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Cisco MDS 9000 NX-OS Software Release 4.2(1)

PB491260

This product bulletin discusses the Cisco® MDS 9000 family multilayer switches that run Cisco MDS 9000 NX-OS Software Release 4.2(1). It summarizes the hardware features supported and the software features available and provides software ordering information.

Supported Hardware

Table 1 summarizes the hardware features that Cisco MDS 9000 NX-OS Software Release 4.2(1) supports. Please note that Cisco MDS 9000 NX-OS Software Release 4.2(1) will be the last release to support a subset of Generation 1 modules. The next future major release of Cisco MDS 9000 NX-OS Software will not support Generation 1 modules.

Table 1. Cisco MDS 9000 NX-OS Software Release 4.2(1) Supported Hardware Features.

Part Number	Description
Cisco MDS 9513 Multilayer Director (DS-C9513)	13-slot multilayer director: • Modular chassis requires 2 slots for supervisor-2 modules, with 11 slots available for switching modules • Supervisor-2 module provides control engine for Cisco MDS 9513 • Two crossbar modules provide 2.2 terabytes per second (Tbps) of chassis switching bandwidth
Cisco MDS 9509 Multilayer Director (DS-C9509)	9-slot multilayer director: • Modular chassis requires 2 slots for supervisor modules, with 7 slots available for switching modules • Supervisor module consists of control engine and integrated crossbar • Cisco MDS 9000 NX-OS 4.2(1) requires the Supervisor-2 module
Cisco MDS 9506 Multilayer Director (DS-C9506)	6-slot multilayer director: • Modular chassis requires 2 slots for supervisor modules, with 4 slots available for switching modules • Supervisor module consists of control engine and integrated crossbar • Cisco MDS 9000 NX-OS 4.2(1) requires the Supervisor-2 module
Cisco MDS 9222i Multilayer Fabric Switch (DS-C9222i-K9)	3-rack-unit (3RU) semimodular multilayer fabric switch with 18 4-Gbps Fibre Channel ports, 4 Gigabit Ethernet ports, and optional switching module or services module
Cisco MDS 9216i Multilayer Fabric Switch (DS-C9216i-K9)	3RU semimodular multilayer fabric switch with 14 2-Gbps Fibre Channel ports, 2 Gigabit Ethernet ports, and optional switching module or services module
Cisco MDS 9134 34-Port Multilayer Fabric Switch (DS-C9134-K9)	1RU fixed-configuration multilayer fabric switch with 32 4-Gbps and 2 10-Gbps Fibre Channel ports
Cisco MDS 9124 24-Port Multilayer Fabric Switch (DS-C9124-K9)	1RU fixed-configuration multilayer fabric switch with 24 4-Gbps Fibre Channel ports
Cisco MDS 9500 Series Supervisor-2 Module (DS-X9530-SF2-K9)	Supervisor-2 module for Cisco MDS 9500 Series Multilayer Directors
Cisco MDS 9000 16-Port Fibre Channel Switching Module with Small Form-Factor Pluggable (SFP) LC (DS-X9016)	16-port, 2-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9216i and Cisco MDS 9500 Series
Cisco MDS 9000 32-Port 2-Gbps Fibre Channel Switching Module with SFP LC (DS-X9032)	32-port, 2-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9216i and MDS 9500 Series
Cisco MDS 9000 12-port 4-Gbps Fibre Channel Switching Module with SFP LC (DS-X9112)	12-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 and MDS 9500 Series Multilayer Directors

Cisco MDS 9000 24-port 4-Gbps Fibre Channel Switching Module with SFP LC (DS-X9124)	24-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 48-port 4-Gbps Fibre Channel Switching Module with SFP LC (DS-X9148)	48-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 4-Port 10-Gbps Fibre Channel Switching Module with SFP LC (DS-X9704)	4-port, 10-Gbps Fibre Channel switching module with X2 SC connectors for Cisco MDS 9222i and MDS 9500 Series
Cisco MDS 9000 24-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9224-96K9)	24-port, 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
Cisco MDS 9000 48-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9248-96K9)	48-port, 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
Cisco MDS 9000 4/44-Port Host-Optimized 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9248-48K9)	4/44-port, Host-Optimized 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9222i and MDS 9500 Series
Cisco MDS 9000 16-Port Storage Services Node (DS-X9316-SSNK9)	16-Port Gigabit Ethernet IP and storage services module with SFP LC connectors for Cisco MDS 9222i and MDS 9500 Series
Cisco MDS 9000 18/4-Port Multiprotocol Services Module (MSM) (DS-X9304-18K9)	18-port, 4-Gbps Fibre Channel plus 4-port Gigabit Ethernet IP services and switching module with SFP LC connectors for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 14/2-Port Multiprotocol Services Module (DS-X9302-14K9)	14-port, 2-Gbps Fibre Channel plus 2-port Gigabit Ethernet IP services and switching module with SFP LC connectors for Cisco MDS 9216i and MDS 9500 Series
Cisco MDS 9000 32-Port Storage Services Module (DS-X9032-SSM)	32-port, 2-Gbps storage services module with SFP LC connectors for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9513 Switching Fabric Module (DS-13SLT-FAB1)	Cisco MDS Switching Fabric Module for Cisco MDS 9513 Multilayer Director
Cisco MDS 9513 Switching Fabric2 Module (DS-13SLT-FAB2)	Cisco MDS Switching Fabric 2 Module for Cisco MDS 9513 Multilayer Director
Cisco 10-Gbps X2 Fibre Channel Short-Reach Interface (DS-X2-FC10G-SR)	X2 SC optics for 10-Gbps Fibre Channel for short reach for Cisco MDS 9200 and MDS 9500 Series
Cisco 10-Gbps X2 Fibre Channel Long-Reach Interface (DS-X2-FC10G-LR)	X2 SC optics for 10-Gbps Fibre Channel for long reach (10 km) for Cisco MDS 9200 and MDS 9500 Series
Cisco 10-Gbps X2 Fibre Channel Extended-Reach Interface (DS-X2-FC10G-ER)	X2,SC optics for 10-Gbps Fibre Channel for extended reach (40 km) for Cisco MDS 9200 and MDS 9500 Series
Cisco 10-Gbps X2 Fibre Channel Copper Interface (DS-X2-FC10G-CX4)	X2 SC optics for 10-Gbps Fibre Channel over copper for Cisco MDS 9200 and MDS 9500 Series
Cisco 10-Gbps X2 Ethernet Short-Reach Interface (DS-X2-E10G-SR=)	X2 SC optics for 10-Gbps Ethernet for short reach for Cisco MDS 9200 and MDS 9500 Series
Cisco 2-, 4-, or 8-Gbps Autosensing SFP+ LC Shortwave Interface (DS-SFP-FC8G-SW)	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for shortwave mode for Cisco MDS DS-X9200 Series switching modules
Cisco 1-, 2-, or 4-Gbps Autosensing SFP+ LC Longwave Interface (DS-SFP-FC8G-LW)	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for longwave mode for Cisco MDS DS-X9200 Series switching modules; supports distances up to 10 km
Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Shortwave Interface (DS-SFP-FC4G-SW)	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for shortwave mode for Cisco MDS 9124 and DS-X9100 Series switching modules
Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Longwave (4-km Reach) Interface (DS-SFP-FC4G-MR)	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9124 and DS-X9100 Series switching modules; supports distances up to 4 km

Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Longwave Interface (DS-SFP-FC4G-LW)	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9124 and DS-X9100 Series switching modules; supports distances up to 10 km
Cisco 1- or 2-Gbps Autosensing SFP LC Shortwave Interface (DS-SFP-FC-2G-SW)	SFP optics (LC type) for 1- or 2-Gbps Fibre Channel for shortwave mode for Cisco MDS 9500, MDS 9200, and MDS 9100 Series; not supported for use in 4-Gbps-capable ports
Cisco 1- or 2-Gbps Autosensing SFP LC Longwave Interface (DS-SFP-FC-2G-LW)	SFP optics (LC type) for 1- or 2-Gbps Fibre Channel for longwave mode for Cisco MDS 9500, MDS 9200, and MDS 9100 Series; not supported for use in 4-Gbps-capable ports
Cisco 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Shortwave Interface (DS-SFP-FCGE-SW)	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for shortwave mode for Cisco MDS 9500, MDS 9200, and MDS 9100 Series; not supported for use in 4-Gbps-capable ports
Cisco 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Longwave Interface (DS-SFP-FCGE-LW)	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for longwave mode for Cisco MDS 9500, MDS 9200, and MDS 9100 Series; not supported for use in 4-Gbps-capable ports
Cisco 1-Gbps Copper Ethernet SFP (DS-SFP-GE-T)	SFP (RJ-45 connector) for Gigabit Ethernet over copper for Cisco MDS 9500, MDS 9200, and MDS 9100 Series
Cisco Coarse Wavelength-Division Multiplexing (CWDM) Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Interface (DS-CWDM-xxxx=)	CWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, MDS 9200, and MDS 9100 Series, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm
Cisco CWDM 4-Gbps Fibre Channel SFP LC Interface (DS-CWDM4Gxxxx=)	CWDM 4-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, MDS 9200, and MDS 9100 Series, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm
Cisco 10-Gbps Dense Wavelength-Division Multiplexing (DWDM) X2 Ethernet for Fibre Channel SC Interface (DWDM-X2-xx.xx=)	DWDM X2 SC optics for 10-Gbps Fibre Channel connectivity to an existing Ethernet DWDM infrastructure for Cisco MDS 9500 and MDS 9200 Series, with 15xx.xx nm wavelength, where xx.xx = 60.61, 59.79, 58.98, 58.17, 56.55, 55.75, 54.94, 54.13, 52.52, 51.72, 50.92, 50.12, 48.51, 47.72, 46.92, 46.12, 44.53, 43.73, 42.94, 42.14, 40.56, 39.77, 38.98, 38.19, 36.61, 35.82, 35.04, 34.25, 32.68, 31.90, 31.12, or 30.33
Cisco Dense Wavelength-Division Multiplexing Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Interface (DWDM-SFP-xxxx=)	DWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, MDS 9200, and MDS 9100 Series, where product number xxxx = 3033, 3112, 3190, 3268, 3425, 3504, 3582, 3661, 3819, 3898, 3977, 4056, 4214, 4294, 4373, 4453, 4612, 4692, 4772, 4851, 5012, 5092, 5172, 5252, 5413, 5494, 5575, 5655, 5817, 5898, 5979, or 6061nm
Cisco 4-Wavelength Add/Drop Multiplexer (ADM) (DS-CWDMOADM4A=)	4-channel CWDM optical ADM (OADM) module (Cisco CWDM 1470, 1490, 1510, or 1530 NM Add/Drop Module)
Cisco 4-Wavelength ADM (DS-CWDMOADM4B=)	4-channel CWDM OADM module (Cisco CWDM 1550, 1570, 1590, or 1610 NM Add/Drop Module)
Cisco 8-Wavelength ADM (DS-CWDM-MUX8A=)	ADM for 8 CWDM wavelengths
Cisco CWDM Multiplexer Chassis (DS-CWDMCHASSIS=)	2-slot chassis for CWDM ADMs
Cisco 300W AC Power Supply (DS-CAC-300W)	300W AC power supply for Cisco MDS 9100 Series Multilayer Fabric Switches
Cisco 300W AC Power Supply (DS-C24-300AC)	300W AC power supply for Cisco MDs 9124 Multilayer Fabric Switch
Cisco 845W AC Power Supply (DS-CAC-845W)	845W AC power supply for Cisco MDS 9200 Series
Cisco 3000W AC Power Supply (DS-CAC-3000W)	3000W AC power supply for Cisco MDS 9509
Cisco 2500W AC Power Supply (DS-CAC-2500W)	2500W AC power supply for Cisco MDS 9509
Cisco 6000W AC Power Supply (DS-CAC-6000W)	6000W AC power supply for Cisco MDS 9513
Cisco 1900W AC Power Supply (DS-CAC-1900W)	1900W AC power supply for Cisco MDS 9506
Cisco 512-MB Compact Flash Memory (MEM-MDS-FLD512M)	Cisco MDS 9500 Series external 512-MB compact flash memory for supervisor module
Cisco MDS 9000 Port Analyzer Adapter (DS-PAA-2, DS-PAA)	Cisco MDS 9000 port analyzer adapter for troubleshooting and analysis of Fibre Channel traffic

Cisco Storage Media Encryption (SME) Smart Card Reader (DS-SCR-K9=)	Cisco MDS 9000 SME smart card reader
Cisco SME Smart Card (DS-SC-K9=)	Cisco MDS 9000 SME smart card
Cisco MDS 9000 Management Software and Documentation CD-ROM (M90FM-CD-441=)	Cisco MDS 9000 Management software and documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 4.2(1)

New Software Features

Table 2 summarizes the major new software features available in Cisco NX-OS Software Release 4.2(1).

Table 2.   Cisco MDS 9000 NX-OS Software Release 4.2(1) Features Available

Software Feature	Description
Cisco NX-OS	Cisco NX-OS enhancements include the following: • Cisco TrustSec Fibre Channel link encryption • Enhanced Fibre Channel ID (FC-ID) description • Port group monitoring • IBM Fiber Connection (FICON) Extended Remote Copy (XRC) acceleration.
Cisco XRC Acceleration	Cisco XRC Acceleration is supported on the Cisco MDS 9000 18/4-Port Multiservice Module and MDS 9222i Multilayer Fabric Switch.
I/O Accelerator (IOA)	• IOA is supported on the Cisco MDS 9000 18/4-Port Multiservice Module, the Cisco MDS 9000 16-Port Storage Services Node, and the Cisco MDS 9222i Multilayer Fabric Switch. • IOA accelerates I/O over metropolitan area networks (MANs) and WANs using proven Cisco Small Computer System Interface (SCSI) acceleration technology. • IOA can be deployed in conjunction with disk data replication solutions such as Symmetrix Remote Data Facility (SRDF), MirrorView, TrueCopy, and Continuous Access (CA) Enterprise Virtual Array (EVA) to extend the distance between data centers and reduce the effects of latency. • IOA can also be used to enable remote tape backup and restore operations without significant throughput degradation.
Cisco SAN Extension support on new module	Cisco SAN Extension is supported on the Cisco MDS 9000 16-Port Storage Services Node
Cisco SME enhancements	Cisco SME enhancements include SME for tape support on the Cisco MDS 9000 16-Port Storage Services Node
Cisco Fabric Manager Server (FMS) enhancements	Cisco FMS enhancements include the following: • Federated Reporting • Each instance of Cisco Fabric Manager or Fabric Manager Server now supports up to 15,000 flows • Data Center 3.0 switch discovery through Cisco Discovery Protocol • Host provisioning wizard • Client launch pad • Fabric Manager software installation wizard

Ordering Information for Software Images

Table 3 lists the new software images and applicable software ordering information for the Cisco MDS 9000 family.

Table 3.   Software Ordering Information

Part Number	Description
M95S2K9-4.2.1	Cisco MDS 9500 Supervisor/Fabric-2, NX-OS Software Release 4.2(1)
M92S2K9-4.2.1	Cisco MDS 9200 Supervisor/Fabric-2, NX-OS Software Release 4.2(1)
M92S1K9-4.2.1	Cisco MDS 9200 Supervisor/Fabric-I, NX-OS Software Release 4.2(1)
M91S2K9-4.2.1	Cisco MDS 9100 Supervisor/Fabric-2, NX-OS Software Release 4.2(1)
M91S1K9-4.2.1	Cisco MDS 9100 Supervisor/Fabric-I, NX-OS Software Release 4.2(1)
SSI-M9K9-421	Cisco Storage Services Interface- version 4.2.1
M92SSESSNK9=	Cisco Storage Services Enabler License for SSN-16 (1 engine) on Cisco MDS 9200
M95SSESSNK9=	Cisco Storage Services Enabler License for SSN-16 (1 engine) on Cisco MDS 9500

M92SMESSNK9=	Cisco Storage Media Encryption License for SSN-16 (1 engine) on Cisco MDS 9200
M95SMESSNK9=	Cisco Storage Media Encryption License for SSN-16 (1 engine) on Cisco MDS 9500
M92IOASSN=	Cisco I/O Accelerator License for SSN-16 (1 engine) on Cisco MDS 9200
M95IOASSN=	Cisco I/O Accelerator License for SSN-16 (1 engine) on Cisco MDS 9500
M92IOA184=	Cisco I/O Accelerator License for MSM-18/4 on Cisco MDS 9200
M95IOA184=	Cisco I/O Accelerator License for MSM-18/4 on Cisco MDS 9500
M9222IIOA=	Cisco I/O Accelerator License for Cisco MDS 9222i base switch
M92EXTSSNK9=	Cisco SAN Extension License for SSN-16 (1 engine) on Cisco MDS 9200
M95EXTSSNK9=	Cisco SAN Extension License for SSN-16 (1 engine) on Cisco MDS 9500
M9200XRC=	Cisco XRC Acceleration for Cisco MDS 9200
M9500XRC=	Cisco XRC Acceleration for Cisco MDS 9500
M90FM-CD-421=	Cisco MDS 9000 Management Software and Documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 4.2(1)

For More Information

For more detailed information about this Cisco software release, refer to the Cisco MDS 9000 Family release notes at http://www.cisco.com/en/US/products/hw/ps4159/ps4358/prod_release_notes_list.html.

For more information about the Cisco MDS 9000 Family, refer to the product literature at http://www.cisco.com/en/US/products/hw/ps4159/ps4358/prod_literature.html.

For more information about license packages, refer to the fact sheets within the product literature.