



# Cisco MDS 9222i Switch and 18/4-Port Module Hardware Release Notes

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For Installation in a Sun™ Storage Area Network

Sun Microsystems, Inc.  
[www.sun.com](http://www.sun.com)

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# Cisco MDS 9222i Switch and 18/4-Port Module Hardware Release Notes

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Read this document so that you are aware of the requirements and issues that can affect the installation and operation of the Cisco Multilayer DataCenter Switch (MDS) 9222i Multiservice Modular Switch (Cisco MDS 9222i) and Cisco MDS 18/4-port Multiservice Module (MSM-18/4) hardware in a Sun storage area network (SAN).

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This document contains the following sections:

- [“Product Features” on page 2](#)
- [“Firmware Requirements” on page 3](#)
- [“Supported Software” on page 5](#)
- [“Supported Hardware” on page 8](#)
- [“Downloading and Installing Patches” on page 11](#)
- [“Related Documentation” on page 12](#)
- [“Service Contact Information” on page 12](#)

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# Product Features

The Cisco MDS 9222i switch integrates Fibre Channel (FC) and IP (FCIP) storage services in a single system to allow maximum flexibility in user configurations. It has eighteen 4-Gbps FC ports, four 1-Gigabit Ethernet IP storage services ports, and a modular expansion slot. The Cisco MSM-18/4 module contains the same number of ports and same functionality in blade form.

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**Note** – The Cisco MDS 9222i switch and MSM-18/4 module IP ports are not compatible with the IP ports on earlier switches and modules (IPS 4, IPS 8, 14+2 or 9216i).

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The Cisco MDS 9222i switch and MSM-18/4 module have the following additional key features:

- Up to 4 Gbps shared application throughput appliances
- Up to 16 tunnels per 4 ports, for both FCIP and iSCSI
- FCIP write and tape read/write acceleration

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# Firmware Requirements

Visit the SunSolve web site to search for and download the latest firmware revision for your switch. Sun recommends that you keep your switch firmware up-to-date. See [“Downloading and Installing Patches” on page 11](#) for more information.

The minimum supported firmware version is dependent on the equipment configuration. [TABLE 1](#) lists the applicable firmware patch IDs for the firmware versions mentioned below.

- The Cisco MDS 9222i switch requires SAN-OS 3.2(1a) (minimum).
- The Cisco MSM-18/4 module requires SAN-OS 3.2(1a) (minimum) be installed on the switch in which the module is installed.
- Cisco Data Mobility Manager (DMM) requires NX-OS 4.1(1b) (minimum). If used in conjunction with Cisco Storage Media Encryption (SME), the required firmware revision is NX-OS 4.1(3a) (minimum). See [“Cisco Data Mobility Manager” on page 6](#) for further information concerning DMM.
- Cisco SME firmware requirements differ depending on the configurations below. See [“Cisco Storage Media Encryption” on page 7](#) for further information concerning SME.
  - MDS 9222i switches with SME enabled require SAN-OS 3.3(3) (minimum for SAN-OS series) or NX-OS 4.1(3a) (minimum for NX-OS series).
  - MDS 92xx switches with an SME-enabled Cisco MSM-18/4 module require SAN-OS 3.3(3) (minimum for SAN-OS series) or NX-OS 4.1(3a) (minimum for NX-OS series).
  - MDS 95xx (Supervisor 1) switches with an SME-enabled Cisco MSM-18/4 module require SAN-OS 3.3(3) (minimum for SAN-OS series). NX-OS is not supported.
  - MDS 95xx (Supervisor 2) switches with an SME-enabled Cisco MSM-18/4 module require SAN-OS 3.3(3) (minimum for SAN-OS series) or NX-OS 4.1(3a) (minimum for NX-OS series).
  - If SME is used in conjunction with DMM, the required firmware revision is NX-OS 4.1(3a) (minimum). SAN-OS is not supported.
- Mainframe connections using FICON require SAN-OS version 3.2(2c) (minimum).

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**Note** – SAN-OS 3.2(2c) is not qualified for channel extension with Cisco Visual Switch Manager (VSM) or any Sun StorageTek FICON tape drives. For FICON, ensure the channel extension feature is disabled when using SAN-OS 3.2(2c) with VSM or Sun StorageTek FICON tape drives.

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**TABLE 1** SunSolve Patch IDs for Minimum Supported Firmware Versions

	<b>SAN-OS 3.2(1a)</b>	<b>SAN-OS 3.2(2c)</b>	<b>SAN-OS 3.3(3)</b>	<b>NX-OS 4.1(1b)</b>	<b>NX-OS 4.1(3a)</b>
MDS 9216	126486-04	126486-05	126486-09	140042-01	140042-03
MDS 9222i	126489-01	126489-02	126489-06	140044-01	140044-03
MDS 95xx (Supervisor 1)	126484-04	126484-05*	126484-09	Not Supported	Not Supported
MDS 95xx (Supervisor 2)	126485-04	126485-05	126485-09	140045-01	140045-03

\* MDS 9509 and 9506 only.

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# Supported Software

This section describes the software that can be used with the Cisco MDS 9222i switch and MSM-18/4 module, and contains the following topics:

- [“Operating System Requirements” on page 5](#)
- [“Supported Management Software” on page 6](#)
- [“Cisco Data Mobility Manager” on page 6](#)
- [“Cisco Storage Media Encryption” on page 7](#)

## Operating System Requirements

The following operating systems running on hosts in the SAN are compatible with the Cisco MDS 9222i switch and MSM-18/4 module.

### Solaris

- Solaris™ 9 Update 1 and higher for Sparc
- Solaris 10

### Linux

- Red Hat Enterprise Linux 4 (IA32/AMD64)
- Red Hat Enterprise Linux 5 (IA32/AMD64)
- SuSE Linux 9 Professional Community Edition (IA32/AMD64)
- SuSE Linux 10 Professional Community Edition (IA32/AMD64)

### Microsoft Windows

- Windows Server 2000 (IA32)
- Windows Server 2003 (IA32/AMD64)

### Other

- HP/UX Version 11.0, 11i
- IBM AIX Version 5.3

# Supported Management Software

You can manage the Cisco MDS 9222i switch and MSM-18/4 module using any of the following software management tools:

- Application programming interface (API) for integration with third-party and user-developed management tools
- Cisco Device Manager
- Cisco Fabric Manager
- Cisco MDS 9000 family command-line interface (CLI)
- Cisco Quick Configuration wizard.

See [“Related Documentation” on page 12](#) for further information.

## Cisco Data Mobility Manager

The Cisco MDS Data Mobility Manager (DMM) is a fabric-based SAN software application that enables movement of data blocks from a source device to a destination device. Such movement is typically needed to address array lease expiration events, capacity planning, and implementation of tiered storage strategies.

The Cisco DMM feature is enabled through a separate end-user software license. There are five types of DMM licenses:

- A license for enabling DMM on a Cisco MDS 9222i switch
- A license for enabling DMM on a Cisco MSM 18/4 module contained within an MDS 92xx chassis
- A license for enabling DMM on a Cisco MSM 18/4 module contained within an MDS 95xx chassis
- A license for enabling DMM on a Cisco MDS 9000 Family 32-Port Storage Services Module (Cisco SSM) contained within a Cisco MDS 9222i switch
- A license for enabling DMM on a Cisco SSM module contained within an MDS 95xx chassis.

See [“Firmware Requirements” on page 3](#) for DMM firmware requirements and other firmware requirements for your configuration.



# Cisco Storage Media Encryption

Cisco MDS 9000 Family Storage Media Encryption (SME) encrypts data at rest on heterogeneous tape devices and virtual tape libraries. SME is completely integrated with the Cisco MDS 9000 family of switches and Cisco Fabric Manager, enabling highly available encryption services to be deployed and managed without rewiring or reconfiguring SANs, or installing additional software.

A Cisco MDS 9000 SME license is required to enable SME on a Cisco MDS 9222i switch or MSM-18/4 module. The SME license is self-contained in that no other licenses are needed. Cisco SME requires a Fabric Manager server for configuration but does not require a Fabric Manager server license.

There are three types of SME licenses:

- A license for enabling SME on an MDS 9222i switch
- A license for enabling SME on a Cisco MDS 9000 Family 18/4-Port Multiservice Module contained within an MDS 92xx chassis
- A license for enabling SME on a Cisco MDS 9000 Family 18/4-Port Multiservice Module contained within an MDS 95xx chassis.

See [“Firmware Requirements” on page 3](#) for SME firmware requirements and other firmware requirements for your configuration. Further SME information can be found in [“Related Documentation” on page 12](#).

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# Supported Hardware

The Cisco MDS 9222i switch and MSM-18/4 module are compatible with the following storage platforms, HBAs, and host server platforms. The list applies only to the Cisco MDS 9222i switch and MSM-18/4 module hardware. It does not apply to the Cisco SME software specifically.

This section contains the following topics:

- [“Supported Storage Platforms” on page 8](#)
- [“Supported Host Bus Adapters” on page 8](#)
- [“Supported Server Platforms” on page 9](#)

## Supported Storage Platforms

The Cisco MDS 9222i switch and MSM-18/4 module are compatible with the following storage platforms:

- Sun StorEdge™ 3510, 3511 FC arrays
- Sun StorEdge 9910, 9960, 9970, 9980, 9985, and 9990
- Sun StorEdge Fibre Channel 9840B/C, 9940B, T10K, LTO 3/4, SDLT 600, SDLT4 tape drives
- Sun StorEdge FC420 FC-SCSI Bridge for L25 and L100 tape libraries with the SG-XFCCARD2-C LVD SCSI to Fibre Channel Card Quantum or the SG-XFC420CARD-MOD Fibre Channel / LVD Internal Bridge
- Sun StorEdge T3B array with full fabric
- Sun StorageTek™ 6140 and 6540 arrays
- Sun StorageTek FlexLine™ 380 array
- C4 tape library with the SG-XFCCARD2-C LVD SCSI to Fibre Channel Card Quantum
- FC Robots: L180/700/1400, SL500

## Supported Host Bus Adapters

The Cisco MDS 9222i switch and MSM-18/4 module are compatible with the following HBAs:

- SG-XPCI2FC-QF2 and SG-XPCI2FC-QF2-Z
- SG-XPCI1FC-QL2

- SG-XPCI1FC-QLC and SG-XPCI1FC-QLC-Z (Maximum of two cascaded switches between devices)
- SG-XPCI1FC-EM2 and SG-XPCI2FC-EM2
- SG-XPCI1FC-QF4 and SG-XPCI2FC-QF4
- SG-XPCIE1FC-QF4 and SG-XPCIE2FC-QF4
- SG-XPCI1FC-EM4-Z and SG-XPCI2FC-EM4-Z
- SG-XPCIE1FC-EM4 and SG-XPCIE2FC-EM4
- SG-XPCIE2FC-QB4-Z (Sun Blade™ 6000 & 8000 Modular System only)
- SG-XPCIE2FC-EB4-Z (Sun Blade 6000 & 8000 Modular System only)
- SG-PCIE20FC-NEM-Z (Sun Blade 8000 Modular System only)

## Supported Server Platforms

The Cisco MDS 9222i switch and MSM-18/4 module are compatible with the following Sun servers.

### x64/x86 Systems

- Sun Blade 6000 & 8000 Modular System
- Sun Fire™ V20/40z
- Sun Fire x2100 and x4100/4200 (M2)
- Sun Fire x2200 and x4600

### SPARC Servers

- Sun Blade 1500/2500
- Sun Blade 2500+
- Sun Enterprise™ 4900/6900
- Sun Fire T1000/T2000
- Sun Fire V1280/Netra 1280
- Sun Fire Netra 240
- Sun Fire V210/V240/V250
- Sun Fire V245
- Sun Fire V440
- Sun Fire V445

- Sun Fire V480
- Sun Fire V490
- Sun Fire V880
- Sun Fire V890
- Sun Fire V1280/Netra 1280
- Sun Fire 4800/4810/6800
- Sun Fire 12k/15k/20k/25k

## Windows 2003 Server

- Sun Blade 6000 & 8000 Modular System

## Red Hat Enterprise Linux and SuSE Linux Enterprise 9 Servers

- Sun Blade 6000 & 8000 Modular System

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# Downloading and Installing Patches

The following task provides instructions for downloading and installing patches for the Cisco MDS 9222i switch and MSM-18/4 module. See “[Firmware Requirements](#)” on [page 3](#) for the required or recommended firmware versions and associated patch IDs.

1. Access the SunSolve<sup>SM</sup> web site at:

<http://sunsolve.sun.com>

2. Read and accept the terms and conditions of the License Agreement.

3. From the Support category, select Patches and Updates.

4. Under PatchFinder, type the patch ID and click Find Patch.

Do not type the -xx revision number. PatchFinder automatically finds the latest patch.

5. Verify you have retrieved the correct patch.

6. Print the page.

Printing this page also prints the patch README file, which contains installation instructions, special instructions, special guidelines, and notes.

7. Download the patch by clicking on either HTTP or FTP as shown in the following line:

Download Patch (*nn,nnn,nnn* bytes) HTTP FTP.

8. Click PatchFinder and repeat the process from Step 4 for each patch.

9. Install the patches.

When you have finished downloading all patches, install the patches by following the instructions in each patch README file.

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## Related Documentation

Cisco documentation is configuration-specific and can be obtained directly from Cisco's web site.

- For documentation related to Cisco MDS 9200 Series Multilayer Switches:

["http://cisco.com/en/US/products/ps5988/tsd\\_products\\_support\\_series\\_home.html"](http://cisco.com/en/US/products/ps5988/tsd_products_support_series_home.html)

- For documentation related to Cisco MDS 9500 Series Multilayer Directors:

["http://cisco.com/en/US/products/ps5990/tsd\\_products\\_support\\_series\\_home.html"](http://cisco.com/en/US/products/ps5990/tsd_products_support_series_home.html)

- For documentation related to Cisco Data Mobility Manager (DMM) for NX-OS 4.x, see the *Cisco MDS 9000 Family Data Mobility Manager Configuration Guide, Release 4.x*, which is located here:

["http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/sw/4\\_1/dmm/configuration/guide/dmmcfg.html"](http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/sw/4_1/dmm/configuration/guide/dmmcfg.html)

DMM configuration guides for other firmware releases may be available at the Cisco web site.

- For documentation related to Cisco Storage Media Encryption (SME) for NX-OS 4.x, see the *Cisco MDS 9000 Family Storage Media Encryption Configuration Guide, Release 4.x*, which is located here:

["http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/sw/4\\_1/sme/configuration/guide/smebook.html"](http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/sw/4_1/sme/configuration/guide/smebook.html)

SME configuration guides for other firmware releases may be available at the Cisco web site.

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## Service Contact Information

If you need help installing or using this product in the United States, call 1-800-USA-4SUN, or go to:

["http://www.sun.com/service/contacting/index.xml"](http://www.sun.com/service/contacting/index.xml)