ROMMON Release Notes for the WS-X45-SUP7-E, WS-X45-SUP7L-E, and WS-C4500X Family of Switches

Current Release: 15.0(1r)SG16—March 14, 2019

Prior Releases: 15.0(1r)SG15, 15.0(1r)SG14 , 15.0(1r)SG13, 15.0(1r)SG11, 15.0(1r)SG10, 15.0(1r)SG7, 15.0(1r)SG6, 15.0(1r)SG5, 15.0(1r)SG2

This publication describes how to download the new ROMMON image from Cisco.com and then upgrade the ROMMON on the WS-X45-SUP7-E, WS-X45-Sup7L-E, WS-C4500X-32 and WS-C4500X-16 switches.

This document consists of these sections:

ROMMON Image Overview

The ROMMON image discussed here consists of new ROMMON software and FPGA images, which are only accepted on WS-C4500X-32, WS-C4500X-16, WS-X45-SUP7-E, and WS-X45-SUP7L-E. Both images are installed by following the "Upgrading the Supervisor Engine ROMMON from the Console" section on page 5.

Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

WS-X45-SUP7-E/WS-X45-SUP7L-E

ROMMON IOS Version 15.0(1r)SG5

ROMMON IOS Version 15.0(1r)SG5 is required to enable the enhanced crashinfo information available in Cisco IOS XE Release 3.2.0SG. For redundant supervisor switches, you should first upgrade the software to Cisco IOS XE Release 3.02.00.SG, then upgrade the ROMMON to IOS Version 15.0(1r)SG5. With previous software releases, you cannot upgrade the ROMMON without bringing down both supervisor engines simultaneously. In the following ROMMON upgrade discussion, we assume that the switch is running Cisco IOS XE Release 3.02.00.SG or later.

ROMMON IOS Version 15.0(1r)SG7

For VSS functionality, you must upgrade to ROMMON IOS Version 15.0(1r)SG7.

ROMMON IOS Versions 15.0(1r)SG13

Supports the Preboot Execution Environment (PXE) feature, also called PXE boot—A network boot loader that enables the switch to retrieve the software image and other files from a remote server, during the initial deployment, without requiring end-user intervention (Zero-Touch Provisioning).

You can specify a remote TFTP server to download the software image and other files.

Note If you are not using the PXE boot feature, you do not have to upgrade to ROMMON IOS Version 15.0(1r)SG13.

ROMMON IOS Versions 15.0(1r)SG14

Starting with ROMMON IOS Version 15.0(1r)SG14, you can use the PXE boot feature to specify a remote TFTP or HTTP server.

With this ROMMON IOS version, the factory default setting for the configuration register value is 0x2106 (boot field 06). This is also the recommended setting if you are using an existing device and upgrading to this version.

Note If you are not using the PXE boot feature, you do not have to upgrade to ROMMON IOS Version 15.0(1r)SG14.

ROMMON IOS Versions 15.0(1r)SG16

This rommon version is applicable only for WS-X45-SUP7-E. For information about enhancements in ROMMON IOS Version 15.0(1r)SG16, see Caveats, page 3.

WS-C4500X-32, WS-C4500X-16

ROMMON IOS Version 15.0(1r)SG6

15.0(1r)SG6 is the minimum required version on the C4500X switches.

ROMMON IOS Version 15.0(1r)SG7

For VSS functionality, you must upgrade to ROMMON IOS Version 15.0(1r)SG7.

ROMMON IOS Versions 15.0(1r)SG13

Supports the Preboot Execution Environment (PXE) feature, also called PXE boot—A network boot loader that enables the switch to retrieve the software image and other files from a remote server, during the initial deployment, without requiring end-user intervention (Zero-Touch Provisioning).

You can specify a remote TFTP server to download the software image and other files.

Note If you are not using the PXE boot feature, you do not have to upgrade to ROMMON IOS Version 15.0(1r)SG13.

ROMMON IOS Versions 15.0(1r)SG14

Starting with ROMMON IOS Version 15.0(1r)SG14, you can use the PXE boot feature to specify a remote TFTP or HTTP server.

With this ROMMON IOS version, the factory default setting for the configuration register value is 0x2106 (boot field 06). This is also the recommended setting if you are using an existing device and upgrading to this version.

Note If you are not using the PXE boot feature, you do not have to upgrade to ROMMON IOS Version 15.0(1r)SG14.

Caveats

The following caveat is fixed in ROMMON IOS Version 15.0(1r)SG16:

* In a Cisco Catalyst 4500 redundant chassis with dual supervisor (WS-X45-SUP7-E), during hardware failure on standby supervisor, active supervisor continues to function in redundant mode assuming that the standby supervisor is up and running Cisco IOS software.

    Workaround: None. CSCvo20428

The following caveat is fixed in ROMMON IOS Version 15.0(1r)SG15:

* The ROMMON upgrade process has been improved by
    – Providing log messages that indicate failures in write processes, during an upgrade.
    – Increasing the number of times the system retries (in case of a failure), to three retries.

CSCvd49800.

The following caveats are open for ROMMON IOS Version 15.0(1r)SG13:

* PXE file download does not display accurate logs for ova download.

    Workaround: None. CSCva41858

The following caveat is open for ROMMON IOS Version 15.0(1r)SG11 and ROMMON IOS Version 15.0(1r)SG14:

* A ROMMON software upgrade from version 15.0(1r)SG10 to version15.0(1r)SG11 or to version 15.0(1r)SG14 on a C4500X switch causes the devices to hang.

    Workaround: Power off and then power on the devices. CSCut66603

The following caveat is fixed for ROMMON IOS Version 15.0(1r)SG11:

- Some WS-C4500X switches are unable to access the bootflash when the C4KX-NM-8SFP+ module is removed, and fail to boot after a power cycle.

  Workaround: Avoid performing a power cycle after removing the C4KX-NM-8SFP+ module. If required, perform a reset instead. CSCup65575

The following caveat is fixed for ROMMON IOS Version 15.0(1r)SG10.

- If a switch uses a config-register ending in 0x2, it may drop into ROMMON if the bootup is interrupted by a powercycle.

  Workaround: Use config-register 0x2101. CSCue19458

The following caveats are open for ROMMON IOS Version 15.0(1r)SG7.

- The date command incorrect in ROMMON for Sup7-LE and WS-C4500X-32 platforms.

- On Supervisor Engine 7L-E and WS-C4500X-32 with ROMMON IOS Version 15.0(1r)SG6, ROMMON cannot reliably acquire date and time information from the onboard Real Time Clock.

  Workaround: None CSCtx44255

- If a switch uses a config-register ending in 0x2, it may drop into ROMMON if the bootup is interrupted by a powercycle.

  Workaround: Use config-register 0x2101. CSCue19458

The following caveats are fixed for ROMMON IOS Version 15.0(1r)SG7:

- With ROMMON IOS Version 15.0(1r)SG7, ROMMON supports VSS.

  Workaround: None.   CSCuc07522

- If you upgrade ROMMON with the **boot statement** command, the ROMMON upgrade occurs three times before IOS boots.

  Workaround: None.   CSCtx60355

- With **no service password-recovery** configured, you can still interrupt the boot process with CTRL-C without erasing the configuration.

  Workaround: None. CSCtu40819

The following caveats are open for ROMMON version 15.0(1r)SG6:

- The date command incorrect in Rommon for Sup7-LE and WS-C4500X-32 platforms

- On Supervisor Engine 7l-E and WS-C4500X-32 with ROMMON version 15.0(1r)SG6, ROMMON cannot reliably acquire date and time information from the onboard Real Time Clock.

  Workaround: None CSCtx44255

The following caveat is fixed for ROMMON version 15.0(1r)SG5:

- The **no service password recovery** command was implemented.

  Workaround: None. CSCtq20729

The following caveats are fixed for ROMMON version 15.0(1r)SG2:

- In a redundant switch configuration with the active supervisor engine running IOS, after the ROMMON upgrade utility completes on the standby supervisor engine, the uplinks on the active supervisor engine drop link and do not recover

  Workaround: Upgrade the ROMMON version on both supervisor engines simultaneously, to ensure that the uplinks are down when during the upgrade. CSCtj54375

- No persistent record exists for kernel panics (like kernel software caveats, Layer 2 hardware glitches, and DDR parity errors), making it impossible to debug when they occur.

    Workaround: Connect system console to a device that saves the output. CSCtj80874

- If a WS-X45-SUP7-E supervisor engine is inserted in a 4507R+E or 4510R+E chassis, ROMMON incorrectly reports the chassis as 4507R-E or 4510R-E:

    Workaround: None. CSCtl74638

> **Note** This release also supports up to 4 Gigabytes of memory and a maximum length of the ROMMON command line from 128 to 256 bytes.

Guidelines for Upgrading the ROMMON

> **Caution** If your supervisor engine is shipped with a newer version of ROMMON then do not downgrade! The new ROMMON will have board settings based on a hardware revision of components, and old settings will not work.

Upgrading the Supervisor Engine ROMMON from the Console

> **Caution** To avoid actions that might make your system unable to boot, read this entire section before starting the upgrade.

> **Note** The examples in this section use the programmable read-only memory (PROM) upgrade IOS Version 15.0(1r)SG2 and Cisco IOS Release 15.0(2)SG. For other releases, replace the ROMMON release and Cisco IOS software release with the appropriate releases and filenames. This document describes the procedure for a single supervisor system. You must perform the process on each supervisor in a dual supervisor system.

Follow this procedure to upgrade your supervisor engine ROMMON:

Step 1 Directly connect a serial cable to the console port of the supervisor engine.

> **Note** This section assumes that the console baud rate is set to 9600 (default). If you want to use a different baud rate, change the configuration register value for your switch.

Step 2 Download the cat4500-e-promupgrade-150_1r_SG2 program from Cisco.com, and place it on a TFTP server in a directory that is accessible from the switch that is upgraded.

The cat4500-e-promupgrade-150_1r_SG2 program is available on Cisco.com at the same location from which Catalyst 4500 system images are downloaded.

Step 3 Use the **dir bootflash:** command to ensure that sufficient space exists in Flash memory to store the PROM upgrade image. If you are using an SD card, replace **bootflash:** with **slot0:**

Step 4 Download the cat4500-e-promupgrade-150_1r_SG2 program into Flash memory using the **copy tftp** command.

The following example shows how to download the PROM upgrade image cat4500-e-promupgrade-150_1r_SG2 from the remote host 172.20.58.78 to bootflash:

```
Switch# copy tftp: bootflash:
Address or name of remote host [172.20.58.78]?
Source filename [cat4500-e-promupgrade-150_1r_SG2]?
Destination filename [cat4500-e-promupgrade-150_1r_SG2]?
Accessing tftp://172.20.58.78/ cat4500-e-promupgrade-150_1r_SG2...
Loading cat4500-e-promupgrade-150_1r_SG2 from 172.20.58.78 (via
GigabitEthernet2/1):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!
!!!!!!!!!!
[OK - 901380 bytes]
```

Step 5 On a dual-supervisor system, copy the same ROMMON image to the standby supervisor engine with the **copy bootflash: cat4500-e-promupgrade-150_1r_SG2 slavebootflash** command.

Step 6 Enter the **reload** command to reset the switch, press **Ctrl-C** to stop the boot process, then re-enter ROMMON mode.

> ✎
> **Note** On a redundant system, this action causes a switchover.

The following example shows the output after a reset into ROMMON:

```
Switch# reload
Proceed with reload? [confirm]

03:57:16:%SYS-5-RELOAD:Reload requested


Rom Monitor Program Version 15.0(1r)SG1


.
.(output truncated)
.

 Established physical link 1Gb Full Duplex
 Network layer connectivity may take a few seconds
rommon 1 >
```

Step 7 Run the PROM upgrade program by entering this command:
boot cat4500-e-promupgrade-150_1r_SG2

> ⚠
> **Caution** No intervention is necessary to complete the upgrade. To ensure a successful upgrade, do not interrupt the upgrade process. Do not perform a reset, power cycle, or OIR of the supervisor engine until the upgrade completes.

The following example shows the output from a successful upgrade, followed by a system reset:

```
boot bootflash:cat4500-e-promupgrade-150_1r_SG2

Checking digital signature
/nfs/gsg-sw/interim/rommon/k10_rommon/SG2/unifiedwriterK10-150_1r_SG2.SPA: Digitally
Signed Release Software with key version A

 *********************************************************
```

```
*                                                          *
* Rom Monitor Upgrade Utility For   WS-X45-SUP7-E System *
*                                                          *
* Copyright (c) 2008-2011 by Cisco Systems, Inc.          *
* All rights reserved.                                     *
*                                                          *
************************************************************

Upgrading image... DO NOT RESET the system
unless instructed or upgrade will fail !!!

Image Name : Cat4K_Mpc8572_Rommon_2MB
Image size : 2097152 bytes

Uncompressing image.....
Done!

Cat4K_Mpc8572_Rommon_2MB: Digitally Signed Release Software with key version A

 erasing... *******************************
 writing... *******************************
 reading... verifying...  Done!

 ************************************************************
 System will now reset itself and reboot within few seconds
 ************************************************************
```

Step 8 Boot the Cisco IOS software image. This may happen automatically if the system is configured to auto-boot.

Step 9 On a redundant system, hook up a console to the now-active supervisor engine. After the system achieves an SSO state, repeat steps 6-8.

Step 10 Use the **show module** command to verify that you have upgraded the ROMMON:

```
Switch# show module
Chassis Type : WS-C4503-E

Power consumed by backplane : 0 Watts

Mod Ports Card Type                                Model             Serial No.
---+-----+--------------------------------------+-----------------+-----------
 1    4  Sup 7-E 10GE (SFP+), 1000BaseX (SFP)   WS-X45-SUP7-E     CAT1418L059
 3   48  10/100/1000BaseT (RJ45)                WS-X4648-RJ45-E   JAE14460A8U

 M MAC addresses                   Hw  Fw          Sw              Status
--+--------------------------------+---+-----------+---------------+---------
 1 001b.2a68.48c0 to 001b.2a68.48c3 0.8 15.0(1r)SG(3 03.02.00.2.32  Ok
 3 c471.fe3e.a8c0 to c471.fe3e.a8ef 1.0                             Ok
```

Step 11 Use the **delete** command on the active supervisor to delete the PROM upgrade program from bootflash.

The following example shows how to delete cat4500-e-promupgrade-150_1r_SG2 image from bootflash:

```
Switch# delete bootflash: cat4500-e-promupgrade-150_1r_SG2
```

Step 12 On a redundant system, also delete the upgrade file from the standby supervisor engine.

```
Switch# delete slavebootflash: cat4500-e-promupgrade-150_1r_SG2
```

The ROMMON has now been upgraded.

Upgrading the Supervisor Engine ROMMON with Telnet

⚠

Caution   To avoid actions that might make your system unable to boot, read this entire section before starting the upgrade.

Follow this procedure to upgrade your supervisor engine ROMMON to Release 15.0(1r)SG2. This procedure can be used when console access is not available and when the ROMMON upgrade must be performed remotely.

✐

Note   In the following section, use the PROM upgrade version bootflash:cat4500-e-ios-promupgrade-150-1r-SG2.

Step 1   Establish a Telnet session to the supervisor engine.

✐

Note   In the following discussion, we assume that at least one IP address has been assigned to either an SVI or a routed port.

Step 2   Download the bootflash:cat4500-e-ios-promupgrade-150-1r-SG2 program from Cisco.com, and place it on a TFTP server in a directory that is accessible from the switch to be upgraded.

The bootflash:cat4500-e-ios-promupgrade-150-1r-SG2 programs are available on Cisco.com at the same location from which you download Catalyst 4500 system images.

Step 3   Use the **dir bootflash:** command to ensure that there is sufficient space in Flash memory to store the PROM upgrade image. If there is insufficient space, delete one or more images.

If you are using an SD card, replace **bootflash:** with **slot0:**.

Step 4   Download the bootflash:cat4500-e-ios-promupgrade-150-1r-SG2 program into Flash memory using the **copy tftp** command.

The following example shows how to download the PROM upgrade image bootflash:cat4500-e-ios-promupgrade-150-1r-SG2 from the remote host 172.20.58.78 to bootflash:

```
Switch# copy tftp: bootflash:
Address or name of remote host [172.20.58.78]?
Source filename [bootflash:cat4500-e-ios-promupgrade-150-1r-SG2]?
Destination filename [cat4500-e-ios-promupgrade-150-1r-SG2]?
Accessing tftp://172.20.58.78/ bootflash:cat4500-e-ios-promupgrade-150-1r-SG2...
Loading bootflash:cat4500-e-ios-promupgrade-150-1r-SG2 from 172.20.58.78 (via
FastEthernet2/1):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!
[OK - 455620 bytes]

455620 bytes copied in 2.644 secs (172322 bytes/sec)
Switch#
```

Step 5   Use the **no boot system flash bootflash:***file_name* command to clear all BOOT variable commands in the configuration file. In this example, the BOOT variable was set to boot the image cat4500e-universal.SPA.03.02.00.SG.150-2.SG.bin from bootflash:

```
Switch# configure terminal
Switch(config)# no boot system flash
bootflash:cat4500e-universal.SPA.03.02.00.SG.150-2.SG.bin
Switch(config)# exit
```

```
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#
```

Use the boot system flash bootflash:file_name command to set the BOOT variable. You will use two BOOT commands: one to upgrade the ROMMON and a second to load the Cisco IOS software image after the ROMMON upgrade is complete. Notice the order of the BOOT variables in the example below. At bootup the first BOOT variable command upgrades the ROMMON. When the upgrade is complete the supervisor engine will autoboot, and the second BOOT variable command will load the Cisco IOS software image specified by the second BOOT command

Note For a successful ROMMON upgrade, the config-register must be set to enable reading the **boot system** commands (i.e. the last digit of the configuration register is set to 2; for example, 0x0102.)

In this example, we assume that the console port baud rate is set to 9600 bps and that the config-register is set to 0x0102.

Use the config-register command to autoboot using image(s) specified by the BOOT variable. Configure the BOOT variable to upgrade the ROMMON and then autoboot the IOS image after the ROMMON upgrade is complete. In this example, we are upgrading the ROMMON to version 15.0(1r)SG2. After the ROMMON upgrade is complete, the supervisor engine will boot Cisco IOS-XE software Release 03.02.03.SG.

config-register to 0x0102.

```
Switch# configure terminal
Switch(config)# boot system flash bootflash:cat4500-e-ios-promupgrade-150-1r-SG2
Switch(config)# boot system flash
bootflash:cat4500e-universal.SPA.03.02.03.SG.150-2.SG3.bin
Switch(config)# config-register 0x2102
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#
```

Step 6 Use the **show bootvar** command to verify the boot string. The BOOT variable in this example will first run the PROM upgrade to upgrade ROMMON. Then, the upgrade software will reload and the supervisor engine will load the Cisco IOS software image.

```
Switch# show bootvar
BOOT variable =
bootflash:cat4500-e-ios-promupgrade-150-1r-SG2,1;bootflash:cat4500e-universal.SPA.03.02.03
.SG.150-2.SG3.bin,1;
CONFIG_FILE variable does not exist
BOOTLDR variable does not exist
Configuration register is 0x2102
```

Step 7 Run the PROM upgrade program by issuing the **reload** command. Issuing this command will terminate your Telnet session.

Caution Verify the boot string in step 6. No intervention is necessary to complete the upgrade. To ensure a successful upgrade, do not interrupt the upgrade process. Do not perform a reset, power cycle, or OIR of the supervisor engine until the upgrade is complete.

The following example shows the console port output from a successful ROMMON upgrade followed by a system reset. Your Telnet session is disconnected during the ROMMON upgrade, so you will not see this output. This step could take 2-3 minutes to complete. You will need to reconnect your Telnet session after 2-3 minutes when the Cisco IOS-XE software image and the interfaces are loaded.

```
Switch# reload
Proceed with reload? [confirm]

*Feb  3 17:08:30.633: %SYS-5-RELOAD: Reload requested by console. Reload reason: Reload
commandPlease stand by while rebooting the system...

Restarting system.

Rommon signature verification PASSED for golden image
Rommon signature verification PASSED for primary image
FPGA signature verification PASSED for primary image




*************************************************************
*                                                           *
* Welcome to Rom Monitor for   WS-X45-SUP7-E System.        *
* Copyright (c) 2008-2010 by Cisco Systems, Inc.            *
* All rights reserved.                                      *
*                                                           *
*************************************************************

Rom Monitor Program Version 15.0(1r)SG1
CPU Rev: 2.1, Board Rev: 6, Board Type: 101, CPLD Moka Rev: 7.0x2643.0x5956
Chassis: WS-C4507R-E

***** The system will autoboot in 5 seconds *****


Type control-C to prevent autobooting.
. .
Established physical link 100Mb Full Duplex
Network layer connectivity may take a few seconds
. . .

******** The system will autoboot now ********


 config-register = 0x2102
 Autobooting using BOOT variable specified file.....

Current BOOT file is --- bootflash:cat4500-e-ios-promupgrade-150-1r-SG2
loading image

Checking digital signature
flash1:/USER/cat4500-e-ios-promupgrade-150-1r-SG2: Digitally Signed Release Software with
key version A

*************************************************************
*                                                           *
*      ROM Monitor/FPGA Upgrade for   WS-X45-SUP7-E System  *
*                                                           *
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*                                                           *
```

```
**************************************************************

Upgrading image/FPGA... DO NOT RESET the system
unless instructed or upgrade will fail !!!

 Image Name : Cat4K_Mpc8572_Rommon_2MB
 Image size : 2097152 bytes

 Uncompressing image.....
 Done!

Cat4K_Mpc8572_Rommon_2MB: Digitally Signed Release Software with key version A


 **************************************************************
 *          ** Now Upgrading Primary ROMMON Image **        *
 **************************************************************
 erasing... *******************************
 writing... ******************************
 reading... verifying...  Done!


 Image Name : Cat4K_MOKA_Sig
 Image size : 432 bytes

 Uncompressing image.....
 Done!

 Image Name : Cat4K_MOKA_Fpga
 Image size : 594412 bytes

 Uncompressing image.....
 Done!

Cat4K_MOKA_Fpga: Digitally Signed Release FPGA with key version A


 Image Name : Cat4K_MOKA_Fpga
 Image size : 594412 bytes

 Uncompressing image.....
 Done!

 **************************************************************
 *              ** Now Programming FPGA Image **             *
 **************************************************************
 erasing... **********
 writing... **********
 reading... verifying...  Done!


 Image Name : Cat4K_MOKA_Sig
 Image size : 432 bytes

 Uncompressing image.....
 Done!

 **************************************************************
 *          ** Now Programming FPGA Signature **            *
 **************************************************************
 erasing... *
 writing... *
 reading... verifying...  Done!
```

```
      *********************************************************
      System will now reset itself and reboot within few seconds
      *********************************************************
      .
      .(output truncated)
      .
      ***** The system will autoboot in 5 seconds *****


      Type control-C to prevent autobooting.
      . .
      Established physical link 100Mb Full Duplex
      Network layer connectivity may take a few seconds
      . . .

      ******** The system will autoboot now ********

      config-register = 0x2102
      Autobooting using BOOT variable specified file.....

      Current BOOT file is --- bootflash:cat4500e-universal.SPA.03.02.03.SG.150-2.SG3.bin
      loading image
```

Step 8 Use the **no boot system flash bootflash:***file_name* command to clear the BOOT command used to upgrade the ROMMON.

```
Switch# configure terminal
Switch(config)# no boot system flash bootflash:cat4500-e-ios-promupgrade-150-1r-SG2
Switch(config)# exit
Switch# write
Building configuration...
Compressed configuration from 3641 to 1244 bytes [OK]
Switch#
```

Step 9 Use the **show version** command to verify that the ROMMON has been upgraded.

```
Switch# show version
Cisco IOS Software, IOS-XE Software, Catalyst 4500 L3 Switch Software
(cat4500e-UNIVERSAL-M), Version 03.02.03.SG RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2012 by Cisco Systems, Inc.
Compiled Mon 09-Jan-12 03:25 by prod_rel_team



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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.



Image text-base: 0x100A17B4, data-base: 0x13CCB460

ROM: 15.0(1r)SG2
Jawa Revision 7, Snowtrooper Revision 0x0.0x116
```

```
Switch uptime is 4 minutes
Uptime for this control processor is 4 minutes
System returned to ROM by power-on
System image file is "bootflash:cat4500e-universal.SPA.03.02.03.SG.150-2.SG3.bin"


License Information for 'WS-X45-SUP7-E'
    License Level: entservices   Type: Default. No valid license found.
    Next reboot license Level: entservices

cisco WS-C4507R+E (MPC8572) processor (revision 6) with 2097152K/20480K bytes of memory.
Processor board ID FOX1418GEW0
MPC8572 CPU at 1.5GHz, Supervisor 7
Last reset from PowerUp
2 Virtual Ethernet interfaces
24 Gigabit Ethernet interfaces
8 Ten Gigabit Ethernet interfaces
511K bytes of non-volatile configuration memory.

Configuration register is 0x2102

Switch#
```

Step 10   Use the **delete** command to delete the PROM upgrade program from bootflash.

The following example shows how to delete the cat4500-e-ios-promupgrade-150-1r-SG2 image from bootflash and reclaim unused space:

```
Switch# delete bootflash:cat4500-e-ios-promupgrade-150-1r-SG2
Delete filename [cat4500-e-ios-promupgrade-150-1r-SG2]?
Delete bootflash:cat4500-e-ios-promupgrade-150-1r-SG2? [confirm]

Switch#
```

Step 11   Use the **show bootvar** command to verify that the ROMMON upgrade program has been removed from the BOOT variable.

```
Switch# show bootvar
BOOT variable = bootflash:cat4500e-universal.SPA.03.02.03.SG.150-2.SG3.bin,1
CONFIG_FILE variable does not exist
BOOTLDR variable does not exist
Configuration register is 0x0102
```

The ROMMON has now been upgraded.

Network Booting from ROMMON

Starting with ROMMON IOS Version 15.0(1r)SG13, you can use the PXE boot feature to specify a remote TFTP server to download the software image and other files.

Starting with ROMMON IOS Version 15.0(1r)SG14, you can use the PXE boot feature to specify a remote TFTP or HTTP server to download the software image and other files.

PXE boot requires the configuration of a DHCP server, and the boot field set to one of the autoboot options in the ROMMON.

For ROMMON IOS Versions before 15.0(1r)SG13, network booting using a boot loader image is not supported. Use one of the following options to boot an image instead:

  1.   Boot from an SD card by entering the following command:

```
rommon 1> boot slot0:<bootable_image>
```

2. Use ROMMON TFTP boot.

✎

Note To use ROMMON tftp boot, the TFTP server must be accessible from the Ethernet management port on the supervisor engine.

To boot from ROMMON, perform the following tasks while in ROMMON mode:

a. Ensure that the Ethernet management port on the supervisor engine is physically connected to the network.

b. Set IP address of the Ethernet management port on the supervisor engine by entering the following command: **set interface fa1** *ip_address ip_mask*

For example, to set the supervisor engine Ethernet port with an IP address 172.16.1.5 and IP mask 255.255.255.0, enter the following command:

```
rommon 2> set interface fa1 172.16.1.5 255.255.255.0
```

c. Set default gateway for the Ethernet management port on the supervisor engine by entering the following command: **set ip route default** *gateway_ip_address*. The default gateway should be directly connected to the supervisor engine Ethernet management port subnet.

d. Ping the TFTP server to ensure that there is connectivity to the server from the Ethernet management port on the supervisor engine by entering the following command: **ping** *tftp_server_ip_address*.

e. Once the ping is successful, boot the image from the TFTP server by entering the following command: **boot tftp://***tftp_server_ip_address* **/** *image_path_and_file_name*

For example, to boot the Cisco IOS XE image cat4500e-universalk9.03.01.00 .SG.150-1.XO.bin located on the TFTP server 172.16.1.8, enter the following command:

```
rommon 3> boot
tftp://172.16.1.8/tftpboot/cat4500e-universalk9.03.01.00.SG.150-1.XO.bin
```

Related Documentation

Although their Release Notes are unique, the 4 platforms (Catalyst 4500, Catalyst 4900, Catalyst ME 4900, and Catalyst 4900M) use the same *Software Configuration Guide*, *Command Reference Guide*, and *System Message Guide*. Refer to the following home page for additional information:

http://www.cisco.com//en/US/products/hw/switches/ps4324/prod_release_notes_list.html

Hardware Documents

Installation guides and notes including specifications and relevant safety information are available at the following URLs:

• *Catalyst 4500 E-series Switches Installation Guide*

http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/catalyst4500e/installation/guide/Eseries.html

• Catalyst 4500-X hardware installation information is available at:

http://www.cisco.com/en/US/products/ps12332/prod_installation_guides_list.html

- For information about individual switching modules and supervisors, refer to the *Catalyst 4500 Series Module Installation Guide* at:

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/configuration/notes/OL_25315.html

- *Regulatory Compliance and Safety Information for the Catalyst 4500 Series Switches*

  http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/regulatory/compliance/78_13233.html

- Installation notes for specific supervisor engines or for accessory hardware are available at:

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_installation_guides_list.html

Software Documentation

Software release notes, configuration guides, command references, and system message guides are available at the following URLs:

- Cisco 4500-X release notes are available at:

  http://www.cisco.com/en/US/products/ps12332/prod_release_notes_list.html

- Catalyst 4500E release notes are available at:

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_release_notes_list.html

Software documents for the Catalyst 4500 E-Series and the Catalyst 4500-X Series switches are available at the following URLs:

- *Catalyst 4500 Series Software Configuration Guide*

  http://www.cisco.com/en/US/products/hw/switches/ps4324/products_installation_and_configuration_guides_list.html

- *Catalyst 4500 Series Software Command Reference*

  http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_command_reference_list.html

- *Catalyst 4500 Series Software System Message Guide*

  http://www.cisco.com/en/US/products/hw/switches/ps4324/products_system_message_guides_list.html

Cisco IOS Documentation

Platform- independent Cisco IOS documentation may also apply to the Catalyst 4500 and 4900 switches. These documents are available at the following URLs:

- Cisco IOS configuration guides, Release 12.x

http://www.cisco.com/en/US/products/ps6350/products_installation_and_configuration_guides_list.html

- Cisco IOS command references, Release 12.x

  http://www.cisco.com/en/US/products/ps6350/prod_command_reference_list.html

  You can also use the Command Lookup Tool at:

  http://tools.cisco.com/Support/CLILookup/cltSearchAction.do

- Cisco IOS system messages, version 12.x

  http://www.cisco.com/en/US/products/ps6350/products_system_message_guides_list.html

You can also use the Error Message Decoder tool at:

http://www.cisco.com/pcgi-bin/Support/Errordecoder/index.cgi

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.