



New and Changed Information

The *Cisco MDS 9500 Series Hardware Installation Guide* applies to Cisco MDS NX-OS Release 5.2 and earlier Cisco MDS SAN-OS releases.

[Table 1](#) lists the new and changed features available with each supported Cisco MDS NX-OS release and SAN-OS release for the Cisco MDS 9500 Series, with the latest release first.



Note

As of NX-OS Release 4.1(1b), SAN-OS has been changed to NX-OS. References to SAN-OS releases before 4.1(1b) still apply.

Table 1 Documented Features for the Cisco MDS 9500 Series

Feature	Description	Changed in Release	Where Documented
Cisco MDS 8-port 10-Gbps FCoE module	Added Cisco MDS 8-port 10Gbps FCoE module. Added information about the FCoE feature and the corresponding switches where the feature is implemented.	5.2	Product Overview chapter and “Technical Specifications” section on page 1-1.
Cisco MDS 48-Port 8-Gbps Advanced Fibre Channel Switching Module	The 48-port Advanced 8-Gbps Fibre Channel switching module provides 48 SFP/SFP+ based Fibre Channel external interfaces, allowing a maximum bandwidth up to 256-Gbps.	5.2	The “48-Port 8-Gbps Advanced Fibre Channel Switching Module” section on page 1-35 and the “Technical Specifications” section on page 1-1.
Cisco MDS 32-Port 8-Gbps Advanced Fibre Channel Switching Module	The 32-port Advanced 8-Gbps Fibre Channel switching module provides 32 SFP/SFP+ based Fibre Channel external interfaces, allowing a maximum bandwidth up to 256-Gbps.	5.2	The “32-Port 8-Gbps Advanced Fibre Channel Switching Module” section on page 1-35 and the “Technical Specifications” section on page 1-1.

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Table 1 Documented Features for the Cisco MDS 9500 Series (continued)

Feature	Description	Changed in Release	Where Documented
Crossbar modules	Added a new chapter “Migrating to Generation 4 8-Gbps Advanced Fibre Channel Switching Modules” and information about the DS-13SLT-FAB3 support and the switches compatible with the Fabric Module 3.	5.2	The “Migrating to Generation 4 8-Gbps Advanced Fibre Channel Switching Modules” section on page 1-1 and the “Technical Specifications” section on page 1-1.
Supervisor-2A module	Similar to the Supervisor-2 module, the Supervisor-2A module provides control and management functions for the Cisco MDS 9500 Series switches. The Cisco MDS 9500 Series switches support redundant, hot-swappable Supervisor-2A modules.	5.2	The “Supervisor-2A Modules” section on page 1-17 and the “Technical Specifications” section on page 1-1.
Cisco MDS 16-Port Storage Services Node (SSN-16)	Added Cisco MDS 16-Port Storage Services Node (SSN-16). The SSN-16 module has 16 1-Gigabit Ethernet ports.	4.2(1)	Product Overview chapter.
Cisco MDS 16-Port Storage Services Node (SSN-16) technical specifications	Added Cisco MDS 16-Port Storage Services Node (SSN-16) technical specifications.	4.2(1)	“Technical Specifications” section on page 1-1
48-port 8-Gbps Fibre Channel switching module	Added 48-port 8-Gbps Fibre Channel switching module. The switching module offers 48 autosensing 1-, 2-, 4- and 8-Gbps Fibre Channel ports and can be used in the Cisco MDS 9500 Series Switches.	4.1(1b)	The “48-Port 8-Gbps Fibre Channel Switching Module” section on page 1-37 and the “Technical Specifications” section on page 1-1.
24-port 8-Gbps Fibre Channel switching module	Added 24-port 8-Gbps Fibre Channel switching module. The switching module offers 24 autosensing 1-, 2-, 4- and 8-Gbps Fibre Channel ports and can be used in the Cisco MDS 9500 Series Switches.	4.1(1b)	The “24-Port 8-Gbps Fibre Channel Switching Module” section on page 1-38 and the “Technical Specifications” section on page 1-1.

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Table 1 Documented Features for the Cisco MDS 9500 Series (continued)

Feature	Description	Changed in Release	Where Documented
4/44-port 8-Gbps Host-Optimized Fibre Channel switching module	Added 4/44-port 8-Gbps Host-Optimized Fibre Channel switching module. The switching module offers 48 autosensing 1-, 2-, 4- and 8-Gbps Fibre Channel ports and can be used in any of the Cisco MDS 9500 Series chassis and in the Cisco MDS 9222i Switches.	4.1(1b)	The “4/44-Port 8-Gbps Host-Optimized Fibre Channel Switching Module” section on page 1-38 and the “Technical Specifications” section on page 1-1.
Migration to Generation 3 modules	Added the information associated with readying the MDS 9500 Series to support Generation 3 8-Gbps Fibre Channel switching modules.	4.1(1b)	“Migrating to Generation 3 8-Gbps Fibre Channel Switching Modules” section on page 1-1.
Crossbar modules	Added DS-13SLT-FAB2 support	4.1(1b)	“Technical Specifications” section on page 1-1.
SFP+ transceivers	Added the SFP+ transceivers information.	4.1(1b)	“Technical Specifications” section on page 1-1.
Cisco MDS Fibre Channel Bladeswitch overview	Description of the Cisco MDS Fibre Channel Bladeswitch for IBM BladeCenter.	3.3(1a)	Product Overview chapter.
18/4-port Multiservice (MSM-18/4) module	Added information on IPV6 support.	3.3(1a)	Product Overview chapter.
18/4-port Multiservice (MSM-18/4) module	Added information on SAN extension support.	3.3(1a)	The “18/4-Port Multiservice Module” section on page 48 .
18/4-port Multiservice (MSM-18/4) module	Added the Storage Media Encryption information.	3.2(1)	The “18/4-Port Multiservice Module” section on page 48.
18/4-port Multiservice (MSM-18/4) module	Added the new 18/4-port Multiservice (MSM-18/4) module.	3.2(1)	The “18/4-Port Multiservice Module” section on page 48 and the “Technical Specifications” section on page 1-1.
Cisco MDS 9513 Multilayer Director	Added Cisco MDS 9513 Multilayer Director. The chassis consists of 13 horizontal slots, where slots 1 to 6 and slots 9 to 13 are reserved for switching, services, and IPS modules, and slots 7 and 8 are for Supervisor-2 modules only.	3.0(1)	The “Chassis” section on page 1-2 and the “Installing the Cisco MDS 9513 Director in a Rack” section on page 1-7.

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Table 1 Documented Features for the Cisco MDS 9500 Series (continued)

Feature	Description	Changed in Release	Where Documented
Supervisor-2 module	Added Supervisor-2 module. Supervisor-2 modules can be used in the Cisco MDS 9509 and 9506 Director in slots 5 and 6. Dual Supervisor-2 modules must be used in slots 7 and 8 of the Cisco MDS 9513 Director.	3.0(1)	The “Supervisor-2 Modules” section on page 1-17.
48-port 4-Gbps Fibre Channel switching module	Added 48-port 4-Gbps Fibre Channel switching module. The switching module offers 48 autosensing 1-, 2-, and 4-Gbps Fibre Channel ports and can be used in any of the Cisco MDS 9500 Series chassis and in the Cisco MDS 9216i and 9216A Switches.	3.0(1)	The “48-Port 4-Gbps Fibre Channel Switching Module” section on page 1-39 and the “Technical Specifications” section on page 1-1.
24-port 4-Gbps Fibre Channel switching module	Added 24-port 4-Gbps Fibre Channel switching module. The switching module offers 24 autosensing 1-, 2-, and 4-Gbps Fibre Channel ports and can be used in any of the Cisco MDS 9500 Series chassis and in the Cisco MDS 9216i and 9216A Switches.	3.0(1)	The “24-Port 4-Gbps Fibre Channel Switching Module” section on page 1-39 and the “Technical Specifications” section on page 1-1.
12-port 4-Gbps Fibre Channel switching module	Added 12-port 4-Gbps Fibre Channel switching module. The switching module can be used in any of the Cisco MDS 9500 Series chassis and in the Cisco MDS 9216i and 9216A Switches.	3.0(1)	The “12-Port 4-Gbps Fibre Channel Switching Module” section on page 1-40 and the “Technical Specifications” section on page 1-1.
4-port 10-Gbps Fibre Channel switching module	Added 4-port 10-Gbps Fibre Channel switching module. The switching module offers four dedicated bandwidth Fibre Channel ports running at 10 Gbps with no oversubscription.	3.0(1)	The “4-Port 10-Gbps Fibre Channel Switching Module” section on page 1-41 and “Technical Specifications” section on page 1-1.
Crossbar modules	Added crossbar modules. The Cisco MDS 9513 Director supports two crossbar modules located at the rear of the chassis. Each Supervisor-2 module has an associated crossbar module.	3.0(1)	The “Crossbar Modules” section on page 1-25 and “Removing and Installing a Crossbar Module” section on page 1-47.
X2 transceiver	Added the X2 transceiver information. The X2 transceiver is a small form-factor pluggable optimized for 10-Gbps applications.	3.0(1)	The “X2 Transceivers” section on page 1-62 and the “Transceiver Specifications” section on page 20.
Fibre Channel SFP transceiver	Added 4-Gbps Fibre Channel SFP transceiver.	3.0(1)	The “Fibre Channel SFP Transceivers” section on page 1-63 and the “Transceiver Specifications” section on page 1-20.

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Table 1 Documented Features for the Cisco MDS 9500 Series (continued)

Feature	Description	Changed in Release	Where Documented
3000W Power Supply for the Cisco MDS 9509 Director	Added 3000W power supply for the Cisco MDS 9509 Director.	3.0(1)	The “Cisco MDS 9509 Power Supplies” section on page 1-12, “Installing an AC Power Supply in the Cisco MDS 9509 Director” section on page 1-57, and the “Specifications for the Cisco MDS 9509 Power Supplies” section on page 1-10.
Gigabit Ethernet SFP transceiver	Added Gigabit Ethernet SFP transceiver.	Not release specific	The “Supported Transceivers” section on page 1-62 and the “Transceiver Specifications” section on page 1-20.
32-port Fibre Channel Storage Services Module (SSM)	Added 32-port Fibre Channel Storage Services Module (SSM).	2.0(2b)	The “32-Port Fibre Channel Storage Services Module” section on page 1-57.
14/2-port Multiprotocol Services (MPS-14/2) module	Provided FCIP, iSCSI, and Fibre Channel capability in a multiprotocol module.	2.0(1b)	The “14/2-Port Multiprotocol Services Module” section on page 1-51.
Clock module installation	Added installation procedure for clock modules.	Not release specific	The “Removing and Installing Clock Modules” section on page 1-76.
9500 Shelf Kit	Added optional shelf bracket kit for the Cisco MDS 9509 Director.	Not release specific	The “Cisco MDS 9500 Shelf Bracket” section on page 1-13.
4-port IP Storage Services (IPS-4) module	Provided FCIP services and iSCSI services capability in a 4-port Gigabit Ethernet module.	1.3(4a)	The “IP Storage Services Modules” section on page 1-53.
Jumper power cord	Added jumper power cord available for use in a cabinet.	Not release specific	The “Jumper Power Cord” section on page 1-11.
Installation	Modified Cisco MDS 9509 installation options.	Not release specific	The “Installation Options” section on page 1-2.
Power supplies	Added information on Cisco MDS 9509 power supplies.	Not release specific	The “Installing the Cisco MDS 9509 Director in a Rack” section on page 1-11.
Installation of SFP transceivers	Added instructions for installation and removal of SFP transceivers and cables.	Not release specific	The “Removing, Installing, and Verifying Supervisor, Switching, and Services Modules” section on page 1-38.

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Table 1 Documented Features for the Cisco MDS 9500 Series (continued)

Feature	Description	Changed in Release	Where Documented
Additional UK power cable	Added United Kingdom power cable BS89/13, BS 1363/A, for use with 1900-W power supply.	Not release specific	The “Power Cords” section on page 1-7.
Caching Services Module (CSM)	Added virtualization services for reallocating physical resources as virtual resources.	1.3(1)	The “32-Port 2-Gbps Fibre Channel Switching Module” section on page 1-42.
Telco and EIA Shelf Bracket Kit	Allowed single-user installation and installation in a telco rack.	Not release specific	The “Cisco MDS 9000 Family Telco and EIA Shelf Bracket” section on page 1-6.
Advanced Services Module (ASM)	Added support for up to 32 Fibre Channel ports, provided distributed intelligent storage services, and enabled virtualization.	1.2(2a)	The “32-Port Fibre Channel Advanced Services Module” section on page 1-55.
Console port to modem Connection	Added support for connecting the console port on the Cisco MDS 9500 Series to a modem.	1.2(2a)	The “Connecting to the Console Port” section on page 1-2.
COM1 port to modem Connection	Added support for connecting the COM1 port on the Cisco MDS 9500 Series to a modem.	1.2(1a)	The “Connecting to the COM1 Port” section on page 1-4.
Gigabit Ethernet and CWDM SFP transceivers	Added support for Gigabit Ethernet/Fibre Channel SFP transceivers and CWDM SFP transceivers.	1.1(1a)	The “Supported Transceivers” section on page 1-62.
8-port IP Storage Services (IPS-8) module	Provided FCIP services and iSCSI services capability in an 8-port Gigabit Ethernet module.	1.1(1a)	The “IP Storage Services Modules” section on page 1-53.
Cisco MDS 9506 Director	Added the Cisco MDS 9506 Director, a multilayer Fibre Channel switch that supports up to six modules.	1.1(1a)	This guide.
16-port Fibre Channel module	Added 16-port Fibre Channel hot-swappable switching module for use with the Cisco MDS 9500 Series.	1.0(2a)	The “Switching Modules” section on page 1-32.
32-port Fibre Channel module	Added 32-port Fibre Channel hot-swappable switching module for use with the Cisco MDS 9500 Series.	1.0(2a)	The “Switching Modules” section on page 1-32.
Cisco MDS 9509 Switch	Added the Cisco MDS 9509 Director, a multilayer Fibre Channel switch that supports up to nine modules.	1.0(2a)	This guide.