Cisco MDS 9000 Series Release Notes, Release 8.x

First Published: May 04, 2017

This document describes the caveats and limitations for switches in the Cisco MDS 9000 Series. Use this document in conjunction with documents listed in the "Obtaining Documentation and Submitting a Service Request" section on page 42.

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.

Table 1   Change History

Date	Description
May 04, 2017	Updated Release Notes for 8.1(1).
September 28, 2017	Updated Release Notes for 8.2(1).
February 28, 2018	Updated Release Notes for 8.1(1a).
March 9, 2018	Updated Release Notes for 8.2(2).
July 13, 2018	Updated Release Notes for 8.3(1).
October 22, 2018	Updated Release Notes for 8.1(1b).

Contents

This document includes the following:

Introduction

The Cisco MDS 9000 Series of Multilayer Directors and Fabric Switches provides best-in-class high availability, scalability, security, and management, allowing you 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.

Choosing Between Cisco MDS NX-OS Open Systems Releases

Cisco uses MDS NX-OS release numbering to indicate when significant features or hardware support are added to the code. This allows older trains to provide stability and newer trains to focus new features and hardware.

- Cisco MDS NX-OS Release 6.2(x) - This release train provides general support for most Cisco MDS platforms such as Cisco MDS 9706 switch, MDS 9710 switch, Cisco MDS 9700 48 Port 16 Gbps Fibre Channel Switching Module, Cisco MDS 9700 10 Gbps 48 Port Fibre Channel over Ethernet Module, and Cisco MDS 9700 40 Gbps 24 Port Fibre Channel over Ethernet Module, except for newer platforms such as Cisco MDS 9718 Multilayer Director, Cisco MDS 9700 48 Port 32 Gbps Fibre Channel Switching Module, Cisco MDS 9000 24/10 Port SAN Extension Module, and Cisco MDS 32 Gbps Fibre Channel Fabric switches such as Cisco MDS 9132T, MDS 9148T, and MDS 9396T switches. This release is only being updated with maintenance fixes to ensure maximum stability for Cisco MDS 9148S, MDS 9396S, MDS 9250i, MDS 9706, MDS 9710 switches, and Cisco MDS 9700 48 Port 16 Gbps Fibre Channel Switching Module.

- Cisco MDS NX-OS Release 7.3(x)D1(x) - This release train supports the same platforms as the 6.2(x) train as well as the Cisco MDS 9718 Director and the Cisco MDS 24-Port 40-Gbps Fibre Channel over Ethernet Module. It is based on Cisco MDS NX-OS Release 6.2(x).

- Cisco MDS NX-OS Release 7.3(x)DY(x) - This release train supports the same platforms as the 7.3(x)D1(x) train as well as the Cisco MDS 24/10 port SAN Extension Module. It is based on Cisco MDS NX-OS Release 7.3(0)D1(1).

- Cisco MDS NX-OS Release 8.1(x) - This release train does not support Cisco MDS 9500 technology hardware. It only supports the newer Cisco MDS 9700 technology hardware, along with Cisco MDS 9700 modules such as Cisco MDS 9700 48-Port 16-Gbps Fibre Channel Switching Module, Cisco MDS 9000 24/10 Port SAN Extension Module, Cisco MDS 9700 10 Gbps 48 Port Fibre Channel over Ethernet Module, and Cisco MDS 9700 40 Gbps 24 Port Fibre Channel over Ethernet Module) and adds support for the Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module.

- Cisco MDS NX-OS Release 8.2(x) - This release train supports the same platforms as the 8.1(x) train as well as the Cisco MDS 9132T Fibre Channel Switch. It is based on Cisco MDS NX-OS Release 8.1(x).

- Cisco MDS NX-OS Release 8.3(x) - This release train supports the same platforms as the 8.2(x) train as well as the Cisco MDS 9148T and Cisco MDS 9396T Fibre Channel Switches. It is based on Cisco MDS NX-OS Release 8.2(x).

Details about the new features and hardware supported by each Cisco MDS NX-OS release can be found in the .

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

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 Supported Releases

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

Table 2 lists the NX-OS releases that are certified for FICON. Refer to the specific release notes for FICON upgrade path information.

Table 2   ***FICON Supported Releases***

FICON Supported Releases	
NX-OS	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*
	Release 6.2(5b)
	Release 6.2(5a)
	Release 5.2(2s)
	Release 5.2(2)
	Release 4.2(7b)
	Release 4.2(1b)
	Release 4.1(1c)

Upgrading Your Cisco MDS NX-OS Software Image

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

- General Upgrading Guidelines, page 4
- Open Systems Nondisruptive Upgrade Paths, page 5
- FICON Upgrade Paths, page 10

For detailed instructions for performing a software upgrade using Cisco DCNM, see the *Cisco DCNM Release Notes*.

General Upgrading Guidelines

Follow these general guidelines before 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 your 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 on page 5 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, you may want to review the information in the "Limitations and Restrictions" section on page 27 prior to a software upgrade to determine if a feature may possibly behave differently following the upgrade.

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.

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.3(1)

If you have the SAN analytics feature enabled, ensure that you disable the SAN analytics feature using the **no feature analytics** command before upgrading to Cisco MDS NX-OS Release 8.3(1).

Table 3   Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.3(1)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 8.x releases	Upgrade directly to MDS NX-OS Release 8.3(1)
All 7.3(x) releases	1. Upgrade to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.3(1)
6.2(21)[1]	1. Upgrade to MDS NX-OS Release 6.2(23) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2] 3. Upgrade to MDS NX-OS Release 8.3(1)
6.2(13a) and above releases except 6.2(21)	1. Upgrade to MDS NX-OS Release 8.1(1a)[2] 2. Upgrade to MDS NX-OS Release 8.3(1)
All 6.2(x) releases prior to 6.2(13a)	1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2] 3. Upgrade to MDS NX-OS Release 8.3(1)

1. Upgrading specifically from MDS NX-OS Release 6.2(21) to MDS NX-OS Release 8.1(1a) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

2. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

Upgrading Guidelines for Cisco MDS NX-OS Release 8.2(2)

- Prior to upgrading any Cisco MDS 9706 and Cisco MDS 9710 switches to Cisco MDS NX-OS Release 8.2(2), the switches should be checked if they are affected by CSCvf99665.
  This defect manifests as a corrupt IPv6 address with a zero length mask (/0) on the mgmt0 interface. The actual IPv6 address itself is not important but if it has a /0 mask then it is invalid. This invalid IPv6 address cannot be removed by normal configuration. Refer to the following example:

  ```
  show interface mgmt0
  mgmt0 is up
  Internet address is 1.2.3.4/24
  ...
  ::148.173.170.255/0
  fe80::2e31:24ff:fe51:b834/64
  ```

  If a switch is found to be affected, there are specific steps that must be taken after upgrading to Cisco MDS NX-OS Release 8.2(2). For information on these specific steps, see the **Resolution Summary** section in CSCvf99665.

- If you have the SAN analytics feature enabled, ensure that you disable the SAN analytics feature using the **no feature analytics** command before upgrading to Cisco MDS NX-OS Release 8.2(2).

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.2(2)

Table 4   Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.2(2)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 8.x releases	Upgrade directly to MDS NX-OS Release 8.2(2)
All 7.3(x) releases	1. Upgrade to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.2(2)
6.2(21)[1]	1. Upgrade to MDS NX-OS Release 6.2(23) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2] 3. Upgrade to MDS NX-OS Release 8.2(2)
6.2(13a) and above releases except 6.2(21)	1. Upgrade to MDS NX-OS Release 8.1(1a)[2] 2. Upgrade to MDS NX-OS Release 8.2(2)
All 6.2(x) releases prior to 6.2(13a)	1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2] 3. Upgrade to MDS NX-OS Release 8.2(2)

1. Upgrading specifically from MDS NX-OS Release 6.2(21) to MDS NX-OS Release 8.1(1a) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

2. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

Upgrading Guidelines for Cisco MDS NX-OS Release 8.2(1)

- Prior to upgrading any Cisco MDS 9706 and Cisco MDS 9710 switches to Cisco MDS NX-OS Release 8.2(1), the switches should be checked if they are affected by CSCvf99665.
  This defect manifests as a corrupt IPv6 address with a zero length mask (/0) on the mgmt0 interface. The actual IPv6 address itself is not important but if it has a /0 mask then it is invalid. This invalid IPv6 address cannot be removed by normal configuration. Refer to the following example:

  ```
  show interface mgmt0
  mgmt0 is up
  Internet address is 1.2.3.4/24
  ...
  ::148.173.170.255/0
  fe80::2e31:24ff:fe51:b834/64
  ```

  If a switch is found to be affected, there are specific steps that must be taken after upgrading to Cisco MDS NX-OS Release 8.2(1). For information on these specific steps, see the **Resolution Summary** section in CSCvf99665.

- Upgrading to Cisco MDS NX-OS Release 8.2(1) on a device with the **esp-aes-xcbc-mac** algorithm is not supported. In such a scenario, we recommend that you first change the algorithm, and then upgrade to Cisco MDS NX-OS Release 8.2(1).

- We recommend that you delete existing IP ACLs on the management interface before upgrading to Cisco MDS NX-OS Release 8.2(1). You can reconfigure the IP ACLs after the upgrade is complete. For more information, see CSCvh30932.

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.2(1)

Table 5   Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.2(1)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 8.x releases	Upgrade directly to MDS NX-OS Release 8.2(1)
All 7.3(x) releases	1. Upgrade to MDS NX-OS Release 8.1(1a) 2. Upgrade to MDS NX-OS Release 8.2(1)
6.2(21)[1]	1. Upgrade to MDS NX-OS Release 6.2(23) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2] 3. Upgrade to MDS NX-OS Release 8.2(1)
6.2(13a) and above releases except 6.2(21)	1. Upgrade to MDS NX-OS Release 8.1(1a)[2] 2. Upgrade to MDS NX-OS Release 8.2(1)
All 6.2(x) releases prior to 6.2(13a)	1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 6.2(21) 3. Upgrade to MDS NX-OS Release 6.2(23) 4. Upgrade to MDS NX-OS Release 8.1(1a)[2] 5. Upgrade to MDS NX-OS Release 8.2(1)

1. Upgrading specifically from MDS NX-OS Release 6.2(21) to MDS NX-OS Release 8.1(1a) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

2. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

Upgrading Guidelines for Cisco MDS NX-OS Release 8.1(1b)

- Prior to upgrading any Cisco MDS 9706 and Cisco MDS 9710 switches to Cisco MDS NX-OS Release 8.1(1b), the switches should be checked if they are affected by CSCvf99665.
  This defect manifests as a corrupt IPv6 address with a zero length mask (/0) on the mgmt0 interface. The actual IPv6 address itself is not important but if it has a /0 mask then it is invalid. This invalid IPv6 address cannot be removed by normal configuration. Refer to the following example:

  ```
  show interface mgmt0
  mgmt0 is up
  Internet address is 1.2.3.4/24
  ...
  ::148.173.170.255/0
  fe80::2e31:24ff:fe51:b834/64
  ```
  If a switch is found to be affected, there are specific steps that must be taken after upgrading to Cisco MDS NX-OS Release 8.1(1b). For information on these specific steps, see the **Resolution Summary** section in CSCvf99665.

- The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. When upgrading a device equipped with these units from any Cisco MDS NX-OS 6.x release do not use this release.

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1b)

Table 6   Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1b)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 7.3(x) releases	Upgrade directly to MDS NX-OS Release 8.1(1b)
6.2(21)[1]	**1.** Upgrade to MDS NX-OS Release 6.2(23)
	2. Upgrade to MDS NX-OS Release 8.1(1a)[2]
	3. Upgrade to MDS NX-OS Release 8.1(1b)
All 6.2(13a) and above releases except 6.2(21)	**1.** Upgrade directly to MDS NX-OS Release 8.1(1a)[2]
	2. Upgrade to MDS NX-OS Release 8.1(1b)
All 6.2(x) releases prior to 6.2(13a)	**1.** Upgrade to MDS NX-OS Release 6.2(13a)
	2. Upgrade to MDS NX-OS Release 8.1(1a)[2]
	3. Upgrade to MDS NX-OS Release 8.1(1b)

1. Upgrading specifically from MDS NX-OS Release 6.2(21) to MDS NX-OS Release 8.1(1a) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

2. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

For FICON upgrade paths, see the FICON Upgrade Paths, page 10 section.

Upgrading Guidelines for Cisco MDS NX-OS Release 8.1(1a)

- Prior to upgrading any Cisco MDS 9706 and Cisco MDS 9710 switches to Cisco MDS NX-OS Release 8.2(2), the switches should be checked if they are affected by CSCvf99665.
  This defect manifests as a corrupt IPv6 address with a zero length mask (/0) on the mgmt0 interface. The actual IPv6 address itself is not important but if it has a /0 mask then it is invalid. This invalid IPv6 address cannot be removed by normal configuration. Refer to the following example:

  show interface mgmt0
  ```
  mgmt0 is up
  Internet address is 1.2.3.4/24
  ...
  ::148.173.170.255/0
  fe80::2e31:24ff:fe51:b834/64
  ```
  If a switch is found to be affected, there are specific steps that must be taken after upgrading to Cisco MDS NX-OS Release 8.1(1a). For information on these specific steps, see the **Resolution Summary** section in CSCvf99665.

- The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. When upgrading a device equipped with these units from any Cisco MDS NX-OS 6.x release do not use this release.

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1a)

Table 7   Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1a)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 7.3(x) releases	Upgrade directly to MDS NX-OS Release 8.1(1a)
6.2(21)[1]	1. Upgrade to MDS NX-OS Release 6.2(23) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2]
All 6.2(13a) and above releases except 6.2(21)	Upgrade directly to MDS NX-OS Release 8.1(1a)[2]
All 6.2(x) releases prior to 6.2(13a)	1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 8.1(1a)[2]

1. Upgrading specifically from MDS NX-OS Release 6.2(21) to MDS NX-OS Release 8.1(1a) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

2. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

For FICON upgrade paths, see the FICON Upgrade Paths, page 10 section.

Upgrading Guidelines for Cisco MDS NX-OS Release 8.1(1)

- Prior to upgrading the Cisco MDS 9706 and Cisco MDS 9710 switches to Cisco MDS NX-OS Release 8.1(1), ensure that they are not affected by CSCvg05230. This defect manifests as a corrupt IPv6 address and mask on the mgmt0 interface. An affected switch cannot be upgraded or downgraded while running the Cisco MDS NX-OS Release 8.1(1). Because this issue cannot be resolved through normal methods, we recommend that you contact the Cisco TAC for help in purging the IPv6 NVRAM fields nondisruptively. This process is simpler if performed before upgrading to Cisco MDS NX-OS Release 8.1(1). For more information, including how to determine if a switch is affected, see CSCvg05230 and CSCvf99665.

- We recommend that you delete existing IP ACLs on the management interface before upgrading to Cisco MDS NX-OS Release 8.1(1). You can reconfigure the IP ACLs after the upgrade is complete. For more information, see CSCvh30932.

- The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. When upgrading a device equipped with these units from any Cisco MDS NX-OS 6.x release do not use this release.

Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1)

Table 8 Nondisruptive Upgrade Path to Cisco MDS NX-OS Release 8.1(1)

Current Release	Nondisruptive Upgrade Path and Ordered Upgrade Steps
MDS NX-OS:	
All 7.3(x) releases	Upgrade directly to MDS NX-OS Release 8.1(1)
6.2(13a) and above releases	Upgrade directly to MDS NX-OS Release 8.1(1)[1]
All 6.2(x) releases prior to 6.2(13a)	1. Upgrade to MDS NX-OS Release 6.2(13a) 2. Upgrade to MDS NX-OS Release 8.1(1)[1]

1. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be upgraded directly to Cisco MDS NX-OS Release 8.2(x) or later via a disruptive reload.

FICON Upgrade Paths

Use Table 9 to determine the nondisruptive upgrade path for FICON-certified releases. Find the image release number you are currently using in the Current Release with FICON Enabled column of the table and follow the recommended path.

Table 9 FICON Nondisruptive Upgrade Path

Current Release with FICON Enabled	Upgrade Path
NX-OS Release 8.1(1a)	Upgrade directly to MDS NX-OS Release 8.1(1b).
NX-OS Release 6.2(11e)	1. Upgrade directly to MDS NX-OS Release 8.1(1a). 2. Upgrade to MDS NX-OS Release 8.1(1b).

Table 9 *FICON Nondisruptive Upgrade Path*

Current Release with FICON Enabled	Upgrade Path
NX-OS Release 6.2(11d)	1. Upgrade directly to MDS NX-OS Release 8.1(1a). 2. Upgrade to MDS NX-OS Release 8.1(1b).
NX-OS Release 6.2(11c)	1. Upgrade directly to MDS NX-OS Release 8.1(1a). 2. Upgrade to MDS NX-OS Release 8.1(1b).
NX-OS Release 6.2(5b)	You can nondisruptively upgrade to NX-OS Release 6.2(11c) or 6.2(11e).
NX-OS Release 6.2(5a)	1. Upgrade directly to MDS NX-OS Release 8.1(1a). 2. Upgrade to MDS NX-OS Release 8.1(1b).
NX-OS Release 5.2(2), 5.2(2E4), and 5.2(2s)	You can nondisruptively upgrade to NX-OS Release 6.2(5b).
NX-OS Release 4.2(7b)	You can nondisruptively upgrade NX-OS Release 5.2(2), 5.2(2E4), and 5.2(2s).
NX-OS Release 4.2(1b)	You can nondisruptively upgrade to NX-OS Release 4.2(7b).
NX-OS Release 4.1(1c)	You can nondisruptively upgrade to NX-OS Release 4.2(1b).

Downgrading Your Cisco MDS NX-OS Software Image

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

General Downgrading Guidelines

Follow these general guidelines before you perform a software downgrade:

- Disable all features that are not supported by the downgrade release. Use the **show incompatibility system** *downgrade-image* command to determine what needs to be disabled.
- Use the **show install all impact** *downgrade-image* command to determine if your downgrade is nondisruptive.
- Some features impact whether a downgrade is disruptive or nondisruptive:
  - **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 NX-OS or SAN-OS image that you want to downgrade to in the To NX-OS or SAN-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 not supported by the down revision MDS NX-OS version will be powered down when the down revision MDS NX-OS code 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.

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 prior to 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 Cisco MDS 9718 Switches.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.3(1)

Table 10   Nondisruptive Downgrade Path from NX-OS Release 8.3(1)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 8.x releases	Downgrade directly from MDS NX-OS Release 8.3(1)
All 7.3(x) releases	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
All 6.2(13a) and above releases except 6.2(21)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to the target release
6.2(21)[2]	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to MDS NX-OS Release 6.2(23) 3. Downgrade to the target release
All releases prior to 6.2(13a)	1. Downgrade to MDS NX-OS Release 8.1(a)[1] 2. Downgrade to NX-OS Release 6.2(13a) 3. Downgrade to the target release

1. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be downgraded directly to Cisco NX-OS 6.2(x) via a disruptive reload.

2. Downgrading specifically from MDS NX-OS Release 8.3(1) to MDS NX-OS Release 6.2(21) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.2(2)

If you have the SAN analytics feature enabled, ensure that you disable the SAN analytics feature using the **no feature analytics** command before downgrading to Cisco MDS NX-OS Release 8.2(2).

Table 11   Nondisruptive Downgrade Path from NX-OS Release 8.2(2)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 8.x releases	Downgrade directly from MDS NX-OS Release 8.2(2)
All 7.3(x) releases	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
All 6.2(13a) and above releases except 6.2(21)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to the target release

Table 11   Nondisruptive Downgrade Path from NX-OS Release 8.2(2)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
6.2(21)[2]	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to MDS NX-OS Release 6.2(23) 3. Downgrade to the target release
All releases prior to 6.2(13a)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to NX-OS Release 6.2(13a) 3. Downgrade to the target release

1. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be downgraded directly to Cisco NX-OS 6.2(x) via a disruptive reload.

2. Downgrading specifically from MDS NX-OS Release 8.2(2) to MDS NX-OS Release 6.2(21) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.2(1)

If you have the SAN analytics feature enabled, ensure that you disable the SAN analytics feature using the **no feature analytics** command before downgrading to Cisco MDS NX-OS Release 8.2(1).

Table 12   Nondisruptive Downgrade Path from NX-OS Release 8.2(1)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 8.x releases	Downgrade directly from MDS NX-OS Release 8.2(1)
All 7.3(x) releases	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
All 6.2(13a) and above releases except 6.2(21)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to the target release
6.2(21)[2]	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to MDS NX-OS Release 6.2(23) 3. Downgrade to the target release
All releases prior to 6.2(13a)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to NX-OS Release 6.2(13a) 3. Downgrade to the target release

1. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be downgraded directly to Cisco NX-OS 6.2(x) via a disruptive reload.

2. Downgrading specifically from MDS NX-OS Release 8.2(1) to MDS NX-OS Release 6.2(21) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.1(1b)

Table 13   Nondisruptive Downgrade Path from NX-OS Release 8.1(1b)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 7.3(x) releases	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to MDS NX-OS Release 8.1(1b)
All 6.2(13a) and above releases except 6.2(21)	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to MDS NX-OS Release 8.1(1b)
6.2(21)[2]	1. Downgrade to MDS NX-OS Release 8.1(1a)[1] 2. Downgrade to MDS NX-OS Release 6.2(23) 3. Downgrade to the target release
All releases prior to 6.2(13a)	1. Downgrade to NX-OS Release 6.2(13a) 2. Downgrade to the target release

1. The Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is not supported in this release. Such devices must be downgraded directly to Cisco NX-OS 6.2(x) via a disruptive reload.

2. Downgrading specifically from MDS NX-OS Release 8.2(1) to MDS NX-OS Release 6.2(21) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

For FICON downgrade paths, see the FICON Downgrade Paths, page 16 section.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.1(1a)

Table 14   Nondisruptive Downgrade Path from NX-OS Release 8.1(1a)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 7.3(x) releases	Downgrade directly from MDS NX-OS Release 8.1(1a)
All 6.2(13a) and above releases except 6.2(21)	Downgrade directly from MDS NX-OS Release 8.1(1a)

Table 14   Nondisruptive Downgrade Path from NX-OS Release 8.1(1a)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
6.2(21)[1]	1. Downgrade to MDS NX-OS Release 6.2(23) 2. Downgrade to the target release
All releases prior to 6.2(13a)	1. Downgrade to NX-OS Release 6.2(13a) 2. Downgrade to the target release

1. Downgrading specifically from MDS NX-OS Release 8.1(1a) to MDS NX-OS Release 6.2(21) is disruptive. For more information, see CSCvj40760 in the "Open Caveats in Cisco MDS NX-OS Release 8.1(1a)" section on page 39.

For FICON downgrade paths, see the FICON Downgrade Paths, page 16 section.

Nondisruptive Downgrade Path from Cisco MDS NX-OS Release 8.1(1)

Table 15   Nondisruptive Downgrade Path from NX-OS Release 8.1(1)

To NX-OS or SAN-OS Release	Nondisruptive Downgrade Path and Ordered Downgrade Steps
NX-OS:	
All 7.3(x) releases	Downgrade directly from MDS NX-OS Release 8.1(1)
All 6.2(13a) and above releases	Downgrade directly from MDS NX-OS Release 8.1(1)
All releases prior to 6.2(13a)	1. Downgrade to NX-OS Release 6.2(13a) 2. Downgrade to the target release

FICON Downgrade Paths

Table 16 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 16 **FICON Nondisruptive Downgrade Paths**

To Release with FICON Enabled	Downgrade Path
8.1(1a)	Downgrade to the target release
NX-OS Release 6.2(11e)	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
NX-OS Release 6.2(11d)	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
NX-OS Release 6.2(11c)	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
NX-OS Release 6.2(5b)	You can nondisruptively downgrade to NX-OS Release 6.2(11c) or 6.2(11e).
NX-OS Release 6.2(5a)	1. Downgrade to MDS NX-OS Release 8.1(1a) 2. Downgrade to the target release
NX-OS Release 5.2(2) and 5.2(2s)	You can nondisruptively downgrade directly from NX-OS Release 6.2(5b).
NX-OS Release 4.2(7b)	You can nondisruptively downgrade directly from NX-OS Release 5.2(2) or 5.2(2s).
NX-OS Release 4.2(1b)	You can nondisruptively downgrade directly from NX-OS Release 4.2(7b).
NX-OS Release 4.1(1c)	You can nondisruptively downgrade directly from NX-OS Release 4.2(1b).

New Hardware and Software Features

New Hardware Features in Cisco MDS NX-OS Release 8.3(1)

This section lists the new hardware chassis and features introduced in Cisco MDS NX-OS Release 8.3(1).

Cisco MDS 9148T Fibre Channel Switch

The Cisco MDS 9148T 32-Gbps 48-Port Fibre Channel Switch is a powerful compact one rack-unit (1RU) device with up to 48x32-Gbps full line rate Fibre Channel ports.

For more information, see the Cisco MDS 9148T Fibre Channel Switch Hardware Installation Guide.

Cisco MDS 9396T Fibre Channel Switch

The Cisco MDS 9396T 32-Gbps 96-Port Fibre Channel Switch is a powerful compact two rack-unit (2RU) device with up to 96x32-Gbps full line rate Fibre Channel ports, and three modular Linecard Expansion Modules (LEMs).

For more information, see the Cisco MDS 9396T Multilayer Fabric Switch Hardware Installation Guide.

New Software Features in Cisco MDS NX-OS Release 8.3(1)

This section lists the new software features introduced in Cisco MDS NX-OS Release 8.3(1).

Cisco SAN Analytics and Telemetry

The SAN Analytics solution provides valuable insight into Cisco fabrics by allowing you to monitor, analyze, identify, and troubleshoot performance issues by leveraging the native architecture provided as part of the Cisco MDS 32 Gbps portfolio.

The following features were added:

- Interface Statistics Streaming—This feature allows you to stream traffic and error counters data of Fibre Channel interfaces.

- SAN Telemetry Streaming (STS)—This feature provides a mechanism for the switch to directly stream data out to a destination (such as Cisco Data Center Network Manager) to be consumed. This streaming mechanism can include flow-based metrics as well as interface metrics.

- Port Sampling—This is a feature that allows you to gather data from a subset of ports in a module that is being monitored, cycle through the subset of ports, and stream data from these ports at a regular sampling interval. This feature is designed to reduce the number of data points consumed by the system but still provides valuable data needed to find issues within the fabric.

For more information, see the Cisco MDS 9000 Series SAN Analytics and Telemetry Configuration Guide.

Pathtrace Multipath

The Pathtrace Multipath feature builds on Pathtrace to collect and display Equal-Cost Multi-Path (ECMP) routing paths and statistics between source and destination switches. This allows information for all links between the two endpoints to be displayed, including individual equal cost links of a port channel. This can aid troubleshooting difficult situations such as when a single link in a port channel has errors and the rest do not.

For more information, see the Cisco MDS 9000 Series System Management Configuration Guide.

Port Beaconing

The Port Beaconing feature can be used to identify individual switch and peer ports in a data center environment. This feature may be used by a switch administrator to help a data center operations personnel to identify ports that need to be serviced by replacing cables or small form-factor pluggable transceivers (SFPs).

For more information, see the Cisco MDS 9000 Series Interfaces Configuration Guide.

TCAM Usage Enhancements

System messages have been introduced when the following situations occur:

- When the TCAM usage crosses 80% in the module, direction, region, and forwarding engine listed.
- When TCAM usage falls below the 80% threshold in the module, region, direction, and forwarding engine indicated.
- When the overall TCAM usage indicated in the forwarding engine crossed 70% on the module and forwarding engine indicated.
- When the overall TCAM usage indicated in the forwarding engine fell below 70% in the module, direction, and forwarding engine indicated.

For more information, see the Cisco MDS 9000 Family and Nexus 7000 Series NX-OS System Messages Reference.

FLOGI Error Logging Enhancements

FLOGI error reporting has been enhanced by the addition of the following new syslog messages:

- %FLOGI_REJECTED_DUPLICATE_PWWN_IN_FABRIC
- %FLOGI_REJECTED_DUE_TO_SERVICE_TIMEOUT
- %FLOGI_REJECTED_DUPLICATE_PWWN_ON_SWITCH
- %FLOGI_IMPLICIT_DEVICE_LOGOUT
- %FLOGI_ON_FPORT_CHANNEL_MEMBER.

For more information, see Cisco MDS 9000 Family and Nexus 7000 Series NX-OS System Messages Reference.

ISL Link Diagnostics Enhancements

ISL diagnostic support is added for the following platforms:

- Cisco MDS 9396S Multilayer Fabric Switch
- Cisco MDS 9396T Multilayer Fabric Switch
- Cisco MDS 9148T Multilayer Fabric Switch
- Cisco MDS 9132T Multilayer Fabric Switch

For more information, see the Cisco MDS 9000 Series System Management Configuration Guide.

HBA Link Diagnostics Enhancements

The HBA Link Diagnostics feature is supported in N port virtualisation (NPV) mode and switch mode. This

feature is supported on the following platforms:

- Cisco MDS 9132T Multilayer Fabric Switch
- Cisco MDS 9148T Multilayer Fabric Switch
- Cisco MDS 9396T Multilayer Fabric Switch

Support for the HBA Link Diagnostics feature in N-port virtualisation mode has been added to the following platform:

- Cisco MDS 9396S Multilayer Fabric Switch

For more information, see the Cisco MDS 9000 Series System Management Configuration Guide.

Autozone

The Autozone feature is a mechanism to automate zoning via a single command or zero-touch deployment for the 32 Gbps fabric switches (such as MDS 9132T, MDS 9148T, MDS 9396T, and any new switch that supports this feature).

For more information, see the Cisco MDS 9000 Series Fabric Configuration Guide.

Default Maximum SNMP Packet Size Changes

The default maximum SNMP transmit packetsize was reduced from 17,382 to 1,500 bytes. The **snmp-server packetsize** command was added to control this parameter.

New Hardware Features in Cisco MDS NX-OS Release 8.2(2)

There are no new hardware features in Cisco MDS NX-OS Release 8.2(2).

New Software Features in Cisco MDS NX-OS Release 8.2(2)

There are no new software features in Cisco MDS NX-OS Release 8.2(2).

New Hardware Features in Cisco MDS NX-OS Release 8.2(1)

This section lists the new hardware chassis and features introduced in Cisco MDS NX-OS Release 8.2(1).

Cisco MDS 9132T Fibre Channel Switch

The Cisco MDS 9132T 32-Gbps 32-Port Fibre Channel Switch is a powerful compact one rack-unit (1RU)device with up to 32x32-Gbps full line rate Fibre Channel ports, and a pluggable and modular Linecard Expansion Module (LEM) which can be inserted and removed as a Field Replaceable Unit (FRU).

New SFPs Support

Support for third-party SFPs is introduced for Cisco MDS 9132T Fibre Channel Switch and Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module.

For more information, see the Interoperability Matrix for Cisco Nexus and MDS 9000.

New Software Features in Cisco MDS NX-OS Release 8.2(1)

This section lists the new software features introduced in Cisco MDS NX-OS Release 8.2(1).

Cisco MDS SAN Analytics

The Cisco MDS SAN Analytics feature is introduced to monitor, analyze, identify, and troubleshoot performance issues on Cisco MDS switches.

For more information about this feature, see the Cisco MDS 9000 Series SAN Analytics and Telemetry Configuration Guide.

Buffer-to-Buffer Credit Recovery

The buffer-to-buffer credit recovery feature is supported for F ports.

For more information about this feature, see the Cisco MDS 9000 Series Interfaces Configuration Guide.

Enhancements for Debugging FCoE Slow Drain

The congestion drop timeout and pause drop timeout commands in FCoE are modified to align with the commands used in Fibre Channel.

For more information about this feature, see the Cisco MDS 9000 Series Interfaces Configuration Guide.

Virtual Machine Identifier

The Virtual Machine Identifier (VMID) feature is introduced to identify virtual machines that are running on hypervisors.

For more information about this feature, see the Cisco MDS 9000 Series Fabric Configuration Guide.

HBA Link Diagnostics

The HBA Link Diagnostics feature helps in validating the health of links between Host Bus Adapters (HBAs) and Cisco MDS switches in a network.
For detailed information about this feature, see the Cisco MDS 9000 Series System Management Guide.

Fibre Channel Read Diagnostic Parameters Enhancements

Querying of non-switch (edge) devices with RDP is supported.

For detailed information about this feature, see the Cisco MDS 9000 Series Command Reference.

LDAP Enhancements

LDAP connections on port 636 automatically starting securely with SSL or TLS is introduced.
For more information about this feature, see the Cisco MDS 9000 Series Security Configuration Guide.

SHA-2 Encryption and Fingerprint Hashing Support

- New user accounts will have passwords encrypted with SHA-2 by default.
- SHA-2 fingerprint hashing is supported only on Cisco MDS 9132T, Cisco MDS 9148S, MDS 9396S, MDS 9250i, and MDS 9700 Series switches.

For more information about this feature, see the Cisco MDS 9000 Series Security Configuration Guide.

Anti-counterfeit Measures

Anti-counterfeit measures have been introduced for the Cisco MDS 9132T Fibre Channel Switch.

IOA on Cisco MDS 24/10 Port SAN Extension Module

For information about this feature, see the Cisco MDS MDS 9000 Series I/O Accelerator Configuration Guide.

Secure Boot Support

Secure boot support has been introduced for the Cisco MDS 9132T Fibre Channel Switch.

New Hardware Features in Cisco MDS NX-OS Release 8.1(1b)

This section lists the new hardware chassis and features introduced in Cisco MDS NX-OS Release 8.1(1b).

Support for Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW)

Support for Cisco MDS 9700 HVDC PSU (DS-CHV-3.5KW) is added.

Note Upgrading or downgrading from Cisco MDS NX-OS Release 8.1(1b) to any other release that does not support high voltage PSUs is not supported on Cisco MDS 9700 Series Switches.

New Software Features in Cisco MDS NX-OS Release 8.1(1b)

FICON Support on Cisco MDS 9700 48 Port 32 Gbps Fibre Channel Switching Module

FICON is supported on Cisco MDS 9700 48 Port 32 Gbps Fibre Channel Switching Module.

FICON Tape Acceleration on the Cisco MDS 24/10 SAN Extension Module

FICON Tape Acceleration (FTA) support on the Cisco MDS 24/10 SAN Extension Module is introduced on Cisco MDS 9706 and 9710 switches.

New Hardware Features in Cisco MDS NX-OS Release 8.1(1a)

There are no new hardware features in Cisco MDS NX-OS Release 8.1(1a).

New Software Features in Cisco MDS NX-OS Release 8.1(1a)

There are no new software features in Cisco MDS NX-OS Release 8.1(1a).

FICON certification was achieved in Cisco MDS NX-OS Release 8.1(1a).

New Hardware Features in Cisco MDS NX-OS Release 8.1(1)

This section lists the new hardware chassis and features introduced in Cisco MDS NX-OS Release 8.1(1).

Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module

The Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module is supported on Cisco MDS 9700 Series Multilayer Directors. This module delivers predictable performance, scalability, and innovative features to support private and virtualized data centers.

For more information about this module, see the *Cisco MDS 9700 Series Hardware Installation Guide*.

New Software Features in Cisco MDS NX-OS Release 8.1(1)

This section lists the new software features introduced in Cisco MDS NX-OS Release 8.1(1).

Fibre Channel Read Diagnostic Parameters

The Fibre Channel Read Diagnostic Parameters (RDP) is a feature that provides the capability to read port and link diagnostics parameters like link errors, port name, port speed, SFP diagnostics, temperature, Rx power, Tx power, current, connector type, FEC status, buffer credits, serial number, vendor details, model number, and manufacture date.

FLOGI Scale Optimization

The FLOGI scale optimization feature increases the chassis-wide FLOGI scale limits. This feature is supported only on Cisco MDS 9718 Directors and is enabled by default.

For more information about this feature, see the Cisco MDS 9000 Series Fabric Configuration Guide.

Port Monitoring Enhancements

The link connecting an edge switch to a core switch must be treated as an ISL (core port), instead of an F port or a TF port. The port monitor may take port-guard action on the link if it is treated as an edge port, which will result in isolating the devices that are connected to the edge switch.

For more information about this feature, see the Cisco MDS 9000 Series Interfaces Configuration Guide.

Slow Drain Detection and Isolation Enhancements

Prior to Cisco MDS NX-OS Release 8.1(1), Slow Drain Detection and Congestion Avoidance was used to drop frames, reset, error-disable, or flap a port on a slow-drain device. From Cisco MDS NX-OS Release 8.1(1), the Slow Drain Detection and Congestion Isolation feature is introduced to isolate slow flows and route them to a low priority virtual link so that normal flows are not affected.

For more information about this feature, see the Cisco MDS 9000 Series Interfaces Configuration Guide.

40G FCoE Long Distance Support

The following QSFPs have been introduced to support FCoE Long Distance:

- QSFP-40GE-LR4 –10 km
- QSFP-40GE-ER4 –40 km

For more information about this feature see the Cisco MDS 9700 Series Hardware Installation Guide and the Cisco MDS 9000 Series QoS Configuration Guide.

Smart Software Licensing

Smart Software Licensing is a standardized licensing platform that simplifies the Cisco software experience and helps you understand how Cisco software is used across your network.

For more information about this feature, see the Cisco MDS 9000 Series Licensing Guide.

NVMe Support

NVMe support has been introduced for Cisco MDS 9000 Series Switches.

Anti-counterfeit Measures

Anti-counterfeit measures have been introduced for the Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module.

Secure Boot Support

Secure boot support has been introduced for the Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module.

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 Extension over IP package, and the Mainframe package. On-demand ports activation licenses are also available for the Cisco MDS 9250i Multiservice Fabric Switch, Cisco MDS 9148S 48-Port Multilayer Fabric Switch, and the Cisco MDS 9396S 96-Port Multilayer Fabric Switch.

Note A license is not required to use the 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).

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, you must 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 ports allow 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, MDS 9148S 48-Port Multilayer Fabric Switch, Cisco MDS 9396S Multilayer Fabric Switch, Cisco MDS 9148T Fibre Channel Switch, and the Cisco MDS 9396T Fibre Channel Switch. As needed, customers can expand switch connectivity by licensing additional ports.

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

You cannot bring up these modules if these features are already configured. You should completely remove all configurations that include these features before you attempt to bring up these modules. In addition, you cannot configure these features after you bring up these modules.

Slow Drain Detection and 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).

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 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.

- In Cisco MDS NX-OS Release 8.x, Write Acceleration on FCIP port channels should not be configured between two MDS 9700 Series switches with Cisco MDS 24/10 port SAN Extension Module under the following conditions:
  - If traffic flows between an FCoE port and an FC port through an FCIP port channel.
  - If traffic flows between an FCIP port and an FC port through an FCIP port channel.

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 you of important events related to Cisco MDS software and hardware for the following categories:

- End-of-Sale and End-of-Life Announcements
- Field Notices
- Security Advisories
- Software Updates [New, Certified, Software Advisories, Deferred, Obsoleted]
- 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://www.cisco.com/, and log in to your account.

2. Click **Support**.

3. Under the **Support Resources** category, click **Cisco Notification Service**.

4. On the **Cisco Notification Service** page, click **Add Notification**.

5. Under the **Topic Type** menu, click the **Alert-centric** option and then click **Continue**.

6. Under the **Topic** menu, choose a category and then click **Continue**.

7. Under the **Sub-Topic(s)** menu, type "mds nx-os" in the search box and then click **MDS 9000 NX-OS and SAN-OS Software** option from the list.

8. Under the **Finish** menu, click **Finish**.

✎

Note You must renew your notification subscriptions annually.

Resolved Caveats in Cisco MDS NX-OS Release 8.3(1)

Table 17   Resolved Caveats in Cisco MDS NX-OS Release 8.3(1)

Identifier	Description
CSCup69479	System default F mode causes FCIP tunnel to drop frames.
CSCuy83074	fc4-types not synced across fabric.
CSCuz22707	MDS9710 older PSU PN/SN detected after switchover.
CSCva20758	MDS 24/10 port SAN extension module: snmpd crash on fetching port-channel member fc port counters.
CSCva54781	show install all impact failed with free space test failed error.
CSCvc04449	VL credits configured in Congestion Isolation mode gets lost after toggling the feature.
CSCvd49251	FICON FTA - Crash occurs when running multiple DFDSS dumps to IBM 3500 tape system.
CSCvd70693	ER_RDY support for 10G should be removed and configuration check should be in place.
CSCvd87879	Link will not come up when credits configured is less than 34 in congestion-isolation mode.
CSCvd89879	USB is not detected in MDS 9148s and MDS 9396s switch with 8.1(1) image.
CSCve24391	Corruption in ACLTCAM index object list.
CSCve51462	Internal counters in the flogi component are incrementing when flogi is retried with different arguments.
CSCve53588	Congestion-isolation feature not isolating slow device when upgraded to NX-OS 8.1(1).
CSCve72490	Offline port RSCN not sent.
CSCve76170	MDS 9148s and 9396s - init system results in corrupted bootflash.
CSCve83189	LC pmon service crashes with signal 6.
CSCvf14690	Need show tech-support slowdrain for MDS 9148/9148S/9396S/9132T in NPV mode.
CSCvf19141	MDS 9700::<<%LIBDCDI-2-DCDI_ERR>> DATACORRUPTION-DATAINCONSISTENCY syslogs are seen after ISSU.
CSCvf68489	Fcd hap reset (heartbeat loss) during ISSU & upgrade aborts.
CSCvf82249	show logging onboard error-stats for FCIP formatting changes.
CSCvf83739	Single bit ECC error is being treated as fatal on the Cisco MDS 32G linecard on MDS 9700 and brings down the port instance.
CSCvf88178	SAN-Analytics: read/write_io_initiation/completion_time_max discrepancy in storage ports.
CSCvf96594	OHMS detects NVRAM test failure for various blocks.
CSCvf98303	MDS 32 Gb speed - show port internal info command displays oper port fec state down status.

Table 17   Resolved Caveats in Cisco MDS NX-OS Release 8.3(1)

Identifier	Description
CSCvf99665	ISSU/D fails with bootflash busy err; seg fault mounting bootflash (not mounted).
CSCvg07274	WWN beginning with 10:00:00:10:9b listed as wrong vendor in FCNS database.
CSCvg07694	Port Online RSCN sent during ISSU/D when zoned devices are on a remote switch.
CSCvg17573	port-monitor not monitoring NPV NP ports.
CSCvg25642	Credit loss recovery not functioning on MDS switches.
CSCvg36852	Kernel panic on MDS 9132T or 9148T or 9396T with switchport speed auto.
CSCvg50844	Disable HTTP and enable HTTPS in MDS switches.
CSCvg62335	GARP loop/storm or ARP loop.
CSCvg76152	ISL Diagnostics cable length is not accurate on 32G Line card for diagnostics tests.
CSCvh18546	After MDS 9148S upgrade from 6.2(17) to 8.1(1) the link light will be off for mgmt port.
CSCvh18563	After MDS 9148S upgrade from 6.2(17) to 8.1(1) the "logging origin-id" command is missing.
CSCvh19223	ISSU fails when running "show install all status" on a separate window.
CSCvh21454	MDS9250i or MDS9148S reloads due to kernel panic.
CSCvh30932	IP access list corruption after NX-OS upgrade.
CSCvh66178	MDS other than MDS9718 should not have FLOGI Scale optimization enabled.
CSCvh68603	When running the LDAP test "test aaa group username password" it results in system switchover.
CSCvh70372	ISL diagnostics does not display stop statistics when a test ends.
CSCvh72141	MDS 9700: IP ACL log deny messages are not recorded in "show logging log".
CSCvh77741	pwwn-based zoning cannot be mixed with other zoning modes.
CSCvh87415	Telemetry process core with high number of ITL flows.
CSCvh94844	snmp-server host entry with DNS name cannot be removed.
CSCvh99074	'show tech-support' subcommand on a fully loaded MDS 9700 fails and exits.
CSCvi33036	Add hostname dynamically to the telemetry header.
CSCvi33074	snmpd crashes cause switchover on 8.1(1).
CSCvi44099	MDS 9148S FC ports do not come up, transceiver Tx Power -40.00dBm.
CSCvi56611	MDS 9700 ethanalyzer does not strip headers for FIP traffic.
CSCvi77147	Include "show system internal kernel nvram-messages previous" in show tech for NPV in 6.2.
CSCvj07205	VRRP configuration should be removed from under IPStorage ports
CSCvj14367	Regular zone changes disrupt IVR traffic.
CSCvj24686	FC Port-channel behavior is inconsistent on MDS9148/MDS9148S if miscabling happens.

Table 17   Resolved Caveats in Cisco MDS NX-OS Release 8.3(1)

Identifier	Description
CSCvj49451	MTS error messages in NVRAM log.
CSCvj51494	XBAR loopback test failures after replacing 32G FC modules with 16G FC modules.
CSCvj55755	logging onboard txwait shows 100% congestion during ISSU and port flap.
CSCvj58687	Intermittent 51 second frame timeout drops without congestion.
CSCvj62547	Delete stale ACL entry after ISSU from NX-OS 8.2(x) to 8.3(x)
CSCvj74742	In NX-OS 8.x, custom created roles have limited privileges compared to NX-OS 6.x release.
CSCvj88112	Seeing LTL packet drops while sending traffic with IVR configuration.

Open Caveats in Cisco MDS NX-OS Release 8.3(1)

Table 18 *Open Caveats in Cisco MDS NX-OS Release 8.3(1)*

Identifier	Description
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.
CSCvj53221	MDS 9396T: Discrepancy in credit loss events under creditmon and hardware errors during ISSU.
CSCvj58258	DM fan LED does not change to red when a fan is absent in MDS 9148T.
CSCvj69154	"show system internal statsprofiler" command is not available in MDS 9132T NPV mode.
CSCvj72737	DM: MDS 9396T/9148T system status LED turns off if switch is booted without one of the fans.
CSCvj75180	MDS 9700 DS-X9448-768K9: Incorrect port range displayed in Syslog for device error 0xc0000300.
CSCvj78326	Span session with sfpAbsent destination becomes active after switch reload.
CSCvj84451	MDS 9396S: System does not shutdown when any fan is absent for 5 minutes.
CSCvj84632	MDS 9396S: System does not trigger EEM policy to shutdown in 3 minutes, when both fans are absent.
CSCvj85616	Interface goes to link-failure or not-connected state when the "dpvm activate force" command is issued.
CSCvj89080	Streaming failures are incrementing, data is not seen sometimes in DCNM with gRPC in connected state.
CSCvj89198	MDS 9396S: Incorrect syslog prints after overriding EEM fan policy.
CSCvj90524	Port rotation CLI: show command does not update immediately if analytics is disabled on port.
CSCvj90527	Port rotation CLI: show command does not remove port which has operation status as down.
CSCvj93031	show system login failures does not display IPV6 addresses.
CSCvk00570	IPS sub interface creation for VLAN 1024 and above fails.
CSCvk74689	Reduced default maximum SNMP Tx frame size causes "too many items in request" errors.

Resolved Caveats in Cisco MDS NX-OS Release 8.2(2)

Table 19 *Open Caveats in Cisco MDS NX-OS Release 8.2(2)*

Identifier	Description
CSCva20758	MDS 24/10 port SAN extension module: snmpd crash on fetching port-channel member fc port counters.
CSCvc04449	VL credits configured in Congestion Isolation mode gets lost after toggling the feature.

Table 19 Open Caveats in Cisco MDS NX-OS Release 8.2(2)

Identifier	Description
CSCvd87879	Link will not come up when credits configured is less than 34 in congestion-isolation mode.
CSCvd89879	USB is not detected in MDS 9148s and MDS 9396s switch with 8.1(1) image.
CSCvf88178	SAN-Analytics: read/write_io_initiation/completion_time_max discrepancy in storage ports.
CSCvf99665	ISSU/D fails with bootflash busy err; seg fault mounting bootflash (not mounted).
CSCvh29101	MDS NXOS 7.x & 8.x:: OU name has space in LDAP rootDN, NXOS adding extra backward slash '\'
CSCvh30932	IP access list corruption after NX-OS upgrade
CSCvh99074	'show tech-support' subcommand on a fully loaded MDS 9700 fails and exits

Open Caveats in Cisco MDS NX-OS Release 8.2(2)

Table 20 Open Caveats in Cisco MDS NX-OS Release 8.2(2)

Identifier	Description
CSCvc75645	9396S/9148S - licmgr crashed while installing incremental port licenses.
CSCvd94841	DCNM SAN Client FCIP Wizard Fails to configure FCIP Tunnels on DS-X9334-K9 module.
CSCvf68489	FICON: Fcd hap reset (heartbeat loss) during ISSU & upgrade aborts.
CSCvg36852	Kernel panic on MDS 9132T or 9148T or 9396T with switchport speed auto.
CSCvh21454	MDS9250i or MDS9148S reloads due to kernel panic.
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.
CSCvj58687	Intermittent 51 second timeout drops on 32 G module.
CSCvk28980	MDS 9132T Front Fan Status LED red when less than 4 fantrays (DS-C32T-FAN-E/I) are present.

Resolved Caveats in Cisco MDS NX-OS Release 8.2(1)

Table 21 Resolved Caveats in Cisco MDS NX-OS Release 8.2(1)

Identifier	Description
CSCve51462	Internal counters in the flogi component are incrementing when flogi is retried with different arguments.
CSCud43510	LDAP fails when using SSL and port 636.
CSCus58026	Improve diagnostics when MDS reloads due to full volatile DB.
CSCuv42986	Callhome stops working.

Table 21 Resolved Caveats in Cisco MDS NX-OS Release 8.2(1)

Identifier	Description
CSCuy09742	copy run start times out after removing ntp source-interface mgmt 0.
CSCuz06438	"switchport fill-pattern idle speed 8000" CLI is blocked in 9148S,9250i.
CSCuz22707	MDS9710 Older PSU PN/SN detected after switchover.
CSCva23686	Fill word IDLE not reported correctly in port info.
CSCva54781	show install all impact failed with free space test failed error.
CSCvb49642	Add Tx/Rx datarate threshold counters to OBFL.
CSCvb97552	Display a warning when fcip acceleration is enabled.
CSCvc62072	LC module uptime is wrongly calculated.
CSCvc63852	PLOGI sent from host to target misdirected to supervisor when received on a ISL.
CSCvc67941	MDS 9396S kernel panic on hung read of PSU SPROM.
CSCvc92256	"SSE cmd = 34 failed" eror messages in onboard log.
CSCvc97863	'acltcam' service crashes on MDS with IVR configuration.
CSCvd29813	9148s/ 9250i: Incorrect value seen for "fec corrected and uncorrected blocks" under DM Port monitor.
CSCvd34842	Need to log FCIP errors to OBFL.
CSCvd43653	Rare random frame drops in the absence of congestion on MDS 9700 platforms.
CSCvd49500	MDS 9396S Fan hardware PID not accurate.
CSCvd62800	Unable to remove SNMP host by ip address/hostname from running configuration.
CSCve00931	Saving configuration eventually causes restart of 'span' service.
CSCve10201	No traffic sent across an FCIP interface with tcp max-bandwidth-mbps 33 or less.
CSCve23084	'New Zoneset <name> is significantly bigger/smaller than current active Zoneset' warning not issued.
CSCve24145	zone/zoneset clone, rename, and convert failures are logged as successful in the accounting log.
CSCve24391	Corruption in acltcam index object list.
CSCve32147	Switch scheduler failing to redirect job outputs to TFTP server.
CSCve47182	SCSI reads over FCIP TA link fail when target device has status confirmation enabled.
CSCve50663	Hardware driver crashes when initialization fails and whole module is powered down.
CSCve58695	Remove the Authentication Method Option Esp-aes-xcbc-mac under FCIP IPSec Configuration.
CSCve70443	Disable Single Bit ECC Errors from being logged in Syslog Message.

Table 21   Resolved Caveats in Cisco MDS NX-OS Release 8.2(1)

Identifier	Description
CSCve72490	Offline port RSCN not sent.
CSCve97661	Host-Storage Connectivity loss due to misconfiguration of PC between NPV and NPV-Core (NPIV) switch.

Open Caveats in Cisco MDS NX-OS Release 8.2(1)

Table 22   Open Caveats in Cisco MDS NX-OS Release 8.2(1)

Identifier	Description
CSCvc04449	VL credits configured in Congestion Isolation mode gets lost after toggling the feature.
CSCvc75645	9396S/9148S - licmgr crashed while installing incremental port licenses.
CSCvd87879	Link will not come up when credits configured is less than 34 in congestion-isolation mode.
CSCvd89879	USB is not detected in MDS 9148s and MDS 9396s switch with 8.1(1) image.
CSCvd94841	DCNM SAN Client FCIP Wizard Fails to configure FCIP Tunnels on DS-X9334-K9 module.
CSCvf68489	FICON: Fcd hap reset (heartbeat loss) during ISSU & upgrade aborts.
CSCvf88178	SAN-Analytics: read/write_io_initiation/completion_time_max discrepancy in storage ports.
CSCvf99665	ISSU/D fails with bootflash busy err; seg fault mounting bootflash (not mounted).
CSCvh21454	MDS9250i or MDS9148S reloads due to kernel panic.
CSCvh30932	IP access list corruption after NX-OS upgrade.
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.
CSCvj58687	Intermittent 51 second timeout drops on 32 G module.
CSCvk28980	MDS 9132T Front Fan Status LED red when less than 4 fantrays (DS-C32T-FAN-E/I) are present.

Resolved Caveats in Cisco MDS NX-OS Release 8.1(1b)

Table 23   Resolved Caveats in Cisco MDS NX-OS Release 8.1(1b)

Identifier	Description
CSCuz22707	MDS9710 Older PSU PN/SN detected after switchover.
CSCva20758	MDS 24/10 port SAN extension module: snmpd crash on fetching port-channel member fc port counters.
CSCva23686	Fill word IDLE not reported correctly in port info.

Table 23   Resolved Caveats in Cisco MDS NX-OS Release 8.1(1b)

Identifier	Description
CSCva54781	show install all impact failed with free space test failed error.
CSCva56616	ISSU should check linecard ramdisk space before attempting upgrade.
CSCvc62072	LC module uptime is wrongly calculated.
CSCvc74064	Call Home XML files are randomly storing in the internal flash callhome directory.
CSCvd43653	Rare random frame drops in the absence of congestion on MDS 9700 platforms.
CSCvd74840	OXID based traffic load balancing not working on MDS 9396S in NPV mode on NP Port-channel uplink.
CSCve17470	Cisco MDS 32 Gbps FC modules reload when luxor hash-method is configured.
CSCve23084	'New Zoneset <name> is significantly bigger/smaller than current active Zoneset' warning not issued.
CSCve50663	Hardware driver crashes when initialization fails and whole module is powered down.
CSCve56524	DM renaming vsan is adding "vsan x hash-method luxor-on" entry in running-config.
CSCve70443	Disable Single Bit ECC Errors from being logged in Syslog Message
CSCvf14690	Need show tech-support slowdrain for MDS 9148/9148S/9396S/9132T in NPV mode.
CSCvf19141	GLDN::m9700::<<%LIBDCDI-2-DCDI_ERR>> DATACORRUPTION-DATAINCONSISTENCY syslogs are seen after ISSU.
CSCvg07694	Port Online RSCN sent during ISSU/D when zoned devices are on a remote switch.
CSCvg50844	disable http and enable https in MDS switches.
CSCvh21454	MDS 9250i or MDS 9148S spontaneously reloads.
CSCvh77741	pwwn-based zoning cannot be mixed with other zoning modes.
CSCvh94844	snmp-server host entry with DNS name cannot be removed.
CSCvj14367	Regular zone changes disrupt ivr traffic.
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.
CSCvj35308	ip access list for sl_def_acl show in running-config diff after copy r s.
CSCvj51494	XBAR loopback test failures after replacing 32G FC modules with 16G FC modules.
CSCuv42986	Callhome stops working.

Open Caveats in Cisco MDS NX-OS Release 8.1(1b)

Table 24   Open Caveats in Cisco MDS NX-OS Release 8.1(1b)

Identifier	Description
CSCvc75645	9396S/9148S - licmgr crashed while installing incremental port licenses.
CSCvi11757	FEC for 16G FICON does not interoperate with HDS 16G FICON disk arrays.

Resolved Caveats in Cisco MDS NX-OS Release 8.1(1a)

Table 25   Resolved Caveats in Cisco MDS NX-OS Release 8.1(1a)

Identifier	Description
CSCve51462	Internal counters in the flogi component are incrementing when flogi is retried with different arguments.
CSCuv42986	Callhome stops working.
CSCvb76482	RDP request for local port/remote port query gets an additional ELS response.
CSCvb93701	ISSU/D fails on MDS 9706/9710 with 'bootflash busy' error; seg fault while mounting bootflash.
CSCvc04449	VL credits configured in Congestion Isolation mode gets lost after toggling the feature.
CSCvc16087	Port Assert Seen On Reloading 24/10 SAN extension Module having FCIP Tunnels.
CSCvd87879	Link will not come up when credits configured is less than 34 in congestion-isolation mode.
CSCvd89879	USB is not detected in MDS 9148s and MDS 9396s switch with 8.1(1) image.
CSCve10201	No traffic sent across an FCIP interface with tcp max-bandwidth-mbps 33 or less.
CSCve27707	Base port should not checkout licenses in smart mode for 9148s,9250i,9396s.
CSCve29398	Zone server fails when a zone has 255+ members.
CSCve53588	Congestion-isolation feature not isolating slow device when ISSU to NX-OS 8.1(1).
CSCve76170	MDS 9148s and 9396s - init system results in corrupted bootflash.
CSCvf68489	FICON: Fcd hap reset (heartbeat loss) during ISSU & upgrade aborts.
CSCvf99665	ISSU/D fails with bootflash busy err; seg fault mounting bootflash (not mounted).
CSCvg02575	Kernel panic on fabric switch during ISSU to or ISSD from 8.1(1).
CSCvh30932	IP access list corruption after NX-OS upgrade.
CSCvh99074	'show tech-support' subcommand on a fully loaded MDS 9700 fails and exits.

Open Caveats in Cisco MDS NX-OS Release 8.1(1a)

Table 26   Open Caveats in Cisco MDS NX-OS Release 8.1(1a)

Identifier	Description
CSCvc75645	9396S/9148S - licmgr crashed while installing incremental port licenses.
CSCvd94841	Cisco DCNM SAN Client FCIP Wizard fails to configure FCIP tunnels on DS-X9334-K9 module.
CSCvh21454	MDS9250i or MDS9148S reloads due to kernel panic.
CSCvi11757	FEC for 16G FICON does not interoperate with HDS 16G FICON disk arrays.
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.
CSCvj40760	ISSU from 6.2(21) to 8.1(1a) is incorrectly disruptive for all FC ports all platforms.

Resolved Caveats in Cisco MDS NX-OS Release 8.1(1)

Table 27   Resolved Caveats in Cisco MDS NX-OS Release 8.1(1)

Identifier	Description
CSCus21289	mts set options returned -1 errno=2 for pid=7286 opc=106513.
CSCuu23485	OpenSSL to CISCO SSL Migration for Vulnerability Fixes.
CSCuw78551	MDS9250i IPStorage port is in init state though connected switch is up.
CSCux20090	Unable to attach module on MDS fabric switch.
CSCuy04686	Changing user password results in clear text sent to TACACS server logs.
CSCuy20167	Remove the second "txbytes compressed" for auto compression.
CSCuy60295	Fix potential code path for ACL TCAM usage going negative.
CSCuy96388	Unable to install port activation license on MDS 9396S and 9148S.
CSCuz07307	Getting password prompt even when entering password in copy ftp command.
CSCuz33342	Logging level port link-failure critical fails to work after ISSU.
CSCuz55997	Fan hardware info not displayed.
CSCva64432	Switch Accepts GPN_ID when port is already offline.
CSCva64534	Include "sh system internal kernel nvram-messages previous" in show tech.
CSCvb17477	MDS 9500: Power Supply capacity shows n/a on DM after powering off/on PSU.
CSCvb18873	During port-mon initialization LC configuration download fails.
CSCvb21271	Enable per-process memory usage limit on MDS linecards.
CSCvb26079	Port-monitor does not alert sync-loss when port is flapping continuously.
CSCvb68546	NX-OS "show tech ivr" missing asterisks for active IVR zoneset.
CSCvb94242	MDS 9396S PSU#2 fan failure alerts flapping.

Table 27   Resolved Caveats in Cisco MDS NX-OS Release 8.1(1)

Identifier	Description
CSCvc17723	Port crashes during Port license installation.
CSCvc23058	Spurious SFP alarms.
CSCvc23945	Implement proper validation of WWN in port security.
CSCvc23955	Certain WWNs erroneously declared invalid.
CSCvc43884	Switch crash due to acl hap reset.
CSCvc55114	Module fails to initialize when ports in speed group 10g and switchport fcrxbbcredit extended.
CSCvc62286	LDAP rootDN has an extra ' ' in debug if it has the value "dc=il" and LDAP is failing.
CSCvc69321	'install all' command blocked after original 'install' command session is terminated.
CSCvc97863	'acltcam' service crashes on MDS with IVR configuration.
CSCvd47149	LUN zoning is not supported when zone commit is done.
CSCvd49251	FICON FTA - Crash on CU side when running multiple DFDSS dumps to IBM 3500 tape system.
CSCvd49500	MDS 9396S Fan hardware PID not accurate.

Open Caveats in Cisco MDS NX-OS Release 8.1(1)

Table 28   Open Caveats in Cisco MDS NX-OS Release 8.1(1)

Identifier	Description
CSCve51462	Internal counters in the flogi component are incrementing when flogi is retried with different arguments.
CSCvb76482	RDP request for local port/remote port query gets an additional ELS response.
CSCvb93701	ISSU/D fails on MDS 9706/9710 with 'bootflash busy' error; seg fault while mounting bootflash.
CSCvc04449	VL credits configured in Congestion Isolation mode gets lost after toggling the feature.
CSCvc16087	Port Assert Seen On Reloading 24/10 SAN extension Module having FCIP Tunnels.
CSCvc75645	9396S/9148S - licmgr crashed while installing incremental port licenses.
CSCvd43653	Rare random frame drops in the absence of congestion on MDS 9700 platforms.
CSCvd87879	Link will not come up when credits configured is less than 34 in congestion-isolation mode.
CSCvd89879	USB is not detected in MDS 9148s and MDS 9396s switch with 8.1(1) image.
CSCvd94841	DCNM SAN Client FCIP Wizard Fails To configure FCIP Tunnels on DS-X9334-K9 module.

Table 28   Open Caveats in Cisco MDS NX-OS Release 8.1(1)

Identifier	Description
CSCve10201	No traffic sent across an FCIP interface with tcp max-bandwidth-mbps 33 or less.
CSCve27707	Base port should not checkout licenses in smart mode for 9148s,9250i,9396s.
CSCve29398	Zone server fails when a zone has 255+ members.
CSCve53588	Congestion-isolation feature not isolating slow device when ISSU to NX-OS 8.1(1).
CSCve76170	MDS 9148s and 9396s - init system results in corrupted bootflash.
CSCvf68489	FICON: Fcd hap reset (heartbeat loss) during ISSU & upgrade aborts.
CSCvf99665	ISSU/D fails with bootflash busy err; seg fault mounting bootflash (not mounted).
CSCvg02575	Kernel panic on fabric switch during ISSU to or ISSD from 8.1(1).
CSCvh21454	MDS9250i or MDS9148S reloads due to kernel panic.
CSCvh30932	IP access list corruption after NX-OS upgrade.
CSCvj22775	Devices take a long time or fail to login to 32 Gbps ports at 16 Gbps.

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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