



Upgrading the Software

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Prerequisites for the Software Upgrade Process

This section describes how to upgrade the Cisco IOS XE software for an existing controller installation in a VM.



Note

- This procedure provides details about upgrading to a new software version of the controller in the same VM.
 - We recommend that you use Web UI method for a faster upgrade process.
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Be sure to complete the following prerequisites before upgrading the Cisco IOS XE version of the controller software image:

- Compatibility with the hypervisor vendor and version being used. If you want to upgrade to a new hypervisor version that is not supported by your current version of controller, you need to upgrade the version of controller before upgrading to the new hypervisor version.
- Memory requirements of the VM for the controller software image:
 - If the new controller version requires more memory than your previous version, you must increase the memory allocation on the VM before starting the upgrade process.
 - You must use the **.bin** file to upgrade or downgrade your software. Use the **.iso** and **.ova** files for first-time installation only.

Upgrading the Controller Software (CLI)

Perform the following to upgrade from one release to another in install mode:

Before you begin

- Clean up the old installation files using the **install remove inactive** command.
- For upgrading the software using CLI, we recommend that you use install mode for the upgrade. Use the **show version** command to verify the boot mode.
- To perform a software image upgrade, you must be booted into IOS through **boot flash:packages.conf**.
- Ensure that boot parameter is set to boot only from *flash:packages.conf*.

Step 1 Go to the software download page: <https://software.cisco.com/download/home/286316412/type>

- Click IOS XE Software link.
- Select the release number you want to install.

Note Cisco recommended release is selected by default. For information on the release designations, see: <https://software.cisco.com/download/static/assets/i18n/reldesignation.html?context=sds>

- Click **download**.

Step 2 Copy the new image to flash by executing the following command: **copy tftp:image flash:**

Device# **copy tftp:image flash:**

Note Transferring large files over TFTP is a time-consuming process

Device# **copy tftp://10.8.0.6//C9800-universalk9_wlc.xx.xx.xx.SPA.bin flash:**

```
Destination filename [C9800-universalk9_wlc.xx.xx.xx.SPA.bin]?
Accessing tftp://10.8.0.6//C9800-universalk9_wlc.xx.xx.xx.SPA.bin...
Loading /C9800-universalk9_wlc.xx.xx.xx.SPA.bin from 10.8.0.6 (via GigabitEthernet0/0):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 601216545 bytes]

601216545 bytes copied in 50.649 secs (11870255 bytes/sec)
```

Step 3 Verify if the image has been successfully copied to flash by executing the following command: **dir flash:**

Device# **dir flash:*.bin**

Step 4 Install the software image to flash by executing the following command: **install add file bootflash:image activate commit**

Note You can also use multi-step installation of the software. To perform multi-step installation, go to [Step 5](#).

Device# **install add file bootflash:C9800-universalk9_wlc.xx.xx.xx.SPA.bin activate commit**

```
install_add activate_commit: START Thu Dec 6 15:43:57 UTC 2018
Dec 6 15:43:58.669 %INSTALL-5-INSTALL_START_INFO: R0/0: install_engine: Started install one-shot
bootflash:C9800-xx-universalk9.xx.xx.xx.SPA.bin
install_add activate_commit: Adding PACKAGE

--- Starting initial file syncing ---
Info: Finished copying bootflash:C9800-xx-universalk9.xx.xx.xx.SPA.bin to the selected chassis
Finished initial file syncing

--- Starting Add ---
Performing Add on all members
```

```

[1] Add package(s) on chassis 1
[1] Finished Add on chassis 1
Checking status of Add on [1]
Add: Passed on [1]
Finished Add

Image added. Version: xx.xx.xx.216
install_add_activate_commit: Activating PACKAGE
Following packages shall be activated:
/bootflash/C9800-xx-rpboot.xx.xx.xx.SPA.pkg
/bootflash/C9800-xx-mono-universalk9.xx.xx.xx.SPA.pkg

This operation requires a reload of the system. Do you want to proceed? [y/n]y
--- Starting Activate ---
Performing Activate on all members
[1] Activate package(s) on chassis 1
--- Starting list of software package changes ---
Old files list:
  Removed C9800-xx-mono-universalk9.BLD_Vxxxx_THROTTLE_LATEST_20181022_153332.SSA.pkg
  Removed C9800-xx-rpboot.BLD_Vxxxx_THROTTLE_LATEST_20181022_153332.SSA.pkg
New files list:
  Added C9800-xx-mono-universalk9.xx.xx.xx.SPA.pkg
  Added C9800-xx-rpboot.xx.xx.xx.SPA.pkg
Finished list of software package changes
[1] Finished Activate on chassis 1
Checking status of Activate on [1]
Activate: Passed on [1]
Finished Activate

--- Starting Commit ---
Performing Commit on all members
[1] Commit package(s) on chassis 1
[1] Finished Commit on chassis 1
Checking status of Commit on [1]
Commit: Passed on [1]
Finished Commit

Install will reload the system now!
SUCCESS: install_add_activate_commit Thu Dec  6 15:49:21 UTC 2018
Dec  6 15:49:21.294 %INSTALL-5-INSTALL_COMPLETED_INFO: R0/0: install_engine: Completed install one-shot
PACKAGE bootflash:C9800-xx-universalk9.xx.xx.xx.SPA.bin

```

Note The system reloads automatically after executing the **install add file activate commit** command. You do not have to manually reload the system.

Step 5 (Optional) You can also perform multi-step installation of the software:

Note Ensure that boot parameter is set to boot only from *flash:packages.conf*.

- a) Add the controller software image to the flash and expanded it, using the **install add file** command.

```
Device# install add file bootflash:C9800-universalk9_wlc.xx.xx.xx.SPA.bin
```

- b) Perform predownload of the AP image, using the **ap image predownload** command.

```
Device# ap image predownload
```

- c) Check the predownload status of the AP, using the **show ap image** command.

```
Device# show ap image
```

- d) Activate the package, using the **install activate** command.

```
Device# install activate
```

e) Commit the activation changes to be persistent across reloads using the **install commit** command.

```
Device# install commit
```

Step 6 Verify the installation by running the following command: **show version**

Note When you boot the new image, the boot loader is automatically updated, but the new bootloader version is not displayed in the output until the next reload.

Step 7 To see a summary of the active packages in a system, run the following command: **show install summary**

```
Device# show install summary
```

```
[ Chassis 1 2 ] Installed Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
           C - Activated & Committed, D - Deactivated & Uncommitted
```

```
-----
Type  St  Filename/Version
-----
```

```
IMG   I   <v1>
IMG   C   <v2>
```

Upgrading the Controller Software (GUI)

Before you begin

Clean up the old installation files using the **Remove Inactive Files** link.



Note For GUI options such as *Software Maintenance Upgrade*, *AP Service Package*, and *AP Device Package*, see the respective feature sections.

Step 1 Choose **Administration > Software Management**.

Step 2 Choose an option from the **Upgrade Mode** drop-down list:

- **INSTALL**: The Install mode uses a package-provisioning file named *packages.conf* in order to boot a device.
- **BUNDLE**: The Bundle mode uses monolithic Cisco IOS images to boot a device. The Bundle mode consumes more memory than the Install mode because the packages are extracted from the bundle and copied to RAM.

Note You get to view the **Destination** field only for BUNDLE upgrade mode.

Step 3 From the **Transport Type** drop-down list, choose the transfer type to transfer the software image to your device as **TFTP**, **SFTP**, **FTP**, **Device**, or **Desktop (HTTP)**.

- If you choose **TFTP** as the **Transport Type**, enter the **Server IP Address** of the TFTP server that you want to use. Also, enter the complete **File Path**.

In controllers, the IP TFTP source is mapped to the service port by default.

- If you choose **SFTP** as the **Transport Type**, enter the **Server IP Address** of the SFTP server that you want to use. Also, enter the **SFTP Username**, **SFTP Password**, and the complete **File Path**.
- If you choose **FTP** as the **Transport Type**, enter the **Server IP Address** of the FTP server that you want to use. Also, enter the **FTP Username**, **FTP Password**, and the complete **File Path**.
- If you choose **Device** as the **Transport Type**, choose the **File System** from the drop-down list. In the **File Path** field, browse through the available images or packages from the device and select one of the options, and click **Select**.
- If you choose **Desktop (HTTPS)** as the **Transport Type**, choose the **File System** from the drop-down list. In the **Source File Path** field, click **Select File** to select the file, and click **Open**.

Step 4 Click **Download & Install**.

Step 5 To boot your device with the new software image, click **Save Configuration & Activate**.

Step 6 Click **Commit** after the device reboots to make the activation changes persistent across reloads.

Note For 17.4 and later releases, this step is mandatory for the upgrade to be persistent. If you do not click **Commit**, the auto-timer terminates the upgrade operation after 6 hours, and the controller reverts back to the previous image.

Rebooting the Controller

After you have copied the new system image into the bootflash memory, loaded the new system image, and saved a backup copy of the new system image and configuration, reboot the VM using the **reload** command.



Note When you reload an active device, it reloads the whole stack.

For more information about rebooting the VM, see your [VMware documentation](#).

After rebooting, the controller VM must include the new system image with a newly installed Cisco IOS XE software version.



Note After an upgrade from 16.11 to an higher release, you should be able to view the new login page.

If not, perform either one of the following to redirect to the login page:

- Refresh GUI.
- Clear cache.

