



# Cisco MDS 9000 Series Release Notes, Release 8.4(2e)

This document describes the features, issues, and deployment guidelines 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:** The documentation set for this product strives to use bias-free language. For the purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

**Note:** Release notes are updated on an as needed basis 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
December 22, 2023	Added <a href="#">CSCwf85545</a> to the Open Issues section.
November 06, 2023	Added <a href="#">CSCwv93277</a> in the Resolved Caveats section.
October 27, 2022	Added <a href="#">CSCwb29379</a> in the Resolved Caveats section.
October 10, 2022	Initial release.

## 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 has the flexibility to fit small deployments as well as to address 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. These images can be upgraded or downgraded to different versions. The versions of both images must match for the system to boot.

Each model of Cisco MDS switch has unique kickstart and system images. For more information on the image names for each Cisco MDS switch, see the [Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 8.x](#).

To download 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 <https://software.cisco.com/download/find/MDS>.

### 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(2e) 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](#).

## 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

- 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 9706 Crossbar Fabric-1 Switching Module (DS-X9706-FAB1)
  - Cisco MDS 9706 Crossbar Fabric-3 Switching Module (DS-X9706-FAB3)
  - Cisco MDS 9700 Series Supervisor-1 Module (DS-X97-SF1-K9)
  - Cisco MDS 9700 Series Supervisor-4 Module (DS-X97-SF4-K9)
- 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 9710 Crossbar Fabric-1 Switching Module (DS-X9710-FAB1)
  - Cisco MDS 9710 Crossbar Fabric-3 Switching Module (DS-X9710-FAB3)
  - Cisco MDS 9700 Series Supervisor-1 Module (DS-X97-SF1-K9)
  - Cisco MDS 9700 Series Supervisor-4 Module (DS-X97-SF4-K9)
- Cisco MDS 9250i

FICON is also supported on the following IBM OEM switches and modules:

- IBM SAN192C-6
  - IBM 48-Port 32-Gbps Fibre Channel Switching Module (01FT644)

- IBM SAN Director Supervisor Module 4 (02JD753)
- IBM SAN Director Supervisor Module 1 (01FT600)
- IBM 24/10 Port SAN Extension Module (01FT645)
- IBM SAN384C-6
  - IBM 48-Port 32-Gbps Fibre Channel Switching Module (01FT644)
  - IBM SAN Director Supervisor Module 4 (02JD753)
  - IBM SAN Director Supervisor Module 1 (01FT600)
  - IBM 24/10 Port SAN Extension Module (01FT645)
- IBM SAN50C-R

### FICON Supported Releases

The Cisco MDS NX-OS Release 8.1(1a), Release 8.1(1b), Release 8.4(1a), Release 8.4(2b), Release 8.4(2c), and Release 8.4(2e) are IBM-qualified FICON releases for Cisco MDS. From Cisco MDS NX-OS Release 8.4(1a), FICON is supported on the Cisco MDS 9706 Crossbar Fabric-3 Switching Module (DS-X9706-FAB3), Cisco MDS 9710 Crossbar Fabric-3 Switching Module (DS-X9710-FAB3), and Cisco MDS 9700 Series Supervisor-4 Module (DS-X97-SF4-K9).

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

**Table 1.** FICON Supported Releases

FICON Supported Releases	
MDS NX-OS	Release 8.4(2e)
	Release 8.4(2c)
	Release 8.4(2b)
	Release 8.4(1a)
	Release 8.1(1b)
	Release 8.1(1a)
	Release 6.2(11e)

### FICON Tape Acceleration

FICON Tape Acceleration (FTA) is supported on Cisco MDS 24/10 SAN Extension Module in Cisco MDS NX-OS Release 8.1(1b), Release 8.4(1a), Release 8.4(2b), Release 8.4(2c) and Release 8.4(2e).

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

### 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](#)
- [Open Systems Nondisruptive Upgrade Paths](#)

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 "[Open Systems Nondisruptive Upgrade Paths](#)" section for all MDS NX-OS releases.
  - **Fibre Channel over Ethernet (FCoE) Ports:** FCoE ports can be nondisruptively upgraded without affecting traffic on the ports. See the "[Open Systems Nondisruptive Upgrade Paths](#)" section for all MDS NX-OS releases.
  - **IP Storage (IPS) Ports:** Traffic on IPS ports on Cisco MDS 9250i, and Cisco MDS 24/10-Port SAN Extension Modules is disrupted during an upgrade or downgrade. Nodes that are members of VSANs traversing an FCIP ISL are impacted, and a fabric reconfiguration may occur. If supported, iSCSI initiators connected to the IPS 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 Directors from Cisco MDS NX-OS Release 8.3(1), Release 8.3(2), Release 8.4(1), or Release 8.4(1a) to Release 8.4(2) or later, ensure that you perform a switchover before upgrading. For more information, see [CSCvt87216](#).

## Open Systems 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.

**Table 2.** Nondisruptive Upgrade Paths to Cisco MDS NX-OS Release 8.4(2e)

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
All 8.x releases <sup>1</sup>	Upgrade directly to MDS NX-OS Release 8.4(2e)

<sup>1</sup> 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(2) or later. However, you

Current Release	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
All 7.3(x) releases	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 8.1(1b) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.4(2e)
6.2(29) and above releases	Upgrade directly to MDS NX-OS Release 8.4(2e)
6.2(13a) until 6.2(27)	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 8.1(1b) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.4(2e)
All 6.2(x) releases prior to 6.2(13a)	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 6.2(13a) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.1(1b) <b>Step 3.</b> Upgrade to MDS NX-OS Release 8.4(2e)

## FICON Systems Nondisruptive Upgrade Paths

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

**Table 3.** FICON Nondisruptive Upgrade Paths from MDS NX-OS Release 8.4(2e)

Current Release with FICON Enabled	Nondisruptive Upgrade Paths and Ordered Upgrade Steps
MDS NX-OS Release 8.4(1a), 8.4(2b) and 8.4(2c)	Upgrade directly to MDS NX-OS Release 8.4(2e)
MDS NX-OS Release 8.1(1b)	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2c) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.4(2e)
MDS NX-OS Release 8.1(1a)	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2c) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.4(2e)
MDS NX-OS Release 6.2(11e)	<b>Step 1.</b> Upgrade directly to MDS NX-OS Release 8.1(1a) <b>Step 2.</b> Upgrade to MDS NX-OS Release 8.1(1b) <b>Step 3.</b> Upgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2c) <b>Step 4.</b> Upgrade to MDS NX-OS Release 8.4(2e)

## Downgrading Cisco MDS NX-OS Software Image

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

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

### General Downgrading Guidelines

Follow these general guidelines before performing a software downgrade:

---

can upgrade from Cisco MDS NX-OS Release 8.4(1) and above releases to Cisco MDS NX-OS Release 9.2(1) or later without disabling the feature.

- 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. See the “[Open Systems Nondisruptive Downgrade Paths](#)” section for all MDS NX-OS releases.
  - **Fibre Channel over Ethernet (FCoE) Ports:** FCoE ports can be nondisruptively downgraded without affecting traffic on the ports. See the “[Open Systems Nondisruptive Downgrade Paths](#)” section for all MDS NX-OS releases.
  - **FCoE Ports:** FCoE ports can be nondisruptively downgraded without affecting traffic on the ports.
  - **IPS Ports:** Traffic on IPS ports on Cisco MDS 9250i, and Cisco MDS 24/10-Port SAN Extension Modules is disrupted during an upgrade or downgrade. Nodes that are members of VSANs traversing an FCIP ISL are impacted, and a fabric reconfiguration may occur. If supported, iSCSI initiators connected to the IPS ports lose connectivity to iSCSI targets while the upgrade is in progress.

Find the MDS NX-OS image that you want to downgrade to in the *Target Release* column of the [Table 4](#) 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](#).
- If you are downgrading to Cisco MDS NX-OS Release 8.1(x), Release 8.2(x), Release 8.3(x), or Release 8.4(1x) from Release 8.4(2x) and if smart license and VSAN policy for a role are configured, ensure that you **disable Smart Licensing or disable VSAN policy for only the role** before downgrading or performing a switchover. You can reenale these features after downgrading or performing the switchover. For more information, see [CSCvy19014](#).
- Non-disruptive downgrading from Cisco MDS NX-OS Release 8.5(1) to 8.4(x) is not supported. For more information, see [CSCwd18183](#).
- 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 Release 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 Release 8.1(1) and Release 8.1(1b) is not supported if the FLOGI Scale Optimization feature is enabled on the Cisco MDS 9718 Switches.

**Table 4.** Nondisruptive Downgrade Paths from NX-OS Release 8.4(2e)

Target Release	Nondisruptive Downgrade Paths and Ordered Downgrade Steps
All 8.x releases	Downgrade to the target release
All 7.3(x) releases	<p><b>Step 1.</b> Downgrade directly to MDS NX-OS Release 8.1(1b)</p> <p><b>Step 2.</b> Downgrade to the target release</p>
6.2(29) and above releases	Downgrade to the target release
6.2(13a) until 6.2(27)	<p><b>Step 1.</b> Downgrade directly to MDS NX-OS Release 8.1(1b)</p> <p><b>Step 2.</b> Downgrade to the target release</p>
All 6.2(x) releases prior to 6.2(13a)	<p><b>Step 1.</b> Downgrade directly to MDS NX-OS Release 8.1(1b)</p> <p><b>Step 2.</b> Downgrade to MDS NX-OS Release 6.2(13a)</p> <p><b>Step 3.</b> Downgrade to the target release</p>



## FICON Systems Nondisruptive Downgrade Paths

The following 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 5.** FICON Nondisruptive Downgrade Paths from MDS NX-OS Release 8.4(2e)

To Release with FICON Enabled	Nondisruptive Downgrade Paths and Ordered Downgrade Steps
MDS NX-OS Release 8.4(1a), 8.4(2b), and 8.4(2e)	Downgrade directly from MDS NX-OS 8.4(2e)
MDS NX-OS Release 8.1(1b)	<b>Step 4.</b> Downgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2e) <b>Step 5.</b> Downgrade to the target release
MDS NX-OS Release 8.1(1a)	<b>Step 6.</b> Downgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2e) <b>Step 7.</b> Downgrade to MDS NX-OS Release 8.1(1b) <b>Step 8.</b> Downgrade to the target release
MDS NX-OS Release 6.2(11e)	<b>Step 9.</b> Downgrade directly to MDS NX-OS Release 8.4(1a) or 8.4(2b) or 8.4(2e) <b>Step 10.</b> Downgrade to MDS NX-OS Release 8.1(1b) <b>Step 11.</b> Downgrade to MDS NX-OS Release 8.1(1a) <b>Step 12.</b> Downgrade to the target release

## New Hardware and Software Features

- [New Hardware Features in Cisco MDS NX-OS Release 8.4\(2e\)](#)
- [New Software Features in Cisco MDS NX-OS Release 8.4\(2e\)](#)

### New Hardware Features in Cisco MDS NX-OS Release 8.4(2e)

There are no new hardware features in Cisco MDS NX-OS Release 8.4(2e).

### New Software Features in Cisco MDS NX-OS Release 8.4(2e)

There are no new software features in Cisco MDS NX-OS Release 8.4(2e).

## Unsupported Features

### Data Mobility Manager

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.

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

---

## XRC Acceleration License

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.

## 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

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.

### Slow Drain Detection and Congestion Isolation

ER\_RDY is not supported on FC interfaces running at 10 Gbps.

### FCIP Support

- In Cisco MDS NX-OS Release 8.1(1) or later, FCIP Write Acceleration is not supported between 24/10 San Extension Module and Cisco 18+4 MSM module and between 24/10 San Extension Module and Cisco SSN16 module.
- In Cisco MDS NX-OS Release 8.1(1) or later, 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.

- On Cisco MDS 24/10 Port SAN Extension Module, configuring multiple ECMP port channels with FCIP members in the same VSAN is not a valid configuration. If this is configured, then the traffic will flow through only one of the port channels.

### 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 Release 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 is supported on certain ports for the following modules:

Model	Description	Cisco TrustSec Capable Ports	Encryption Key Length
<b>DS-X9748-3072</b>	64 Gbps Fibre Channel Switching module	9, 11, 13, 15, 25, 27, 29, 31	AES 128 bit
<b>DS-X9648-1536K9</b>	32 Gbps Fibre Channel Switching Module	9-12, 25-28, 41-44	AES 128 bit
<b>DS-X9448-768K9</b>	16 Gbps Fibre Channel Switching module	All FC ports	AES 128 bit
<b>DS-X9334-K9</b>	24/10 Port SAN Extension Module	All FC ports	AES 128 bit
<b>DS-C9132T-K9</b>	MDS 9132T Fabric Switch	9-12, 25-28	AES 128 bit
<b>DS-C9148T-K9</b>	MDS 9148T Fabric Switch	9-12, 25-28, 41-44	AES 128 bit
<b>DS-C9396T-K9</b>	MDS 9396T Fabric Switch	Base ports: 9-12, 25-28, 41-44 LEM ports: 57-60, 73-76, 89-92	AES 128 bit
<b>DS-C9396S-K9</b>	MDS 9396S Fabric Switch	All FC ports	AES 128 bit

### Caveats

- [Subscribing for Important Product Update Notifications](#)
- [Resolved Defects in Cisco MDS NX-OS Release 8.4\(2e\)](#)
- [Open Defects in Cisco MDS NX-OS Release 8.4\(2e\)](#)

### 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 Defects in Cisco MDS NX-OS Release 8.4(2e)

### Severity 2 (Severe) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CSCwd00610</a>	MDS switch is slow or unresponsive after reset of multiple interfaces	9.3(1) 9.2(1), 9.2(2) 8.5(1) 8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
<a href="#">CSCwb29379</a>	End devices unable to communicate - FCNS rejects all FC CT queries with 'logical busy'	9.2(2) 8.4(2d)

### Severity 3 (Moderate) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CCSCwc76047</a>	Supervisor/Fabric switch reload after new F-port Port Channel is brought up	9.2(1) 8.4(2d) 8.1(1) 7.3(1) 6.2(1)

Defect ID	Description	Known Impacted Releases
<a href="#">CSCv93277</a>	Interface CRCs not incrementing on MDS 32G modules/switches.	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)
<a href="#">CSCvz91287</a>	NVRAM health status is not displayable	9.2(1), 9.2(2) 8.5(1) 8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
<a href="#">CSCwa44187</a>	licmgr service crash with signal 6	9.2(2)
<a href="#">CSCwc70047</a>	Command 'clear ips stats all' does not clear all ips counters	8.5(1)

## Open Defects in Cisco MDS NX-OS Release 8.4(2e)

### Severity 2 (Severe) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CSCvp48050</a>	MDS 9700 control plane packet drops after switch boot	8.5(1) 8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d)

### Severity 3 (Moderate) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CSCwd18183</a>	ISSD from 8.5(1) to 8.4(2d)/8.4(2e) and any future release of 8.4(2x) is not supported.	8.4(2e)
<a href="#">CSCwf85545</a>	"port" service crash	8.4(2e)

### Severity 4 (Minor) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CSCvf08416</a>	'show tech details' triggers 'pam_ftp(ftp:auth): conversation failed - ftpd' syslogs	8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(2), 8.3(1) 8.2(2), 8.2(1)

Defect ID	Description	Known Impacted Releases
<a href="#">CSCvj93031</a>	IPv6 source address not displayed in log in failure logs	8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(2), 8.3(1)
<a href="#">CSCvs23106</a>	SCSI target discovery service running even after removal of last DS-X9334-K9 module from switch	8.5(1) 8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
<a href="#">CSCvt15761</a>	Nondisruptive reload causes reinitialization of error disabled ports on other linecards	8.5(1) 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d)
<a href="#">CSCvw00538</a>	Remove misleading ficonstat 'merge failed' message in non-FICON VSAN	8.5(1) 8.4(2b), 8.4(2c), 8.4(2d)
<a href="#">CSCwc61263</a>	Linecard fails to boot up with '%PORT-5-MODULE_BRINGUP_NOT_ALLOWED' error	8.4(2c) 8.1(1)

#### Severity 6 (Enhancement) Defects

Defect ID	Description	Known Impacted Releases
<a href="#">CSCvo22835</a>	All flows are briefly suspended while moving an IOA flow between 2 clusters.	8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d) 8.3(2), 8.3(1) 8.2(2), 8.2(1) 8.1(1b), 8.1(1a), 8.1(1)
<a href="#">CSCvp70681</a>	Streaming to telemetry receiver stops, receiver stays in "idle" state	8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d)
<a href="#">CSCvx37657</a>	Need to log nonvolatile logs about BIOS programming errors.	8.5(1) 8.4(2c), 8.4(2d) 8.3(2)

#### 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](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](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>

### **Licensing Information**

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/mds9000/sw/8\\_x/config/licensing/cisco\\_mds9000\\_licensing\\_guide\\_8x.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/mds9000/sw/8_x/config/licensing/cisco_mds9000_licensing_guide_8x.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>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

---

## Legal Information

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1721R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

© 2022 Cisco Systems, Inc. All rights reserved.