

# Cisco IOS XE Migration Guide for IIoT Switches

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**Americas Headquarters**
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

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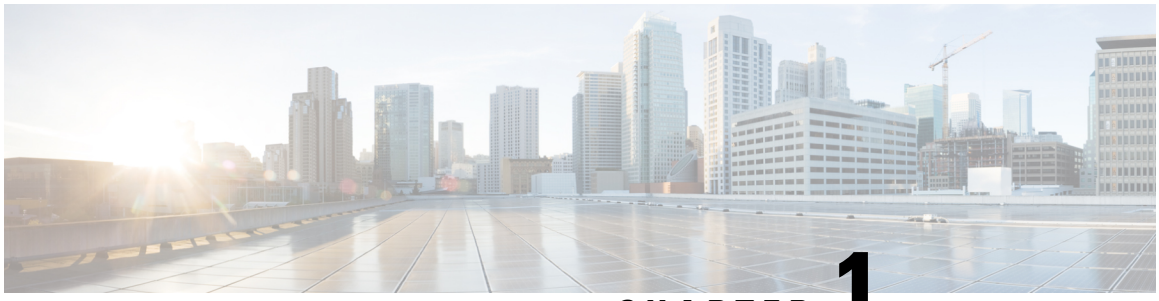
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CHAPTER 1

# Migration Overview

This chapter contains the following sections:


- Migration Overview, on page 1
- Before You Begin, on page 2


# Migration Overview

This document describes how to perform the following upgrade or downgrade procedures for the Cisco IOS XE software on a switch:

- Upgrade to Cisco IOS XE Release 17.10 or later
- Downgrade from Cisco IOS XE Release 17.10 or later to a release earlier than 17.10

This document applies to the following IIoT switching platforms:

- Cisco Catalyst IE3xxx Rugged Series Switches, except the IE31xx
- Stratix 5800 Industrial Managed Ethernet Switches

### Problem Definition

This guide is designed to help you upgrade to IOS XE 17.10.x or later or downgrade to a release earlier than 17.10 without disturbing the running-config or causing loss of data.

Before Cisco IOS XE 17.10.x, the running-config was loaded from booted media. If the switch was booted from SD flash, the running-config that is stored in SD flash was loaded on the switch. Beginning with release 17.10, the running-config is always loaded from flash. This approach might cause confusion when the switch is booted from SD flash and you do not see running-config being loaded from SD flash. To avoid such situations, refer to this migration guide before you upgrade or downgrade.

DNA Center does not support software updates from removable media. Therefore, we recommend that you use onboard flash for running-config and the Cisco IOS XE software image.

### Migration Scenarios

This document covers the following migration scenarios:

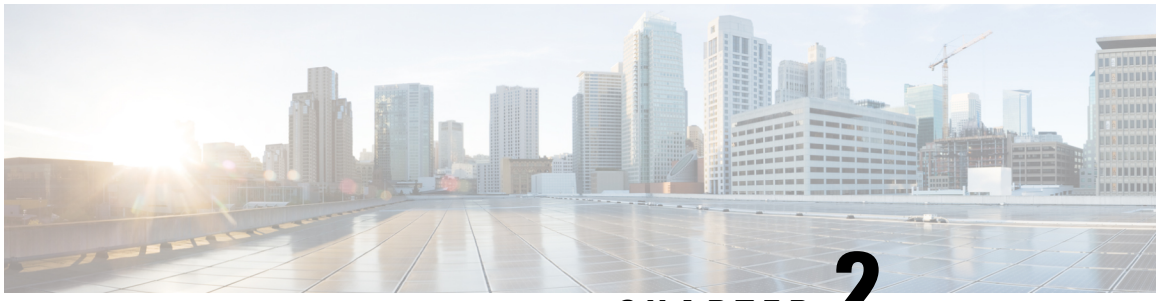

- Upgrading From Earlier Releases to Cisco IOS XE 17.10 and Later, on page 3

• Downgrading from Cisco IOS XE 17.10 Releases and Later to Cisco IOS XE 17.9 Releases and Earlier, on page 19

# Before You Begin

Before you begin, note the following:

- SD flash is used to represent removable media. The scenarios that this document describes also are applicable to USB flash.
- In some scenarios, you are asked to delete all the images from SD flash or USB flash. We recommend that you make a backup copy of the images before you delete them.



CHAPTER 2

# Upgrading From Earlier Releases to Cisco IOS XE 17.10 and Later

This chapter contains the following sections:


- SD Flash to Flash, on page 3
- Flash to Flash, on page 7
- SD Flash to SD Flash, on page 10
- Flash to SD Flash, on page 14


## SD Flash to Flash

In this scenario:

- The switch is running a version of Cisco IOS XE 17.9.x or earlier and you want to upgrade to Cisco IOS XE 17.10.x or later.
- Cisco IOS XE is running from SD flash and 17.10 or later images should run from flash.
- After the procedure is complete, both the Cisco IOS XE image and the startup-config continue to boot from onboard flash.

### Upgrade Procedure

1. Configure the following commands, and then save the configuration using the **write memory** command:
   a. no boot system
2. Sync the running-config from SD flash to flash.
3. Download the Cisco IOS XE 17.10 or later image and keep the image in flash.
4. Configure the following commands:
   a. no boot manual
   b. boot system flash:*your-switch*-universalk9.17.10.01.SPA.bin
   c. boot flash-primary

5. Reload the system.

After reloading, the switch performs a bootloader upgrade, then boots Cisco IOS XE 17.10 or later from flash.

### Example

```
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no boot system
Switch(config)#end
Switch#wr
Building configuration...
[OK]
Switch#
Switch#sync sdflash: flash: skip ios-image
BOOT Image: sdflash:ie3x00-universalk9.17.09.02.SPA.bin

Skip file IOS-image : [OK]
Verifying src nvram_config : [OK]
Verifying dst nvram_config file : [OK]
Verifying src cfg.dat : [OK]
Verifying dst cfg.dat file : [OK]
Skip file private-KS1 : [OK]
Syncing nvram_config file from sdflash to flash :
Copying vlan configure file from sdflash:vlan.dat to flash:vlan.dat : [OK]
Syncing cfg.dat file from sdflash to var : [OK]
Switch#dir flash:ie3x00-universalk9.17.10.01.SPA.bin
Directory of flash:/ie3x00-universalk9.17.10.01.SPA.bin

86813   -rw-        493968913  Feb 28 2023 01:22:24 +00:00
ie3x00-universalk9.17.10.01.SPA.bin

1651314688 bytes total (995946496 bytes free)
Switch#dir flash:
Directory of flash:/

86883   -rw-              616  Feb 28 2023 01:41:04 +00:00  vlan.dat
86772   -rw-         33554432  Feb 28 2023 01:41:04 +00:00  nvram_config
86777   drwx             4096  Feb 28 2023 01:39:20 +00:00  .installer
86810   drwx             4096  Feb 28 2023 01:38:49 +00:00  dc_profile_dir
86776   -rw-            46604  Feb 28 2023 01:36:15 +00:00  pnap.dat
86812   -rw-         33554432  Feb 28 2023 01:36:14 +00:00  nvram_config_bkup
86815   drwx             4096  Feb 28 2023 01:32:23 +00:00  EDSrockwell
86959   drwx             4096  Feb 28 2023 01:32:22 +00:00  ProfinetGSD
86813   -rw-        493968913  Feb 28 2023 01:22:24 +00:00
ie3x00-universalk9.17.10.01.SPA.bin
23670   drwx             4096  Feb 28 2023 00:31:32 +00:00  pnp-tech
86894   drwx             4096  Feb 14 2023 00:00:00 +00:00  .product_analytics
86770   drwx             4096  Feb 13 2023 02:43:48 +00:00  .prst_sync
86783   drwx             4096  Feb 13 2023 02:35:42 +00:00  .rollback_timer
86903   -rw-             4988  Feb 13 2023 02:32:03 +00:00  packages.conf
86786   drwx             4096  Dec 17 2022 00:56:13 +00:00  .ssh
23667   drwx             4096  Dec 16 2022 03:21:19 +00:00  pnp-info
86774   drwx             4096  Dec 16 2022 03:19:00 +00:00  .dbpersist
47331   drwx             4096  Dec 12 2022 04:35:34 +00:00  eem
86884   drwx             4096  Dec 12 2022 04:35:33 +00:00  managed
86881   drwx             4096  Dec 12 2022 04:35:30 +00:00  onep
86814   drwx             4096  Dec 12 2022 04:34:51 +00:00  EDScisco
86809   drwx             4096  Dec 12 2022 04:34:51 +00:00  gs_script
86793   drwx             4096  Dec 12 2022 04:34:51 +00:00  tech_support
86782   drwx             4096  Dec 12 2022 04:34:34 +00:00  core
86781   drwx             4096  Dec 12 2022 04:34:08 +00:00  cflow
86780   drwx             4096  Dec 12 2022 04:34:08 +00:00  pcap
```

```
86779   -rwx               0  Dec 12 2022 04:34:08 +00:00  mode_event_log
86778   drwx            4096  Dec 12 2022 04:34:08 +00:00  SHARED-IOX

1651314688 bytes total (995946496 bytes free)
Switch#
Switch#
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#boot sys flash:ie3x00-universalk9.17.10.01.SPA.bin
Switch(config)#no boot manual
Switch(config)#boot flash-primary
Switch(config)#end
Switch#wr
Building configuration...
[OK]
Switch#
Switch#sh boot
Current Boot Variables:
BOOT variable = flash:ie3x00-universalk9.17.10.01.SPA.bin;

Boot Variables on next reload:
BOOT variable does not exist
Config file = sdflash:/nvram_config
ENABLE_FLASH_PRIMARY_BOOT = yes
MANUAL_BOOT variable = no
ENABLE_BREAK variable = yes
Switch#reload
Proceed with reload? [confirm]

*Feb 28 01:43:00.864: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
Command.
watchdog: watchdog0: watchdog did not stop!
reboot: Restarting system

Initializing disk drivers...
Initializing file systems...

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* Version:  7.1.14
* Compiled: Wed 20-Apr-22 22:19 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "flash:ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "flash:ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
New version = 8.1.2, Current version = 7.1.14
Erasing 4063232 bytes ..............................................................
Writing 932416 bytes ..............
Verifying 932416 bytes ..............
Erasing 4063232 bytes ..............................................................
Writing 936512 bytes ..............
Verifying 936512 bytes ..............
Bootloader upgrade successful
Resetting...
```

```
Initializing disk drivers...
Initializing file systems...

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* Version:  8.1.2
* Compiled: Fri 09-Sep-22 09:39 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "flash:ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "flash:ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
Bootloader upgrade not required
SUP PL (profile: 1) configuration done successfully
RTOS (profile: 1) boot successful

Taking BP out of reset
Taking LC1 out of reset

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Software feature.



cisco IE-3200-8P2S (ARM) processor (revision V01) with 429823K/6147K bytes of memory.
Processor board ID FOC2213V1QC
1 Virtual Ethernet interface
10 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
1968556K bytes of physical memory.
523264K bytes of crashinfo at crashinfo:.
1638400K bytes of Flash at flash:.
3883008K bytes of sdflash at sdflash:.

Base Ethernet MAC Address          : f8:b7:e2:e5:25:80
Motherboard Assembly Number        : 73-101446-05
Motherboard Serial Number          : FOC221223CJ
Model Revision Number              : V01
Motherboard Revision Number        : 5
Model Number                       : IE-3200-8P2S
System Serial Number               : FOC2213V1QC
Top Assembly Part Number           : 68-101575-01
Top Assembly Revision Number       : 26
System FPGA version                : 0.89.2
CIP Serial Number                  : 0x4AE52580
SKU Brand Name                     : Cisco



Press RETURN to get started!
```

# Flash to Flash

In this scenario:

- The switch is running a version of Cisco IOS XE 17.9.x or earlier and you want to upgrade to Cisco IOS XE 17.10.x or later.
- Cisco IOS XE is running from flash and 17.10 or later images should run from flash.
- After the procedure is complete, both the Cisco IOS XE image and the startup-config continue to boot from onboard flash.

### Upgrade Procedure

1. Download the Cisco IOS XE 17.10 or later image and keep the image in flash.
2. Configure the following commands:
   a. no boot system

**b.** no boot manual

**c.** boot flash-primary

**d.** boot system flash:*your-switch*-universalk9.17.10.01.SPA.bin

**3.** Reload the system.

After reloading, the switch performs a bootloader upgrade, then boots Cisco IOS XE 17.10 or later from flash.

### Example

```
Switch#sh boot
Current Boot Variables:
BOOT variable = flash:ie3x00-universalk9.17.10.01.SPA.bin;

Boot Variables on next reload:
BOOT variable = flash:ie3x00-universalk9.17.10.01.SPA.bin;
Config file = flash:/nvram_config
ENABLE_FLASH_PRIMARY_BOOT = yes
MANUAL_BOOT variable = no
ENABLE_BREAK variable = yes
Switch#relo
Switch#reload
Proceed with reload? [confirm]

*Feb 28 03:15:04.231: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
Command.
watchdog: watchdog0: watchdog did not stop!
reboot: Restarting system

Initializing disk drivers...
Initializing file systems...
SD Card is disabled

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* Version:  7.1.14
* Compiled: Wed 20-Apr-22 22:19 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "flash:ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "flash:ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
New version = 8.1.2, Current version = 7.1.14
Erasing 4063232 bytes ..............................................................
Writing 932416 bytes ..............
Verifying 932416 bytes ..............
Erasing 4063232 bytes ..............................................................
Writing 936512 bytes ..............
Verifying 936512 bytes ..............
Bootloader upgrade successful
Resetting...
```

```
Initializing disk drivers...
Initializing file systems...
SD Card is disabled

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* Version:  8.1.2
* Compiled: Fri 09-Sep-22 09:39 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "flash:ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "flash:ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
Bootloader upgrade not required
SUP PL (profile: 1) configuration done successfully
RTOS (profile: 1) boot successful

Taking BP out of reset
Taking LC1 out of reset

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cisco IE-3200-8P2S (ARM) processor (revision V01) with 429823K/6147K bytes of memory.
Processor board ID FOC2213V1QC
1 Virtual Ethernet interface
10 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
1968556K bytes of physical memory.
523264K bytes of crashinfo at crashinfo:.
1638400K bytes of Flash at flash:.

Base Ethernet MAC Address          : f8:b7:e2:e5:25:80
Motherboard Assembly Number        : 73-101446-05
Motherboard Serial Number          : FOC221223CJ
Model Revision Number              : V01
Motherboard Revision Number        : 5
Model Number                       : IE-3200-8P2S
System Serial Number               : FOC2213V1QC
Top Assembly Part Number           : 68-101575-01
Top Assembly Revision Number       : 26
System FPGA version                : 0.89.2
CIP Serial Number                  : 0x4AE52580
SKU Brand Name                     : Cisco



Press RETURN to get started!
```

# SD Flash to SD Flash

In this scenario:

- The switch is running a version of Cisco IOS XE 17.9.x or earlier and you want to upgrade to Cisco IOS XE 17.10.x or later.
- Both 17.9 or earlier images and 17.10 or later images should run from SD flash bundle mode.
- After the procedure is complete, both the Cisco IOS XE image and the startup-config continue to boot from onboard flash.

### Upgrade Procedure

1. Copy the running-config to flash using the command **sync**.
2. Download the Cisco IOS XE 17.10 or later image and keep the image in SD flash.
3. Delete all other Cisco IOS XE images from SD flash and flash.

4. Unset the current boot path from SD flash.
5. Reload the system.

After reloading, the switch performs a bootloader upgrade, then boots Cisco IOS XE 17.10 or later from SD flash in bundle mode.

### Example

```
Switch#sync sdflash: flash: skip ios-image
BOOT Image: sdflash:ie3x00-universalk9.17.09.02.SPA.bin

Skip file IOS-image : [OK]
Verifying src nvram_config : [OK]
Verifying dst nvram_config file : [OK]
Verifying src cfg.dat : [OK]
Verifying dst cfg.dat file : [OK]
Skip file private-KS1 : [OK]
Syncing nvram_config file from sdflash to flash :
Copying vlan configure file from sdflash:vlan.dat to flash:vlan.dat : [OK]
Syncing cfg.dat file from sdflash to var : [OK]
Switch#
Switch#
Switch#dir sdfl
Switch#dir sdflash:
Directory of sdflash:/

191     -rwx         33554432  Feb 28 2023 03:41:14 +00:00  nvram_config_bkup
217     -rwx         33554432  Feb 28 2023 03:41:12 +00:00  nvram_config
207     -rwx        493968913  Feb 28 2023 03:39:16 +00:00
ie3x00-universalk9.17.10.01.SPA.bin

3972005888 bytes total (1891991552 bytes free)
Switch#dir flash:
Directory of flash:/

86883   -rw-              616  Feb 28 2023 03:42:18 +00:00  vlan.dat
86772   -rw-         33554432  Feb 28 2023 03:42:18 +00:00  nvram_config
86777   drwx             4096  Feb 28 2023 03:41:43 +00:00  .installer
86810   drwx             4096  Feb 28 2023 03:34:27 +00:00  dc_profile_dir
86776   -rw-            46604  Feb 28 2023 03:32:18 +00:00  pnap.dat
86815   drwx             4096  Feb 28 2023 03:31:05 +00:00  EDSrockwell
86959   drwx             4096  Feb 28 2023 03:31:04 +00:00  ProfinetGSD
23670   drwx             4096  Feb 28 2023 00:31:32 +00:00  pnp-tech
86894   drwx             4096  Feb 14 2023 00:00:00 +00:00  .product_analytics
86770   drwx             4096  Feb 13 2023 02:43:48 +00:00  .prst_sync
86783   drwx             4096  Feb 13 2023 02:35:42 +00:00  .rollback_timer
86903   -rw-             4988  Feb 13 2023 02:32:03 +00:00  packages.conf
86786   drwx             4096  Dec 17 2022 00:56:13 +00:00  .ssh
23667   drwx             4096  Dec 16 2022 03:21:19 +00:00  pnp-info
86774   drwx             4096  Dec 16 2022 03:19:00 +00:00  .dbpersist
47331   drwx             4096  Dec 12 2022 04:35:34 +00:00  eem
86884   drwx             4096  Dec 12 2022 04:35:33 +00:00  managed
86881   drwx             4096  Dec 12 2022 04:35:30 +00:00  onep
86814   drwx             4096  Dec 12 2022 04:34:51 +00:00  EDScisco
86809   drwx             4096  Dec 12 2022 04:34:51 +00:00  gs_script
86793   drwx             4096  Dec 12 2022 04:34:51 +00:00  tech_support
86782   drwx             4096  Dec 12 2022 04:34:34 +00:00  core
86781   drwx             4096  Dec 12 2022 04:34:08 +00:00  cflow
86780   drwx             4096  Dec 12 2022 04:34:08 +00:00  pcap
86779   -rwx                0  Dec 12 2022 04:34:08 +00:00  mode_event_log
86778   drwx             4096  Dec 12 2022 04:34:08 +00:00  SHARED-IOX
```

```
1651314688 bytes total (1524002816 bytes free)
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no boo manual
Switch(config)#no boo sys
Switch(config)#no boot fl
Switch(config)#no boot flash-primary
Switch(config)#end
Switch#wr mem

*Feb 28 03:42:51.376: %SYS-5-CONFIG_I: Configured from console by console
Building configuration...
[OK]
Switch#sh boot
*Feb 28 03:43:09.776: %SYS-6-PRIVCFG_ENCRYPT_SUCCESS: Successfully encrypted private config
 file
Current Boot Variables:
BOOT variable does not exist

Boot Variables on next reload:
BOOT variable =
Config file = sdflash:/nvram_config
ENABLE_FLASH_PRIMARY_BOOT = no
MANUAL_BOOT variable = no
ENABLE_BREAK variable = yes
Switch#reload
Proceed with reload? [confirm]

*Feb 28 03:43:18.517: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
Command.
watchdog: watchdog0: watchdog did not stop!
reboot: Restarting system

Initializing disk drivers...
Initializing file systems...

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* Version:  7.1.14
* Compiled: Wed 20-Apr-22 22:19 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
New version = 8.1.2, Current version = 7.1.14
Erasing 4063232 bytes ..............................................................
Writing 932416 bytes ..............
Verifying 932416 bytes ..............
Erasing 4063232 bytes ..............................................................
Writing 936512 bytes ..............
Verifying 936512 bytes ..............
Bootloader upgrade successful
Resetting...
▒
Initializing disk drivers...
```

```
Initializing file systems...

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* Version:  8.1.2
* Compiled: Fri 09-Sep-22 09:39 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
Bootloader upgrade not required
SUP PL (profile: 1) configuration done successfully
RTOS (profile: 1) boot successful

Taking BP out of reset
Taking LC1 out of reset

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           San Jose, California 95134-1706



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Software feature.


% Failed to initialize backup nvram


cisco IE-3200-8P2S (ARM) processor (revision V01) with 429823K/6147K bytes of memory.
Processor board ID FOC2213V1QC
1 Virtual Ethernet interface
10 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
1968552K bytes of physical memory.
523264K bytes of crashinfo at crashinfo:.
1638400K bytes of Flash at flash:.
3883008K bytes of sdflash at sdflash:.

Base Ethernet MAC Address          : f8:b7:e2:e5:25:80
Motherboard Assembly Number        : 73-101446-05
Motherboard Serial Number          : FOC221223CJ
Model Revision Number              : V01
Motherboard Revision Number        : 5
Model Number                       : IE-3200-8P2S
System Serial Number               : FOC2213V1QC
Top Assembly Part Number           : 68-101575-01
Top Assembly Revision Number       : 26
System FPGA version                : 0.89.2
CIP Serial Number                  : 0x4AE52580
SKU Brand Name                     : Cisco



Press RETURN to get started!
```

# Flash to SD Flash

In this scenario:

- The switch is running a version of Cisco IOS XE 17.9.x or earlier and you want to upgrade to Cisco IOS XE 17.10.x or later.
- Cisco IOS XE 17.9.x or earlier is running from flash and Cisco IOS XE 17.10 or later images should run from SD flash.
- After the procedure is complete, Cisco IOS XE image boots from SD flash, but the startup-config is read from onboard flash,



**Important** This scenario is not a recommended.

### Upgrade Procedure

1. Download the Cisco IOS XE 17.10 or later image and keep the image in SD flash.
2. Configure the following commands:
   a. no boot system
   b. no boot manual
   c. no boot flash-primary
3. Delete all other bootable image files from SD flash, except for the Cisco IOS XE 17.10 image.
4. Reload the system.

The switch performs a bootloader upgrade, then boots Cisco IOS XE 17.10 or later from SD flash.

### Example

```
Switch(config)#no boo sys
Switch(config)#no boo manu
Switch(config)#no boo flash-primary
Switch(config)#end
Switch#wr mem

*Feb 28 04:17:31.637: %SYS-5-CONFIG_I: Configured from console by console
Building configuration...
[OK]
Switch#
*Feb 28 04:17:43.168: %SYS-6-PRIVCFG_ENCRYPT_SUCCESS: Successfully encrypted private config
 file
Switch#relo
Switch#reload
Proceed with reload? [confirm]

*Feb 28 04:17:51.460: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
Command.
watchdog: watchdog0: watchdog did not stop!
reboot: Restarting system

Initializing disk drivers...
Initializing file systems...

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* Version:  7.1.14
* Compiled: Wed 20-Apr-22 22:19 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin"...
Image passed digital signature verification
Checking for Bootloader upgrade...
New version = 8.1.2, Current version = 7.1.14
```

```
Erasing 4063232 bytes ..............................................................
Writing 932416 bytes ..............
Verifying 932416 bytes ..............
Erasing 4063232 bytes ..............................................................
Writing 936512 bytes ..............
Verifying 936512 bytes ..............
Bootloader upgrade successful
Resetting...
▒
Initializing disk drivers...
Initializing file systems...

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* Version:  8.1.2
* Compiled: Fri 09-Sep-22 09:39 [RELEASE SOFTWARE]
* Boot Partition: qspi-upgrade-bootloader
* Reset Reason: Soft Reset

WARNING: DEV key installed

Loading "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin" to memory...
Verifying image "sdflash:/ie3x00-universalk9.17.10.01.SPA.bin"...
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Taking BP out of reset
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Software feature.

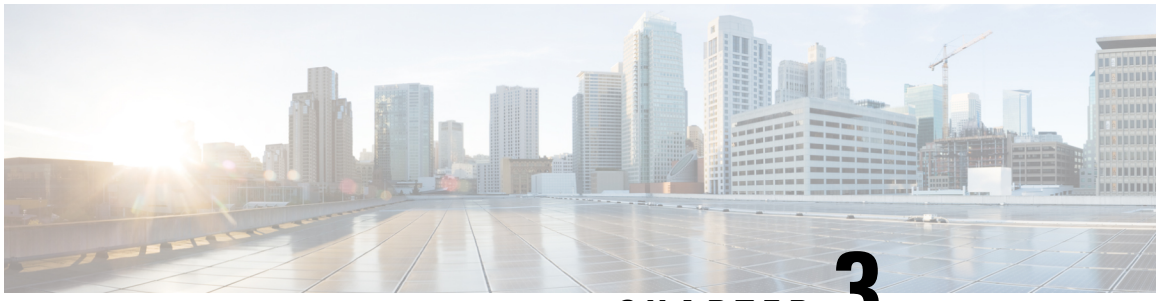


cisco IE-3200-8P2S (ARM) processor (revision V01) with 429823K/6147K bytes of memory.
Processor board ID FOC2213V1QC
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10 Gigabit Ethernet interfaces
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Base Ethernet MAC Address          : f8:b7:e2:e5:25:80
Motherboard Assembly Number        : 73-101446-05
Motherboard Serial Number          : FOC221223CJ
Model Revision Number              : V01
Motherboard Revision Number        : 5
Model Number                       : IE-3200-8P2S
System Serial Number               : FOC2213V1QC
Top Assembly Part Number           : 68-101575-01
Top Assembly Revision Number       : 26
System FPGA version                : 0.89.2
CIP Serial Number                  : 0x4AE52580
SKU Brand Name                     : Cisco



Press RETURN to get started!
```



CHAPTER 3

# Downgrading from Cisco IOS XE 17.10 Releases and Later to Cisco IOS XE 17.9 Releases and Earlier

This chapter contains the following sections:


- SD Flash to Flash, on page 19
- Flash to Flash, on page 20
- SD Flash to SD Flash, on page 20
- Flash to SD Flash, on page 21


## SD Flash to Flash

In this scenario:

- The switch is running Cisco IOS XE 17.10.x or later and you want to downgrade to Cisco IOS XE 17.9.x or earlier.
- Cisco IOS XE 17.10 or later is running from SD flash and Cisco IOS XE 17.9 or earlier images should run from flash.

### Downgrade Procedure

1. Download the Cisco IOS XE 17.9 or earlier image and keep the image in flash.
2. Delete all other Cisco IOS XE images from SD flash.
3. Configure the following commands:
   a. no boot system
   b. no boot manual
   c. boot system flash:*image-name*
   d. boot enable-break
4. Reload the system.

After reloading, the switch performs a bootloader downgrade from 8.1.x to 7.1.x, then boots Cisco IOS XE 17.9 or earlier from flash.

# Flash to Flash

In this scenario:

- The switch is running Cisco IOS XE 17.10.x or later and you want to downgrade to Cisco IOS XE 17.9.x or earlier.
- Cisco IOS XE 17.10 or later is running from flash and the Cisco IOS XE 17.9 or earlier images should run from flash.

### Downgrade Procedure

1. Download the Cisco IOS XE 17.9 or earlier image and keep the image in flash.
2. Delete all other Cisco IOS XE images from flash.
3. Delete all Cisco IOS XE images from the SD card.
4. Configure the following commands:
   a. no boot system
   b. no boot manual
   c. boot system flash:*image-name*
   d. boot enable-break
5. Reload the system.

After reloading, the switch performs a bootloader downgrade from 8.1.x to 7.1.x, then boots Cisco IOS XE 17.9 or earlier from flash.

# SD Flash to SD Flash

In this scenario:

- The switch is running Cisco IOS XE 17.10.x or later and you want to downgrade to Cisco IOS XE 17.9.x or earlier.
- Cisco IOS XE 17.10 or later is running from SD flash and Cisco IOS XE 17.9 or earlier images should run from SD flash.

### Downgrade Procedure

1. Download the Cisco IOS XE 17.9 or earlier image and keep the image in SD flash.
2. Delete all other Cisco IOS XE images from SD flash.

3. If flash has the ENABLE_FLASH_PRIMARY ROM monitor environment variable set (by running the **show romvar** command), delete all Cisco IOS XE images from flash.
4. Configure the following commands:
   a. no boot system
   b. no boot manual
   c. boot enable-break
5. Reload the system.

After reloading, the switch performs a bootloader downgrade from 8.1.x to 7.1.x, then boots Cisco IOS XE 17.9 or earlier from SD flash.

# Flash to SD Flash

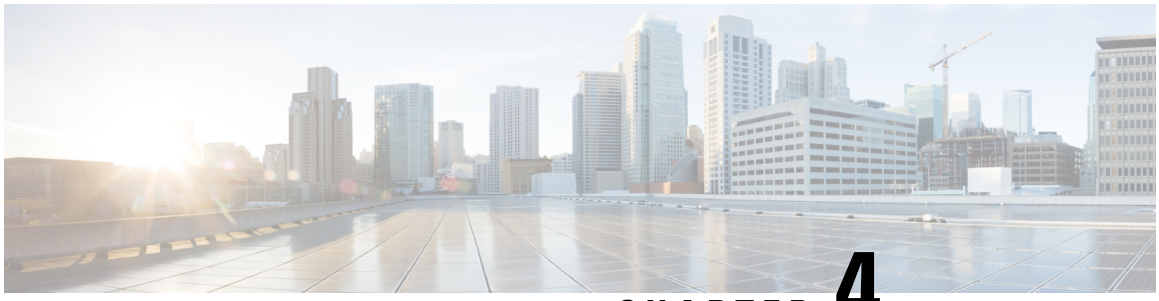
In this scenario:

- The switch is running Cisco IOS XE 17.10.x or later and you want to downgrade to Cisco IOS XE 17.9.x or earlier.
- Cisco IOS XE 17.10 or later is running from flash and Cisco IOS XE 17.9 or earlier images should run from SD flash.

### Downgrade Procedure

1. Download the Cisco IOS XE 17.9 or earlier image and keep the image in SD flash.
2. Delete all other Cisco IOS XE images from SD flash.
3. If flash has the ENABLE_FLASH_PRIMARY ROM monitor environment variables set (by running **show romvar**), delete all Cisco IOS XE images from flash.
4. Configure the following commands:
   a. no boot system
   b. no boot manual
   c. boot enable-break
5. Reload the system.

After reloading, the switch performs a bootloader downgrade from 8.1.x to 7.1.x, then boots Cisco IOS XE 17.9 or earlier from SD flash.



CHAPTER 4

# Making USB Flash the Primary Boot Device for Embedded Switches


• Making USB Flash the Primary Boot Device for Embedded Switches, on page 23



# Making USB Flash the Primary Boot Device for Embedded Switches


Beginning with the Cisco IOS XE 17.10.1 release, you can configure Cisco embedded switches to make USB flash the primary boot device. To do so:

### Procedure

At the configuration prompt, enter the following command: **boot system usbflash0:*image_filename***

**Example:**

```
ESS-X300(config)#boot system usbflash0:Image_17.10.1.bin
ESS-X300(config)#end
ESS-X300#wr memory
Building configuration...
[OK]
ESS-X300#
ESS-X300(config)#boot usb-primary

USB will be primary device on next boot
when the device is booted from USB

ESS-X300(config)#end
ESS-X300#wr memory
Building configuration...
[OK]
ESS-X300#reload
```

Making USB Flash the Primary Boot Device for Embedded Switches