

## Cisco MDS 9000 NX-OS Software Release 5.2.(2)

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This product bulletin discusses Cisco<sup>®</sup> MDS 9000 NX-OS Software Release 5.2.(2), which runs on the Cisco MDS 9000 Family multilayer switches. 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 Release 5.2.(2) supports. Please note that Cisco MDS 9000 NX-OS Release 5.2.(2) does not support any Generation 1 modules.

**Table 1.** Cisco MDS 9000 NX-OS Release 5.2.(2) Supported Hardware Features.

Product Name and Part Number	Description
<b>Cisco MDS 9513 Multilayer Director (DS-C9513)</b>	13-slot multilayer director: <ul style="list-style-type: none"> <li>• Modular chassis requires 2 slots for supervisor modules, with 11 slots available for switching modules</li> <li>• Supervisor-2/Supervisor-2A module provides control engine for Cisco MDS 9513</li> <li>• Two crossbar modules (Fabric-2 or Fabric-3) provide up to 8.4 terabits per second (Tbps) of chassis switching bandwidth</li> </ul>
<b>Cisco MDS 9509 Multilayer Director (DS-C9509)</b>	9-slot multilayer director: <ul style="list-style-type: none"> <li>• Modular chassis requires 2 slots for supervisor modules, with 7 slots available for switching modules</li> <li>• Supervisor module consists of control engine and integrated crossbar</li> <li>• Cisco MDS 9000 NX-OS 5.2.(2) requires the Supervisor-2/Supervisor-2A module</li> </ul>
<b>Cisco MDS 9506 Multilayer Director (DS-C9506)</b>	6-slot multilayer director: <ul style="list-style-type: none"> <li>• Modular chassis requires 2 slots for supervisor modules, with 4 slots available for switching modules</li> <li>• Supervisor module consists of control engine and integrated crossbar</li> <li>• Cisco MDS 9000 NX-OS 5.2.(2) requires the Supervisor-2/Supervisor-2A module</li> </ul>
<b>Cisco MDS 9222i Multilayer Fabric Switch (DS-C9222i-K9)</b>	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
<b>Cisco MDS 9148 48-Port Multilayer Fabric Switch (DS-C9148-16P-K9, DS-C9148-24P-K9, and DS-C9148-48P-K9)</b>	1RU fixed-configuration multilayer fabric switch with 48 2/4/8-Gbps Fibre Channel ports
<b>Cisco MDS 9134 34-Port Multilayer Fabric Switch (DS-C9134-K9)</b>	1RU fixed-configuration multilayer fabric switch with 32 4-Gbps and 2 10-Gbps Fibre Channel ports
<b>Cisco MDS 9124 24-Port Multilayer Fabric Switch (DS-C9124-K9)</b>	1RU fixed-configuration multilayer fabric switch with 24 4-Gbps Fibre Channel ports
<b>Cisco MDS 9500 Series Supervisor-2 Module (DS-X9530-SF2-K9)</b>	Supervisor-2 module for Cisco MDS 9500 Series Multilayer Directors
<b>Cisco MDS 9500 Series Supervisor-2A Module (DS-X9530-SF2AK9)</b>	Supervisor-2A module for Cisco MDS 9500 Series
<b>Cisco MDS 9000 12-Port 4-Gbps Fibre Channel Switching Module with Small Form-Factor Pluggable (SFP) LC (DS-X9112)</b>	12-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 Series Multilayer Switches and Cisco MDS 9500 Series Multilayer Directors

Product Name and Part Number	Description
<b>Cisco MDS 9000 24-Port 4-Gbps Fibre Channel Switching Module with SFP LC (DS-X9124)</b>	24-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 and 9500 Series
<b>Cisco MDS 9000 48-Port 4-Gbps Fibre Channel Switching Module with SFP LC (DS-X9148)</b>	48-port, 4-Gbps Fibre Channel switching module with SFP LC connectors for Cisco MDS 9200 and 9500 Series
<b>Cisco MDS 9000 4-Port 10-Gbps Fibre Channel Switching Module with SFP LC (DS-X9704)</b>	4-port, 10-Gbps Fibre Channel switching module with X2 SC connectors for Cisco MDS 9222i and Cisco MDS 9500 Series
<b>Cisco MDS 9000 24-Port 8-Gbps Fibre Channel Switching Module with SFP and Enhanced SFP (SFP+) LC (DS-X9224-96K9)</b>	24-port, 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
<b>Cisco MDS 9000 48-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9248-96K9)</b>	48-port, 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
<b>Cisco MDS 9000 4/44-Port Host-Optimized 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9248-48K9)</b>	4/44-port, host-optimized 8-Gbps Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9222i and Cisco MDS 9500 Series
<b>Cisco MDS 9000 32-Port 8-Gbps Advanced Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9232-256K9)</b>	32-port, 8-Gbps advanced Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
<b>Cisco MDS 9000 48-Port 8-Gbps Advanced Fibre Channel Switching Module with SFP and SFP+ LC (DS-X9248-256K9)</b>	48-port, 8-Gbps advanced Fibre Channel switching module with SFP and SFP+ LC connectors for Cisco MDS 9500 Series
<b>Cisco MDS 9000 16-Port Storage Services Node (SSN) (DS-X9316-SSNK9)</b>	16-port Gigabit Ethernet IP and storage services module with SFP LC connectors for Cisco MDS 9222i and Cisco MDS 9500 Series
<b>Cisco MDS 9000 18/4-Port Multiprotocol Services Module (MSM) (DS-X9304-18K9)</b>	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 9500 Series
<b>Cisco MDS 9513 Switching Fabric Module (DS-13SLT-FAB1)</b>	Cisco MDS 9000 Series switching fabric module for Cisco MDS 9513 Multilayer Director
<b>Cisco MDS 9513 Switching Fabric-2 Module (DS-13SLT-FAB2)</b>	Cisco MDS 9000 Series switching Fabric-2 module for Cisco MDS 9513 Multilayer Director
<b>Cisco MDS 9513 Switching Fabric-3 Module (DS-13SLT-FAB3)</b>	Cisco MDS Series switching Fabric-3 module for Cisco MDS 9513 Multilayer Director
<b>Cisco MDS 9000 10-Gbps 8-Port Fibre Channel over Ethernet (FCoE) Module</b>	Cisco 10-Gbps 8-port FCoE module for Cisco MDS 9500 Series; Cisco 10-Gbps 8-port FCoE module requires Supervisor-2A
<b>Cisco 10-Gbps X2 Fibre Channel Short-Reach Interface (DS-X2-FC10G-SR)</b>	X2 SC optics for 10-Gbps Fibre Channel for short reach for Cisco MDS 9200 and 9500 Series
<b>Cisco 10-Gbps X2 Fibre Channel Long-Reach Interface (DS-X2-FC10G-LR)</b>	X2 SC optics for 10-Gbps Fibre Channel for long reach (10 km) for Cisco MDS 9200 and 9500 Series
<b>Cisco 10-Gbps X2 Fibre Channel Extended-Reach Interface (DS-X2-FC10G-ER)</b>	X2 SC optics for 10-Gbps Fibre Channel for extended reach (40 km) for Cisco MDS 9200 and 9500 Series
<b>Cisco 10-Gbps X2 Fibre Channel Copper Interface (DS-X2-FC10G-CX4)</b>	X2 SC optics for 10-Gbps Fibre Channel over copper for Cisco MDS 9200 and 9500 Series
<b>Cisco 10-Gbps X2 Ethernet Short-Reach Interface (DS-X2-E10G-SR=)</b>	X2 SC optics for 10-Gbps Ethernet for short reach for Cisco MDS 9200 and 9500 Series
<b>Cisco MDS 9000 Family 10-Gbps</b>	SFP+ optics for 10-Gbps Fibre Channel short wave for Cisco MDS 9500 Series

Product Name and Part Number	Description
<b>Fibre Channel Shortwave SFP+ LC (DS-SFP-FC10G-SW)</b>	
<b>Cisco MDS 9000 Family 10-Gbps Fibre Channel Longwave SFP+ LC (DS-SFP-FC10G-LW)</b>	SFP+ optics for 10-Gbps Fibre Channel short wave for Cisco MDS 9500 Series
<b>Cisco 2-, 4-, or 8-Gbps Autosensing SFP+ LC Shortwave Interface (DS-SFP-FC8G-SW)</b>	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for shortwave mode for Cisco MDS DS-X9200 switching modules
<b>Cisco 2-, 4-, or 8-Gbps Autosensing SFP+ LC Longwave Interface (DS-SFP-FC8G-LW)</b>	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for longwave mode for Cisco MDS DS-X9200 switching modules; supports distances up to 10 km
<b>Cisco 2-, 4-, or 8-Gbps Autosensing SFP+ Extended Reach Interface (DS-SFP-FC8G-ER)</b>	SFP+ optics (LC, type) for 2-, 4-, or 8-Gbps Fibre Channel for Extended Reach mode for Cisco MDS DS-X9200 switching modules; supports distances up to 40 km
<b>Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Shortwave Interface (DS-SFP-FC4G-SW)</b>	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for shortwave mode for Cisco MDS 9124 Multilayer Fabric Switch and Cisco MDS DS-X9100 switching modules
<b>Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Longwave (4-km Reach) Interface (DS-SFP-FC4G-MR)</b>	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9124 and Cisco MDS DS-X9100 switching modules; supports distances up to 4 km
<b>Cisco 1-, 2-, or 4-Gbps Autosensing SFP LC Longwave Interface (DS-SFP-FC4G-LW)</b>	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9124 and Cisco MDS DS-X9100 switching modules; supports distances up to 10 km
<b>Cisco 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Shortwave Interface (DS-SFP-FCGE-SW)</b>	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for shortwave mode for Cisco MDS 9500 and 9200 Series and Cisco MDS 9100 Series Multilayer Fabric Switches; not supported for use in 4-Gbps-capable ports
<b>Cisco 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Longwave Interface (DS-SFP-FCGE-LW)</b>	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for longwave mode for Cisco MDS 9500, 9200, and 9100 Series; not supported for use in 4-Gbps-capable ports
<b>Cisco 1-Gbps Copper Ethernet SFP (DS-SFP-GE-T)</b>	SFP (RJ-45 connector) for Gigabit Ethernet over copper for Cisco MDS 9500, 9200, and 9100 Series
<b>Cisco Coarse Wavelength-Division Multiplexing (CWDM) Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Interface (DS-CWDM-xxxx=)</b>	CWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, 9200, and 9100 Series, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm
<b>Cisco CWDM 4-Gbps Fibre Channel SFP LC Interface (DS-CWDM4Gxxxx=)</b>	CWDM 4-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, 9200, and 9100 Series, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm
<b>Cisco Dense Wavelength-Division Multiplexing (DWDM) 10-Gbps X2 Ethernet for Fibre Channel SC Interface (DWDM-X2-xx.xx=)</b>	DWDM X2 SC optics for 10-Gbps Fibre Channel connectivity to an existing Ethernet DWDM infrastructure for Cisco MDS 9500 and 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
<b>Cisco DWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC Interface (DWDM-SFP-xxxx=)</b>	DWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, 9200, and 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 6061 nm
<b>Cisco DWDM 4-Gbps Fibre Channel SFP LC Interface (ONS-SC-4G-xx.x=)</b>	DWDM 4-Gbps Fibre Channel SFP LC type for Cisco MDS 9500, 9200, and 9100 Series, where product number xx.x = 61.4, 60.6, 59.7, 58.9, 58.1, 57.3, 56.5, 55.7, 54.9, 54.1, 53.3, 52.5, 51.7, 50.9, 50.1, 49.3, 48.5, 47.7, 46.9, 46.1, 45.3, 44.5, 43.7, 42.9, 42.1, 41.3, 40.5, 39.7, 38.9, 38.1, 37.4, 36.6, 35.8, 35.0, 34.2, 33.4, 32.6, 31.9, 31.1, or 30.3
<b>Cisco 4-Wavelength Add/Drop Multiplexer (ADM) (DS-CWDMOADM4A=)</b>	4-channel CWDM optical ADM (OADM) module (Cisco CWDM 1470, 1490, 1510, or 1530 NM ADM)
<b>Cisco 4-Wavelength ADM (DS-CWDMOADM4B=)</b>	4-channel CWDM OADM module (Cisco CWDM 1550, 1570, 1590, or 1610 NM ADM)
<b>Cisco 8-Wavelength ADM (DS-</b>	ADM for 8 CWDM wavelengths

Product Name and Part Number	Description
<b>CWDM-MUX8A=)</b> Cisco CWDM Multiplexer Chassis (DS-CWDMCHASSIS=)	2-slot chassis for CWDM ADMs
<b>Cisco 300W AC Power Supply (DS-CAC-300W)</b>	300W AC power supply for Cisco MDS 9100 Series
<b>Cisco 300W AC Power Supply (DS-C24-300AC)</b>	300W AC power supply for Cisco MDs 9124
<b>Cisco 845W AC Power Supply (DS-CAC-845W)</b>	845W AC power supply for Cisco MDS 9200 Series
<b>Cisco 3000W AC Power Supply (DS-CAC-3000W)</b>	3000W AC power supply for Cisco MDS 9509
<b>Cisco 2500W AC Power Supply (DS-CAC-2500W)</b>	2500W AC power supply for Cisco MDS 9509
<b>Cisco 6000W AC Power Supply (DS-CAC-6000W)</b>	6000W AC power supply for Cisco MDS 9513
<b>Cisco 1900W AC Power Supply (DS-CAC-1900W)</b>	1900W AC power supply for Cisco MDS 9506
<b>Cisco 512-MB Compact Flash Memory (MEM-MDS-FLD512M)</b>	Cisco MDS 9500 Series external 512-MB compact flash memory for supervisor module
<b>Cisco MDS 9000 Port Analyzer Adapter (DS-PAA-2, DS-PAA)</b>	Cisco MDS 9000 port analyzer adapter for troubleshooting and analysis of Fibre Channel traffic
<b>Cisco Storage Media Encryption (SME) Smart Card Reader (DS-SCR-K9=)</b>	Cisco SME smart card reader
<b>Cisco SME Smart Card (DS-SC-K9=)</b>	Cisco SME smart card
<b>Cisco MDS 9000 Data Center Network Manager for SAN (DCNM-SAN) SAN Software and Documentation CD-ROM (M9DCNM-SAN-CD-521=)</b>	Cisco MDS 9000 Family management software and documentation CD-ROM for Cisco MDS 9000 NX-OS Release 5.2.(2)

## New Software Features

Table 2 summarizes the major new software features available in Cisco MDS 9000 NX-OS Release 5.2.(2).

**Table 2.** Cisco MDS 9000 NX-OS Release 5.2.(2) Features

Software Feature	Description
<b>Cisco MDS 9000 NX-OS</b>	Inter-VSAN Routing (IVR) support for Cisco MDS 9148 Cisco N-Port Virtualization (NPV) I/O Acceleration (IOA) support Cisco NX-OS 5.2(2) support for Cisco MDS 9124 and 9134 platforms IBM Fiber Connection (FICON) support for Cisco MDS 8-Gbps advanced Fibre Channel switching modules and Fibre Channel over IP (FCIP) Cisco MDS 9000 16-Port SSN module

## 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
<b>M95S2K9-5.2.2</b>	Cisco MDS 9500 Supervisor/Fabric-2, NX-OS Software Release 5.2.(2)
<b>M92S2K9-5.2.2</b>	Cisco MDS 9200 Supervisor/Fabric-2, NX-OS Software Release 5.2.(2)

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<b>M92S1K9-5.2.2</b>	Cisco MDS 9200 Supervisor/Fabric-1, NX-OS Software Release 5.2.(2)
<b>M91S2K9-5.2.2</b>	Cisco MDS 9100 Supervisor/Fabric-2, NX-OS Software Release 5.2.(2)
<b>M91S1K9-5.2.2</b>	Cisco MDS 9100 Supervisor/Fabric-1, NX-OS Software Release 5.2.(2)
<b>SSI-M9K9-5.2.2</b>	Cisco Storage Services Interface-version 5.2.1

## 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](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](http://www.cisco.com/en/US/products/hw/ps4159/ps4358/prod_literature.html).
- For more information about license packages, refer to the data sheets within the product literature.



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