

Overview

This document describes how to upgrade or downgrade the Cisco MDS NX-OS software and firmware for Cisco MDS 9000 Series Multilayer Switches.

- Introduction, on page 1
- About Software Images, on page 1
- About Transceiver Firmware Bundles, on page 2
- Software Image for a Cisco MDS Switch, on page 3
- No Payload Encryption Software Images, on page 3
- Downloading NX-OS Software and Firmware, on page 4
- Related Resources, on page 5

Introduction

This document describes how to upgrade and downgrade the Cisco MDS NX-OS software and firmware for Cisco MDS 9000 Series Multilayer Switches.

Note All the CLI session examples that are provided in this document are intended only for reference. The actual switch output differs based on your switch model.

About Software Images

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

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

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

Note Do not rename the standard image filenames.

Release notes are sometimes updated with the new information on restrictions and caveats. Refer to the following website for the most recent version of the Cisco MDS 9000 Series Release Notes.

Dependent Factors for Software Installation

The software image install procedure depends on the following factors:

- Software images — The kickstart and system image files reside in directories or folders that can be accessed from the Cisco MDS 9000 Series Multilayer switch prompt.
- Image version — Each image file has a version.
- Flash disks on the switch — The bootflash: resides on the supervisor module, and the CompactFlash disk is inserted into the slot0: device.
- Supervisor modules — Either single or dual supervisor modules are present.

Supported Components

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

Determining Compatibility of New Software with Existing Software

To determine the version of the Cisco MDS NX-OS software that is currently running on a Cisco MDS 9000 switch using the CLI, log in to the switch and run the **show version** command in privileged EXEC mode.

To determine the version of the Cisco MDS NX-OS software currently running on a Cisco MDS 9000 switch using Cisco DCNM for SAN, click the Switches tab in the Information pane, locate the relevant switch using the corresponding IP address, logical name, or worldwide name (WWN), and check its version in the Release column.

Use the **show incompatibility-all system bootflash** : *system image filename* command to determine which features are incompatible with the destination upgrade release.

```
switch(config)# show incompatibility-all system bootflash:m9700-sf4ek9-mz.9.2.1.bin

Checking incompatible configuration(s):
No incompatible configurations

Checking dynamic incompatibilities:
No incompatible configurations
```

About Transceiver Firmware Bundles

Some transceiver models contain firmware that supports updating. The update for each transceiver is bundled together as a single file which you can download from Cisco. When the upgrade process is run on the switch, NX-OS extracts the update for each type of transceiver and applies it to the corresponding transceiver type if the installed version is lower than the upgrade version.

Note These updates are disruptive to install and usually not required. Do not install them unless directed by Cisco support.

Software Image for a Cisco MDS Switch

The following table lists the system and kickstart image that you can use for a Cisco MDS switch.

Table 1: Software Images for Cisco MDS Switches

Cisco MDS Switch	Naming Convention
Cisco MDS 9396T	Filenames begin with m9300-s2ek9
Cisco MDS 9148T	Filenames begin with m9148-s6ek9
Cisco MDS 9132T	Filenames begin with m9100-s6ek9
Cisco MDS 9148S	Filenames begin with m9100-s5ek9
Cisco MDS 9220i	Filenames begin with m9220-s7ek9
Cisco MDS 9250i	Filenames begin with m9250-s5ek9
Cisco MDS 9396S	Filenames begin with m9300-s1ek9
Cisco MDS 9718, 9710, and 9706	Filenames begin with m9700-sf3ek9 [1] Filenames begin with m9700-sf4ek9 [2]
Cisco MDS 9124V	Filenames begin with m9124v-s8ek9
Cisco MDS 9148V	Filenames begin with m9148v-s8ek9
Cisco MDS 9396V	Filenames begin with m9396v-s3ek9

1 The m9700-sf3ek9 filename images are supported only on Cisco MDS 9700 Series Supervisor-1 Module on Cisco MDS 9710 and 9706 Director Switches, and Cisco MDS 9700 Series Supervisor-1E Module on Cisco MDS 9718 Director Switches.

2 The m9700-sf4ek9 filename images are supported only on Cisco MDS 9700 Series Supervisor-4 Module on Cisco MDS 9718, 9710, and 9706 Director Switches.

No Payload Encryption Software Images

No payload encryption (NPE) versions of Cisco MDS NX-OS software are available. These images have encryption code removed and can be used in countries that have import restrictions on products that encrypt payload data.

To differentiate an NPE image from a standard software image, the letters npe are included in the image name as follows:

- m9100-s6ek9-kickstart-mz-npe.9.3.2.bin
- m9100-s6ek9-mz-npe.9.3.2.bin
- m9100-s5ek9-kickstart-mz-npe.9.3.2.bin
- m9100-s5ek9-mz-npe.9.3.2.bin
- m9148-s6ek9-kickstart-mz-npe.9.3.2.bin
- m9148-s6ek9-mz-npe.9.3.2.bin
- m9300-s1ek9-kickstart-mz-npe.9.3.2.bin
- m9300-s1ek9-mz-npe.9.3.2.bin
- m9300-s2ek9-kickstart-mz-npe.9.3.2.bin
- m9300-s2ek9-mz-npe.9.3.2.bin
- m9396v-s3ek9-kickstart-mz-npe.9.4.1.bin
- m9396v-s3ek9-mz-npe.9.4.1.bin
- m9220-s7ek9-kickstart-mz-npe.9.3.2.bin
- m9220-s7ek9-mz-npe.9.3.2.bin
- m9700-sf4ek9-kickstart-mz-npe.9.3.2.bin
- m9700-sf4ek9-mz-npe.9.3.2.bin
- m9700-sf3ek9-kickstart-mz-npe.9.3.2.bin
- m9700-sf3ek9-mz-npe.9.3.2.bin
- m9700-sf4ek9-kickstart-mz-npe.9.3.2.bin
- m9700-sf4ek9-mz-npe.9.3.2.bin

Note When downloading software, ensure that you select the correct software image for your Cisco MDS 9000 Series Multilayer switch. Nondisruptive software upgrades or downgrades between NPE images and non-NPE images are not supported.

Downloading NX-OS Software and Firmware

The Cisco MDS NX-OS software is designed for mission-critical high-availability environments. To realize the benefits of nondisruptive upgrade on the Cisco MDS 9700 Series Multilayer Directors, we recommend that you install dual supervisor modules. See Cisco MDS 9700 Series Supervisor-4 Module Data Sheet.

To download the latest Cisco MDS NX-OS software, access the Software Center.

To request a copy of the source code under the terms of either GPL (General Public License) or LGPL (Lesser General Public License), email mds-software-disclosure@cisco.com.

Related Resources

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:

https://www.cisco.com/en/US/products/ps5989/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

Compatibility Matrix

Cisco MDS 9000 Series Compatibility Matrix, Release 9.x

Configuration Examples TechNotes

Perform an MDS 9000 Series Switch Non-Disruptive NX-OS Upgrade