

Cisco MDS 9000 Family Release Notes for Storage Services Interface Image Release 5.2(6i)

Release Date: May 30, 2013

Text Part Number: OL-29007-08

This document describes the caveats and limitations for the Storage Service Interface (SSI) software for the various Cisco MDS Services Modules (SSN-16, MSM-18/4, and MDS 9222i). Use this document in conjunction with the documents listed in the "Related Documentation" section on page 10.



Release notes are sometimes updated with new information on restrictions and caveats. Refer to the following website for the most recent version of the *Cisco MDS 9000 Family Release Notes*: http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html

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Introduction

The SSI interface provides the following features:

- Data Mobility Manager (DMM)
- Cisco SANTap and EMC RecoverPoint



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.

System Requirements

This section describes the system requirements for Cisco MDS SSI Release 5.2(6i) and includes the following topics:

- Components Supported, page 2
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Components Supported

Table 1 lists the software and hardware components supported by the Cisco MDS 9000 Family.

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components

Component	Part Number	Description	Applicable Product
Software	M95S2K9-5.2.6i	MDS 9500 Supervisor/Fabric-2, NX-OS software.	MDS 9500 Series only
	M92S2K9-5.2.6i	MDS 9222 Supervisor/Fabric-2, NX-OS software.	MDS 9200 Series only
	M91S2K9-5.2.6i	MDS 9100 Supervisor/Fabric-2, NX-OS software.	MDS 9124 Switch and MDS 9134 Switch
	M91S3K9-5.2.6i	MDS 9148 Supervisor/Fabric-3 NX-OS software	MDS 9148 Switch
SSI Interface	SSI-M9K9-526i	Storage Services Interface for Release 5.2(6i)	MDS 9000 Family
Licenses	M9500SSE184K9	Storage Services Enabler License for one MSM-18/4 module	MDS 9500 Series only
	M9222ISSE1K9	Storage Services Enabler License	MDS 9222i Switch only
	M9200SSE184K9	Storage Services Enabler License for one MSM-18/4 module	MDS 9200 Series only
	M95DMM184K9	Data Mobility Manager License for one MSM-18/4 module	MDS 9500 Series only
	M9222IDMMK9	Data Mobility Manager License for Cisco MDS 9222i	MDS 9222i Switch

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Licenses (continued)	M92DMM184K9	Data Mobility Manager License for one MSM-18/4 module	MDS 9200 Series only
	M95DMM184TSK9	Data Mobility Manager for one MSM-18/4 module — Time limited to 180 days only	MDS 9500 Series only
	M9222IDMMTSK9	Data Mobility Manager — Time limited to 180 days only	MDS 9222i Switch only
	M92DMM184TSK9	Data Mobility Manager for one MSM-18/4 module — Time limited to 180 days only	MDS 9200 Series only
Chassis	DS-C9513	Cisco MDS 9513 Multilayer Director (13-slot multilayer director with 2 slots for Supervisor-2 modules, with 11 slots available for switching modules — SFPs sold separately)	MDS 9513 Switch
	DS-C9509	Cisco MDS 9509 Multilayer Director (9-slot multilayer director with 2 slots for Supervisor modules, with 7 slots available for switching modules — SFPs sold separately)	MDS 9509 Switch
	DS-C9506	Cisco MDS 9506 Multilayer Director (6-slot multilayer director with 2 slots for Supervisor modules, with 4 slots available for switching modules — SFPs sold separately)	MDS 9506 Switch
	DS-C9222i-K9	Cisco MDS 9222i Multilayer Fabric Switch (3-rack-unit (3RU) semimodular multilayer fabric switch with 18 4-Gbps Fibre Channel ports, 4 Gigabit Ethernet ports, and a modular expansion slot for Cisco MDS 9000 Family Switching and Services modules)	MDS 9222i Switch
	DS-C9148-K9	Cisco MDS 9148 48-Port Multilayer Fabric Switch (1RU fixed-configuration multilayer fabric switch with 48 8-Gbps Fibre Channel ports)	MDS 9148i Switch
	DS-C9134-K9	Cisco MDS 9134 34-Port Multilayer Fabric Switch (1RU fixed-configuration multilayer fabric switch with 32 4-Gbps and 2 10-Gbps Fibre Channel ports)	MDS 9134 Switch
	DS-C9124-K9	Cisco MDS 9124 24-Port Multilayer Fabric Switch (1RU fixed-configuration multilayer fabric switch with 24 4-Gbps Fibre Channel ports)	MDS 9124 Switch
Supervisor	DS-X9530-SF2-K9	Cisco MDS 9500 Series Supervisor-2 Module	MDS 9500 Series
Modules	DS-X9530-SF2A-K9	Cisco MDS 9500 Series Supervisor-2A Module	MDS 9500 Series

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Switching Modules	DS-X9112	Cisco MDS 9000 12-port 4-Gbps Fibre Channel	MDS 9500 Series
		Switching Module with SFP LC connectors	MDS 9200 Series
	DS-X9124	Cisco 24-port 4-Gbps Fibre Channel Switching Module	MDS 9500 Series
		with SFP LC connectors	MDS 9200 Series
	DS-X9148 Cisco MDS 9000 48-port 4-Gbps Fibre Chang Switching Module with SFP LC	Cisco MDS 9000 48-port 4-Gbps Fibre Channel	MDS 9500 Series
		Switching Module with SFP LC	MdS 9200 Series
	DS-X9704	Cisco MDS 9000 Family 4-Port 10-Gbps Fibre Channel	MDS 9500 Series
	Switching Module with SFP LC	MdS 9200 Series	
	DS-X9224-96K9	Cisco MDS 9000 24-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	MDS 9500 Series
	DS-X9248-96K9	Cisco MDS 9000 48-Port 8-Gbps Fibre Channel Switching Module with SFP and SFP+ LC connectors	MDS 9500 Series
	DS-X9248-48K9	Cisco MDS 9000 4/44-Port Host-Optimized 8-Gbps Fibre	MDS 9500 Series
	Channel Switching Module with SFP and SFP+ LC connectors	MDS 9222i Switch	
	DS-X9708-K9	Cisco MDS 9000 8-port 10-Gbps Fibre Channel over Ethernet (FCoE) module	MDS 9500 Series
	DS-X9232-256K9	Cisco MDS 9000 32-port 8-Gbps Advanced Fibre Channel Switching module	MDS 9500 Series
	DS-X9248-256K9	Cisco MDS 9000 48-port 8-Gbps Advanced Fibre Channel Switching module	MDS 9500 Series
Services	DS-X9304-18K9	Cisco MDS 9000 18/4-Port Multiprotocol Services	MDS 9500 Series
Modules		Module (MSM-18/4) — 18-port, 4-Gbps Fibre Channel plus 4-port Gigabit Ethernet IP services and switching module with SFP LC connectors	
	DS-X9316-SSNK9	Cisco MDS 9000 Family 16-Port Storage Services Node	MDS 9500 Series
		(SSN-16) — 16 fixed 1-Gbps Ethernet ports, plus 4 service engines that support 16 Gigabit Ethernet IP storage services ports	MDS 9222i Switch
External	DS-13SLT-FAB1	Cisco MDS 9513 Switching Fabric1 Module	MDS 9513 Switch
crossbar module	DS-13SLT-FAB2	Cisco MDS 9513 Switching Fabric2 Module	MDS 9513 Switch
module	DS-13SLT-FAB3	Cisco MDS 9513 Switching Fabric 3 module	MDS 9513 Switch

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Optics	DS-X2-FC10G-SR	X2 SC optics, 10-Gbps Fibre Channel for short reach	MDS 9500 Series
			MDS 9200 Series
	DS-X2-FC10G-LR	X2 SC optics, 10-Gbps Fibre Channel for long reach (10	MDS 9500 Series
		km)	MDS 9200 Series
	DS-X2-FC10G-ER	X2 SC optics, 10-Gbps Fibre Channel for extended reach (40 km)	MDS 9500 Series
			MDS 9200 Series
	DS-X2-FC10G-CX4	X2 SC optics, 10-Gbps Fibre Channel over copper	MDS 9500 Series
			MDS 9200 Series
	DS-X2-E10G-SR	X2 SC optics, 10-Gbps Ethernet for short reach	MDS 9500 Series
			MDS 9200 Series
LC-type fiber-optic	DS-SFP-FC8G-SW	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for shortwave mode	MDS DS-X9200 Series switching modules
SFP	DS-SFP-FC8G-LW	SFP+ optics (LC type) for 2-, 4-, or 8-Gbps Fibre Channel for longwave mode; supports distances up to 10 km	MDS DS-X9200 Series switching modules
	DS-SFP-FC4G-SW	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for shortwave mode	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC4G-MR	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode; supports distances up to 4 km	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC4G-LW	SFP optics (LC type) for 1-, 2-, or 4-Gbps Fibre Channel for longwave mode; supports distances up to 10 km	MDS 9124 and DS-X9100 Series switching modules
	DS-SFP-FC-2G-SW	SFP optics (LC type) for 1- or 2-Gbps Fibre Channel for shortwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-FC-2G-LW	SFP optics (LC type) for 1- 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	MDS 9000 Series
	DS-SFP-FCGE-SW	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for shortwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-FCGE-LW	SFP optics (LC type) for 1-Gbps Ethernet and 1- or 2-Gbps Fibre Channel for longwave mode; not supported for use in 4-Gbps-capable ports	MDS 9000 Series
	DS-SFP-GE-T	SFP (RJ-45 connector) for Gigabit Ethernet over copper	MDS 9000 Series

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Cisco Coarse Wavelength- Division	DS-CWDM-xxxx	CWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm	MDS 9000 Family
Multiplexing (CWDM)	DS-CWDM4Gxxxx	CWDM 4-Gbps Fibre Channel SFP LC type, where product number xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610 nm	MDS 9000 Family
Dense Wavelength- Division Multiplexing (DWDM)	DWDM-X2-xx.xx	DWDM X2 SC optics for 10-Gbps Fibre Channel connectivity to an existing Ethernet DWDM infrastructure, 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	MDS 9500 Series MDS 9200 Series
	DWDM-SFP-xxxx	DWDM Gigabit Ethernet and 1- or 2-Gbps Fibre Channel SFP LC type, 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 6061nm	MDS 9000 Family
Add/Drop Multiplexer (ADM)	DS-CWDMOADM4A	4-channel CWDM optical ADM (OADM) module (Cisco CWDM 1470, 1490, 1510, or 1530 NM Add/Drop Module)	MDS 9000 Family
	DS-CWDMOADM4B	4-channel CWDM OADM module (Cisco CWDM 1550, 1570, 1590, or 1610 NM Add/Drop Module)	MDS 9000 Family
	DS-CWDM-MUX8A	ADM for 8 CWDM wavelengths	MDS 9000 Family
CWDM Multiplexer Chassis	DS-CWDMCHASSIS	2-slot chassis for CWDM ADMs	MDS 9000 Family
Power	DS-CAC-300W	300W AC power supply	MDS 9100 Series
Supplies	DS-C24-300AC	300W AC power supply	MDS 9124 Switch
	DS-CAC-845W	845W AC power supply for Cisco MDS 9200 Series	MDS9200 Series
	DS-CAC-3000W	3000W AC power supply for Cisco MDS 9509	MDS 9509 Switch
	DS-CAC-6000W	6000W AC power supply for Cisco MDS 9513	MDS 9513 Switch
	DS-CAC-1900W	1900W AC power supply for Cisco MDS 9506	MDS 9506 Switch
CompactFlash	MEM-MDS-FLD512M	External 512-MB CompactFlash memory for supervisor module	MDS 9500 Series
Port Analyzer Adapter	DS-PAA-2, DS-PAA	A standalone Fibre Channel-to-Ethernet adapter that allows for simple, transparent analysis of Fibre Channel traffic in a switched fabric	MDS 9000 Family
Smart Card Reader	DS-SCR-K9	Storage Media Encryption (SME) Smart Card Reader	MDS 9000 Family

Table 1 Cisco MDS 9000 Family Supported Software and Hardware Components (continued)

Component	Part Number	Description	Applicable Product
Smart Card	DS-SC-K9	SME Smart Card	MDS 9000 Family
CD-ROM		Cisco MDS 9000 Management Software and Documentation CD-ROM for Cisco MDS 9000 NX-OS Software Release 4.1(3)	MDS 9000 Family

Determining the Software Version



Use the latest available software release supported by your vendor for all Cisco MDS 9000 Family products.

To determine the version of the Cisco NX-OS software currently running on a Cisco MDS 9000 Family switch using the CLI, log into the switch and enter the **show version** command.

To determine the version of the Cisco NX-OS software currently running on a Cisco MDS 9000 Family switch using the Fabric Manager, from the Switches tab in the information pane, locate the switch using the IP address, logical name, or WWN, and then check its version in the Release column.

Downloading Software

To download the latest Cisco software, access the Software Center at this URL:

http://www.cisco.com/software/navigator



If you would like to request code to be provided under the terms of either GNU General Public License (GPL) or the GNU Lesser General Public License (LGPL), contact mds-software-disclosure@cisco.com.

Upgrade and Downgrade Caveats

This section provides information about upgrading to the current release or downgrading from it.

Upgrading to Cisco MDS SSI Release 5.2(6i)

Following a software upgrade to SSI Release 5.2(6i) in a 32-bit environment, you must unmount and remount all SCSI devices. The following procedure is specific to hosts or targets that see 32-bit LUN IDs. Follow these steps:

- 1. Quiesce all applications on the host.
- **2.** Enter the following commands:

umount <file system>

varyoffvg <volume group>

exportvg <volume group>

- **3**. Perform the upgrade.
- **4**. Enter the following commands:

rmdev -dl <hdisk#> -R (Repeat this for all hdisks.)

cfgmgr

Isdev -Cc disk (See if all the LUNs are discovered.)

lsattr -El <hdisk#> (Check LUN ID field to check that host sees the same LUN ID as the target LUN ID.)

importvg -y <volume group> <hdisk#> (Volume group name is same as the one that was exported earlier. hdisk# can be just one of the hdisks in the volume group.)

varyonvg <volume group>

mount <file system>

New Features

There are no new features in Cisco MDS SSI Release 5.2(6i).

Limitations

This sections lists limitations or restrictions associated with this release.

GUI Support Not Available for Target IO Timeout DVT Configuration

A target IO timeout for DVT can only be configured through the CLI. GUI support for this configuration is not available in Cisco MDS SSI Release 5.2(6i).

Compatibility Matrix

Before upgrading your SSI image, refer to the Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images.

The SSI Release 5.2(6i) image is compatible with the Cisco MDS NX-OS Release 5.2(6b), 5.2(6a), and 5.2(6) images.

Caveats

This section lists the open and resolved caveats for this release. Use Table 2 to determine the status of a particular caveat. In the table, "O" indicates an open caveat and "R" indicates a resolved caveat.

Table 2 Open Caveats and Resolved Caveats Reference

DDTS Number	NX-OS Software Release (Open or Resolved)	NX-OS Software Release (Open or Resolved)
	5.2(6b)	5.2(6i)
Severity 2		
CSCtx92067	О	R
CSCud12362	0	R
Severity 3		
CSCuf43912	_	R

Resolved Caveats

CSCtx92067

Symptom: The Cisco SANTap data path processor (DPP) crashes with the following error:

%SANTAP-SLOT4-2-ISAPI_CRIT_PROCESS_CRASH: DPP status: ISAPI_DPP_CONNECT_STATUS_NOT_OK.
SANTAP aborting. SANTAP VM Size: 22816kB
%RM-SLOT4-2-RM_VICPP_RECREATE_ERROR: All the fast path resources are down VICPP
connectivity lost
%PROC_MGR-SLOT4-2-ERR_MSG: ERROR: PID 1495 (ps_stap) killed with signal (6)
%RM-SLOT4-2-CPP_CATASTROPHIC_ERROR: ERROR: Component (Partner Software) caused
critical error. Service Module will be reloaded
MODULE-2-MOD_DIAG_FAIL: Module 4 (serial: JAF1504BMNN) reported failure on ports
4/1-4/22 (0x0) due to ISAPI experienced an error in device 41 (device error 0x0)

Condition: This situation occurs during a normal operation.

Workaround: This issue is resolved.

CSCud12362

Symptom: On the Cisco MDS 9222i Multiservice Modular Switch, the Intelligent Storage Application Programmatic Interface (ISAPI) crashes and then crashes the Cisco SANTap. This issue causes the switch to reload with the following error:

CH00XF04 %SANTAP-SLOT1-2-ISAPI_CRIT_PROCESS_CRASH: DPP status: ISAPI_DPP_CONNECT_STATUS_NOT_OK. Invalid SANTAP VM size to generate core. SANTAP exiting without core. SANTAP VM Size: 61152kB

CH00XF04 %RM-SLOT1-2-CPP_CATASTROPHIC_ERROR: ERROR: Component (Partner Software) caused critical error. Service Module will be reloaded

Condition: This situation occurs during a normal operation.

Workaround: This issue is resolved.

CSCuf43912

Symptom: Requirement for the default timeout value to change from 200 seconds to 40 seconds.

Workaround: This issue is resolved.

Open Caveats

There are no open caveats.

Related Documentation

The documentation set for NX-OS for the Cisco MDS 9000 Family includes the following documents. To find a document online, access the following web site:

http://www.cisco.com/en/US/products/ps5989/tsd_products_support_series_home.html

The documentation set for Cisco Data Center Network Manager appears in the Cisco DCNM Release Notes for Release 5.2, which is available from the following website:

http://www.cisco.com/en/US/partner/products/ps9369/prod_release_notes_list.html

Release Notes

- Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Releases
- Cisco MDS 9000 Family Release Notes for MDS SAN-OS Releases
- Cisco MDS 9000 Family Release Notes for Storage Services Interface Images
- Cisco MDS 9000 Family Release Notes for Cisco MDS 9000 EPLD Images

Regulatory Compliance and Safety Information

• Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family

Compatibility Information

- Cisco Data Center Interoperability Support Matrix
- Cisco MDS 9000 NX-OS Hardware and Software Compatibility Information and Feature Lists
- Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images
- Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide
- Cisco MDS NX-OS Release Compatibility Matrix for IBM SAN Volume Controller Software for Cisco MDS 9000
- Cisco MDS SAN-OS Release Compatibility Matrix for VERITAS Storage Foundation for Networks Software

Hardware Installation

- Cisco MDS 9500 Series Hardware Installation Guide
- Cisco MDS 9200 Series Hardware Installation Guide
- Cisco MDS 9100 Series Hardware Installation Guide

Cisco MDS 9124 and Cisco MDS 9134 Multilayer Fabric Switch Quick Start Guide

Software Installation and Upgrade

- Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide
- Cisco MDS 9000 Family Storage Services Interface Image Install and Upgrade Guide
- Cisco MDS 9000 Family Storage Services Module Software Installation and Upgrade Guide

Cisco NX-OS

- Cisco MDS 9000 Family NX-OS Licensing Guide
- Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide
- Cisco MDS 9000 Family NX-OS System Management Configuration Guide
- Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide
- Cisco MDS 9000 Family NX-OS Fabric Configuration Guide
- Cisco MDS 9000 Family NX-OS Quality of Service Configuration Guide
- Cisco MDS 9000 Family NX-OS Security Configuration Guide
- Cisco MDS 9000 Family NX-OS IP Services Configuration Guide
- Cisco MDS 9000 Family NX-OS Intelligent Storage Services Configuration Guide
- Cisco MDS 9000 Family NX-OS High Availability and Redundancy Configuration Guide
- Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide

Command-Line Interface

• Cisco MDS 9000 Family Command Reference

Intelligent Storage Networking Services Configuration Guides

- Cisco MDS 9000 I/O Acceleration Configuration Guide
- Cisco MDS 9000 Family SANTap Deployment Guide
- Cisco MDS 9000 Family Data Mobility Manager Configuration Guide
- Cisco MDS 9000 Family Storage Media Encryption Configuration Guide
- Cisco MDS 9000 Family Secure Erase Configuration Guide
- Cisco MDS 9000 Family Cookbook for Cisco MDS SAN-OS

Troubleshooting and Reference

- Cisco NX-OS System Messages Reference
- Cisco MDS 9000 Family NX-OS Troubleshooting Guide

- Cisco MDS 9000 Family NX-OS MIB Quick Reference
- Cisco MDS 9000 Family NX-OS SMI-S Programming Reference

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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