



Cisco Nexus 7000 Series Virtual Device Context Command Reference



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A Commands

- [allocate interface ethernet, page 2](#)

allocate interface ethernet

To allocate Ethernet interfaces to a virtual device context (VDC), use the **allocate interface ethernet** command. To revert to the default settings, use the **no** form of this command.

allocate interface ethernet slot/port

allocate interface ethernet slot/port

allocate interface ethernet slot/port [-port]

allocate interface ethernet slot/port, ethernet slot1/port ...[, ethernet slot/port]

no allocate interface ethernet slot/port

no allocate interface ethernet slot/port [-port]

no allocate interface ethernet slot/port, ethernet slot1/port ...[, ethernet slot/port]

Syntax Description

slot/port

Slot number and port number for the Ethernet interface.

Command Default

None

Command Modes

VDC configuration

Command History

Release

Modification

6.1(1)

Added the no option.

4.0(1)

This command was introduced.

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

Initially, all interfaces belong to the default VDC. You can allocate individual interfaces, ranges of interface, or lists of interfaces.

Use the **show vdc membership** command to display the current allocation of interfaces among the VDCs on the physical device.



Note

All configuration for the interface is lost when you allocate them to another VDC.

To remove the interface from the VDC and return them to the default VDC, you must enter VDC configuration mode for the default VDC and allocate the interface to the default VDC.

This command requires the Advanced Services license.

Examples

This example shows how to allocate one Ethernet interface to a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# allocate interface ethernet 2/1
Moving ports will cause all config associated to them in source vdc to be removed. Are you
sure you want to move the ports? [yes] yes
```

This example shows how to allocate a range of Ethernet interfaces on the same module to a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# allocate interface ethernet 2/1 - 4
Moving ports will cause all config associated to them in source vdc to be removed. Are you
sure you want to move the ports? [yes] yes
```

This example shows how to allocate a list of Ethernet interfaces on the same module to a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# allocate interface ethernet 2/1, ethernet 2/3, ethernet 2/5
Moving ports will cause all config associated to them in source vdc to be removed. Are you
sure you want to move the ports? [yes] yes
```

This example shows how to move an Ethernet interface back to the default VDC:

```
switch# configure terminal
switch(config)# vdc switch
switch(config-vdc)# allocate interface ethernet 2/1
Moving ports will cause all config associated to them in source vdc to be removed. Are you
sure you want to move the ports? [yes] yes
```

Related Commands

| Command | Description |
|---------------------|---|
| show vdc membership | Displays VDC interface membership information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |



B Commands

- [boot-order](#), page 6

boot-order

To allocate the boot order value for a nondefault virtual device context (VDC), use the **boot-order** command.

boot-order *number*

Syntax Description

| | |
|---------------|--|
| <i>number</i> | Boot order number. The range is from 1 to 4. |
|---------------|--|

Command Default

1

Command Modes

VDC configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.2(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

The boot order feature has the following characteristics:

- Multiple VDCs can have the same boot order value.
- VDCs with lowest boot order value boot first.
- The Cisco NX-OS software completely starts all VDCs with the same boot order value before starting the VDCs with the next boot order value.
- The Cisco NX-OS software starts VDCs which have the same boot order value in parallel.
- You cannot change the boot order for the default VDC, only nondefault VDCs.

This command requires the Advanced Services license.

Examples

This example shows how to allocate one Ethernet interface to a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# boot-order 2
```

Related Commands

| Command | Description |
|-----------------|---|
| show vdc detail | Displays detailed information about the VDCs. |

| Command | Description |
|---------|---|
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |



C Commands

- [copy running-config startup-config vdc-all, page 10](#)
- [cpu-share, page 11](#)

copy running-config startup-config vdc-all

To copy the running configuration for all virtual device contexts (VDCs) to the startup configuration, use the **show copy running-config startup-config vdc-all** command.

copy running-config startup-config vdc-all

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 4.0(1) | This command was introduced. |

Usage Guidelines You can use this command only in the default VDC (VDC 1).
This command does not require a license.

Examples This example shows how to copy the running configuration for all VDCs on the physical device to the startup configuration:

```
switch# copy running-config startup-config vdc-all
[#####] 100%
```

cpu-share

To control CPU time during periods of contention, use the `cpu-share` command.

cpu-share priority

Syntax Description

| | |
|-----------------|---|
| priority | Specifies the priority of the vdc control cpu time during periods of contention. The range is from 1 to 10. |
|-----------------|---|

Command Default

5

Command Modes

Global configuration mode

Command History

| Release | Modification |
|---------|------------------------------|
| 6.1(1) | This command was introduced. |

Usage Guidelines

VDCs being used for testing should have comparatively lower values than those vdc's being used for production work.

This command does not require a license.

Examples

This example shows how to set the VDC cpu share to 10:

```
switch(config)# vdc foo
Note: Creating VDC, one moment please ...
switch(config-vdc)# cpu-share 10
switch(config-vdc)#
```

Related Commands

| Command | Description |
|------------------|---|
| <code>vdc</code> | Creates or specifies a VDC and enters VDC configuration mode. |



H Commands

- [ha-policy](#), page 14

ha-policy

To configure the high availability (HA) policy for a virtual device context (VDC), use the **ha-policy** command.

ha-policy {**dual-sup** {**bringdown**| **restart**| **switchover**}| **single-sup** {**bringdown**| **reload**| **restart**}}

Syntax Description

| | |
|-------------------|--|
| dual-sup | Specifies the HA policy for devices with dual supervisor modules. |
| bringdown | Puts the VDC in a failed state. To recover from the failed state, you must reload the physical device. |
| restart | Deletes the VDC and recreates it using the startup configuration. |
| switchover | Initiates a supervisor module switchover. |
| dual-sup | Specifies the HA policy for devices with dual supervisor modules. |
| reload | Reloads the physical device and recreates the VDC using the startup configuration. |

Command Default

Default VDC: **dual-sup** default is **switchover** **single-sup** default is **reload**

Nondefault VDC: **dual-sup** default is **switchover** **single-sup** default is **restart**

Command Modes

VDC configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

You cannot change the HA policy for the default VDC.

This command requires the Advanced Services license.

Examples

This example shows how to specify the HA policy for a VDC:

```
switch# configure terminal
```

```
switch(config)# vdc MyDevice
switch(config-vdc)# ha-policy reset
```

Related Commands

| Command | Description |
|----------|---|
| show vdc | Displays VDC interface membership information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |



L Commands

- [limit-resource m4route-mem](#), page 18
- [limit-resource m6route-mem](#), page 20
- [limit-resource module-type](#), page 22
- [limit-resource monitor-session](#), page 24
- [limit-resource monitor-session-erspan-dst](#), page 26
- [limit-resource port-channel](#), page 28
- [limit-resource u4route-mem](#), page 30
- [limit-resource u6route-mem](#), page 33
- [limit-resource vlan](#), page 36
- [limit-resource vrf](#), page 38

limit-resource m4route-mem

To configure IPv4 multicast route memory resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource m4route-mem** command. To revert to the default, use the **no** form of this command.

limit-resource m4route-mem [**minimum** *min-value*] **maximum** *max-value*

no limit-resource m4route-mem

Syntax Description

| | |
|------------------|--|
| minimum | (Optional) Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum amount of IPv4 multicast route memory in megabytes. The range is from 1 to 90 MB. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum amount of IPv4 multicast route memory in megabytes. The range is from 1 to 90 MB and must be equal to or greater than the minimum value. |

Command Default

For the default VDC, the default minimum and maximum limit value is 58 MB. For a nondefault VDC, the default minimum and maximum limit value is 8 MB.

Command Modes

VDC configuration
VDC resource template configuration

Command History

| Release | Modification |
|---------|---|
| 5.0(2) | Changed the minimum and maximum values. |
| 4.1(2) | This command was introduced. |

Usage Guidelines

The multicast routing information base (RIB) for IPv4 is in shared memory. The total available shared memory for the RIB for all VDCs on a physical device with 4 GB of memory is 256 MB. You can have approximately 11,000 routes, each with 16 next-hops, in 4 MB of IPv4 multicast route memory.



Note

Take care when reserving IPv4 multicast routing memory for a VDC not to reserve more of the shared memory than is available.

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for IPv4 multicast routing memory takes affect only after a device reload or a stateful supervisor module switchover.

**Note**

You can set only one value for the IPv4 multicast route memory resource maximum and minimum limits. If you specify a minimum limit, that is the value for both the minimum and maximum limits and the maximum limit is ignored. If you specify only a maximum limit, that is the value for both the minimum and maximum limits.

This command does not require a license.

Examples

This example shows how to configure the IPv4 multicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource m4route-mem minimum 8 maximum 64
```

This example shows how to revert to the default IPv4 multicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource m4route-mem
```

This example shows how to configure the IPv4 multicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource m4route-mem minimum 4 maximum 40
d
```

This example shows how to revert to the default IPv4 multicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource m4route-mem
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource m6route-mem

To configure IPv6 multicast route memory resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource m6route-mem** command. To revert to the default, use the **no** form of this command.

limit-resource m6route-mem [**minimum** *min-value*] **maximum** *max-value*

no limit-resource m6route-mem

Syntax Description

| | |
|------------------|---|
| minimum | (Optional) Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum amount of IPv6 multicast route memory in megabytes. The range is from 1 to 20. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum amount of IPv6 multicast route memory in megabytes. The range is from 1 to 20 and must be equal to or greater than the minimum value. |

Command Default

For the default VDC, the default minimum and maximum limit value is 8 MB. For a nondefault VDC, the default minimum and maximum limit value is 2 MB.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|---------|---|
| 5.0(2) | Changed the minimum and maximum values. |
| 4.1.(2) | This command was introduced. |

Usage Guidelines

The multicast routing information base (RIB) for IPv6 is in shared memory. The total available shared memory for RIB in a physical device with 4 GB of memory is 256 MB for both IPv4 and IPv6 route memory. You can have approximately 11,000 routes, each with 16 next-hops, in 4 MB of IPv6 route memory.



Note

Take care when reserving IPv6 route memory for a VDC not to reserve more of the shared memory than is available.

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for IPv6 multicast routing memory takes affect after a device reload or a stateful supervisor module switchover.

**Note**

You can set only one value for the IPv6 multicast route memory resource maximum and minimum limits. If you specify a minimum limit, that is the value for both the minimum and maximum limits and the maximum limit is ignored. If you specify only a maximum limit, that is the value for both the minimum and maximum limits.

This command does not require a license.

Examples

This example shows how to configure the IPv6 multicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource m6route-mem minimum 8 maximum 12
```

This example shows how to revert to the default IPv6 multicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource m6route-mem
```

This example shows how to configure the IPv6 multicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource m6route-mem minimum 4 maximum 16
```

This example shows how to revert to the default IPv6 multicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource m6route-mem
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource module-type

To configure the line card type resource limit for a virtual device context (VDC), use the **limit-resource module-type** command. To revert to the default, use the **no** form of this command.

limit-resource module-type [f1| f2| f2e| f3| m1| m1x1| m2x1]

no limit-resource module-type [f1| f2| f2e| f3| m1| m1x1| m2x1]

Syntax Description

| | |
|-----------|--|
| f1 | (Optional) Enables F1 type line cards in the VDC. |
| f2 | (Optional) Enables F2 type line cards in the VDC. |
| f2e | (Optional) Enables F2e type line cards in the VDC. |
| f3 | (Optional) Enables F3 type line cards in the VDC. |
| <i>m1</i> | (Optional) Enables M1 type line cards in the VDC. |
| m1x1 | (Optional) Enables M1x1 type line card in the VDC. |
| m2x1 | (Optional) Enables M2x1 type line card in the VDC. |

Command Default

None

Command Modes

VDC configuration

Command History

| Release | Modification |
|---------|---|
| 6.2(6) | The f3 keyword was added. |
| 6.1(1) | Added m2x1 keyword to the syntax description. |
| 5.1(1) | This command was introduced. |

Usage Guidelines

By default, both the M1 and F1 types of line cards are supported in a VDC.

A VDC supports only the following line card type modes:

- **limit-resource module-type M1** (default)—This module restricts a VDC to M1 modules only.
- **limit-resource module-type F1**—This module restricts a VDC to F1 modules only.

- no limit-resource module-type—This module allows a combination of F1 and M1 modules in a VDC.

**Note**

This command does not support VDC resource templates.

This command does not require a license.

Examples

This example shows how to enable the M2X1 type line card in the VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource module-type m2x1
switch(config-vdc)#
```

This example shows how to configure the line card type for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource module-type f1
This will cause all ports of unallowed types to be removed from this vdc. Continue? [yes]
switch(config-vdc)
```

This example shows how to revert to the default line card type for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource module-type f1
This will cause all ports of unallowed types to be removed from this vdc. Continue? [yes]
switch(config-vdc)#
```

Related Commands

| Command | Description |
|-------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |

limit-resource monitor-session

To configure switched port analyzer (SPAN) monitor session resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource monitor-session** command. To revert to the default, use the **no** form of this command.

limit-resource monitor-session minimum *min-value* **maximum** [*max-value*] **equal-to-min**}

no limit-resource monitor-session

Syntax Description

| | |
|---------------------|--|
| minimum | Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum number of SPAN monitor sessions. The range is from 0 to 2. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum number of SPAN monitor sessions. The range is from 0 to 2. |
| equal-to-min | Specifies that the maximum limit is always equal to the minimum limit. |

Command Default

The default minimum is 0. The default maximum is 2.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for SPAN monitor sessions takes affect immediately.

This command does not require a license.

Examples

This example shows how to configure the SPAN monitor session limits for a VDC:

```
switch# configure terminal
```

```
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource monitor-session minimum 1 maximum 2
```

This example shows how to revert to the default SPAN monitor session limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource monitor-session
```

This example shows how to configure the SPAN monitor session limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource monitor-session minimum 0 maximum 1
```

This example shows how to revert to the default SPAN monitor session limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource monitor-session
```

Related Commands

| Command | Description |
|-----------------------------------|---|
| show vdc resource [detail] | Displays VDC resource limits information. |
| show vdc resource template | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |

limit-resource monitor-session-erspan-dst

To configure the encapsulated remote switched port analyzer (ERSPAN) destination monitor session resource limits for a virtual device context (VDC), use the **limit-resource monitor-session-erspan-dst** command. To revert to the default, use the **no** form of this command.

monitor-session-erspan-dst [**minimum** *min-value*] [**maximum** *max-value*]

no monitor-session-erspan-dst [**minimum** *min-value*] [**maximum** *max-value*]

Syntax Description

| | |
|-----------|--|
| minimum | Specifies the minimum value reserved for the VDC and allocates the minimum monitor ERSPAN destination session. |
| min-value | Minimum number of erspan-dst monitor sessions. The range is from 0 to 24. |
| maximum | Specifies the minimum value reserved for the VDC and allocates the maximum monitor ERSPAN destination session. |
| max-value | Maximum number of erspan-dst monitor sessions. The range is from 0 to 24. |

Command Default

The default minimum is 0.

The default maximum is 24.

Command Modes

VDC configuration

VDC resource template configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 5.1(1) | This command was introduced. |

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the ERSPAN destination monitor session limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
```

```
switch(config-vdc)# limit-resource monitor-session-erspan-dst minimum 5 maximum 15
switch(config-vdc)#
```

This example shows how to revert to the default ERSPAN destination monitor session limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource monitor-session-erspan-dst minimum 5 maximum 15
switch(config-vdc)#
```

Related Commands

| Command | Description |
|--------------------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| limit-resource monitor-session | Configures Switched Port Analyzer (SPAN) monitor session resource limits for a virtual device context (VDC) or a VDC resource template. |

limit-resource port-channel

To configure port channel resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource port-channel** command. To revert to the default, use the **no** form of this command.

limit-resource port-channel minimum *min-value* **maximum** [*max-value*] **equal-to-min** }
no limit-resource monitor-session

Syntax Description

| | |
|---------------------|--|
| minimum | Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum number of port channels. The range is from 0 to 768. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum number of port channels. The range is from 0 to 768. |
| equal-to-min | Specifies that the maximum limit is always equal to the minimum limit. |

Command Default

The default minimum is 0. The default maximum is 768.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|---------|--|
| 4.1(2) | Changed the default maximum limit from 192 to 768. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for port channels takes affect immediately.

This command does not require a license.

Examples

This example shows how to configure the port channel resource limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource port-channel minimum 8 maximum 64
```

This example shows how to revert to the default port channel limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource port-channel
```

This example shows how to configure the port channel limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource port-channel minimum 4 maximum 128
```

This example shows how to revert to the default port channel limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource port-channel
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource u4route-mem

To configure IPv4 unicast route memory resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource u4route-mem** command. To revert to the default, use the **no** form of this command.

limit-resource u4route-mem [**minimum** *min-value*] **maximum** *max-value*

no limit-resource u4route-mem

Syntax Description

| | |
|------------------|---|
| minimum | (Optional) Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum amount of IPv4 unicast route memory in megabytes. The range is from 1 to 250 MB. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum amount of IPv4 unicast route memory in megabytes. The range is from 1 to 250 MB and must be equal to or greater than the minimum value. |

Command Default

For the default VDC, the default minimum and maximum limit value is 96 MB. For a nondefault VDC, the default minimum and maximum limit value is 8 MB.

Command Modes

VDC configuration
VDC resource template configuration

Command History

| Release | Modification |
|---------|--|
| 5.0(2) | Changed the minimum and maximum values. |
| 4.1(2) | <ul style="list-style-type: none"> The minimum keyword became optional. The default maximum limit for the default VDC changed from 320 MB to 32 MB. The default maximum limit for nondefault VDCs changed from 320 MB to 8 MB. |

| Release | Modification |
|---------|--|
| 4.0(2) | <ul style="list-style-type: none"> The default maximum limit for the default VDC changed from 256 MB to 320 MB. The default maximum limit for nondefault VDCs changed from 256 MB to 320 MB. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

The unicast routing information base (RIB) for IPv4 is in shared memory. The total available shared memory for the RIB for all VDCs on a physical device with 4 GB of memory is 256 MB. You can have approximately 11,000 routes, each with 16 next-hops, in 16 MB of IPv4 unicast route memory.



Note

Be careful when you are reserving IPv4 unicast routing memory for a VDC that you do not reserve more of the shared memory than is available.

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for IPv4 unicast routing memory takes affect only after a device reload or a stateful supervisor module switchover.



Note

You can set only one value for the IPv4 unicast route memory resource maximum and minimum limits. If you specify a minimum limit, that is the value for both the minimum and maximum limits and the maximum limit is ignored. If you specify only a maximum limit, that is the value for both the minimum and maximum limits.

There are two options to make this command take effect:

- If this is a single-sup system, do a 'copy run start' and reload the box.
- If there are two sup cards, you can do a system-switchover.

This command does not require a license.

Examples

This example shows how to configure the IPv4 unicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource u4route-mem minimum 8 maximum 64
```

This example shows how to revert to the default IPv4 unicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource u4route-mem
```

This example shows how to configure the IPv4 unicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource u4route-mem minimum 4 maximum 40
```

This example shows how to revert to the default IPv4 unicast route memory limits for a VDC resource template:

```
switch# configure terminal  
switch(config)# vdc resource template MyTemplate  
switch(config-vdc-template)# no limit-resource u4route-mem
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource u6route-mem

To configure IPv6 unicast route memory resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource u6route-mem** command. To revert to the default, use the **no** form of this command.

limit-resource u6route-mem [**minimum** *min-value*] **maximum** *max-value*

no limit-resource u6route-mem

Syntax Description

| | |
|------------------|---|
| minimum | (Optional) Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum amount of IPv6 route memory in megabytes. The range is from 1 to 150 MB. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum amount of IPv6 route memory in megabytes. The range is from 1 to 150 MB and must be equal to or greater than the minimum value. |

Command Default

For the default VDC, the default minimum and maximum limit value is 24 MB.

For a nondefault VDC, the default minimum and maximum limit value is 4 MB.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|-------------|--|
| 7.3(0)DX(1) | Changed the maximum limit from 100 MB to 150 MB, to support 512K IPv6 routes. |
| 5.0(2) | Changed the minimum and maximum values. |
| 4.1(2) | <ul style="list-style-type: none"> The minimum keyword became optional. The default maximum limit for the default VDC changed from 192 MB to 16 MB. The default maximum limit for nondefault VDCs changed from 192 MB to 4 MB. |

| Release | Modification |
|---------|--|
| 4.0(2) | <ul style="list-style-type: none"> The default maximum limit for the default VDC changed from 256 MB to 192 MB. The default maximum limit for nondefault VDCs changed from 256 MB to 192 MB. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

The unicast routing information base (RIB) for IPv6 is in shared memory. The total available shared memory for RIB in a physical device with 4 GB of memory is 256 MB for both IPv4 and IPv6 route memory. You can have approximately 11,000 routes, each with 16 next-hops, in 16 MB of IPv6 route memory.



Note Be careful when you are reserving IPv4 unicast routing memory for a VDC that you do not reserve more of the shared memory than is available.

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for IPv6 unicast routing memory takes affect after a device reload or a stateful supervisor module switchover.



Note You can set only one value for the IPv6 unicast route memory resource maximum and minimum limits. If you specify a minimum limit, that is the value for both the minimum and maximum limits and the maximum limit is ignored. If you specify only a maximum limit, that is the value for both the minimum and maximum limits.

This command does not require a license.

Examples

This example shows how to configure the IPv6 unicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource u6route-mem minimum 8 maximum 24
```

This example shows how to revert to the default IPv6 unicast route memory limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource u6route-mem
```

This example shows how to configure the IPv6 unicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource u6route-mem minimum 4 maximum 32
```

This example shows how to revert to the default IPv6 unicast route memory limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource u6route-mem
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource vlan

To configure VLAN resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource vlan** command. To revert to the default, use the **no** form of this command.

limit-resource vlan minimum *min-value* **maximum** [*max-value*] **equal-to-min**}

no limit-resource vlan

Syntax Description

| | |
|---------------------|--|
| minimum | Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum number of VLANs. The range is from 16 to 4094. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum number of VLANs. The range is from 16 to 4094. |
| equal-to-min | Specifies that the maximum limit is always equal to the minimum limit. |

Command Default

The default minimum is 16. The default maximum is 4094.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for VLANs takes affect immediately.

This command does not require a license.

Examples

This example shows how to configure the VLAN limits for a VDC:

```
switch# configure terminal
```



```
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource vlan minimum 32 maximum 2056
```

This example shows how to revert to the default VLAN limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource vlan
```

This example shows how to configure the VLAN limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource vlan minimum 24 maximum 3000
```

This example shows how to revert to the default VLAN limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource vlan
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |

limit-resource vrf

To configure virtual routing and forwarding instance (VRF) resource limits for a virtual device context (VDC) or a VDC resource template, use the **limit-resource vrf** command. To revert to the default, use the **no** form of this command.

limit-resource vrf minimum *min-value* **maximum** [*max-value*] **equal-to-min**}

no limit-resource vrf

Syntax Description

| | |
|---------------------|--|
| minimum | Specifies the minimum value reserved for the VDC. |
| <i>min-value</i> | Minimum number of VRFs. The range is from 2 to 1000. |
| maximum | Specifies the maximum limit value as resources are available. |
| <i>max-value</i> | Maximum number of VRFs. The range is from 2 to 1000. |
| equal-to-min | Specifies that the maximum limit is always equal to the minimum limit. |

Command Default

The default minimum is 16. The default maximum is 1000.

Command Modes

VDC configuration VDC resource template configuration

Command History

| Release | Modification |
|---------|---|
| 5.0(2) | Changed the minimum and maximum values. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

The Cisco NX-OS software reserves the minimum limit for the resource. Changing the minimum limit for VRFs takes affect immediately.

This command does not require a license.

Examples

This example shows how to configure the VRF limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# limit-resource vrf minimum 32 maximum 1000
```

This example shows how to revert to the default VRF limits for a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# no limit-resource vrf
```

This example shows how to configure the VRF limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# limit-resource vrf minimum 64 maximum 1000
```

This example shows how to revert to the default VRF limits for a VDC resource template:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)# no limit-resource vrf
```

Related Commands

| Command | Description |
|-----------------------|---|
| show vdc resource | Displays VDC resource limits information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |
| vdc resource template | Creates or specifies a VDC resource template and enters VDC resource template configuration mode. |



R Commands

- [reload vdc, page 42](#)

reload vdc

To reload a nondefault virtual device context (VDC), use the **reload vdc** command.

reload vdc [childvdc]

Syntax Description

| | |
|-----------------|---|
| childvdc | Reloads the child VDC from the admin VDC. |
|-----------------|---|

Command Default

None

Command Modes

Any command mode in a nondefault VDC

Command History

| Release | Modification |
|---------|------------------------------|
| 4.2(1) | This command was introduced. |

Usage Guidelines

You can use the **reload vdc** command only in the nondefault VDCs.



Note

Use the **reload** command to reload the default VDC, which also reloads all nondefault VDCs.

This command requires the Advanced Services license.



Caution

Reloading a VDC disrupts all traffic on the VDC.

Examples

This example shows how to reload a nondefault VDC:

```
switch-TestVDC# reload vdc
```

This example show how to reload the child VDC from the admin VDC:

```
adminvdc(config)# reload vdc childvdc
```

Related Commands

| Command | Description |
|---------|---------------------------------|
| reload | Reloads the Cisco NX-OS device. |



S Commands

- [switchback](#), page 44
- [switchto vdc](#), page 45
- [system admin-vdc migrate](#), page 47
- [system module-type](#), page 48

switchback

To switch back to the default virtual device context (VDC) from another VDC, use the **switchback** command.

switchback

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

This command requires the Advanced Services license.

Examples

This example shows how to switch back to the default VDC:

```
switch-MyVDC# switchback
switch(config)#
```

Related Commands

| Command | Description |
|------------------|---|
| show current vdc | Displays information about the current VDC. |
| switchto vdc | Switches to a nondefault VDC. |

switchto vdc

To switch to another virtual device context (VDC) from the default VDC, use the **switchto vdc** command.

switchto vdc *vdc-name*

Syntax Description

| | |
|-----------------|-----------|
| <i>vdc-name</i> | VDC name. |
|-----------------|-----------|

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

- Only users with the network-admin or network-operator role can use the switchto vdc command. No other users are permitted to use it.
- No user can grant permission to another role to use the switchto vdc command.
- After a network-admin uses the switchto vdc command, this user becomes a vdc-admin for the new VDC. Similarly, after a network-operator uses the switchto vdc command, this user becomes a vdc-operator for the new VDC. Any other roles associated with the user are not valid after the switchto vdc command is entered.
- After a network-admin or network-operator uses the switchto vdc command, this user cannot use this command to switch to another VDC. The only option is to use the switchback command to return to the original VDC.

You can use this command only from the default VDC (VDC 1).

To return to the default VDC, use the **exit** from EXEC mode or the **switchback** command.

This command requires the Advanced Services license.

Examples

This example shows how to switch to a VDC:

```
switch# switchto vdc MyDevice
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
```

the GNU General Public License (GPL) version 2.0 or the GNU Lesser General Public License (LGPL) Version 2.1. A copy of each such license is available at <http://www.opensource.org/licenses/gpl-2.0.php> and <http://www.opensource.org/licenses/lgpl-2.1.php>
switch-MyDevice#

Related Commands

| Command | Description |
|------------------|---|
| show current vdc | Displays information about the current VDC. |
| switchback | Returns to the default VDC. |

system admin-vdc migrate

To configure the default VDC used for switchwide configuration to copy any local config from default VDC to a new VDC, use the **system admin-vdc migrate** command.

```
system admin-vdc migrate vdc
no system admin-vdc
```

Syntax Description

| | |
|------------|----------------------|
| vdc | Specifies a new vdc. |
|------------|----------------------|

Command Default

Disabled

Command Modes

Global configuration mode

Command History

| Release | Modification |
|---------|------------------------------|
| 6.1(1) | This command was introduced. |

Usage Guidelines

This command does not require a license.

Examples

This example shows how to configure the default VDC used for switchwide configuration to copy any local config from default VDC to a new VDC:

```
switch(config)# system admin-vdc migrate vdc2
switch(config)#
```

Related Commands

| Command | Description |
|-----------------|--|
| show vdc | Displays whether the default VDC is configured for Ethernet or Admin VDC mode. |

system module-type

To configure which module can be enabled on a chassis, use the **system module-type** command. To reset the configuration mode to allow all modules, use the no form of the command.

```
{system module-type f1| f2| f2e| f3| m1| m1x1| m2x1}
```

```
{no system module-type f1| f2| f2e| f3| m1| m1x1| m2x1}
```

Syntax Description

| | |
|------|---|
| f1 | Specifies the F1 type modules in the chassis. |
| f2 | Specifies the F2 type modules in the chassis. |
| f2e | Specifies the F2e type modules in the chassis. |
| f3 | Specifies the F3 type modules in the chassis. |
| m1 | Specifies the M1 type modules in the chassis. |
| m1x1 | Specifies the M1x1 type modules in the chassis. |
| m2x1 | Specifies the M2 type modules in the chassis. |

Command Default

Enable

Command Modes

Switchwide vdc mode

Command History

| Release | Modification |
|---------|------------------------------|
| 6.2(6) | The f3 keyword was added. |
| 6.1(3) | This command was introduced. |

Usage Guidelines

Note

The modules that you do not enable must not be powered on after you configure this feature and enter yes. An error message will force you to manually disable these modules before proceeding. This prevents major disruption and service issues within a VDC.

This command does not require a license.

Examples

This example shows how to configure which module can be enabled on a chassis:

```
switch(config)# system module-type f1 f2 m1
Modules of unsupported types will not be allowed to power on after this. Continue(y/n)?
[yes] y
switch(config)#
```

Related Commands

| Command | Description |
|-----------------|--|
| show vdc | Displays whether the default VDC is configured for Ethernet or Admin VDC mode. |

system module-type



Show Commands

- [show mac vdc, page 52](#)
- [show resource, page 53](#)
- [show running-config vdc, page 55](#)
- [show running-config vdc-all, page 56](#)
- [show startup-config vdc-all, page 59](#)
- [show vdc, page 60](#)
- [show vdc current-vdc, page 62](#)
- [show vdc membership, page 63](#)
- [show vdc resource, page 65](#)
- [show vdc resource template, page 67](#)
- [show vdc shared membership, page 69](#)

show mac vdc

To display the MAC address of a specific virtual device context (VDC), use the **show mac vdc command**.

show mac vdc vdc-id

Syntax Description

| | |
|--------|-----------------------------------|
| vdc-id | VDC ID. The range is from 1 to 4. |
|--------|-----------------------------------|

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 5.2(1) | This command was introduced. |

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the MAC address of a specific VDC:

```
switch# show mac vdc 1
vdc id = 1, management port mac address = f8:66:f2:09:f2:e8
switch#
```

Related Commands

| Command | Description |
|-------------------|---|
| show vdc | Displays virtual context device (VDC) information. |
| show vdc resource | Displays the virtual device context (VDC) resource information. |

show resource

To display the resource usage for a virtual device context (VDC), use the **show resource** command.

show resource [**monitor-sessions**| **port-channel**| **u4route-mem**| **u6route-mem**| **vlan**| **vrf**]

Syntax Description

| | |
|-------------------------|--|
| monitor-sessions | (Optional) Displays the monitor session resource usage. |
| port-channel | (Optional) Displays the port channel resource usage. |
| u4route-mem | (Optional) Displays the IPv4 unicast route memory resource usage. |
| u6route-mem | (Optional) Displays the IPv6 unicast route memory resource usage. |
| vlan | (Optional) Displays only the VLAN resource information. |
| vrf | (Optional) Displays only the virtual forwarding and routing instance (VRF) resource information. |

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

This command does not require a license.

Examples

This example shows how to display the resource usage for a VDC:

```
switch# show resource
Resource           Min      Max      Used   Unused   Avail
-----
port-channel       0        192      4       0       188
monitor-session    0         2        2       0        0
vlan               16      4094    12       4      4082
u6route-mem       16       256     16       0       232
```

show resource

| | | | | | |
|-------------|----|------|----|----|------|
| u4route-mem | 32 | 256 | 32 | 0 | 208 |
| vrf | 16 | 8192 | 2 | 14 | 8158 |

show running-config vdc

To display the virtual device context (VDC) information in the default VDC running configuration, use the **show running-config vdc** command.

show running-config vdc

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 4.0(1) | This command was introduced. |

Usage Guidelines You can use this command only in the default VDC (VDC 1).
This command does not require a license.

Examples This example shows how to display VDC information in the running configuration:

```
switch# show running-config vdc
version 4.0(1)
vdc switch id 1
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource vrf minimum 16 maximum 1000
  limit-resource port-channel minimum 0 maximum 192
  limit-resource u4route-mem minimum 32 maximum 256
  limit-resource u6route-mem minimum 16 maximum 256
vdc Payroll id 2
  allocate interface Ethernet2/47
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource vrf minimum 16 maximum 1000
  limit-resource port-channel minimum 0 maximum 192
  limit-resource u4route-mem minimum 8 maximum 256
  limit-resource u6route-mem minimum 4 maximum 256
vdc Engineering id 3
  allocate interface Ethernet2/46
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource vrf minimum 16 maximum 1000
  limit-resource port-channel minimum 0 maximum 192
  limit-resource u4route-mem minimum 8 maximum 256
  limit-resource u6route-mem minimum 4 maximum 256
vdc resource template MyTemplate
```

show running-config vdc-all

To display the running configurations for all virtual device contexts (VDCs), use the **show running-config vdc-all** command.

show running-config vdc-all [all]

Syntax Description

| | |
|------------|---|
| all | (Optional) Displays VDC default setting information from the running configuration. |
|------------|---|

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

This command does not require a license.

Examples

This example shows how to display the running configurations for all VDCs:

```
switch# show running-config vdc-all
!Running config for vdc: switch
switchto vdc switch
version 4.0(1)
snmp-server enable traps entity
power redundancy-mode combined force
feature tacacs+
feature pbr
feature private-vlan
feature interface-vlan
feature dot1x
feature lacp
feature glbp
feature dhcp
feature eou
feature tunnel
feature cts
logging level glbp 6
role name MyRole
username adminbackup password 5 $1$Oip/C5Ci$oOdx7oJS1BCFpNRmQK4na. role network-operator
username admin password 5 $1$x.9srJIq$jjvKISFQ1sxR4oi44YanxJ0 role network-admin
username User1 password 5 $1$Dm4XUUyR$V1/3B25/84g3YRkOt3Rj50 role network-operator
```

```

telnet server enable
ssh key rsa 768 force
kernel core target 0.0.0.0
kernel core limit 1
aaa group server radius aaa-private-sg
    use-vrf management
vlan dot1Q tag native
system default switchport
no system default switchport shutdown
snmp-server user User1 auth md5 0xbc9d5254b8aedec4747ad156d8726ae0 priv 0xbc9d52
54b8aedec4747ad156d8726ae0 localizedkey engineID 128:0:0:9:3:0:24:186:216:63:188
snmp-server user admin auth md5 0xbc9d5254b8aedec4747ad156d8726ae0 priv 0xbc9d52
54b8aedec4747ad156d8726ae0 localizedkey engineID 128:0:0:9:3:0:24:186:216:63:188
snmp-server enable traps license
vrf context management
    ip route 0.0.0.0/0 172.28.230.1
logging level syslog 1
logging server 172.28.254.254
vdc switch id 1
    limit-resource vlan minimum 16 maximum 4094
    limit-resource monitor-session minimum 0 maximum 2
    limit-resource vrf minimum 16 maximum 1000
    limit-resource port-channel minimum 0 maximum 192
    limit-resource u4route-mem minimum 32 maximum 256
    limit-resource u6route-mem minimum 16 maximum 256
vdc Payroll id 2
    allocate interface Ethernet2/47
    limit-resource vlan minimum 16 maximum 4094
    limit-resource monitor-session minimum 0 maximum 2
    limit-resource vrf minimum 16 maximum 1000
    limit-resource port-channel minimum 0 maximum 192
    limit-resource u4route-mem minimum 8 maximum 256
    limit-resource u6route-mem minimum 4 maximum 256
vdc Engineering id 3
    allocate interface Ethernet2/46
    limit-resource vlan minimum 16 maximum 4094
    limit-resource monitor-session minimum 0 maximum 2
    limit-resource vrf minimum 16 maximum 1000
    limit-resource port-channel minimum 0 maximum 192
    limit-resource u4route-mem minimum 8 maximum 256
    limit-resource u6route-mem minimum 4 maximum 256
vdc resource template MyTemplate
interface Vlan1
interface Ethernet2/1
    shutdown
    switchport
    switchport monitor
    ip access-group markin in
    ip dhcp snooping limit rate 80
    ip arp inspection limit rate 300 burst interval 5
interface Ethernet2/2
    shutdown
    no switchport
interface Ethernet2/2.1
    shutdown
interface Ethernet2/3
    no cdp enable
    shutdown
    storm-control broadcast level 20
    storm-control unicast level 20
    switchport
    dot1x mac-auth-bypass
....
interface mgmt0
    ip address 172.28.231.193/23
line console
    speed 115200
logging level cdp 6
event manager applet x
    monitor session 1
        no shut
    monitor session 2
        no shut

```

```

    source interface Ethernet2/2 both
    source interface Ethernet2/5 both
    destination interface Ethernet2/1
    destination interface Ethernet2/3
    filter vlan 50
monitor session 3
  no shut
logging level dhcp_snoop 6
logging level eth_port_channel 6
logging ip access-list cache entries 8000
logging ip access-list cache interval 300
logging ip access-list cache threshold 0
acllog match-log-level 6
!Running config for vdc: Payroll
switchto vdc Payroll
im_verify_ifindex failed for 0x5000000
status: 0x411a0000 - shared pss not opened
if_info_status: 0x0
version 4.0(1)
username admin password 5 $1$f89fb1AG$TK6vd.TAq0rp9Gwzc7j6y0 role network-admi
telnet server enable
ssh key rsa 768 force
aaa group server radius aaa-private-sg
  use-vrf management
snmp-server user admin network-admin auth md5 0xdddf68fa88ad2a5ea0818856db35fa9f
  priv 0xdddf68fa88ad2a5ea0818856db35fa9fb localizedkey
vrf context management
  ip route 0.0.0.0/0 172.28.230.1
logging server 172.28.254.254
interface Ethernet2/47
logging ip access-list cache entries 8000
logging ip access-list cache interval 300
logging ip access-list cache threshold 0
acllog match-log-level 6
!Running config for vdc: Engineering
switchto vdc Engineering
im_verify_ifindex failed for 0x5000000
status: 0x411a0000 - shared pss not opened
if_info_status: 0x0
version 4.0(1)
username admin password 5 $1$pPFrW5.g$rciQSDOB/A/c0N8eXf1081 role network-admi
telnet server enable
ssh key rsa 768 force
aaa group server radius aaa-private-sg
  use-vrf management
snmp-server user admin network-admin auth md5 0x67568a735d6a1f7e4833fd0de8c196f
  priv 0x67568a735d6a1f7e4833fd0de8c196fb localizedkey
vrf context management
  ip route 0.0.0.0/0 172.28.230.1
logging server 172.28.254.254
interface Ethernet2/46
logging ip access-list cache entries 8000
logging ip access-list cache interval 300
logging ip access-list cache threshold 0
acllog match-log-level 6

```

show startup-config vdc-all

To display the configuration information for all virtual device contexts (VDCs) in the startup configuration, use the **show startup-config vdc-all** command.

show startup-config vdc-all

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

| Command History | Release | Modification |
|------------------------|----------------|------------------------------|
| | 4.0(1) | This command was introduced. |

Usage Guidelines You can use this command only in the default VDC (VDC 1).
This command does not require a license.

Examples This example shows how to display information for all VDCs in the startup configuration:

```
switch# show startup-config vdc-all
```

show vdc

To display virtual context device (VDC) information, use the **show vdc** command.

show vdc [*vdc-name*] [detail]

Syntax Description

| | |
|-----------------|--|
| <i>vdc-name</i> | (Optional) VDC name. |
| detail | (Optional) Displays detailed information about the VDCs. |

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

In the default VDC, this command displays information about all VDCs on the physical device. In nondefault VDCs, this command display information only about the current VDC.

This command does not require a license.

Examples

This example shows how to display summary information about VDCs in the default VDC:

```
switch# show vdc
vdc_id  vdc_name                state      mac
-----  -
1       switch                       active     00:18:ba:d8:3f:fd
2       Payroll                       active     00:18:ba:d8:3f:fe
3       MyVDC                         active     00:18:ba:d8:3f:ff
```

This example shows how to display detailed information about VDCs in the default VDC:

```
switch# show vdc detail
vdc id: 1
vdc name: switch
vdc state: active
vdc mac address: 00:22:55:79:a4:c1
vdc ha policy: RELOAD
vdc dual-sup ha policy: SWITCHOVER
vdc boot Order: 1
vdc create time: Thu May 14 08:14:39 2009
vdc restart count: 0
vdc id: 2
vdc name: payroll
```



```

vdc state: active
vdc mac address: 00:22:55:79:a4:c2
vdc ha policy: RESTART
vdc dual-sup ha policy: SWITCHOVER
vdc boot Order: 1
vdc create time: Thu May 14 08:15:22 2009
vdc restart count: 0
vdc id: 3
vdc name: test
vdc state: active
vdc mac address: 00:22:55:79:a4:c3
vdc ha policy: RESTART
vdc dual-sup ha policy: SWITCHOVER
vdc boot Order: 1
vdc create time: Thu May 14 08:15:29 2009
vdc restart count: 0

```

This example shows how to display summary VDC information in a nondefault VDC:

```

switch-Payroll# show vdc Payroll
vdc_id  vdc_name                state      mac
-----  -
2       Payroll                      active     00:18:ba:d8:3f:fe

```

This example shows how to display detailed VDC information in a nondefault VDC:

```

switch-Payroll# show vdc Payroll detail
vdc id: 2
vdc name: payroll
vdc state: active
vdc mac address: 00:22:55:79:a4:c2
vdc ha policy: RESTART
vdc dual-sup ha policy: SWITCHOVER
vdc boot Order: 1
vdc create time: Thu May 14 08:15:22 2009
vdc restart count: 0

```

show vdc current-vdc

To display the current virtual device context (VDC) identifier information, use the **show vdc current-vdc** command.

show vdc current-vdc

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

| Command History | Release | Modification |
|------------------------|----------------|------------------------------|
| | 4.0(1) | This command was introduced. |

Usage Guidelines You can use this command in any VDC.
This command does not require a license.

Examples This example shows how to display the current VDC identifier information:

```
switch-Payroll# show vdc current-vdc
Current vdc is 2 - Payroll
```

show vdc membership

To display the interface membership information for the virtual device contexts (VDCs), use the **show vdc membership** command.

show vdc membership [status]

Syntax Description

| | |
|---------------|--|
| status | (Optional) Displays status information about the interfaces. |
|---------------|--|

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC.

This command does not require a license.

Examples

This example shows how to display the interface membership information in the default VDC:

```
switch# show vdc membership
vdc_id: 1 vdc_name: switch interfaces:
Ethernet2/1          Ethernet2/2          Ethernet2/3
Ethernet2/4          Ethernet2/5          Ethernet2/6
Ethernet2/7          Ethernet2/8          Ethernet2/9
Ethernet2/10         Ethernet2/11         Ethernet2/12
Ethernet2/13         Ethernet2/14         Ethernet2/15
Ethernet2/16         Ethernet2/17         Ethernet2/18
Ethernet2/19         Ethernet2/20         Ethernet2/21
Ethernet2/22         Ethernet2/23         Ethernet2/24
Ethernet2/25         Ethernet2/26         Ethernet2/27
Ethernet2/28         Ethernet2/29         Ethernet2/30
Ethernet2/31         Ethernet2/32         Ethernet2/33
Ethernet2/34         Ethernet2/35         Ethernet2/36
Ethernet2/37         Ethernet2/38         Ethernet2/39
Ethernet2/40         Ethernet2/41         Ethernet2/42
Ethernet2/43         Ethernet2/44         Ethernet2/45
Ethernet2/48
vdc_id: 2 vdc_name: Payroll interfaces:
Ethernet2/47
vdc_id: 3 vdc_name: MyVDC interfaces:
Ethernet2/46
```

This example shows how to display the interface membership information in a nondefault VDC:

```
switch-Payroll# show vdc membership
vdc_id: 2 vdc_name: Payroll interfaces:
    Ethernet2/47
```

This example shows how to display the interface status information in a default VDC:

```
switch# show vdc membership status
vdc_id: 1 vdc_name: switch interfaces:
Port      Status
-----
Eth2/1    OK
Eth2/2    OK
Eth2/3    OK
Eth2/4    OK
Eth2/5    OK
Eth2/6    OK
Eth2/7    OK
Eth2/8    OK
Eth2/9    OK
Eth2/10   OK
...
```

show vdc resource

To display the virtual device context (VDC) resource information, use the **show vdc resource** command.

show vdc resource [**monitor-session** | **port-channel** | **u4route-mem** | **vlan** | **vrf**] [**detail**]

Syntax Description

| | |
|------------------------|--|
| monitor-session | (Optional) Displays only the Switched Port Analyzer (SPAN) monitor session resources. |
| port-channel | (Optional) Displays only the port channel resource information. |
| u4route-mem | (Optional) Displays only the IPv4 unicast route memory resource information. |
| u6route-mem | (Optional) Displays only the IPv6 unicast route memory resource information. |
| vlan | (Optional) Displays only the VLAN resource information. |
| vrf | (Optional) Displays only the virtual forwarding and routing instance (VRF) resource information. |
| detail | (Optional) Displays detailed information. |

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

This command does not require a license.

Examples

This example shows how to display summary VDC resource information:

```
switch# show vdc resource
```

show vdc resource

```

port-channel          0 used          0 unused        192 free        192 total
monitor-session      0 used          0 unused         2 free          2 total
vlan                  14 used         34 unused       16370 free      16384 total
u4route-mem          48 used         0 unused         208 free        256 total
vrf                    6 used          42 unused       8186 free      8192 total

```

This example shows how to display detailed VDC resource information:

```

switch# show vdc resource detail
port-channel          0 used          0 unused        192 free        192 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch      0      192      0          0          192
Payroll     0      192      0          0          192
MyVDC       0      192      0          0          192
monitor-session 0 used    0 unused    2 free          2 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch      0         2         0          0           2
Payroll     0         2         0          0           2
MyVDC       0         2         0          0           2
vlan        14 used   34 unused  16370 free  16384 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch     16     4094      10         6         4084
Payroll    16     4094       2         14        4092
MyVDC      16     4094       2         14        4092
u4route-mem 48 used  0 unused   208 free    256 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch     32     256       32         0         208
Payroll    8       256       8          0         208
MyVDC      8       256       8          0         208
vrf        6 used   42 unused  8186 free  8192 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch     16     8192       2         14        8158
Payroll    16     8192       2         14        8158
MyVDC      16     8192       2         14        8158

```

This example shows how to display summary VDC resource information for port channels:

```

switch# show vdc resource port-channel
port-channel          0 used          0 unused        192 free        192 total

```

This example shows how to display detailed VDC resource information for port channels:

```

switch# show vdc resource port-channel detail
port-channel          0 used          0 unused        192 free        192 total
-----
  Vdc      Min      Max      Used      Unused      Avail
  ----      -
switch      0      192      0          0          192
Payroll     0      192      0          0          192
MyVDC       0      192      0          0          192

```

show vdc resource template

To display the virtual device context (VDC) resource template information, use the **show vdc resource template** command.

show vdc resource template [vdc-template-name]

Syntax Description

| | |
|--------------------------|--|
| <i>vdc-template-name</i> | (Optional) VDC resource template name. |
|--------------------------|--|

Command Default

None

Command Modes

Any command mode

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

This command does not require a license.

Examples

This example shows how to display summary information for all VDC resource templates:

```
switch# show vdc resource template
MyTemplate
-----
Resource           Min           Max
-----
port-channel       8             64
global-default
-----
Resource           Min           Max
-----
u4route-mem       32            256
vdc-default
-----
Resource           Min           Max
-----
port-channel       0             192
monitor-session    0              2
vlan               16            4094
u4route-mem       8             256
vrf                16            8192
```

This example shows how to display summary information for a specific VDC resource template:

```
switch# show vdc resource template MyTemplate
MyTemplate
```

```

-----
Resource           Min      Max
-----
port-channel       8        64

```

This example shows how to display detailed VDC resource information:

```

switch# show vdc resource detail
port-channel       0 used      0 unused    192 free    192 total
-----
Vdc               Min      Max      Used      Unused     Avail
-----
switch           0        192      0          0         192
Payroll          0        192      0          0         192
MyVDC            0        192      0          0         192
monitor-session  0 used    0 unused    2 free      2 total
-----
Vdc               Min      Max      Used      Unused     Avail
-----
switch           0         2         0          0          2
Payroll          0         2         0          0          2
MyVDC            0         2         0          0          2
vlan             14 used   34 unused  16370 free  16384 total
-----
Vdc               Min      Max      Used      Unused     Avail
-----
switch           16       4094     10         6         4084
Payroll          16       4094     2          14        4092
MyVDC            16       4094     2          14        4092
u4route-mem     48 used   0 unused   208 free   256 total
-----
Vdc               Min      Max      Used      Unused     Avail
-----
switch           32       256      32         0         208
Payroll          8        256      8          0         208
MyVDC            8        256      8          0         208
vrf              6 used   42 unused  8186 free  8192 total
-----
Vdc               Min      Max      Used      Unused     Avail
-----
switch           16       8192     2          14        8158
Payroll          16       8192     2          14        8158
MyVDC            16       8192     2          14        8158

```


show vdc shared membership

To display the shared interfaces on a virtual device context (VDC), use the **show vdc shared membership** command.

show vdc shared membership

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Any command mode

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 5.2(1) | This command was introduced. |

Usage Guidelines This command does not require a license.

Examples This example shows how to display the shared interfaces on the VDC:

```
switch# show vdc shared membership
vdc_id: 1 vdc_name: PE3_1 interfaces:
vdc_id: 2 vdc_name: P2 interfaces:
vdc_id: 3 vdc_name: CE3_1 interfaces:
vdc_id: 4 vdc_name: test-vdc interfaces:
switch#
```

| Related Commands | Command | Description |
|------------------|----------------------------------|--|
| | show vdc fcoe-vlan- range | Displays the FCoE VLAN range on the VDC. |

`show vdc shared membership`



T Commands

- [template](#), page 72

template

To apply a virtual device context (VDC) resource template to a VDC, use the **template** command.

template *vdc-template-name*

Syntax Description

| | |
|--------------------------|-----------------------------|
| <i>vdc-template-name</i> | VDC resource template name. |
|--------------------------|-----------------------------|

Command Default

None

Command Modes

VDC configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).
This command does not require a license.

Examples

This example shows how to apply a resource template to a VDC:

```
switch# configure terminal
switch(config)# vdc MyDevice
switch(config-vdc)# template MyTemplate
```

Related Commands

| Command | Description |
|----------|---|
| show vdc | Displays VDC interface membership information. |
| vdc | Creates or specifies a VDC and enters VDC configuration mode. |



V Commands

- [vdc, page 74](#)
- [vdc combined-hostname, page 77](#)
- [vdc resource template, page 78](#)
- [vdc restart, page 80](#)
- [vdc suspend, page 81](#)

vdc

To create or specify a virtual device context (VDC) and enter VDC configuration mode, use the **vdc** command. To delete a VDC, use the **no** form of this command.

```
vdc vdc-name [ ha-policy { dual-sup { bringdown | restart | switchover } [ single-sup { bringdown |
reload | restart } ] | single-sup { bringdown | reload | restart } [ dual-sup { bringdown | restart | switchover
} ] } ] [ id vdc-id ] [ template vdc-template-name ] [ type storage ]
```

```
no vdc vdc-name
```

Syntax Description

| | |
|--|--|
| <i>vdc-name</i> | VDC name. |
| ha-policy | (Optional) Specifies the high availability (HA) policy for the VDC when an unrecoverable error occurs. The default is restart. |
| dual-sup | Specifies the HA policy for devices with dual supervisor modules. |
| bringdown | Puts the VDC in a failed state. To recover from the failed state, you must reload the physical device. |
| restart | Deletes the VDC and recreates it using the startup configuration. |
| switchover | Initiates a supervisor module switchover. |
| single-sup | Specifies the HA policy for devices with a single supervisor module. |
| reload | Reloads the physical device and recreates the VDC using the startup configuration. |
| id <i>vdc-id</i> | (Optional) Specifies the VDC ID. The default is the first available number. |
| template <i>vdc-template-name</i> | (Optional) Specifies the VDC resource template. The default is the default VDC resource template. |
| type | (Optional) Creates VDC with a special set of services. |
| storage | (Optional) Specifies that the VDC should be used for storage only. |

Command Default

The default HA policy for the default VDC: **dual-sup** default is **switchover** **single-sup** default is **reload**

The default HA policy for nondefault VDCs: **dual-sup** default is **switchover** **single-sup** default is **restart**
 The default VDC ID is first available. The default VDC resource template is the default template. The default switchover policy is **bringdown** .

Command Modes

Global configuration

Command History

| Release | Modification |
|---------|--------------------------------------|
| 5.2(1) | Added the type and storage keywords. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

In the Release 5.2(1) and higher, the type storage VDC allows you to run Fibre Channel over Ethernet (FCoE) in the Cisco NX-OS Nexus 7000 Series switch. The VDC type storage cannot be the default VDC, and it can be only one of the VDCs. You cannot have two type storage VDCs on the device. Only FCoE VLANs can be assigned to the storage VLANs. For more information about FCoE, see Cisco NX-OS FCoE Configuration Guide for Cisco Nexus 7000 and Cisco MDS 9500.

When you create a VDC, the Cisco NX-OS software allocates the internal resources for the VDC. This process can take a few minutes to complete depending on the amount of internal resource you have requested for the VDC.

When you delete a non-default vdc, interfaces from that vdc are moved to unallocated pool.

This command requires the Advanced Services license for creating and managing nondefault VDCs. It does not require a license for managing the default VDC.

Examples

This example shows how to create a VDC and enter VDC configuration mode:

```
switch# configure terminal
switch(config)# vdc MyDevice
Note: VDC creation is a time consuming process, please wait until the command completes
switch(config-vdc)#
```

This example shows how to create a VDC with a different single supervisor module HA policy than the default and enter VDC configuration mode:

```
switch# configure terminal
switch(config)# vdc MyDevice ha-policy single-sup reload
Note: VDC creation is a time consuming process, please wait until the command completes
switch(config-vdc)#
```

This example shows how to delete a VDC:

```
switch# configure terminal
switch(config)# no vdc MyDevice
Deleting this vdc will remove its config. Continue deleting this vdc? [no] yes
Note: VDC deletion is a time consuming process, please wait until the command completes
```

Related Commands

| Command | Description |
|----------|----------------------------------|
| show vdc | Displays VDC status information. |

vdc combined-hostname

To change the command-line interface (CLI) prompt for the nondefault virtual device contexts (VDCs) to show both the default VDC name and the hostname, use the **vdc combined-hostname** command. To change the CLI prompt to show only the nondefault VDC name, use the **no** form of this command.

vdc combined-hostname

no vdc combined-hostname

Syntax Description This command has no arguments or keywords.

Command Default None

Command Modes Global configuration

| Command History | Release | Modification |
|-----------------|---------|------------------------------|
| | 4.2(1) | This command was introduced. |

Usage Guidelines This command does not require a license. When the prompt string length is more than 64 characters, only the first 64 characters is displayed.

Examples This example shows how to change the CLI prompt for the nondefault VDCs to include the hostname:

```
switch# configure terminal
switch(config)# vdc combined-hostname
```

This example shows how to change the CLI prompt for the nondefault VDCs to not include the hostname:

```
switch# configure terminal
switch(config)# no vdc combined-hostname
```

vdc resource template

To create or specify a virtual device context (VDC) resource template and enter VDC resource template configuration mode, use the **vdc** command. To delete a VDC resource template, use the **no** form of this command.

vdc resource template *vdc-template-name*

no vdc resource template *vdc-template-name*

Syntax Description

| | |
|--------------------------|---|
| <i>vdc-template-name</i> | VDC resource template name. The name has a maximum length of 32 characters and is not case-sensitive. |
|--------------------------|---|

Command Default

| Resource | Minimum | Maximum |
|--|---------|---------|
| IPv4 multicast route map memory ¹ | 8 | 8 |
| IPv6 multicast route map memory 1 | 2 | 2 |
| IPv4 unicast route map memory 1 | 8 | 8 |
| IPv6 unicast route map memory 1 | 4 | 4 |
| Port channels | 0 | 768 |
| SPAN sessions | 0 | 2 |
| VLANs | 16 | 4094 |
| VRFs | 16 | 8192 |

¹ Route map memory limits are in megabytes.

Command Modes

Global configuration

Command History

| Release | Modification |
|---------|--|
| 4.1(2) | <ul style="list-style-type: none"> The default maximum limit for the IPv4 unicast resource changed from 256 MB to 8 MB. The default maximum limit for the IPv4 unicast resource changed from 256 MB to 4 MB. Added the IPv4 and IPv6 multicast resources. |
| 4.0(1) | This command was introduced. |

Usage Guidelines

You can use this command only in the default VDC (VDC 1).

You cannot change the default VDC resource template provided by the Cisco NX-OS software.

You can create up to 64 VDC resource templates.

This command does not require a license.

Examples

This example shows how to create or specify a VDC resource template and enter VDC resource template configuration mode:

```
switch# configure terminal
switch(config)# vdc resource template MyTemplate
switch(config-vdc-template)#
```

This example shows how to delete a VDC resource template:

```
switch# configure terminal
switch(config)# no vdc resource template MyTemplate
```

Related Commands

| Command | Description |
|----------------------------|----------------------------------|
| show vdc resource template | Displays VDC status information. |

vdc restart

To restart a virtual device context (VDC) that is in the failed state due to a high availability (HA) failure, use the **vdc restart** command.

vdc *vdc-name* **restart**

Syntax Description

| | |
|-----------------|-----------|
| <i>vdc-name</i> | VDC name. |
|-----------------|-----------|

Command Default

None

Command Modes

Global configuration

Command History

| Release | Modification |
|---------|---|
| 4.2(4) | This command was replaced by the reload vdc command. |
| 4.2(1) | This command was introduced. |

Usage Guidelines

You can use this command only from the default VDC (VDC 1).

This command requires the Advanced Services license.



Caution

Restarting a VDC disrupts all traffic on the VDC.

Examples

This example shows how to restart a VDC:

```
switch# configure terminal
switch(config)# vdc TestVDC restart
```

Related Commands

| Command | Description |
|------------|--|
| reload vdc | Restarts the current VDC. |
| show vdc | Displays the information and status for all VDCs on the physical device. |

vdc suspend

To suspend virtual device context (VDC) operation, use the **vdc suspend** command. To resume the VDC operation, use the **no** form of this command.

vdc *vdc-name* **suspend**

no vdc *vdc-name* **suspend**

Syntax Description

| | |
|-----------------|-----------|
| <i>vdc-name</i> | VDC name. |
|-----------------|-----------|

Command Default

None

Command Modes

Global configuration

Command History

| Release | Modification |
|---------|------------------------------|
| 4.2(1) | This command was introduced. |

Usage Guidelines

You can use this command only from the default VDC (VDC 1).

You can only suspend a nondefault VDC.

This command requires the Advanced Services license.



Caution

Suspending a VDC disrupts all traffic on the VDC.

Examples

This example shows how to suspend VDC operation:

```
switch# configure terminal
switch(config)# vdc TestVDC suspend
```

This example shows how to resume VDC operation:

```
switch# configure terminal
switch(config)# no vdc TestVDC suspend
```

Related Commands

| Command | Description |
|----------|--|
| show vdc | Displays the information and status for all VDCs on the physical device. |