

Cisco MDS 9000 NX-OS Software Release 5.0(1)

PB569991

This product bulletin discusses the Cisco® MDS 9000 Family multilayer switches that run Cisco MDS 9000 NX-OS Software Release 5.0(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 5.0(1) supports. Please note that Cisco MDS 9000 NX-OS Software Release 5.0(1) does not support any Generation 1 modules.

Table 1. Cisco MDS 9000 NX-OS Software Release 5.0(1) Supported Hardware Features.

Part Number	Description
Cisco MDS 9513 Multilayer Director (DS-C9513)	13-slot multilayer director: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 9148 48-Port Multilayer Fabric Switch (DS-C9148-16P-K9, DS-C9148-24P-K9, and DS-C9148-48P-K9)	1RU fixed-configuration multilayer fabric switch with 48 2/4/8-Gbps Fibre Channel ports
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 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

Part Number	Description
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 (SSN) (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 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-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

Part Number	Description
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-511=)	Cisco MDS 9000 Management software and documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 5.0(1)

New Software Features

Table 2 summarizes the major new software features available in Cisco MDS 9000 NX-OS Software Release 5.0(1).

Table 2. Cisco MDS 9000 NX-OS Software Release 5.0(1) Features

Software Feature	Description
Cisco MDS 9000 NX-OS	<p>Cisco MDS 9000 NX-OS enhancements include the following:</p> <ul style="list-style-type: none"> • Authentication, authorization, and accounting (AAA) enhancements: Supports Lightweight Directory Access Protocol (LDAP) and Active Directory for AAA authentication at the command-line interface (CLI) level • Software support for the Cisco MDS 9148 8-Gbps fabric switch • Small Form-Factor Pluggable (SFP) diagnostics: Documents error messages related to SFP failures in syslog
Cisco SME enhancements	Cisco SME enhancements include read acceleration to improve restore performance.
Cisco Fabric Manager Server (FMS) enhancements	<p>Cisco FMS enhancements include the following:</p> <ul style="list-style-type: none"> • VSAN scoping for Cisco Fabric Manager discovery • Preconfiguration wizard for Cisco Data Mobility Manager (DMM) and Cisco MDS 9000 Secure Erase • Cisco MDS 9000 Family Configuration Analysis Tool • Cross-launching in context of Cisco Fabric Manager and Data Center Network Manager (DCNM)
Cisco MDS 9000 Secure Erase	<p>Cisco MDS 9000 Secure Erase enables customers to permanently erase data from end-of-life and end-of-lease storage arrays using standards-compliant algorithms. Cisco MDS 9000 Secure Erase is supported on the Cisco MDS 9000 18/4-Port MSM, MDS 9000 16-Port SSN, and MDS-9222i base switch. A job completion log is provided to document erasure and meet compliance documentation requirements. The following algorithms are supported:</p> <ul style="list-style-type: none"> • DoD522022m • DoD522022m-s • NIST-800 88 • Zeroes • Gutmann • RCMP

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
M95S2K9-5.1.1	Cisco MDS 9500 Supervisor/Fabric-2, NX-OS Software Release 5.0(1)
M92S2K9-5.1.1	Cisco MDS 9200 Supervisor/Fabric-2, NX-OS Software Release 5.0(1)
M92S1K9-5.1.1	Cisco MDS 9200 Supervisor/Fabric-I, NX-OS Software Release 5.0(1)
M91S2K9-5.1.1	Cisco MDS 9100 Supervisor/Fabric-2, NX-OS Software Release 5.0(1)
M91S1K9-5.1.1	Cisco MDS 9100 Supervisor/Fabric-I, NX-OS Software Release 5.0(1)
SSI-M9K9-511	Cisco Storage Services Interface-version 5.1.1
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
M90FM-CD-421=	Cisco MDS 9000 Management Software and Documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 5.0(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.



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San Jose, CA

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