



System Setup Command Reference for Cisco ASR 9000 Series Routers

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Preface

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Preface

Initial release of the cumulative command reference document that covers all updates from Release 7.0.0 onwards.

Communications, Services, and Additional Information

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Action Commands

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clear configuration inconsistency

To clear an inconsistency alarm for a router configuration or admin plane configuration, use the **clear configuration inconsistency** command in Admin EXEC mode or EXEC mode.

clear configuration inconsistency

Syntax Description

This command has no keywords or arguments.

Command Default

Administration EXEC mode: Clears the inconsistency alarms for the admin plane configuration.

EXEC mode: Clears the inconsistency alarms for an SDR configuration.

Command Modes

Admin EXEC mode

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

An inconsistency alarm is set when there is a failure to restore the configuration; this can occur during router startup, or when a line card or route switch processor (RSP) card is inserted or removed.

If an inconsistency alarm is set, a message similar to the following example is displayed:

```
RP/0/0/CPU0:May 26 11:58:40.662 : cfmgr-rp[130]: %MGBL-CONFIGCLI-3
  BATCH_CONFIG_FAIL : 28 config(s) failed during startup. To view
  failed config(s) use the command - "show configuration failed startup"

RP/0/0/CPU0:May 26 11:58:41.731 : cfmgr-rp[130]:
  %MGBL-CONFIG-3-ADMIN_INCONSISTENCY_ALARM : Admin plane configuration
  inconsistency alarm has been raised. Configuration commits will be
  blocked until an ADMIN plane 'clear configuration inconsistency' command
  has been run to synchronize persisted admin plane configuration with
  running admin configuration.
```

When the inconsistency alarm is set, all configuration commit operations fail until the alarm is cleared using the **clear configuration inconsistency** command. This command clears the alarm and removes the failed configuration.

For example, the following configuration commit fails to finish due to an existing inconsistency alarm:

```
RP/0/RSP0/CPU0:router# configure

ADMIN plane running configuration is inconsistent with persistent
configuration.
No configuration commits will be allowed until an admin plane
'clear configuration inconsistency' command is performed.
RP/0/RSP0/CPU0:router(config)# hostname router2
RP/0/RSP0/CPU0:router(config)#commit
```


ADMIN plane running configuration is inconsistent with persistent configuration.
No configuration commits will be allowed until an admin plane 'clear configuration inconsistency' command is performed.

Enter the **clear configuration inconsistency** command to clear the alarm and allow commit operations to continue.



Note To reapply the failed configuration, you must reapply and recommit the configuration. Use the **load configuration failed** command with the **startup** keyword to populate the target configuration with the contents of the previous failed configuration from the startup configuration.

Use the **show configuration history** command with the **alarm** keyword to view the inconsistency alarm set and alarm clear events in the configuration history log.

Command Modes

To clear the inconsistency alarms for the admin plane configuration, enter the **clear configuration inconsistency** command in administration EXEC mode.

To clear the inconsistency alarms for the router, enter the **clear configuration inconsistency** command in EXEC mode.

Task ID

Task ID	Operations
config-services	execute

The following example shows how to clear the inconsistency alarms for the admin plane configuration by entering the **clear configuration inconsistency** command in administration EXEC mode:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# clear configuration inconsistency

Creating any missing directories in Configuration File system...OK
Initializing Configuration Version Manager...OK
Syncing ADMIN commit database with running configuration...OK
Re-initializing cache files...OK
Updating Commit Database. Please wait...[OK]
```

The following example shows how to clear the inconsistency alarms for a router configuration. The command is entered in EXEC mode.

```
RP/0/RSP0/CPU0:router# clear configuration inconsistency

Creating any missing directories in Configuration File system...OK
Initializing Configuration Version Manager...OK
Syncing commit database with running configuration...OK
Re-initializing cache files...OK
Updating Commit Database. Please wait...[OK]
```

In the following example, a history of the inconsistency alarms set and cleared for the router configuration are displayed using the **show configuration history** command with the **alarm** keyword:

```
RP/0/RSP0/CPU0:router# show configuration history alarm
```

Sno.	Event	Info	Time Stamp
~~~~	~~~~~	~~~~~	~~~~~
1	alarm	inconsistency alarm raised	Thu Jun 22 15:23:15 2009
2	alarm	inconsistency alarm cleared	Thu Jun 22 15:42:30 2009
3	alarm	inconsistency alarm raised	Sun Jul 9 13:39:57 2009
4	alarm	inconsistency alarm cleared	Sun Jul 9 14:15:48 2009
5	alarm	inconsistency alarm raised	Sat Jul 15 18:18:26 2009
6	alarm	inconsistency alarm cleared	Sat Jul 15 19:21:03 2009

## hw-module location

To configure various hardware attributes for a specific node, or for all nodes installed in the router, use the **hw-module location** command in System Admin EXEC mode.

To recover the RP (route processor) and SC (shelf controller) card or all the nodes in a system, use the **hw-module location** command in Sysadmin EXEC mode.

To reset or shutdown a specific node, or to put a node into maintenance mode, use the **hw-module location** command in the mode.

**hw-module location** *location/all* **bootmedia** [*recovery-partition/usb/network*] **reloadofflineonlinereload** [**force**]**shutdown** [**force**]

<b>Syntax Description</b>	<i>node-id/all</i>	Node whose hardware attributes you want to configure. The <i>node-id</i> is expressed in the <i>rack/slot/module</i> notation in the mode.  To configure all nodes, use <i>all</i> .  <b>Note</b> Enter the <b>show platform</b> command to see the location of all nodes installed in the router.
<b>bootmedia</b>		Select a boot media to load images.
<b>offline</b>		Changes the state of the hardware module to offline to perform diagnostics. When card is set to offline, it is taken out of the network. However, the card is powered on and maintains connectivity so that it can be accessed for diagnostics.
<b>online</b>		Changes the state of the hardware module to online for normal operation of the device.
<b>reload</b>		Reloads the hardware module.
<b>shutdown</b>		shut down the hardware module.
<b>Command Default</b>	None	
<b>Command Modes</b>	System Admin EXEC	

Command History	Release	Modification
	Release 6.0	This command was introduced.

**Usage Guidelines**

The **hw-module location**/*locationallbootmedia* is used to reimage a node or all nodes..

If the **bootmedia network** command specifies a single location, the node will get reloaded and reimaged with an image downloaded from the master RP.



**Note** The **bootmedia network** option is applicable to RP and LC nodes. It is not applicable to FC and SC nodes.

The master RP can be determined by looking at the **show controller card-mgr inventory summary** command output in `mode`:

```

sysadmin-vm:0_RP0# show controller card-mgr inventory summary
Fri Feb 26 03:24:22.205 UTC-08:00
Card Manager Inventory Summary :
-----
Location Card Type                BP ID  Serial Number  HW Ver  Card State
-----
0/0       NC55-24x100G-SE                 1   SAL1934MNEX    0.103 CARD_READY
0/3       NC55-6X100GE-PROT              4   SAL1915D4D9    0.110 CARD_READY
0/FC1     NC55-5508-FC                    22  SAL1923GDG2    0.305 CARD_READY
0/FC3     NC55-5508-FC                    24  SAL1926HZYB    0.106 CARD_READY
0/FC5     NC55-5508-FC                    26  SAL1911B7WJ    0.303 CARD_READY
0/RP0     NC55-RP (Master)                27  SAL1925HFTH    1.1    CARD_READY
0/RP1     NC55-RP (Slave)                  28  SAL1924GUZC    1.1    CARD_READY
0/SC0     NC55-SC (Slave)                  29  SAL190389WF    1.4    CARD_READY
0/SC1     NC55-SC (Master)                 30  SAL1923G36G    1.4    CARD_READY

```

If **bootmedia network** specifies the master RP location, the master RP will reboot and get reimaged with an image downloaded from an external PXE server via the master RP's management ethernet interface.

If **bootmedia network** command specifies *all* locations, the master RP will reboot and get reimaged with an image downloaded from an external PXE server via the master RP's management ethernet interface. After the master RP is reimaged, all other cards will get reloaded and reimaged with an image downloaded from the master RP.

The **bootmedia usb** option is only available for RP0 and RP1. When this option is selected, the RP will reload and be reimaged using the image stored on the RP's usb device.

```

sysadmin-vm:0_RP0# hw-module location 0/RP1 ?
Possible completions:
  bootmedia  Select boot media to load image from
  offline    Take a hardware module offline for diagnostics
  online     Take a hardware module online for normal operation
  reload     Reload a hardware module
  shutdown   Shut down a hardware module

sysadmin-vm:0_RP0# hw-module location 0/3 bootmedia ?
Possible completions:
  network

sysadmin-vm:0_RP0# hw-module location 0/RP1 bootmedia ?
Possible completions:
  network  usb

```

```
sysadmin-vm:0_RP0# hw-module location 0/RP1 bootmedia usb ?
Possible completions:
  reload    Reload a hardware module

sysadmin-vm:0_RP0# hw-module location 0/RP1 bootmedia usb reload ?
Possible completions:
  |         Output modifiers
  <cr>

sysadmin-vm:0_RP0# hw-module location 0/3 bootmedia network reload
Fri Feb 26 00:47:26.972 UTC-08:00
Reload hardware module ? [no,yes] yes
result Card reload request on 0/3 succeeded.
sysadmin-vm:0_RP0#
```

# install add

To copy the contents of a package installation envelope (PIE) file to a storage device, use the **install add** command in EXEC or Admin EXEC mode EXEC mode.

Administration EXEC Mode:

```
install add [{source source-path | tar}] file [activate [pause sw-change] [auto-abort-timer time]
[location node-id] [{asynchronous | synchronous}] [parallel-reload] [prompt-level {default | none}]
[if-active] [sdr sdr-name]
```

EXEC Mode:

```
install add [{source source-path | tar}] file [activate [pause sw-change] [auto-abort-timer time]
[location node-id] [{asynchronous | synchronous}] [parallel-reload] [prompt-level {default | none}]
```

## Syntax Description

<b>source</b> <i>source-path</i>	(Optional) Specifies the source location of the PIE files to be appended to the PIE filenames. Location options are as follows: <ul style="list-style-type: none"> <li>• <b>disk0:</b></li> <li>• <b>disk1:</b></li> <li>• <b>compactflash:</b></li> <li>• <b>harddisk:</b></li> <li>• <b>ftp://username :password@hostname</b> or <i>ip-address / directory-path</i></li> <li>• <b>rcp://username@hostname</b> or <i>ip-address / directory-path</i></li> <li>• <b>tftp://hostname</b> or <i>ip-address / directory-path</i></li> </ul>
<b>tar</b>	(Optional) Indicates that the PIE file is contained in a tar file.
<i>file</i>	Name and location of the PIE file (composite package) to install. If a source path location is specified using the <b>source</b> keyword, the <i>file</i> argument can be either a fully specified PIE file path, or a path to the PIE file relative to the source path. <p><b>Note</b> Up to 32 PIE files can be added to a device in a single <b>install add</b> operation.</p> <p>If the <b>tar</b> keyword is used, the <i>file</i> argument is a tar file that contains one or more PIE files, or directories containing PIE files. Up to 16 tar files can be added, out of the possible 32 install files.</p>
<b>activate</b>	(Optional) Activates the package or packages. This option is run only if the <b>install add</b> operation is successful.

<b>pause sw-change</b>	(Optional) Pauses the operation before locking the configuration for the software activation. While the operation is paused, you can perform configuration changes. You control the resumption of the operation at the CLI prompt.
<b>auto-abort-timer</b> <i>time</i>	(Optional) Specifies an abort timer value, <i>time</i> , in minutes, which when expired loads the last committed loadpath.
<b>location</b> <i>node-id</i>	(Optional) Activates a package on the designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.  <b>Note</b> A package cannot be activated on a single node unless some version of the package being activated is already active on all nodes. For example, a Multiprotocol Label Switching (MPLS) package cannot be active on only one node. If a version of the MPLS package is already active on all nodes, an MPLS package then could be upgraded or downgraded on a single node.
<b>asynchronous</b>	(Optional) Performs the command in asynchronous mode. In asynchronous mode, this command runs in the background, and the EXEC prompt is returned as soon as possible. This is the default mode.
<b>synchronous</b>	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
<b>parallel-reload</b>	(Optional) Forces all cards on the router to reload at the same time and then come up with the new software, rather than proceeding according to the option encoded in the install package.
<b>prompt-level</b> { <b>default</b>   <b>none</b> }	(Optional) Specifies when you are prompted for input during the procedure.  <ul style="list-style-type: none"> <li>• <b>default</b>—You are prompted only when input is required by the operation.</li> <li>• <b>none</b>—You are never prompted.</li> </ul>
<b>if-active</b>	(Optional. Administration EXEC mode only.) Activates the optional packages only if a version is already active.
<b>sdr</b> <i>sdr-name</i>	(Optional. Administration EXEC mode only.) Activates a package for a specific secure domain router (SDR). The <i>sdr-name</i> argument is the name assigned to the SDR. The only SDR available is Owner, which refers to the entire router.

**Command Default**

Packages are added to the storage device, but are not activated.

The operation is performed in asynchronous mode. The **install add** command runs in the background, and the EXEC prompt is returned as soon as possible.

### Command Modes

EXEC

EXEC mode

Admin EXEC mode

### Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.0.0	This command was removed from EXEC mode. The <b>sdr</b> keyword was removed.

### Usage Guidelines

Use the **install add** command to unpack the package software files from a PIE file and copy them to the boot device (usually disk0:).

- From administration EXEC mode, the package software files are added to all route processors (RPs) installed in the router. If the **install add** command is entered without specifying an SDR, then the package files are added to all RPs in the owner SDR.
- From EXEC mode, the package software files are added to the RPs only for the SDR to which you are logged in.

### Adding and Activating a Package

Software packages remain inactive until activated with the **install activate** command.

To add and activate a package at the same time, use the **install add** command with the **activate** keyword. When this command is used, the keywords and rules for package activation apply.

- To add and activate a package for the owner SDR, enter the **install add** command with the **activate** keyword from administration EXEC mode.
- It is also possible to add and activate a package using the **install add** command with the **activate** keyword from EXEC mode.



**Note** SDR-specific activation is supported for specific packages and upgrades, such as optional packages and Software Maintenance Upgrades (SMUs). Packages that do not support SDR-specific activation can be activated for all SDRs simultaneously only from administration EXEC mode. For detailed instructions, see the *Managing Cisco IOS XR Software Packages* module of *System Management Configuration Guide for Cisco ASR 9000 Series Routers*.



**Note** If a software activation requires a node reload, the config-register for that node should be set to autoboot. If the config-register for the node is not set to autoboot, then the system automatically changes the setting and the node reloads. A message describing the change is displayed.



### Synchronous Mode

Use the **install add** command with the **synchronous** keyword to complete the operation before the prompt is returned. A progress bar indicates the status of the operation. For example:

```
- 1% complete: The operation can still be aborted (ctrl-c for options)
\ 10% complete: The operation can still be aborted (ctrl-c for options)
```

### TFTP Services and Image Size

Some Cisco IOS XR images may be larger than 32 MB, and the TFTP services provided by some vendors may 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 software image using FTP or rcp.
- Use a third-party or freeware TFTP server that supports file sizes larger than 32 MB.

### Adding tar Files

Use the **tar** keyword to add one or more PIE files in the tar file format. If the **tar** keyword is used, only a single tar file can be added.



---

**Note** Multiple tar files or a combination of PIE and tar files is not supported.

---

Note the following regarding tar files:

- The *file* argument must include the complete location of the tar file.
- The tar file can contain only PIE files and directories containing PIE files. For example:
  - The tar file pies.tar containing the files x.tar and y.pie fails because x.tar is not a PIE file.
  - The tar file pies.tar containing the file x.pie and the directory dir_a, where dir_a contains a PIE file y.pie succeeds.
  - The tar file pies.tar containing the file x.pie and the directory dir_a, where dir_a contains a tar file y.tar fails because y.tar is not a PIE file.
  - The tar file pies.tar containing the PIE files x.pie, y.pie, ...*.pie succeeds.
- The **source** keyword is not supported with the **tar** keyword.

Following is a valid example of using the **tar** keyword:

```
RP/0/RSP0/CPU0:router(admin)# install add tar
tftp://223.255.254.254/install/files/pies.tar
```

You can add and activate tar files at the same time. In other words, the **install add** command is supported using the **tar** and the **activate** keywords simultaneously.

## Adding Multiple Packages

To add multiple PIE files, use the **source** keyword to specify the directory path location of the PIE files. Then list all the PIE filenames, as necessary. This alleviates the need to repeat the directory location for each PIE file. Up to 32 files can be added, of which 16 can be tar files.

Following is an example of the **install add** command using the **source** keyword:

```
RP/0/0/CPU0:router(admin)# install add source
tftp://192.168.201.1/images/myimages/comp-asr9k-mini.pie
asr9k-mgbl-p.pie asr9k-mpls-p.pie
asr9k-mcast-p.pie
```

The following example also illustrates a valid use of the **install add** command with the **source** keyword:

```
RP/0/RSP0/CPU0:router(admin)# install add source
tftp://192.168.254.254/images/user/asr9k-mcast-p.pie
pies/asr9k-mpls-p.pie
ftp://1.2.3.4/other_location/asr9k-mgbl-p.pie
```

In the previous example, three PIE files are added from the following locations:

- tftp://192.168.254.254/images/user/asr9k-mcast-p.pie
- tftp://192.168.254.254/images/user/pies/asr9k-mpls-p.pie
- ftp://1.2.3.4/other_location/asr9k-mgbl-p.pie

## Parallel Reload

Installation operations are activated according to the method encoded in the package being activated. Generally, this method has the least impact for routing and forwarding purposes, but it may not be the fastest method from start to finish and can require user interaction by default. To perform the installation procedure as quickly as possible, you can specify the **parallel-reload** keyword. This forces the installation to perform a parallel reload, so that all cards on the router reload simultaneously, and then come up with the new software. This impacts routing and forwarding, but it ensures that the installation is performed without other issues.

## Pausing Activation Before Configuration Lock

If you specify the **activate** keyword, use the **pause sw-change** keywords to pause the software activation operation before locking the configuration. A software activation operation begins with preparatory steps, such as software checks, and then proceeds with the actual activation of the new software. The configuration is locked for the activation. If you specify the **pause sw-change** keywords, the operation pauses before locking the configuration and provides you with the option to hold the operation while you perform configuration changes, and proceed with the activation whenever you choose. This is useful, for example, if your workflow involves configuring a router out of the network during software installation and you want to minimize the time that the router is out of the network. You can specify these keywords for both asynchronous and synchronous operations. In both cases, follow the onscreen instructions to control the pausing and completion of the operation.

The following example shows how to add a PIE file for all SDRs in the system. In the following example, a Multiprotocol Label Switching (MPLS) package is added in synchronous mode. This operation copies the files required for the package to the storage device. This package remains inactive until it is activated with the **install activate** command.

```
RP/0/RSP0/CPU0:router# admin
```

```
RP/0/RSP0/CPU0:router(admin)# install add  
tftp://209.165.201.1/asr9k-mpls.pie synchronous  
  
Install operation 4 'install add /tftp://209.165.201.1/asr9k-mpls.pie synchronous'  
  started by user  
'user_b' at 03:17:05 UTC Mon Nov 14 2005.  
Info:      The following package is now available to be activated:  
Info:  
Info:          disk0:asr9k-mpls-3.3.80  
Info:  
Install operation 4 completed successfully at 03:18:30 UTC Mon Nov 14 2005.
```

In the following example, a package is added and activated with a single command:

```
RP/0/RSP0/CPU0:router# admin  
RP/0/RSP0/CPU0:router(admin)# install add disk1:asr9k-mgbl-p.pie-3.8.0activate  
  
Install operation 4 'install add /disk1:asr9k-mgbl-p.pie-3.8.0 activate' started  
by user 'user_b' at 07:58:56 UTC Wed Mar 01 2006.  
The install operation will continue asynchronously.  
:router(admin)#Part 1 of 2 (add software): Started  
Info:      The following package is now available to be activated:  
Info:  
Info:          disk0:asr9k-mgbl-3.8.0  
Info:  
Part 1 of 2 (add software): Completed successfully  
Part 2 of 2 (activate software): Started  
Info:      The changes made to software configurations will not be persistent across  
system reloads. Use the command 'admin install  
Info:      commit' to make changes persistent.  
Info:      Please verify that the system is consistent following the software change  
using the following commands:  
Info:          show system verify  
Info:          install verify  
Part 2 of 2 (activate software): Completed successfully  
Part 1 of 2 (add software): Completed successfully  
Part 2 of 2 (activate software): Completed successfully  
Install operation 4 completed successfully at 08:00:24 UTC Wed Mar 01 2006.
```

## install activate (IOS XR 64 bit)

To enable the package configurations to be made active on the router so new features and software fixes take effect, use the **install activate** command in EXEC mode or Admin EXEC mode.

```
install activate package_name
install activate id operation_id
```

### Syntax Description

*package_name*

Enter the package names separated by space.

**Note** Up to 16 packages can be specified in a single **install activate** command at a time. Multiple packages can be specified using the wildcard syntax, for example, `asr9k-*-x64-*3I`.

**id** *operation_id*

The *operation_id* is the ID from the **install add** operation.

The **show install request** command displays the operation id number of the **install add** operation and its status. You can also find the *operation_id* in the **show install log** command output.

### Command Default

The **install activate** command activates all packages that were added in the specified **install add** operation and the operation is performed in an asynchronous mode. The command runs in the background and the EXEC prompt is returned soon after.

If you use the operation ID (from the add operation) to activate packages, all packages that were added in the specified install add operation are activated together. You do not have to activate the packages individually.

For example, if five packages are added in operation 6, all the five packages are activated together by executing **install activate id 6** command.



### Note

- Activation takes some time and does not happen instantaneously.
- Activation of some SMUs require a manual reloading of the router. 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.

### Command Modes

EXEC mode

Admin EXEC mode

### Command History

Release	Modification
Release 6.1.2	Support for IOS XR 64 bit <b>install activate</b> command was added.

## Usage Guidelines

- Only inactive packages can be activated. Use the **show install inactive** command to identify the inactive packages that are present in the repository.
- If you want to activate packages using the **install activate id *operation_id*** command syntax, use the **show install log** command to identify the operation ID of the add operation.

The following example lets you activate packages by specifying the package names:

```
RP/0/RSP0/CPU0:router# install activate asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
asr9k-optic-x64-1.0.0.0-r61106I.x86_64
```

```
Jun 22 14:09:25 Package list:
Jun 22 14:09:25 asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
Jun 22 14:09:25 asr9k-optic-x64-1.0.0.0-r61106I.x86_64
Jun 22 14:09:35 Install operation will continue in the background
```

```
RP/0/RSP0/CPU0:router#
```

The following example lets you activate packages by specifying the id from the add operation:

```
RP/0/RSP0/CPU0:router# install activate id 6
```

```
Jun 22 15:02:24 Package list:
Jun 22 15:02:24 asr9k-bgp-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-isis-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-k9sec-x64-1.1.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-li-x64-1.1.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-parser-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-mgbl-x64-2.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-optic-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-mcast-x64-1.1.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-mpls-te-rsvp-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-eigrp-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-ospf-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-mpls-x64-2.0.0.0-r61106I.x86_64
Jun 22 15:02:25 Skipped packages which were already active:
Jun 22 15:02:25 asr9k-bgp-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:25 asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
Jun 22 15:02:25 asr9k-optic-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:33 Install operation will continue in the background
```

```
RP/0/RSP0/CPU0:router#
```

The following example lets you activate multiple packages using the wildcard syntax:

```
RP/0/RSP0/CPU0:router#install activate asr9k-*-x64-*3I
```

```
Jun 16 19:35:06 Install operation 105 started by root:
install activate pkg asr9k-*-x64-*3I
Jun 16 19:35:06 Package list:
Jun 16 19:35:06 asr9k-eigrp-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-ospf-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-m2m-x64-2.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-k9sec-x64-1.1.0.0-r61103I.x86_64
```

```
Jun 16 19:35:06 asr9k-mpls-x64-1.1.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-bgp-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-isis-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-mini-x64-6.1.1.03I
Jun 16 19:35:06 asr9k-mgbl-x64-2.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-parser-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-optic-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-mcast-x64-1.1.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-mpls-te-rsvp-x64-1.0.0.0-r61103I.x86_64
Jun 16 19:35:06 asr9k-li-x64-1.0.0.0-r61103I.x86_64
Jun 22 15:02:33 Install operation will continue in the background
```

```
RP/0/RSP0/CPU0:router#
```

## install deactivate (IOS XR 64 bit)

To remove a package from the active software set, use the **install deactivate** command in EXEC mode or Admin EXEC mode.

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

### Syntax Description

*package_name*

Enter the package names separated by space.

#### Note

Up to 16 packages can be specified in a single **install deactivate** command at a time. Multiple packages can be specified using the wildcard syntax, for example, `asr9k-*-x64-*3I`.

**id** *operation_id*

The *operation_id* is the ID from the **install add** operation.

The **show install request** command displays the operation id number of the **install add** operation and its status. You can also find the *operation_id* in the **show install log** command output.

### Command Default

The **install deactivate** command deactivates all features and software patches associated with the specified activated packages. This operation is performed in an asynchronous mode and the command runs in the background.

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

For example, if five packages are added in operation 6, all the five packages are deactivated together by executing **install deactivate id 6** command.



**Note** The System admin packages that were added as a part of the **install add** operation (of the ID used in deactivate operation) will also be deactivated.

### Command Modes

EXEC mode  
Admin EXEC mode

### Command History

Release	Modification
Release 6.1.2	Support for IOS XR 64 bit <b>install deactivate</b> command was added.

### Usage Guidelines

- Only active packages can be deactivated. Use the **show install active** command to identify the active packages.

- If you want to deactivate packages using the **install deactivate id** *operation_id* command syntax, use the **show install log** command to identify the operation ID of the add operation.
- If you want to remove the inactive packages from the repository, use the **show install inactive** command to identify the deactivated packages that are now listed as inactive packages.

Then, use the **install remove** command to remove the packages from the repository.

The following example lets you deactivate packages by specifying the package names:

```
RP/0/RSP0/CPU0:router# install deactivate asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
asr9k-optic-x64-1.0.0.0-r61106I.x86_64

Jun 22 14:09:25 Package list:
Jun 22 14:09:25 asr9k-m2m-x64-2.0.0.0-r61106I.x86_64
Jun 22 14:09:25 asr9k-optic-x64-1.0.0.0-r61106I.x86_64
Jun 22 14:09:35 Install operation will continue in the background

RP/0/RSP0/CPU0:router#
```

The following example lets you deactivate packages by specifying the id from the add operation:

```
RP/0/RSP0/CPU0:router# install deactivate id 6

Jun 22 15:02:24 Package list:
Jun 22 15:02:24 asr9k-bgp-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-isis-x64-1.0.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-k9sec-x64-1.1.0.0-r61106I.x86_64
Jun 22 15:02:24 asr9k-li-x64-1.1.0.0-r61106I.x86_64
Jun 22 15:02:33 Install operation will continue in the background

RP/0/RSP0/CPU0:router#
```

The following example lets you deactivate multiple packages using the wildcard syntax:

```
RP/0/RSP0/CPU0:router# install deactivate *-r61103I

Jun 16 19:35:06 Install operation 108 started by root:
install deactivate pkg asr9k-mpls-x64-1.1.0.0-r61103I asr9k-mpls-te-rsvp-x64-1.0.0.0-r61103I
asr9k-mcast-x64-1.1.0.0-r61103I
Jun 16 19:35:06 Package list:
Jun 16 19:35:06 asr9k-mpls-x64-1.1.0.0-r61103I
Jun 16 19:35:06 asr9k-mpls-te-rsvp-x64-1.0.0.0-r61103I
Jun 16 19:35:06 asr9k-mcast-x64-1.1.0.0-r61103I
Jun 16 19:35:06 Install operation will continue in the background

RP/0/RSP0/CPU0:router#
```



# install commit

To save the active software set to be persistent across designated system controller (DSC) reloads, use the **install commit** command in EXEC or Admin EXEC mode EXEC mode.

Administration EXEC Mode:

**install commit** [{**location** *node-id* | **sdr** *sdr-name*}]

EXEC mode Mode

**install commit**

## Syntax Description

<b>location</b> <i>node-id</i>	(Optional. Admin EXEC mode mode only.) Specifies a node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.
<b>sdr</b> <i>sdr-name</i>	(Optional. Admin EXEC mode only.) Commits the active software set for a specific SDR. The <i>sdr-name</i> argument is the name assigned to the SDR. The only SDR available is Owner, which refers to the entire router.

## Command Default

Admin EXEC mode: Commits the active software set for all SDRs.

EXEC mode: Commits the active software set for the current SDR.

## Command Modes

EXEC

Admin EXEC mode

EXEC mode

## Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.0.0	This command was removed from EXEC mode. Support for the <b>sdr</b> keyword was removed.

## Usage Guidelines

When a package is activated, it becomes part of the current running configuration. To make the package activation persistent across designated secure domain router shelf controller (DSDRSC) reloads, enter the **install commit** command. On startup, the DSDRSC of the SDR loads this committed software set.

If the system is restarted before the active software set is saved with the **install commit** command, the previously committed software set is used.

## Command Modes

To commit the active software set for the owner SDR, use the **install commit** command in either administration EXEC or EXEC mode.

## Task ID

Task ID	Operations
pkg-mgmt	read, write

The following example shows how to make the current active software set persistent across DSDRSC reloads for all SDRs in the system:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# install commit

Install operation 16 'install commit' started by user 'user_b' at 19:18:58 UTC
Sat Apr 08 2006.
Install operation 16 completed successfully at 19:19:01 UTC Sat Apr 08 2006.
```

# install upgrade source

To upgrade the software package, use the **install upgrade source** command in administration EXEC mode.

**install upgrade source** [{ftp | tftp} *system-disk*] [**path** *directory-path*] [{*file-name* | **version** *version-number* | **packages**}] [*source-file*] [**synchronous**] [**pause-reload**]

Syntax	Description
<b>source</b>	Specify the source location of the PIE files to be appended to the PIE filenames. Location options are as follows:  <b>ftp:</b> —Copies from an FTP network server. The syntax is <b>ftp</b> : <i>[[[/username [:password]@] location]/directory]/filename</i> . <b>tftp:</b> —Copies from a TFTP network server. The syntax is <b>tftp</b> : <i>[[/location]/directory]/filename</i> <i>system disk</i> —Copies package source from system disk. Location options are as follows: <ul style="list-style-type: none"> <li>• <b>harddisk:</b> —Copies from the hard disk drive file system (if present).</li> <li>• <b>disk1:</b> —Copies from disk1: file system.</li> </ul>
<b>path</b> <i>directory-path</i>	Specify the storage device and directory for the file search. The search is performed for the specified directory and all subdirectories in that directory tree.  The syntax for <i>directory-path</i> is: <i>device</i> : <i>[/ directory-path]</i>  If a directory path is not specified, then the search is performed in the current directory (a path of . [dot] is assumed).
<i>file-name</i>	Only for TFTP, with file that contains a list of packages to be installed  <b>Note</b> Directory listing is not possible
<b>version</b> <i>version-number</i>	Specify the package version that is to be installed
<b>packages</b>	Specify the package names to install (packages can be <i>tar</i> file)
<i>source-file</i>	Specify the source location of the PIE files on the system
<b>synchronous</b>	(Optional) Performs the command in synchronous mode. This mode allows the installation process to be completed before the prompt is returned.  <b>Note</b> By default, installation operations are performed in asynchronous mode. In asynchronous mode, the command will run without expecting any user inputs while holding the prompt.

**pause-reload**

(Optional) Pauses the operation before any reload occurs. The configuration remains locked for the activation. This keyword precedes the following two keywords:

- **pause-reload allow-sw-change**—The operation pauses before locking the configuration and provides the option to hold the operation while you perform configuration changes. You can proceed with the activation whenever you choose.
- **pause-reload disallow-sw-change**—The operation pauses before reload but this will not allow you to make any configuration changes.

**Note**

These keywords are applicable for asynchronous and synchronous operations. In both cases, follow onscreen instructions to control the pausing and completion of the operation.

**Command Default**

By default **install upgrade source** picks active version packages.

**Command Modes**

Administration EXEC

**Command History**

Release	Modification
Release 5.3.2	This command was introduced.

**Usage Guidelines****FTP**

Use the following options to upgrade the system using FTP as source:

- Only repository without version—It picks delta packages (ignoring optional packages) of the active version; that is, the difference between packages present in the file specified and packages active on the system.
- Repository with version—It picks packages of the specified version. If a mini package of the specified version is found in the file, it will upgrade the system, provided all dependency and package compatibility checks are completed successfully.
- Packages—Specifies the list of packages to add or upgrade the system. This option can be used to add *tar* files.

**TFTP**

Use the following options to upgrade the system using TFTP as source:

- File-name—This option requires the package list to be provided in a file, which can then be used to upgrade the system or update the packages or SMU's. It picks delta packages (ignoring optional packages) of the active version; that is, the difference between packages present in the file specified and packages active on the system.
- File-name with version—It picks packages of the specified version. If a mini package of the specified version is found in the file, it will upgrade the system, provided all dependency and package compatibility checks are completed successfully.

- **Packages**—Specifies the list of packages to add or upgrade the system. This option can be used to add *tar* files.

### harddisk

Use the following options to upgrade the system using harddisk as source:

- **Only repository without version**—It picks delta packages (ignoring optional packages) of the active version; that is, the difference between packages present in the file specified and packages active on the system.
- **Repository with version**—It picks packages of the specified version. If a mini package of the specified version is found in the file, it will upgrade the system, provided all dependency and package compatibility checks are completed successfully.
- **Packages**—Specifies the list of packages to add or upgrade the system. This option can be used to add *tar* files.

Task ID	Task ID	Operation
	pkg-mgmt	execute

### Example

This example shows how to upgrade a package to 5.2.4 version with image `asr9k-mini-px.pie-5.2.4` from the FTP repository, using the **install upgrade source** command:

```
RP/0/RSP0/CPU0:router#admin
RP/0/RSP0/CPU0:router(admin)#install upgrade source ftp://10.10.10.10/yum_like_upgrade
asr9k-mini-px.pie-5.2.4 synchronous
```

This example shows how to upgrade a package to 5.3.2 version from the on-system repository, using the **install upgrade source** command:

```
RP/0/RSP0/CPU0:router#admin
RP/0/RSP0/CPU0:router(admin)#install upgrade source harddisk:/images/532 version 5.3.2
synchronous
```

This example shows how to upgrade package to release 5.1.0 from the TFTP repository, using the **install upgrade source** command:

```
RP/0/RSP0/CPU0:router#admin
RP/0/RSP0/CPU0:router(admin)# install upgrade source tftp://10.10.10.10/auto/tftpboot/userid
file-name packages.txt version 5.1.0 synchronous
```

This example shows how to add and activate the package or SMU of active version using the **install upgrade source** command:

```
RP/0/RSP0/CPU0:router#admin
RP/0/RSP0/CPU0:router(admin)# install upgrade source tftp://10.10.10.10/packages pkg1,pkg2
```

`pkg1` is an optional package and `pkg2` is a SMU. Both are active versions, but inactive on the system. The **install upgrade source** command checks whether the package or SMU is already inactive on system. If it is in inactive, the command skips its downloading, and adds as well as activates optional packages or SMUs along with its pre requisites.

# install remove

To delete inactive packages from a storage device, use the **install remove** command in EXEC or `mode`.

Administration EXEC Mode:

```
install remove {id add-id | device:package | inactive} [sdr sdr-name] [prompt-level {default | none}]
[{asynchronous | synchronous}] [test]
```

EXEC Mode:

```
install remove {device:package | inactive} [prompt-level {default | none}] [{asynchronous |
synchronous}] [test]
```

## Syntax Description

<b>id</b> <i>add-id</i>	Specifies the ID number of an <b>install add</b> operation. The command deletes all packages that were added in the specified <b>install add</b> operation. The ID number of an <b>install add</b> operation is indicated in the syslog displayed during the operation and in the output of the <b>show install log</b> command.  Up to 16 <b>install add</b> operations can be specified
<i>device : package</i>	Device and package, expressed in concatenated form (for example, <code>disk0:asr9k-mgbl-3.8.0</code> ). For the <i>device</i> argument, the value is a specified storage device, typically <b>disk0</b> .  <b>Note</b> Multiple packages can be removed at the same time. Up to 32 <i>device : package</i> pairs can be specified.
<b>inactive</b>	Removes all inactive, noncommitted packages from the boot device (usually <code>disk0</code> ).
<b>sdr</b> <i>sdr-name</i>	(Optional. Administration EXEC mode only) Removes a package for a specific secure domain router (SDR). The <i>sdr-name</i> argument is the name assigned to the SDR.
<b>prompt-level</b> { <b>default</b>   <b>none</b> }	(Optional) Specifies when you are prompted for input during the procedure.  <ul style="list-style-type: none"> <li><b>default</b> —You are prompted only when input is required by the operation.</li> <li><b>none</b> —You are never prompted.</li> </ul>
<b>asynchronous</b>	(Optional) Performs the command in asynchronous mode. In asynchronous mode, this command runs in the background, and the EXEC prompt is returned as soon as possible. This is the default mode.
<b>synchronous</b>	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
<b>test</b>	(Optional) Verifies the effects of proposed operations without making changes to the Cisco IOS XR software.

## Command Default

The operation is performed in asynchronous mode: The **install remove** command runs in the background, and the EXEC prompt is returned as soon as possible.

## Command Modes

EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.
	Release 4.0.0	This command was removed from EXEC mode. Support was removed for the <b>sdr</b> keyword.

## Usage Guidelines



- Note** Only inactive packages can be removed. (Packages cannot be in the active or committed software set.)
- To remove all inactive packages from the boot device (usually **disk0:**), use the **install remove** command with the **inactive** keyword.
  - To remove a specific inactive package from a storage device, use the **install remove** command with the *device: package* arguments.



- Note** When removing all inactive packages from the boot device, use the **show version**, **show install active**, or **show install committed** command to determine the device used as the boot device.
- To remove all packages that were added in one or more specific **install add** operations, use the **id add-id** keyword and argument. The operation ID of an **install add** operation is indicated in the syslog displayed during the operation and in the output of the **show install log** command. If you specify packages according to operation ID, all the packages that were added by the specified operation must still be on the router.

## Command Modes

- To remove packages from the Owner SDR, use the **install remove** command in administration EXEC or EXEC mode.
- To remove all inactive packages from the boot device in the system or SDR, use the **install remove** command with the **inactive** keyword.

### User Prompts

Use the **install remove** command with the **prompt-level none** keywords to automatically ignore any confirmation prompts and proceed with the package removal.

### Test Operation

Use the **test** keyword to verify the effects of the package removal operation and determine whether the operation can be completed. After previewing the effects of the proposed operations, use the **show install log** command for more details about the effects of the proposed operations.



- Note** When removing a package, note that the **install remove** command ignores secure domain router (SDR) boundaries and performs the operation in global scope.

The following example shows how to remove a specific inactive package. In this example, the operation is run in test mode. The operation is then confirmed and the package is removed.

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# install remove
disk0:asr9k-diags-3.7.90 test

Install operation 30 'install remove disk0:asr9k-diags-3.7.90 test' started by user 'user_b'
  at 23:40:22 UTC Sat Apr 15 2006.
Warning: No changes will occur due to 'test' option being specified. The
Warning: following is the predicted output for this install command.
Info:     This operation will remove the following package:
Info:     disk0:asr9k-diags-3.7.90
Info:     After this install remove the following install rollback points will
Info:     no longer be reachable, as the required packages will not be present:
Info:     4, 9, 10, 14, 15, 17, 18
Proceed with removing these packages? [confirm] y

The install operation will continue asynchronously.
Install operation 30 completed successfully at 23.
```

The following example shows how to remove all inactive packages from the boot device:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# install remove inactive synchronous

RP/0/RSP0/CPU0:Aug 15 09:25:41.020 :
  instdir[198]: %INSTALL-INSTMGR-6-INSTALL_OPERATION_STARTED :
Install operation 8 '(admin) install remove inactive' started by user 'user_b'
Install operation 8 '(admin) install remove inactive' started by user 'user_b' at
  09:25:41 UTC Tue Aug 15 2006.
Info:     This operation will remove the following package:
Info:     disk0:asr9k-compmgmt__installmgr-0.0.5
Proceed with removing these packages? [confirm]
The install operation will continue asynchronously.
```



# install replace

To replace the currently installed software with that in a given ISO and apply the change, use the **install replace** command in EXEC mode.

**install replace** *location* [**commit**] [**reload**] [**noprompt**] [**synchronous**]

<i>location</i>	Specifies the location of the package for installation.
<b>commit</b>	(Optional) Commits the installed software after replacing.
<b>reload</b>	(Optional) Replaces the software through a reload.
<b>noprompt</b>	(Optional) Applies the changes without prompting for permission.
<b>synchronous</b>	(Optional) Applies the changes synchronously.

**Command Default** None

**Command Modes** EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.5.2	This command was introduced.

**Usage Guidelines** Include the keyword **noprompt** in the command to enable the system to bypass your permission to reload the router.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	pkg-mgmt	read, write

This example shows how to replace the current software with the asr9k-x64.iso image.

```
Router# install replace /harddisk:/asr9k-x64.iso
```

This example shows how to replace the current software and commit the changes:

```
Router# install replace /harddisk:/asr9k.iso commit
```

This example shows how to replace the current software and reload:

```
Router# install replace /harddisk:/asr9k.iso reload
```

# reload

## reload

**Syntax Description** This command has no keywords or arguments.

**Command Default** No default behavior or values

**Command Modes** EXEC

Command History	Releases	Modifications
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **reload** command to cause the RSP to reload the Cisco IOS XR software according to the configuration register setting (for example, 0x0 to enter ROMMON mode and 0x2 to reload the RSP to EXEC mode). If a standby RSP is in the ready redundancy state, the **reload** command also causes the router to fail over to the standby RSP. Use the **show redundancy** command in EXEC mode to display the status of the standby RSP.

When the **reload** command is used and a switchover occurs, the running (active) software configuration is automatically maintained during switchover.



**Caution** If a standby RSP is not installed or is not in the ready state, then the router experiences a loss of service while the active RSP is reloading Cisco IOS XR software. To view the status of the standby RSP, issue the **show redundancy** command in EXEC mode.

If you use the **reload** command and there is no available standby node, you are prompted to continue with the reload:

```
RP/0/RSP0/CPU0:router# reload
Standby card not present or not Ready for failover. Proceed?[confirm]y
```

Task ID	Task ID	Operations
	root-lr	execute

The following example shows how to reload the active RSP. If a standby RSP is in the ready state, then the router fails over to the standby RSP. If the standby RSP is not installed or is not in the ready state, then the router enters ROMMON mode and routing operations stop.

```
RP/0/RSP0/CPU0:router# reload
```

```
Updating Commit Database. Please wait...[OK]
Proceed with reload? [confirm] y

PCI0 device[7]: Vendor ID 0x10ee
PCI0 device[7]: Device ID 0x300e
PCI1 device[7]: Device ID 0x1100
PCI1 device[7]: Vendor ID 0x1013
PCI1 device[8]: Device ID 0x649
PCI1 device[8]: Vendor ID 0x1095
PCI1 device[9]: Device ID 0x5618
PCI1 device[9]: Vendor ID 0x14e4
PCI1 device[10]: Device ID 0x5618
PCI1 device[10]: Vendor ID 0x14e4
System Bootstrap, Version 1.15(20040120:002852) ,
Copyright (c) 1994-2004 by cisco Systems, Inc.
Board type is 0x100000 (1048576)
Enabling watchdog
Broadcom 5618 #0 Found on PCI
Broadcom 5618 #1 Found on PCI
No. of BCM 56xx switches found 2 .
BCM Switch #0 initialisation complete.
BCM Switch #1 initialisation complete
G4(7450-SMP-GT64260_A) platform with 2048 Mb of main memory

rommon B1 >
```

## ztp enable

Manual Zero Touch Provisioning (ZTP) invocation using CLI commands allows ZTP to run over more interfaces.

To enable Zero Touch Provisioning (ZTP) at boot, use the **ztp enable** command in EXEC mode.

### ztp enable

<b>Command Default</b>	No default behavior or values
------------------------	-------------------------------

<b>Command Modes</b>	EXEC mode
----------------------	-----------

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

<b>Usage Guidelines</b>	By default, ZTP is enabled. When you execute the <b>ztp enable</b> command the start value in the <code>ztp.ini</code> file is set to <i>True</i> .
-------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------

The following example shows the sample of the `ztp.ini` file:

```
[Startup]
start: True
retry_forever: True

[Fetcher Priority]
Mgmt4: 0
Mgmt6: 1
DPort4: 2
DPort6: 3
```

This example shows how to enable ztp at boot:

```
Router#ztp enable
Fri Jul 12 16:09:02.154 UTC
Enable ZTP? [confirm] [y/n] :y
ZTP Enabled.
```

# ztp disable

Manual Zero Touch Provisioning (ZTP) invocation using CLI commands allows ZTP to run over more interfaces.

To disable Zero Touch Provisioning (ZTP) at boot, use the **ztp disable** command in EXEC mode.

## ztp disable

### Command Default

No default behavior or values

### Command Modes

EXEC mode

### Command History

Release	Modification
Release 7.0.1	This command was introduced.

### Usage Guidelines

Use **ztp disable** command to disable ZTP. When you execute the **ztp disable** command, the start value in the `ztp.ini` file is set to *False*.

The following example shows the sample of the `ztp.ini` file:

```
[Startup]
start: False
retry_forever: True

[Fetcher Priority]
Mgmt4: 0
Mgmt6: 1
DPort4: 2
DPort6: 3
```

This example shows how to disable ztp at boot:

```
Router#ztp disable
Fri Jul 12 16:07:18.491 UTC
Disable ZTP? [confirm] [y/n] :y
ZTP Disabled.
Run ZTP enable to run ZTP again.
```

# ztp initiate

To invoke a new ZTP DHCP session, use the **ztp initiate** command in EXEC mode.

```
ztp initiate {[ apply configuration ] | [ dataport ] | [ dhcp4 ] | [ dhcp6 ] | [ dhcp4-client-identifier ] | [ dhcp6-client-identifier ] | [ dscp value ] | [ dscp6 value ] | [ hostname ] | [ interface ] | [ management ] | [ noprompt ]} [ debug ] [ verbose ]
```

Syntax Description	Option	Description
	<b>debug</b>	Run with additional logging to the console(cisco-support)
	<b>verbose</b>	Run with logging to the console(cisco-support)
	<b>apply configuration</b>	XR configuration commands to apply(cisco-support)
	<b>dataport</b>	Send DHCP requests on all ADMIN UP physical LC interfaces.
	<b>dhcp4</b>	Send only DHCP IPv4 requests(cisco-support)
	<b>dhcp6</b>	Send only DHCP IPv6 requests(cisco-support)
	<b>dhcp4-client-identifier</b>	Override default dhcp-client-identifier(cisco-support)
	<b>dhcp6-client-identifier</b>	Override default dhcp6-client-id(cisco-support)
	<b>dscp value</b>	DSCP/Prec Value(cisco-support)
	<b>dscp6 value</b>	DSCP6/Prec Value(cisco-support)
	<b>hostname</b>	XR hostname to set(cisco-support)
	<b>interface</b>	Send DHCP requests only on the given interface(cisco-support)
	<b>management</b>	Send DHCP requests on the platforms management interface(cisco-support)
	<b>noprompt</b>	Run without prompting(cisco-support)

**Command Default** No default behavior or values

**Command Modes** EXEC mode

Command History	Release	Modification
	Release 6.3.1	This command was introduced.

**Usage Guidelines** Use the **ztp initiate** command to forcefully initiate the ZTP, ignoring username configuration. **ztp initiate** allows the execution of a script even when the system has already been configured. This command is useful for testing ZTP without forcing a reload. This command is particularly useful to test scripts or if some manual operations are required before provisioning the box. **ztp initiate** can specify any data interfaces and management interface on the system to be used for the whole ZTP process. If you don't specify an interface, ztp will be invoked on management interface only.

No progress logs are shown by default, although there will be XR syslogs for important events. If you wish to see more logs, add **verbose** after the **ztp initiate** command. For more details, add **debug** before **verbose**.

Logs can be found in **disk0:/ztp/ztp.log**.

### Example

This example shows how to bring up the interface manually:

```
RP/0/RP0/CPU0:router#ztp initiate debug verbose interface TenGigE 0/0/0/0
Invoke ZTP? (this may change your configuration) [confirm] [y/n] :
```

This example shows how to get rid of the prompting:

```
RP/0/RP0/CPU0:router#ztp initiate noprompt
Mon Jun 27 20:40:10.353 UTC
ZTP will now run in the background.
Please use "show logging" or look at /disk0:/ztp/ztp.log to check progress.
```

This example shows how to invoke the breakout discovery and ZTP, ZTP is invoked on the interfaces which are up:

```
RP/0/RP0/CPU0:router#ztp breakout debug verbose
RP/0/RP0/CPU0:router#ztp initiate dataport debug verbose
Invoke ZTP? (this may change your configuration) [confirm] [y/n] :
```

ztp initiate





## Show Commands

---

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# show version

To display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images, use the **show version** command in appropriate configuration mode.

**show version** [**brief**]

<b>Syntax Description</b>	<b>brief</b>	It displays detail summary of system information and hardware details.
<b>Command Default</b>	No default behavior or values	
<b>Command Modes</b>	EXEC XR EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.

## Usage Guidelines



**Note** The **brief** keyword can be used during command execution on Cisco IOS XR 32 bit routers.

The command is applicable for IOS XR 64 Bit software on ASR 9000 Enhanced XR (eXR).

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **show version** command displays a variety of system information, including hardware and software version, router uptime, boot settings (configuration register), and active software.

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	basic-services	read

This example shows partial output from the **show version** command:

```
RP/0/RSP0/CPU0:router# show version
Tue Jul 28 05:14:13.670 DST

Cisco IOS XR Software, Version 3.9.0.14I
Copyright (c) 2009 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.1(20090521:183759) [ASR9K ROMMON],
PE44_ASR-9010 uptime is 1 week, 6 days, 13 hours, 52 minutes
```

```

System image file is "bootflash:disk0/asr9k-os-mpi-3.9.0.14I/mbiasr9k-rp.vm"

cisco ASR9K Series (MPC8641D) processor with 4194304K bytes of memory.
MPC8641D processor at 1333MHz, Revision 2.2

2 Management Ethernet
12 TenGigE
40 GigabitEthernet
219k bytes of non-volatile configuration memory.
975M bytes of compact flash card.
33994M bytes of hard disk.
1605616k bytes of disk0: (Sector size 512 bytes).
1605616k bytes of disk1: (Sector size 512 bytes).

Configuration register on node 0/RSP0/CPU0 is 0x102
Boot device on node 0/RSP0/CPU0 is disk0:
Package active on node 0/RSP0/CPU0:
asr9k-scfclient, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-scfclient-3.9.0.14I
    Built on Mon Jul 13 08:28:45 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-adv-video, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-adv-video-3.9.0.14I
    Built on Mon Jul 13 10:13:23 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-fpd, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-fpd-3.9.0.14I
    Built on Mon Jul 13 08:44:47 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-diags, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-diags-3.9.0.14I
    Built on Mon Jul 13 08:28:48 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-k9sec, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-k9sec-3.9.0.14I
    Built on Mon Jul 13 08:43:40 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-mgbl, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-mgbl-3.9.0.14I
    Built on Mon Jul 13 10:11:41 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

asr9k-mcast, V 3.9.0.14I, Cisco Systems, at disk0:asr9k-mcast-3.9.0.14I
    Built on Mon Jul 13 08:40:57 DST 2009
    By sjc-lds-208 in /auto/ioxbuild7/production/3.9.0.14I/asr9k/workspace for c4.2.1-p0

--More--

```

**Table 1: show version Field Descriptions**

Field	Description
Cisco IOS XR Software, Version #	Cisco IOS XR software version number currently running on the router.
ROM	System bootstrap version number currently running on the router.
router uptime	Number of uninterrupted days, hours, minutes, and seconds the system has been up and running.
System image file is	Location and name of the system image file currently running on the router.

Field	Description
Packet over SONET/SDH network interface(s)	Number of Packet-over-SONET/SDH interfaces available on the current router.
SONET/SDH Port controller(s)	Number of SONET or SDH ¹ interfaces available on the current router.
Ethernet/IEEE 802.3 interface(s)	Number of Ethernet or IEEE 802.3 interfaces available on the current router.
GigabitEthernet/IEEE interface(s)	Number of Gigabit Ethernet or IEEE 802.3 interfaces available on the current router.
bytes of non-volatile configuration memory	Available volatile configuration memory, in bytes.
bytes of ATA PCMCIA card at disk 0	ATA PCMCIA ² available on the card in disk 0, in bytes.
Package active on node 0/1/SP	Details about the current software package that is running on the SP node in slot 1.

¹ SDH = Synchronous Digital Hierarchy

² ATA PCMCIA = AT Attachment Personal Computer Memory Card Industry Association

This example shows partial output from the **show version** command for for IOS XR 64 Bit version:

```
RP/0/RSP0/CPU0:ASR-9906-C-LS#show version
```

```
Wed Mar 29 11:45:24.914 UTC
Cisco IOS XR Software, Version 7.5.2
Copyright (c) 2013-2022 by Cisco Systems, Inc.
```

```
Build Information:
```

```
Built By      : ingunawa
Built On     : Tue Apr 26 18:26:36 PDT 2022
Built Host   : iox-ucs-055
Workspace    : /auto/srcarchive14/prod/7.5.2/asr9k-x64/ws
Version      : 7.5.2
Location     : /opt/cisco/XR/packages/
Label        : 7.5.2
```

```
cisco ASR9K () processor
System uptime is 5 weeks 5 days 16 hours 13 minutes
```

# show platform

To display information and status for each node in the system, use the **show platform** command in EXEC or administration EXEC mode.

**show platform** [*node-id*]

System admin EXEC Mode:

**show platform** [*location*]

<b>Syntax Description</b>	<i>node-id</i>	(Optional) Node for which to display information. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
<b>Command Default</b>	Status and information are displayed for all nodes in the system.	
<b>Command Modes</b>	Administration EXEC EXEC System Admin EXEC mode on 64-bit IOS-XR	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
	Release 3.9.0	Support was added for the 2-Port Channelized OC-12/DS0 SPA.

**Usage Guidelines** The **show platform** command provides a summary of the nodes in the system, including node type and status. Enter the **show platform** command in administration EXEC mode to display output for the entire system. Enter the **show platform** command in EXEC mode to display output for only those nodes that belong to the SDR on which the command is executed.

For ASR-9001-S, EP1 will be displayed as, **Not allowed online**, until the required license is bought.

This example shows the sample display output for ASR9912 and ASR9922:

```
RP/0/RSP0/CPU0:router:router (admin) # show platform
Wed Jul  3 11:34:18.487 UTC
Node           Type                               State           Config State
-----
0/RP0/CPU0     ASR-9922-RP-SE (Active)           IOS XR RUN      PWR, NSHUT, MON
0/RP1/CPU0     ASR-9922-RP-TR (Standby)          IOS XR RUN      PWR, NSHUT, MON
0/FT0/SP       FAN TRAY                           READY
0/FT1/SP       FAN TRAY                           READY
0/0/CPU0       A9K-36x10GE-TR                     IOS XR RUN      PWR, NSHUT, MON
0/1/CPU0       A9K-36x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/2/CPU0       A9K-36x10GE-TR                     IOS XR RUN      PWR, NSHUT, MON
0/3/CPU0       A9K-36x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/4/CPU0       A9K-36x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/5/CPU0       A9K-36x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/6/CPU0       A9K-36x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/7/CPU0       A9K-36x10GE-TR                     IOS XR RUN      PWR, NSHUT, MON
0/8/CPU0       A9K-24x10GE-SE                     IOS XR RUN      PWR, NSHUT, MON
0/9/CPU0       A9K-24x10GE-TR                     IOS XR RUN      PWR, NSHUT, MON
```

```

0/PM0/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/PM1/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/PM2/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/PM3/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/PM4/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/PM5/SP      PWR-3KW-AC-V2      READY      PWR, NSHUT, MON
0/FC0/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC1/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC2/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC3/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC4/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC5/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON
0/FC6/SP      ASR-9912-SFC110    OK         PWR, NSHUT, MON

```

The following example shows sample output from the **show platform** command:

```

RP/0/RP0/CPU0:router# show platform

Thu Nov 19 21:44:49.274 UTC
Node           Type                               State           Config State
-----
0/RSP0/CPU0    A9K-RSP-4G (Active)               IOS XR RUN      PWR, NSHUT, MON
0/RSP1/CPU0    A9K-RSP-4G (Standby)              IN-RESET        PWR, NSHUT, MON
0/1/CPU0       A9K-SIP-700                        IOS XR RUN      PWR, NSHUT, NMON
0/1/0          SPA-10X1GE-V2                       OK               PWR, NSHUT, MON
0/1/1          SPA-1X10GE-L-V2                     OK               PWR, NSHUT, MON
0/3/CPU0       A9K-40GE-B                          IOS XR RUN      PWR, NSHUT, MON
0/4/CPU0       A9K-SIP-700                          IOS XR RUN      PWR, NSHUT, MON
0/4/1          SPA-2XCHOCL2/DS0                      OK               PWR, NSHUT, MON

```

The following is sample output for the **show platform** command with the *node-id* argument:

```

RP/0/RSP0/CPU0:router# show platform 0/1/cpu0

Mon Jul 27 22:30:04.752 DST
Node           Type                               State           Config State
-----
0/1/CPU0       A9K-40GE-B                          IOS XR RUN      PWR, NSHUT, MON

```

This table describes the significant fields shown in the display.

**Table 2: show platform Field Descriptions**

Field	Description
Node	Identifier of the node in the <i>rack / slot / module</i> notation.
Type	Type of node.
State	Current state of the specified node.
Config State	Current status of the specified node.

The following is sample output for the **show platform** command with the location argument:



---

**Note** The location argument is only applicable for IOS XR 64 Bit version on ASR 9000 Enhanced XR (eXR).

---

```
sysadmin-vm:0_RSP0# show platform
```

```
Thu Jun 15 06:14:46.667 UTC+00:00
```

```
Location Card Type HW State SW State Config State
```

```
-----  
0/0 A99-32X100GE-TR OPERATIONAL OPERATIONAL NSHUT  
0/RSP0 A9K-RSP5-64G OPERATIONAL OPERATIONAL NSHUT
```

# show install

To display active packages, use the **show install** command in EXEC or administration EXEC mode.

## Administration EXEC Mode

**show install** [{detail | summary | verbose}] [{sdr *sdr-name* | location *node-id*}

## EXEC Mode

**show install** [{detail | summary | verbose}] [location *node-id*]

Syntax Description	Parameter	Description
	<b>detail</b>	(Optional) Displays a detailed summary of the active packages for a system, secure domain router (SDR), or node.
	<b>summary</b>	(Optional) Displays a summary of the active packages in a system or SDR. Use this command to display the default software profile for SDRs
	<b>verbose</b>	(Optional) Displays a detailed summary of the active packages for a system, SDR, or node, including component and file information for each package.
	<b>sdr</b> <i>sdr-name</i>	(Optional. Administration EXEC mode only.) Displays the active packages for a specific SDR. The <i>sdr-name</i> argument is the name assigned to the SDR. The only SDR available is Owner, which refers to the entire router.
	<b>location</b> <i>node-id</i>	(Optional) Displays the active packages for a designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.

**Command Default** No default behavior or values

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.



**Note** This command displays output that is similar to the **show install active** command.

Use the **show install** command to display the active software set for all nodes, or for specific nodes. Enter the command in administration EXEC mode to display information for all nodes in all SDRs.



### Displaying Information for a Specific SDR

- To display information for a specific SDR from administration EXEC mode, use the **sdr** *sdr-name* keyword and argument.
- To display information for an SDR when logged into that SDR, enter the command in EXEC mode.

### Displaying Information for a Specific Node

Use the **location** *node-id* keyword and argument to display information for a specific node. If you do not specify a location with the **location** *node-id* keyword and argument, this command displays information from all nodes.

### Summary, Detailed, and Verbose Information

Use the **summary** keyword to display a summary of the active packages in a system or SDR. Use the **detail** keyword to display the active packages for each node in an SDR, or in all SDRs. Use the **verbose** keyword to display additional information, including component and file information for each package.




---

**Note** This command displays output that is similar to the **show install active** command.

---

### Displaying the Default SDR Software Profile

When an SDR is created, the nodes assigned to that SDR are configured with the default software profile. To view a summary of the default SDR software configuration, enter the **show install summary** command in administration EXEC mode. Any new nodes that are configured to become a part of an SDR boot with the default software profile listed in the output of this command.

---

#### Task ID

---

#### Task ID Operations

---

pkg-mgmt read

---

Use the **location** *node-id* keyword and argument to display the active packages for a designated node:

```
RP/0/RSP0/CPU0:router# show install location 0/rp0/cpu0
Thu May 20 10:08:54.666 DST
Node 0/RP0/CPU0 [HRP] [SDR: Owner]
  Boot Device: disk0:
  Boot Image: /disk0/asr9k-os-mbi-3.9.0/mbi-rp.vm
  Active Packages:
    disk0:asr9k-k9sec-p-3.9.0
    disk0:asr9k-mpls-p-3.9.0
    disk0:asr9k-mgbl-p-3.9.0
    disk0:asr9k-mcast-p-3.9.0
    disk0:asr9k-doc-p-3.9.0
    disk0:comp-asr9k-mini-3.9.0
    disk0:asr9k-fpd-3.9.0
    disk0:asr9k-diags-p-3.9.0
```

Use the **summary** keyword to display a summary of the active packages in the system. This command also shows the default software profile used for new SDRs.

```
RP/0/RSP0/CPU0:router# show install summary
```

```
Thu May 20 10:14:38.919 DST
Active Packages:
  disk0:asr9k-upgrade-p-3.9.0
  disk0:asr9k-k9sec-p-3.9.0
  disk0:asr9k-mpis-p-3.9.0
  disk0:asr9k-mgbl-p-3.9.0
  disk0:asr9k-mcast-p-3.9.0
  disk0:asr9k-doc-p-3.9.0
  disk0:comp-asr9k-mini-3.9.0
  disk0:asr9k-fpd-3.9.0
  disk0:asr9k-diags-p-3.9.0
```

**Table 3: show install Field Descriptions**

Field	Description
Boot Device	Device where the node stores the active software.
Boot Image	Location on the DSC of the active minimum boot image (MBI) used to boot the node.
Active Packages	Active packages loaded on the node.

# show install active

To display active packages, use the **show install active** command in EXEC or administration EXEC mode.

## Administration EXEC Mode

```
show install active [{detail | summary | verbose}] [{location node-id}]
```

## EXEC Mode

```
show install active [{detail | summary | verbose}] [location node-id]
```

Syntax Description	detail	(Optional) Displays a detailed summary of the active packages for a system, secure domain router (SDR), or node.
	summary	(Optional) Displays a summary of the active packages in a system or SDR.
	verbose	(Optional) Displays a detailed summary of the active packages for a system, SDR, or node, including component information for each package.
	sdr sdr-name	(Optional. Administration EXEC mode only.) Displays the active packages for a specific SDR. The <i>sdr-name</i> argument is the name assigned to the SDR.
	location node-id	(Optional) Displays the active packages for a designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.

**Command Default** None

**Command Modes** Administration EXEC  
EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

## Usage Guidelines



**Note** This command displays output that is similar to the **show install** command.

Use the **show install active** command to display the active software set for all nodes, or for specific nodes.

### Displaying Information for a Specific Node

Use the **location node-id** keyword and argument to display information for a specific node. If you do not specify a location with the **location node-id** keyword and argument, this command displays information from all nodes.

### Summary, Detailed, and Verbose Information

Use the **summary** keyword to display a summary of the active packages in a system or SDR. Use the **detail** keyword to display the active packages for each node in an SDR, or in all SDRs. Use the **verbose** keyword to display additional information, including component and file information for each package.

### For Superseded SMUs

The **show install active** command does not display superseded SMUs. To get details of the superseded SMUs, use the **show install superseded** command.

The following example illustrates sample output from the **show install active** command with the **location node-id** keyword and argument specified:

```
RP/0/RSP0/CPU0:router# show install active location 0/1/cpu0

Node 0/1/CPU0 [LC] [SDR: Owner]
  Boot Device: bootflash:
  Boot Image: /disk0/asr9k-os-mpi-3.9.0.30I/mbiasr9k-lc.vm
  Active Packages:
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.30I
    disk0:asr9k-diags-3.9.0.30I
    disk0:asr9k-k9sec-3.9.0.30I
    disk0:asr9k-mcast-3.9.0.30I
    disk0:asr9k-mpis-3.9.0.30I
    disk0:comp-
asr9k-mini-3.9.0.30I
```

The following example illustrates sample output from the **show install active** command with the **summary** keyword specified:

```
RP/0/RSP0/CPU0:router(admin)# show install active summary

Wed May 26 12:01:27.993 PST
Default Profile:
  Admin Resources
  SDRs:
    Owner
  Active Packages:

    disk0:asr9k-doc-3.9.0.03I
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.03I
    disk0:asr9k-diags-3.9.0.03I
    disk0:asr9k-k9sec-3.9.0.03I
    disk0:asr9k-mgbl-3.9.0.03I
    disk0:asr9k-mcast-3.9.0.03I
    disk0:asr9k-mpis-3.9.0.03I
    disk0:comp-
asr9k-mini-3.9.0.03I
```

**Table 4: show install active Field Descriptions**

<b>Field</b>	<b>Description</b>
Boot Device	Device where the node stores the active software.
Boot Image	Location on the DSC of the active minimum boot image (MBI) used to boot the node.
Active Packages	Active packages loaded on the node.

# show install active

To display active packages, use the **show install active** command in EXEC or administration EXEC mode.

## Administration EXEC Mode

```
show install active [{detail | summary | verbose}] [{location node-id}]
```

## EXEC Mode

```
show install active [{detail | summary | verbose}] [location node-id]
```

Syntax Description	Parameter	Description
	<b>detail</b>	(Optional) Displays a detailed summary of the active packages for a system, secure domain router (SDR), or node.
	<b>summary</b>	(Optional) Displays a summary of the active packages in a system or SDR.
	<b>verbose</b>	(Optional) Displays a detailed summary of the active packages for a system, SDR, or node, including component information for each package.
	<b>sdr sdr-name</b>	(Optional. Administration EXEC mode only.) Displays the active packages for a specific SDR. The <i>sdr-name</i> argument is the name assigned to the SDR.
	<b>location node-id</b>	(Optional) Displays the active packages for a designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.

**Command Default** None

**Command Modes** Administration EXEC  
EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

## Usage Guidelines



**Note** This command displays output that is similar to the **show install** command.

Use the **show install active** command to display the active software set for all nodes, or for specific nodes.

### Displaying Information for a Specific Node

Use the **location node-id** keyword and argument to display information for a specific node. If you do not specify a location with the **location node-id** keyword and argument, this command displays information from all nodes.

### Summary, Detailed, and Verbose Information

Use the **summary** keyword to display a summary of the active packages in a system or SDR. Use the **detail** keyword to display the active packages for each node in an SDR, or in all SDRs. Use the **verbose** keyword to display additional information, including component and file information for each package.

### For Superseded SMUs

The **show install active** command does not display superseded SMUs. To get details of the superseded SMUs, use the **show install superseded** command.

The following example illustrates sample output from the **show install active** command with the **location** *node-id* keyword and argument specified:

```
RP/0/RSP0/CPU0:router# show install active location 0/1/cpu0

Node 0/1/CPU0 [LC] [SDR: Owner]
  Boot Device: bootflash:
  Boot Image: /disk0/asr9k-os-mpi-3.9.0.30I/mbiasr9k-lc.vm
  Active Packages:
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.30I
    disk0:asr9k-diags-3.9.0.30I
    disk0:asr9k-k9sec-3.9.0.30I
    disk0:asr9k-mcast-3.9.0.30I
    disk0:asr9k-mpis-3.9.0.30I
    disk0:comp-
asr9k-mini-3.9.0.30I
```

The following example illustrates sample output from the **show install active** command with the **summary** keyword specified:

```
RP/0/RSP0/CPU0:router(admin)# show install active summary

Wed May 26 12:01:27.993 PST
Default Profile:
  Admin Resources
  SDRs:
    Owner
  Active Packages:

    disk0:asr9k-doc-3.9.0.03I
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.03I
    disk0:asr9k-diags-3.9.0.03I
    disk0:asr9k-k9sec-3.9.0.03I
    disk0:asr9k-mgbl-3.9.0.03I
    disk0:asr9k-mcast-3.9.0.03I
    disk0:asr9k-mpis-3.9.0.03I
    disk0:comp-
asr9k-mini-3.9.0.03I
```

*Table 5: show install active Field Descriptions*

<b>Field</b>	<b>Description</b>
Boot Device	Device where the node stores the active software.
Boot Image	Location on the DSC of the active minimum boot image (MBI) used to boot the node.
Active Packages	Active packages loaded on the node.



# show install committed

To display committed software packages, use the **show install committed** command in EXEC or administration EXEC mode.

## Administration EXEC Mode

**show install committed** [{**detail** | **summary** | **verbose**}] [{**sdr** *sdr-name* | **location** *node-id*}]

## EXEC Mode

**show install committed** [{**detail** | **summary** | **verbose**}] [**location** *node-id*]

Syntax Description		
<b>detail</b>	(Optional) Displays a detailed summary of the committed packages for a system, secure domain router (SDR), or node.	
<b>summary</b>	(Optional) Displays a summary of the committed packages in a system or SDR.	
<b>verbose</b>	(Optional) Displays a detailed summary of the committed packages for a system, SDR, or node, including component and file information for each package.	
<b>sdr</b> <i>sdr-name</i>	(Optional. Administration EXEC mode only.) Displays the committed packages for a specific SDR. The <i>sdr-name</i> argument is the name assigned to the SDR. The only SDR available is Owner, which refers to the entire router.	
<b>location</b> <i>node-id</i>	(Optional) Displays the committed packages for a designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.	

**Command Default** Displays detailed information for all nodes in the SDR or system.

**Command Modes** EXEC

Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When a software package is activated, it remains active only until the next router reload. To save the active software to be persistent across router reloads, use the **install commit** command.

Use the **show install committed** command to display the packages included in the committed software set. This is useful for verifying that the desired set of packages is committed.

Use the **show install** command to display the committed software packages for all nodes, or for specific nodes.

### Displaying Information for a Specific SDR

- To display information for a specific SDR from EXEC or administration EXEC mode, use the **sdr** *sdr-name* keyword and argument.
- To display information for an SDR when logged into that SDR, enter the **show install committed** command in EXEC or administration EXEC mode.

### Displaying Information for a Specific Node

Use the **location** *node-id* keyword and argument to display information for a specific node. If you do not specify a location with the **location** *node-id* keyword and argument, this command displays information from all nodes.

### Summary, Detailed, and Verbose Information

Use the **summary** keyword to display summary of packages in a system or SDR. Use the **detail** keyword to display the packages for each node in an SDR, or in all SDRs. Use the **verbose** keyword to display additional information, including component and file information for each package.

Task ID	Task ID	Operations
	pkg-mgmt	read

The following shows sample output from the **show install committed** command with the **summary** keyword:

```
RP/0/RSP0/CPU0:router# admin
RP/0/RSP0/CPU0:router(admin)# show install committed summary

Thu May 27 00:06:11.155 DST
Committed Packages:
  disk0:asr9k-doc-3.9.0.04I
  disk0:asr9k-fpd-3.9.0.04I
  disk0:asr9k-adv-video-3.9.0.04I
  disk0:asr9k-diags-3.9.0.04I
  disk0:asr9k-k9sec-3.9.0.04I
  disk0:asr9k-mgbl-3.9.0.04I
  disk0:asr9k-mcast-3.9.0.04I
  disk0:asr9k-mp1s-3.9.0.04I
  disk0:comp-
asr9k-mini-3.9.0.04I
```

The following shows sample output from the command. Enter the **show install committed** command without keywords or arguments to display detailed information for all nodes in the SDR or system:

```
RP/0/RSP0/CPU0:router# show install committed

Tue Jul 28 01:50:32.337 DST
Secure Domain Router: Owner

Node 0/RSP0/CPU0 [RP] [SDR: Owner]
  Boot Device: disk0:
  Boot Image: /disk0/asr9k-os-mbi-3.9.0.14I/mbiasr9k-rp.vm
  Committed Packages:
```

```

disk0:comp-asr9k-mini-3.9.0.14I
disk0:asr9k-adv-video-3.9.0.14I
disk0:asr9k-fpd-3.9.0.14I
disk0:asr9k-k9sec-3.9.0.14I
disk0:asr9k-mgbl-3.9.0.14I
disk0:asr9k-mcast-3.9.0.14I
disk0:asr9k-mpls-3.9.0.14I

Node 0/1/CPU0 [LC] [SDR: Owner]
  Boot Device: mem:
  Boot Image: /disk0/asr9k-os-mbi-3.9.0.14I/lc/mbiasr9k-lc.vm
  Committed Packages:
    disk0:comp-asr9k-mini-3.9.0.14I
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.14I
    disk0:asr9k-mcast-3.9.0.14I
    disk0:asr9k-mpls-3.9.0.14I

Node 0/4/CPU0 [LC] [SDR: Owner]
  Boot Device: mem:
  Boot Image: /disk0/asr9k-os-mbi-3.9.0.14I/lc/mbiasr9k-lc.vm
  Committed Packages:
    disk0:comp-asr9k-mini-3.9.0.14I
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.14I
    disk0:asr9k-mcast-3.9.0.14I
    disk0:asr9k-mpls-3.9.0.14I

Node 0/6/CPU0 [LC] [SDR: Owner]
  Boot Device: mem:
  Boot Image: /disk0/asr9k-os-mbi-3.9.0.14I/lc/mbiasr9k-lc.vm
  Committed Packages:
    disk0:comp-asr9k-mini-3.9.0.14I
    disk0:asr9k-adv-video-3.9.0.14I
    disk0:asr9k-fpd-3.9.0.14I
    disk0:asr9k-mcast-3.9.0.14I
    disk0:asr9k-mpls-3.9.0.14I

```

**Table 6: show install committed Field Descriptions**

Field	Description
Boot Image	Location on the DSC of the active minimum boot image (MBI) used to boot the node.
Committed Packages	Active packages committed on the node.

# show install inactive

To display the inactive packages on the designated shelf controller (DSC) for one or more secure domain routers (SDRs), use the **show install inactive** command in EXEC or administration EXEC mode.

## Administration EXEC Mode

**show install inactive** [{detail | summary | verbose}] [{sdr *sdr-name* | location *node-id*}]

## EXEC Mode

**show install inactive** [{detail | summary | verbose}] [location *node-id*]

Syntax Description		
	<b>detail</b>	(Optional) Displays summary and component information for inactive packages.
	<b>summary</b>	(Optional) Displays a summary of inactive packages.
	<b>verbose</b>	(Optional) Displays summary, component, and file information for inactive packages.
	<b>sdr</b> <i>sdr-name</i>	(Optional. Administration EXEC mode only.) Displays the inactive packages for a the boot device in a specific secure domain router (SDR). The <i>sdr-name</i> argument is the name assigned to the SDR. The only SDR available is Owner, which refers to the entire router.
	<b>location</b> <i>node-id</i>	(Optional) Displays the inactive software set from a designated node. The <i>node-id</i> argument is expressed in <i>rack/slot/module</i> notation.

**Command Default** None

**Command Modes** Administration EXEC  
EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** Use the **show install inactive** command to display the inactive packages for the DSC.



**Note** Use the **show version**, **show install active**, or **show install committed** command to determine the device used as the boot device.

Enter the command in administration EXEC mode to display information for the DSDRSC in all SDRs.

### Displaying Information for a Specific SDR

- To display information for a specific SDR from administration EXEC mode, use the **sdr** *sdr-name* keyword and argument.
- To display information for an SDR when logged into that SDR, enter the command in EXEC mode.

### Displaying Information for a Specific Node

Use the **location** *node-id* keyword and argument to display information for a specific node. If you do not specify a location with the **location** *node-id* keyword and argument, this command displays information from all nodes.

### Summary, Detailed, and Verbose Information

Use the **summary** keyword to display summary of inactive packages in a system or SDR. Use the **detail** keyword to display the packages for each node in an SDR, or in all SDRs. Use the **verbose** keyword to display additional information, including component and file information for each package.

The following example shows sample output from the **show install inactive** command:

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

```
Node 0/1/CPU0 [LC] [SDR: Owner]
Boot Device: bootflash:
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2
```

```
Node 0/4/CPU0 [LC] [SDR: Owner]
Boot Device: bootflash:
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2
```

```
Node 0/6/CPU0 [LC] [SDR: Owner]
Boot Device: bootflash:
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2
```

```
Node 0/RSP0/CPU0 [HRP] [SDR: Owner]
```

```

Boot Device: disk0:
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-doc-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mgbl-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2
  disk0:asr9k-rout-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2

```

The following example shows sample output from the **show install inactive** command with the **summary** keyword:

```

RP/0/RSP0/CPU0:router# show install inactive summary

Tue Feb  3 02:09:21.359 PST
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-doc-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mgbl-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2
  disk0:asr9k-rout-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2

```

The following example shows sample output from the **show install inactive** command with the **detail** and **location** keywords:

```

RP/0/RSP0/CPU0:router# show install inactive detail location 0/1/cpu0

Tue Feb  3 02:14:31.299 PST
Node 0/1/CPU0 [LC] [SDR: Owner]
Boot Device: bootflash:
Inactive Packages:
  disk0:comp-asr9k-mini-3.7.2
  disk0:asr9k-lc-3.7.2
  disk0:asr9k-fwgd-3.7.2
  disk0:asr9k-admin-3.7.2
  disk0:asr9k-base-3.7.2
  disk0:asr9k-os-mpi-3.7.2
  disk0:asr9k-infra-test-3.7.2
  disk0:asr9k-fpd-3.7.2
  disk0:asr9k-diags-3.7.2
  disk0:asr9k-mcast-3.7.2
  disk0:asr9k-mpls-3.7.2

```

**Table 7: show install inactive Field Descriptions**

<b>Field</b>	<b>Description</b>
disk0:asr9k-mgbl-3.8.0	Storage device and the name of the package that is inactive.
asr9k-mgbl V3.8.0 Manageability Package	Name of the package that is inactive.
Vendor	Name of the manufacturer.
Desc	Name of the package.
Build	The date and time when the inactive package was built.
Source	The source directory where the inactive package was built.

# show install package

To display information about a package, use the **show install package** command in EXEC or administration EXEC mode.

**show install package** {*device:package* | **all**} [{**brief** | **detail** | **verbose**}]

Syntax Description	
<i>device : package</i>	Device and package, expressed in concatenated form (for example, disk0:asr9k-mgb1-3.8.0). For the <i>device:</i> argument, the value is a specified storage device, typically <b>disk0</b> .
<b>all</b>	Displays all installed packages on the system or SDR.
<b>brief</b>	(Optional) Displays only the name and version of packages.
<b>detail</b>	(Optional) Displays detailed information including impact to processes and nodes, vendor information, card support, and component information.
<b>verbose</b>	(Optional) Displays the information included in the keyword, plus information about dynamic link libraries (DLLs).

**Command Default** None

**Command Modes** Administration EXEC  
EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines**

Use the **show install package** command with the **all** keyword to display a list of the packages on the router or SDR.

Use the **show install package** command with the **detail** keyword to display the version of the package, name of the manufacturer, name of the package, date and time when the package was built, and source directory where the package was built.

Use the **show install package** command with the **verbose** keyword to display the same information as the **detail** keyword, plus additional information about DLLs.



**Note** This command returns the same data in EXEC mode and administration EXEC mode. In EXEC mode, only the information for the current SDR is displayed.

For additional information about the status of installed software packages, use the **show install active** and **show install inactive** commands.



The following sample output from the **show install package** command lists all packages that are available on the router:

```
RP/0/RSP0/CPU0:router(admin)# show install package all

Tue Jul 28 05:02:53.578 DST
disk0:asr9k-fpd-3.9.0.14I

disk0:asr9k-mgbl-3.9.0.14I

disk0:asr9k-mpls-3.9.0.14I

disk0:asr9k-k9sec-3.9.0.14I

disk0:asr9k-mcast-3.9.0.14I

disk0:asr9k-adv-video-3.9.0.14I

disk0:comp-asr9k-mini-3.9.0.14I
  disk0:asr9k-scfclient-3.9.0.14I
  disk0:asr9k-diags-3.9.0.14I
  disk0:asr9k-rout-3.9.0.14I
  disk0:asr9k-lc-3.9.0.14I
  disk0:asr9k-fwdg-3.9.0.14I
  disk0:asr9k-admin-3.9.0.14I
  disk0:asr9k-base-3.9.0.14I
  disk0:asr9k-os-mpi-3.9.0.14I
```

The following sample output from the **show install package** command lists all the packages contained in a composite package:

```
RP/0/RSP0/CPU0:router(admin)# show install package disk0:comp-asr9k-mini-3.8.0

Tue Feb  3 04:01:55.015 PST
disk0:comp-asr9k-mini-3.8.0
  disk0:asr9k-rout-3.8.0
  disk0:asr9k-lc-3.8.0
  disk0:asr9k-fwdg-3.8.0
  disk0:asr9k-admin-3.8.0
  disk0:asr9k-base-3.8.0
  disk0:asr9k-os-mpi-3.8.0
```

**Table 8: show install package Field Descriptions**

Field	Description
disk0:asr9k-rout-3.8.0	Storage device and the name of the package that has been installed.
asr9k-rout V3.8.0 Routing Package	Name of the package.
Vendor	Name of the manufacturer.
Desc	Name of the package.
Build	Date and time the package was built.
Source	Source directory where the package was built.

Field	Description
Card(s)	Card types supported by the package.
Restart information	Restart impact on processes or nodes.
Components in package	Components included in the package.

# show fpd package

To display which shared port adapters (SPA) and SPA interface processors (SIPs) are supported with your current Cisco IOS XR software release, which field-programmable device (FPD) image you need for each SPA and SIP, and what the minimum hardware requirements are for the SPA and SIP modules, use the **show fpd package** command in administration EXEC mode.

**show fpd package**

**Syntax Description** This command has no keywords or arguments.

**Command Default** No default behavior or values

**Command Modes** Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

If there are multiple FPD images for your card, use the **show fpd package** command to determine which FPD image to use if you only want to upgrade a specific FPD type.

Task ID	Task ID	Operations
	sysmgr	read

The following example shows sample output from the **show fpd package** command:

```
show fpd package
Tue Jan 22 13:56:00.212 UTC

=====
                                Field Programmable Device Package
                                =====
Card Type           FPD Description           Req   SW   Min Req   Min Req
=====  =====  =====  =====  =====  =====
NO             2.09         2.09         0.0
NC55-1200W-ACFW    LIT-PrimMCU-ACFW (A)
-----
NO             1.04         1.04         0.0
NC55-900W-ACFW-I   LIT-PrimMCU-ACFW-I (A)
-----
NO             2.260        2.260        0.0
NC55-900W-DCFW-I   LIT-PrimMCU-DCFW-I (A)
-----
NO             2.259        2.259        0.0
NC55-930W-DCFW-C   LIT-PrimMCU-DCFW-C (A)
-----
YES            0.27         0.27         0.0
NC55-MPA-12T-S     MPAFPGA
-----
NO             38.518       38.518       0.1
NC55-MPA-1TH2H-S   -WDM-D-1HL_DCO_2
```

## show fpd package

	MPAFPGA	YES	0.53	0.53	0.0
	WDM-DE-1HL_DCO_2	NO	38.518	38.518	0.1
	WDM-DS-1HL_DCO_2	NO	38.268	38.268	0.1
-----					
NC55-MPA-2TH-HX-S	-WDM-D-1HL_DCO_0	NO	38.518	38.518	0.1
	-WDM-D-1HL_DCO_1	NO	38.518	38.518	0.1
	MPAFPGA	YES	0.53	0.53	0.0
	WDM-DE-1HL_DCO_0	NO	38.518	38.518	0.1
	WDM-DE-1HL_DCO_1	NO	38.518	38.518	0.1
	WDM-DS-1HL_DCO_0	NO	38.268	38.268	0.1
	WDM-DS-1HL_DCO_1	NO	38.268	38.268	0.1
-----					
NC55-MPA-2TH-S	-WDM-D-1HL_DCO_0	NO	38.518	38.518	0.1
	-WDM-D-1HL_DCO_1	NO	38.518	38.518	0.1
	MPAFPGA	YES	0.53	0.53	0.0
	WDM-DE-1HL_DCO_0	NO	38.518	38.518	0.1
	WDM-DE-1HL_DCO_1	NO	38.518	38.518	0.1
	WDM-DS-1HL_DCO_0	NO	38.268	38.268	0.1
	WDM-DS-1HL_DCO_1	NO	38.268	38.268	0.1
-----					
NC55-MPA-4H-HD-S	MPAFPGA	YES	0.53	0.53	0.0
-----					
NC55-MPA-4H-HX-S	MPAFPGA	YES	0.53	0.53	0.0
-----					
NC55-MPA-4H-S	MPAFPGA	YES	0.53	0.53	0.0
-----					
NC55A2-MOD-SE-H-S	Bootloader (A)	YES	1.11	1.11	0.0
	CPU-IOFPGA (A)	YES	1.18	1.18	0.1
	MB-IOFPGA (A)	YES	0.18	0.18	0.1
	MB-MIFPGA	YES	0.19	0.19	0.0
	SATA (A)	NO	5.00	5.00	0.0
-----					
NCS-55A2-MOD-HD-S	Bootloader (A)	YES	1.11	1.11	0.0
	CPU-IOFPGA (A)	YES	1.18	1.18	0.1
	MB-IOFPGA (A)	YES	0.18	0.18	0.1
	MB-MIFPGA	YES	0.19	0.19	0.0
	SATA (A)	NO	5.00	5.00	0.0
-----					
NCS-55A2-MOD-HX-S	Bootloader (A)	YES	1.11	1.11	0.0
	CPU-IOFPGA (A)	YES	1.18	1.18	0.1
	MB-IOFPGA (A)	YES	0.18	0.18	0.1
	MB-MIFPGA	YES	0.19	0.19	0.0
	SATA (A)	NO	5.00	5.00	0.0
-----					
NCS-55A2-MOD-S	Bootloader (A)	YES	1.11	1.11	0.0
	CPU-IOFPGA (A)	YES	1.18	1.18	0.1
	MB-IOFPGA (A)	YES	0.18	0.18	0.1
	MB-MIFPGA	YES	0.19	0.19	0.0
	SATA (A)	NO	5.00	5.00	0.0
-----					
NCS-55A2-MOD-SE-S	Bootloader (A)	YES	1.11	1.11	0.0
	CPU-IOFPGA (A)	YES	1.18	1.18	0.1
	MB-IOFPGA (A)	YES	0.18	0.18	0.1
	MB-MIFPGA	YES	0.19	0.19	0.0
	SATA (A)	NO	5.00	5.00	0.0
	STATSFPGA	YES	0.01	0.01	0.0

This table describes the significant fields shown in the display:

**Table 9: show fpd package Field Descriptions**

Field	Description
Card Type	Module part number.
FPD Description	Description of all FPD images available for the line card.
Type	Hardware type. Possible types can be: <ul style="list-style-type: none"> <li>• spa—Shared port adapter</li> <li>• lc—Line card</li> </ul>
Subtype	FPD subtype. These values are used in the <b>upgrade hw-module fpd</b> command to indicate a specific FPD image type to upgrade.
SW Version	FPD software version recommended for the associated module running the current Cisco IOS XR software.
Min Req SW Vers	Minimum required FPD image software version to operate the card. Version 0.0 indicates that a minimum required image was not programmed into the card.
Min Req HW Vers	Minimum required hardware version for the associated FPD image. A minimum hardware requirement of version 0.0 indicates that all hardware can support this FPD image version.



**Note** In the **show fpd package** command output, the “subtype” column shows the FPDs that correspond with each line card image. To upgrade a specific FPD with the **upgrade hw-module fpd** command, replace the *fpga-type* argument with the appropriate FPD from the “subtype” column, as shown in the following example:

```
RP/0/RSP0/CPU0:router(admin)# upgrade hw-module fpd fpga2 location 0/3/1 reload
```

## show hw-module fpd

To display field-programmable device (FPD) compatibility for all modules or a specific module, use the **show hw-module fpd** command in the EXEC or administration EXE mode.

**show hw-module fpd location** {*node-id* | **all**}

<b>Syntax Description</b>	<b>location</b> { <i>node-id</i>   <b>all</b> } Specifies the location of the module. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the <b>all</b> keyword to indicate all nodes.
---------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Command Default</b>	No default behavior or values
------------------------	-------------------------------

<b>Command Modes</b>	EXEC Administration EXEC
----------------------	-----------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 3.7.2	This command was introduced.
	Release 3.9.0	Support was added for the 2-port channelized OC-12/DS0 SPA.
	Release 4.3.2	Support for Back-plane identification (BPID) nodes.

<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<b>Task ID</b>	<b>Task</b>	<b>Operations</b>
	sysmgr	read
	root-lr	read

The following example shows how to display FPD compatibility for all modules in the router:

```
RP/0/RSP0/CPU0:router# ios#show hw-module fpd
Tue Jan 22 13:56:55.082 UTC
```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/RP0	NCS-55A2-MOD-S	0.3	MB-MIFPGA	CURRENT	0.19	0.19
0/RP0	NCS-55A2-MOD-S	0.3	Bootloader	CURRENT	1.10	1.10
0/RP0	NCS-55A2-MOD-S	0.3	CPU-IOFPGA	CURRENT	1.18	1.18
0/RP0	NCS-55A2-MOD-S	0.3	MB-IOFPGA	CURRENT	0.18	0.18
0/PM0	NC55-1200W-ACFW	1.0	LIT-PrimCU-ACFW	NEED UPGD	2.08	2.08
0/PM1	NC55-1200W-ACFW	1.0	LIT-PrimCU-ACFW	NEED UPGD	2.08	2.08

```
RP/0/RP0/CPU0:ios#.
```



**Note** After Release 5.3.x, Upg/Dng? will display Yes only for upgrade.

The following example shows the FPD for which upgrade will be skipped.

```
RP/0/RSP1/CPU0:router# show hw-module fpd location all

Mon Jun 29 05:38:50.332 PST

=====
Existing Field Programmable Devices
=====
Location      Card Type      HW      Current SW Upg/
Version Type  Subtype  Inst  Version  Dng?
=====
0/RSP0/CPU0   A9K-RSP-4G     4.8    1c    fpga3    0      1.13    No
              1c    fpga1    0      1.5      No
              1c    fpga2    0      1.14    No
              1c    cbc      0      1.2     No
              1c    fpga4    0      1.6     No
              1c    rommon   0      1.0     No
-----
0/RSP0/CPU0   ASR-9010-FAN   1.0    1c    cbc      1      4.0     No
-----
0/RSP0/CPU0   ASR-9010-FAN   1.0    1c    cbc      2      4.0     No
-----
0/1/CPU0      A9K-40GE-B     1.0    1c    fpga1    0      0.38    No
              1c    fpga2    0      0.8     No
              1c    cbc      0      2.2     No
              1c    cp1d1    0      0.15    No
              1c    rommon   0      1.0     No
-----
0/1/CPU0      A9K-40GE-B     1.0    1c    fpga1    1      0.38    No
-----
0/4/CPU0      A9K-8T/4-B     1.0    1c    fpga1    0      0.38    No
              1c    fpga2    0      0.10    No
              1c    cbc      0      2.2     No
              1c    cp1d2    0      0.7     No
              1c    cp1d1    0      0.15    No
              1c    cp1d3    0      0.3     No
              1c    rommon   0      1.0     No
              1c    fpga3    0      14.42   No
-----
0/4/CPU0      A9K-8T/4-B     1.0    1c    fpga1    1      0.38    No
-----
0/6/CPU0      A9K-4T-B       1.0    1c    fpga1    0      0.38    No
              1c    fpga2    0      0.10    No
              1c    cbc      0      2.2     No
              1c    cp1d2    0      0.7     No
              1c    cp1d1    0      0.15    No
              1c    cp1d3    0      0.3     No
              1c    rommon   0      1.0     No
              1c    fpga3    0      14.42   No
-----
0/6/CPU0      A9K-4T-B       1.0    1c    fpga1    1      0.38    No
-----
```

The following example shows how to display FPD compatibility for a specific module in the router:

Table 10: show hw-module fpd Field Descriptions

Field	Description
Location	Location of the module in the <i>rack/slot/module</i> notation.
Card Type	Module part number.
HW Version	Hardware model version for the module.
Type	Hardware type. Can be one of the following types: <ul style="list-style-type: none"> <li>• spa—Shared port adapter</li> <li>• lc—Line card</li> </ul>
Subtype	FPD type. Can be one of the following types: <ul style="list-style-type: none"> <li>• fabldr—Fabric downloader</li> <li>• fpga1—Field-programmable gate array</li> <li>• fpga2—Field-programmable gate array 2</li> <li>• fpga3—Field-programmable gate array 3</li> <li>• fpga4—Field-programmable gate array 4</li> <li>• fpga5—Field-programmable gate array 5</li> <li>• rommonA—Read-only memory monitor A</li> <li>• rommon—Read-only memory monitor B</li> </ul>
Inst	FPD instance. The FPD instance uniquely identifies an FPD and is used by the FPD process to register an FPD.
Current SW Version	Currently running FPD image version.
Upg/Dng?	Specifies whether an FPD upgrade or downgrade is required. A downgrade is required in rare cases when the version of the FPD image has a higher major revision than the version of the FPD image in the current Cisco IOS XR software package.



## show interfaces (frame relay)

To display statistics about Frame Relay interfaces, use the **show interfaces** command in EXEC mode.

```
show interfaces [{summary} | [type interface-path-id] [{brief|description|detail|accounting [rates]}] ]
[location node-id]
```

Syntax Description	
<b>summary</b>	(Optional) Displays a summary of interface information by interface type.
<i>type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	(Optional) Physical interface or virtual interface.
<b>Note</b>	Use the <b>show interfaces</b> command to see a list of all interfaces currently configured on the router.
	For more information about the syntax for the router, use the question mark (?) online help function.
<b>brief</b>	(Optional) Displays brief information about each interface (one line per interface).
<b>description</b>	(Optional) Displays an interface description.
<b>detail</b>	(Optional) Displays detailed information about each interface. This is the default.
<b>accounting</b>	(Optional) Displays the number of packets of each protocol type that have been sent through the interface.
<b>rates</b>	(Optional) Displays interface accounting rates.
<b>location</b> <i>node-id</i>	(Optional) Displays information about all interfaces on the specified node. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.

**Command Default** No default behavior or values

**Command Modes** EXEC mode

Command History	Release	Modification
	Release 4.0.0	This command was introduced

**Usage Guidelines** The **show interfaces** (Frame Relay) command is available on Packet-over-SONET/SDH (POS), serial, and multilink interfaces.

Task ID	Task	Operations
	fr	read, write

## Examples

The following example shows the output from the **show interfaces** command when the interface is configured with Frame Relay encapsulation:

```
RP/0/RSP0/CPU0:router# show interfaces pos 0/1/0/0

POS0/1/0/0 is up, line protocol is up
  Hardware is Packet over SONET/SDH
  Internet address is Unknown
  MTU 4474 bytes, BW 622080 Kbit
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation FRAME-RELAY, crc 32, controller loopback not set,
  LMI enq sent 0, LMI stat recvd 0, LMI upd recvd 0
  LMI enq recvd 9463, LMI stat sent 9463, LMI upd sent 0, DCE LMI up
  LMI DLCI 0 LMI type is ANSI Annex D frame relay DCE
  Last clearing of "show interface" counters never
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    20934 packets input, 1508069 bytes, 1151 total input drops
    0 drops for unrecognized upper-level protocol
  Received 0 broadcast packets, 0 multicast packets
    0 runts, 0 giants, 0 throttles, 0 parity
  1151 input errors, 1058 CRC, 0 frame, 0 overrun, 93 ignored, 0 abort
  19590 packets output, 990924 bytes, 0 total output drops
  Output 0 broadcast packets, 0 multicast packets
  0 output errors, 0 underruns, 0 applique, 0 resets
  0 output buffer failures, 0 output buffers swapped out
```

**Table 11: show interfaces Field Descriptions**

Field	Description
Interface name	Displays the name of the current interface. In the example, the interface name is POS0/1/0/0.
Interface state	Displays the state of the interface. In the example, the interface is in the administratively up state.
Line protocol state	Displays the state of the Layer 2 line protocol. This field may be different from the interface state if, for example, a keepalive failure has brought down the Layer 2.  <b>Note</b> The line protocol state is not the same as the protocol state displayed in the <b>show ip interfaces</b> command, because it is the state of Layer 2 (media) rather than Layer 3 (IP protocol).
Hardware	Displays the current hardware type.
Internet address is <i>n.n.n.n/n</i>	Displays the Layer 2 address (MAC address for Ethernet interfaces).  <b>Note</b> Enter the <b>mac-address</b> command to configure the hardware address.
MTU	Displays the maximum transmission unit (MTU) for the interface. The MTU is the maximum packet size that can be transmitted over the interface.  <b>Note</b> The MTU field indicates the interface MTU. Enter the <b>mtu</b> command to configure a lower MTU value at the layer 3 level.

Field	Description
BW	Displays the bandwidth of the interface in kbps.
reliability	Displays the proportion of packets that are not dropped and do not have errors. <b>Note</b> The reliability is shown as a fraction of 255.
txload	Indicates the traffic flowing out of the interface as a proportion of the bandwidth. <b>Note</b> The txload is shown as a fraction of 255.
rxload	Indicates the traffic flowing into the interface as a proportion of the bandwidth. <b>Note</b> The rxload is shown as a fraction of 255.
Encapsulation	Layer 2 encapsulation installed on the interface.
CRC	Indicates the length of the cyclic redundancy check (CRC), in bytes. <b>Note</b> Enter the <b>pos crc</b> command to configure the CRC.
controller loopback	Indicates that the hardware was configured as controller loopback.
LMI enq sent	Number of LMI enquiry messages sent.
LMI stat rcvcd	Number of LMI status messages received.
LMI upd rcvcd	Number of LMI updated messages received.
LMI enq rcvcd	Number of LMI enquiry messages received.
LMI stat sent	Number of LMI status messages sent.
LMI upd sent	Number of LMI updated messages sent.
DCE LMI	Displays the state of the DCE LMI.
LMI DLCI	Displays the LMI DLCI identifier.
LMI type	Displays the LMI type.
Last clearing	Time at which the counters that measure cumulative statistics (such as number of bytes transmitted and received) shown in this report were last reset to zero. Note that variables that might affect routing for example, load and reliability) are not cleared when the counters are cleared.
5 minute input rate 5 minute output rate	Average number of bits and packets transmitted per second in the last 5 minutes. The 5-minute input and output rates should be used only as an approximation of traffic per second during a given 5-minute period. These rates are exponentially weighted averages with a time constant of 5 minutes. A period of four time constants must pass before the average is within two percent of the instantaneous rate of a uniform stream of traffic over that period.

Field	Description
packets input	Total number of error-free packets received by the system.
bytes	Total number of bytes, including data and MAC encapsulation, in the error-free packets received by the system.
Received...broadcasts	Total number of broadcast or multicast packets received by the interface
runts	Number of packets that are discarded because they are smaller than the minimum packet size of the medium.
giants	Number of packets that are discarded because they exceed the maximum packet size of the medium
input errors	Total number of no buffer, runts, giants, CRCs, frame, overrun, ignored, and terminated counts. Other input-related errors can also increment the count, so that this sum might not balance with the other counts.
CRC	Cyclic redundancy checksum generated by the originating station or far-end device does not match the checksum calculated from the data received. On a serial link, CRCs usually indicate noise, gain hits, or other transmission problems on the data link.
frame	Number of packets received incorrectly having a CRC error and a noninteger number of octets. On a serial line, this is usually the result of noise or other transmission problems.
overrun	Number of times the serial receiver hardware was unable to hand received data to a hardware buffer because the input rate exceeded the receiver's ability to handle the data.
ignored	Number of received packets ignored by the interface because the interface hardware ran low on internal buffers. Broadcast storms and bursts of noise can cause the ignored count to be increased.
abort	Illegal sequence of one bits on a serial interface. This usually indicates a clocking problem between the serial interface and the data link equipment.
carrier transitions	Number of times the carrier detect signal of a serial interface has changed state. For example, if data carrier detect (DCD) goes down and comes up, the carrier transition counter will increment two times. Indicates modem or line problems if the carrier detect line is changing state often.

## show inventory (Cisco IOS XR 64-bit)

To retrieve and display information about all the Cisco products that are installed in the router, use the **show inventory** command in EXEC or System Admin EXEC mode.

EXEC Mode

```
show inventory [{ node-id | all | location { node-id | all } | raw }]
```

System Admin EXEC Mode

```
show inventory [{ all | chassis | fan | location { node-id } | power | raw }]
```

### Syntax Description

<b>node-id</b>	(Optional) Location for which to display the specified information. The <i>node-id</i> argument is entered in the <i>rack/slot/module</i> notation.
<b>all</b>	(Optional) Displays inventory information for all the physical entities in the chassis.
<b>location</b>	(Optional) Displays inventory information for a specific node or for all nodes in the chassis.
<b>raw</b>	(Optional) Displays raw information about the chassis for diagnostic purposes.
<b>chassis</b>	(Optional) Displays inventory information for the entire chassis.
<b>fans</b>	(Optional) Displays inventory information for the fans.
<b>power</b>	(Optional) Displays inventory information for the power supply.

### Command Default

All inventory information for the entire chassis is displayed.

### Command Modes

EXEC

System Admin EXEC mode

### Command History

Release	Modification
Release 7.0.1	This command was introduced.

### Usage Guidelines

This command is supported on Cisco IOS XR 64-bit software.

If a Cisco entity is not assigned a product ID (PID), that entity is not retrieved or displayed.

Enter the **show inventory** command with the **raw** keyword to display every RFC 2737 entity installed in the router, including those without a PID, unique device identifier (UDI), or other physical identification.



**Note** The **raw** keyword is primarily intended for troubleshooting problems with the **show inventory** command itself.

If any of the Cisco products do not have an assigned PID, the output displays incorrect PIDs, and version ID (VID) and serial number (SN) elements may be missing.

For UDI compliance products, the PID, VID, and SN are stored in EEPROM and NVRAM. Use the **show inventory** command to display this information.

Task ID	Task ID	Operations
	sysmgr	read

The following example shows partial sample output from the **show inventory** command in EXEC mode:

```
RP/0/RSP0/CPU0:ASR-9906-C-LS#show inventory

Wed Mar 29 11:46:26.707 UTC
NAME: "0/RSP0", DESCR: "ASR 9000 Route Switch Processor 5 for Service Edge 40G"
PID: A9K-RSP5-SE      , VID: V01, SN: FOC2246NLGP

NAME: "0/1", DESCR: "ASR 9000 16-port 100GE TR linecard"
PID: A9K-16X100GE-TR  , VID: V01, SN: FOC2249PA5Z

NAME: "HundredGigE0/1/0/14", DESCR: "100GE-SR4-S QSFP Module"
PID: QSFP-100G-SR4-S  , VID: V02, SN: AVF2212S1FV

NAME: "HundredGigE0/1/0/15", DESCR: "100GE-SR4-S QSFP Module"
PID: QSFP-100G-SR4-S  , VID: V03, SN: INL23120234

NAME: "0/2", DESCR: "48X10G/1G Packet Transport Optimized LC"
PID: A9K-48X10GE-1G-TR , VID: V01, SN: FOC2106NT5R

NAME: "TenGigE0/2/0/7", DESCR: "10GBASE-SR SFP Module, Enterprise-Class"
PID: SFP-10G-SR-S      , VID: V01, SN: AVD2206D0YL

NAME: "TenGigE0/2/0/9", DESCR: "10GBASE-SR SFP Module, Enterprise-Class"
PID: SFP-10G-SR-S      , VID: V01, SN: AVD1912DJMD

NAME: "TenGigE0/2/0/10", DESCR: "10GBASE-SR SFP+ Module for MMF"
PID: SFP-10G-SR        , VID: V03, SN: AVD233691HD

NAME: "TenGigE0/2/0/11", DESCR: "10GBASE-LR SFP+ Module for SMF"
PID: SFP-10G-LR        , VID: V02, SN: SPC182007JY

NAME: "TenGigE0/2/0/12", DESCR: "10GBASE-SR SFP Module, Enterprise-Class"
PID: SFP-10G-SR-S      , VID: V01, SN: ACW223506YD

NAME: "TenGigE0/2/0/13", DESCR: "10GBASE-LR SFP Module, Enterprise-Class"
PID: SFP-10G-LR-S      , VID: V01, SN: AVD2002T02B

NAME: "TenGigE0/2/0/14", DESCR: "10GBASE-LR SFP+ Module for SMF"
PID: SFP-10G-LR        , VID: V02, SN: ACW24151C0F

NAME: "TenGigE0/2/0/15", DESCR: "10GBASE-LR SFP+ Module for SMF"
PID: SFP-10G-LR        , VID: V02, SN: AVD1951R1NG

NAME: "TenGigE0/2/0/17", DESCR: "10GBASE-LR SFP Module, Enterprise-Class"
PID: SFP-10G-LR-S      , VID: V01, SN: AVD2303K0F0

NAME: "TenGigE0/2/0/18", DESCR: "10GBASE-LR SFP Module, Enterprise-Class"
PID: SFP-10G-LR-S      , VID: V01, SN: FNS223007XW

NAME: "TenGigE0/2/0/20", DESCR: "10GBASE-SR SFP+ Module for MMF"
PID: SFP-10G-SR        , VID: V03, SN: AVD1905A4SP
```

```

NAME: "TenGigE0/2/0/21", DESCR: "10GBASE-SR SFP+ Module for MMF"
PID: SFP-10G-SR          , VID: V02, SN: AGD14063DAL

NAME: "TenGigE0/2/0/22", DESCR: "10GBASE-SR SFP+ Module for MMF"
PID: SFP-10G-SR          , VID: V03, SN: FNS172421U9

NAME: "TenGigE0/2/0/38", DESCR: "10GBASE-SR SFP+ Module for MMF"
PID: SFP-10G-SR          , VID: V03, SN: OPM22320KUR

NAME: "0/FC0", DESCR: "ASR 9906 Switch Fabric Card 3"
PID: A99-SFC3-T          , VID: V01, SN: FOC2242N2MJ

NAME: "0/FC2", DESCR: "ASR 9906 Switch Fabric Card 3"
PID: A99-SFC3-T          , VID: V01, SN: FOC2245N5W6

NAME: "0/FC4", DESCR: "ASR 9906 Switch Fabric Card 3"
PID: A99-SFC3-T          , VID: V01, SN: FOC2245N5UD

NAME: "Rack 0", DESCR: "ASR 9906 4 Line Card Slot Chassis"
PID: ASR-9906            , VID: V01, SN: FOX2434P3J4

NAME: "0/FT0", DESCR: "ASR 9906 Fan Tray"
PID: ASR-9906-FAN        , VID: V01, SN: FOC2323NBSM

NAME: "0/FT1", DESCR: "ASR 9906 Fan Tray"
PID: ASR-9906-FAN        , VID: V01, SN: FOC2323NBSF

NAME: "0/PT0", DESCR: "Simulated Power Tray IDPROM"
PID: A9K-AC-PEM-V3       , VID: V03, SN: FOT1981P81A

NAME: "0/PT0-PM0", DESCR: "6kW AC Power Module"
PID: PWR-6KW-AC-V3       , VID: V02, SN: DTM2013002M

NAME: "0/PT0-PM1", DESCR: "6kW AC Power Module"
PID: PWR-6KW-AC-V3       , VID: V02, SN: DTM19270369

NAME: "0/PT0-PM2", DESCR: "6kW AC Power Module"
PID: PWR-6KW-AC-V3       , VID: V02, SN: DTM1927035H

```

The following example shows partial sample output from the **show inventory** command in System Admin EXEC mode:

```

sysadmin-vm:0_RSP0#show inventory

Wed Mar 29 11:46:49.238 UTC+00:00

Name: Rack 0                Descr: ASR 9906 4 Line Card Slot Chassis
PID: ASR-9906                VID: V01                      SN: FOX2434P3J4

Name: 0/1                    Descr: ASR 9000 16-port 100GE TR linecard
PID: A9K-16X100GE-TR         VID: V01                      SN: FOC2249PA5Z

Name: 0/2                    Descr: 48X10G/1G Packet Transport Optimized LC
PID: A9K-48X10GE-1G-TR       VID: V01                      SN: FOC2106NT5R

Name: 0/RSP0                 Descr: ASR 9000 Route Switch Processor 5 for Service Edge 40G
PID: A9K-RSP5-SE             VID: V01                      SN: FOC2246NLGP

Name: 0/FC0                 Descr: ASR 9906 Switch Fabric Card 3

```

## show inventory (Cisco IOS XR 64-bit)

```
PID: A99-SFC3-T          VID: V01          SN: FOC2242N2MJ
Name: 0/FC2             Descr: ASR 9906 Switch Fabric Card 3
PID: A99-SFC3-T          VID: V01          SN: FOC2245N5W6
Name: 0/FC4             Descr: ASR 9906 Switch Fabric Card 3
PID: A99-SFC3-T          VID: V01          SN: FOC2245N5UD
Name: 0/FT0             Descr: ASR 9906 Fan Tray
PID: ASR-9906-FAN        VID: V01          SN: FOC2323NBSM
Name: 0/FT1             Descr: ASR 9906 Fan Tray
PID: ASR-9906-FAN        VID: V01          SN: FOC2323NBSF
Name: 0/PT0             Descr: Simulated Power Tray IDPROM
PID: A9K-AC-PEM-V3       VID: V03          SN: FOT1981P81A
Name: 0/PT0-PM0         Descr: 6kW AC Power Module
PID: PWR-6KW-AC-V3       VID: V02          SN: DTM2013002M
Name: 0/PT0-PM1         Descr: 6kW AC Power Module
PID: PWR-6KW-AC-V3       VID: V02          SN: DTM19270369
Name: 0/PT0-PM2         Descr: 6kW AC Power Module
PID: PWR-6KW-AC-V3       VID: V02          SN: DTM1927035H
```



# show ipv4 interface

To display the usability status of interfaces configured for IPv4, use the **show ipv4 interface** command in the EXEC mode.

```
show ipv4 [vrf vrf-name] interface [{type interface-path-id | brief | summary}]
```

Syntax Description	
<b>vrf</b>	(Optional) Displays VPN routing and forwarding (VRF) instance information.
<i>vrf-name</i>	(Optional) Name of a VRF.
<i>type</i>	Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	<p>Either a physical interface instance or a virtual interface instance as follows:</p> <ul style="list-style-type: none"> <li>Physical interface instance. Naming notation is <i>rack/slot/module/port</i> and a slash between values is required as part of the notation. <ul style="list-style-type: none"> <li><i>rack</i>: Chassis number of the rack.</li> <li><i>slot</i>: Physical slot number of the modular services card or line card.</li> <li><i>module</i>: Module number. A physical layer interface module (PLIM) is always 0.</li> <li><i>port</i>: Physical port number of the interface.</li> </ul> </li> </ul> <p><b>Note</b> In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0 ) and the module is CPU0. Example: interface MgmtEth0/RSP0 /CPU0/0.</p> <ul style="list-style-type: none"> <li>Virtual interface instance. Number range varies depending on interface type.</li> </ul> <p>For more information about the syntax for the router, use the question mark (?) online help function.</p>
<b>brief</b>	(Optional) Displays the primary IPv4 addresses configured on the router's interfaces and their protocol and line states.
<b>summary</b>	(Optional) Displays the number of interfaces on the router that are assigned, unassigned, or unnumbered.

**Command Default** If VRF is not specified, the software displays the default VRF.

**Command Modes** EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.
	Release 4.2.0	This command was supported for BNG.

**Usage Guidelines**

The **show ipv4 interface** command provides output similar to the **show ipv6 interface** command, except that it is IPv4-specific.

The interface name will be displayed only if the name belongs to the VRF instance. If the *vrf-name* is not specified then the interface instance will be displayed only if the interface belongs to the default VRF.

**Task ID****Task ID Operations**


---

 ipv4 read
 

---



---

 network read
 

---

**Examples**

This is the sample output of the **show ipv4 interface** command:

```
RP/0/RSP0/CPU0:router# show ipv4 interface

Loopback0 is Up, line protocol is Up
  Internet address is 10
  .0.0.1/8

  Secondary address 10.0.0.2/8
  MTU is 1514 (1514 is available to IP)
  Multicast reserved groups joined: 10.0.0.1
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  ICMP redirects are always sent
  ICMP unreachable are always sent
gigabitethernet0/0/0/0 is Up, line protocol is Up
  Internet address is 10.25.58.1/16
  MTU is 1514 (1500 is available to IP)
  Multicast reserved groups joined: 10.0.224.1
  Directed broadcast forwarding is disabled
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  ICMP redirects are always sent
  ICMP unreachable are always sent
gigabitethernet0/0/0/0 is Shutdown, line protocol is Down
  Vrf is default (vrfid 0x60000000)
  Internet protocol processing disabled
```

This table describes the significant fields shown in the display.

**Table 12: show ipv4 interface Command Field Descriptions**

Field	Description
Loopback0 is Up	If the interface hardware is usable, the interface is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.
line protocol is Up	If the interface can provide two-way communication, the line protocol is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.

Field	Description
Internet address	IPv4 Internet address and subnet mask of the interface.
Secondary address	Displays a secondary address, if one has been set.
MTU	Displays the IPv4 MTU ³ value set on the interface.
Multicast reserved groups joined	Indicates the multicast groups this interface belongs to.
Directed broadcast forwarding	Indicates whether directed broadcast forwarding is enabled or disabled.
Outgoing access list	Indicates whether the interface has an outgoing access list set.
Inbound access list	Indicates whether the interface has an incoming access list set.
Proxy ARP	Indicates whether proxy ARP ⁴ is enabled or disabled on an interface.
ICMP redirects	Specifies whether ICMPv4 ⁵ redirects are sent on this interface.
ICMP unreachable	Specifies whether unreachable messages are sent on this interface.
Internet protocol processing disabled	Indicates an IPv4 address has not been configured on the interface.

³ MTU = maximum transmission unit

⁴ ARP = Address Resolution Protocol address resolution protocol

⁵ ICMPv4 = Internet Control Message Protocol internet control message protocol version 4

## show ipv6 interface

To display the usability status of interfaces configured for IPv6, use the **show ipv6 interface** command in the EXEC mode.

```
show ipv6 [vrf vrf-name] interface [{summary} | [type interface-path-id][brief [{link-local | global}]]]
```

Syntax Description	
<b>vrf</b>	(Optional) Displays VPN routing and forwarding (VRF) instance information.
<i>vrf-name</i>	(Optional) Name of a VRF.
<i>type</i>	(Optional) Interface type. For more information, use the question mark (?) online help function.
<i>interface-path-id</i>	<p>(Optional) Either a physical interface instance or a virtual interface instance as follows:</p> <ul style="list-style-type: none"> <li>Physical interface instance. Naming notation is <i>rack/slot/module/port</i> and a slash between values is required as part of the notation. <ul style="list-style-type: none"> <li><i>rack</i>: Chassis number of the rack.</li> <li><i>slot</i>: Physical slot number of the modular services card or line card.</li> <li><i>module</i>: Module number. A physical layer interface module (PLIM) is always 0.</li> <li><i>port</i>: Physical port number of the interface.</li> </ul> </li> </ul> <p><b>Note</b> In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0 /CPU0/0.</p> <ul style="list-style-type: none"> <li>Virtual interface instance. Number range varies depending on interface type.</li> </ul> <p>For more information about the syntax for the router, use the question mark (?) online help function.</p>
<b>brief</b>	(Optional) Displays the primary IPv6 addresses configured on the router interfaces and their protocol and line states.
<b>link-local</b>	(Optional) Displays the link local IPv6 address.
<b>global</b>	(Optional) Displays the global IPv6 address.
<b>summary</b>	(Optional) Displays the number of interfaces on the router that are assigned, unassigned, or unnumbered.
<b>Command Default</b>	None
<b>Command Modes</b>	EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.
	Release 4.3.0	This command was supported for BNG.
	Release 5.1.2	The <b>link-local</b> and <b>global</b> keywords were added to the command.

**Usage Guidelines**

The **show ipv6 interface** command provides output similar to the **show ipv4 interface** command, except that it is IPv6-specific.

Use the **link-local** or **global** keywords along with the **brief** keyword to view the link local or global IPv6 addresses.

Task ID	Task ID	Operations
	ipv6	read

**Examples**

This is the sample output of the **show ipv6 interface** command:

```
RP/0/RSP0/CPU0:router# show ipv6 interface
GigabitEthernet0/2/0/0 is Up, line protocol is Up, Vrfid is default (0x60000000)
 IPv6 is enabled, link-local address is fe80::212:daff:fe62:c150
 Global unicast address(es):
  202::1, subnet is 202::/64
 Joined group address(es): ff02::1:ff00:1 ff02::1:ff62:c150 ff02::2
  ff02::1
 MTU is 1514 (1500 is available to IPv6)
 ICMP redirects are disabled
 ICMP unreachable are enabled
 ND DAD is enabled, number of DAD attempts 1
 ND reachable time is 0 milliseconds
 ND advertised retransmit interval is 0 milliseconds
 ND router advertisements are sent every 200 seconds
 ND router advertisements live for 1800 seconds
 Hosts use stateless autoconfig for addresses.
 Outgoing access list is not set
 Inbound access list is not set
```

This table describes the significant fields shown in the display.

**Table 13: show ipv6 interface Command Field Descriptions**

Field	Description
GigabitEthernet0 /3/0/0 is Shutdown, line protocol is Down	Indicates whether the interface hardware is currently active (whether line signal is present) and whether it has been taken down by an administrator. If the interface hardware is usable, the interface is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.

Field	Description
line protocol is Up (or down)	Indicates whether the software processes that handle the line protocol consider the line usable (that is, whether keepalives are successful). If the interface can provide two-way communication, the line protocol is marked “Up.” For an interface to be usable, both the interface hardware and line protocol must be up.
IPv6 is enabled, stalled, disabled (stalled and disabled are not shown in sample output)	Indicates that IPv6 is enabled, stalled, or disabled on the interface. If IPv6 is enabled, the interface is marked “enabled.” If duplicate address detection processing identified the link-local address of the interface as being a duplicate address, the processing of IPv6 packets is disabled on the interface and the interface is marked “stalled.” If IPv6 is not enabled, the interface is marked “disabled.”
link-local address	Displays the link-local address assigned to the interface.
TENTATIVE	The state of the address in relation to duplicate address detection. States can be any of the following: <ul style="list-style-type: none"> <li>• duplicate—The address is not unique and is not being used. If the duplicate address is the link-local address of an interface, the processing of IPv6 packets is disabled on that interface.</li> <li>• tentative—Duplicate address detection is either pending or under way on this interface.</li> </ul> <p><b>Note</b> If an address does not have one of these states (the state for the address is blank), the address is unique and is being used.</p>
Global unicast addresses	Displays the global unicast addresses assigned to the interface.
ICMP redirects	State of Internet Control Message Protocol (ICMP) IPv6 redirect messages on the interface (the sending of the messages is enabled or disabled).
ND DAD	State of duplicate address detection on the interface (enabled or disabled).
number of DAD attempts	Number of consecutive neighbor solicitation messages that are sent on the interface while duplicate address detection is performed.
ND reachable time	Displays the neighbor discovery reachable time (in milliseconds) assigned to this interface.

This is the sample output of the **show ipv6 interface brief link-local** command:

```
RP/0/RSP0/CPU0:router#show ipv6 interface brief link-local
```

Interface	IPv6-Address	Status	Protocol
GigabitEthernet0/0/0/0	fe80::fe:8ff:feeb:26c5	Up	Up
GigabitEthernet0/0/0/1	fe80::4f:88ff:fea0:8c9d	Up	Up
GigabitEthernet0/0/0/3	unassigned	Shutdown	Down
GigabitEthernet0/0/0/4	unassigned	Shutdown	Down

This is the sample output of the **show ipv6 interface brief global** command:

```
RP/0/RSP0/CPU0:router#show ipv6 interface brief global
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/0  2001:db8::1            Up        Up
GigabitEthernet0/0/0/1  2001:db8::2            Up        Up
GigabitEthernet0/0/0/3  unassigned              Shutdown  Down
GigabitEthernet0/0/0/4  unassigned              Shutdown  Down
```

This is the sample output of the **show ipv6 interface type interface-path-id brief link-local** command:

```
RP/0/RSP0/CPU0:router#show ipv6 interface gigabitEthernet 0/0/0/0 brief link-local
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/0  fe80::fe:8ff:feeb:26c5 Up        Up
```

This is the sample output of the **show ipv6 interface type interface-path-id brief global** command:

```
RP/0/RSP0/CPU0:router#show ipv6 interface gigabitEthernet 0/0/0/0 brief global
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/0  2001:db8::1            Up        Up
```

This is the sample output of the **show ipv6 vrf vrf-name interface brief link-local** command:

```
RP/0/RSP0/CPU0:router#show ipv6 vrf vrf1 interface brief link-local
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/2  fe80::46:c8ff:fe22:daae Up        Up
```

This is the sample output of the **show ipv6 vrf vrf-name interface brief global** command:

```
RP/0/RSP0/CPU0:router#show ipv6 vrf vrf1 interface brief global
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/2  2001:db8::2            Up        Up
```

This is the sample output of the **show ipv6 vrf vrf-name interface type interface-path-id brief link-local** command:

```
RP/0/RSP0/CPU0:router#show ipv6 vrf vrf1 interface gigabitEthernet 0/0/0/2 brief link-local
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/2  fe80::46:c8ff:fe22:daae Up        Up
```

This is the sample output of the **show ipv6 vrf vrf-name interface type interface-path-id brief global** command:

```
RP/0/RSP0/CPU0:router#show ipv6 vrf vrf1 interface gigabitEthernet 0/0/0/2 brief global
```

```
Interface                IPv6-Address            Status    Protocol
GigabitEthernet0/0/0/2  2001:db8::2            Up        Up
```

## Related Commands

Command	Description
<a href="#">show ipv4 interface</a> , on page 75	Displays the usability status of interfaces configured for IPv4.

# show install boot-options

To display the boot options set for a specified location or for all locations, use the **show install boot-options** command in administration EXEC mode or EXEC mode.

**show install boot-options** [{**location** *node-id* | **all**}]

## Syntax Description

**location** {*node-id* | **all**} (Optional) Specifies a node. The *node-id* argument is expressed in *rack/slot/module* notation. The **all** keyword specifies all nodes.

## Command Default

If no location is specified, the **show install boot-options** command displays boot options for all locations.

## Command Modes

Administration EXEC  
EXEC

## Command History

Release	Modification
Release 3.7.2	This command was introduced.

## Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **show install boot-options** command to display boot options that were set using the **install boot-options** command.

## Task ID

Task ID	Operations
pkg-mgmt	read

The following example shows how to display the boot options for all locations:

```
RP/0/RSP0/CPU0:router# show install boot-options

Thu Jul 30 05:00:30.652 DST
Node                               Boot Options
-----+-----
0/RSP0/CPU0                         no boot options set.
0/1/CPU0                             no boot options set.
0/4/CPU0                             no boot options set.
0/6/CPU0                             no boot options set.
```



# show running-config

To display the contents of the currently running configuration or a subset of that configuration, use the **show running-config** command in the appropriate mode.

```
show running-config [[exclude] command] [sanitized]
```

Syntax Description		
<b>exclude</b>		(Optional) Excludes a specific configuration from the display.
<i>command</i>		(Optional) Command for which to display the configuration.
<b>sanitized</b>		(Optional) Displays a sanitized configuration for safe distribution and analysis.

**Command Default** The **show running-config** command without any arguments or keywords displays the entire contents of the running configuration file.

**Command Modes** EXEC  
Administration EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

You can display either the entire running configuration, or a subset of the running configuration. The subset may be all the commands within a specified command mode.



**Note** In Cisco IOS XR software, the running configuration is automatically used at system startup, reset, or power cycle. The running configuration is the committed configuration.

## Sanitized Output

Use the **show running-config** command with the **sanitized** keyword to display the contents of the active running configuration without installation-specific parameters. Some configuration details, such as IP addresses, are replaced with different addresses. The sanitized configuration can be used to share a configuration without exposing the configuration details.

**Command Modes** When the **show running-config** command is entered in administration configuration mode, the configuration for the administration plane is displayed, including the configured logical routers for the system. When the **show running-config** command is entered in any global configuration mode, or in EXEC mode, the configuration for the specific secure domain router (SDR) is displayed.

The **inheritance** and **no-annotations** keywords are not supported in administration EXEC or configuration modes.

### Excluding Parts of the Display

Use the **exclude** keyword followed by a *command* argument to exclude a specific configuration from the display.

Task ID	Task ID	Operations
	config-services	read

This example shows how to enter the **show running-config** command with the question mark (?) online help function to display the available subsets of the running configuration that can be entered to display a subset of the running configuration:

```
RP/0/RSP0/CPU0:router# show running-config ?

aaa                Authentication, Authorization and Accounting
alias              Create an alias for entity
aps                Configure SONET Automatic Protection Switching (APS)
arp                Global ARP configuration subcommands
as-path            BGP autonomous system path filter
as-path-set        Define an AS-path set
banner             Define a login banner
cdp                Enable CDP, or configure global CDP subcommands
cef                CEF configuration commands
cinetd             Global Cisco inetd configuration commands
class-map          Configure QoS Class-map command
clock              Configure time-of-day clock
community-list     Add a community list entry
community-set      Define a community set
controller         Controller configuration subcommands
dhcp               Dynamic Host Configuration Protocol
domain             Domain service related commands
exception          CoreDump configuration commands
exclude            Exclude a feature or configuration item from display
explicit-path      Explicit-path config commands
extcommunity-set   Define an extended community set
fault              Fault related commands
forward-protocol   Controls forwarding of physical and directed IP broadcasts
ftp                Global FTP configuration commands
--More--
```

In this example, the **show running-config** command is used to display the running configuration for Packet-over-SONET/SDH (POS) interface 0/2/0/1:

```
RP/0/RSP0/CPU0:router# show running-config interface pos 0/2/0/1

interface POS0/2/0/1
ipv4 address 10.0.0.0 255.0.0.0
```

This example shows sample output from the **show running-config** command with the **sanitized** keyword displays a sanitized version of the running configuration. The sanitized configuration can be used to share a configuration without exposing specific configuration details.

```
RP/0/RSP0/CPU0:router# show running-config sanitized
```

```
Building configuration...
```

```
!! Last configuration change at 05:26:50 UTC Thu Jan 19 2009 by <removed>
!
snmp-server traps fabric plane
snmp-server traps fabric bundle state
hostname <removed>
line console
exec-timeout 0 0
!
exception choice 1 compress off filepath <removed>
logging console debugging
telnet vrf <removed> ipv4 server max-servers no-limit
snmp-server ifindex persist
snmp-server host 10.0.0.1 traps version <removed> priv <removed> udp-port 2555
snmp-server view <removed> <removed> included
snmp-server community <removed> RO LROwner
snmp-server community <removed> RO LROwner
snmp-server group <removed> v3 priv read <removed> write <removed>
snmp-server traps snmp
snmp-server traps syslog
interface Loopback10
!
interface Loopback1000
!
--More--
```

# show redundancy

To display the status of route processor redundancy, use the **show redundancy** command in EXEC mode.

**show redundancy** [{**location** {*node-id* | **all**} | **statistics** | **summary**}]

Syntax Description		
<b>location</b> { <i>node-id</i>   <b>all</b> }		(Optional) Specifies the node for which to display LED information. The <i>node-id</i> argument is expressed in the <i>rack/slot/module</i> notation. Use the <b>all</b> keyword to indicate all nodes.
<b>statistics</b>		(Optional) Displays redundancy statistics information.
<b>summary</b>		(Optional) Displays a summary of all redundant node pairs in the router.

**Command Default** Route processor redundancy information is displayed for all nodes in the system.

**Command Modes** EXEC mode

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **show redundancy** command to display the redundancy status of the route switch processors (RSPs). The **show redundancy** command also displays the boot and switchover history for the RSPs. To view the nonstop routing (NSR) status of the standby RSPs in the system, use the **summary** keyword.

Task ID	Task ID	Operations
	system	read
	basic-services	read (for <b>statistics</b> keyword)

The following example shows sample output from the **show redundancy** command:

```
RP/0/RSP0/CPU0:router# show redundancy location 0/rsp0/cpu0
Thu Jul 30 05:47:12.155 DST
Node 0/RSP0/CPU0 is in ACTIVE role
Node 0/RSP0/CPU0 has no valid partner

Reload and boot info
-----
A9K-RSP-4G reloaded Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
14 hours, 25 minutes ago
Active node booted Tue Jul 14 15:21:30 2009: 2 weeks, 1 day,
```

14 hours, 25 minutes ago

Active node reload "Cause: User initiated forced reload all"

**Table 14: show redundancy Field Descriptions**

Field	Description
Node */*/* is in XXX role	<p>Current role of the primary route processor, where (*/*/*) is the route processor ID in the format <i>rack/slot/module</i>, and XXX is the role of the route processor (active or standby).</p> <p>In the example, this field shows that the node with the ID 0/RP0/CPU0 is in active role.</p>
Partner node (*/*/*) is in XXX role	<p>Current role of the secondary (or partner) route processor, where (*/*/*) is the route processor ID in the <i>rack/slot/module</i> format, and XXX is the role of the route processor (active or standby).</p> <p>In the example, this field shows that the node with the ID 0/RP1/CPU0 is in standby role.</p>
Standby node in (*/*/*) is ready	<p>Current state of the standby node, where (*/*/*) is the standby route processor ID.</p> <p>In the example, the standby node is ready.</p>
Standby node in (*/*/*) is NSR-ready	<p>Current state of the standby node regarding nonstop routing (NSR), where (*/*/*) is the standby route processor ID.</p> <p>In the example, the standby node is NSR-ready.</p>
Reload and boot info	<p>General overview of the active and standby route processors' reload and boot history.</p>

# show media

To display the current state of the disk storage media, use the **show media** command in EXEC or Administration EXEC mode.

**show media location** {*node-id* | **all**}

## Syntax Description

**location**{*node-id* | **all**} (Optional) Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack/slot/module* notation. Use the **all** keyword to indicate all nodes.

## Command Default

The disk storage media for the active RP is displayed.

## Command Modes

Administration EXEC

EXEC

## Command History

Release	Modification
Release 7.0.1	This command was introduced.

## Usage Guidelines

Use the **show media** command to view the status of the storage media on your system.

The following example displays the output of the **show media** command:

```

sysadmin-vm:0_RP0 #show media
Thu Nov 30 14:57:14.002 WET
Media Information for local node.
-----
Partition          Size      Used   Percent   Avail
rootfs:            2.7G     1.5G    59%       1.1G
apphost:           1.9G      61M     4%        1.7G
/dev/sde            870M     401M   50%       409M
harddisk:          2.4G     966M   43%       1.3G
log:                459M      67M    16%       359M
config:             159M     2.5M    2%        144M
disk0:              1.3G     108M    9%        1.1G
-----
rootfs: = root file system (read-only)
log:    = system log files (read-only)
config: = configuration storage (read-only)

```

**Table 15: show media Field Descriptions**

Field	Description
Partition	Partition on the disk.
Size	Size of the partition.
Used	Partition size used.
Percent	Percentage used.

Field	Description
Avail	Available free partition space.







## INDEX

### C

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