Cisco MDS 9000 SAN-OS Software Release 3.1(1)

PB385403

This product bulletin discusses the Cisco® MDS 9000 family multilayer switches that run Cisco MDS 9000 SAN-OS Software Release 3.1(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 SAN-OS Software Release 3.1(1) supports.

Table 1. Cisco MDS 9000 SAN-OS Software Release 3.1(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 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 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 9216A Multilayer Fabric Switch (DS-C9216A-K9)	3-rack unit (RU) semimodular fabric switch with 16 2-Gbps Fibre Channel 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 9140 40-Port Multilayer Fabric Switch (DS-C9140-K9)	1RU fixed-configuration multilayer fabric switch with 40 2-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 9120 20-Port Multilayer Fabric Switch (DS-C9120-K9)	1RU fixed-configuration multilayer fabric switch with 20 2-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 9500 Series Supervisor-1 Module (DS-X9530-SF1-K9)	Supervisor-1 module for Cisco MDS 9509 and MDS 9506 multilayer directors
Cisco MDS 9000 16-Port Fibre Channel Switching Module, Small Form-Factor Pluggable (SFP), LC (DS-X9016)	16-port, 2-Gbps Fibre Channel switching module with SFP, LC connectors for Cisco MDS 9200 Series multilayer fabric switches and Cisco MDS 9500 Series
Cisco MDS 9000 32-Port 2-Gbps Fibre Channel Switching Module, SFP, LC (DS-X9032)	32-port, 2-Gbps Fibre Channel switching module with SFP, LC connectors for Cisco MDS 9200 and MDS 9500 series
Cisco MDS 9000 12-Port 4-Gbps Fibre Channel Switching Module, SFP, LC (DS-X9112)	12-port, 4-Gbps Fibre Channel switching module with SFP, LC connectors for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 24-Port 4-Gbps Fibre Channel Switching Module, 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, 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, SFP, LC (DS-X9704)	4-port, 10-Gbps Fibre Channel switching module with X2, SC 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 9200 and MDS 9500 Series
Cisco MDS 9000 8-Port IP Storage Services Module (DS-X9308-SMIP)	8-port Gigabit Ethernet IP storage services module for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 4-Port IP Storage Services Module (DS-X9304-SMIP)	4-port Gigabit Ethernet IP storage services module for Cisco MDS 9200 and MDS 9500 Series
Cisco MDS 9000 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
10-Gbps X2 interface, Short Reach (DS-X2-FC10G-SR)	X2, SC optics for 10-Gbps Fibre Channel for Short Reach for Cisco MDS 9500 and MDS 9200 Series
10-Gbps X2 interface, Long Reach (DS-X2-FC10G-LR)	X2, SC optics for 10-Gbps Fibre Channel for Long Reach (10km) for Cisco MDS 9500 and MDS 9200 Series
10-Gbps X2 interface, Extended Reach (DS-X2-FC10G-ER)	X2, SC optics for 10-Gbps Fibre Channel for Extended Reach (40km) for Cisco MDS 9500 and MDS 9200 Series
1-Gbps, 2-Gbps, or 4-Gbps autosensing SFP, LC interface, shortwave (DS-SFP-FC4G-SW)	SFP optics (LC type) for 1-Gbps, 2-Gbps, or 4-Gbps Fibre Channel for shortwave mode for Cisco MDS 9020, MDS 9124, and DS-X91xx switching modules
1-Gbps, 2-Gbps, or 4-Gbps autosensing SFP, LC interface, longwave (4-km reach) (DS-SFP-FC4G-MR)	SFP optics (LC type) for 1-Gbps, 2-Gbps, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9020, MDS 9124, and DS-X91xx switching modules; supports distances up to 4 km
1-Gbps, 2-Gbps, or 4-Gbps autosensing SFP, LC interface, longwave (DS-SFP-FC4G-LW)	SFP optics (LC type) for 1-Gbps, 2-Gbps, or 4-Gbps Fibre Channel for longwave mode for Cisco MDS 9020, MDS 9124, and DS-X91xx switching modules; supports distances up to 10 km
1-Gbps or 2-Gbps autosensing SFP, LC interface, shortwave (DS-SFP-FC-2G-SW)	SFP optics (LC type) for 1-Gbps 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
1-Gbps or 2-Gbps autosensing SFP, LC interface, longwave (DS-SFP-FC-2G-LW)	SFP optics (LC type) for 1-Gbps 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
1-Gbps Ethernet and 1-Gbps or 2-Gbps Fibre Channel shortwave SFP, LC interface (DS-SFP-FCGE-SW)	SFP optics (LC type) for 1-Gbps Ethernet and 1-Gbps 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
1-Gbps Ethernet and 1-Gbps or 2-Gbps Fibre Channel longwave SFP, LC interface (DS-SFP-FCGE-LW)	SFP optics (LC type) for 1-Gbps Ethernet and 1-Gbps 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
1-Gbps Ethernet SFP, HSSDC-2 interface (DS-SFP-T)	SFP (HSSDC-2 type) for Gigabit Ethernet over copper for Cisco MDS 9500, MDS 9200, and MDS 9100 Series
Coarse wavelength-division multiplexing (CWDM) Gigabit Ethernet and 1-Gbps or 2-Gbps Fibre Channel SFP, LC interface (CWDM-SFP-xxxx-2G)	CWDM Gigabit Ethernet and 1-Gbps or 2-Gbps Fibre Channel SFP and LC for Cisco MDS 9500, MDS 9200, and MDS 9100 Series, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm
4-wavelength add/drop multiplexer (ADM) (CWDM-MUX-4)	ADM for 4 CWDM wavelengths
8-wavelength ADM (CWDM-MUX-8)	ADM for 8 CWDM wavelengths
CWDM multiplexer chassis (CWDM-CHASSIS-2)	2-slot chassis for CWDM ADMs
300W AC power supply (DS-CAC-300W)	300W AC power supply for Cisco MDS 9100 Series multilayer fabric switches
300W AC power supply (DS-C24-300AC)	300W AC power supply for Cisco MDs 9124 multilayer fabric switch
845W AC power supply (DS-CAC-845W)	845W AC power supply for Cisco MDS 9200 Series
2500W AC power supply (DS-CAC-2500W)	2500W AC power supply for Cisco MDS 9509

2500W DC power supply (DS-CDC-2500W)	2500W DC power supply for Cisco MDS 9509
3000W AC power supply (DS-CAC-3000W)	3000W AC power supply for Cisco MDS 9509
4000W AC power supply (DS-CAC-4000W-US)	4000W AC power supply for Cisco MDS 9509, for use in United States (cable attached)
4000W AC power supply (DS-CAC-4000W-INT)	4000W AC power supply for Cisco MDS 9509, for international use (cable attached)
6000W AC power supply (DS-CAC-6000W)	6000W AC power supply for Cisco MDS 9513
1900W AC power supply (DS-CAC-1900W)	1900W AC power supply for Cisco MDS 9506
1900W DC power supply (DS-CDC-1900W)	1900W DC power supply for Cisco MDS 9506
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

Software Features

Table 2 summarizes the software features available.

Table 2.   Cisco MDS 9000 SAN-OS Software Release 3.1(1) Features Available

Software Feature	Description
Cisco MDS 9124 Multilayer Fabric Switch support	Support has been added for Cisco MDS 9124 Multilayer Fabric Switch
On-demand ports	On-demand ports allow customers to purchase 4-Gbps Cisco MDS 9100 Series fabric switches (9124 and blade switches) initially with as few as 8 activated ports. Additional ports can be activated as needed with on demand port activation licenses
In-service software upgrades	Nondisruptive, in-service software upgrades are available for the Cisco MDS 9124
Fibre Connection (FICON) tape acceleration	FICON tape acceleration improves tape backup and archive operations by allowing faster data streaming between mainframe hosts and tape devices over WAN links with Fibre Channel over IP (FCIP)
IP Network Simulator	A variety of IP data network conditions can be simulated, including the ability to test the effect of network latency, reordering, and packet drops on FCIP or Internet Small Computer Systems Interface (iSCSI). The IP network simulator feature is supported only on 8-port and 4-port Cisco MDS 9000 IP Storage Services modules
Cisco Fabric Manager enhancements	Cisco Fabric Manager enhancements include: • Offline provisioning with device aliases • Quick Configuration wizard • Java Database Connectivity (JDBC)–compliant database support
Cisco Fabric Manager Server enhancements	Cisco Fabric Manager Server (FMS) enhancements include: • Report generation with third-party software • Storage enclosure performance report • Gigabit Ethernet interface performance monitoring • Performance monitoring for user-specified parameters • User-defined sampling interval for inter-switch link performance monitoring

Orderable Software Images

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

Table 3. Software Ordering Information

Part Number	Description
M95S2K9-3.1.1	Cisco MDS 9500 Supervisor/Fabric-2, SAN-OS Software Release 3.1(1)
M95S1K9-3.1.1	Cisco MDS 9500 Supervisor/Fabric-I, SAN-OS Software Release 3.1(1)
M92S1K9-3.1.1	Cisco MDS 9216 Supervisor/Fabric-I, SAN-OS Software Release 3.1(1)
M91S2K9-3.1.1	Cisco MDS 9100 Supervisor/Fabric-2, SAN-OS Software Release 3.1(1)
M91S1K9-3.1.1	Cisco MDS 9100 Supervisor/Fabric-I, SAN-OS Software Release 3.1(1)

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 details about licensed packages, refer to the fact sheets with the product literature.