



Perform System Upgrade and Install Feature Packages

The system upgrade and package installation processes are executed using install commands on the NCS 1001. The processes involve adding and activating the iso images (.iso), feature packages (.rpm), and software maintenance upgrade files (.smu) on the NCS 1001. These files are accessed from a network server and then activated on the NCS 1001. If the installed package or SMU causes any issue, it can be uninstalled.

The topics covered in this chapter are:

- [Upgrade the System, on page 1](#)
- [Software Compatibility Matrix, on page 1](#)
- [Upgrading the Firmware, on page 2](#)
- [Install Packages, on page 4](#)

Upgrade the System

Upgrading the system is the process of installing a new version of the Cisco IOS XR operating system on the NCS 1001. The NCS 1001 comes pre-installed with the Cisco IOS XR image. However, you can install the new version in order to keep features up to date. The system upgrade operation is performed from the XR mode. However, during system upgrade, the operating systems that run both on the XR and the System Admin get upgraded.

System upgrade is done by installing a base package—Cisco IOS XR Core Bundle plus Manageability Package. The file name for this bundle is ncs1001-mini-x-7.0.1.iso. Install this ISO image using install commands. For more information about the install process, see [Workflow for Install Process, on page 4](#).

Software Compatibility Matrix

The following table describes the software compatibility for all firmware.

Table 1: Software Compatibility Matrix

FPD	R6.2.1	R6.2.2	R6.3.1	R6.3.2	R6.5.1	R6.5.2	R7.0.0	R7.0.1
FW_PSMv1	1.38	1.38	1.43	1.45	1.45	1.51	1.51	1.51

FPD	R6.2.1	R6.2.2	R6.3.1	R6.3.2	R6.5.1	R6.5.2	R7.0.0	R7.0.1
FW_PSMv2	0.09 (V2 not supported)	0.09 (V2 not supported)	0.12	0.14	0.14	0.16	0.16	0.16
Control_BKP	1.07	1.09	1.09	1.09	1.10	1.10	1.10	1.10
Control_FPGA	1.07	1.09	1.09	1.09	1.10	1.10	1.10	1.10
FW_EDFAv1	1.39	1.39	1.43	1.43	1.43	1.51	1.54	1.55
FW_EDFAv2	0.12 (V2 not supported)	0.12 (V2 not supported)	0.28	0.31	0.37	0.37	0.39	0.40
FW_OTDR_p	NA	NA	NA	NA	5.02	5.02	6.02	6.02
FW_OTDR_s	NA	NA	NA	NA	1.47	1.51	1.51	1.51
PO-PriMCU (AC)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
PO-PriMCU (DC)	NA	1.10	1.10	1.10	1.10	1.10	1.10	1.14
BIOS_Backup	13.50	13.60	13.80	14.20	14.20	14.20	14.20	14.50
BIOS_Primary	13.50	13.60	13.80	14.20	14.20	14.20	14.20	14.50
Daisy_Duke_BKP	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.20
Daisy_Duke_FPGA	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.20

Upgrading the Firmware

Use the following procedure to upgrade the firmware.

- Step 1** Use the `show hw-module fpd` command to display information about the current FPD image version. You can use this command to determine if you must upgrade the FPD image version.

Example:

```
sysadmin-vm:0_RP0# show hw-module fpd
Tue Sep 12 16:33:31.476 CEST
```

```

                                     FPD Versions
                                     =====
Location  Card type      HWver FPD device  ATR Status  Running Programd
-----
0/0       NCS1001-K9     0.1   Control_BKP  B   CURRENT    1.10
0/0       NCS1001-K9     0.1   Control_FPGA CURRENT    1.10    1.10
0/1       NCS1K-EDFA     0.0   FW_EDFAv1   NEED UPGD  1.39    1.39
0/2       NCS1K-OTDR     0.0   FW_OTDR_p   CURRENT    5.02    5.02
0/2       NCS1K-OTDR     0.0   FW_OTDR_s   CURRENT    1.47    1.47
```

```

0/3      NCS1K-EDFA      0.0  FW_EDFAv1      CURRENT  1.43  1.43
0/RP0   NCS1K-CNTLR2    0.1  BIOS_Backup    BS  CURRENT  14.20  14.20
0/RP0   NCS1K-CNTLR2    0.1  BIOS_Primary   S  CURRENT  14.20  14.20
0/RP0   NCS1K-CNTLR2    0.1  Daisy_Duke_BKP BS  CURRENT  0.17   0.17
0/RP0   NCS1K-CNTLR2    0.1  Daisy_Duke_FPGA S  CURRENT  0.17   0.17

```

In the above example, the status is NEED UPGD. This status confirms that an FPD image version upgrade is required.

Step 2 Use the show fpd package command to display the FPD image version you need for each hardware component.

Example:

```
sysadmin-vm:0_RP0# show fpd package
```

Step 3 Use the upgrade hw-module command to upgrade the FPD image.

Example:

The following example shows how to upgrade the FPD image.

```
sysadmin-vm:0_RP0# upgrade hw-module location 0/PM0 fpd FW_EDFAv1
```

Step 4 Use the show hw-module fpd command to verify the upgraded firmware version.

Example:

```
sysadmin-vm:0_RP0# show hw-module fpd
Tue Sep 12 16:33:31.476 CEST
```

Location	Card type	HWver	FPD device	ATR	Status	FPD Versions	
						Running	Programd
0/0	NCS1001-K9	0.1	Control_BKP	B	CURRENT	1.10	1.10
0/0	NCS1001-K9	0.1	Control_FPGA		CURRENT	1.10	1.10
0/1	NCS1K-EDFA	0.0	FW_EDFAv1		CURRENT	1.43	1.43
0/2	NCS1K-OTDR	0.0	FW_OTDR_p		CURRENT	5.02	5.02
0/2	NCS1K-OTDR	0.0	FW_OTDR_s		CURRENT	1.47	1.47
0/3	NCS1K-EDFA	0.0	FW_EDFAv1		CURRENT	1.43	1.43
0/RP0	NCS1K-CNTLR2	0.1	BIOS_Backup	BS	CURRENT		14.20
0/RP0	NCS1K-CNTLR2	0.1	BIOS_Primary	S	CURRENT	14.20	14.20
0/RP0	NCS1K-CNTLR2	0.1	Daisy_Duke_BKP	BS	CURRENT		0.17
0/RP0	NCS1K-CNTLR2	0.1	Daisy_Duke_FPGA	S	CURRENT	0.17	0.17

Note When the user upgrades the FW_PSMv1 FPD from 1.38 to 1.43 or higher version, traffic is affected for around 120 seconds.

Note When the user upgrades the FW_EDFAv1 FPD from 1.38 to 1.43 or higher version, traffic is affected for around 120 seconds due to restart of line amplifier. After the FPD upgrade, use the following procedure to recover the functionality of the EDFA module.

This procedure is required only to upgrade the FW_EDFAv1 FPD from 1.38 version to 1.43 or higher version. All the other FPD upgrades do not affect the traffic.

1. From admin console, use the hw-module location 0/slot reload command to perform hardware reset of the EDFA module.
2. If any amplifier within the EDFA module does not restart, troubleshoot using the controller ots 0/slot/0/port osri {on | off} command.

Note Use the hw-module 0/RP0 reload command from admin console after Control FPGA upgrade. If this is not performed, FPD upgrades of EDFA/PSM will fail.

Note If the control FPGA version is not current, use the following procedure for FPD upgrade. Otherwise, traffic loss occurs during the FPD upgrade.

1. Upgrade Control_FPGA using the upgrade hw module location 0/0 fpd Control FPGA command.
2. Check the output of show hw-module fpd command.
3. From admin console, use the hw-module location 0/0 reload command.
4. From admin console, use the hw-module location 0/RP0 reload command.
5. Proceed with the upgrade of other FPDs if required.

Install Packages

Packages and software patches (SMU) can be installed on NCS 1001. Installing a package on NCS 1001 installs specific features that are part of that package. Cisco IOS XR software is divided into various software packages; this enables you to select the features to run on NCS 1001. Each package contains components that perform a specific set of NCS 1001 functions.

The naming convention of the package is <platform>--<pkg>--<pkg version>--<release version>.<architecture>.rpm. Standard packages are:

Feature Set	Filename	Description
Composite Package		
Cisco IOS XR Core Bundle + Manageability Package	ncs1001-iosxr-px-k9-7.0.1.tar	Contains required core packages, including OS, Admin, Base, Forwarding, SNMP Agent, FPD, and Alarm Correlation and Netconf-yang, Telemetry, Extensible Markup Language (XML) Parser, HTTP server packages.
Individually-Installable Optional Packages		
Cisco IOS XR Security Package	ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm	Support for Encryption, Decryption, IP Security (IPSec), Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).

Workflow for Install Process

To install a package, see [Install Packages, on page 5](#). To uninstall a package, see [Uninstall Packages, on page 12](#). The workflow for installation and uninstallation processes are depicted in individual flowcharts in their respective subsections.

Install Packages

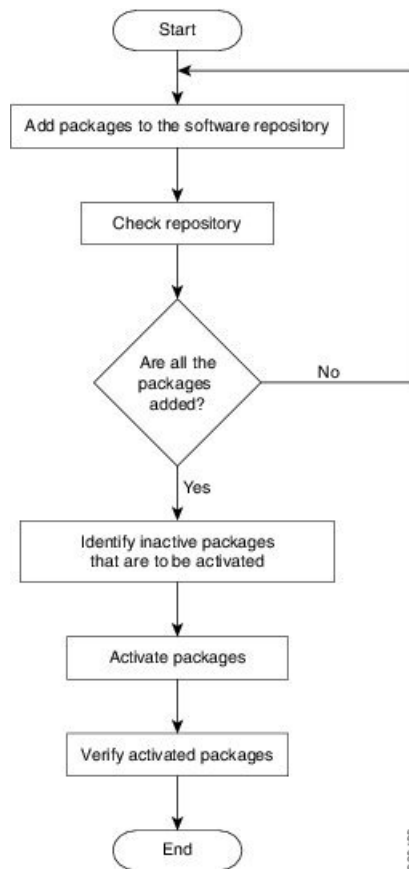
Complete this task to upgrade the system or install a patch. The system upgrade is done using an ISO image file, while the patch installation is done using packages and SMUs. This task is also used to install .tar files. The .tar file contains multiple packages and SMUs that are merged into a single file. A single .tar file can contain up to 64 individual files. The packaging format defines one RPM per component, without dependency on the card type.



Note To install a System Admin package or a XR package, execute the `install` commands in System Admin EXEC mode or XR EXEC mode respectively. All `install` commands are applicable in both these modes.

The workflow for installing a package is shown in this flowchart.

Figure 1: Installing Packages Workflow



Before you begin

- Configure and connect to the management port. The installable file is accessed through the management port. For details about configuring the management port, see [Configure Management Interface](#).
- Copy the package to be installed either on the NCS 1001 hard disk or on a network server to which the NCS 1001 has access.

- When ncs1001-k9sec package is not installed, use only FTP or TFTP to copy files or during the install add operation.

Step 1 Execute one of these commands:

- install add source <tftp transfer protocol>/ package_path/ filename1 filename2 ...
- install add source <ftp or sftp transfer protocol>// user@server:/ package_path/ filename1 filename2 ...

Example:

```
RP/0/RP0/CPU0:ios#install add source harddisk: ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

or

```
RP/0/RP0/CPU0:ios#install add source tftp://10.58.230.32/mystique/iso/7.0.1/ ncs1001-mini-x-7.0.1.iso
ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

```
Thu Jul 25 14:26:43.661 CEST
```

```
Jul 25 14:26:47 Install operation 13 started by root:
```

```
install add source tftp://10.58.230.32/mystique/iso/7.0.1 ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
ncs1001-mini-x-7.0.1.iso
```

```
Jul 25 14:26:49 Install operation will continue in the background
```

The software files are unpacked from the package and added to the software repository. This operation may take time depending on the size of the files being added. The operation is performed in asynchronous mode. The install add command runs in the background, and the EXEC prompt is returned.

Step 2 show install request

Example:

```
RP/0/RP0/CPU0:ios#show install request
```

```
User root, Op Id 13
```

```
install add
```

```
ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

```
ncs1001-mini-x-7.0.1.iso
```

```
The install add operation 13 is 30% complete
```

```
.....
```

```
.....
```

```
Jul 25 14:46:36 Install operation 13 finished successfully
```

(Optional) Displays the operation ID of the add operation and its status. The operation ID can be used later to execute the activate command.

Step 3 show install log operation ID

Example:

```
RP/0/RP0/CPU0:ios#show install log 13
```

```
Thu Jul 25 14:48:53.270 CEST
```

```
Jul 25 14:26:47 Install operation 13 started by root:
```

```
install add source tftp://10.58.230.32/mystique/iso/7.0.1 ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
ncs1001-mini-x-7.0.1.iso
```

```
Jul 25 14:26:48 Action 1: install add action started
```

```
Jul 25 14:26:49 Install operation will continue in the background
```

```
Jul 25 14:46:34 Packages added:
```

```
Jul 25 14:46:34 ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

```

Jul 25 14:46:34      ncs1001-mini-x-7.0.1.iso
Jul 25 14:46:34 Action 1: install add action completed successfully
Jul 25 14:46:36 Install operation 13 finished successfully
Jul 25 14:46:36 Ending operation 13

```

Displays packages that are added to the repository. Packages are displayed only after the `install add` operation is complete.

Step 4 show install inactive

Example:

```
RP/0/RP0/CPU0:ios#show install inactive
```

```

Thu Jul 25 14:51:45.852 CEST
2 inactive package(s) found:
  ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
  ncs1001-mini-x-7.0.1.iso

```

Displays inactive packages that are present in the repository. Only inactive packages can be activated.

Step 5 install activate package_name

Example:

```
RP/0/RP0/CPU0:ios#install activate ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm ncs1001-mini-x-7.0.1.iso
```

```
Thu Jul 25 14:53:27.564 CEST
```

```

Jul 25 14:53:30 Install operation 14 started by root:
  install activate pkg ncs1001-k9sec-1.0.0.0-r701 ncs1001-mini-x-7.0.1
Jul 25 14:53:30 Package list:
Jul 25 14:53:30      ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 14:53:31      ncs1001-mini-x-7.0.1.iso

```

```

This install operation will reload the system, continue?
[yes/no]:[yes] yes

```

```
Install operation will continue in the background
```

```
RP/0/RP0/CPU0:ios#show install log 14
```

```

Thu Jul 25 15:11:49.780 CEST
Jul 25 14:53:30 Install operation 14 started by root:
  install activate pkg ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm ncs1001-mini-x-7.0.1.iso
Jul 25 14:53:30 Package list:
Jul 25 14:53:30      ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 14:53:31      ncs1001-mini-x-7.0.1.iso
Jul 25 14:53:37 Action 1: install prepare action started
Jul 25 14:55:17 The prepared software is set to be activated with reload upgrade
Jul 25 14:55:18 This install operation will reload the system, continue?
[yes/no]:[yes] yes
Jul 25 14:55:18 Install operation will continue in the background
Jul 25 14:55:18 Start preparing new VM for reload upgrade
Jul 25 15:06:17 All the above nodes completed System Upgrade prepare.
Jul 25 15:06:18 Action 1: install prepare action completed successfully
Jul 25 15:06:19 Action 2: install activate action started
Jul 25 15:06:19 The software will be activated with reload upgrade
Jul 25 15:06:22 Following nodes are available for System Upgrade activate:
Jul 25 15:06:22  0/RP0
Jul 25 15:11:09 Action 2: install activate action completed successfully
Jul 25 15:11:10 Action 2: install activate action completed successfully
Jul 25 15:11:20 Install operation 14 finished successfully
Jul 25 15:11:21 Ending operation 14

```

The package configurations are made active on the NCS 1001. As a result, new features and software fixes take effect. This operation is performed in asynchronous mode. The `install activate` command runs in the background, and the EXEC prompt is returned.

Note After an RPM of a higher version is activated, and if it is required to activate an RPM of a lower version, use the `force` option. For example:

Using the traditional method, add the RPM with lower version to the repository and then force the activation:

```
install add source repository ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
install activate ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm force
```

or

Using the `install update` command:

```
install update source repository ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

If you use the operation ID, all packages that were added in the specified operation are activated together. For example, if 5 packages are added in operation 2, all the 5 packages are activated together. You do not have to activate the packages individually.

Step 6 show install active

Execute this command in a new CLI session after reboot of RP0.

Example:

```
RP/0/RP0/CPU0:ios#show install active

Thu Jul 25 17:04:47.600 CEST
Node 0/RP0/CPU0 [RP]
  Boot Partition: xr_lv48
  Active Packages: 2
    ncs1001-xr-7.0.1 version=7.0.1 [Boot image]
    ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

Displays packages that are active.

Step 7 install commit system

Example:

```
RP/0/RP0/CPU0:ios#install commit system

Thu Jul 25 17:05:27.364 CEST
Jul 25 17:05:30 Install operation 15 started by root:
  install commit system
Jul 25 17:05:31 Install operation will continue in the background

Jul 25 17:05:55 Install operation 15 finished successfully
```

Commits the newly active software.

Step 8 show install commit

Example:

```
RP/0/RP0/CPU0:ios#show install commit

Thu Jul 25 17:07:54.255 CEST
Node 0/RP0/CPU0 [RP]
  Boot Partition: xr_lv48
```



```
Committed Packages: 2
ncs1001-xr-7.0.1 version=7.0.1[Boot image]
ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

Installing Packages: Related Commands

Related Commands	Purpose
show install log	Displays the log information for the install process; this can be used for troubleshooting in case of installation failure.
show install package	Displays the details of the packages that have been added to the repository. Use this command to identify individual components of a package.
install prepare	Makes pre-activation checks on an inactive package, to prepare it for activation.
show install prepare	Displays the list of package that have been prepared and are ready for activation.

What to do next

- After performing a system upgrade, upgrade FPD by using the `upgrade hw-module location all fpd` command from the Cisco IOS XR mode. The progress of FPD upgrade process can be monitored using the `show hw-module fpd` command.
- Reload NCS 1001 if any FPD status is in RLOAD REQ state. If CTRL FPGA is in RLOAD REQ state, use the `hw-module location 0/0 reload` command. If Daisy Duke or BIOS is in RLOAD REQ state, use the `hw-module location 0/RP0 reload` command.
- Verify the installation using the `install verify packages` command.
- Uninstall the packages or SMUs if their installation causes any issues on the NCS 1001. See [Uninstall Packages, on page 12](#).



Note ISO images cannot be uninstalled. However, you can perform a system downgrade by installing an older ISO version.

(Optional) Install Prepared Packages

A system upgrade or feature upgrade is performed by activating the ISO image file, packages, and SMUs. It is possible to prepare these installable files before activation. During the prepare phase, pre-activation checks are made and the components of the installable files are loaded on to the NCS 1001 setup. The prepare process runs in the background and the NCS 1001 is fully usable during this time. When the prepare phase is over, the prepared files can be activated instantaneously. The advantages of preparing before activation are:

- If the installable file is corrupted, the prepare process fails. This provides an early warning of the problem. If the corrupted file was activated directly, it may cause the NCS 1001 to malfunction.

- Directly activating an ISO image for system upgrade takes considerable time during which the NCS 1001 is not usable. However, if the image is prepared before activation, not only does the prepare process run asynchronously, but when the prepared image is subsequently activated, the activation process too takes less time. As a result, the downtime is considerably reduced.

Complete this task to upgrade the system and install packages by making use of the prepare operation.

Step 1 Add the required ISO image and packages to the repository.

For details, see [Install Packages, on page 5](#).

Step 2 show install repository

Example:

```
RP/0/RP0/CPU0:ios# show install repository
```

```
Thu Jul 25 14:49:56.892 CEST
... package(s) in XR repository:
. . . . .
ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
ncs1001-mini-x-7.0.1.iso
. . . . .
```

Perform this step to verify that the required installable files are available in the repository. Packages are displayed only after the "install add" operation is complete.

Step 3 Execute one of these commands:

- `install prepare package_name`
- `install prepare id operation_id`

Example:

```
RP/0/RP0/CPU0:ios#install prepare ncs1001-mini-x-7.0.1.iso ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

or

```
RP/0/RP0/CPU0:ios#install prepare id 5
```

```
Fri Jul 26 11:36:41.163 CEST
Jul 26 11:36:45 Install operation 5 started by root:
  install prepare pkg ncs1001-mini-x-7.0.1.iso pkg ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 26 11:36:46 Package list:
Jul 26 11:36:46      ncs1001-mini-x-7.0.1.iso
Jul 26 11:36:46      ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 26 11:36:53 Install operation will continue in the background
Could not start this install operation. Install operation 5 is still in progress
RP/0/RP0/CPU0:152#Jul 26 11:48:57 Install operation 5 finished successfully
```

The prepare process takes place. This operation is performed in asynchronous mode. The `install prepare` command runs in the background, and the EXEC prompt is returned.

`install prepare` is the first step of the activation process and can also be executed before the activation process.

If you use the operation ID, all packages that were added in the specified operation are prepared together. For example, if 5 packages are added in operation 5, by executing the `install prepare id 5` command, all 5 packages are prepared together. You do not have to prepare the packages individually.

Step 4 show install prepare

Example:

```
RP/0/RP0/CPU0:ios#show install prepare
```

Displays packages that are prepared. From the result, verify that all required packages have been prepared.

```
Fri Jul 26 11:54:45.472 CEST
Prepared Boot Image: ncs1001-mini-x-7.0.1.iso
Prepared Boot Partition: /dev/panini_vol_grp/xr_lv5
Restart Type: Reboot
Prepared Packages:
 ncs1001-mini-x-7.0.1.iso
 ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

```
Use the "install activate" command to activate the prepared packages.
Use the "install prepare clean" command to undo the install prepare operation.
Prepared Boot Image: ncs1001-mini-x-7.0.1.iso
Prepared Boot Partition: /dev/panini_vol_grp/xr_lv5
Restart Type: Reboot
Prepared Packages:
 ncs1001-mini-x-7.0.1.iso
 ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

Step 5 install activate

Example:

```
RP/0/RP0/CPU0:ios#install activate
```

```
Fri Jul 26 12:01:29.174 CEST
Jul 26 12:01:34 Install operation 6 started by root:
 install activate
This install operation will reload the system, continue?
 [yes/no]:[yes] yes
Jul 26 12:00:27 Following nodes are available for System Upgrade activate:
Jul 26 12:00:27 0/RP0
Jul 26 12:05:12 Install operation 6 finished successfully
```

All packages that have been prepared are activated together to activate the package configurations on the NCS 1001.

Activation of some SMUs require manual reload of the NCS 1001. When such SMUs are activated, a warning message is displayed to perform reload. The components of the SMU get activated only after the reload is complete. Perform the NCS 1001 reload immediately after the execution of the `install activate` command is completed.

Step 6 show install active

Example:

```
RP/0/RP0/CPU0:ios#show install active
```

```
Thu Jul 25 17:04:47.600 CEST
Node 0/RP0/CPU0 [RP]
 Boot Partition: xr_lv48
 Active Packages: 2
   ncs1001-xr-7.0.1 version=7.0.1 [Boot image]
   ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

Displays packages that are active.

Step 7 install commit system

Example:

```
RP/0/RP0/CPU0:ios#install commit system
```

Commits the recently activated software.

```

Thu Jul 25 17:05:27.364 CEST
Jul 25 17:05:30 Install operation 7 started by root:
    install commit system
Jul 25 17:05:31 Install operation will continue in the background

Jul 25 17:05:55 Install operation 7 finished successfully

```

Installing Packages: Related Commands

Related Commands	Purpose
show install log	Displays the log information for the install process; this can be used for troubleshooting in case of install failure.
show install package	Displays the details of the packages that have been added to the repository. Use this command to identify individual components of a package.
install prepare clean	Clears the prepare operation and removes the packages from the prepared state.

What to do next

- After performing a system upgrade, upgrade FPD by using the `upgrade hw-module location all fpd all` command from the Cisco IOS XR mode. The progress of FPD upgrade process can be monitored using the `show hw-module fpd` command.
- Reload NCS 1001 if any FPD status is in RLOAD REQ state. If CTRL FPGA is in RLOAD REQ state, use the `hw-module location 0/0 reload` command. If Daisy Duke or BIOS is in RLOAD REQ state, use the `hw-module location 0/RP0 reload` command.
- Verify the installation using the `install verify packages` command.
- Uninstall the packages or SMUs if their installation causes any issues on the NCS 1001. See [Uninstall Packages, on page 12](#).



Note ISO images cannot be uninstalled. However, you can perform a system downgrade by installing an older ISO version.

Uninstall Packages

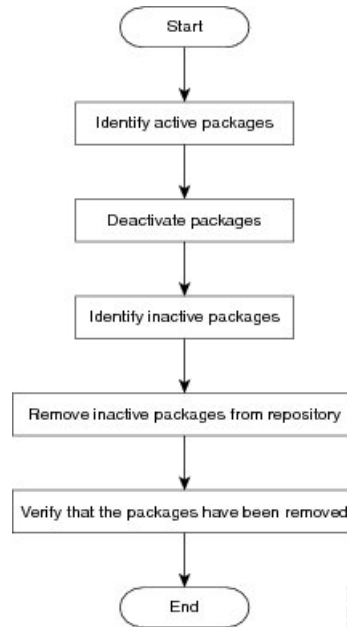
Complete this task to uninstall a package. All the NCS 1001 functionalities that are part of the uninstalled package are deactivated. Packages that are added in the XR mode cannot be uninstalled from the System Admin mode, and vice versa.



Note Installed ISO images cannot be uninstalled. Also, kernel SMUs that install third party SMU on host, XR mode and System Admin mode, cannot be uninstalled. However, subsequent installation of ISO image or kernel SMU overwrites the existing installation.

The workflow for uninstalling a package is shown in this flowchart.

Figure 2: Uninstalling Packages Workflow



Step 1 show install active

Example:

```

RP/0/RP0/CPU0:ios#show install active
Thu Jul 25 16:23:36.579 CEST
Node 0/RP0/CPU0 [RP]
  Boot Partition: xr_lv48
  Active Packages: 2
    ncs1001-xr-7.0.1 version=7.0.1 [Boot image]
    ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
  
```

Displays active packages. Only active packages can be deactivated.

Step 2 show install repository

Example:

```

show install repository

Thu Jul 25 16:52:03.432 CEST
2 package(s) in XR repository:
  ncs1001-mini-x-7.0.1.iso
  ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
  
```

Step 3 Execute one of these commands:

- `install deactivate package_name`
- `install deactivate id operation_id`

Example:

```
RP/0/RP0/CPU0:ios#install deactivate ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

or

```
RP/0/RP0/CPU0:ios#install deactivate id 48
```

All features and software patches associated with the package are deactivated. You can specify multiple package names and deactivate them simultaneously.

If you use the operation ID, all packages that were added in the specified operation are deactivated together. You do not have to deactivate the packages individually.

```
Thu Jul 25 16:23:52.789 CEST
Jul 25 16:23:56 Install operation 48 started by root:
  install deactivate pkg ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 16:23:56 Package list:
Jul 25 16:23:56     ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 16:24:11 Install operation will continue in the background
Jul 25 16:26:38 Install operation 48 finished successfully
```

Step 4 `show install inactive`

Example:

```
RP/0/RP0/CPU0:ios#show install inactive
```

```
Thu Jul 25 16:27:54.005 CEST
1 inactive package(s) found:
  ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

The deactivated packages are now listed as inactive packages. Only inactive packages can be removed from the repository.

Step 5 `install remove package_name`

Example:

```
RP/0/RP0/CPU0:ios#install remove ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
```

```
Thu Jul 25 16:30:11.870 CEST
Jul 25 16:30:14 Install operation 49 started by root:
  install remove ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 16:30:14 Package list:
Jul 25 16:30:15     ncs1001-k9sec-1.0.0.0-r701.x86_64.rpm
Jul 25 16:30:16 Install operation will continue in the background
Jul 25 16:30:21 Install operation 49 finished successfully
```

The inactive packages are removed from the repository.

Use the `install remove` command with the `id operation-id` keyword and argument to remove all packages that were added for the specified operation ID.

Step 6 `show install repository`

Example:

```
RP/0/RP0/CPU0:ios#show install repository
```

```
Thu Jul 25 16:52:03.432 CEST
.. package(s) in XR repository:
   ncs1001-mini-x-7.0.1.iso
```

Displays packages available in the repository. The package that are removed are no longer displayed in the result.

What to do next

Install required packages. See [Install Packages, on page 5](#).

