Performing Software Maintenance Upgrades

This chapter describes how to perform software maintenance upgrades on Cisco NX-OS devices.

This chapter contains the following sections:

Prerequisites for SMUs

These prerequisites must be met for a package to be activated or deactivated:

- You must be in a user group associated with a task group that includes the proper task IDs. If you suspect a user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

- Verify that all line cards are installed and operating properly. For example, do not activate or deactivate packages while line cards are booting, while line cards are being upgraded or replaced, or when you anticipate an automatic switchover activity.

- In a dual-supervisor system, both the active and standby supervisor modules have to be synchronized with each other.

Guidelines and Limitations for SMUs

SMUs have the following guidelines and limitations:

- Some packages require the activation or deactivation of other packages. If the SMUs have dependencies on each other, you cannot activate them without first activating the previous ones.

- The package being activated must be compatible with the current active software set.

- You cannot activate multiple SMUs in one command.

- Per-VDC SMUs are not supported.

- Activation is performed only after the package compatibility checks have been passed. If a conflict is found, an error message displays.

- While a software package is being activated, other requests are not allowed to run on any of the impacted nodes. Package activation is completed when a message similar to this one appears:

  ```
  Install operation 1 completed successfully at Thu Jan 9 01:19:24 2014
  ```

- Each CLI install request is assigned a request ID, which can be used later to review the events.

- SMUs are dependent on your physical device. So, an SMU for the Cisco Nexus 7000 Series will not work for the Cisco Nexus 7700 Series and vice versa.

- If you perform a software maintenance upgrade and later upgrade your device to a new Cisco NX-OS software release, the new image will overwrite both the previous Cisco NX-OS release and the SMU package file.

- SMUs are dependent on the version of Cisco NX-OS software release installed. You need to install SMUs compatible with your release. Moving to another Cisco NX-OS software release using reload or ISSU will inactivate the SMUs installed for the previously installed Cisco NX-OS software release. For example, if you have SMUs for Cisco NX-OS Release 7.2.0 in your Supervisor 2 setup, moving to an image of another release, say Cisco NX-OS Release 7.2.2 will cause the SMU to become inactive.

- SMU will be deactivated if you are loading an image of the Cisco NX-OS software release prior to NX-OS Release 7.2.0 that does not support SMUs. However, moving back to Cisco NX-OS Release 7.2.0 will activate the SMU.

Information About Performing a Software Maintenance Upgrades

Overview of SMUs

Typically, SMUs do not have a large impact on device operations. SMU versions are synchronized to the package major, minor, and maintenance versions they upgrade.

SMUs are not an alternative to maintenance releases. They provide a quick resolution of immediate issues. All defects fixed by SMUs are integrated into the maintenance releases.

Actual deployment of SMUs might vary based on your device. Usually, software can be patched simply by restarting the process. However, based on the device, if the process to be patched cannot be restarted, the SMU is implemented either through a reload or ISSU.

The effect of an SMU depends on its type:

- Process restart SMU—Causes a process or group of processes to restart on activation.

- Reload SMU—Causes a reload of the whole switch and a parallel reload of supervisors and line cards.

- Line card SMU—Based on the line card type. The supervisor pushes the SMU to all impacted line cards. Activation of the line card SMU requires a reload of the switch.

• Prerequisite SMU—Requires activation before a dependent SMU is loaded. A SMU can have one or more SMU as prerequisites.

• Supersede SMU— Contains cumulative fix for previously loaded SMUs and supersedes the former.

For information on upgrading your device to a new feature or maintenance release, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide*.

An SMU consists of the SMU binary file. The naming convention for an SMU is as below:

<platform>-<pkg-type>.<release_version>.<CDET>.<file-type>

For example:

n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin

Package Management

The general procedure for adding and activating SMU packages on the device is as follows:

1. Copy the package file or files to a local storage device or file server.
2. Add the package or packages on the device using the **install add** command.
3. Activate the package or packages on the device using the **install activate** command.
4. (Optional) Deactivate and remove the package, when desired.

The following figure illustrates the key steps in the package management process.

Figure 1: Process to Add, Activate, and Commit SMU Packages
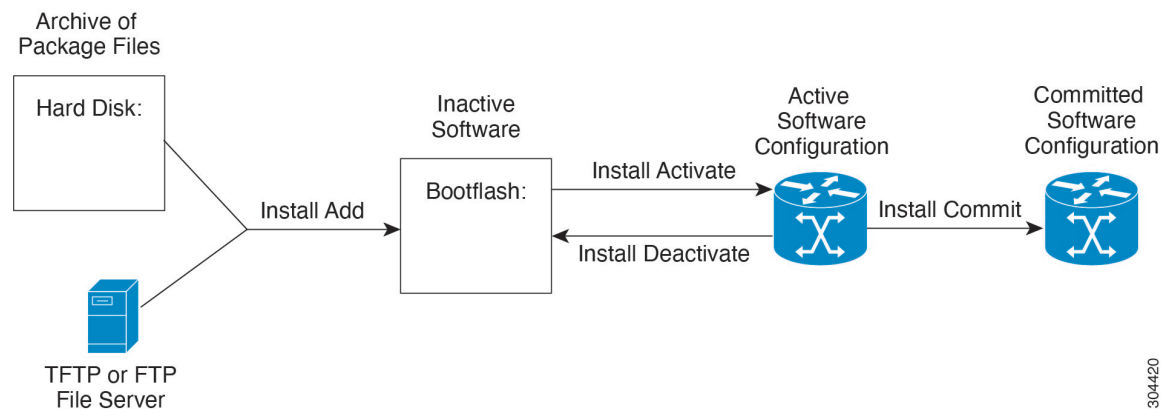
Impact of Package Activation and Deactivation

The activation or deactivation of an SMU package can have an immediate impact on the system. The system can be affected in the following ways:

• New processes might be started.

• Running processes might be stopped or restarted.

• All processes on the line cards can be patched and only those processes that can be restarted are restarted. Restarting processes in the line cards are equivalent to a soft reset.

• For line card SMUs, the system behaves as if it were going through an upgrade.

• The line cards might reload.

• The complete system might reload.

• No processes in the line cards might be affected.

Note   You must address any issues that result from the revised configuration and reapply the configuration, if necessary.

Tip   When you activate packages, use the **test** option to test the effects of a command without impacting the running system. After the activation process completes, enter the **show install log** command to display the process results.

Performing a Software Maintenance Upgrade for Cisco NX-OS

Preparing for Package Installation

You should use several **show** commands to gather information in preparation for the SMU package installation.

Before you begin

Determine if a software change is required.

Verify that the new package is supported on your system. Some software packages require that other packages or package versions be activated, and some packages support only specific line cards.

Review the release notes for important information related to that release and to help determine the package compatibility with your device configuration.

Verify that the system is stable and prepared for the software changes.

Procedure

	Command or Action	Purpose
Step 1	show install active **Example:** `switch# show install active`	Displays the active software on the device. Use this command to determine what software should be added on the device.
Step 2	show module **Example:** `switch# show module`	Confirms that all modules are in the stable state.

	Command or Action	Purpose
Step 3	**show clock** **Example:** `switch# show clock`	Verifies that the system clock is correct. Software operations use certificates based on device clock times.

Step 4	**show install pkg-info** *SMU_name*
	
	Example:
	`Device# show install pkg-info n7700-s2-`
	`dk9.7.2.0.D1.1.CSCuo07721.bin`
		Displays details regarding the contents of the SMU, that is, SMU restart type, platform, processes affected, and so on.

Example

This example shows how to display the active packages for the entire system. Use this information to determine if a software change is required.

Before SMU installation:

```
switch# show install active

Boot Images:

Kickstart Image: bootflash:/ n7700-s2-kickstart.7.2.0.D1.1.bin
System Image: bootflash:/ n7700-s2-dk9.7.2.0.D1.1.bin

Active Packages:
Active Packages on Module #1:
```

After SMU installation:

```
Switch# show install active

Boot Images:

Kickstart Image: bootflash:/n7700-s2-kickstart.7.2.0.D1.1.bin
System Image: bootflash:/n7700-s2-dk9.7.2.0.D1.1.bin

Active Packages:

  n7700-s2-dk9.7.2.0.D1.1.CSCuo7721.bin

Active Packages on Module #1:
  n7700-s2-dk9.7.2.0.D1.1.CSCuo7721.bin
```

This example shows how to display the current system clock setting:

```
switch# show clock

02:14:51.474 PST Wed Jan 04 2014
```

This example shows how to display details of the installed package. Use this information to determine if a software change is required.

```
switch# show install pkg-info n7700-s2-dk9.7.2.0.D1.1. CSCuo07721.bin

Contents of Package file 'n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin'
          Expiry date: Sun Oct 22 11:39:35 2017
          Uncompressed size: 224905
          Vendor: Cisco Systems
```

```
Restart type: restart
Desc: Bug Fix for CDET: CSCuo07721
Build: Built on Tue Aug  4 01:12:10 2015
Source: By Unknown
Platform: Nexus7700
Supersedes: None
Superseded By: None
Pre-requisite: None
Restart information: Ethpm
Pre-install activate scripts: None
Post-install activate scripts: None
Pre-install deactivate scripts: None
Post-install deactivate scripts: None
```

Downloading the SMU Package File from Cisco.com

Follow these steps to download the SMU package file:

Procedure

Step 1	Log in to Cisco.com.
Step 2	Go to the Download Software page at this URL: http://software.cisco.com/download/navigator.html
Step 3	In the Select a Product list, choose **Switches** > **Data Center Switches** > **Cisco Nexus 7000 Series Switches** > *model*.
Step 4	Choose the appropriate SMU file for your device and click **Download**.

Copying the Package File to a Local Storage Device or Network Server

You must copy the SMU package file to a local storage device or a network file server to which the device has access. After this task is done, the package can be added and activated on the device.

If you need to store package files on the device, we recommend that you store the files on the hard disk. The boot device is the local disk from which the package is added and activated. The default boot device is bootflash:.

Tip Before you copy package files to a local storage device, use the **dir** command to determine if the required package files are already on the device.

Tip Verify there is enough space on the bootflash.

If the SMU package files are located on a remote TFTP, FTP, SCP, or SFTP server, you can copy the files to a local storage device. After the files are located on the local storage device, the package can be added and activated on the device from that storage device. The following server protocols are supported:

- Trivial File Transfer Protocol—TFTP allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password). It is a simplified version of FTP.

Note Some package files might be larger than 32 MB, and the TFTP services provided by some vendors might not support a file this large. If you do not have access to a TFTP server that supports files larger than 32 MB, download the file using FTP.

- File Transfer Protocol—FTP is part of the TCP/IP protocol stack and requires a username and password.

- Secure Copy—SCP allows files to be transferred from a network server that supports Secure Shell (SSH) and uses the secure copy protocol(SCP).

- SSH File Transfer Protocol—SFTP is part of the SSHv2 feature in the security package and provides for secure file transfers. For more information, see the *Cisco Nexus 7000 Series NX-OS Security Configuration Guide*.

Note Consult your system administrator for the location and availability of your network server.

Use the commands in the following table to copy the SMU package file from the server to your device using the file transfer protocols.

Table 1: Commands for Copying SMU Package Files to the Device

Command	Purpose
copy tftp://*hostname-or-ipaddress*/*directory-path*/*filename* **bootflash:** ```switch# copy tftp://10.1.1.1/images/ n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin bootflash:```	Copies the package file from the TFTP server to the bootflash:. • *hostname-or-ipaddress*—The hostname or IP address of the network file server. • *directory-path*—The network file server path that leads to the package file to be added. • *filename*—The name of the package file that you want to add.

Command	Purpose

copy ftp://*username***:***password***@***hostname-or-ipaddress***/***directory-path***/***filename*** bootflash:**
 	
`switch# copy ftp://john:secret@10.1.1.1/images/`
`n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin bootflash:`
	Copies the package file from the FTP server to the bootflash:.
	
	• *username*—The username of the user who has access privileges to the directory in which the package file is stored.
	
	• *password*—The password associated with the username of the user who has access privileges to the directory in which the package file is stored. If a password is not provided, the networking device accepts anonymous FTP.
	
	• *hostname-or-ipaddress*—The hostname or IP address of the network file server.
	
	• *directory-path*—The network file server path that leads to the package file to be added. The specified directory should be a directory under the home directory of the user. In this example, the file being downloaded is in a subdirectory called "images" in the home directory of the user "john."
	
	Note For FTP services, *directory-path* is the directory relative to the *username* home directory. If you want to specify an absolute path for the directory, you must add a "/" following the server address.
	
	• *filename*—The name of the package file that you want to add.

Command	Purpose

copy sftp://*hostname-or-ipaddress***/***directory-path***/***filename* **bootflash:**
 	
`switch# copy`
`sftp://10.1.1.1/images`
`n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
`bootflash:`
	Copies the package file from the SFTP server to the bootflash:.
	
	  • *username*—The username of the user who has access privileges to the directory in which the package file is stored.
	
	  • *directory-path*—The network file server path that leads to the package file to be added.
	
	  • *filename*—The name of the package file that you want to add.

copy scp://*username@scpserver.cisco.com***//***directory-path***/***filename* **bootflash:**
 	
`switch# copy`
`scp://john@10.1.1.1//download/n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
 	
`bootflash:n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
	Copies the package file from the SCP server to the bootflash:.
	
	  • *hostname-or-ipaddress*—The hostname or IP address of the network file server.
	
	  • *directory-path*—The network file server path that leads to the package file to be added.
	
	  • *filename*—The name of the package file that you want to add.

After the SMU package file has been transferred to a network file server or the local storage device, you are ready to add and activate the file.

Adding and Activating Packages

You can add SMU package files that are stored on a local storage device or on a remote TFTP, FTP, or SFTP server to your device.

Note The SMU package being activated must be compatible with the currently active software to operate. When activation is attempted, the system runs an automatic compatibility check to ensure that the package is compatible with the other active software on the device. If a conflict is found, an error message displays. The activation is performed only after all compatibility checks have been passed.

Note Activating an SMU for a process does not deactivate SMUs applied for other processes. However, previously active SMUs for the same process will be deactivated.

Before you begin

Make sure that all packages to be added are present on a local storage device or a network file server.

Make sure that you meet all of the prerequisites for the activation of packages.

Complete the procedure described in Copying the Package File to a Local Storage Device or Network Server.

Procedure

	Command or Action	**Purpose**
Step 1	Connect to the console port and log in.	Establishes a CLI management session to the console port.
Step 2	(Optional) **dir bootflash:**	Displays the package files that are available to be added.
		Note Only SMU package files can be added and activated using this procedure.
Step 3	**install add** *filename* [**activate**] **Example:** `switch# install add bootflash: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`	Unpacks the package software files from the local storage device or network server and adds them to the bootflash: on active and standby supervisors.
		Installs the SMU code from the local storage device or network server and adds them to the bootflash: on the active and standby supervisor. After the **install add** process, the SMU patch still requires activation as described in steps 4-7.
		The *filename* argument can take any of these formats:
		• **bootflash:***filename* • **tftp://***hostname-or-ipaddress/directory-path/filename* • **ftp://***username***:***password***@** *hostname-or-ipaddress/directory-path/filename* • **sftp://***hostname-or-ipaddress/directory-path/filename* • **usb1:***filename*
		Multiple versions of an SMU package can be added to the storage device without impacting the currently running software, but only one version of a package can be activated.

	Command or Action	**Purpose**
		Note Though the **install add** function copies the SMU code to any standby supervisor present in the system, it does not copy the SMU .bin file to a standby supervisor bootflash, as the SMU .bin file is not required on both active and standby bootflash. It can manually be copied to the standby bootflash, if required.
Step 4	(Optional) **show install inactive** **Example:** `switch# show install inactive`	Displays the inactive packages on the device. Verify that the package added in the previous step appears in the display.

Step 5	Required: **install activate** *filename* [**test**]
	
	Example:
	`switch# install activate n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
	
	`Install operation 158 completed successfully at Tue Jun 9 19:09:33 2015`
		Activates a package that was added to the device. SMU packages remain inactive until activated. (Skip this step if the package was activated earlier with the **install add activate** command.)
		
		Note Press **?** after a partial package name to display all possible matches available for activation. If there is only one match, press the **Tab** key to fill in the rest of the package name.
		
		Tip When you activate packages, use the **test** keyword to test the effects of a command without impacting the running system. After the activation process finishes, enter the **show install log** command to display the process results.

Step 6	Repeat Step 5 until all packages are activated.	Activates additional packages as required.
Step 7	(Optional) **show install active** **Example:** `switch# show install active`	Displays all active packages. Use this command to determine if the correct packages are active.

Committing the Active Package Set

When an SMU package is activated on the device, it becomes part of the current running configuration. To make the package activation persistent across system-wide reloads, you must commit the package on the device.

Note On startup, the device loads the committed package set. If the system is reloaded before the current active package is committed, the previously committed package set is used.

Before you begin

Before you commit a package set, verify that the device is operating correctly and is forwarding packets as expected.

Complete the procedure described in .

Procedure

	Command or Action	Purpose

Step 1	**install commit** *filename*
	
	Example:
	
	`switch# install commit`
	`n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
		Commits the current set of packages so that these packages are used if the device is restarted.

Step 2	(Optional) **show install committed** **Example:** `switch# show install committed`	Displays which packages are committed.

Example

This example shows how to commit active SMU packages on the device and then verify the committed packages:

```
switch#  install commit n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 2 completed successfully at Thu Jan 9 01:20:46 2014

switch# show install committed
Boot Images:
      Kickstart Image: bootflash:/n7700-s2-kickstart.7.2.0.D1.1.bin
      System Image: bootflash:/ n7700-s2-dk9.7.2.0.D1.1.bin

Committed Packages:
      n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
```

Deactivating and Removing Packages

When a package is deactivated, it is no longer active on the device, but the package files remain on the boot disk. The package files can be reactivated later, or they can be removed from the disk.

The Cisco NX-OS software also provides the flexibility to roll back the selected package set to a previously saved package set. If you find that you prefer a previous package set over the currently active package set, you can use the **install deactivate** and **install commit** commands to deactivate the current package and install active and install commit commands to activate the previous package.

Before you begin

You cannot deactivate a package if it is required by another active package. When you attempt to deactivate a package, the system runs an automatic check to ensure that the package is not required by other active packages. The deactivation is performed only after all compatibility checks have been passed.

You cannot delete a package if it is part of the running or committed software of the device.

Procedure

	Command or Action	**Purpose**
Step 1	Connect to the console port and log in.	Establishes a CLI management session to the console port.

Step 2	**install deactivate** *filename*
	
	Example:
	`switch# install deactivate`
	`n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin`
		Deactivates a package that was added to the device and turns off the package features for the line card.
		
		Note Press **?** after a partial package name to display all possible matches available for deactivation. If there is only one match, press the **Tab** key to fill in the rest of the package name.

Step 3	(Optional) **show install inactive** **Example:** `switch# show install inactive`	Displays the inactive packages on the device.
Step 4	(Optional) **install commit** **Example:** `switch# install commit`	Commits the current set of packages so that these packages are used if the device is restarted. **Note** Packages can be removed only if the deactivation operation is committed.

Step 5	(Optional) **install remove** {*filename* | **inactive**}
	
	Example:
	`switch# install remove n7700-s2-`
	`dk9.7.2.0.D1.1.CSCuo07721.bin`
	`Proceed with removing n7700-s2-`
	`dk9.7.2.0.D1.1.CSCuo07721.bin? (y/n)?`
	`[n] y`
	
	Example:
	`switch# install remove inactive`
	`Proceed with removing? (y/n)? [n] y`
		Removes the inactive package.
		
		• Only inactive packages can be removed.
		• Packages can be removed only if they are deactivated from all line cards in the device.
		• The package deactivation must be committed.
		• To remove a specific inactive package from a storage device, use the **install remove** command with the *filename* argument.
		• To remove all inactive packages from all nodes in the system, use the **install**

Command or Action	Purpose
	remove command with the **inactive** keyword.

Example

This example shows how to deactivate a package, commit the changes, and remove the inactive package from the device:

```
switch# install deactivate n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 3 completed successfully at Thu Jan 9 01:20:36 2014

switch# show install inactive
Inactive Packages: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin

switch# install commit
Install operation 4 completed successfully at Thu Jan 9 01:20:46 2014

switch# install remove n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Proceed with removing n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin? (y/n)? [n] y
Install operation 5 completed successfully at Thu Jan 9 01:20:57 2014
```

Displaying Installation Log Information

The installation log provides information on the history of the installation operations. Each time an installation operation is run, a number is assigned to that operation.

- Use the **show install log** command to display information about both successful and failed installation operations.

- Use the **show install log** command with no arguments to display a summary of all installation operations. Specify the *request-id* argument to display information specific to an operation. Use the **detail** keyword to display details for a specific operation, including file changes, nodes that could not be reloaded, and any impact to processes.

This example shows how to display information for all installation requests:

```
switch# show install log
Thu Jan 9 01:26:09 2014
Install operation 1 by user 'admin' at Thu Jan 9 01:19:19 2014
Install add bootflash: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 1 completed successfully at Thu Jan 9 01:19:24 2014
---------------------------------------
Install operation 2 by user 'admin' at Thu Jan 9 01:19:29 2014
Install activate n7700-s2-dk9.7.2.0.D1.1.bin
Install operation 2 completed successfully at Thu Jan 9 01:19:45 2014
---------------------------------------
Install operation 3 by user 'admin' at Thu Jan 9 01:20:05 2014
Install commit n7700-s2- dk9.7.2.0.D1.1.bin
Install operation 3 completed successfully at Thu Jan 9 01:20:08 2014
---------------------------------------
Install operation 4 by user 'admin' at Thu Jan 9 01:20:21 2014
Install deactivate n7700-s2-dk9.7.2.0.D1.1.bin
Install operation 4 completed successfully at Thu Jan 9 01:20:36 2014
---------------------------------------
Install operation 5 by user 'admin' at Thu Jan 9 01:20:43 2014
Install commit n7700-s2-dk9.7.2.0.D1.1.bin
```

```
Install operation 5 completed successfully at Thu Jan 9 01:20:46 2014
---------------------------------------
Install operation 6 by user 'admin' at Thu Jan 9 01:20:55 2014
Install remove n7700-s2-dk9.7.2.0.D1.1.bin
Install operation 6 completed successfully at Thu Jan 9 01:20:57 2014
---------------------------------------
Install operation 7 by user 'admin' at Thu Jan 9 01:21:07 2014
Install remove
Install operation 7 completed successfully at Thu Jan 9 01:21:10 201
```

This example shows how to display additional information, including any impact to nodes and processes:

```
switch# show install log detail
Thu Jan 9 01:24:03 2014
Install operation 1 by user 'admin' at Thu Jan 9 01:19:19 2014
Installer started downloading the package: / n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
via bootflash
Install add bootflash: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Copying file at Thu Jan 9 01:19:20 2014
Download success, 238545 bytes received
Verifying package
Checking MD5 at Thu Jan 9 01:19:21 2014
MD5 checksum OK
Checking HW platform at Thu Jan 9 01:19:22 2014
Checking SW platform at Thu Jan 9 01:19:23 2014
Package verified successfully
Sending patch file to plugin manager at Thu Jan 9 01:19:23 2014
The following package is now available to be activated: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin

Install operation 1 completed successfully at Thu Jan 9 01:19:24 2014
---------------------------------------
Install operation 2 by user 'admin' at Thu Jan 9 01:19:29 2014
Install activate n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install activate action started
The software will be activated with process restart
2 processes affected
sysinfo (modified)
vman (modified)
Install operation 2 completed successfully at Thu Jan 9 01:19:45 2014
---------------------------------------
Install operation 3 by user 'admin' at Thu Jan 9 01:20:05 2014
Install commit n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
MD5 checksum OK for patch: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 3 completed successfully at Thu Jan 9 01:20:08 2014
---------------------------------------
Install operation 4 by user 'admin' at Thu Jan 9 01:20:21 2014
Install deactivate n7700-s2-dk9.7.2.0.D1.1.bin
Install deactivate action started
The software will be deactivated with process restart
2 processes affected
sysinfo (modified)
vman (modified)
Install operation 4 completed successfully at Thu Jan 9 01:20:36 2014
---------------------------------------
Install operation 5 by user 'admin' at Thu Jan 9 01:20:43 2014
Install commit n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
MD5 checksum OK for patch: n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 5 completed successfully at Thu Jan 9 01:20:46 2014
---------------------------------------
Install operation 6 by user 'admin' at Thu Jan 9 01:20:55 2014
Install remove n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install operation 6 completed successfully at Thu Jan 9 01:20:57 2014
---------------------------------------
Install operation 7 by user 'admin' at Thu Jan 9 01:21:07 2014
```

```
Install remove
Install operation 7 completed successfully at Thu Jan 9 01:21:10 2014
```

This example shows the output after an SMU package has been activated but before the switch has been reloaded:

```
switch# show install log detail
Install operation 18 by user 'admin' at Sun Mar 9 00:42:10 2014
Install activate n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin
Install activate action started
The software will be activated with system reload
Install operation 18 !!WARNING!!
This patch will get activated only after a reload of the switch. at Sun Mar 9 00:42:12 2014
```

This example shows the details of the specific SMUs:

```
switch# show install package
Boot Images:
    Kickstart Image: bootflash:/ n7700-s2-kickstart.7.2.0.D1.1.bin
    System Image: bootflash:/ n7700-s2-dk9.7.2.0.D1.1.bin
---------------------------------------------------------------
n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin              Active Committed

Modules

       Module #3: Active Committed

       Module #4: Active Committed

n7700-s2-dk9.7.2.0.D1.1.CSCuo07721.bin              Inactive

Modules

       Module #3: Inactive

       Module #4: Inactive
```

Where to Go Next

For information about configuring control policies, see the "Configuring ISG Control Policies" module.

Additional References

Related Documents

Related Topic	Document Title
Software upgrades	*Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide*
System management commands	*System Management Command Reference*

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Related Documents

Related Topic	Document Title
Software upgrades	*Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide*

Feature Information for Performing Software Maintenance Upgrades

The following table provides release information about the SMU package files supported for this software. This table lists only the software release that introduced support for a given SMU package. Unless noted otherwise, subsequent releases of that software also support that SMU package.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

SMU Package File	Releases	Description
n7700-s2-dk9.7.2.0.CSCuo07721.bin	7.2(0)	Restart type: restart
		Platform: Nexus7700
		Supersedes: None
		Superseded By: None
		Restart information: *CSCuo07721*
		Pre-install activate scripts: None
		Post-install activate scripts: None
		Pre-install deactivate scripts: None
		Post-install deactivate scripts: None