

Downgrading from Cisco MDS NX-OS Release 9.x

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Cisco MDS NX-OS Software Downgrade Guidelines

- Downgrading directly from Cisco MDS NX-OS Release 9.4(2a) to Cisco MDS NX-OS Release 9.4(2) is not recommended.
- Downgrading directly from Cisco MDS NX-OS Release 9.x to unsupported releases are disruptive.
- Downgrading directly from Cisco MDS NX-OS Release 9.x to releases before Cisco MDS NX-OS Release 6.2(9) is not supported. In such a scenario, we recommend that you first downgrade to Cisco MDS NX-OS Release 6.2(13a) or higher and then downgrade to the required release.
- Downgrading directly from Cisco MDS NX-OS Release 9.x 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 9.x to Cisco MDS NX-OS Release 7.3(1)DY(1) is not supported. In such a scenario, we recommend that you first downgrade to Cisco MDS NX-OS Release 7.3(0)D1(1) and then upgrade to 7.3(1)DY(1).
- Downgrading from Cisco MDS NX-OS Release 9.x is not supported if the FLOGI Scale Optimization feature is enabled on Cisco MDS 9718 Switches.
- We do not recommend parallel In-Service Software Downgrade (ISSD) on Cisco MDS 9148S, Cisco MDS 9250i, and Cisco MDS 9396S fabric switches when these fabric switches are each other's peers.
- If you are downgrading from Cisco MDS NX-OS Release 9.x to a release prior to Cisco MDS NX-OS Release 9.2(1), ensure that you use the **clear logging onboard txwait** command after downgrading. Otherwise, logging to the OBFL TxWait file may cease with an error. For more information, see the Cisco MDS 9000 Series Interfaces Configuration Guide, Release 9.x.

- If you copy firmware using the SFTP or SCP clients after enabling the **feature scp-server** or **feature sftp-server** command on your switch, ensure that you close the SFTP or SCP connection using the **no feature scp-server** or **no feature sftp-server** command before performing ISSD. Otherwise, ISSD will be disruptive. To avoid this issue, we recommend that you transfer files to the switch using the **copy** command instead or using the DCNM client.
- Prior to upgrade or downgrade, reset the switch's logging levels to the system defaults via the **no logging level all** configuration command. If this is not done, the upgrade or downgrade may be disruptive due to excessive logging causing control plane downtime exceeding 80 seconds.

  Before entering the **no logging level all** command, ensure that the switch's current logging configuration is saved. This will need to restored after the upgrade or downgrade.

  Follow these steps:

  1. Enter the **show running-config | i "logging level"** command and save the output. These are the switch's current settings.
  2. Enter the **no logging level all** command in configuration mode.
  3. Perform upgrade or downgrade.
  4. Restore logging level configuration using the output that was saved from Step 1.

- To determine if high-bandwidth capability is enabled, use the **show hardware fabric-mode** command. The following example shows that the higher bandwidth capability is not activated:

```
switch# show hardware fabric-mode
Fabric mode supports only one configuration of 8G FC modules - 4/44 Host-Optimized 8G
FC module.
switch#
```

  The following example shows that the higher bandwidth capability is activated:

```
switch# show hardware fabric-mode
fabric mode supports FCoE, Gen2 and above linecards
switch#
```

For information on supported chassis and modules, see the Cisco MDS 9000 Series Compatibility Matrix. For information on the procedures for installing and upgrading software for Intelligent Storage Services on the Cisco MDS 9000 Series Storage Services Module (SSM), see the Cisco MDS 9000 Series Storage Services Module Software Installation and Upgrade Guide.

Downgrade Guidelines for Cisco MDS 9396S Switch

- Downgrading from Cisco MDS NX-OS Release 9.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 9.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).
- To downgrade from Cisco MDS NX-OS Release 9.x to Cisco MDS NX-OS Release 7.3(x) on a Cisco MDS 9396S Series switch, you must first disable the extended receive BB_credit configuration using

the **no feature fcrxbbcredit extended** command. After the downgrade process is complete, enable the extended receive BB_credit configuration using the **feature fcrxbbcredit extended** command.

Downgrade Guidelines for Cisco MDS 9250i Switch

- Downgrading from Cisco MDS NX-OS Release 9.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 9.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 9.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.

Downgrading from Cisco MDS NX-OS Release 9.x to Cisco MDS NX-OS Release 8.x

To downgrade from Cisco MDS NX-OS Release 9.x to Cisco MDS NX-OS Release 8.x or an earlier release, perform the following steps:

Procedure

Step 1 Verify that the system image files for the downgrade are present in the active supervisor module bootflash:

```
switch# dir bootflash:

26126848 May 07 11:51:20 2021 m9700-sf4ek9-kickstart-mz.9.2.1.bin
20090368 Apr 06 05:25:31 2018 m9700-sf4ek9-kickstart-mz.8.3.1
20044800 Mar 30 15:42:05 2014 m9700-sf4ek9-kickstart-mz.6.2.7.bin
107197681 Apr 06 05:26:53 2001 m9700-sf4ek9-mz.6.2.5.bin.S68
107587249 Mar 30 15:42:52 2014 m9700-sf4ek9-mz.6.2.7.bin
```

Step 2 If the software image file is not present, download it from an FTP or TFTP server to the active supervisor module bootflash.

You can obtain the software image file from the Cisco.com Software Download Center: http://www.cisco.com/cisco/software/navigator.html

Note
If you need more space in the active supervisor module bootflash, use the **delete** command to remove the files that are not necessary, and perform Step 3, on page 3 and Step 4, on page 4.

```
switch# copy tftp://tftpserver.cisco.com/MDS/m9700-sf4ek9-kickstart-mz.8.3.1.bin
bootflash:m9700-sf4ek9-kickstart-mz.8.3.1.bin
switch# copy tftp://tftpserver.cisco.com/MDS/m9700-sf4ek9-kickstart-mz.8.3.1.bin
bootflash:m9700-sf4ek9-kickstart-mz.8.3.1.bin
```

Step 3 Ensure that the required space is available in the active supervisor:

```
switch# dir bootflash:

26126848 May 07 11:51:20 2021 m9700-sf4ek9-kickstart-mz.9.2.1.bin
12288 Aug 26 19:06:14 2011 lost+found/
18939904 Jul 01 10:54:49 2011 m9700-sf4ek9-kickstart-mz.6.2.5.bin
101756072 Jul 01 10:33:52 2011 m9700-sf4ek9-mz.6.2.5.bin

Usage for bootflash://sup-local
120695976 bytes used
63863640 bytes free
184559616 bytes total
```

Step 4 If you need more space in the active supervisor module bootflash, delete the files that are not required, to make space available:

```
switch# delete bootflash: m9700-sf4ek9-kickstart-mz.6.2.5.bin
```

Step 5 Run the **show incompatibility system** *image-filename* command to determine if you must disable the features not supported by a release earlier than release to be installed.

```
switch# show incompatibility system bootflash: system m9700-sf4ek9-mz.8.3.1.bin
Checking incompatible configuration(s):
.
..
...
no incompatible configurations
switch#
```

Step 6 Save the configuration using the **copy running-config startup-config** command:

```
switch# copy running-config startup-config
```

Step 7 Run the **install all** command to downgrade the software:

```
switch# install all kickstart m9700-sf4ek9-kickstart-mz.8.3.1.bin
system m9700-sf4ek9-mz.8.3.1.bin
install all kickstart m9700-sf4ek9-kickstart-mz.8.3.1.bin system m9700-sf4ek9-mz.8.3.1.
bin
Installer will perform compatibility check first. Please wait.

Verifying image bootflash:/m9700-sf4ek9-kickstart-mz.8.3.1.bin for boot variable "kickstart".
[####################] 100% -- SUCCESS

Verifying image bootflash:/m9700-sf4ek9-mz.8.3.1.bin for boot variable "system".
[####################] 100% -- SUCCESS

Performing module support checks.
[####################] 100% -- SUCCESS

Verifying image type.
[####################] 100% -- SUCCESS

Extracting "system" version from image bootflash:/m9700-sf4ek9-mz.8.3.1.bin.
[####################] 100% -- SUCCESS

Extracting "kickstart" version from image bootflash:/m9700-sf4ek9-kickstart-mz.8.3.1.bin.
[####################] 100% -- SUCCESS

Extracting "bios" version from image bootflash:/m9700-sf4ek9-mz.8.3.1.bin.
[####################] 100% -- SUCCESS

Performing Compact Flash and TCAM sanity test.
[####################] 100% -- SUCCESS
```

```
Notifying services about system upgrade.
[####################] 100% -- SUCCESS



Compatibility check is done:
Module  bootable          Impact  Install-type  Reason
------  --------  --------------  ------------  ------
     1       yes  non-disruptive         reset


Other miscellaneous information for installation:
Module  info
------  --------------------------------
1  FC ports 1-40 and FCoE ports 1-8 are hitless, IPS 1-2 are hitful, and Intelligent Applications
running are hitful


Images will be upgraded according to following table:
Module       Image         Running-Version(pri:alt)           New-Version  Upg-Required
------  ----------  ----------------------------------------  --------------------
     1      system                    9.2(1)               8.3(1)           yes
     1   kickstart                    9.2(1)               8.3(1)           yes
     1        bios v2.1.17(01/08/14):v2.1.17(01/08/14)     v2.1.17(01/08/14)  no

Do you want to continue with the installation (y/n)?  [n] y

Install is in progress, please wait.

Performing runtime checks.
[####################] 100% -- SUCCESS

Notifying services about the upgrade.
[####################] 100% -- SUCCESS

Setting boot variables.
[####################] 100% -- SUCCESS

Performing configuration copy.
[####################] 100% -- SUCCESS

Module 1: Refreshing compact flash and Upgrading bios/loader/bootrom/power-seq.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Converting startup config.
[####################] 100% -- SUCCESS

Upgrade can no longer be aborted, any failure will result in a disruptive upgrade.

Freeing memory in the file system.
[####################] 100% -- SUCCESS

Loading images into memory.
[####################] 100% -- SUCCESS

Saving linecard runtime state.
[####################] 100% -- SUCCESS

Saving supervisor runtime state.
[####################] 100% -- SUCCESS

Saving mts state.
[####################] 100% -- SUCCESS
```

```
Reloading the kernel to proceed with the upgrade.
All telnet and ssh connections will now be temporarily terminated.
alishan-241#

>> NX7--LC-loader-02.01.17 (Jan  8 2014 - 16:30:41), Build: 02.01.17

CPU0:  8572E, Version: 2.2, (0x80e80022)
Core:  E500, Version: 3.0, (0x80210030)
Clock Configuration:
       CPU:1066.672 MHz, CCB:533.336 MHz,
       DDR:266.668 MHz (533.336 MT/s data rate), LBC:33.334 MHz
L1:    D-cache 32 kB enabled
       I-cache 32 kB enabled
Board: 9044, IOFPGA: 0x0000001A, SPROM: 0xAB
Boot flash : Primary
I2C:   ready
DRAM:  Initializing
DDR: dimm type 10, registered 1
DDR: dimm type 10, registered 1
    DDR:  4 GB
L2:    1024 KB enabled
Using default environment

In:    serial
Out:   serial
Err:   serial
Net:   INFO: Net boot mode = 1
INFO: Net boot mode = 1
INFO: Board will come up MGMT interface
INFO: MAC address is: b8:38:61:4a:25:c0
eTSEC2 board phy 3
INFO: Net boot mode = 1
eTSEC2
IDE:   Bus 0: OK
  Device 0: Model: UGB30STC4000Z4-EBY-ASD Firm: FW100511 Ser#: UNIGEN3     30009652
            Type: Hard Disk
            Capacity: 3907.9 MB = 3.8 GB (8003520 x 512)

Booting image bootflash://m9700-sf4ek9-kickstart-mz.8.3.1.bin
25012224 bytes read
NBI at 08000000 size 134217728

Booting image at addr 0x00800000...
Memory <- <0x0 0x0 0x1 0x0> (4096MB)
ethernet0: local-mac-address <- b8:38:61:4a:25:c0
ethernet1: local-mac-address <- 00:e0:0c:00:01:fd
ethernet2: local-mac-address <- 00:e0:0c:00:02:fd
CPU clock-frequency <- 0x3f941f80 (1067MHz)
CPU timebase-frequency <- 0x3f941f8 (67MHz)
CPU bus-frequency <- 0x1fca0fc0 (533MHz)

zImage starting: loaded at 0x00800000 (sp: 0x7fedc4c0)
Allocating 0x620d88 bytes for kernel...
gunzipping (0x00000000 <- 0x00817000:0x00de3838)...done 0x5bc060 bytes
Using loader supplied ramdisk at 0x2800000-0x3cf1000
initrd head: 0x1f8b0808

Linux/PowerPC load: rw root=/dev/ram0 rdbase=0x7000000 card_index=9044 maxcpus=2 ip=off ramdisk_size
=262144 noquiet obfl_type_ide=1 kgdboc=ttyS0,9600,B isanimg_loc=0x6000000 isanimg_size=0x400 console
=ttyS0,9600n8nn loader_ver="02.01.17" card_index=9044 quiet bootdev=ide0 server_ip=171.69.21.28 ksim
g=/m9700-sf4ek9-kickstart-mz.8.1.1b.bin isanimg=/m9700-sf4ek9-mz.8.3.1.bin  Finalizing device tree...
flat tree at 0xdf0140
                                                ï¿½setup_arch: bootmem
```

```
mpc85xx_ds_setup_arch()
arch: exit

[    0.060042] Host controller irq 26
[    0.134632] Assign root port irq 26
[    0.753013] physmap-flash physmap-flash.0: Could not reserve memory region
[    1.032836] Enabling all PCI devices
INIT: version 2.88 booting
Checking all filesystems.....retval=[0]
done.
Loading system software
Uncompressing system image: bootflash:///m9700-sf4ek9-mz.8.3.1.bin
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Load plugins that defined in image conf: /isan/plugin_img/img.conf
No Patching support on this platform
Loading plugin 0: core_plugin...
No Patching support on this platform
Enter pboot_chk_compatibility
num srgs 1
0: swid-core-s5ek9, swid-core-s5ek9
num srgs 1
0: swid-sup-ali-ks, swid-sup-ali-ks
INIT: Entering runlevel: 3

[   95.008144] clpk_hw_init_1:Post ISSU instance 0 status 0x00000736 GOOD
[   95.086952] clpk_hw_init_1:Post ISSU instance 1 status 0x00000536 GOOD
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...
System is coming up... Please wait...

Continuing with installation process, please wait.
The login will be disabled until the installation is completed.

Status for linecard upgrade.
[####################] 100% -- SUCCESS

Performing supervisor state verification.
[####################] 100% -- SUCCESS

Supervisor non-disruptive upgrade successful.

Install has been successful.
```

Step 8 Run the **show version** command to verify the successful downgrade:

```
switch# show version

Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Documents: http://www.cisco.com/en/US/products/ps9372/tsd_products_support_serie
s_home.html
Copyright (c) 2002-2016, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.
```

```
Software
BIOS: version 2.1.17
loader: version N/A
kickstart: version 8.3(1)
system: version 8.3(1)
BIOS compile time: 01/08/14
kickstart image file is: bootflash:///m9700-sf4ek9-kickstart-mz.8.3.1.bin.
S21
kickstart compile time: 1/11/2016 16:00:00 [02/11/2016 10:35:42]
system image file is: bootflash:///m9700-sf4ek9-mz.8.3.1.bin.S21
system compile time: 1/11/2016 16:00:00 [02/11/2016 13:08:53]


Hardware
cisco MDS 9250i 40 FC 2 IPS 8 FCoE (2 RU) Chassis ("40FC+8FCoE+2IPS Supervisor
")
Motorola, e500v2, core 0 with 4155752 kB of memory.
Processor Board ID JAF1626BCQH

Device name: alishan-dr
bootflash: 4013856 kB

Kernel uptime is 0 day(s), 17 hour(s), 18 minute(s), 58 second(s)

Last reset at 443194 usecs after Wed Aug 31 10:58:41 2016

Reason: Reset due to upgrade
System version: 8.3(1)
Service:

plugin
Core Plugin
switch#
```

Step 9 Verify the status of the modules in the switch, using the **show module** command:

```
switch# show module

Mod Ports Module-Type Model Status
--- ----- -------------------------------- ------------------ ----------
1 50 40FC+8FCoE+2IPS Supervisor DS-C9250i-22PK9-SUP active *

Mod Sw Hw World-Wide-Name(s) (WWN)
--- --------------- ------ --------------------------------------------------
1 7.3(0)D1(1) 0.9 20:01:54:7f:ee:1b:14:a0 to 20:28:54:7f:ee:1b:14:a0


Mod MAC-Address(es) Serial-Num
--- -------------------------------------- ----------
1 f0-f7-55-29-50-60 to f0-f7-55-29-50-6f JAF1626BCQH

* this terminal session

switch#
```