Upgrading the Switch Software

Automatic Boot Loader Upgrade

When you upgrade from any prior IOS 3.xE release to an IOS XE 16.x release for the first time, the boot loader is automatically upgraded and it will take effect on the next reload. For subsequent IOS XE 16.x releases, if the boot loader is updated in those releases, it will be automatically upgraded when you load the new release on the switch. If you go back to an IOS 3.xE release, your boot loader will not be downgraded. The updated boot loader supports all previous IOS 3.xE releases.

⚠️

Caution   Please do not power cycle your switch during the upgrade.

The following is a sample of the console output during the automatic boot loader upgrade while booting Cisco IOS XE Denali 16.x.x :

```
%IOSXEBOOT-PLEASE-###: (rp/0): DO NOT POWER CYCLE ### BOOT LOADER UPGRADING
%IOSXEBOOT-Nov-Tue: (rp/0): 24 11:04:42 Universal 2015 boot loader upgrade
 successful
```

Automatic Microcode Upgrade

During an IOS image upgrade or downgrade on a PoE or UPoE switch, the microcode is updated to reflect applicable feature enhancements and bug fixes. Do not restart the switch during the upgrade or downgrade process. With the Cisco IOS XE Denali 16.x.x release, it takes approximately an additional 4 minutes to complete the microcode upgrade in addition to the normal reload time. The microcode update occurs only during an image upgrade or downgrade on PoE or UPoE switches. It does not occur during switch reloads or on non-PoE switches.

The following is a sample of the console messages that are displayed during microcode upgrade:

```
Front-end Microcode IMG MGR: found 4 microcode images for 1 device.
Image for front-end 0: /tmp/microcode_update/front_end/fe_type_6_0
Image for front-end 0: /tmp/microcode_update/front_end/fe_type_6_1
```

```
Image for front-end 0: /tmp/microcode_update/front_end/fe_type_6_2
Image for front-end 0: /tmp/microcode_update/front_end/fe_type_6_3

Front-end Microcode IMG MGR: Preparing to program device microcode...
Front-end Microcode IMG MGR: Preparing to program device[0]...594412 bytes....
Skipped[0].
Front-end Microcode IMG MGR: Preparing to program device[0]...381758 bytes.
Front-end Microcode IMG MGR: Programming device
0...rwRrrrrrw..0%.....................................................................
..10%.......................................................................20%.........
.............................................................30%......................
.............................................................40%...................................
..............................................50%................................................
.......................60%...............................................................
............70%.
...............................................................80%...........
.............................................................90%........................
...........................................100%
Front-end Microcode IMG MGR: Preparing to program device[0]...25166 bytes.
Front-end Microcode IMG MGR: Programming device
0...rrrrrrw..0%....10%....20%......30%...40%......50%....60%......70%...80%......90%....100%
Front-end Microcode IMG MGR: Microcode programming complete for device 0.
Front-end Microcode IMG MGR: Preparing to program device[0]...86370 bytes....
Skipped[3].
Front-end Microcode IMG MGR: Microcode programming complete in 237 seconds
```

Upgrading Cisco IOS XE Software

The method that you use to upgrade Cisco IOS XE software depends on whether the device is running in installed mode or in bundle mode.

Install Mode

Upgrading from Cisco IOS XE 3.xE to Cisco IOS XE Denali 16.x

The following sections provide information on how to upgrade from Cisco IOS XE 3.xE to Cisco IOS XE Denali 16.x.

Copy New Image to Stack

Follow the steps below to copy the source image stored on the TFTP server on to the local flash:

Procedure

Step 1 Make sure your tftp server is reachable from IOS via source interface.

Example:

```
Switch#show run | i tftp
ip tftp source-interface GigabitEthernet0/0
ip tftp blocksize 8192
Switch#
Switch#show run | i ip route vrf
ip route vrf Mgmt-vrf 5.0.0.0 255.0.0.0 5.30.0.1
Switch#
```

```
Switch#show run int GigabitEthernet0/0
Building configuration...

Current configuration : 115 bytes
!
interface GigabitEthernet0/0
vrf forwarding Mgmt-vrf
ip address 5.30.12.121 255.255.0.0
negotiation auto
end
Switch#
Switch#ping vrf Mgmt-vrf ip 5.28.11.250
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.28.11.250, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
```

Step 2   Copy the image from your tftp server to flash.

Example:

```
Switch#copy tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin flash:
Destination filename [cat3k_caa-universalk9.16.01.01.SPA.bin]?
Accessing tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin...
Loading cat3k_caa-universalk9.16.01.01.SPA.bin from 5.28.11.250 (via
GigabitEthernet0/0):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!O!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 469677062 bytes]

469677062 bytes copied in 140.610 secs (3340282 bytes/sec)
Switch#
```

Step 3   Use the **dir** flash command to confirm that the image has been successfully copied to flash.

Example:

```
Switch#dir flash:*.bin
Directory of flash:/*.bin

77453 -rw- 469677062 Nov 30 2015 16:31:05 -08:00
cat3k_caa-universalk9.16.01.01.SPA.bin

3458338816 bytes total (2644488192 bytes free)
Switch#
```

Add Software Install Image to Flash

Procedure

Use the **software install** command with the 'new' and 'force' options to expand the target image to flash.
You can point to the source image on your TFTP server or in flash if you have it copied to flash.

Example:

```
Switch#software install file flash:cat3k_caa-universalk9.16.01.01.SPA.bin new force
Preparing install operation ...
[4]: Copying software from active switch 4 to switches 1,2,3
```

```
[4]: Finished copying software to switches 1,2,3
[1 2 3 4]: Starting install operation
[1 2 3 4]: Expanding bundle flash:cat3k_caa-universalk9.16.01.01.SPA.bin
[1 2 3 4]: Copying package files
[1 2 3 4]: Package files copied
[1 2 3 4]: Finished expanding bundle flash:cat3k_caa-universalk9.16.01.01.SPA.bin
[1 2 3 4]: Verifying and copying expanded package files to flash:
[1 2 3 4]: Verified and copied expanded package files to flash:
[1 2 3 4]: Starting compatibility checks
[1 2 3 4]: Bypassing peer package compatibility checks due to 'force' command option
[1 2 3 4]: Finished compatibility checks
[1 2 3 4]: Starting application pre-installation processing
[1 2 3 4]: Finished application pre-installation processing
[1]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[2]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[3]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[4]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[1]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[2]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[3]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[4]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[1 2 3 4]: Creating pending provisioning file
[1 2 3 4]: Finished installing software. New software will load on reboot.
[1 2 3 4]: Committing provisioning file
```

```
[1 2 3 4]: Do you want to proceed with reload? [yes/no]: yes
[1 2 3 4]: Reloading
```

Note Old files listed in the logs should be removed using the **request platform software package clean switch all** command, after reload.

Reload

Procedure

Step 1 If you said 'Yes' to the prompt in software install and your switches are configured with auto boot, the stack will automatically boot up with the new image. If not, you can manually boot flash:packages.conf

Example:

```
switch: boot flash:packages.conf
```

Note When you boot the new image, it will automatically update the boot loader.

Step 2 When the new image boots up, you can verify the version of the new image, by checking **show version**.

Example:

```
Switch#show version
Cisco IOS Software [Denali], Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version
 16.3.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Tue 02-Aug-16 17:33 by mcpre
```

Step 3 After you have successfully installed the image, you no longer need the .bin image and the file can be deleted from flash of each switch if it was copied to flash.

Example:

```
Switch#delete flash:cat3k_caa-universalk9.16.03.01.SPA.bin
Delete filename [cat3k_caa-universalk9.16.03.01.SPA.bin]?
Delete flash:/cat3k_caa-universalk9.16.03.01.SPA.bin? [confirm]
Switch#
```

Upgrading from Cisco IOS XE Denali 16.x-1 to Cisco IOS XE Denali 16.x

The following sections provide informaton on how to upgrade from Cisco IOS XE Denali 16.x-1 to Cisco IOS XE Denali 16.x

Clean Up

Procedure

Step 1 If you said 'Yes' to the prompt in software install and your switches are configured with auto boot, the stack will automatically boot up with the new image. If not, you can manually boot flash:packages.conf

Example:

```
switch: boot flash:packages.conf
```

Note When you boot the new image, it will automatically update the boot loader.

Step 2 When the new image boots up, you can verify the version of the new image, by checking **show version**.

Example:

```
Switch#show version
Cisco IOS Software [Denali], Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version
 16.3.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Tue 02-Aug-16 17:33 by mcpre
```

Step 3 After you have successfully installed the image, you no longer need the .bin image and the file can be deleted from flash of each switch if it was copied to flash.

Example:

```
Switch#delete flash:cat3k_caa-universalk9.16.03.01.SPA.bin
Delete filename [cat3k_caa-universalk9.16.03.01.SPA.bin]?
Delete flash:/cat3k_caa-universalk9.16.03.01.SPA.bin? [confirm]
Switch#
```

Copy New Image to Stack

Follow the steps below to copy the source image stored on the TFTP server on to the local flash:

Procedure

Step 1 Make sure your tftp server is reachable from IOS via source interface.

Example:

```
Switch#show run | i tftp
ip tftp source-interface GigabitEthernet0/0
ip tftp blocksize 8192
Switch#
Switch#show run | i ip route vrf
ip route vrf Mgmt-vrf 5.0.0.0 255.0.0.0 5.30.0.1
Switch#
Switch#show run int GigabitEthernet0/0
Building configuration...

Current configuration : 115 bytes
```

```
!
interface GigabitEthernet0/0
vrf forwarding Mgmt-vrf
ip address 5.30.12.121 255.255.0.0
negotiation auto
end
Switch#
Switch#ping vrf Mgmt-vrf ip 5.28.11.250
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.28.11.250, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
```

Step 2   Copy the image from your tftp server to flash.

Example:

```
Switch#copy tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin flash:
Destination filename [cat3k_caa-universalk9.16.01.01.SPA.bin]?
Accessing tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin...
Loading cat3k_caa-universalk9.16.01.01.SPA.bin from 5.28.11.250 (via
GigabitEthernet0/0):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!O!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 469677062 bytes]

469677062 bytes copied in 140.610 secs (3340282 bytes/sec)
Switch#
```

Step 3   Use the **dir** flash command to confirm that the image has been successfully copied to flash.

Example:

```
Switch#dir flash:*.bin
Directory of flash:/*.bin

77453 -rw- 469677062 Nov 30 2015 16:31:05 -08:00
cat3k_caa-universalk9.16.01.01.SPA.bin

3458338816 bytes total (2644488192 bytes free)
Switch#
```

Add Software Install Image to Flash

Procedure

Use the **software install** command with the 'new' and 'force' options to expand the target image to flash.
You can point to the source image on your TFTP server or in flash if you have it copied to flash.

Example:

```
Switch#software install file flash:cat3k_caa-universalk9.16.01.01.SPA.bin new force
Preparing install operation ...
[4]: Copying software from active switch 4 to switches 1,2,3
[4]: Finished copying software to switches 1,2,3
[1 2 3 4]: Starting install operation
[1 2 3 4]: Expanding bundle flash:cat3k_caa-universalk9.16.01.01.SPA.bin
[1 2 3 4]: Copying package files
```

```
[1 2 3 4]: Package files copied
[1 2 3 4]: Finished expanding bundle flash:cat3k_caa-universalk9.16.01.01.SPA.bin
[1 2 3 4]: Verifying and copying expanded package files to flash:
[1 2 3 4]: Verified and copied expanded package files to flash:
[1 2 3 4]: Starting compatibility checks
[1 2 3 4]: Bypassing peer package compatibility checks due to 'force' command option
[1 2 3 4]: Finished compatibility checks
[1 2 3 4]: Starting application pre-installation processing
[1 2 3 4]: Finished application pre-installation processing
[1]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[2]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[3]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[4]: Old files list:
Removed cat3k_caa-base.SPA.03.07.02E.pkg
Removed cat3k_caa-drivers.SPA.03.07.02E.pkg
Removed cat3k_caa-infra.SPA.03.07.02E.pkg
Removed cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
Removed cat3k_caa-platform.SPA.03.07.02E.pkg
Removed cat3k_caa-wcm.SPA.10.3.120.0.pkg
[1]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[2]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[3]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[4]: New files list:
Added cat3k_caa-rpbase.16.01.01.SPA.pkg
Added cat3k_caa-srdriver.16.01.01.SPA.pkg
Added cat3k_caa-wcm.16.01.01.SPA.pkg
Added cat3k_caa-webui.16.01.01.SPA.pkg
[1 2 3 4]: Creating pending provisioning file
[1 2 3 4]: Finished installing software. New software will load on reboot.
[1 2 3 4]: Committing provisioning file

[1 2 3 4]: Do you want to proceed with reload? [yes/no]: yes
[1 2 3 4]: Reloading
```

Note   Old files listed in the logs should be removed using the **request platform software package clean switch all** command, after reload.

Reload

Procedure

Step 1   If you said 'Yes' to the prompt in software install and your switches are configured with auto boot, the stack will automatically boot up with the new image. If not, you can manually boot flash:packages.conf

Example:

```
switch: boot flash:packages.conf
```

Note   When you boot the new image, it will automatically update the boot loader.

Step 2   When the new image boots up, you can verify the version of the new image, by checking **show version**.

Example:

```
Switch#show version
Cisco IOS Software [Denali], Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version
 16.3.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Tue 02-Aug-16 17:33 by mcpre
```

Step 3   After you have successfully installed the image, you no longer need the .bin image and the file can be deleted from flash of each switch if it was copied to flash.

Example:

```
Switch#delete flash:cat3k_caa-universalk9.16.03.01.SPA.bin
Delete filename [cat3k_caa-universalk9.16.03.01.SPA.bin]?
Delete flash:/cat3k_caa-universalk9.16.03.01.SPA.bin? [confirm]
Switch#
```

Bundle Mode

Upgrading from Cisco IOS XE 3.xE to Cisco IOS XE Denali 16.x

The following sections provide information on how to upgrade from Cisco IOS XE 3.xE to Cisco IOS XE Denali 16.x

Copy New Image to Stack

Follow the steps below to copy the source image stored on the TFTP server on to the local flash:

Procedure

Step 1   Make sure your tftp server is reachable from IOS via source interface.

Example:

```
Switch#show run | i tftp
ip tftp source-interface GigabitEthernet0/0
ip tftp blocksize 8192
Switch#
Switch#show run | i ip route vrf
ip route vrf Mgmt-vrf 5.0.0.0 255.0.0.0 5.30.0.1
Switch#
Switch#show run int GigabitEthernet0/0
Building configuration...

Current configuration : 115 bytes
!
interface GigabitEthernet0/0
vrf forwarding Mgmt-vrf
ip address 5.30.12.121 255.255.0.0
negotiation auto
end
Switch#
Switch#ping vrf Mgmt-vrf ip 5.28.11.250
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 5.28.11.250, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
```

Step 2   Copy the image from your tftp server to flash.

Example:

```
Switch#copy tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin flash:
Destination filename [cat3k_caa-universalk9.16.01.01.SPA.bin]?
Accessing tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin...
Loading cat3k_caa-universalk9.16.01.01.SPA.bin from 5.28.11.250 (via
GigabitEthernet0/0):!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!O!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 469677062 bytes]

469677062 bytes copied in 140.610 secs (3340282 bytes/sec)
Switch#
```

Step 3   Use the **dir** flash command to confirm that the image has been successfully copied to flash.

Example:

```
Switch#dir flash:*.bin
Directory of flash:/*.bin

77453 -rw- 469677062 Nov 30 2015 16:31:05 -08:00
cat3k_caa-universalk9.16.01.01.SPA.bin

3458338816 bytes total (2644488192 bytes free)
Switch#
```

Edit the Boot Variable

Procedure

Step 1 Clear the boot variable.

Example:

```
Switch(config)# no boot system
```

Step 2 Edit the boot variable to point to the new image.

Example:
```
Switch(config)# boot system flash:cat3k_caa-universalk9.16.03.01.SPA.bin
```

Step 3 Use the **write** memory command to save the configuration change.

Example:
```
Switch#write memory
```

Step 4 Use the **show boot** command to confirm that your boot variable is pointing to the new image.

Example:
```
Switch#show boot
--------------------------
Switch 1
--------------------------
Current Boot Variables:
BOOT variable = flash:cat3k_caa-universalk9.16.02.01.SPA.bin;

Boot Variables on next reload:
BOOT variable = flash:cat3k_caa-universalk9.16.02.01.SPA.bin;
Allow Dev Key = yes
Manual Boot = yes
Enable Break = yes
Switch#
```

Reload

Procedure

Step 1 If you said 'Yes' to the prompt in software install and your switches are configured with auto boot, the stack will automatically boot up with the new image. If not, you can manually boot flash:packages.conf

Example:

```
switch: boot flash:packages.conf
```

Note   When you boot the new image, it will automatically update the boot loader.

Step 2 When the new image boots up, you can verify the version of the new image, by checking **show version**.

Example:

```
Switch#show version
Cisco IOS Software [Denali], Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version
 16.3.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Tue 02-Aug-16 17:33 by mcpre
```

Step 3   After you have successfully installed the image, you no longer need the .bin image and the file can be deleted from flash of each switch if it was copied to flash.

Example:

```
Switch#delete flash:cat3k_caa-universalk9.16.03.01.SPA.bin
Delete filename [cat3k_caa-universalk9.16.03.01.SPA.bin]?
Delete flash:/cat3k_caa-universalk9.16.03.01.SPA.bin? [confirm]
Switch#
```

Move from Cisco IOS XE Denali 16.x Bundle Mode to Install Mode

Procedure

Step 1   Ensure you have enough space in flash to expand a new image by cleaning up old installation files. This command will erase your Cisco IOS XE Denali 16.x bin image file, so ensure that you copy it to your Active again.

Note   Use the **switch all** option to clean up all switches in your stack.

Example:

```
Switch#request platform software package clean switch all file flash:
Running command on switch 1
Cleaning up unnecessary package files
Scanning boot directory for packages... done.
Preparing packages list to delete...
done.
Running command on switch 2
Cleaning up unnecessary package files
Scanning boot directory for packages... done.
Preparing packages list to delete...
done.
Running command on switch 3
Cleaning up unnecessary package files
Scanning boot directory for packages... done.
Preparing packages list to delete...
done.
Running command on switch 4
Cleaning up unnecessary package files
Scanning boot directory for packages... done.
Preparing packages list to delete...
done.
The following files will be deleted:
[1]:
/flash/cat3k_caa-base.SPA.03.07.02E.pkg
/flash/cat3k_caa-drivers.SPA.03.07.02E.pkg
/flash/cat3k_caa-infra.SPA.03.07.02E.pkg
/flash/cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
/flash/cat3k_caa-platform.SPA.03.07.02E.pkg
/flash/cat3k_caa-universalk9.16.01.01.SPA.bin
```

```
/flash/cat3k_caa-wcm.SPA.10.3.120.0.pkg
/flash/packages.conf
[2]:
/flash/cat3k_caa-base.SPA.03.07.02E.pkg
/flash/cat3k_caa-drivers.SPA.03.07.02E.pkg
/flash/cat3k_caa-infra.SPA.03.07.02E.pkg
/flash/cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
/flash/cat3k_caa-platform.SPA.03.07.02E.pkg
/flash/cat3k_caa-universalk9.16.01.01.SPA.bin
/flash/cat3k_caa-wcm.SPA.10.3.120.0.pkg
/flash/packages.conf
[3]:
/flash/cat3k_caa-base.SPA.03.07.02E.pkg
/flash/cat3k_caa-drivers.SPA.03.07.02E.pkg
/flash/cat3k_caa-infra.SPA.03.07.02E.pkg
/flash/cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
/flash/cat3k_caa-platform.SPA.03.07.02E.pkg
/flash/cat3k_caa-universalk9.16.01.01.SPA.bin
/flash/cat3k_caa-wcm.SPA.10.3.120.0.pkg
/flash/packages.conf
[4]:
/flash/cat3k_caa-base.SPA.03.07.02E.pkg
/flash/cat3k_caa-drivers.SPA.03.07.02E.pkg
/flash/cat3k_caa-infra.SPA.03.07.02E.pkg
/flash/cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg
/flash/cat3k_caa-platform.SPA.03.07.02E.pkg
/flash/cat3k_caa-universalk9.16.01.01.SPA.bin
/flash/cat3k_caa-wcm.SPA.10.3.120.0.pkg
/flash/packages.conf

Do you want to proceed? [y/n]y
[1]:
Deleting file flash:cat3k_caa-base.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-drivers.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-infra.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg... done.
Deleting file flash:cat3k_caa-platform.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-universalk9.16.01.01.SPA.bin... done.
Deleting file flash:cat3k_caa-wcm.SPA.10.3.120.0.pkg... done.
Deleting file flash:packages.conf... done.
SUCCESS: Files deleted.
[2]:
Deleting file flash:cat3k_caa-base.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-drivers.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-infra.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg... done.
Deleting file flash:cat3k_caa-platform.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-universalk9.16.01.01.SPA.bin... done.
Deleting file flash:cat3k_caa-wcm.SPA.10.3.120.0.pkg... done.
Deleting file flash:packages.conf... done.
SUCCESS: Files deleted.
[3]:
Deleting file flash:cat3k_caa-base.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-drivers.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-infra.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg... done.
Deleting file flash:cat3k_caa-platform.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-universalk9.16.01.01.SPA.bin... done.
Deleting file flash:cat3k_caa-wcm.SPA.10.3.120.0.pkg... done.
Deleting file flash:packages.conf... done.
SUCCESS: Files deleted.
[4]:
Deleting file flash:cat3k_caa-base.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-drivers.SPA.03.07.02E.pkg... done.
```

```
Deleting file flash:cat3k_caa-infra.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-iosd-universalk9.SPA.152-3.E2.pkg... done.
Deleting file flash:cat3k_caa-platform.SPA.03.07.02E.pkg... done.
Deleting file flash:cat3k_caa-universalk9.16.01.01.SPA.bin... done.
Deleting file flash:cat3k_caa-wcm.SPA.10.3.120.0.pkg... done.
Deleting file flash:packages.conf... done.
SUCCESS: Files deleted.
Switch#
```

Step 2 Copy the image from your tftp server to flash.

Example:

```
Switch#copy tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin flash:
Destination filename [cat3k_caa-universalk9.16.01.01.SPA.bin]?
Accessing tftp://5.28.11.250/cat3k_caa-universalk9.16.01.01.SPA.bin...
Loading cat3k_caa-universalk9.16.01.01.SPA.bin from 5.28.11.250 (via
GigabitEthernet0/0):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!O!!!!!!!!!!!
!!!!!!!!!!!!!!!!
[OK - 469677062 bytes]

469677062 bytes copied in 140.610 secs (3340282 bytes/sec)
Switch#
```

Step 3 Use the **request platform software package expand switch all file flash:image.bin auto-copy** command to expand the target image to flash and move from bundle mode to install mode. You can point to the source image on your TFTP server or in flash if you have it copied to flash.

> **Note** Use the **switch all** option to upgrade all switches in your stack.
>
> Use the **auto-copy** option to copy the.bin image from flash: to all other switches in your stack.

Example:

```
Switch#request platform software package expand switch all file
flash:cat3k_caa-universalk9.16.01.01.SPA.bin auto-copy
[1]: Copying flash:cat3k_caa-universalk9.16.01.01.SPA.bin from switch 1 to switch 2 3 4
[2 3 4]: Finished copying to switch 2 3 4
[1 2 3 4]: Expanding file
[1 2 3 4]: Finished expanding all-in-one software package in switch 1 2 3 4
SUCCESS: Finished expanding all-in-one software package.
Switch#
```

Edit the Boot Variable

Procedure

Step 1 Clear the boot variable.

Example:

```
Switch(config)# no boot system
```

Step 2 Edit the boot variable to point to the new image.

Example:

```
Switch(config)# boot system flash:cat3k_caa-universalk9.16.03.01.SPA.bin
```

Step 3   Use the **write** memory command to save the configuration change.

Example:

```
Switch#write memory
```

Step 4   Use the **show boot** command to confirm that your boot variable is pointing to the new image.

Example:

```
Switch#show boot
--------------------------
Switch 1
--------------------------
Current Boot Variables:
BOOT variable = flash:cat3k_caa-universalk9.16.02.01.SPA.bin;

Boot Variables on next reload:
BOOT variable = flash:cat3k_caa-universalk9.16.02.01.SPA.bin;
Allow Dev Key = yes
Manual Boot = yes
Enable Break = yes
Switch#
```

Reload

Procedure

Step 1   If you said 'Yes' to the prompt in software install and your switches are configured with auto boot, the stack will automatically boot up with the new image. If not, you can manually boot flash:packages.conf

Example:

```
switch: boot flash:packages.conf
```

Note   When you boot the new image, it will automatically update the boot loader.

Step 2   When the new image boots up, you can verify the version of the new image, by checking **show version**.

Example:

```
Switch#show version
Cisco IOS Software [Denali], Catalyst L3 Switch Software (CAT3K_CAA-UNIVERSALK9-M), Version
 16.3.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2016 by Cisco Systems, Inc.
Compiled Tue 02-Aug-16 17:33 by mcpre
```

Step 3   After you have successfully installed the image, you no longer need the .bin image and the file can be deleted from flash of each switch if it was copied to flash.

Example:

```
Switch#delete flash:cat3k_caa-universalk9.16.03.01.SPA.bin
Delete filename [cat3k_caa-universalk9.16.03.01.SPA.bin]?
```

```
Delete flash:/cat3k_caa-universalk9.16.03.01.SPA.bin? [confirm]
Switch#
```