Cisco MDS 9000 Series Release Notes

Release 9.4(2)

This document describes the features, issues, and deployment guidelines for the Cisco MDS NX-OS software for use on the Cisco MDS 9000 Series Switches.

Note:

- Cisco MDS 9000 NX-OS 9.4(2) software release is affected by software defect CSCwk14579, which may cause authentication failures after the upgrade, only in the case where TACACS is used as authentication protocol. If you are using TACACS and are considering an upgrade to Cisco MDS 9000 NX-OS 9.4(2), we are recommending to postpone the upgrade. A future release, available shortly, will contain the fix for this issue. If the upgrade to Cisco MDS 9000 NX-OS 9.4(2) is required and TACACS is being used as the authentication protocol, then a workaround is available. Please review the workaround section in the software defect CSCwk14579.
- The documentation set for this product strives to use bias-free language. For 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.
- Release notes are updated on an as needed basis with new information on restrictions and issues. See the following website for the most recent version of the Cisco MDS 9000 Series Release Notes.

Date	Description
January 22, 2026	Added CSCvv27832 to the Resolved Issues section.
October 03, 2025	Added CSCwo41374 to the Open Issues section.
August 29, 2025	Upgrading and Downgrading Cisco MDS NX-OS Software Image sections are moved to Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 9.x.
August 21, 2025	Added CSCwn10124, CSCwn94165 to the Open Issues section.
May 05, 2025	Added CSCwk65461 and CSCwk67211 to the Open Issues section.
March 25, 2025	Added CSCwo03706 to the Open Issues section.
March 03, 2025	Added CSCwn58100 to the Open Issues section.
August 12, 2024	Added CSCwk33644 to the Open Issues section.
May 11,2024	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 and to address the stringent requirements of large data center storage environments: high availability, security, scalability, sustainability, ease of management, and seamless integration of new technologies.

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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 the 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 9.x.

To download the new Cisco MDS 9000 Series Switches NX-OS software, go to the Storage Networking Software download website at https://software.cisco.com/download/find/MDS.

Upgrade and Downgrade Paths

Cisco MDS NX-OS Release 9.4(2) supports non-disruptive upgrade and downgrade to other Cisco MDS NX-OS Releases. For upgrade and downgrade paths, and guidelines that are recommended for upgrading or downgrading Cisco MDS NX-OS software images, see Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 9.x.

About Firmware Images

Cisco MDS 9000 Series Switches contain a number of hardware components with updatable firmware. The Transceiver Firmware bundle contains updates for various port transceivers. The EPLD Firmware bundle contains updates for programmable logic devices in the system.

These updates can be disruptive and so are not part of the Cisco NX-OS software image. They are released with every Cisco NX-OS release but do not frequently contain changes. Refer to the specific Release Notes for any recommended fixes.

For more information on Transceiver Firmware, see the Cisco MDS 9000 Series Transceiver Firmware Release Notes, Release 9.4(2).

For more information on EPLD bundles, see the Cisco MDS 9000 Series EPLD Release Notes, Release 9.4(2).

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 bugs may not yet have been fixed. After an initial release, minor version numbers of the release train are incremented as bugs are resolved, and minor feature enhancements and security patches are integrated. This provides increased stability to the new features and updated security.

For Cisco recommended MDS NX-OS releases for each type of hardware, see Recommended Releases for Cisco MDS 9000 Series Switches document.

Components Supported

For information on supported software and hardware components, see Cisco MDS 9000 Series Compatibility Matrix.

IBM FICON Qualification Status

Cisco MDS NX-OS Release 9.4(2) is not IBM FICON qualified.

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Cisco TrustSec FC Link Encryption

For more information about which set of interfaces on each module support FC-SP, see the Configuring Cisco TrustSec Fibre Channel Link Encryption chapter of the *Cisco* MDS *9000 Series Security Configuration Guide, Release 9.x*.

Upgrade and Downgrade Paths

The following sections provides information about nondisruptive upgrade and downgrade paths for Cisco MDS NX-OS Release 9.4(2). For guidelines that are recommended for upgrading or downgrading Cisco MDS NX-OS software images, see the Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 9.x.

Note: If you have the SAN analytics feature enabled, ensure that you disable the SAN analytics feature using the **no feature analytics** command before upgrading. For detailed instructions, see *Preventing SAN Analytics Corruption during ISSU* section in the Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide, Release 9.x.

New Hardware Features

Product Impact	Feature	Description
Transceivers	64 Gbps LW SFP	Support for the DS-SFP-FC64G-LW transceiver has been introduced. See the Cisco MDS 9000 Series Pluggable Transceivers Data Sheet.

New and Enhanced Software Features

Product Impact	Feature	Description
Feature Set	FCIP	The minimum allowed limit of the TCP minimum retransmit timeout has been lowered from 200 ms to 50 ms. The TCP minimum retransmit time is configured with the **fcp-min-retransmit-time** command in FCIP profile configuration. See the Cisco MDS 9000 Series IP Services Configuration Guid, Release 9.x.
	SNMP	Support for reading FC transceiver sensor descriptions and DOM parameters has been introduced. The descriptions are in the 'entPhysicalDescr' OID. See the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 9.x.
	FDMI	Support for virtual devices to allow management of virtual HBAs has been introduced. See the Cisco MDS 9000 Series Fabric Configuration Guide, Release 9.x.
	SAN Analytics	Support for SAN Analytics and SAN Telemetry Streaming on the Cisco MDS 9396V Fibre Channel switch has been introduced. See the Cisco MDS 9000 Series SAN Analytics and SAN Telemetry Streaming Configuration Guide.
Ease of use	System	Support for linecard configuration migration when upgrading linecards in the same slot has been added. The **migrate configuration linecard** exec command has been introduced. See the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 9.x and CSCvm69632.

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Product Impact	Feature	Description
Power Efficiency	System	Support to control SFP power in interfaces that are shutdown has been introduced. The following commands have been introduced: Configuration mode: **system transceiver power-control** Exec mode: **show system transceiver power-control** Also the **show interface** command has been modified to display the power control setting and current power state. See the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 9.x.
Security	SSL	Support for TLS version 1.3 on Cisco MDS 9700 Multilayer Directors has been introduced. See the Cisco MDS 9000 Series Security Configuration Guide, Release 9.x.
	SSH	Support for flexible Ciphers and Algorithms in SSH on MDS 9148S 16G Multilayer Fabric Switch, MDS 9396S 16G Multilayer Fabric Switch and MDS 9250i Multiservice Fabric Switch has been introduced. See the Cisco MDS 9000 Series Security Configuration Guide, Release 9.x.

Unsupported Features

MD5 Hash in FCSP

From Cisco MDS NX-OS Release 9.4(2), support for the MD5 hash algorithm in Fibre Channel Security Protocol (FSCP) has been removed as it is no longer considered secure. The default hash algorithm has been changed to SHA1.

10G and 40G FCoE linecards

From Cisco MDS NX-OS Release 9.4(2), the following FCoE linecards are no longer supported:

- DS-X9848-480K9 – 48-port 10-Gbps FCoE Switching Module
- DS-X9824-960K9 – MDS 9700 24-port 40-Gbps FCoE Switching Module

For more information, see Cisco MDS 9700 Series Multilayer Directors Hardware Installation Guide.

SDV feature

Cisco MDS NX-OS Release 9.3(2) and later releases do not support Cisco SAN device virtualization (SDV).

Traditional and Smart Licensing Version 1.0 Licenses

Cisco MDS NX-OS Release 9.2(2) and later releases does not support installation of Product Authorization Key (PAK) or Smart Licensing version 1.0 licenses. Licenses are now managed through Smart License using Policy (SLP).

For more information such as how to migrate licenses, see Smart Licensing Using Policy chapter in Cisco MDS 9000 Series Licensing Guide, Release 9.x.

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Python 2

Support for Python 2 is deprecated from Cisco MDS NX-OS Release 9.2(2). Python 3 remains supported instead. Python 2 scripts should be checked for compatibility with Python 3 to ensure they continue to function as expected.

For more information, see the Python API chapter in the Cisco MDS 9000 Series Programmability Guide, Release 9.x.

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.

Data Encryption Standard (DES) for SNMP

From Cisco MDS NX-OS Release 8.5(1), AES-128 is the default encryption mechanism for SNMPv3. DES encryption for SNMP is supported only for DES users who upgrade from previous releases to Cisco MDS NX-OS Release 8.5(1). Ensure that you delete all the SNMPv3 users configured with DES encryption before upgrading to Cisco MDS NX-OS Release 8.5(1) and later releases. Any downgrades from Cisco MDS NX- OS Release 8.5(1) will be restricted if any of the SNMPv3 users have DES encryption configured as the privacy protocol. All such users will either need to be deleted or reconfigured to use no privacy protocol or AES128 encryption before downgrading.

For more information, see Cisco MDS 9000 Series System Management Configuration Guide, Release 9.x.

Fabric Performance Impact Notifications (FPIN)

- FPIN is not supported on switches that are operating in NPV mode.
- FPIN notifications for oversubscription-based congestion are not supported.

FCWA, XRC, DMM, SME

FCWA, XRC, DMM, and SME features are not supported from Release 8.x.

SAN Extension Tuner

SAN Extension Tuner (SET) is not supported on Cisco MDS 9220i switches in Cisco MDS NX-OS Release 8.5(1) or later.

Fibre Channel Read Diagnostic Parameters

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

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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 9.2(2) or later releases, simultaneous use of IVR and FCIP Write Acceleration features is not supported on FCIP tunnels configured on Cisco MDS 9700 Director switches.
- On Cisco MDS 24/10 Port SAN Extension Module, configuring multiple FSPF equal cost paths (ECMP) port channels with FCIP members in the same VSAN is not a valid configuration. If this is configured, then the traffic flows 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 and Cisco MDS 9220i multiservice fabric switch.

Resolved Issues

Severity 1 (Catastrophic) Issues

Bug ID	Headline	Known Impacted Releases
CSCwh60299	A fabric switch with SFP checksum errors reloads after an ISSU	9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d). 8.4(2e) 8.3(2), 8.3(1) 8.2(2), 8.2(1) 8.1(1)
CSCwh70425	Nginx process crash with core files on 9.3.2	9.3(2)
CSCwh50527	Sup-1 to Sup-4 migration detects problem with Sup-4 but does not abort migration and poweroff sup-4	8.5(1)
CSCwh53262	'machine check' error triggers reload on MDS 9396S switch and warning on MDS 32 Gbps FC linecard	9.4(1) 9.3(1) 9.2(1) 8.4(2d)

Severity 2 (Severe) Issues

Bug ID	Headline	Known Impacted Releases
CSCvv27832	Kernel panic on MDS DS-X97-SF4-K9 model supervisor	9.4(1a) 8.4(2a), 8.4(1a), 8.4(1)

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Bug ID	Headline	Known Impacted Releases
CSCwh70425	Nginx process crash with core files on 9.3.2	9.3(2)
CSCwj18866	Internal buffers leaked by TACACS service even though TACACS service is not enabled	9.4(1) 9.3(2a)

Severity 3 (Moderate) Issues

Bug ID	Headline	Known Impacted Releases
CSCwh15117	Fabric switch or MDS 9700 Supervisor Module-3 resets randomly with reason 'watchdog timeout'	9.3(2a), 9.3(1) 9.2(1) 8.5(1) 8.4(1) 8.3(1) 8.2(1) 8.1(1)
CSCwh50527	Sup-1 to Sup-4 migration detects problem with Sup-4 but does not abort migration and poweroff sup-4	8.5(1)
CSCwh76823	pmon service crashes while running 'show tech' commands	9.4(1a)
CSCwi36075	Interfaces stuck in offline status after DellEMC Unity, NetApp, HPE Synergy VC upgrade or reboot	9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1)
CSCwi94490	Strings " prohibit" or " block" are falsely interpret as FICON config when performing ISSU	9.4(1a)

Open Issues

Severity 1 (Catastrophic) Issues

Bug ID	Headline	Known Impacted Releases
CSCwo03706	An FC interface will not come up / switch to soft zoning	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1) 9.2(2), 9.2(1a), 9.2(1) 8.5(1)

Severity 2 (Severe) Issues

Bug ID	Headline	Known Impacted Releases
CSCvp48050	MDS 9700 control plane packet drops after switch boot	9.4(2), 9.4(1a) 8.4(1)
CSCwi81679	analytics_client service crash after enabling or disabling monitoring multiple times	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1)

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Bug ID	Headline	Known Impacted Releases
CSCwn10124	Device unable to log into fabric due to maximum FLOGIs already on the port	9.4(2), 9.4(1a), 9.4(1) 9.3(1) 9.2(1) 8.5(1) 8.4(1) 8.3(1) 8.2(1) 8.1(1)
CSCwn58100	Hosts losing paths due to FSPF instability due to LSRs reaching Max Age after upgrading to 9.4(2a)	9.4(3), 9.4(2a), 9.4(2), 9.4(1a), 9.4(1)
CSCwk65461	ISSD compatibility check failure from NX-OS 9.4(2)	9.4(2)
CSCwk67211	FDMI service crash while executing 'show fdmi database detail' command	9.4(2)
CSCwn94165	Linecard 'acltcam' service crashes with signal 6	9.4(2), 9.4(1a), 9.4(1)
CSCwo41374	Switch hangs after CPU stall, control plane and management interface not responding	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1), 9.2(2), 9.2(1a), 9.2(1) 8.5(1), 8.4(2f), 8.4(2e), 8.4(2d), 8.4(2c), 8.4(2b), 8.4(2a), 8.4(2), 8.4(1a), 8.4(1) 7.3(1)DY(1) 6.2(33)

Severity 3 (Moderate) Issues

Bug ID	Headline	Known Impacted Releases
CSCwi20078	fwd-flow validation CC fails in 9132T after ISSU from NX-OS 8.4(2f)	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1)
CSCwj46403	Online 64 Gbps ports go down and reinitialise when OLS primative is received	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1)
CSCwj80322	FCSP service crash after reload or enabling the FCSP feature	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1)

Severity 4 (Minor) Issues

Bug ID	Headline	Known Impacted Releases
CSCvf08416	'show tech details' triggers 'pam_ftp(ftp:auth): conversation failed- ftpd' syslogs	9.4(2), 9.4(1a) 8.5(1) 8.4(1), 8.4(2), 8.4(2a),

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Bug ID	Headline	Known Impacted Releases
		8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e) 8.3(2), 8.3(1) 8.2(2), 8.2(1)
CSCvj93031	IPv6 source address not displayed in log in failure logs	9.4(2), 9.4(1a) 8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e) 8.3(2), 8.3(1)
CSCvs23106	SCSI target discovery service running even after removal of last DS-X9334-K9 module from switch	9.4(2), 9.4(1a) 8.5(1) 8.4(1), 8.4(1a), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e) 8.3(1), 8.3(2) 8.2(1), 8.2(2) 8.1(1), 8.1(1a), 8.1(1b)
CSCvt15761	Nondisruptive reload causes reinitialization of error disabled ports on other linecards	9.4(2), 9.4(1a) 8.5(1) 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e)
CSCvv00538	Remove misleading ficon stat 'merge failed' message in non- FICON VSAN	9.4(2), 9.4(1a) 8.5(1) 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e)
CSCwc61263	Linecard fails to boot up with '%PORT-5-MODULE_BRINGUP_NOT_ALLOWED' error	9.4(2), 9.4(1a) 8.4(2e), 8.4(2c) 8.1(1)
CSCwj41404	Scheduler job 'XbarErrorMonitor_Job' fails to run	9.4(2), 9.4(1a), 9.4(1) 9.3(2a), 9.3(2), 9.3(1) 8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e) 8.3(2), 8.3(1)
CSCwk33644	Power Supply status of " Powered-dn" causes Amber System Status LED	9.4(2a), 9.4(2) 9.4(1a), 9.4(1)

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Severity 6 (Enhancement) Issues

Bug ID	Headline	Known Impacted Releases
CSCvo22835	All flows are briefly suspended while moving an IOA flow between 2 clusters	9.4(2), 9.4(1a) 8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e) 8.3(2), 8.3(1) 8.2(2), 8.2(1) 8.1(1b), 8.1(1a), 8.1(1)
CSCvp70681	Streaming to telemetry receiver stops, receiver stays in " idle" state	9.4(2), 9.4(1a) 8.5(1) 8.4(1), 8.4(2), 8.4(2a), 8.4(2b), 8.4(2c), 8.4(2d), 8.4(2e)
CSCvw77444	Need to automatically sync bootflash:/scripts directory between active and standby sups	9.4(2), 9.4(1a), 9.4(1) 8.1(1a)
CSCvx37657	Need to save nonvolatile logs about BIOS programming errors	9.4(2), 9.4(1a) 8.5(1) 8.4(2c), 8.4(2d), 8.4(2e) 8.3(2)
CSCwb13413	A fabric module with a faulty link to a linecard is not powered down	9.4(2), 9.4(1a) 8.4(1)
CSCwe86920	Add option to 'show tech-support' to exclude and include subcommands	9.4(2), 9.4(1a), 9.4(1) 8.1(1)
CSCwf48167	Span tx is not working in NPV mode on all platforms, rx is working	9.4(2), 9.4(1a), 9.4(1)
CSCwf66251	Need a syslog warning when number of zone members exceeds maximum supported	9.4(2), 9.4(1a) 8.4(2d)

Related Documentation

The documentation set for the Cisco MDS 9000 Series includes the documents that are 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

Cisco Nexus Dashboard Fabric Controller (Formerly DCNM)

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

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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/dcn/mds9000/sw/9x/configuration/licensing/cisco-mds-9000-nx-os-licensing-guide-9x.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

CLI

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

Statement of Volatility

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

Documentation Roadmap

https://www.cisco.com/c/en/us/td/docs/storage/san_switches/mds9000/roadmaps/rel90.html

Documentation Feedback

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