



Perform System Upgrade and Install Feature Packages

The system upgrade and package installation processes are executed using **install** commands on the NCS 1002. The processes involve adding and activating the iso images (*.iso*), feature packages (*.rpm*), and software maintenance upgrade files (*.smu*) on the NCS 1002. These files are accessed from a network server and then activated on the NCS 1002. If the installed package or SMU causes any issue, it can be uninstalled.



Note It is recommended that you collect the output of **show tech-support ncs1k** command before performing operations such as reload or CPU OIR on the NCS 1002 system. The command provides information about the state of the system before reload or before the CPU-OIR operation is performed and is useful in debugging.



Note The Bridge SMUs for R6.1.2, R6.2.2, and R6.3.1 are available [here](#). The relevant Bridge SMU for the source release must be installed before upgrading to R6.3.x, R6.5.x, and R7.x.x. For example, the Bridge SMU for R6.1.2 must be installed before upgrading R6.1.2 to R6.3.2.



Note From R6.5.2, python 2.7 standard library package (python27.tar.gz) is available as an optional package on CCO. This package is required to implement python automation scripts. This package can be downloaded using ZTP (ztp -i command).



Note The output of the examples in the procedures is not from the latest software release. The output will change for any explicit references to the current release.

The topics covered in this chapter are:

- [Upgrade the System, on page 2](#)
- [Software Upgrade Matrix, on page 2](#)
- [Install Packages, on page 3](#)
- [Upgrading the Firmware, on page 11](#)

Upgrade the System

Upgrading the system is the process of installing a new version of the Cisco IOS XR operating system on the NCS 1002. The NCS 1002 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 *ncs1k-xr-7.2.1*. Install this ISO image using **install** commands. For more information about the install process, see [Workflow for Install Process, on page 3](#).



Note Software upgrade from a release having 2 bit Association Number (AN) support (R6.1.2 or below) to a release having 4 bit AN support (R6.2.1 or above) is not supported. When software is upgraded, the slice must be re-provisioned using the **upgrade hw-module slice all** command after the upgrade. The traffic is affected until the re-provisioning completes.

For more information on upgrading the system and the RPMs, see *Cisco IOS XR Flexible Packaging Configuration Guide for Cisco NCS 1000 Series*.

Software Upgrade Matrix

The following table lists the upgrade paths supported for Cisco NCS 1002.

Source Release	Destination Release	Bridge SMUs
R6.1.2	R6.3.2, R6.5.1, R6.5.2	ncs1k-6.1.2.CSCvf01652, ncs1k-sysadmin-6.1.2.CSCvf01652
R6.2.2	R6.3.2, R6.5.1, R6.5.2	ncs1k-6.2.2.CSCvf01652, ncs1k-sysadmin-6.2.2.CSCvf01652
R6.3.1	R6.3.2, R6.5.1, R6.5.2, R7.0.1, R7.1.1, and R7.2.1	<ul style="list-style-type: none"> • ncs1k-6.3.1.CSCvf01652 • ncs1k-sysadmin-6.3.1.CSCvf01652
R6.3.2	R6.5.1, R6.5.2, R7.0.1, R7.1.1, and R7.2.1	None
R6.5.1	R6.5.2, R7.0.1, R7.1.1, and R7.2.1	None
R6.5.2	R7.0.1, R7.1.1, and R7.2.1	None
R7.0.1	R7.1.1 and R7.2.1	None
R7.1.1	R7.2.1	None

Install Packages

Packages and software patches (SMU) can be installed on NCS 1002. Installing a package on NCS 1002 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 1002. Each package contains components that perform a specific set of NCS 1002 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	ncs1k-iosxr-px-k9-7.3.1.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	ncs1k-k9sec-4.1.0.0-r731.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 3](#). To uninstall a package, see [Uninstall Packages, on page 9](#). The workflow for installation and uninstallation processes are depicted in individual flowcharts in their respective subsections.

Install Packages

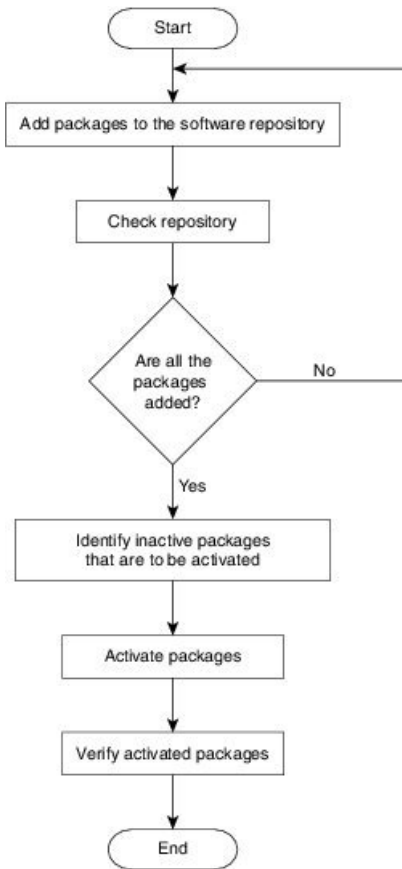
Complete this task to upgrade the system or install a patch. The system upgrade is done using an ISO image file, while the patch installation is done using packages and SMUs. This task is also used to install .tar files. The .tar file contains multiple packages and SMUs that are merged into a single 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



Note Disable auto-fpd upgrade before the software upgrade.

```

RP/0/RP0/CPU0:ios#configure
RP/0/RP0/CPU0:ios(config)#fpd auto-upgrade disable
RP/0/RP0/CPU0:ios(config)#commit
RP/0/RP0/CPU0:ios(config)#end
  
```

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 1002 hard disk or on a network server to which the NCS 1002 has access.
- When ncs1k-k9sec package is not installed, use only FTP or TFTP to copy files or during the **install add** operation.

Procedure

Step 1

Execute one of these commands:

- **install add source** <ftp 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: ncs1k-mini-x-7.0.1.iso
ncs1k-k9sec-4.1.0.0-r701.x86_64.rpm
```

```
Fri Jul 19 16:02:02.071 IST
Jul 19 16:02:04 Install operation 1 started by root:
install add source harddisk: ncs1k-mini-x-7.0.1.iso ncs1k-k9sec-4.1.0.0-r701.x86_64.rpm
Jul 19 16:02:05 Install operation will continue in the background
RP/0/RP0/CPU0:ios#Jul 19 16:03:35 Install operation 1 finished successfully
```

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
```

```
Fri Jul 19 16:09:47.908 IST
The install add operation 4 is 60% complete
```

(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 repository

Example:

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

```
Fri Jul 19 16:11:53.189 IST
4 package(s) in XR repository:
ncs1k-mini-x-7.0.1
ncs1k-k9sec-4.1.0.0-r652.x86_64
ncs1k-xr-6.5.2
ncs1k-k9sec-4.1.0.0-r701.x86_64
```

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
```

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

Step 5

Execute one of these commands:

- **install activate** *package_name*
- **install activate id** *operation_id*

Example:

```
RP/0/RP0/CPU0:ios#install activate id 4

Fri Jul 19 16:16:20.091 IST
Jul 19 16:16:22 Install operation 6 started by root:
  install activate id 4
Jul 19 16:16:22 Package list:
Jul 19 16:16:22      ncs1k-mini-x-7.0.1
Jul 19 16:16:22      ncs1k-k9sec-4.1.0.0-r652.x86_64
Jul 19 16:16:22      ncs1k-xr-6.5.2
Jul 19 16:16:22      ncs1k-k9sec-4.1.0.0-r701.x86_64
This install operation will reload the system, continue?
 [yes/no]:[yes] yes
Jul 19 16:17:17 Install operation will continue in the background
```

The package configurations are made active on the NCS 1002. 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 ncs1k-mini-x-7.0.1
install activate ncs1k-mini-x-7.0.1 force
```

or

Using the install update command:

```
install update source repository ncs1k-mini-x-7.0.1
```

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 8, by executing the **install activate id 8** command, all 5 packages are activated together. You do not have to activate the packages individually.

Step 6 **show install active****Example:**

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

Displays packages that are active.

Step 7 **install commit system****Example:**

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

```
Fri Jul 19 18:03:12.845 IST
Jul 19 18:03:16 Install operation 7 started by root:
  install commit
Jul 19 18:03:17 Install operation will continue in the background
RP/0/RP0/CPU0:ios#Jul 19 18:04:01 Install operation 7 finished successfully
```

Commits the newly active software.

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 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 1002 if any FPD status is in RLOAD REQ state. If CTRL FPGA is in RLOAD REQ state, use the **hw-module location all 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 1002. See [Uninstall Packages, on page 9](#).



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 1002 setup. The prepare process runs in the background and the NCS 1002 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 1002 to malfunction.
- Directly activating an ISO image for system upgrade takes considerable time during which the NCS 1002 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.

Procedure

Step 1 Add the required ISO image and packages to the repository.
For details, see [Install Packages, on page 3](#).

Step 2 **show install repository**

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 ncs1k-k9sec-4.1.0.0-r701.x86_64
```

or

```
RP/0/RP0/CPU0:ios#install prepare id 21
```

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.

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 22, by executing the **install prepare id 21** 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.

Step 5 **install activate** *package_name*

All packages that have been prepared are activated together to activate the package configurations on the NCS 1002.

Activation of some SMUs require manual reload of the NCS 1002. 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 1002 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
```

Displays packages that are active.

Step 7 install commit system**Example:**

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

```
Fri Jul 19 18:03:12.845 IST
Jul 19 18:03:16 Install operation 7 started by root:
  install commit
Jul 19 18:03:17 Install operation will continue in the background
RP/0/RP0/CPU0:ios#Jul 19 18:04:01 Install operation 7 finished successfully
```

Commits the recently activated software.

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 1002 if any FPD status is in RLOAD REQ state. If CTRL FPGA is in RLOAD REQ state, use the **hw-module location all 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 1002. See [Uninstall Packages, on page 9](#).



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

Uninstall Packages

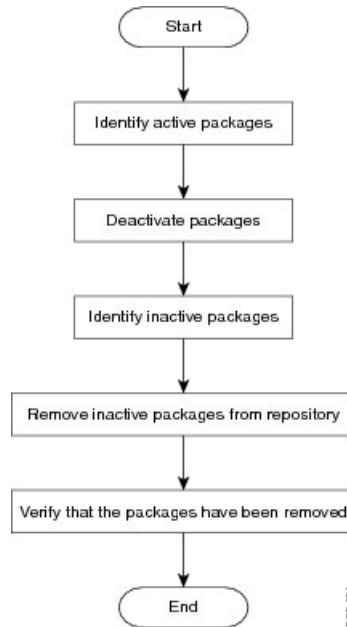
Complete this task to uninstall a package. All the NCS 1002 functionalities that are part of the uninstalled package are deactivated. Packages that are added in the XR mode cannot be uninstalled from the System Admin mode, and vice versa.



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



Procedure

Step 1 show install active

Displays active packages. Only active packages can be deactivated.

Step 2 Execute one of these commands:

- **install deactivate** *package_name*
- **install deactivate id** *operation_id*

Example:

```
RP/0/RP0/CPU0:ios#install deactivate ncs1k-k9sec-4.1.0.0-r701.x86_64
```

or

```
RP/0/RP0/CPU0:ios#install deactivate id 8
```

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.

Step 3 **show install inactive**

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

Step 4 **install remove *package_name*****Example:**

```
RP/0/RP0/CPU0:ios#install remove ncs1k-k9sec-4.1.0.0-r701.x86_64
```

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 5 **show install repository**

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 3](#)

Upgrading the Firmware

Use the following procedure to upgrade the firmware.

Procedure

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

No FPD image version upgrade is required if the status is CURRENT in the command output.

Example:

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Fri Aug 30 07:30:01.111 UTC
```

Location	Card type	HWver	FPD device	FPD Versions		
				ATR	Status	Running Program
0/0	NCS1002-K9	1.2	CDSP_PORT_05	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_06	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_12	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_13	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_19	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_20	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_26	CURRENT	3.77	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_27	CURRENT	3.77	3.77
0/0	NCS1002-K9	2.1	CFP2_PORT_05	CURRENT	5.52	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_06	CURRENT	5.52	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_12	CURRENT	5.52	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_13	CURRENT	5.52	5.52

0/0	NCS1002-K9	5.0	CFP2_PORT_19	CURRENT	3.26	3.26
0/0	NCS1002-K9	2.1	CFP2_PORT_20	CURRENT	5.52	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_26	CURRENT	5.52	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_27	CURRENT	5.52	5.52
0/0	NCS1002-K9	0.1	CTRL_BKP_LOW	B	CURRENT	2.23
0/0	NCS1002-K9	0.1	CTRL_BKP_UP	B	CURRENT	2.23
0/0	NCS1002-K9	0.1	CTRL_FPGA_LOW	CURRENT	2.23	2.23
0/0	NCS1002-K9	0.1	CTRL_FPGA_UP	CURRENT	2.23	2.23
0/RP0	NCS1K-CNTLR	0.1	BIOS_Backup	BS	NEED UPGD	14.00
0/RP0	NCS1K-CNTLR	0.1	BIOS_Primary	S	NEED UPGD	14.40
0/RP0	NCS1K-CNTLR	0.1	Daisy_Duke_BKP	BS	NEED UPGD	0.15
0/RP0	NCS1K-CNTLR	0.1	Daisy_Duke_FPGA	S	NEED UPGD	0.17
0/PM0	NCS1K-2KW-AC	0.0	PO-PrimCU	NOT READY		
0/PM1	NCS1K-2KW-AC	0.0	PO-PrimCU	CURRENT		

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

Step 2 Use the **upgrade hw-module location all fpd all** command to upgrade the FPD image.

Step 3 Check whether all the FPDs are upgraded.

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Fri Aug 30 09:25:44.644 UTC
```

Location	Card type	HWver	FPD device	ATR	FPD Versions	
					Status	Running Program
0/0	NCS1002-K9	1.2	CDSP_PORT_05		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_06		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_12		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_13		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_19		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_20		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_26		CURRENT	3.77
0/0	NCS1002-K9	1.2	CDSP_PORT_27		CURRENT	3.77
0/0	NCS1002-K9	2.1	CFP2_PORT_05		CURRENT	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_06		CURRENT	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_12		CURRENT	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_13		CURRENT	5.52
0/0	NCS1002-K9	5.0	CFP2_PORT_19		CURRENT	3.26
0/0	NCS1002-K9	2.1	CFP2_PORT_20		CURRENT	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_26		CURRENT	5.52
0/0	NCS1002-K9	2.1	CFP2_PORT_27		CURRENT	5.52
0/0	NCS1002-K9	0.1	CTRL_BKP_LOW	B	CURRENT	2.23
0/0	NCS1002-K9	0.1	CTRL_FPGA_LOW		CURRENT	2.23
0/0	NCS1002-K9	0.1	CTRL_FPGA_UP		CURRENT	2.23
0/0	NCS1002-K9	0.1	CTRL_BKP_UP	B	CURRENT	2.23
0/RP0	NCS1K-CNTLR	0.1	BIOS_Backup	BS	CURRENT	14.50
0/RP0	NCS1K-CNTLR	0.1	BIOS_Primary	S	RLOAD REQ	14.40
0/RP0	NCS1K-CNTLR	0.1	Daisy_Duke_BKP	BS	CURRENT	0.20
0/RP0	NCS1K-CNTLR	0.1	Daisy_Duke_FPGA	S	RLOAD REQ	0.17
0/PM0	NCS1K-2KW-AC	0.0	PO-PrimCU		NOT READY	
0/PM1	NCS1K-2KW-AC	0.0	PO-PrimCU		CURRENT	

Step 4 Do not reload RP. Use the following steps to reload the RP.

```
RP/0/RP0/CPU0:ios#admin
sysadmin-vm:0_RP0#hw-module location 0/RP0 reload
Thu Aug 13 10:53:48.599 UTC+00:00
Reload node ? [no,yes] yes
```

RP will reload. Wait for RP to come up.

Step 5 Once the RP is up, check whether all the FPDs are in current state.

```
RP/0/RP0/CPU0:ios#show hw-module fpd
Wed Aug 12 13:14:43.467 IST
FPD Versions
=====
Location Card type HWver FPD device ATR Status Running Programd
-----
0/0      NCS1002-K9 1.2  CDSP_PORT_05 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_06 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_12 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_13 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_19 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_20 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_26 CURRENT  3.77  3.77
0/0      NCS1002-K9 1.2  CDSP_PORT_27 CURRENT  3.77  3.77
0/0      NCS1002-K9 2.0  CFP2_PORT_05 CURRENT  4.40  4.40
0/0      NCS1002-K9 2.1  CFP2_PORT_06 CURRENT  5.52  5.52
0/0      NCS1002-K9 2.1  CFP2_PORT_12 CURRENT  5.52  5.52
0/0      NCS1002-K9 0.0  CFP2_PORT_13 CURRENT  1.01  1.01
0/0      NCS1002-K9 2.1  CFP2_PORT_19 CURRENT  5.52  5.52
0/0      NCS1002-K9 2.1  CFP2_PORT_20 CURRENT  5.52  5.52
0/0      NCS1002-K9 4.2  CFP2_PORT_26 CURRENT  3.20  3.20
0/0      NCS1002-K9 2.1  CFP2_PORT_27 CURRENT  5.52  5.52
0/0      NCS1002-K9 0.1  CTRL_BKP_LOW B CURRENT  2.23
0/0      NCS1002-K9 0.1  CTRL_BKP_UP B CURRENT  2.23
0/0      NCS1002-K9 0.1  CTRL_FPGA_LOW CURRENT  2.23  2.23
0/0      NCS1002-K9 0.1  CTRL_FPGA_UP CURRENT  2.23  2.23
0/RP0    NCS1K-CNTLR 0.1  BIOS_Backup BS CURRENT  15.10
0/RP0    NCS1K-CNTLR 0.1  BIOS_Primary S CURRENT  15.10 15.10
0/RP0    NCS1K-CNTLR 0.1  Daisy_Duke_BKP BS CURRENT  0.20
0/RP0    NCS1K-CNTLR 0.1  Daisy_Duke_FPGA S CURRENT  0.20 0.20
0/PM0    NCS1K-2KW-AC 0.0  PO-PrimCU CURRENT  4.00 4.00
0/PM1    NCS1K-2KW-AC 0.0  PO-PrimCU CURRENT
```

Note Once FPD BIOS is upgraded to 15.10, do not downgrade it to the lower version. The system can be downgraded to lower image but not the FPD version.

