

Cisco MDS 9000 Series Switches



Cisco MDS 9700 Series 64-Gbps ready Directors

Cisco Model	Cisco MDS 9706 multilayer director	Cisco MDS 9710 multilayer director	Cisco MDS 9718 multilayer director
			
Configuration	Chassis with 4-linecard capacity	Chassis with 8-linecard capacity	Chassis with 16-linecard capacity
Maximum 2/4/8/10/16/32-Gbps Fibre Channel ports per chassis	192	384	768
Maximum 10-Gbps Fibre Channel over Ethernet (FCoE) ports per chassis	192	384	768
Maximum 40-Gbps FCoE ports per chassis	96	192	384
Chassis throughput	12.3Tbps	24.6Tbps	49.2Tbps
Maximum Fibre Channel over IP (FCIP) ports per chassis	32x1/10 GE 8x40 GE	64x1/10 GE 16x40 GE	128x1/10 GE 32x40 GE
Port speed	2/4/8/10/16/32-Gbps Fibre Channel 1/10/40-Gbps FCoE 1/10/40-Gbps ¹ FCIP		
Port modules and Cisco part numbers	48-port 4/8/16/32-Gbps Fibre Channel switching module		DS-X9648-1536K9
	48-port 2/4/8/10/16-Gbps Fibre Channel switching module		DS-X9448-768K9 ²
	24-port 2/4/8/10/16-Gbps Fibre Channel, 8-port 1/10 Gigabit Ethernet for FCIP, and 2-port 40 Gigabit Ethernet ¹ for FCIP		DS-X9334-K9
	24-port 40-Gbps FCoE module		DS-X9824-960K9
	48-port 10-Gbps FCoE module		DS-X9848-480K9

¹ 40 Gigabit Ethernet ports on the 24/10-SAN extension module will be enabled in the future



² 2: DS-X9448-768K9 is End of Sale as of Mar 2020

Cisco Model	Cisco MDS 9706 multilayer director	Cisco MDS 9710 multilayer director	Cisco MDS 9718 multilayer director
			
Supervisor Modules	DS-X97-SF1-K9/DS-X97-SF4-K9		DS-X97-SF1E-K9
Fabric Modules	DS-X9706-FAB1 or DS-X9706-FAB3	DS-X9710-FAB1 or DS-X9710-FAB3	DS-X9718-FAB1
Max/Min Fabric modules for 32G line rate performance	Minimum 3x Fabric-3 or 6x Fabric-1 modules	Minimum 3x Fabric-3 or 6x Fabric-1 modules	Minimum 6x Fabric-1 modules
Maximum Power Supplies	4	8	16
Rack Units	9	14	26
Chassis per Rack	3	2	1
Power Supplies	DS-CAC97-3KW= AC PSU, DS-CDC97-3KW= DC PSU, DS-CHV-3.5KW= HVDC PSU		
Licensing	SAN Analytics license Enterprise package license DCNM Advanced license Mainframe Package license ³ IOA License for 24/10 Module		
FICON certification	Yes	Yes	No
Common Features	64G Fiber Channel ready Integrated SAN analytics ⁴ NVMe/FC ready Automation using Ansible, Restful API, Openstack Virtual Machine awareness Anti-counterfeit technology with secure boot Native on-switch RESTAPI and Python interpreter Multi-protocol support Simplified Management		

³ For MDS 9706 and MDS 9710 only

⁴ 32G module only


Cisco MDS 9000 Series 64-Gbps Fabric Switches

Cisco Model	Cisco MDS 9148V 64G Multilayer Fabric Switch	Cisco MDS 9124V 64G Multilayer Fabric Switch
		
Configuration	Fixed 1RU chassis; 48 ports pre-configured	Fixed 1RU chassis; 24 ports pre-configured
Ports	48x8/16/32/64-Gbps Fibre channel (line rate) fixed switch	24x8/16/32/64-Gbps Fibre channel (line rate) fixed switch
Port speed	8/16/32/64-Gbps Fibre Channel	8/16/32/64-Gbps Fibre Channel
Licensing	MDS Premier Software Subscription License bundle for a period of 1-,3,5-,7 year option* MDS Advantage Software Subscription License bundle for a period of 1-,3,5-,7 year option	
Features	Modular high availability Autozone feature NVMe/FC ready Virtual Machine awareness Extended BB_Credits (Upto 16,000 per port/24,000 per port group) Native on-switch REST API and PYTHON interpreter FC Trustsec Link encryption Power-On Auto Provisioning (POAP) and intelligent diagnostics Cisco In-Service Software Upgrade(ISSU) and downgrade (ISSD) Redundant hot-swappable power supplies and fan trays Anti-counterfeit technology with secure boot	

Cisco MDS 9000 Series 32-Gbps Fabric Switches

Cisco Model	Cisco MDS 9132T 32G Multilayer Fabric Switch	Cisco MDS 9148T 32G Multilayer Fabric Switch	Cisco MDS 9396T 32G Multilayer Fabric Switch
			
Configuration	Semi-modular 1RU chassis; configurable to 8, 16, 24 or 32 ports	Fixed 1RU chassis; configurable to 24, 32, 40 or 48 ports	Fixed 2RU chassis; configurable to 48, 64, 80 or 96 ports
Ports	16x4/8/16/32-Gbps Fibre channel (line rate) base switch 16x4/8/16/32-Gbps Fibre channel (line rate) expansion module	48x4/8/16/32-Gbps Fibre channel (line rate) fixed switch	96x4/8/16/32-Gbps Fibre channel (line rate) fixed switch
Port speed	4/8/16/32-Gbps Fibre Channel sp	4/8/16/32-Gbps Fibre Channel sp	4/8/16/32-Gbps Fibre Channel sp
Port activation license	8/16-Port	8-Port	16-Port
Licensing	SAN Analytics license Enterprise package license DCNM Advanced license Port Activation license		
Features	Integrated SAN Analytics Modular high availability Autozone feature NVMe/FC ready Virtual Machine awareness Extended BB_Credits (Upto 8270 per port/8300 per port group) Native on-switch REST API and PYTHON interpreter FC Trustsec Link encryption Power-On Auto Provisioning (POAP) and intelligent diagnostics Cisco In-Service Software Upgrade(ISSU) and downgrade (ISSD) Redundant hot-swappable power supplies and fan trays Anti-counterfeit technology with secure boot		

Cisco MDS 9000 Series 16-Gbps Fabric Switches

Cisco Model	Cisco MDS 9148S 16G Multilayer Fabric Switch	Cisco MDS 9250i 16G Multiservice Fabric Switch
		
Configuration	Fixed 1RU chassis; configurable to 12, 24, 36, or 48 ports enabled	Fixed 2RU chassis; configurable to 20 or 40 Fibre Channel ports enabled
Ports	48 x 2/4/8/16-Gbps Fibre Channel (line rate)	20 x 2/4/8/16-Gbps Fibre Channel (line rate) with option to expand to 40 8x10 Gigabit Ethernet for FCoE 2 x 1/10 Gigabit Ethernet for FCIP and iSCSI (Internet Small Computer Systems Interface) gateway
Port speed	2/4/8/16-Gbps Fibre Channel	2/4/8/16-Gbps Fibre Channel, 10-GEF CoE, and 1/10-GE FCIP and iSCSI (Internet Small Computer Systems Interface gateway)
Port activation license	12-Port	20 x FC Ports only
License keys	Enterprise package license DCNM Advanced license Port Activation license I/O Accelerator Services package ⁵ Data Mobility Manager package ⁵ Mainframe Package ⁵ XRC Acceleration Package for IBM series z ⁵	
Features	Power-On Auto Provisioning (POAP) and intelligent diagnostics High-performance Inter-Switch Links (ISLs) with multipath load balancing Role-based AAA services to support regulatory requirements Smart zoning and Virtual Output Queuing (VOQ) Hardware-based slow-port detection and recovery Native on-switch RESTAPI Multi-protocol support FICON certification ⁵ Remote SAN extension using FCIP ⁵ Intelligent fabric services: Cisco I/O Accelerator (IOA) 0 ⁵	

⁵ For MDS 9200 only

Cisco MDS 9000 Series Software License Packages

Licensed package	Features
SAN Analytics	This package includes features that enable On-board SAN Telemetry, SAN Insights DCNM visualization and SAN Telemetry Streaming to 3 rd Party tools for Visualization. SAN Insights is included in DCNM advanced license when switches have SAN Analytics license installed.
Enterprise license	This package includes advanced traffic engineering and advanced security features for enterprise SANs like: <ul style="list-style-type: none">▪ Advanced traffic management▪ Inter-VSAN Routing (IVR)▪ Quality of Service (QoS)▪ Extended buffer-to-buffer credits▪ Security▪ Switch-to-switch and host-to-switch authentication▪ Port security▪ VSAN-based access control▪ IP Security (IPsec) for Internet Small Computer Systems Interface and FCIP▪ Internet Key Exchange (IKE) digital certificates▪ Fabric binding for Fibre Channel
Cisco Data Center Network Manager (DCNM) license	Data Center Network Manager is designed to help customers efficiently implement and manage next-generation virtualized data centers. It provides timely management support for data center hardware platforms and Cisco NX-OS Software innovations.
Cisco I/O Accelerator (IOA) license	IOA provides a fabric-based service to accelerate SCSI disk write and tape read and write I/O operations across Metropolitan Area Network (MAN) and WAN links. This license is applicable to MDS 9250i and 24/10 SAN Extension module only.
Mainframe license	This package includes features required in mainframe environments. FICON is an architecture for high- speed connectivity between mainframe and I/O devices <ul style="list-style-type: none">▪ VSAN for FICON and Fibre Channel Protocol (FCP) intermode channel-to-channel operations▪ FICON Control Unit Protocol (CUP)▪ Fabric binding▪ Switch cascading▪ IBM Total Storage virtual tape server▪ IBM Total Storage Extended Remote Copy (XRC)▪ FICON native mode and native mixing operation▪ Persistent FICON FCID assignment▪ Port swapping for host channel cable connectors▪ FICON tape acceleration <p>(This license is applicable to MDS 9706, MDS 9710 and MDS 9250i only.)</p>

Cisco MDS 9000 Series Software Subscription License Bundles

License Bundle	Details
MDS Advantage Software Subscription License bundle	<ul style="list-style-type: none">Includes Enterprise license and Cisco Nexus[®] Dashboard Fabric Controller (NDFC; formerly DCNM) license1-, 3-, 5- and 7-year subscription options
MDS Premier Software Subscription License bundle	<ul style="list-style-type: none">Includes Enterprise license and Cisco Nexus[®] Dashboard Fabric Controller (NDFC; formerly DCNM) license and SAN Analytics license1-, 3-, 5- and 7-year subscription options