

Release Notes for Cisco MDS 9000 Series

Release 8.4(1)

August 2, 2019

This document describes the features, caveats, and limitations for the Cisco MDS NX-OS software for the use on the Cisco MDS 9000 Series Switches. Use this document in combination with documents listed in the [Obtaining Documentation and Submitting a Service Request](#) section.

Note: 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 Series Release Notes](#).

Date	Description
August 18, 2025	Added CSCwf86751 , CSCwn10124 caveat in the Open Caveats section.
April 04, 2023	Added CSCvw32460 caveat in the open Caveats section.
January 14, 2022	Added CSCvz61883 caveat in the Open Caveats section.
December 15, 2021	Added CSCuv76123 caveat in the Open Caveats section.
September 20, 2021	Added CSCvz09012 caveat in the Open Caveats section.
August 26, 2021	Added ISSD guideline for OBFL TxWait.
July 9, 2021	Added CSCvu52058 caveat in the Open Caveats section. Added CSCvo22269 caveat in the Resolved Caveats section.
November 24, 2020	Added CSCvs87512 caveat in the Open Caveats section. Updated the Components Supported, page 3 section to indicate that Cisco MDS 9148S and MDS 9396S switches are not supported in this release.
November 5, 2020	Added CSCvu86801 caveat in the Open Caveats section.
November 2, 2020	Added the CSCv27832 caveat in the Open Caveats section and removed the CSCvo67571 caveat in the Open Caveats section.
October 30, 2020	Added CSCvt87216 caveat in the Open Caveats section.
October 21, 2020	Added CSCvs57660 caveat in the Open Caveats section.
October 9, 2020	Removed the CSCvt41379 caveat from the Open Caveats section and added the CSCv98829 caveat in the Open Caveats section.
September 29, 2020	Added CSCvt41379 caveat in the Open Caveats section.
September 2, 2020	Added CSCv56650 caveat in the Open Caveats section.
June 29, 2020	Added CSCvu28005 caveat in the Open Caveats section.
May 5, 2020	Added CSCvs45930 caveat in the Open Caveats section.
February 25, 2020	Added CSCvs97168 caveat in the Open Caveats section.
October 21, 2019	Added CSCvr43244 caveat in the Open Caveats section.

Date	Description
September 12, 2019	Added CSCvq17673 caveat in the Open Caveats section.
August 29, 2019	Updated the nondisruptive ISSU and ISSD paths for the Cisco MDS NX-OS Release 8.4(1).
August 2, 2019	Added CSCvn51187 caveat in the Resolved Caveats section.
May 27, 2019	Modified the Choosing Between Cisco MDS NX-OS Open Systems Releases section.
July 27, 2019	Added CSCvm74476 caveat in the Resolved Caveats section.
June 22, 2019	Updated Release Notes for Cisco MDS NX-OS Release 8.4(1).

Introduction

The Cisco MDS 9000 Series of Multilayer Directors and Fabric Switches provide best-in-class high availability, scalability, security, and management, that enables to deploy high-performance storage-area networks. Layering a rich set of intelligent features onto a high-performance switch fabric, the Cisco MDS 9000 Series addresses the stringent requirements of large data center storage environments: high availability, security, scalability, ease of management, and seamless integration of new technologies.

About Software Images

The Cisco MDS NX-OS operating system is shipped with the Cisco MDS 9000 Series Switches. The Cisco MDS NX-OS software consists of two images: the kickstart image and the system image.

- To select the kickstart image, use the KICKSTART variable.
- To select the system image, use the SYSTEM variable.

The images and variables are important factors in any install procedure. Specify the variable and the respective image to upgrade or downgrade a switch. The kickstart and system images are not always required for installing the operating system.

For more information on the image file supported on a Cisco MDS switch, see the [Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 8.x](#).

To download a new Cisco MDS 9000 Series software, including Cisco MDS NX-OS and Cisco DCNM management software, go to the Storage Networking Software download website at <http://www.cisco.com/cisco/software/navigator.html>

Choosing Between Cisco MDS NX-OS Open Systems Releases

Cisco uses release numbering to indicate the maturity of a Cisco MDS NX-OS release train. Cisco MDS NX-OS major versions are incremented when significant software features or hardware support are added. Because of the focus on new features and hardware all defects may not yet have been fixed. After an initial release, minor version numbers of the train are incremented, and only security patches and defect fixes are added, providing better stability to the new features and updated security. Details about the new features and hardware supported by Cisco MDS NX-OS Release 8.4(1) can be found in the [New Hardware and Software Features](#) section. For information about other releases, refer to the Release Notes on the [Cisco MDS 9000 NX-OS and SAN-OS Software](#) documentation page.

For Cisco recommended MDS NX-OS releases for each type of hardware, see the [Recommended Releases for Cisco MDS 9000 Series Switches](#) document.

Components Supported

For information on supported software and hardware components, see the [Cisco MDS 9000 Series Compatibility Matrix](#). Cisco MDS NX-OS Release 8.4(1) is not supported on Cisco MDS 9148S and 9396S4 switches.

FICON

Fibre Connection (FICON) interface capabilities enhance certain Cisco MDS 9000 Series switches by supporting both open systems and mainframe storage network environments.

FICON Supported Platforms

FICON is supported on the following Cisco MDS 9000 Series switches:

- Cisco MDS 9706
 - Cisco MDS 9700 48-Port 32-Gbps Fibre Channel Switching Module (DS-X9648-1536K9)
 - Cisco MDS 24/10-Port SAN Extension Module (DS-X9334-K9)
 - Cisco MDS 48-Port 16-Gbps Fibre Channel Switching Module (DS-X9448-768K9)
- Cisco MDS 9710
 - Cisco MDS 9700-48 Port 32-Gbps Fibre Channel Switching Module (DS-X9648-1536K9)
 - Cisco MDS 24/10-Port SAN Extension Module (DS-X9334-K9)
 - Cisco MDS 48-Port 16-Gbps Fibre Channel Switching Module (DS-X9448-768K9)
- Cisco MDS 9250i

FICON is also supported on the following IBM OEM switches:

- IBM SAN192C-6
 - IBM 48 Port 32-Gbps Fibre Channel Switching Module (01FT644)
 - IBM 24/10 Port SAN Extension Module (01FT645)
- IBM SAN384C-6
 - IBM 48 Port 32-Gbps Fibre Channel Switching Module (01FT644)
 - IBM 24/10 Port SAN Extension Module (01FT645)
- IBM SAN50C-R

FICON Supported Releases

The Cisco MDS NX-OS Release 8.1(1a) and Release 8.1(1b) are IBM-qualified FICON releases for Cisco MDS. From Cisco MDS NX-OS Release 8.1(1b), FICON is supported on the Cisco MDS 9700 48 Port 32-Gbps Fibre Channel Switching Module.

The list of the Cisco MDS NX-OS releases that are qualified for FICON. Refer to the specific release notes for FICON upgrade path information.

- Release 8.1(1b)
- Release 8.1(1a)

- Release 6.2(11e)
- Release 6.2(11d) for the Cisco MDS 9250i Switch only
- Release 6.2(11c) for all FICON supported platforms except the Cisco MDS 9250i Switch

Upgrading Cisco MDS NX-OS Software Image

This section lists the guidelines recommended for upgrading Cisco MDS NX-OS software image and includes the following topics:

- [General Upgrading Guidelines](#)
- [Nondisruptive Upgrade Paths](#)
- [FICON Upgrade Paths](#)

For detailed instructions for performing a software upgrade using the switch CLI, see the [Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 8.x](#).

For detailed instructions for performing a software upgrade using Cisco DCNM, see the [Cisco DCNM Release Notes](#).

General Upgrading Guidelines

This section lists the general guidelines for performing a software upgrade:

- Install and configure dual supervisor modules before the upgrade.
- Issue the show install all impact upgrade-image command to determine if the upgrade will be nondisruptive.
- Some features are impacted whether an upgrade is disruptive or nondisruptive:
 - Fibre Channel Ports: Fibre Channel ports can be nondisruptively upgraded without affecting traffic on the ports. See the [Nondisruptive Upgrade Paths](#) section for all MDS NX-OS releases.
 - Gigabit Ethernet Ports: Traffic on Gigabit Ethernet or IPStorage ports is disrupted during an upgrade or downgrade. This includes IPStorage ports on the MDS 9250i and Cisco MDS 24/10 Port SAN Extension Module. Nodes that are members of VSANs traversing an FCIP ISL are impacted, and a fabric reconfiguration occurs. iSCSI initiators connected to the Gigabit Ethernet ports lose connectivity to iSCSI targets while the upgrade is in progress.

Note: In addition to these guidelines, review the information in the [Limitations and Restrictions](#) section before a software upgrade to determine if a feature may possibly behave differently following the upgrade.

- To upgrade or downgrade to a Cisco MDS NX-OS release version, the same release version of the kickstart and system images in the install all command must be used.
- If you are upgrading Cisco MDS 9700 Series Switches from Cisco MDS NX-OS Release 8.3(1), Release 8.3(2), Release 8.4(1), and Release 8.4(1a) to Release 8.4(2) or later, ensure that you perform a switchover before upgrading. For more information, see CSCvt87216.

Nondisruptive Upgrade Paths

The software upgrade information in this section applies only to Fibre Channel switching traffic. Upgrading system software disrupts IP traffic and intelligent services traffic.

Note: If the SAN analytics feature is enabled, then disable the SAN analytics feature using the no feature analytics command before upgrading from Cisco MDS NX-OS 8.2(x) or Cisco MDS NX-OS 8.3(x) to Cisco MDS NX-OS Release 8.4(1).

Table 1. Nondisruptive Upgrade Paths to Cisco MDS NX-OS Release 8.4(1)

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
All 8.x releases	Upgrade directly to MDS NX-OS Release 8.4(1)
All 7.3(x) releases	<ol style="list-style-type: none"> 1. Upgrade to MDS NX-OS Release 8.1(1b) 2. Upgrade to MDS NX-OS Release 8.4(1)
All 6.2(13a) and above releases	<ol style="list-style-type: none"> 1. Upgrade to MDS NX-OS Release 8.1(1b) 2. Upgrade to MDS NX-OS Release 8.4(1)
All 6.2(x) releases prior to 6.2(13a)	<ol style="list-style-type: none"> 1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 8.1(1b) 3. Upgrade to MDS NX-OS Release 8.4(1)

For FICON upgrade paths, see the [FICON Upgrade Paths](#) section.

FICON Upgrade Paths

Use the table to determine the nondisruptive upgrade path for FICON-qualified releases. Find the image release number using the Current Release with FICON Enabled column of the table and follow the recommended path.

Table 2. FICON Nondisruptive Upgrade Paths

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
MDS NX-OS Release 8.1(1a)	Upgrade directly to MDS NX-OS Release 8.1(1b).
MDS NX-OS Release 6.2(11e)	<ol style="list-style-type: none"> 1. Upgrade directly to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.1(1b)
MDS NX-OS Release 6.2(11d)	<ol style="list-style-type: none"> 1. Upgrade directly to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.1(1b)
MDS NX-OS Release 6.2(11c)	<ol style="list-style-type: none"> 1. Upgrade directly to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.1(1b)

Downgrading Cisco MDS NX-OS Software Image

This section lists the guidelines recommended for downgrading Cisco MDS NX-OS software image and includes the following topics:

- [General Downgrading Guidelines](#)
- [Open Systems Nondisruptive Downgrade Paths](#)

- [Nondisruptive Downgrade Paths](#)
- [FICON Downgrade Paths](#)

For detailed instructions for performing a software downgrade using the switch CLI, see [the Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 8.x](#).

General Downgrading Guidelines

Follow these general guidelines before performing a software downgrade:

- Disable all features that are not supported by the downgrade release. Use the show incompatibility system downgrade- image command to determine the features that needs to be disabled.
- Use the show install all impact downgrade-image command to determine if the downgrade is nondisruptive.
- The following features are impacted during a downgrade, whether it is a nondisruptive downgrade or a disruptive downgrade:
 - Fibre Channel Ports: Fibre Channel ports can be nondisruptively downgraded without affecting traffic on the ports.
 - Gigabit Ethernet Ports: Traffic on IPStorage ports is disrupted during a downgrade. This includes IPStorage ports in MDS 9250i and 24/10 Port SAN Extension Module. Nodes that are members of VSANs traversing an FCIP ISL are impacted, and a fabric reconfiguration occurs. iSCSI initiators connected to the Gigabit Ethernet ports lose connectivity to iSCSI targets while the downgrade is in progress.

Find the MDS NX-OS image that you want to downgrade to in the To MDS NX-OS Release column of the table and follow the steps in the order specified to perform the downgrade.

Note: The software downgrade information in the below tables applies only to Fibre Channel switching traffic. Downgrading system software disrupts IP and intelligent services traffic.

- Any hardware that is not supported by the downgrade release version will be powered down when the downgrade release starts running. Power off and or remove any unsupported components before downgrading. For more information about supported hardware see the Cisco MDS 9000 Series Compatibility Matrix.

Note: If you are downgrading from Cisco MDS NX-OS Release 9.2(1) or later releases to a release prior to Cisco MDS NX-OS Release 9.2(1), ensure that you use the clear logging onboard txwait command after downgrading. Otherwise, logging to the OBFL TxWait file may cease with an error. For more information, see the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 9.x.

ISSD Guidelines for Cisco MDS 9396S Switch

- Downgrading from Cisco MDS NX-OS Release 8.x to Cisco MDS NX-OS Release 7.3(0)D1(1) or Cisco MDS NX-OS Release 6.2(13a) is not supported on a Cisco MDS 9396S Switch which has DS-CAC-1200W as a power supply unit (PSU) and DS-C96S-FAN-I as port side intake fan tray.
- Downgrading from Cisco MDS NX-OS Release 8.x to Cisco MDS NX-OS Release 6.2(13) is not supported on the Cisco MDS 9396S Multilayer Fabric Switch. The minimum recommended image for Cisco MDS 9396S Multilayer Fabric Switch is 6.2(13a).

ISSD Guidelines for Cisco MDS 9250i Switch

- Downgrading from Cisco MDS NX-OS Release 8.x to Cisco MDS NX-OS Release 7.3(0)D1(1), or 6.2(13a) and lower is not supported on a Cisco MDS 9250i Switch which has only one online PSU.
- Downgrading from Cisco MDS NX-OS Release 8.x to Cisco MDS NX-OS Release 7.3(0)D1(1), or 6.2(13a) and lower on a Cisco MDS 9250i Switch with two online PSUs results in loss of N:N grid redundancy. The switch will run in non- redundant mode.
- Downgrading from Cisco MDS NX-OS Release 8.x to Cisco MDS NX-OS Release 7.3(0)D1(1), or 6.2(13a) and lower on a Cisco MDS 9250i Switch with three online PSUs results in loss of N:N grid redundancy. The switch will run in N+1 power redundant mode.

Open Systems Nondisruptive Downgrade Paths

- Downgrading directly from Cisco MDS NX-OS Releases 8.1(1) and Release 8.1(1b) to releases before Cisco MDS NX- OS Release 6.2(9) is not supported. In such a scenario, we recommend that you first downgrade to Cisco MDS NX-OS Release 6.2(13a) or higher and then downgrade to the required release.
- Downgrading directly from Cisco MDS NX-OS Release 8.1(1) to Cisco MDS NX-OS Release 7.3(0)DY(1) is not supported. In such a scenario, we recommend that you first downgrade to Cisco MDS NX-OS Release 7.3(0)D1(1) and then upgrade to 7.3(0)DY(1).
- Downgrading directly from Cisco MDS NX-OS Release 8.1(1) to Cisco MDS NX-OS Release 7.3(1)DY(1) is not supported. In such a scenario, we recommend that you first downgrade to Cisco MDS NX-OS Release 7.3(0)D1(1) and then upgrade to 7.3(1)DY(1).
- Downgrading from Cisco MDS NX-OS Releases 8.1(1) and 8.1(1b) is not supported if the FLOGI Scale Optimization feature is enabled on the Cisco MDS 9718 Switches.

Nondisruptive Downgrade Paths

Table 3. Nondisruptive Downgrade Paths to Cisco MDS NX-OS Release 8.4(1)

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
All 8.x releases	Downgrade directly from MDS NX-OS Release 8.4(1)
All 7.3(x) releases	<ol style="list-style-type: none">Downgrade to MDS NX-OS Release 8.1(1b)Downgrade to the target release
All 6.2(13a) and above releases	<ol style="list-style-type: none">Downgrade to MDS NX-OS Release 8.1(1b)Downgrade to the target release
All 6.2(x) releases prior to 6.2(13a)	<ol style="list-style-type: none">Downgrade to MDS NX-OS Release 8.1(1b)Downgrade to MDS NX-OS Release 6.2(13a)Downgrade to the target release

FICON Downgrade Paths

The table lists the downgrade paths for FICON releases. Find the image release number that you want to downgrade to in the To Release with FICON Enabled column of the table and follow the recommended downgrade path.

Table 4. FICON Nondisruptive Downgrade Paths from MDS NX-OS Release 8.1(1b)

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
MDS NX-OS Release 8.1(1a)	Downgrade directly from MDS NX-OS 8.1(1b)
MDS NX-OS Release 6.2(11e)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 8.1(1a)2. Downgrade to the target release
MDS NX-OS Release 6.2(11d)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 8.1(1a)2. Downgrade to the target release
MDS NX-OS Release 6.2(11c)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 8.1(1a)2. Downgrade to the target release
MDS NX-OS Release 6.2(5b)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 6.2(11c) or 6.2(11e)2. Downgrade to the target release
MDS NX-OS Release 6.2(5a)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 8.1(1a)2. Downgrade to the target release
MDS NX-OS Release 5.2(2) and 5.2(2s)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 6.2(5b)2. Downgrade to the target release
MDS NX-OS Release 4.2(7b)	<ol style="list-style-type: none">1. Downgrade to MDS NX-OS Release 5.2(2) or 5.2(2s)2. Downgrade to the target release
MDS NX-OS Release 4.2(1b)	<ol style="list-style-type: none">1. Downgrade directly from NX-OS Release 4.2(7b)2. Downgrade to the target release
MDS NX-OS Release 4.1(1c)	<ol style="list-style-type: none">1. Downgrade directly from NX-OS Release 4.2(1b)2. Downgrade to the target release

New Hardware and Software Features

New Hardware Features

This section lists the new hardware chassis and features introduced in Cisco MDS NX-OS Release 8.4(1).

Cisco MDS 9700 Series Supervisor-4 Module

The Cisco MDS 9700 Series Supervisor-4 Module (DS-X97-SF4-K9) is introduced for the Cisco MDS 9706 and 9710 Multilayer Directors.

Note: Supervisor-4 Module is not supported for the Cisco MDS 9718 Multilayer Director in this release.

For more information, see the [Cisco MDS 9700 Series Supervisor-4 Module](#) section in the *Cisco MDS 9700 Series Hardware Installation Guide*.

Cisco MDS 9710 Crossbar Fabric-3 Switching Module

Cisco MDS 9710 Crossbar Fabric-3 Switching Module (DS-X9710-FAB3) is introduced for the Cisco MDS 9710 Multilayer Director.

For more information, see the [Cisco MDS 9710 Director Crossbar Fabric Switching Modules](#) section in the *Cisco MDS 9700 Series Hardware Installation Guide*.

Cisco MDS 9706 Crossbar Fabric-3 Switching Module

Cisco MDS 9706 Crossbar Fabric-3 Switching Module (DS-X9706-FAB3) is introduced for the Cisco MDS 9706 Multilayer Director.

For more information, see the [Cisco MDS 9706 Director Crossbar Fabric Switching Modules](#) section in the *Cisco MDS 9700 Series Hardware Installation Guide*.

New Software Features

The following software features were introduced in Cisco MDS NX-OS Release 8.4(1):

Ansible

Support for Ansible was introduced on Cisco MDS devices. Ansible is an open-source IT automation engine that automates cloud provisioning, configuration management, application deployment, intraservice orchestration, and other IT needs. Similar to Puppet, and Chef, Ansible enables administrators to manage, automate, and orchestrate various types of server environments. Ansible is agentless, and does not require a software agent to be installed on the target node (server or switch) in order to automate the device.

For more information, see the [Ansible](#) section in the *Cisco MDS 9000 Series Programmability Guide, Release 8.x Guide*.

Support for Migrating a Cisco MDS 9700 Series Supervisor-1 Module to a Supervisor-4 Module

Nondisruptive migration support was introduced to seamlessly migrate the Cisco MDS 9700 Supervisor-1 Modules to the new Supervisor-4 Modules in the Cisco MDS 9706 and Cisco MDS 9710 Multilayer Directors.

For more information, see the Nondisruptive Migration from a Supervisor-1 Module to a Supervisor-4 Module section in the *Cisco MDS 9700 Series Hardware Installation Guide*.

Support for Migrating Cisco MDS Crossbar Fabric-1 Switching Modules to Fabric-3 Modules

Nondisruptive migration support was introduced to seamlessly migrate the Cisco MDS Crossbar Fabric-1 Switching Modules (DS-X9706-FAB1 and DS-X9710-FAB1) to the new Cisco MDS Crossbar Fabric-3 Switching Modules (DS-X9706-FAB3 and DS-X9710-FAB3) on the Cisco MDS 9706 and Cisco MDS 9710 Multilayer Directors.

For more information, see the Nondisruptive Migration from Crossbar Fabric-1 Switching Modules to Crossbar Fabric-3 Switching Modules section in the *Cisco MDS 9700 Series Hardware Installation Guide*.

Uniform Timestamps

The Uniform Timestamps feature introduces support for RFC 5424 format timestamps for logs produced by multiple software components. This allows easier log merging and searching, reducing time to resolution of issues.

The following commands were introduced:

- **system timestamp format**
- **show system timestamp format**

For more information, see the Cisco MDS 9000 Series System Management Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Enhanced Software Features

The following software features were enhanced in Cisco MDS NX-OS Release 8.4(1):

Autozone

The Autozone feature has been enhanced. Autozone provides options to enable or disable automatically saving of the running- configuration to the startup-configuration after making a zoning change, using the enableautosave and disableautosave options respectively.

The autozone command was modified to the autozone-enable command.

For more information, see the Cisco MDS 9000 Series Command Reference, Release 8.x.

Buffer-to-Buffer Credit Recovery

The Buffer-to-Buffer Credit feature has been enhanced. NP ports support buffer-to-buffer credit recovery for Cisco NPV switch logins. Added Buffer-to-Buffer State Change SOF (BB_SCs) and Buffer-to-Buffer State Change R_RDY (BB_SCr) counter information in the show interface counters detailed command.

For more information, see the “Configuring Interface Buffers” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Consistency Checker

The Consistency Checker feature has been enhanced. Added support to display the access control list (ACL), forwarding information base (FIB), and persistent storage service (PSS) consistency information, using the show consistency-checker command.

For more information, see the Cisco MDS 9000 Series Fundamentals Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Congestion Detection

The Congestion Detection feature has been enhanced. The show hardware internal rxwait-history, show hardware internal txwait-history and show process creditmon txwait-history commands were replaced by the show interface interface-range rxwait-history and show interface interface-range txwait-history commands respectively.

For more information, see the “Congestion Detection, Avoidance, and Isolation” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Congestion Isolation

The Congestion Isolation feature has been enhanced. Added virtual link (VL) information in the show interface interface- range counters, show interface interface-range counters detailed, show logging onboard txwait and show interface interface-range aggregate-counters command outputs.

For more information, see the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Configuration Limits

The Fabric Logins (FLOGIs) or Fabric Discovery (FDISC) limits has been enhanced. The FLOGIs or FDISC limit per switch for the Cisco MDS 9132T, Cisco MDS 9396T, and Cisco MDS 9148T Fabric switches was increased from 1000 to 2000.

For more information, see the Cisco MDS NX-OS Configuration Limits, Release 8.x.

Fibre Channel over Ethernet (FCoE)

The FCoE feature has been enhanced. The following show command outputs were modified:

- **show interface priority-flow-control**
- **show interface vfc interface-range counters detailed**

For more information, see the “Congestion Detection, Avoidance, and Isolation” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x and the Cisco MDS 9000 Series Command Reference, Release 8.x.

Port Beacons

The Port Beacons feature was enhanced. This feature is supported on the Cisco MDS switches that are operating in Cisco NPV mode.

For more information, see the “Configuring Interfaces” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x.

Port Channel

The Port Channel feature was enhanced. The default port channel mode is changed from On to Active for newly created port channels.

For more information, see the “Configuring Port Channels” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x.

Port Monitor

The Port Monitor feature was enhanced. Added support to configure a severity level for port monitor syslog messages.

For more information, see the “Configuring Interfaces” chapter in the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 8.x.

SAN Analytics and SAN Telemetry Streaming

The SAN Analytics and SAN Telemetry Streaming feature was enhanced. This feature supports Non-Volatile Memory Express (NVMe) analytics type. New NVMe view instances and flow metrics were added.

This feature is supported on the Cisco MDS 9396T 32-Gbps 96-Port Fibre Channel Fabric Switch and Cisco MDS 9148T 32-Gbps 48-Port Fibre Channel Fabric Switch.

The fabric_telemetry.proto file is updated with the NVMe flow metrics.

The show analytics schema command is introduced to display schema for the SCSI and NVMe analytics types. The following commands were modified:

- **no analytics type {fc-all | fc-nvme | fc-scsi}**
- **show analytics flow congestion-drops [vsan number] [module number port number]**

The following command outputs were modified:

- **show analytics port-sampling module number**
- **show analytics system-load**
- **ShowAnalytics (--minmax, --errorsonly, --evaluate-npload, --vsan-thput, --outstanding-io, --top, --alias, --key, -- module, --progress, --refresh, and --limit options were added in the show output)**

For more information, see the [Cisco MDS 9000 Series SAN Analytics and Telemetry Configuration Guide, Release 8.x](#) and the [Cisco MDS 9000 Series Command Reference, Release 8.x](#).

Licensed Cisco NX-OS Software Packages

Most Cisco MDS 9000 Series software features are included in the standard package. However, some features are logically grouped into add-on packages that must be licensed separately, such as the Cisco MDS 9000 Enterprise package, SAN Analytics Solution Package, SAN Extension over IP package, On-Demand Port Activation, and the Mainframe package.

Note: Cisco MDS 24-Port 40-Gigabit Fibre Channel over Ethernet Module (DS-X9824-960K9), and the Cisco MDS 48-Port 10-Gigabit Fibre Channel over Ethernet Module (DS-X9848-480K9) does not require a license.

For more information about licensed Cisco NX-OS software packages, see [Cisco MDS Licensing Datasheets](#).

Enterprise Package

The standard software package that is bundled at no charge with the Cisco MDS 9000 Series switches includes the base set of features that we believe are required by most customers for building a SAN. The Cisco MDS 9000 Series also has a set of advanced features that are recommended for all enterprise SANs. These features are bundled together in the Cisco MDS 9000 Enterprise package. Refer to the Cisco MDS 9000 Enterprise Package Data Sheet for more information.

Note: The IVR feature on Cisco MDS 9700 Series Directors with the Cisco MDS 24/10 port SAN Extension Module (DS- X9334-K9) requires an Enterprise package.

SAN Analytics Solution Package

To use the SAN Analytics and SAN Telemetry Streaming features, install appropriate license packages using the install license command. For more information, see the Cisco MDS 9000 Series Licensing Guide.

SAN Extension Over IP Package

The Cisco MDS 9000 SAN Extension over IP package allows the customer to use FCIP to extend SANs over wide distances on IP networks using the Cisco MDS 9000 Series IP storage services. Refer to the Cisco MDS 9000 SAN Extension over IP Package fact sheet for more information.

Note: The FCIP feature on Cisco MDS 9700 Series Directors with the Cisco MDS 24/10 port SAN Extension Module (DS- X9334-K9) does not require a license.

On-Demand Port Activation License

On-Demand Port Activation license allows customers to benefit from Cisco NX-OS Software features while initially purchasing only a few activated ports on the Cisco MDS 9250i Multiservice Fabric Switch, Cisco MDS 9148S 48-Port Multilayer Fabric Switch, Cisco MDS 9396S Multilayer Fabric Switch, Cisco MDS 9148T Fibre Channel Switch, the Cisco MDS 9132T Fiber Channel Switch, and the Cisco MDS 9396T Fibre Channel Switch. As needed, customers can expand switch connectivity by licensing additional ports.

For more information on the On-Demand Port Activation License, see the Cisco MDS 9000 Series Licensing Guide, Release 8.x.

I/O Accelerator Package

Starting from Cisco MDS NX-OS Release 8.2(1), the Cisco I/O Accelerator (IOA) package activates IOA on the Cisco MDS 24/10 Port SAN Extension module. A single license is applicable for both the engines in Cisco MDS 24/10 port SAN Extension Module. The IOA package is licensed per module and is tied to the chassis. Each Cisco MDS 24/10 Port SAN Extension module engine that you configure for IOA checks out a license from the pool managed at the chassis level. Cisco MDS 24/10 Port SAN Extension module IOA licenses are available as single licenses.

Unsupported Features

Data Mobility Manager

Starting from Cisco MDS NX-OS Release 8.1(1), the Cisco MDS Data Mobility Manager is not supported on Cisco MDS 9000 Series Switches.

Zoning Features

LUN zoning, read-only zones, and broadcast zones are no longer supported. These features affect the following hardware:

- Cisco MDS 9250i Multiservice Fabric Switch
- Cisco MDS 9396S Multilayer Fabric Switch
- Cisco MDS 9700 48-port 16-Gbps Fibre Channel Module

If these features are already configured, completely remove all the configurations that include these features before attempting to bring up these modules. In addition, you cannot configure these features after you bring up these modules.

Slow Drain Detection and Congestion Isolation Enhancements

ER_RDY is not supported on FC interfaces running at 10 Gbps.

XRC Acceleration License

Starting from Cisco MDS NX-OS Release 8.1(1a), the Cisco Extended Remote Copy (XRC) acceleration license is obsoleted on Cisco MDS 9000 Series Switches due to improvements in the mainframe XRC feature.

FICON Tape Acceleration

FICON Tape Acceleration (FTA) is not supported on Cisco MDS 24/10 SAN Extension Module in Cisco MDS NX-OS Release 8.1(1a) but it is supported in Cisco MDS NX-OS Release 8.1(1b).

FICON on Cisco MDS 48-Port 32-Gbps Fibre Channel Switching Module

FICON is not supported on Cisco MDS 48-Port 32-Gbps Fibre Channel Switching Module in Cisco MDS NX-OS Release 8.1(1a) but it is supported in Cisco MDS NX-OS Release 8.1(1b).

Virtual Router Redundancy Protocol (VRRP)

From Cisco MDS NX-OS Release 8.3(1) and later, the VRRP feature is not supported on Cisco MDS 9000 Series Switches.

Deprecated Hardware

Starting from Cisco MDS NX-OS Release 8.1(1), the following hardware models are not supported:

- Cisco MDS 9513
- Cisco MDS 9509
- Cisco MDS 9506
- Cisco MDS 9500 Series Supervisor-2A Module
- Cisco MDS 24-Port 8-Gbps Fibre Channel Switching Module
- Cisco MDS 48-Port 8-Gbps Fibre Channel Switching Module
- Cisco MDS 32-Port 8-Gbps Advanced Fibre Channel Switching Module
- Cisco MDS 48-Port 8-Gbps Advanced Fibre Channel Switching Module
- Cisco MDS 10-Gbps 8-Port FCoE Module
- Cisco MDS 16-Port Storage Services Node (SSN-16)
- Cisco MDS 18/4-Port Multiservice Module (MSM)

Limitations and Restrictions

Fibre Channel Read Diagnostic Parameters

Fibre Channel RDP querying is not supported on NPV, Port Channel or FCoE links.

FCIP Support

- In Cisco MDS NX-OS Release 8.x, FCIP Write Acceleration is not supported between 24/10 San Extension Module and Cisco 18+4 MSM and Cisco SSN16 Modules.
- In Cisco MDS NX-OS Release 8.x, FCIP Write Acceleration along with IVR is not supported on FCIP tunnels configured on Cisco MDS 9700 Series switches.
- FCIP tunnels using Cisco MDS 24/10 Port SAN Extension Module cannot be used across FSPF equal cost paths.

40GE IP Storage Interfaces Support

40GE IP Storage Interfaces are not supported.

iSCSI Support

iSCSI is not supported on Cisco MDS 9700 Directors with Cisco MDS 24/10 port SAN Extension Modules.

HVDC PSU Support

The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in Cisco MDS NX-OS Releases 8.1(1) and 8.1(1a). Do not attempt to load these releases on devices equipped with these PSUs or the systems will fail to power up.

Cisco TrustSec FC Link Encryption

Cisco TrustSec FC Link Encryption support for the following modules is available only on certain ports as mentioned below:

- 48 port 32 Gbps Fibre Channel Switching Module (DS-X9648-1536K9)—support for Cisco TrustSec FC Link Encryption is available only on ports 9-12, 25-28 and 41-44.
- Cisco MDS 9132T Fibre Channel Switch—support for Cisco TrustSec FC Link Encryption is available only on ports 9-12, 25-28.
- Cisco MDS 9148T Fibre Channel Switch—support for Cisco TrustSec FC Link Encryption is available only on ports 9-12, 25-28 and 41-44.
- Cisco MDS 9396T Fibre Channel Switch—support for Cisco TrustSec FC Link Encryption is available only on 9-12, 25- 28, 41-44 base ports, and 57-60, 73-76 and 89-92 LEM ports as applicable.

Caveats

Subscribing for Important Product Update Notifications

Cisco provides a subscription service to notify of important events related to the Cisco MDS software and hardware for the following categories:

- Cisco Security Advisories
- Field Notices
- End-of-Sale, End-of-Life, and End-of-Support Announcements
- Software Updates [New, Certified, Software Advisories, Deferred, Obsoleted]
- Updates to Known Bugs

We recommend that you at least subscribe to the Field Notices, Security Advisories, and Software Updates [New, Certified, Software Advisories, Deferred, Obsoleted] categories, if not all categories, so that you can receive notifications about any critical product issues.

To subscribe to a category for receiving notifications of important updates:

1. Go to <https://cway.cisco.com/mynotifications>, and log in to your account.
2. Click Create Subscription.
3. Follow the onscreen instructions.

Note: You must renew your notification subscriptions annually.

Resolved Caveats

Table 5. Resolved Caveats in the Cisco MDS NX-OS Release 8.4(1)

Caveat ID	Description	Known Impacted 8.x Releases
CSCvj53221	MDS 9396T: Discrepancy in credit loss events under creditmon and hardware errors during ISSU.	8.3(2), 8.3(1)
CSCvj58258	DM fan LED does not change to red when a fan is absent in MDS 9148T.	8.3(2), 8.3(1)
CSCvj69154	" show system internal statsprofiler " command is not available in MDS 9132 npv mode.	8.3(2), 8.3(1)
CSCvk00570	DM: IPS sub interface creation for VLAN 1024 and above fails.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvk21939	MDS 9700 ports can go to notConnected state after reload or when several ports flapped.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvk22116	MDS 9132T/9148T/9396T ports can go to notConnected state after reload or when several ports flapped.	8.3(2), 8.3(1), 8.2(2), 8.2(1)
CSCvk27502	MDS9000:If ip name-server configured in switch, LDAP authentication failing.	8.3(1), 8.2(1), 8.1(1a), 8.1(1)
CSCvk59664	Port-channel counters do not reflect the Percentage Tx credits not available.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvm01925	Closing FCNS logins during ISSU/D or FCNS restart causes end devices to lose connectivity.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvm74476	SEC-TIM-LOG: Unable to unconfigure NTP server after ntp sync-retry fails on MDS platform.	8.3(2), 8.3(1)
CSCvm77301	FCIP tunnel fails with persist timer expired.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvm97591	Need option cli_array to display single element as list in NXAPI json/xml output for MDS switch.	8.3(2), 8.3(1)
CSCvn31010	Analytics - acl_mode config timeout; port goes to errdisabled.	8.3(2), 8.3(1)
CSCvn36429	Service " AAA Daemon" failed to store its configuration (error-id 0x80480018).	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1), 8.1(1b), 8.1(1a)
CSCvn37090	Inconsistent telemetry streaming during upgrade from 8.3.1 to 8.3.2.	8.3(2)

Caveat ID	Description	Known Impacted 8.x Releases
CSCvn37920	MDS 9148S Timeout drops after non-disruptive upgrade from 6.2(21) to 6.2(23).	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvn46861	Standby Supervisor reloads under circumstances of SAN analytics exceeding recommended scale limits.	8.3(2)
CSCvn51187	FPNG (FC Ping CT Command) fails after ISSU to version NX-OS 8.4(1).	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1), 8.1(1b), 8.1(1a)
CSCvn66653	MDS9148S very high SFP temperature alarms.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a)
CSCvn69965	%ANALYTICS-4-FTMGR_MOD_HIGH_NPU_LOAD syslog is shown during analytics feature disable.	8.3(2)
CSCvn75741	Shutting down Power Supply in MDS 9148T causes Emergency level Kernel IC2 Nack errors.	8.3(2), 8.3(1), 8.2(2), 8.2(1)
CSCvn92838	Low bit error rate brings down FC interface due to bit error rate too high on 32G modules.	8.3(2), 8.3(1), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvn95605	Callhome HTTP does not transport message for MDS OS version 8.x	8.1(1a)
CSCvo11715	FC port goes into Out of Service state if out-of-service is configured in the startup-config.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo18791	MDS: SPAN fcip interface causes throttling throughput.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo22269	ISSU/D is disruptive on MDS fabric switches with error 0x40930073.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo31940	FCoE: show logging onboard txwait and rxwait shows 100% congestion during ISSU.	8.3(2), 8.3(1), 8.2(2), 8.2(1)
CSCvo71313	MDS showanalytics command will not output any information if total ITLs is greater than 20000.	8.3(2)
CSCvo72141	GPSC returns unknown, speed not established.	8.3(2), 8.3(1),

Caveat ID	Description	Known Impacted 8.x Releases
		8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo74692	IPS ports on 40G linecard enter 'Hardware Failure' when adjacent switch performs ISSU to 8.3(2).	8.3(2), 8.3(1) 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo75187	'Link failure Link Reset failed nonempty recv queue' during ISSU to 8.3(2).	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo75910	ASLR related error message on standby.	8.3(2)
CSCvo76840	Update Cisco MDS 9132T, MDS 9396, MDS 9148T BIOS with update for spectre/meltdown microcode fix.	8.3(2), 8.3(1), 8.2(1)
CSCvo78766	MDS frames stuck on ingress with DI 0x3FF(1023) when analytics is configured.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo82025	Devices unable to FLOGI in to a MDS 9718 after module x crash during ISSU.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo83319	IPS 24/10 module port software failure during ISSU.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvo83652	'show logging onboard flow-control request-timeout' shows wrong Dest Intf for DI.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp00465	IntPortLoopback tests fail after FCIP tunnels are closed from the remote side.	8.3(2), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp04350	Invalid output when using the REST API call for show interface transceiver.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp18930	Supervisor failure after port channel FOP changes.	8.3(2), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)

Caveat ID	Description	Known Impacted 8.x Releases
CSCvp21116	Memory leak causing CDP process to crash.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp25022	MDS link won't come up with non Cisco peer at 32 Gbps.	8.3(2), 8.3(1), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp29084	CPU I2C stuck - both power supply fans reported failed on MDS 9396S.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp34165	Zone member from SNMP output should contain renamed device alias.	8.3(2), 8.3(1), 8.2(2), 8.2(1) 8.1(1b), 8.1(1a), 8.1(1)
CSCvp37076	MDS 9250i Bit errors on one port are attributed to a different port.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp47492	MDS 9148S ports fail Link failure Link Reset failed nonempty recv queue - stay in notConnected state.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCvp59843	MDS9250i: 'acl' service crash during 'copy run start' causes 0x401E0045 error.	8.3(2), 8.3(1), 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)

Open Caveats

Table 6. Open Caveats in the Cisco MDS NX-OS Release 8.4(1)

Caveat ID	Description	Known Impacted 8.x Releases
CSCuv76123	fcdomain for VSAN hung in "Principal Switch Selection ongoing".	8.x 7.x 6.x
CSCvf08416	M9132T, M9396S: pam_ftp(ftp:auth): conversation failed syslog is displayed in the show tech details.	8.4(1) 8.3(2), 8.3(1) 8.2(2), 8.2(1)
CSCvj63083	The slot x show commands should not be logged in the accounting logs.	8.4(1)

Caveat ID	Description	Known Impacted 8.x Releases
		8.3(2), 8.3(1) 8.2(2), 8.2(1)
CSCvj90524	Port sampling CLI: show command doesn't update immediately if analytics is enabled/disabled on port.	8.4(1), 8.3(2), 8.3(1)
CSCvj93031	Show system login failures does not display IPv6 addresses.	8.4(1) 8.3(2), 8.3(1)
CSCvn60892	Zoneset activation is disruptive for analytics entries.	8.4(1) 8.3(2)
CSCvn63182	ISSU/ISSD/supervisor switchover may cause traffic impact in IOA flows.	8.4(1) 8.3(2), 8.3(1)
CSCvn73451	MDS: Logging level for IP ACL is missing in startupconfig after setting logging level all and copy r s.	8.4(1)
CSCvn95578	sudo message from " show system internal kernel memory global detail".	8.4(1), 8.3(2)
CSCvn97463	ShowAnalytics - backspace is not working after listing options on all platform.	8.4(1)
CSCvo22835	While moving IOA flow between 2 clusters, all flows are briefly suspended.	8.4(1) 8.3(2), 8.3(1) 8.2(2), 8.2(1) 8.1(1b), 8.1(1a), 8.1(1)
CSCvo27618	Analytics scale: acl timeouts are observed with scale configs;notconnected/flogi fails/fdisk TO.	8.4(1)
CSCvo67571	Cisco MDS 9250i: Netsim: Octeon crash when netsim enabled.	8.4(1)
CSCvp10372	Syslog " CARDCLIENT-3-CARDCL_ERR: cardcl_send_all_case_sse. Error on devid:49" during ISSU/ ISSD.	8.4(1) 8.3(2), 8.3(1) 8.2(2), 8.2(1) 8.1(1b), 8.1(1a), 8.1(1)
CSCvp18779	Migration: Image sync didn't happen when migration command is issued using custom named images.	8.4(1)
CSCvp36743	VSAN filter applied on an already active span session does not work.	8.4(1)
CSCvp45657	M9250i set of ports encountered hardware failure when activating DPVM.	8.4(1)
CSCvp46769	Syslog " firmware app: sdwrap: unknown syslog level:10 - fw_app" printed during switchover.	8.4(1)

Caveat ID	Description	Known Impacted 8.x Releases
CSCvp48050	MDS 9700 Control Plane Packet drop seen during when switch comes up.	8.4(1)
CSCvp51663	MDS 9148S reload triggered by high receive multicast traffic rate on IPFC interface.	8.4(1), 8.3(1)
CSCvp70681	MDS: Receiver stays in "idle"; no streaming to one receiver; single threaded telemetry.	8.4(1)
CSCvp86423	DS-X9334-K9 - h/w and s/w tables for span entries not matched after ISSU to 8.4(1).	8.4(1)
CSCvp86590	RBAC: User with permit access to analytics should have access to enable feature at interface level.	8.4(1)
CSCvp92163	MDS 9700: Tx span not working after ISSU to 8.4(1).	8.4(1)
CSCvp93262	MDS 9706 DS-X9448-768K9: Line card fails to come up after ISSU from 8.3(1a) to 8.4(1).	8.4(1)
CSCvp98224	When registering to Smart Licensing Portal the device name is shown "switch", and not real name.	8.4(1)
CSCvq17673	Connectivity lost to end devices that don't register FC4 features.	8.4(1) 8.3(2), 8.3(1) 8.2(2), 8.2(1)
CSCvq20428	SUP4 NPE: Migration from SUP2 to SUP4 results in image getting renamed to regular image.	8.4(1)
CSCvq21604	Management IP is not displaying properly in Fabric Configuration Servers database.	8.4(1)
CSCvq23595	NPU hung observed on MDS 9700.	8.4(1)
CSCvr43244	Spurious interrupts on 32G linecard DS-X9648-1536K9.	8.4(1)
CSCvs45930	After migration from SUP3 to SUP4 error seen while disabling analytics on range of interfaces.	8.4(1) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvs57660	F16_PLDA_RXBUF_MERR error on a single FC ASIC results in a complete module reload.	8.4(1) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvs87512	MDS fabric switch with cfs ipv4/ipv6 enabled reloads unexpectedly.	8.4(1)
CSCvs97168	Kickstart pre check fails as /var folder is full with nxapi logs.	8.4(1)

Caveat ID	Description	Known Impacted 8.x Releases
		8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvt87216	NX-OS upgrade fails with 0x40930015 or 0x40930081.	8.4(1) 8.3(1), 8.3(2)
CSCvu28005	Timeout drops seen on 32G fabric switches after ISSU.	8.4(1) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvu52058	ISSU/D is disruptive on MDS fabric switches with error 0x40930073 after SFTP to bootflash.	8.4(1)
CSCvu86801	fc32_mac process is unresponsive while running diagnostic latency test on ISL.	8.4(1)
CSCvv27832	Kernel panic on DS-X97-SF4-K9 model supervisor.	8.4(1)
CSCvv56650	ISSU on MDS 9250i FCoE VFCs causes switchport to stop sending PFC Pauses leading to frame drops.	8.4(1)
CSCvv98829	97xx Chassis information missing and logging error message %PLATFORM-2-PS_UNSUPPORTED.	8.4(1)
CSCvw32460	MDS 9718 Kernel panic due to kernel memory corruption when PC FOP index changes by 512	8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvz09012	End devices encounter errors or do not respond after MDS Fabric switch ISSU.	8.4(1)
CSCvz61883	Module hangs or resets after 450-460 days uptime due to 'machine check' error.	8.4(1) 8.3(2), 8.3(1) 8.2(2), 8.2(1), 8.1(1b), 8.1(1a), 8.1(1)
CSCwn10124	Device unable to log into fabric due to maximum FLOGIs already on the port	8.4(1), 8.3(1), 8.2(1), 8.1(1)
CSCwf86751	ISSU from 8.x or below to 9.4.1 is failing due to var/temp space issue .	8.4(1)

Related Documentation

The documentation set for the Cisco MDS 9000 Series includes the documents listed in this section. To find a document online, access the following URL:

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

The documentation set for Cisco Prime Data Center Network Manager is available from the following URL: http://www.cisco.com/en/US/products/ps9369/tsd_products_support_series_home.html

Release Notes

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/products-release-notes-list.html>

Regulatory Compliance and Safety Information

<http://www.cisco.com/c/en/us/td/docs/switches/datacenter/mds9000/hw/regulatory/compliance/RCSI.html>

Compatibility Information

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/products-device-support-tables-list.html>

Installation and Upgrade

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/products-installation-guides-list.html>

Configuration Guides

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/products-installation-and-configuration-guides-list.html>

Command-Line Interface

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/products-command-reference-list.html>

Troubleshooting and Reference

<http://www.cisco.com/c/en/us/support/storage-networking/mds-9000-nx-os-san-os-software/tsd-products-support-troubleshoot-and-alerts.html>

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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