Cisco MDS 9513 Multilayer Director Hardware Release Notes

For Installation in a Sun™ Storage Area Network

Sun Microsystems, Inc.
www.sun.com

Part No. 820-4953-10
May 2009, Revision A

Submit comments about this document by clicking the Feedback[+] link at: `http://docs.sun.com`

Copyright © 2009 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.sun.com/patents and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, docs.sun.com, StorEdge, StorageTek, FlexLine, Sun Fire, Sun Blade, Sun Enterprise, SunSolve, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc., or its subsidiaries, in the U.S. and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright © 2009 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, États-Unis. Tous droits réservés.

Sun Microsystems, Inc. possède les droits de propriété intellectuels relatifs à la technologie décrite dans ce document. En particulier, et sans limitation, ces droits de propriété intellectuels peuvent inclure un ou plusieurs des brevets américains listés sur le site http://www.sun.com/patents, un ou les plusieurs brevets supplémentaires ainsi que les demandes de brevet en attente aux les États-Unis et dans d'autres pays.

Ce document et le produit auquel il se rapporte sont protégés par un copyright et distribués sous licences, celles-ci en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Tout logiciel tiers, sa technologie relative aux polices de caractères, comprise, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit peuvent dériver des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux États-Unis et dans d'autres pays, licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, Java, docs.sun.com, StorEdge, StorageTek, FlexLine, Sun Fire, Sun Blade, Sun Enterprise, SunSolve, et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc., ou ses filiales, aux États-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux États-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface utilisateur graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox dans la recherche et le développement du concept des interfaces utilisateur visuelles ou graphiques pour l'industrie informatique. Sun détient une license non exclusive de Xerox sur l'interface utilisateur graphique Xerox, cette licence couvrant également les licenciés de Sun implémentant les interfaces utilisateur graphiques OPEN LOOK et se conforment en outre aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DÉCLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES DANS LA LIMITE DE LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE À LA QUALITÉ MARCHANDE, À L'APTITUDE À UNE UTILISATION PARTICULIÈRE OU À L'ABSENCE DE CONTREFAÇON.

Please
Recycle

Adobe PostScript

Cisco MDS 9513 Multilayer Director Hardware Release Notes

Read this document so you are aware of the requirements and issues that can affect the installation and operation of the Cisco Multilayer DataCenter Switch (MDS) 9513 Multilayer Director (Cisco MDS 9513 director) hardware in a Sun storage area network (SAN).

Note – Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

This document contains the following sections:

- "Product Features" on page 2
- "Firmware Requirements" on page 3
- "Supported Modules" on page 5
- "Supported Software" on page 7
- "Supported Hardware" on page 10
- "Downloading and Installing Patches" on page 13
- "Related Documentation" on page 14
- "Service Contact Information" on page 15

Product Features

The Cisco MDS 9513 director is a chassis-based, high-performance, director-class switch intended for large data center storage environments. The Cisco MDS 9513 director has the following key features:

- Provides a maximum of 528 oversubscribed Fibre Channel (FC) ports, 132 non-oversubscribed ports, or various port card-dependent combinations.
- Can be populated with as many as 11 port modules, which may be a mix of older generation MDS port modules, 4 Gbit/sec port modules, or newer 8 Gbit/sec port modules. See "Supported Modules" on page 5 for more information.
- 10 Gbit/sec capability which can be used for inter-switch links (ISLs). See "Supported Modules" on page 5 for more information.
- 1 Gbit/sec Ethernet port capability, which is user configurable for iSCSI and/or Fibre Channel IP (FCIP). See "Supported Modules" on page 5 for more information.
- Integrated Cisco Storage Media Encryption (SME) with the Cisco MDS 9000 Family 18/4-Port Multiservice Module. For further information, see "Cisco Storage Media Encryption" on page 9.
- Support for Cisco Data Mobility Manager (DMM) with the Cisco MDS 9000 Family 32-Port Storage Services Module or Cisco MDS 9000 Family 18/4-Port Multiservice Module. For further information, see "Cisco Data Mobility Manager" on page 8.
- Powered by two 6000 watt redundant power supplies, either of which is capable of powering the system in the event of a power supply failure.
- Front-to-side airflow.

Note – When installing the Cisco MDS 9513 director, special care must be taken to provide adequate cooling in consideration of front-to-side airflow.

Firmware Requirements

Visit the SunSolve[SM] 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 13 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 9513 director requires SAN-OS 3.0(3) (minimum).
- 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 8 for further information concerning DMM.
- Cisco SME firmware requirements differ depending on the configurations below. See "Cisco Storage Media Encryption" on page 9 for further information concerning SME.
  - 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).

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.

TABLE 1 SunSolve Patch IDs for Minimum Supported Firmware Versions

	SAN-OS 3.0(3)	SAN-OS 3.2(2c)	SAN-OS 3.3(3)	NX-OS 4.1(1b)	NX-OS 4.1(3a)
MDS 95xx (Supervisor 1)	126484-01	126484-05*	126484-09	Not Supported	Not Supported
MDS 95xx (Supervisor 2)	126485-01	126485-05	126485-09	140045-01	140045-03

* MDS 9509 and 9506 only.

Supported Modules

The Cisco MDS 9513 director supports a variety of Cisco MDS 9000 Family modules. In addition to support for older-generation modules, it also supports the newer 8 Gbit/sec port modules as listed in TABLE 2. Some of these port modules require the Cisco MDS 9513 Fabric 2 Module for compatibility with the Cisco MDS 9513 director. For more information, see "Cisco MDS 9513 Fabric 2 Module" on page 6.

"Related Documentation" on page 14 provides links to additional information about specific modules in the following table.

TABLE 2 Supported Port Modules

Port Module Description	Maximum Transfer Rate	Cisco MDS 9513 Fabric 2 Module Required?
Cisco MDS 9500 8-port 1 Gigabit Ethernet IP Storage Services Module	1 Gbps	No
Cisco MDS 9000 Family 32-port Storage Services Module	2 Gbps	No
Cisco MDS 9000 Family 1/2/4-Gbps 12-port Fibre Channel switching module	4 Gbps	No
Cisco MDS 9000 Family 1/2/4-Gbps 24-port Fibre Channel switching module	4 Gbps	No
Cisco MDS 9000 Family 1/2/4-Gbps 48-port Fibre Channel switching module	4 Gbps	No
Cisco MDS 9000 Family 18/4-Port Multiservice Module	4 Gbps	No
Cisco MDS 9000 Family 1/2/4/8-Gbps 24-Port Fibre Channel Module	8 Gbps	Yes
Cisco MDS 9000 Family 1/2/4/8-Gbps 48-Port Fibre Channel Module	8 Gbps	Yes
Cisco MDS 9000 Family 1/2/4/8-Gbps 4/44-Port Host-Optimized Fibre Channel Module	8 Gbps	No
Cisco MDS 9000 Family 10-Gbps 4-port Fibre Channel switching module	10 Gbps	No

Cisco MDS 9513 Fabric 2 Module

The Cisco MDS 9513 Fabric 2 Module is required when either the 24- or 48-port 8 Gbit/sec modules listed in TABLE 2 are installed in a Cisco MDS 9513 director. The Cisco MDS 9513 Fabric 2 Module is necessary to achieve the maximum advertised bandwidth and performance with these port modules.

Newer Cisco MDS 9513 directors come standard with the Cisco MDS 9513 Fabric 2 Module installed. Check to verify if the addition of this module is required for your equipment configuration. To do so, execute the `show module xbar` command-line interface (CLI) command. The fabric module type will be displayed under the Module-Type column.

Supported Software

This section describes the software that can be used with the Cisco MDS 9513 director, and contains the following topics:

- "Operating System Requirements" on page 7
- "Supported Management Software" on page 8
- "Cisco Data Mobility Manager" on page 8
- "Cisco Storage Media Encryption" on page 9

Operating System Requirements

The following operating systems running on hosts in the SAN are compatible with the Cisco MDS 9513 director.

Solaris

- Solaris™ 9 Update 1 and higher for Sparc
- Solaris 10 (Sparc/AMD64)

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/AMD64)
- Windows Server 2003 (IA32/AMD64)
- Windows Server 2008 (IA32/AMD64)

Other

- HP/UX Version 11.0, 11i, 11.23, 11.31

- IBM AIX Version 5.3, 6.1

Supported Management Software

You can manage the Cisco MDS 9513 director using any of the following software management tools:

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

See "Related Documentation" on page 14 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. Cisco MDS DMM is supported when either a Cisco MDS 9000 Family 32-Port Storage Services Module or Cisco MDS 9000 Family 18/4-Port Multiservice Module is installed in a Cisco MDS 9513 director.

The Cisco MDS 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 9513 director
- 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 9513 director
- 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 9000 Family 18/4-Port Multiservice Module installed in a Cisco MDS 9513 director. The SME license is self-contained in that no other licenses are needed. 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 a Cisco MDS 9000 Family 18/4-Port Multiservice Module contained within an MDS 95xx chassis
- 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 an MDS 9222i switch.

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 14.

Supported Hardware

The Cisco MDS 9513 director is compatible with the following storage platforms, HBAs, and host server platforms. This section contains the following topics:

- "Supported Storage Platforms" on page 10
- "Supported Host Bus Adapters" on page 11
- "Supported Server Platforms" on page 11

Supported Storage Platforms

The Cisco MDS 9513 director is compatible with the following storage platforms:

- Sun Storage 6580 and 6780 arrays
- Sun StorEdge™ 3510, 3511 FC arrays
- Sun StorEdge 6130 array
- Sun StorEdge 9910, 9960, 9970, 9980, 9985, and 9990
- Sun StorEdge 9985V/9990V
- 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™ 2540 array
- Sun StorageTek 6140 and 6540 arrays
- Sun StorageTek FlexLine™ 240/280/380 arrays
- Sun StorageTek SL3000 modular library system
- Sun StorageTek SL8500 modular library system
- Sun StorageTek T9840D tape drive
- Sun StorageTek Virtual Tape Library (VTL)
- 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 9513 director is compatible with the following HBAs:

- SG-XPCIE1FC-QF8-Z / SG-XPCIE2FC-QF8-Z
- SG-XPCIE1FC-EM8-Z / SG-XPCIE2FC-EM8-Z
- 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 9513 director is 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
- Sun Fire x4140/4240/4440
- Sun Fire x4150/4550

SPARC Servers

- Sun Blade 1500/2500
- Sun Blade 2500+

- Sun Enterprise™ 4900/6900
- Sun SPARC Enterprise M4000/5000/8000/9000 servers
- Sun SPARC Enterprise T5120/5520 servers
- Sun SPARC Enterprise T5140/5240 servers
- Sun Fire T1000/T2000
- Sun Fire V1280/Netra 1280
- Sun Fire Netra 240
- Sun Fire V125
- Sun Fire V210/V240/V250
- Sun Fire V215/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

Downloading and Installing Patches

The following task provides instructions for downloading and installing patches for the Cisco MDS 9513 director. See "Firmware Requirements" on page 3 for the required or recommended firmware versions and associated patch IDs.

1. **Access the SunSolve 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.

Related Documentation

- Documentation related to the Cisco MDS 9513 director can be found at the following Cisco web site:

  "http://cisco.com/en/US/products/ps5990/tsd_products_support_series_home.html"

- Additional information regarding the Cisco MDS 9000 Family 8-Gbps Fibre Channel Switching Modules can be found in the *Cisco MDS 9000 Family 8-Gbps Fibre Channel Switching Modules Hardware Release Notes*, Sun part number 820-6799-*xx*. This document is accessible at:

  "http://docs.sun.com/app/docs/prod/blades.mod"

- Additional information regarding the Cisco MDS 9000 Family 32-port Storage Services Module can be found in the *Cisco MDS 9000 Storage Services Module (SSM) Hardware Release Notes*, Sun part number 820-2430-*xx*. This document is accessible at:

  "http://docs.sun.com/app/docs/prod/cisco.mds9k.32port~cisco-mds9k-32p-ssm#hic"

- Additional information regarding the Cisco MDS 9000 Family 18/4-Port Multiservice Module can be found in the *Cisco MDS 9222i Switch and 18/4-Port Module Hardware Release Notes*, Sun part number 820-2856-*xx*. This document is accessible at:

  "http://docs.sun.com/app/docs/prod/cisco.mds9222i#hic"

- 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"

  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"

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

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"