



Upgrading to Cisco IOS XE Release

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Upgrading from Cisco IOS XE Release 16.6 to Cisco IOS XE Release 17.x.x

If the ROMMON version is 15.6(24r)S and the Cisco IOS XE release is 16.6.x, the router fails in the auto upgrade process during the migration to Cisco IOS XE release 17.x.x resulting in a continuous boot loop. As a workaround, ensure that you upgrade the ROMMON version to 15.6(46r)S before migrating to Cisco IOS XE release 17.x.x.

This issue on the router failure is specific to the following PIDs: ASR-920-12SZ-IM, ASR-920U-12SZ-IM, ASR-920-12SZ-IM-CC, ASR-920-24SZ-IM, ASR-920-24SZ-M, ASR-920-24TZ-M, and A900-RSP2A-128.

Follow these steps to upgrade from 15.6(24r)S to 15.6(46r)S:

1. Copy the ROMMON pkg file **asr920_15_6_46r_s_rommon.pkg** to the bootflash on the Cisco ASR 920 router.
2. Use the **upgrade rom-monitor filename asr920_15_6_46r_s_rommon.pkg all** command to upgrade the version.

Example:

```
Router#upgrade rom-monitor filename bootflash: asr920_15_6_46r_s_rommon.pkg all

Upgrade rom-monitor on Route-Processor 0
Target copying rom-monitor image file
...
ROMMON upgrade complete.
To make the new ROMMON permanent, you must restart the RP.
Router#reload <-- Reloads the active router processor and boot the IOS 17.x.x image

. . .
```

3. Reload the router, boot the router with any IOS version of 16.x.x.

Example:

```
System Bootstrap, Version 15.6(24r)S, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2018 by Cisco Systems, Inc.
```

```

Compiled Thu 30-Aug-18 06:23 by pallavik
Boot ROM1
Last reset cause: RSP-Board
Rommon upgrade requested
Flash upgrade reset 1 in progress
.....
System Bootstrap, Version 15.6(46r)S, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2020 by cisco Systems, Inc.
Compiled Tue 19-May-20 22:55 by pallavik
*Upgrade in progress* Boot ROM0
Last reset cause: BootRomUpgrade
link status 0
link status 0
UEA platform with 3670016 Kbytes of main memory

We're coming up from a flash upgrade reset cookie
rommon 1 >

```

- Once the router is up, verify if the ROMMON version is upgraded to 15.6(46r)S.

Example:

```

Router#show platform
...
Slot CPLD Version Firmware Version
-----
R0 19071012 15.6(46r)S <-- Rommon version depends on the type of
system
F0 19071012 15.6(46r)S

```

- If the ROMMON is upgraded to 15.6(46r)S, install the IOS XE 17.x.x universal image, save the configuration, and reload the device.

The router comes up with the new Cisco IOS XE version 17.x.x.



Note During migration to Cisco IOS XE version 17.x.x, the ROMMON auto-upgrade and FPGA upgrade completes in two reloads.

Upgrading from Cisco IOS XE Release 3.x to Release 16.x

Downloading an Image

Download the image to the same partition of the bootflash where the base image exists. For information on downloading images see, [Loading and Managing System Images Configuration Guide, Cisco IOS XE Release 3S](#).



Note Ensure that you have chosen an upgrade image that is supported by your current software version.

Bootflash Space Requirements

The dual-rate functionality requires a minimum of 10 MB available space in bootflash memory on Cisco ASR 920 Series Router (ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, ASR-920-10SZ-PD, ASR-920-8S4Z-PD, and ASR-920-12SZ-IM).



Note Always use bootflash instead of flash on all the system operations.

Restrictions for Upgrading from Cisco IOS XE Release 3.x to Cisco IOS XE Release 16.x

- Upgrading from Cisco IOS Release 3.x to Cisco IOS Release 16.x is only supported with consolidated mode.
- Upgrading from Cisco IOS Release 3.x to to Cisco IOS Release 16.x using sub-package mode is *not* supported and vice-versa.
- Extracting the Cisco IOS XE Release 16.x image in Cisco IOS XE Release 3.x is not supported, and vice versa.

Upgrading from Cisco IOS XE Release 3.x to Cisco IOS XE 16.x



Note A full upgrade procedure may require reloading the system repeatedly (around two times). Use the **show version** command, after each reload to verify the image version and license level.

Before you begin

- Download the Cisco IOS XE 16.x image from Cisco.com.



Note Cisco IOS XE Release 16.5.1 and onwards is supported.

- Download the ROMMON release from Cisco.com.



Note The sytem automatically reboot twice, on a FGPA upgrade.

Step 1 Backup the running configuration.

Example:

```
Router# copy running-config bootflash:demo.cfg
Destination filename [demo.cfg]?
1834 bytes copied in 0.112 secs (16375 bytes/sec)
```

Step 2 Upgrade the ROMMON image.

Example:

```
Router# upgrade rom-monitor filename bootflash:<rommon-file-name>.pkg all

Upgrade rom-monitor on Router-Processor 0
Target copying rom-monitor image file
. . .
ROMMON upgrade complete
To make the new ROMMON permanent, you must restart the linecard

Router# reload <-- Reloads the active router processor and boot the IOS 3.x image
. . .
Router# show platform
. . .

Slot      CPLD Version      Firmware Version
-----
R0         16040627          15.6(14r)S   □--- Rommon version depends on the type of system

R1         16112128          15.6(14r)S
F0         16040627          15.6(14r)S
F1         16112128          15.6(14r)S
```

Step 3 Install the IOS XE 16.x universal image, save the configuration, and reload the device.

Example:

```
Router# configure terminal
Router(config)# no boot system bootflash:previous_image.bin <-- Removes the previous boot statement
Router(config)# boot system bootflash:16.x-universal-image.bin <-- Adds the new boot statement
Router(config)# end
Router# write
Building configuration...
[OK]
Router# reload <-- Reload the active router processor and boot the IOS XE 16.x Universal image
```

Step 4 Restore the backup configuration to the running configuration.

Example:

```
Router# copy bootflash:demo.cfg running-config
Destination filename [running-config]?

Router# config terminal
Router(config)# no boot system bootflash:previous_image.bin <-- Removes the previous boot statement
Router(config)# end
Router# write
Building configuration...
[OK]
```

Secure SD Card Configuration

Table 1: Feature History

Feature Name	Release Information	Description
Secure SD Card Configuration	Cisco IOS XE Bengaluru 17.4.1	<p>The features uses the following command to provide enhanced security to the routers:</p> <p>platform secure-cfg</p> <p>When you enable the command, the router does not boot if the SD card is replaced, swapped, or modified externally. Thus, you cannot format the SD card externally and this prevents the misuse of the router.</p>

Effective with Cisco IOS XE Bengaluru Release 17.4.1, use the **platform secure-cfg** command to provide enhanced security to the routers. When you enable the command, the router does not boot if the SD card is replaced, swapped, or modified externally. Thus, you cannot format the SD card externally and this prevents the misuse of the router.

This feature is applicable on the Cisco ASR-920-24SZ-IM, Cisco ASR-920-24SZ-M, Cisco ASR-920-24TZ-M, Cisco ASR 920-10SZ-PD (OD), Cisco ASR-920-12CZ-A/ASR-920-12CZ-D, and Cisco ASR-920-4SZ-A/ASR-920-4SZ-D routers.

To enable the **platform secure-cfg** command:

```
Router#enable
Router#configure terminal
Router(conf)#platform secure-cfg
Router(conf)#end
Router# write memory
```

Use the following command to verify that the **platform secure-cfg** command is enabled.

```
Router#show running-config | i secure-cfg
platform secure-cfg
```

