Software Package Management Commands on Cisco IOS XR Software

This chapter describes the Cisco IOS XR commands used to add packages to a router storage device, activate or deactivate packages, upgrade or downgrade existing packages, and display information about packages.

For detailed information about the concepts and tasks necessary to manage Cisco IOS XR software see *Cisco IOS XR Getting Started Guide for the Cisco XR 12000 Series Router*.

clear install boot-options

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

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

Syntax Description

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

Command Default

If no location is specified, the **clear install boot-options** command prompts you for confirmation and clears boot options for all locations.

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

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

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

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

```
RP/0/0/CPU0:router(admin)#clear install boot-options
Install operation 4 '(admin) clear install boot-options location all' started
by user 'salevy' via CLI at 14:03:34 DST Sat Mar 15 2008.
Proceed with clearing boot options for all nodes? [confirm]
Install operation 4 completed successfully at 14:03:49 DST Sat Mar 15 2008.
```

Related Commands

Command	Description
install boot-options, page 35	Sets the boot options for a specified node.
show install boot-options, page 78	Displays the boot options set for a specified location or for all locations.

clear install label

To clear a label from an installation rollback point, use the **clear install label** command in EXEC or administration EXEC mode.

clear install label *label*

Syntax Description

label	Label defined for an installation rollback point.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Use the **clear install label** command to remove a label associated with an installation rollback point. Labels are assigned using the **install label** command.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

In the following example, the label brians_smu is removed from the associated installation rollback point.

```
RP/0/0/CPU0:router# clear install label brians_smu

Install operation 6 'clear install label brians_smu' started by user 'usr'
on SDR Owner via CLI at 09:28:04 DST Thu Aug 09 2007.
Install operation 6 completed successfully at 09:28:04 DST Thu Aug 09 2007.
```

Related Commands

Command	Description
install label, page 46	Adds a label or description to both the current active software state and a state associated with a rollback point.

clear install log-history oldest

To clear the oldest log items from the installation history log, use the **clear install log-history oldest** command in EXEC or administration EXEC mode.

clear install log-history oldest *number*

Syntax Description

number	Specifies the number of log entries to clear. The oldest log entries are cleared.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Enter the **clear install log-history oldest** command in EXEC mode to clear the oldest installation history log entries only for the current secure domain router (SDR) user. (The log entries for the admin user are not cleared.)

Enter the **clear install log-history oldest** command in administration EXEC mode to clear the oldest installation history log entries for all users. (This command impacts all users when entered in administration EXEC mode.)

Use the *number* argument to specify the number of the old log entries to be deleted.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples   In the following example, the two oldest installation log history entries are cleared. Because this command is entered in EXEC mode, only the log entries for the current SDR user are deleted:

```
RP/0/0/CPU0:router# clear install log-history oldest 2

Install operation 5 'clear install log-history oldest 2' started by user
'user_b' at 13:28:27 UTC Sat Aug 26 2006.
Info:     Successfully deleted the following historylog points:
Info:        1, 2
Install operation 5 completed successfully at 13:28:29 UTC Sat Aug 26 2006.
```

In the following example, the five oldest installation log history entries are cleared for all users in the system. Because this command is entered in administration EXEC mode, the log entries for all SDR users are deleted:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# clear install log-history oldest 5

Install operation 6 '(admin) clear install log-history oldest 5' started by
user 'user_b' at 13:35:50 UTC Sat Aug 26 2006.
Info:     Successfully deleted the following historylog points:
Info:        1, 2, 3, 4, 5
Install operation 6 completed successfully at 13:35:50 UTC Sat Aug 26 2006.
```

Related Commands

Command	Description
clear install rollback oldest, page 9	Deletes saved installation points from the installation buffer.
show install log, page 88	Displays the entries stored in the logging installation buffer.

clear install rollback oldest

To delete saved installation points from the installation buffer, use the **clear install rollback oldest** command in EXEC or administration EXEC mode.

clear install rollback oldest *points*

Syntax Description

points	Number of saved installation points to delete, beginning with the oldest saved installation point.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Command Modes

- Enter the **clear install rollback oldest** command in administration EXEC mode to delete the saved installation points for all secure domain routers (SDRs).

- Enter the **clear install rollback oldest** command in EXEC mode to delete the saved installation points for the SDR to which you are logged in.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

In the following example, the **show install rollback ?** command is used to display the available rollback points. The **clear install rollback oldest 2** command is then used to delete the two oldest rollback points. The **show install rollback ?** command is used again to display the remaining rollback points.

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show install rollback ?

  0   ID of the rollback point to show package information for
  2   ID of the rollback point to show package information for
  4   ID of the rollback point to show package information for
  9   ID of the rollback point to show package information for
  10  ID of the rollback point to show package information for

RP/0/0/CPU0:router(admin)# clear install rollback oldest 2

Install operation 11 'clear install rollback oldest 2' started by user 'user_b'
at 18:11:19 UTC Sat Apr 08 2006.
Info:     Successfully deleted the following rollback points:
Info:        0, 2
Install operation 11 completed successfully at 18:11:21 UTC Sat Apr 08 2006.

RP/0/0/CPU0:router(admin)# show install rollback ?

  4   ID of the rollback point to show package information for
  9   ID of the rollback point to show package information for
  10  ID of the rollback point to show package information for
```

Related Commands

Command	Description
install rollback to, page 53	Rolls back the software set to a saved installation point or to the last committed installation point.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install rollback, page 101	Displays the software set associated with a saved installation point.

install abort

To abort an installation transaction, use the **install abort** command in EXEC or administration EXEC mode.

install abort [*request-id*]

Syntax Description

request-id	(Optional) Request ID assigned to an installation operation.

Command Default   Abort the current installation operation.

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.3.0	This command was introduced.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.

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

Use the **install abort** command to halt a software installation operation that is in process or that has been suspended.

Only activation, deactivation, and rollback operations can be aborted. Specifically, the **install abort** command cannot be aborted, but the **install add** command with the **activate** keyword can be aborted.

Use the **install abort** command with the *request-id* argument to halt a specific installation operation if the *request-id* is currently in process.

Command Modes

- To halt a software installation operation for all secure domain routers (SDRs), use the **install abort** command in administration EXEC mode.

- To halt a software installation operation for the SDR to which you are logged in, use the **install abort** command in EXEC mode.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

The following example shows how to halt an installation operation:

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

Info: Please confirm your 'install abort' request by pressing Enter or y, or pressing n to
 cancel it.
Do you really want to abort install operation 15? [confirm] <enter>
Abort confirmed.
Please check console to verify the operation is aborted.
```

Related Commands

Command	Description
install add, page 23	Adds the contents of a PIE file to a storage device.
install activate, page 13	Adds software functionality to the active software set.
install deactivate, page 39	Removes a package from the active software set.

install activate

To add software functionality to the active software set, use the **install activate** command in EXEC or administration EXEC mode.

EXEC Mode:

install activate {*device***:***package*| **id** *add-id*} [**auto-abort-timer** *time*] [**location** *node-id*] [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

Administration EXEC Mode:

install activate {*device***:***package*| **id** *add-id*} [**auto-abort-timer** *time*] [**sdr** *sdr-name*] [**location** *node-id*] [**if-active**] [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

Syntax Description		
device : *package*	Device and package, expressed in concatenated form (for example, disk0:c12k-mgbl-4.0.0).
	For the *device* argument, the value is a specified storage device, typically disk0:. This is the local storage device where the package was added with the **install add** command.
	Press **?** after a partial package name to display all possible matches available for activation. If there is only one match, press the **Tab** key to fill in the rest of the package name. Up to 16 device–package pairs can be specified.
	Note Multiple packages can be activated at one time. Up to 16 packages can be specified in a single **install activate** command. Multiple packages can be specified using the wildcard syntax, for example, harddisk:*4.0*. If multiple Software Maintenance Upgrades (SMUs) are activated, some SMUs may require a reload. If the operation requires a node reload, the user is prompted before the installation operation occurs.
id *add-id*	Specifies the ID number of an **install add** operation. The command activates all packages that were added in the specified **install add** operation. The ID number of an **install add** operation is indicated in the syslog displayed during the operation and in the output of the **show install log** command. Up to 16 **install add** operations can be specified.
auto-abort-timer *time*	(Optional) Specifies an abort timer value, in minutes, which when expired loads the last committed loadpath.
sdr *sdr-name*	(Administration EXEC mode only) Activates a package for a specific secure domain router (SDR). The value of the *sdr-name* argument is the name assigned to the SDR. To specify more than one SDR, list each SDR name separated by a space.

location *node-id*	(Optional) Activates a package on the designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
	Note 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.
	Note To activate a package on all supported nodes, do not specify a location.
if-active	(Optional. Administration EXEC mode only) Activates an optional package or SMU for an optional package only if an earlier version of the package is already active. Use the **if-active** keyword when SDRs have different sets of active software packages.
asynchronous	(Optional) Performs the command in asynchronous mode. In asynchronous mode, the command runs in the background, and the EXEC prompt is returned as soon as possible. This is the default mode.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
parallel-reload	(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.
prompt-level { default | none }	(Optional) Specifies when you are prompted for input during the procedure. • **default** —You are prompted only when input is required by the operation. • **none** —You are never prompted.
test	(Optional) Verifies the effects of proposed operations without making changes to the Cisco IOS XR software.
pause sw-change	(Optional) Pauses the operation after the preparatory stage and before locking the configuration for the actual software change. While the operation is paused, you can perform configuration changes. You control the resumption of the operation from the command-line interface (CLI) prompt.

Command Default

Administration EXEC Mode

• Package is activated for all supported nodes on all SDRs in the system.

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

EXEC Mode

- Package is activated on all supported nodes for the SDR.

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

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **SDR** *sdr-name* keyword and argument.
	Support was added for the **noprompt** keyword.
Release 3.4.0	Support was added for EXEC mode.
	Support was added for the **if-active** keyword in administration EXEC mode.
Release 3.5.0	Support was added for the **auto-abort-timer** keyword.
Release 3.6.0	Support was added for the **prompt-level** and **parallel-reload** keywords.
	Support was added for wildcard syntax when specifying packages to be activated.
	Support was removed for the **noprompt** keyword.
Release 3.7.0	Support was added for the **id** *add-id* keyword and argument.
	Disruption during multiple SMU activation was reduced, requiring reloads in fewer cases.
Release 3.8.0	Support was added for the **pause sw-change** keywords.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.
	Support for the **sdr** keyword was removed.

Usage Guidelines

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

Use the **install activate** command to activate software packages or SMUs for all valid cards. Information within the package is used to verify compatibility with the target cards and with the other active software.

Actual activation is performed only after the package compatibility and application program interface (API) compatibility checks have passed.

Specifying Packages to Activate

You can either use the **id** *add-id* keyword and argument to activate all packages that were added in one or more specific **install add** operations, or specify packages by name. 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.

Upgrading and Downgrading Packages

- To upgrade a package, activate the later version of the package; the earlier version is automatically deactivated.

- To downgrade a package, activate the earlier version of the package; the later version is automatically deactivated.

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Caution Downgrading to Cisco IOS XR Software Release 3.7.0 or earlier is not supported if you are using a FAT32 flash disk. If you are using a FAT32 flash disk, and you must downgrade, convert the flash disk to FAT16 before downgrading. If you do not convert the flash disk to FAT16 before the downgrade, the disk becomes unreadable and the router does not boot. Converting from FAT32 to FAT16 is a complex procedure.

Actual activation is performed only after the compatibility checks have passed.

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Note Activating a Software Maintenance Update (SMU) does not cause any earlier SMUs, or the package to which the SMU applies, to be automatically deactivated.

Activating a Package for All Secure Domain Routers

To activate a package for all secure domain routers (SDRs) in the system, use the **install activate** command in administration EXEC mode.

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Note To enter administration EXEC mode, you must be logged in to the owner SDR, and have root-system access privileges.

Activating a Package for a Specific SDR

- To activate a package for a specific SDR from administration EXEC mode, use the **install activate** command with the **sdr** *sdr-name* keyword and argument.

- To activate a package when logged into an SDR, use the **install activate** command in EXEC mode.

Note Some packages do not support SDR-specific activation and can only be activated for all SDRs simultaneously from administration EXEC mode. For detailed instructions, see the *Managing Cisco IOS XR Software Packages* module of *Cisco IOS XR System Management Configuration Guide for the Cisco XR 12000 Series Router*.

Activating New Versions of the Currently Active Packages

Use the **install activate** command with the **if-active** keyword to activate the package only on SDRs where an earlier version of the package is already active. This command is available only in administration EXEC mode.

The **if-active** keyword is used only for optional packages or SMUs for optional packages.

Router Reloads Following Package Activation

If the activation requires a reload of the SDR or all SDRs, a confirmation prompt appears. Use the **install activate** command with the **prompt-level none** keywords to automatically ignore any reload confirmation prompts and proceed with the package activation. The router reloads if required.

Node Reloads Following Package Activation

If a software operation 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, the system automatically changes the setting and the node reloads. A message describing the change is displayed.

Synchronous Mode

Use the **install activate** 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)
```

When the **install activate** command is run in asynchronous mode, the system may stay in synchronous mode for a short period of time while the system checks for questions to ask the user.

Press **Ctrl-C** during a synchronous operation to abort the operation or make the operation asynchronous.

Test Option

Use the **test** keyword to verify the effects of the proposed operations and determine whether the installation 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.

Auto Abort Option

Use the **auto-abort-timer** keyword to provide a safety mechanism for the instance that a package is activated and access to the router is lost. This option automatically rolls back to the current committed loadpath, thereby undoing any changes that are activated with the **install activate** command. After the installation, if the activated software is working correctly, use the **install commit** command to cancel the timer and commit the new loadpath.

> **Note** The changes made to the active software set are not persistent during route processor (RP) reloads. Use the **install commit** command to make changes persistent.

Parallel Reload

Install 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 action 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 Before Configuration Lock

Use the **pause sw-change** keywords to pause the operation before locking the configuration. An **install activate** 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 you can proceed with the activation whenever you choose. This action 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.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

The following example shows how to display the packages available for activation using the online help system. In this example, **?** is entered after a partial package name to display all possible matches:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install activate disk0:?

disk0:comp-c12k-mini-3.4.0  disk0:c12k-admin-3.4.0  disk0:c12k-base-3.4.0
   disk0:c12k-diags-3.4.0
disk0:c12k-fwdg-3.4.0        disk0:c12k-k9sec-3.4.0  disk0:c12k-lc-3.4.0
   disk0:c12k-mcast-3.4.0
disk0:c12k-mgbl-3.4.0        disk0:c12k-mpls-3.4.0   disk0:c12k-os-mbi-3.4.0.1
I  disk0:c12k-rout-3.4.0
```

The following example shows how to activate a package that was installed in an **install add** operation that was assigned install operation id 2:

```
RP/0/0/CPU0:router(admin)# install activate id 2

Install operation 3 '(admin) install activate id 2' started by user 'lab' via
CLI at 01:10:21 UTC Thu Jan 03 2008.
Info:     This operation will activate the following package:
Info:         disk0:c12k-mcast-3.7.0
```

```
Info:      Install Method: Parallel Process Restart
The install operation will continue asynchronously.
Info:      The changes made to software configurations will not be persistent
Info:      across system reloads. Use the command '(admin) install commit' to
Info:      make changes persistent.
Info:      Please verify that the system is consistent following the software
Info:      change using the following commands:
Info:          show system verify
Info:          install verify packages
Install operation 3 completed successfully at 01:11:30 UTC Thu Jan 03 2008.
```

The following example shows how to activate a package on all nodes for all SDRs. Use the **install commit** command to make the changes persistent across designated secure domain router shelf controller (DSDRSC) reloads.

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install activate disk0:
c12k
-mpls-3.4.0 synchronous

Install operation 15 'install activate disk0:c12k-mpls-3.4.0 synchronous'
started by user 'user_b' at 19:15:33 UTC Sat Apr 08 2006.
Info:      The changes made to software configurations will not be persistent
Info:      across system reloads. Use the command 'admin install commit' to make
Info:      changes persistent.
Info:      Please verify that the system is consistent following the software
Info:      change using the following commands:
Info:          show system verify
Info:          install verify
Install operation 15 completed successfully at 19:16:18 UTC Sat Apr 08 2006.

RP/0/0/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.
```

The following example shows how to activate a package for a specific SDR:

```
RP/0/0/CPU0:router(admin)# install activate disk0:
c12k
-mpls-3.3.80 SDR CE1b

Install operation 2 'install activate disk0:c12k-mpls-3.3.80 on SDR:
  CE1b' started by user 'user_b'
Install operation 2 'install activate disk0:c12k-mpls-3.3.80 on SDR:
  CE1b' started by user 'user_b' at 15:31:23 GMT Mon Nov 14 2005.
Info:      SDR CE1b: Checking running configuration version compatibility with
  newly activated software ...
Info:      SDR CE1b: No incompatibilities found between the activated software
  and router running configuration.
Info:      The changes made to software configurations will not be persistent across
  system reloads. Use the command 'admin install 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
Install operation 2 completed successfully at 15:32:28 GMT Mon Nov 14 2005.
```

The following example shows how to activate a package for multiple SDRs. To perform this operation, enter the **install activate** command with the **sdr** keyword, and list the SDR names. In this example, the SDR

names are"Owner" and "user_a". Use the **install commit** command to make the changes persistent across DSDRSC reloads.

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)#  install activate disk0:
c12k
-mcast-3.4.0.10I synchronous sdr Owner user_a

Install operation 7 '(admin) install activate disk0:c12k-mcast-3.4.0.10I
  synchronous sdr Owner user_a' started by user 'abc' via CLI at 11:32:29 UTC Mon Sep 25
2006.
Info:     This operation will reload the following node:
Info:        0/0/CPU0 (RP) (SDR: Owner)
Info:     This operation will reload all RPs in the Owner SDR, and thereby
  indirectly cause every node in the router to reload.
Proceed with this install operation (y/n)? [y]

- 85% complete: The operation can no longer be aborted (ctrl-c for options)
  [OK]ting Commit Database.  Please wait...
Info:     The changes made to software configurations will not be persistent
  across system reloads. Use the command 'admin install 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
Install operation 7 completed successfully at 11:33:08 UTC Mon Sep 25 2006.
```

The following example shows how to activate multiple software packages using the wildcard syntax:

```
RP/0/0/CPU0:router# admin
rack/slot/module(admin)# install activate disk0:*3.6*

Install operation 2 '(admin) install activate disk0:*3.6*' started by user 'user_a'
  via CLI at 04:30:01 PST Fri Dec 28 2007.
    Info:     This operation will activate the following packages:
    Info:         disk0:c12k-rout-3.6.0
    Info:         disk0:c12k-lc-3.6.0
    Info:         disk0:c12k-fwdg-3.6.0
    Info:         disk0:c12k-admin-3.6.0
    Info:         disk0:c12k-base-3.6.0
    Info:         disk0:c12k-os-mbi-3.6.0
    Info:         disk0:c12k-fpd-3.6.0
    Info:         disk0:c12k-diags-3.6.0
    Info:         disk0:c12k-mgbl-3.6.0
    Info:         disk0:c12k-mpls-3.6.0
    Info:         disk0:c12k-mcast-3.6.0
    Info:         disk0:c12k-k9sec-3.6.0
    Warning:  The following packages are already active on the specified nodes:
    Warning:      c12k-os-mbi-3.6.0
    Warning:      c12k-base-3.6.0
    Warning:      c12k-admin-3.6.0
    Warning:      c12k-fwdg-3.6.0
    Warning:      c12k-lc-3.6.0
    Warning:      c12k-rout-3.6.0
    Warning:  Please check:
    Warning:   - check the name of the packages being activated.
    Warning:   - check the set of active packages using 'show install active'.
    Info:     Install Method: Parallel Process Restart
    Info:     The changes made to software configurations will not be persistent
  across    system reloads. Use the command '(admin)
    Info:     install 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 packages
    Install operation 2 completed successfully at 04:32:01 PST Fri Dec 28 2007.
```

The warning messages are expected, because the packages are already active.

The following example shows a synchronous package activation operation, in which the operation is paused before the configuration is locked for the actual software activation:

```
RP/0/0/CPU0:router# install activate disk0:c12k-firewall synchronous pause sw-change

Wed Jul 23 14:28:40.865 UTC
Install operation 6 'install activate disk0:c12k-firewall-3.8.0.10I synchronous
pause sw-change' started by user 'salevy' on SDR Owner via CLI at 14:28:41 UTC
Wed Jul 23 2008.
Info:     Install Method: Parallel Process Restart
The install operation has paused before the configuration is locked as
requested by user 'salevy'.
Please perform any changes to the configuration that are required before the
operation is to continue.
How should the operation continue?
Abort the operation (abort)
Lock the config and complete the operation (complete)
Suspend the operation and return to the Command Line Interface (cli)
Please confirm an option (abort/complete/cli): [complete] cli
Use the command 'install operation 6 ?' to find how to continue the operation.

RP/0/0/CPU0:router# install operation 6 ?

  abort     Abort the operation
  attach    Attach to the operation
  complete  Phase to run to end of

RP/0/0/CPU0:router# install operation 6 complete

Wed Jul 23 14:29:46.367 UTC
RP/0/0/CPU0:router#Info:     Install operation 6 has been resumed.
Info:     The changes made to software configurations will not be persistent
Info:     across system reloads. Use the command '(admin) install commit' to
Info:     make changes persistent.
Info:     Please verify that the system is consistent following the software
Info:     change using the following commands:
Info:         show system verify
Info:         install verify packages
Install operation 6 completed successfully at 14:30:31 UTC Wed Jul 23 2008.
```

The following example shows an asynchronous package activation operation, in which the operation is paused before the configuration is locked for the actual software activation:

```
RP/0/0/CPU0:router# install activate disk0:c12k-firewall pause sw-change

Wed Jul 23 15:14:56.899 UTC
Install operation 12 'install activate disk0:c12k-firewall-3.8.0.10I pause sw-change'
  started by user 'salevy' on SDR Owner via CLI
at 15:14:57 UTC Wed Jul 23 2008.
The install operation will continue asynchronously.
RP/0/0/CPU0:router#Info:     Install Method: Parallel Process Restart
Info:     Install operation 12 is pausing before the config lock is applied
  for the software change as requested by the user.
Info:     No further install operations will be allowed until the operation is resumed.
Info:     Please continue the operation using one of the following steps:
Info:      - run the command 'install operation 12 complete'.
Info:      - run the command 'install operation 12 attach synchronous' and
  then answer the query.

RP/0/0/CPU0:router# install operation 12 complete

Wed Jul 23 15:18:43.682 UTC
RP/0/0/CPU0:router#Info:     Install operation 12 has been resumed.
```

```
Info:     The changes made to software configurations will not be persistent
  across system reloads. Use the command '(admin)
Info:     install 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 packages
Install operation 12 completed successfully at 15:19:23 UTC Wed Jul 23 2008.
```

Related Commands

Command	Description
install add, page 23	Adds the contents of a PIE file to a storage device.
install commit, page 37	Makes the current active software set persistent across RP reloads.
install deactivate, page 39	Removes a package from the active software set.
show install active, page 68	Displays active software packages.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install request, page 99	Displays the list of incomplete installation manager requests.

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 administration 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

source *source-path*	(Optional) Specifies the source location of the PIE files to be appended to the PIE filenames. Location options are as follows: • **disk0:** • **disk1:** • **compactflash:** • **harddisk:** • **ftp:***//username* :*password@hostname* or *ip-address*/*directory-path* • **rcp:***//username@hostname* or *ip-address*/*directory-path* • **tftp:***//hostname* or *ip-address*/*directory-path*
tar	(Optional) Indicates that the PIE file is contained in a tar file.
file	Name and location of the PIE file (composite package) to install. If a source path location is specified using the **source** keyword, the *file* argument can be either a fully specified PIE file path, or a path to the PIE file relative to the source path. **Note** Up to 32 PIE files can be added to a device in a single **install add** operation. If the **tar** keyword is used, the *file* 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.
activate	(Optional) Activates the package or packages. This option is run only if the **install add** operation is successful.
pause sw-change	(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.

auto-abort-timer *time*	(Optional) Specifies an abort timer value, *time* , in minutes, which when expired loads the last committed loadpath.
location *node-id*	(Optional) Activates a package on the designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
	Note 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.
asynchronous	(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.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
parallel-reload	(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.
prompt-level {**default** | **none**}	(Optional) Specifies when you are prompted for input during the procedure. • **default**—You are prompted only when input is required by the operation. • **none**—You are never prompted.
if-active	(Optional. Administration EXEC mode only.) Activates the optional packages only if a version is already active.
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Activates a package for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.

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

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Release	Modification
Release 3.3.0	Support was added for the **activate**, **sdr**, **noprompt**, and **location** keywords and their associated arguments.
	Support was removed for the **to** *device* keyword and argument.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	Support was added for the **source**, **auto-abort-timer**, and **admin-profile** keywords.
	Support was added for the addition of up to 32 PIE files in a single **install add** operation.
Release 3.6.0	Support was added for the **tar**, **prompt-level**, and **parallel-reload** keywords.
	Support was removed for the **noprompt** keyword.
Release 3.7.0	No modification.
Release 3.8.0	Support was added for the **pause sw-change** keywords.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.
	The **sdr** keyword was removed.

Usage Guidelines

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

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 SDRs effected by the **install add** command . If the **install add** command is entered without specifying an SDR, then the package files are added to all RPs in all SDRs . If the **install add** command is entered with the **sdr** keyword (to add the package files to a specific SDR), then the package files are added to all RPs installed in the specified SDR.

- From EXEC mode, the package software files are added to the RPs only for the SDR to which you are logged in.

Note If a package is added only to a non-owner SDR, then the package files and functionality are not available on the owner SDR, or on any other SDR. To add a package to all SDRs in the system, use the **install add** command without specifying an SDR.

Adding and Activating a Package

Software packages remain inactive until activated with the install activate, page 13 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. See install activate, page 13 for more information.

- To add and activate a package for all SDRs , enter the **install add** command with the **activate** keyword from administration EXEC mode.

- To add and activate a package for a specific SDR from administration EXEC mode, enter the **install add** command with the **activate** keyword and **sdr** *sdr-name* keyword and argument.

- To add and activate a package on a non-owner SDR, enter the **install add** command with the **activate** keyword from 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 *Cisco IOS XR System Management Configuration Guide for the Cisco XR 12000 Series Router*.

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/0/0/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-
c12k
-mini.pie
c12k
-mgbl-p.pie
c12k
-mpls-p.pie
c12k
-mcast-p.pie
```

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

```
RP/0/0/CPU0:router(admin)# install add source
tftp://192.168.254.254/images/user/
c12k
-mcast-p.pie pies/
c12k
```

```
-mpls-p.pie
ftp://1.2.3.4/other_location/
c12k
-mgbl-p.pie
```

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

   • tftp://192.168.254.254/images/user/c12k-mcast-p.pie

   • tftp://192.168.254.254/images/user/pies/c12k-mpls-p.pie

   • ftp://1.2.3.4/other_location/c12k-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.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

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/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install add
tftp://209.165.201.1/
c12k
-mpls.pie synchronous

Install operation 4 'install add /tftp://209.165.201.1/c12k-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:c12k-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 on all SDRs with a single command:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install add disk1:
c12k
-mgbl-p.pie-3.8.0 activate
Install operation 4 'install add /disk1:c12k-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:c12k-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.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install commit, page 37	Makes the current active software set persistent across RP reloads.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install request, page 99	Displays the list of incomplete installation manager requests.

install attach

To attach a terminal to an installation operation, use the **install attach** command in EXEC or administration EXEC configuration mode.

install attach [*request-id*] [**asynchronous**| **synchronous**]

Syntax Description

request-id	(Optional) Request ID assigned to an installation operation.
asynchronous	(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.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.

Command Default

The command operates in synchronous mode.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.3.0	This command was introduced.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.

Usage Guidelines

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

Use the **install attach** command to attach a terminal to an installation operation. This is similar to making the installation operation synchronous, and is used for the following reasons:

- To change an asynchronous installation operation to a synchronous installation operation.

- The installation operation is asynchronous but the terminal that ran the command has been lost (due to a switchover or terminal timeout).

Note An asynchronous operation runs in the background, and the EXEC prompt is returned as soon as possible. This is the default mode. A synchronous operation allows the installation process to finish before the prompt is returned.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples The following example, a software package is activated in asynchronous mode. In asynchronous mode, the command runs in the background, and the CLI prompt is returned as soon as possible.

Use the **install attach** command to attach the terminal to an installation operation. This switches the operation to synchronous mode, which allows the installation process to finish before the prompt is returned.

In the following example, the **install activate** command is entered in asynchronous mode. The CLI prompt returns before the operation is complete.

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install activate
disk0:
c12k
-mcast-3.7.6

Install operation 14 'install activate
disk0:RP/0/0/CPU0:router-mcast-3.7.6'
started by user 'user_b' at 08:04:31 UTC Mon Nov 14 2005.
The install operation will continue asynchronously.

RP/0/
0/CPU0:router(admin)#
Info:  SDR Owner: Checking running configuration version compatibility with
Info:  newly activated software ...
Info:  SDR Owner: No incompatibilities found between the activated software
Info:  and router running configuration.
```

In the following example, the **install attach** command is used to attach the terminal to the installation operation and complete the operation in synchronous mode. The CLI prompt is returned only after the installation operation is complete.

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

Install operation 14 'install activate
disk0:c12k-mcast-3.7.6'
started by user 'user_b' at 08:04:31 UTC Mon Nov 14 2005.
Info:     SDR Owner: Checking running configuration version compatibility with
Info:     newly activated software ...
Info:     SDR Owner: No incompatibilities found between the activated software
Info:     and router running configuration.
```

```
Info:     The changes made to software configurations will not be persistent
Info:     across system reloads. Use the command 'admin install commit' to make
Info:     changes persistent.
Info:     Please verify that the system is consistent following the software
Info:     change using the following commands:
Info:         show system verify
Info:         install verify

The currently active software is not committed. If the system reboots
  then the committed software will be used. Use 'install commit' to commit
  the active software.

Install operation 14 completed successfully at 08:06:12 UTC Mon Nov 14 2005.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install add, page 23	Adds the contents of a PIE file to a storage device.
install deactivate, page 39	Removes a package from the active software set.

install auto-abort-timer stop

To deactivate the auto-abort-timer that is set in the **install activate** or **install deactivate** commands, use the **install auto-abort-timer stop** command in EXEC or administration EXEC mode.

install auto-abort-timer stop [**sdr** *sdr-name*]

Syntax Description

This command has no arguments or keywords.

Syntax Description

sdr *sdr-name*	(Optional. Administration EXEC mode only.) Deactivates the auto-abort-timer for a specific secure domain router (SDR). The value of the *sdr-name* argument can be one or more names assigned to various SDRs. To specify more than one SDR, list each SDR name separated by a space.

Command Default

When activated, the auto-abort-timer runs to expiration and then loads the last committed loadpath.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.

Usage Guidelines

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

Use the **install auto-abort-timer stop** command to halt the auto-abort-timer that was activated with the **install activate** or **install deactivate** command. Alternatively, you can use the **install commit** command to halt the timer.

If you do not halt the auto-abort-timer, the software loads to the last committed loadpath when the timer expires. If the software has installed successfully, and you intend to continue using the new software, you should disable the auto-abort-timer.

Command Modes

- Enter the **install auto-abort-timer stop** command in administration EXEC mode to halt the auto-abort-timer for all secure domain routers (SDRs).

- Enter the **install auto-abort-timer stop** command in EXEC mode to halt the auto-abort-timer operations for the SDR to which you are logged in.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

The following example shows how to halt the auto-abort-timer:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install auto-abort-timer stop
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install commit, page 37	Makes the current active software set persistent across RP reloads.
install deactivate, page 39	Removes a package from the active software set.

install boot-options

To set boot options for a specified node, use the **install boot-options** command. Boot options include formatting and cleaning the disk in the specified node during the boot process.

install boot-options {**clean**| **format**} **location** *node-id*

Syntax Description

clean	Cleans the card installed in the specified node during the next reboot.
format	Formats the card installed in the specified node during the next reboot.
location *node-id*	Specifies a node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.

Command Default   No default behavior or values

Command Modes   Administration EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Use the **install boot-options** command to clean or format a card during the next reboot. This command affects only the next reboot that a user initiates. To initiate a reboot during which the boot option you set are applied, reboot the card from a disk in another node. To reboot from a remote node, connect to the console port of the card and perform a tftpboot from ROM Monitor. When the reboot is complete, the boot options are reset.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples   The following example shows how to set the card located in node 0/0/CPU0 to be cleaned during the next reboot:

```
RP/0/0/CPU0:router(admin)# install boot-options clean location 0/0/CPU0

Install operation 7 '(admin) install boot-options clean location 0/
0/CPU0'
started by user '' via CLI at 09:15:46 GMT Mon Mar 10 2008.
Info:    The boot option will be in effect when the node is reloaded and will
Info:     be cleared when the node preparation is complete.
Install operation 7 completed successfully at 09:15:46 GMT Mon Mar 10 2008.
RP/0/0/CPU0:router(admin)#
```

The following example shows how to set the card located in node 0/0/CPU0 to be formatted during the next reboot:

```
RP/0/0/CPU0:router(admin)# install boot-options format location 0/0/CPU0

Install operation 8 '(admin) install boot-options format location 0/
0/CPU0'
started by user '' via CLI at 09:15:52 GMT Mon Mar 10 2008.
Info:    The boot option will be in effect when the node is reloaded and will
Info:     be cleared when the node preparation is complete.
Install operation 8 completed successfully at 09:15:52 GMT Mon Mar 10 2008.
RP/0/0/CPU0:router(admin)#
```

Related Commands

Command	Description
clear install boot-options, page 3	Clears the boot options for a specified location or for all locations.
reload (administration EXEC)	Reloads a node or all nodes on a single chassis or multishelf system.
show install boot-options, page 78	Displays the boot options set for a specified location or for all locations.

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 administration EXEC mode.

Administration EXEC Mode:

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

EXEC Mode:

install commit

Syntax Description		
location *node-id*		(Optional. Administration EXEC mode only.)Specifies a node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
sdr *sdr-name*		(Optional. Administration EXEC mode only.) Commits the active software set for a specific SDR. The *sdr-name* argument is the name assigned to the SDR.

Command Default　Administration EXEC Mode: Commits the active software set for all SDRs.

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

Command Modes　EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode. Support for the **sdr** keyword was reomoved.

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

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 a specific SDR from administration EXEC mode, use the command with the **sdr** *sdr-name* keyword and argument.

- To commit the active software set for all SDRs in the system, use the **install commit** command without keywords or arguments in administration EXEC mode.

Task ID

Task ID	Operations
pkg-mgmt	read, write

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

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

Related Commands

Command	Description
show install committed, page 80	Displays committed active packages.
show install log, page 88	Displays the entries stored in the logging installation buffer.

install deactivate

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

Administration EXEC Mode:

install deactivate {**id** *add-id*| *device***:***package* } [**auto-abort-timer** *time*] [**sdr** *sdr-name*] [**location** *node-id*] [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

EXEC Mode:

install deactivate {**id** *add-id*| *device***:***package*} [**auto-abort-timer** *time*] [**location** *node-id*] [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

Syntax Description		
id *add-id*	Specifies the ID number of an **install add** operation. The command deactivates all packages that were added in the specified **install add** operation. The ID number of an **install add** operation is indicated in the syslog displayed during the operation and in the output of the **show install log** command.	
	Up to 16 **install add** operations can be specified.	
device **:** *package*	Device and package, expressed in concatenated form (for example, disk0:c12k-mgbl-3.8.0). For the *device* argument, the value is a specified storage device, typically **disk0:**.	
	Press **?** after a partial package name to display all possible matches available for activation. If there is only one match, press [TAB] to fill in the rest of the package name.	
	Up to 32 *device* **:** *package* pairs can be specified.	
auto-abort-timer *time*	(Optional) Specifies an abort timer value, *time* , in minutes, which when expired loads the last committed loadpath.	
sdr *sdr-name*	(Optional. Administration EXEC mode only) Deactivates a package for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.	
location *node-id*	(Optional) Deactivates a package from the designated node. The *node-id* argument is entered in *rack*/*slot*/*module* notation.	
	Note	In most cases, a package cannot be deactivated from a node, because some version of that package must be running on all supported nodes after the deactivation operation finishes.
asynchronous	(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.	
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.	

parallel-reload	(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.
prompt-level {**default** | **none**}	(Optional) Specifies when you are prompted for input during the procedure. • **default**—You are prompted only when input is required by the operation. • **none**—You are never prompted.
test	(Optional) Verifies the effects of proposed operations without making changes to the Cisco IOS XR software.
pause sw-change	(Optional) Pauses the operation after the preparatory stage and before locking the configuration for the actual deactivation. While the operation is paused, you can perform configuration changes. You control the resumption of the operation at the CLI prompt.

Command Default   The **install deactivate** operation is performed in asynchronous mode: The command runs in the background, and the router prompt is returned as soon as possible.

Administration EXEC mode: The package is deactivated on all supported nodes for all SDRs in the system.

EXEC mode: The package is deactivated on all supported nodes for the SDR.

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **sdr** *sdr-name* keyword and argument. Support was added for the **noprompt** keyword.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	Support was added for the **auto-abort-timer** keyword.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	Support was added for the **pause sw-change** keywords and the **id** *add-id* keyword and argument.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.

Release	Modification
	Support was removed for the **sdr** keyword.

Usage Guidelines

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

Deactivating a package removes the activated package from the active software set from all nodes or from a single node. When a deactivation is attempted, the system runs an automatic check to ensure that the package is not required by other active packages. The deactivation is permitted only after all compatibility checks have passed.

The following conditions apply to software deactivation:

- A feature package cannot be deactivated if active packages need it to operate.

- To downgrade a package, activate the earlier version. The later package version is deactivated automatically.

Specifying Packages to Deactivate

You can either use the **id** *add-id* keyword and argument to deactivate all packages that were added in one or more specific **install add** operations, or specify packages by name. 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 deactivate a package for all SDRs in the system, use the **install deactivate** command in administration EXEC mode.

- To deactivate a package for a specific SDR from administration EXEC mode, use the **install deactivate** command with the **sdr** *sdr-name* keyword and argument.

- To deactivate a package when logged into an SDR, use the **install deactivate** command in EXEC mode.

Note   To enter administration EXEC mode, you must be logged in to the owner SDR and have root-system access privileges.

Router Reloads

If the deactivation requires a router reload, a confirmation prompt appears. Use the **install deactivate** command with the **prompt-level none** keywords to automatically ignore any reload confirmation prompts and proceed with the package deactivation. The router reloads if required.

Node Reloads

If a software operation 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 Operation

Use the **install deactivate** 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)
```

Test Option

Use the **test** keyword to verify the effects of the deactivation without making changes to the system. Use this option to determine if the deactivation can be completed. After previewing the effects of the proposed operations, use the command for more details about the effects of the proposed operations.

Auto Abort Option

Use the **auto-abort-timer** keyword to provide a safety mechanism for the instance that a package is deactivated and for some reason access to the router is lost. This option automatically rolls back to the current committed loadpath, thereby undoing any changes that are deactivated with the **install deactivate** command. After the installation, if the activated software is working correctly, use the **install commit** command to cancel the timer and commit the new loadpath.

Use the command to make changes persistent across route processor (RP) reloads.

Pausing Before Configuration Lock

Use the **pause sw-change** keywords to pause the operation before locking the configuration. The deactivation operation begins with preparatory steps, such as software checks, and then proceeds with the actual deactivation. The configuration is locked for the actual deactivation. 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 deactivation whenever you choose. This is useful, for example, if your workflow involves configuring a router out of the network during software changes 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.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

The following example shows how to display the packages available for deactivation using the online help system. In this example, **?** is entered after a partial package name to display all possible matches.

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

```
RP/0/0/CPU0:router(admin)# install deactivate disk0:?

disk0:comp-c12k-mini-3.4.0   disk0:c12k-admin-3.4.0   disk0:c12k-base-3.4.0
    disk0:c12k-diags-3.4.0
disk0:c12k-fwdg-3.4.0        disk0:c12k-k9sec-3.4.0   disk0:c12k-lc-3.4.0
    disk0:c12k-mcast-3.4.0
disk0:c12k-mgbl-3.4.0        disk0:c12k-mpls-3.4.0    disk0:c12k-os-mbi-3.4.0.1
I   disk0:c12k-rout-3.4.0
```

The following example shows how to deactivate a package on all supported nodes in all SDRs. The operation is performed in synchronous mode.

```
RP/0/0/CPU0:router(admin)# install deactivate
disk0:
c12k
-mpls-3.8.0 synchronous

Install operation 14 'install deactivate disk0:c12k-mpls-3.8.0 synchronous'
started by user 'user_b' at 18:38:37 UTC Sat Apr 08 2006.
Info:     The changes made to software configurations will not be persistent
Info:     across system reloads. Use the command 'admin install commit' to make
Info:     changes persistent.
Info:     Please verify that the system is consistent following the software
Info:     change using the following commands:
Info:         show system verify
Info:         install verify
Install operation 14 completed successfully at 18:39:20 UTC Sat Apr 08 2006.
```

In the following example, the security package is deactivated for the SDR named "LR1:"

```
RP/0/0/CPU0:router(admin)# install deactivate
disk0:
c12k
-k9sec-3.4.0 sdr LR1

Install operation 11 'install deactivate disk0:c12k-k9sec-3.4.0 on SDR: LR1'
started by user 'user_b' at 03:25:26 est Thu Mar 02 2006.

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

The install operation will continue asynchronously.
The changes made to software configurations will not be persistent
Info:     across system reloads. Use the command 'admin install commit' to make
Info:     changes persistent.
Info:     Please verify that the system is consistent following the software
Info:     change using the following commands:
Info:         show system verify
Info:         install verify
The currently active software is not committed. If the system reboots then
  the committed software will be used. Use 'install commit' to commit the
  active software.

Install operation 11 completed successfully at 03:25:56 est Thu Mar 02 2006.
```

You cannot deactivate a package if other packages or nodes require that package. In the following example, an attempt to deactivate a package is rejected:

```
RP/0/0/CPU0:router(admin)# install deactivate disk0:c12k-diags-3.3.90 location 0/6/cpu0

Install operation 25 'install deactivate disk0:c12k-diags-3.3.90 on node
0/6/CPU0' started by user 'user_b' at 23:01:38 UTC Sat Apr 15 2006.
Error:    Cannot proceed with the deactivation because of the following package
Error:    incompatibilities:
Error:      c12k-diags-3.3.90 on nodes of type RP needs c12k-diags-3.3.90, or
Error:    equivalent, to be active on node 0/6/CPU0 on secure domain router
Error:    Owner.
Error:      c12k-diags-3.3.90 on nodes of type DRP needs c12k-diags-3.3.90, or
```

```
Error:    equivalent, to be active on node 0/6/CPU0 on secure domain router
Error:    Owner.
Error:     c12k-diags-3.3.90 on nodes of type SP needs c12k-diags-3.3.90, or
Error:    equivalent, to be active on node 0/6/CPU0 on secure domain router
Error:    Owner.
Error:     c12k-diags-3.3.90 on nodes of type LC needs c12k-diags-3.3.90, or
Error:    equivalent, to be active on node 0/6/CPU0 on secure domain router
Error:    Owner.
Error:    Suggested steps to resolve this:
Error:     - check the installation instructions.
Error:     - activate or deactivate the specified packages on the specified
Error:    nodes.
Install operation 25 failed at 23:01:44 UTC Sat Apr 15 2006.
```

The following example shows how to deactivate a package, pausing the operation before locking the configuration for the actual software deactivation. While the operation is paused, you can enter a configuration mode and perform configurations. When you want to complete the operation, you enter the **install operation** *id* **complete** command or the **install operation** *id* **attach synchronous** command.

```
RP/0/0/CPU0:router(admin)# install deactivate
disk0:comp-
c12k
-3.8.0.07I.CSCsr09575-1.0.0
pause sw-change

Install operation 12 '(admin) install deactivate disk0:comp-c12k-3.8.0.07I.CSCsr09575-1.0.0

  pause sw-change' started by user 'admin' via CLI at 09:06:26 BST Mon Jul 07 2008.
Info: This operation will reload the following nodes in parallel:
Info: 0/0/CPU0 (RP) (SDR: Owner)
Info: 0/1/CPU0 (LC(E3-GE-4)) (SDR: Owner)
Info: 0/5/CPU0 (LC(E3-OC3-POS-4)) (SDR: Owner)
Proceed with this install operation (y/n)? [y]
The install operation will continue asynchronously.
RP/0/
0/CPU0:ensoft-gsr13(admin)#
Info: Install Method: Parallel Reload
Info: Install operation 12 is pausing before the config lock is applied
  for the software change as requested by the user.
Info: No further install operations will be allowed until the operation
  is resumed.
Info: Please continue the operation using one of the following steps:
Info: - run the command '(admin) install operation 12 complete'.
Info: - run the command '(admin) install operation 12 attach synchronous'
  and then answer the query.
```

In the following example, the operation is synchronous and the **pause sw-change** keywords are used to pause the operation before configuration lock. In this case, you are prompted to enter one of three options at the pause stage: abort/complete/cli. If you enter **abort**, the operation is aborted. If you enter **complete**, the operation is immediately resumed. If you enter **cli**, the CLI prompt returns, enabling you to perform configurations before resuming the operation. Alternatively, you can leave the prompt open while you open a separate CLI session to perform configurations. Then, you can return to the prompt and enter complete when you are ready to resume the operation.

```
RP/0/0/CPU0:router# install deactivate
disk0:
c12k
-mpls-3.8.0.10I
sync pause sw-change
Wed Jul 23 14:42:11.273 UTC
Install operation 8 'install deactivate disk0:c12k-mpls-3.8.0.10I
  synchronous pause sw-change' started by user 'salevy' on SDR
Owner via CLI at 14:42:12 UTC Wed Jul 23 2008.
Info:     Install Method: Parallel Process Restart
The install operation has paused before the configuration is locked as
  requested by user 'salevy'.
Please perform any changes to the configuration that are required before
```

```
    the operation is to continue.
How should the operation continue?
Abort the operation (abort)
Lock the config and complete the operation (complete)
Suspend the operation and return to the Command Line Interface (cli)
Please confirm an option (abort/complete/cli): [complete] cli
Use the command 'install operation 8 ?' to find how to continue the operation.

RP/0/0/CPU0:router# install operation 8 ?

  abort     Abort the operation
  attach    Attach to the operation
  complete  Phase to run to end of

RP/0/0/CPU0:router# install operation 8 complete

Wed Jul 23 14:43:04.562 UTC
RP/0/0/CPU0:router# Info:     Install operation 8 has been resumed.
Info:     The changes made to software configurations will not be persistent
  across system reloads. Use the command '(admin)
Info:     install 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 packages
Install operation 8 completed successfully at 14:43:53 UTC Wed Jul 23 2008.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install commit, page 37	Makes the current active software set persistent across RP reloads.
install remove, page 49	Deletes inactive packages from a storage device.
show install inactive, page 84	Displays inactive packages in the active software set.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install request, page 99	Displays the list of incomplete installation manager requests.

install label

To add a label or description to a state associated with a rollback point, use the **install label** command in EXEC or administration EXEC mode.

install label *point-id* {**description** *description*| **label-name** *label*}

Syntax Description

point-id	Installation point ID number.
description *description*	Specifies a description for the specified rollback point.
label-name *label*	Specifies a label for the specified rollback point.

Command Default No default behavior or values

Command Modes EXEC

Administration EXEC

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.

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

Use the **install label** command to put a label and description on an installation rollback point that can be used to identify the rollback point in other commands. Commands that support the rollback label include:

- **clear install rollback**

- **install rollback**

- **show install rollback**

Labels and descriptions defined in administrative EXEC mode are visible only in administrative EXEC mode. Labels and descriptions defined in EXEC mode for an SDR are visible only in EXEC mode.

The label can be a maximum of 15 characters which must adhere to the following rules:

- No white-space
- Cannot include any of the following CLI keywords:
    - **active**
    - **all**
    - **asynchronous**
    - **brief**
    - **committed**
    - **description**
    - **detail**
    - **differences**
    - **from**
    - **force**
    - **inactive**
    - **install**
    - **label**
    - **label-name**
    - **location**
    - **noprompt**
    - **rollback**
    - **sdr**
    - **summary**
    - **synchronous**
    - **test**
    - **to**
    - **verbose**

- Cannot contain any of the following characters:
    - Comma (,)
    - Semi-colon (;)
    - Colon (:)
    - Single-quote (')
    - Double-quote ("")

- Cannot contain uppercase alphabetic characters

• Cannot contain numeric characters only

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

The following example shows how to define a label for an installation operation:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install label 0 label-name brians-smu

Install operation 5 'install label 0 label-name brians_smu' started by user
'user' on SDR Owner via CLI at 09:26:43 DST Thu Aug 09 2007.
Install operation 5 completed successfully at 09:26:44 DST Thu Aug 09 2007.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.

install remove

To delete inactive packages from a storage device, use the **install remove** command in EXEC or administration EXEC 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		
id *add-id*	Specifies the ID number of an **install add** operation. The command deletes all packages that were added in the specified **install add** operation. The ID number of an **install add** operation is indicated in the syslog displayed during the operation and in the output of the **show install log** command.	
	Up to 16 **install add** operations can be specified	
device **:** *package*	Device and package, expressed in concatenated form (for example, disk0:c12k-mgbl-3.8.0). For the *device* argument, the value is a specified storage device, typically **disk0:** .	
	Note Multiple packages can be removed at the same time. Up to 32 *device* **:** *package* pairs can be specified.	
inactive	Removes all inactive, noncommitted packages from the boot device (usually disk0:).	
sdr *sdr-name*	(Optional. Administration EXEC mode only) Removes a package for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.	
prompt-level {**default** | **none**}	(Optional) Specifies when you are prompted for input during the procedure.	
	• **default** —You are prompted only when input is required by the operation.	
	• **none** —You are never prompted.	
asynchronous	(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.	
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.	
test	(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

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **noprompt** keyword.
Release 3.4.0	Support was added for EXEC mode.
	The **install remove inactive** command removes inactive packages only from the boot device (usually disk0:).
Release 3.5.0	No modification.
Release 3.6.0	The **prompt-level** keyword replaced the **noprompt** keyword.
Release 3.7.0	No modification.
Release 3.8.0	Support was added for the **id** *add-id* keyword and argument.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.
	Support was removed for the **sdr** keyword.

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

> **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 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 all SDRs, use the **install remove** command in administration EXEC mode.
- To remove packages from a specific SDR, use the **install remove** command in 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.

> **Note** A package can be removed from a single SDR only if the package was not added to any other SDRs.

Router Reloads

If the operation requires a router reload, a confirmation prompt appears. Use the **install remove** command with the **prompt-level none** keywords to automatically ignore any reload confirmation prompts and proceed with the package removal. The router reloads if required.

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, page 88 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.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

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

```
RP/0/0/CPU0:router(admin)# install remove
disk0:
c12k
-diags-3.7.90 test

Install operation 30 'install remove disk0:c12k-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:c12k-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/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install remove
   inactive synchronous

RP/0/0/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:c12k-compmgmt__installmgr-0.0.5
Proceed with removing these packages? [confirm]
The install operation will continue asynchronously.
```

Related Commands

Command	Description
install add, page 23	Adds the contents of a PIE file to a storage device.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install inactive, page 84	Displays inactive packages in the active software set.
show install request, page 99	Displays the list of incomplete installation manager requests.

install rollback to

To roll back the software set to a saved installation point or to the last committed installation point, use the **install rollback to** command in EXEC or administration EXEC mode.

Administration EXEC Mode:

install rollback to {*point-id*| *label*| **committed**} [**auto-abort-timer** *time*] **location** *node-id* [**sdr** *sdr-name*] [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

EXEC Mode:

install rollback to {*point-id*| *label*| **committed**} [**auto-abort-timer** *time*] **location** *node-id* [**asynchronous**| **synchronous**] [**parallel-reload**] [**prompt-level** {**default**| **none**}] [**test**] [**pause sw-change**]

Syntax Description

point-id	Installation point ID number.
label	Label associated with an installation point.
committed	Rolls the Cisco IOS XR software back to the last committed installation point.
auto-abort-timer *time*	(Optional) Specifies an abort timer value, *time* , in minutes, which when expired loads the last committed loadpath.
location *node-id*	Specifies a node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
sdr *sdr-name*	(Optional) Rolls back the software set for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR. This option is in administration EXEC mode only.
asynchronous	(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.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
parallel-reload	(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.
prompt-level {**default**	**none**}	(Optional) Specifies when you are prompted for input during the procedure. • **default** —You are prompted only when input is required by the operation. • **none** —You are never prompted.
test	(Optional) Verifies the effects of proposed operations without making changes to the Cisco IOS XR software.

pause sw-change	(Optional) Pauses the operation after the preparatory stage and before locking the configuration for the actual software change. While the operation is paused, you can perform configuration changes. You control the resumption of the operation at the CLI prompt.

Command Default

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

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.8.0	Support was added for the **pause sw-change** keywords.
Release 3.9.0	No modification.
Release 4.0.0	This command was removed from EXEC mode.
	Support was removed for the **sdr** keyword.

Usage Guidelines

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

Use the **install rollback to** command to roll back the configuration to a saved installation point or to the last committed installation point. Rollback points are created when the router is booted and when packages are activated, deactivated, or committed. When an installation point is created, Cisco IOS XR software assigns an ID number to that rollback point. To roll back to a saved installation point, enter the installation point ID number assigned to it for the *point-id* argument. When a software configuration is committed with the **install commit** command, that configuration is also saved as the last committed installation point. Use the **committed** keyword to roll back to the last committed installation point.

Labels can be assigned to installation points using the **install label** command. Then these labels can be used to identify a specific installation point that you want to roll back to.

To display the saved rollback points available, use the online help function:

```
RP/0/0/CPU0:router(admin)# install rollback to ?
0          Specify the id for the install point to rollback to
1          Specify the id for the install point to rollback to
12         Specify the id for the install point to rollback to
15         Specify the id for the install point to rollback to
2          Specify the id for the install point to rollback to
4          Specify the id for the install point to rollback to
6          Specify the id for the install point to rollback to
7          Specify the id for the install point to rollback to
8          Specify the id for the install point to rollback to
9          Specify the id for the install point to rollback to
committed  Rollback to the last committed installation point
```

If a rollback operation is beyond two saved installation points, a router reload is required to avoid system instability. If a reload is required, a confirmation prompt appears before the reload occurs. Use the **install rollback to** command with the **prompt-level none** keywords to automatically ignore any reload confirmation prompts and proceed with the rollback operation.

If a software operation 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.

If a rollback operation requires that a package be activated that is no longer on the system (because the package had been removed), a message appears in the output of the **install rollback to** command indicating that the specified installation point is unavailable and that the required package must be added to roll back the software set to the specified installation point.

Use the **test** keyword to verify the effects of the proposed operations and determine whether the rollback 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.

Use the **clear install rollback oldest** command to delete saved installation points from the installation buffer.

Use the **show install rollback** command to display the software set associated with a saved installation point.

Rolling Back the Software Set for a Specific SDR

- To roll back the software set for a specific SDR from administration EXEC mode, use the **install rollback to** command with the **sdr** *sdr-name* keyword and argument.

- To roll back the software set when logged into an SDR, use the **install rollback to** command in EXEC mode.

Pausing Before Configuration Lock

Use the **pause sw-change** keywords to pause the operation before locking the configuration. A rollback operation begins with preparatory steps, such as software checks, and then proceeds with the actual software change. The configuration is locked for the actual software change. 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 software change whenever you choose. This is useful, for example, if your workflow involves configuring a router out of the network during software change 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.

Task ID

Task ID	Operations
pkg-mgmt	read, write

Examples

The following example shows how to roll back to a saved installation point:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install rollback to 8

Install operation 10 'install rollback to 8' started by user
  'user_b' at 07:49:26
UTC Mon Nov 14 2005.
```

```
The install operation will continue asynchronously.
RP/0/0/CPU0:router(admin)#Info:
The changes made to software configurations will not be persistent
Info:     across system reloads. Use the command
  'admin install commit' to make
Info:     changes persistent.
Info:     Please verify that the system is consistent following
  the software
Info:     change using the following commands:
Info:         show system verify
Info:         install verify

The currently active software is the same as the committed
  software.

Install operation 10 completed successfully at 07:51:24 UTC Mon
  Nov 14 2005.
```

In the following example, the software is rolled back to the last committed installation point and the rollback is paused before configuration lock and then completed when the user enters the **install operation complete** command:

```
RP/0/0/CPU0:router# install rollback to committed pause sw-change

Wed Jul 23 15:37:53.377 UTC
Install operation 16 'install rollback to committed pause sw-change'
  started by user 'userb' on SDR Owner via CLI at 15:37:54 UTC
Wed Jul 23 2008.
The install operation will continue asynchronously.
RP/0/0/CPU0:router#Info: Install Method: Parallel Process Restart
Info: Install operation 16 is pausing before the config lock is
  applied for the software change as requested by the user.
Info: No further install operations will be allowed until the
  operation is resumed.
Info: Please continue the operation using one of the following
  steps:
Info:  - run the command 'install operation 16 complete'.
Info:  - run the command 'install operation 16 attach synchronous'
        and then answer the query.
RP/0/0/CPU0:router# install operation 16 complete

Wed Jul 23 15:38:35.197 UTC
RP/0/0/CPU0:router#Info: Install operation 16 has been resumed.
Info: The changes made to software configurations will not be persistent
  across system reloads. Use the command '(admin)
Info: install 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 packages
Install operation 16 completed successfully at 15:39:18 UTC Wed
  Jul 23 2008.

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

Related Commands

Command	Description
clear install rollback oldest, page 9	Deletes saved installation points from the installation buffer.
install commit, page 37	Makes the current active software set persistent across RP reloads.
install label, page 46	Adds a label or description to a state associated with a rollback point.
show install log, page 88	Displays the entries stored in the logging installation buffer.

Command	Description
show install request, page 99	Displays the list of incomplete installation manager requests.
show install rollback, page 101	Displays the software set associated with a saved installation point.

install verify healthcheck

To verify that processes and dynamic link libraries (DLLs) running on a node are correct, use the **install verify healthcheck** command in EXEC or administration EXEC mode.

install verify healthcheck [**asynchronous**| **synchronous**] [**admin-profile**] [**sdr** *sdr-name*] [**location** *node-id*] [**repair**]

Syntax Description

asynchronous	(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.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.
admin-profile	(Optional. Administration EXEC mode only) Verifies the processes and DLLs in the administration profile only.
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Performs the command for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.
location *node-id*	(Optional) Verifies the consistency of previously installed software from the designated node with the package file from which it originated. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
repair	(Optional) Repairs anomalies found by the **install verify healthcheck** process.

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

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Release	Modification
Release 4.0.0	This command was removed from EXEC mode.
	Support was removed for the **sdr** keyword.

Usage Guidelines

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

The **install verify healthcheck** command is responsible for verifying that processes and DLLs in use by the system are correct and are executing from the correct location.

Note   The **install verify healthcheck** command can take up to two minutes per package to process.

Verifying the Software Set for a Specific SDR

- To verify the processes for a specific SDR from administration EXEC mode, use the **install verify healthcheck** command with the **sdr** *sdr-name* keyword and argument.

- To verify the software set when logged into an SDR, use the **install verify healthcheck** command in EXEC mode.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

The following example shows how to use the **install verify healthcheck** command. This command is run in asynchronous mode:

```
RP/0/0/CPU0:router# install verify healthcheck

Install operation 10 'install verify healthcheck' started by user
'userb' on SDR Owner via CLI at 04:56:49 UTC Thu Feb 22 2007.
The install operation will continue asynchronously.

Info:    This operation can take 1 minute to completion. Please be patient.
Info:    0/RP0/CPU0 [RP] [SDR: Owner]
Info:        DLLs and processes have right version.
Info:    0/RP1/CPU0 [RP] [SDR: Owner]
Info:        DLLs and processes have right version.
Info:    0/1/CPU0 [LC] [SDR: Owner]
Info:        /pkg/md5/f322c8dff20af6b765c8e8423899401a has wrong version.
Info:    0/6/CPU0 [LC] [SDR: Owner]
Info:        /pkg/md5/f322c8dff20af6b765c8e8423899401a has wrong version.
Info:    Health Check Summary:
Info:        0/RP0/CPU0 DLLs and processes have right version.
Info:        0/RP1/CPU0 DLLs and processes have right version.
Info:        0/1/CPU0 Process(es) with wrong version found.
Info:        0/6/CPU0 Process(es) with wrong version found.
Install operation 10 completed successfully at 04:56:50 UTC Thu Feb 22 2007.
```

The following example shows sample output from the **install verify healthcheck** command when there are problems that are repaired:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# install verify healthcheck repair

Info:     Node: 0/0/CPU0
Info:         process [ERROR] Anomalies Found.
Info:         process insthelper has version: 3.7.7
Info:         dll [SUCCESS] Health-check Successful.
Info:     Node: 0/3/CPU0
Info:         process [SUCCESS] Health-check Successful.
Info:         dll [ERROR] Anomalies Found.
Info:         dll verify has version 3.7.2.
Info:     Node: 0/RP0/CPU0
Info:         process [SUCCESS] Health-check Successful.
Info:         dll [SUCCESS] Health-check Successful.
Info:     Health Check Summary:
Info:         0/0/CPU0: ERROR.
Info:         0/3/CPU0: ERROR.
Info:         0/RP0/CPU0: SUCCESSFUL.
Info:         The processes can be repaired.
Info:     Repair begins
Info:         Restart insthelper on 0/0/CPU0...
Info:         Repair successful.
Info:     Repair ends..
```

Related Commands

Command	Description
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install request, page 99	Displays the list of incomplete installation manager requests.

install verify packages

To verify the consistency of a previously installed software set with the package file from which it originated, use the **install verify packages** command in EXEC or administration EXEC mode.

Administration EXEC Mode:

install verify packages [**sdr** *sdr-name*] [**repair**] [**location** *node-id*] [**admin-plane**] [**asynchronous**| **synchronous**]

EXEC Mode:

install verify packages [repair] [**location** *node-id*] [**asynchronous**| **synchronous**]

Syntax Description	
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Performs the command for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.
repair	(Optional) Repairs anomalies found by the **install verify packages** process.
location *node-id*	(Optional) Verifies the consistency of previously installed software from the designated node with the package file from which it originated. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
admin-plane	(Optional) Verify the admin profile only.
asynchronous	(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.
synchronous	(Optional) Performs the command in synchronous mode. This mode allows the installation process to finish before the prompt is returned.

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

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **sdr** *sdr-name* keyword and argument.

Release	Modification
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	This command was changed from **install verify** .
Release 3.6.0	No modification.
Release 3.7.0	This command was extended to check for corruptions in installation state files and MBI image files.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Use the **install verify packages** command to verify the consistency of a previously installed software set with the package file from which it originated. This command can be used as a debugging tool to verify the validity of the files that constitute the packages to determine if there are any corrupted files. This command also checks for corruptions of install state files and MBI image files. This command is particularly useful when issued after the activation of a package or when upgrading the Cisco IOS XR software to a major release.

Note   The **install verify packages** command can take up to two minutes per package to process.

Verifying the Software Set for a Specific SDR

- To verify the software set for a specific SDR from administration EXEC mode, use the **install verify packages** command with the **sdr** *sdr-name* keyword and argument.

- To verify the software set when logged into an SDR, use the **install verify packages** command in EXEC mode.

Task ID

Task ID	Operations
pkg-mgmt	execute

Examples

The following example shows how to verify the consistency of a previously installed software set with the package file from which it originated:

```
RP/0/RP0/CPU0:router# install verify packages

Install operation 2 '(admin) install verify packages' started by user 'admin' via CLI at
07:35:01 UTC Wed May 14 2008.
Info: This operation can take up to 2 minutes per package being verified. Please be patient.
Info: 0/3/CPU0 [LC] [SDR: Owner]
```

```
Info: meta-data: [SUCCESS] Verification Successful.
Info: /install/c12k-lc-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-fwdg-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-admin-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-base-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-os-mbi-3.8.0.02I: [SUCCESS] Verification Successful.
Info: 0/SM1/SP [SP] [Admin Resource]
Info: meta-data: [SUCCESS] Verification Successful.
Info: /install/c12k-admin-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-base-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-os-mbi-3.8.0.02I: [SUCCESS] Verification Successful.
Info: 0/3/SP [SP] [Admin Resource]
Info: meta-data: [SUCCESS] Verification Successful.
Info: /install/c12k-admin-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-base-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-os-mbi-3.8.0.02I: [SUCCESS] Verification Successful.
Info: 0/RP1/CPU0 [RP] [SDR: Owner]
Info: meta-data: [SUCCESS] Verification Successful.
Info: meta-data: [SUCCESS] Verification Successful.
Info: /install/c12k-os-mbi-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-base-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-admin-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-fwdg-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-lc-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-rout-3.8.0.02I: [SUCCESS] Verification Successful.
Info: 0/RP0/CPU0 [RP] [SDR: Owner]
Info: meta-data: [SUCCESS] Verification Successful.
Info: meta-data: [SUCCESS] Verification Successful.
Info: /install/c12k-os-mbi-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-base-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-admin-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-fwdg-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-lc-3.8.0.02I: [SUCCESS] Verification Successful.
Info: /install/c12k-rout-3.8.0.02I: [SUCCESS] Verification Successful.
Info: Verification Summary:
Info: 0/3/CPU0: SUCCESSFUL. No anomalies found.
Info: 0/SM1/SP: SUCCESSFUL. No anomalies found.
Info: 0/3/SP: SUCCESSFUL. No anomalies found.
Info: 0/RP1/CPU0: SUCCESSFUL. No anomalies found.
Info: 0/RP0/CPU0: SUCCESSFUL. No anomalies found.
Info: The system needs no repair.
Install operation 2 completed successfully at 07:46:29 UTC Wed May 14 2008
```

Related Commands

Command	Description
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install request, page 99	Displays the list of incomplete installation manager requests.

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

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. Use this command to display the default software profile for SDRs
verbose	(Optional) Displays a detailed summary of the active packages for a system, SDR, or node, including component and file information for each package.
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Displays the active packages for a specific SDR. The *sdr-name* argument is the name assigned to the SDR.
location *node-id*	(Optional) Displays the active packages for a designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the optional keywords and arguments: **sdr** *sdr-name* , **detail** , **summary** , and **verbose** .
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Release	Modification
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect 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 or all SDRs

- 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.

- To display information for all SDRs in the system, enter the command in administration EXEC mode, without the **sdr** keyword.

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

Examples

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

```
RP/0/0/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/c12k-os-mbi-3.9.0/mbi-rp.vm
    Active Packages:
      disk0:c12k-k9sec-p-3.9.0
      disk0:c12k-mpls-p-3.9.0
      disk0:c12k-mgbl-p-3.9.0
      disk0:c12k-mcast-p-3.9.0
      disk0:c12k-doc-p-3.9.0
      disk0:comp-c12k-mini-3.9.0
      disk0:c12k-fpd-3.9.0
      disk0:c12k-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/0/0/CPU0:router# show install summary

Thu May 20 10:14:38.919 DST
  Active Packages:
    disk0:c12k-upgrade-p-3.9.0
    disk0:c12k-k9sec-p-3.9.0
    disk0:c12k-mpls-p-3.9.0
    disk0:c12k-mgbl-p-3.9.0
    disk0:c12k-mcast-p-3.9.0
    disk0:c12k-doc-p-3.9.0
    disk0:comp-c12k-mini-3.9.0
    disk0:c12k-fpd-3.9.0
    disk0:c12k-diags-p-3.9.0
```

Table 1: 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.

Related Commands

Command	Description
install activate, page 13	Adds a software package or an SMU to the active software set.
show install active, page 68	Displays active software packages.
show install package, page 92	Displays information about a package.
show install pie-info, page 96	Displays information about the packages contained in a PIE file.
show install which, page 105	Displays the origin of a component, package, or file.

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**] [**sdr** *sdr-name*| **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 *sdr-name* argument is the name assigned to the SDR.
location *node-id*		(Optional) Displays the active packages for a designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the optional keywords and arguments: **sdr** *sdr-name* , **summary** , and **verbose** .
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Release	Modification
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect 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** 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 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 **show install active** command in EXEC mode.

- To display information for all SDRs, enter the **show install active** command in 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 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.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

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

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

  Node 0/1/CPU0 [LC] [SDR: Owner]
    Boot Device: bootflash:
```

```
         Boot Image: /disk0/c12k-os-mbi-3.9.0.30I/mbic12k-lc.vm
         Active Packages:
           disk0:asr9k-adv-video-3.9.0.14I
           disk0:c12k-fpd-3.9.0.30I
           disk0:c12k-diags-3.9.0.30I
           disk0:c12k-k9sec-3.9.0.30I
           disk0:c12k-mcast-3.9.0.30I
           disk0:c12k-mpls-3.9.0.30I
           disk0:
c12k-mini-3.9.0.30I
```

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

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

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

    disk0:c12k-doc-3.9.0.03I

    disk0:c12k-fpd-3.9.0.03I
    disk0:c12k-diags-3.9.0.03I
    disk0:c12k-k9sec-3.9.0.03I
    disk0:c12k-mgbl-3.9.0.03I
    disk0:c12k-mcast-3.9.0.03I
    disk0:c12k-mpls-3.9.0.03I
    disk0:
c12k-mini-3.9.0.03I
```

The following example illustrates sample output from the **show install active** command with the **summary** keyword for a specific SDR:

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

  Active Packages:
    disk0:c12k-doc-3.9.0.28I
    disk0:c12k-fpd-3.9.0.28I
    disk0:hfr-diags-3.9.0
    disk0:hfr-mgbl-3.9.0
    disk0:hfr-k9sec-3.9.0
    disk0:comp-hfr-mini-3.9.0
```

Table 2: show install active 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.

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
show install package, page 92	Displays information about a package.
show install pie-info, page 96	Displays information about the packages contained in a PIE file.
show install which, page 105	Displays the origin of a component, package, or file.

show install audit

To compare the current active packages and software maintenance upgrades (SMUs) on the router with a list of packages and SMUs that should be active, use the **show install audit** command in EXEC or administration EXEC mode.

Administration EXEC Mode

show install audit file *file-name* [**sdr** *sdr-name*| **location** *node-id*] **[verbose]**

EXEC Mode

show install audit file *file-name* [**location** *node-id*] **[verbose]**

Syntax Description

file *file-name*	Specifies the location and name of the installation audit file.
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Audits the active packages on a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.
location *node-id*	(Optional) Audits the active packages on a designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.
verbose	(Optional) Displays a detailed summary of the audit and can be used for troubleshooting.

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.4.1	This command was introduced.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Use the **show install audit** command to compare the currently active packages and SMUs on the router with a list of packages and SMUs that should be active. The file should be a simple text file with a flat list of packages that should be active on the router. It should be placed in a location accessible from the router.

Note the following about the audit file:

- Each package or SMU name must be on a separate line.

Note   For accurate results, make sure that every line in the audit file, including the last line, is terminated with a line break.

- Comments are allowed and must begin with the pound character: #

- SMUs can be specified with a package name only; regular packages should be specified as "package-version". For SMUs, if a version is not specified, the default version of "1.0.0" is used.

- Composite package names are allowed.

- PIE extensions are allowed at the end of the package name, and they are stripped off.

- Maximum number of lines in a file is limited to 100; the maximum length of each line is limited to 256 characters.

Following are the contents of a valid audit file:

```
#   R3.7.2
#   some comments
#

c12k-mini-3.7.2
c12k-mgbl-3.7.2
c12k-mcast-3.7.2
c12k-mpls-3.7.2
c12k-base-3.7.2.CSCek42760
c12k-base-3.7.2.CSCse14607
c12k-mpls-3.7.2.CSCse00294
comp-c12k-3.7.2.CSCsd07147
```

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 **show install audit** 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 for all nodes.

Verbose Information

Use the **verbose** keyword to display additional information, including component and file information for each package.

Command Output

Output from the **show install audit** command provides the following information about the audit:

- Command completes successfully, and the result of the audit is success. This means that all packages listed in the audit file are active, and there are no extra packages active on all nodes where the audit was requested. This can refer to the entire router, a particular SDR, or a particular node.

- Command completes successfully, and the result of the audit is failure. Audit failure means that there are discrepancies between the set of packages listed in the audit file and the packages active on the nodes where audit is done.

  The following additional messages indicate the type of discrepancy found in the audit:

  ◦ Package specified in the audit file is not present at all. In other words, there was no **install add** performed for this package.

  ◦ Package specified in the audit file is present, but is not active on all nodes where it should be active. For example, a package that goes only to route processors (RPs) is not active on all RPs audited (either the entire router or a specific SDR, depending on the scope of command).

  ◦ Package specified in the audit file is present, but is not active on some nodes where it should be active. In this case, a list is provided of the nodes where the package is not active.

  ◦ Extra package that is not present in the audit file is active on all nodes being audited.

  ◦ Extra package that is not present in the audit file is active on some nodes being audited. In this case, a list is provided of the nodes where the package is active.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

The following sample output indicates that the audit is successful:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show install audit file tftp:/10.2.2.2/install_list.txt

Install audit operation completed.
Install audit result: SUCCESS
```

The following sample output indicates that there are discrepancies between the packages installed on the router and the supplied audit file:

```
RP/0/0/CPU0:router(admin)# show install audit file tftp://10.2.2.2/install_list.txt

Info:  Package (c12k-base-3.2.4.CSCxx12345) is not active only on node(s)
Info:  0/5/CPU0, 0/3/CPU0.
Install audit operation completed.
Install audit result: FAILED (discrepancies found)
```

Related Commands

Command	Description
install activate, page 13	Adds a software package or an SMU to the active software set.
show install active, page 68	Displays active software packages.
show install package, page 92	Displays information about a package.
show install pie-info, page 96	Displays information about the packages contained in a PIE file.
show install which, page 105	Displays the origin of a component, package, or file.

show install auto-abort-timer

To display the current auto-abort-timer, use the **show install auto-abort-timer** command in EXEC or administration EXEC mode.

show install auto-abort-timer

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

The **show install auto-abort-timer** command displays the timer value configured with the **install activate** and **install deactivate** commands.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

The following sample output displays the current auto-abort-timer value:

```
RP/0/0/CPU0:router# show install auto-abort-timer
No Auto Abort Timer(s) present
```

Related Commands

Command	Description
install activate, page 13	Adds a software package or an SMU to the active software set.
install deactivate, page 39	Removes a package from the active software set.

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 3.7.0	This command was introduced.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect 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

Examples

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

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

Tue Feb  3 08:20:27.175 PST DST
Node                             Boot Options
--------------------------------+------------------
0/0/CPU0                         no boot options set.
```

```
0/1/CPU0                        no boot options set.
0/2/CPU0                        no boot options set.
0/4/CPU0                        no boot options set.
0/5/CPU0                        no boot options set.
```

Related Commands

Command	Description
clear install boot-options, page 3	Clears boot options.
install boot-options, page 35	Sets boot options.

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

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

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

Command Modes   Administration EXEC

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	This command was supported in both EXEC mode and administration EXEC mode.
	Support was removed for the **all** keyword.
	Support was added for the keywords and arguments: **sdr** *sdr-name*, **detail**, **summary**, and **verbose**.

Release	Modification
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect 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.

Enter the **show install committed** 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 **show install committed** 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 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

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

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

Thu May 27 00:06:11.155 DST
  Committed Packages:
    disk0:c12k-doc-3.9.0.04I
    disk0:c12k-fpd-3.9.0.04I

    disk0:c12k-diags-3.9.0.04I
    disk0:c12k-k9sec-3.9.0.04I
    disk0:c12k-mgbl-3.9.0.04I
    disk0:c12k-mcast-3.9.0.04I
    disk0:c12k-mpls-3.9.0.04I
    disk0:
c12k-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/0/0/CPU0:router# show install committed

Tue Feb  3 08:58:04.744 PST DST
  Node 0/0/CPU0 [LC(SE-SEC)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.8.0.28I/gsr/ucode/mbiprp-lc.ucode
    Committed Packages:
      disk0:c12k-sbc-3.8.0.28I
      disk0:c12k-ipsec-service-3.8.0.28I
      disk0:c12k-fpd-3.8.0.28I
      disk0:c12k-firewall-3.8.0.28I
      disk0:c12k-diags-3.8.0.28I
      disk0:c12k-k9sec-3.8.0.28I
      disk0:c12k-mcast-3.8.0.28I
      disk0:c12k-mpls-3.8.0.28I
      disk0:c12k-mini-3.8.0.28I

  Node 0/1/CPU0 [LC(SE-SEC)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.8.0.28I/gsr/ucode/mbiprp-lc.ucode
    Committed Packages:
      disk0:c12k-sbc-3.8.0.28I
      disk0:c12k-ipsec-service-3.8.0.28I
      disk0:c12k-fpd-3.8.0.28I
      disk0:c12k-firewall-3.8.0.28I
      disk0:c12k-diags-3.8.0.28I
      disk0:c12k-k9sec-3.8.0.28I
      disk0:c12k-mcast-3.8.0.28I
      disk0:c12k-mpls-3.8.0.28I
      disk0:c12k-mini-3.8.0.28I

  Node 0/2/CPU0 [LC(E5-CEC-v2)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.8.0.28I/gsr/ucode/mbiprp-lc.ucode
    Committed Packages:
      disk0:c12k-sbc-3.8.0.28I
      disk0:c12k-ipsec-service-3.8.0.28I
      disk0:c12k-fpd-3.8.0.28I
      disk0:c12k-firewall-3.8.0.28I
      disk0:c12k-diags-3.8.0.28I
      disk0:c12k-k9sec-3.8.0.28I
      disk0:c12k-mcast-3.8.0.28I
      disk0:c12k-mpls-3.8.0.28I
      disk0:c12k-mini-3.8.0.28I
```

```
   Node 0/4/CPU0 [LC(E5-CEC-v2)] [SDR: Owner]
     Boot Device: mem:
     Boot Image: /disk0/c12k-os-mbi-3.8.0.28I/gsr/ucode/mbiprp-lc.ucode
     Committed Packages:
       disk0:c12k-sbc-3.8.0.28I
       disk0:c12k-ipsec-service-3.8.0.28I
       disk0:c12k-fpd-3.8.0.28I
       disk0:c12k-firewall-3.8.0.28I
       disk0:c12k-diags-3.8.0.28I
       disk0:c12k-k9sec-3.8.0.28I
       disk0:c12k-mcast-3.8.0.28I
       disk0:c12k-mpls-3.8.0.28I
       disk0:c12k-mini-3.8.0.28I

   Node 0/5/CPU0 [RP] [SDR: Owner]
     Boot Device: disk0:
     Boot Image: /disk0/c12k-os-mbi-3.8.0.28I/mbiprp-rp.vm
     Committed Packages:
       disk0:c12k-doc-3.8.0.28I
       disk0:c12k-sbc-3.8.0.28I
       disk0:c12k-ipsec-service-3.8.0.28I
       disk0:c12k-fpd-3.8.0.28I
       disk0:c12k-firewall-3.8.0.28I
       disk0:c12k-diags-3.8.0.28I
       disk0:c12k-k9sec-3.8.0.28I
       disk0:c12k-mgbl-3.8.0.28I
       disk0:c12k-mcast-3.8.0.28I
       disk0:c12k-mpls-3.8.0.28I
       disk0:c12k-mini-3.8.0.28I
```

Table 3: 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.

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install commit, page 37	Makes the current active software set persistent across RP reloads.
show install, page 64	Displays active packages.
show install active, page 68	Displays active software packages.
show install package, page 92	Displays information about a package.
show install pie-info, page 96	Displays information about the packages contained in a PIE file.
show install which, page 105	Displays the origin of a component, package, or file.

show install inactive

To display the inactive packages on the designated secure domain router shelf controller (DSDRSC) 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

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

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	This command was modified to display inactive packages only for the boot device.
Release 3.5.0	No modification.

Release	Modification
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Use the **show install inactive** command to display the inactive packages for the DSDRSC .

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.

- To display information for all SDRs in the system, enter the command in administration EXEC mode, without the **sdr** keyword.

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.

Task ID

Task ID	Operations
pkg-mgmt	read

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

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show install inactive
  Secure Domain Router: Owner

    Node 0/0/CPU0 [RP] [SDR: Owner]
      Inactive Packages:
        disk0:c12k-compmgmt__installmgr-0.0.5

    Node 0/5/CPU0 [LC(E3-OC48-POS)] [SDR: Owner]
      Inactive Packages:
        disk0:c12k-rout-3.4.0
        disk0:c12k-compmgmt__installmgr-0.0.5
```

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

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

Tue Feb  3 02:09:21.359 PST
  Inactive Packages:
    disk0:comp-c12k-mini-3.7.2
    disk0:c12k-infra-test-3.7.2
    disk0:c12k-fpd-3.7.2
    disk0:c12k-doc-3.7.2
    disk0:c12k-diags-3.7.2
    disk0:c12k-mgbl-3.7.2
    disk0:c12k-mcast-3.7.2
    disk0:c12k-mpls-3.7.2
    disk0:c12k-rout-3.7.2
    disk0:c12k-base-3.7.2
    disk0:c12k-os-mbi-3.7.2
```

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

```
RP/0/0/CPU0:router(admin)# show install inactive detail

  Secure Domain Router: Owner

    Node 0/0/CPU0 [RP] [SDR: Owner]
      Inactive Packages:
        disk0:c12k-compmgmt__installmgr-0.0.5

    Node 0/5/CPU0 [LC(E3-OC48-POS)] [SDR: Owner]
      Inactive Packages:
        disk0:c12k-rout-3.4.0
        disk0:c12k-compmgmt__installmgr-0.0.5
```

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

```
RP/0/0/CPU0:router(admin)# show install inactive summary location 0/0/CPU0

    Node 0/0/CPU0 [RP] [SDR: Owner]
      Inactive Packages:
        disk0:c12k-compmgmt__installmgr-0.0.5

RP/0/0/CPU0:router(admin)# show install inactive summary location 0/5/CPU0

    Node 0/5/CPU0 [LC(E3-OC48-POS)] [SDR: Owner]
```

```
Inactive Packages:
  disk0:c12k-rout-3.4.0
  disk0:c12k-compmgmt__installmgr-0.0.
```

Table 4: show install inactive Field Descriptions

Field	Description
disk0:c12k-mgbl-3.8.0	Storage device and the name of the package that is inactive.
c12k-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.

Related Commands

Command	Description
install deactivate, page 39	Removes a package from the active software set.
show install package, page 92	Displays information about a package.
show install pie-info, page 96	Displays information about the packages contained in a PIE file.
show install which, page 105	Displays the origin of a component, package, or file.

show install log

To display the details of installation requests, use the **show install log** command in EXEC or administration EXEC mode.

show install log [*install-id*| **from** *install-id*] [**detail**| **verbose**] [**reverse**]

Syntax Description

install-id	(Optional) Identifier assigned to an installation operation.
from *install-id*	(Optional) Displays information for logs from the specified installation identifier and forward.
detail	(Optional) Displays details including impact to processes and nodes.
verbose	(Optional) Displays the information from the keyword, plus additional information about impacts to files, processes, and dynamic link libraries (DLLs).
reverse	(Optional) Displays the logs in reverse order.

Command Default No default behavior or values

Command Modes EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **detail** and **verbose** keywords.
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	No modification.
Release 3.6.0	Support was added for the **from** and **reverse** keywords.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Enter the **show install log** command with no arguments to display a summary of all installation operations, including the changes to files and the processes impacted by each request. Specify the *install-id* argument to display details for a specific operation.

The *install-id* argument is listed beside each operation in the **show install log** summary and is attached to messages from that operation. For example, the third installation operation has "Install 3:" attached to all its status messages.

The **reverse** keyword displays the information from the latest install log to the oldest install log. Use the **from** keyword to limit the output to be from the specified installation identifier and later.

Displaying Information for a Specific SDR or All SDRs

- 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.

- To display information for all SDRs in the system, enter the command in administration EXEC mode, without the **sdr** keyword.

Detailed and Verbose Information

Use the **detail** keyword to display detailed information for all previous installations, including impact to processes and nodes impacted. The detailed information is a subset of the information displayed with the **verbose** keyword.

Use the **verbose** keyword to display detailed information for all previous installations, information including files changes, impact to processes, and impact to dynamic link libraries (DLLs).

Task ID

Task ID	Operations
pkg-mgmt	read

Examples   The following example shows a summary of all installation requests:

```
RP/0/0/CPU0:router(admin)# show install log

Wed Sep  2 13:50:18.882 DST

Install operation 1 started by user 'userb' via CLI at 01:48:12 DST Sat Aug 9 2009.
    (admin) install add
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-diags.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-doc.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-fpd.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-k9sec.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mcast.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mgbl.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mpls.pie-3.9.0.20I.SIT_IMAGE
```

```
        Install operation 1 failed at 01:48:14 DST Sat Aug 29 2009.
    --------------------------------------------------------------------------------

Install operation 2 started by user 'userb' via CLI at 01:48:39 DST Sat Aug 29 2009.
    (admin) install add
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-diags.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-doc.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-fpd.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-k9sec.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mcast.pie-3.9.0.20I.SIT_IMAGE
    /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mgbl.pie-3.9.0.20I.SIT_IMAGE
   /tftp://172.23.16.81/auto/tftpboot-users/usera/c12k-mpls.pie-3.9.0.20I.SIT_IMAGE activate

        Install operation 2 completed successfully at 02:27:45 DST Sat Aug 29 2009.
    --------------------------------------------------------------------------------

Install operation 3 started by user 'userb' via CLI at 02:29:39 DST Sat Aug 29 2009.
    (admin) install commit
    Install operation 3 completed successfully at 02:29:50 DST Sat Aug 29 2009.
    --------------------------------------------------------------------------------

3 entries shown
```

The following example shows the details for a specific installation request. The **detail** keyword is used to display additional information about the impact of the operation to processes and nodes:

```
RP/0/0/CPU0:router(admin)# show install log 3 detail
Sun Feb 15 17:10:31.033 PST DST

Install operation 3 started by user 'user1' via CLI at 02:13:42 PST Tue Feb 10 2009.
(admin) install commit
Install operation 3 completed successfully at 02:13:51 PST Tue Feb 10 2009.

Install logs: Install operation 3 '(admin) install commit' started by user 'user1' via
  CLI at 02:13:42 PST Tue Feb 10 2009. Install operation 3 completed
  successfully at 02:13:51 PST Tue Feb 10 2009.
```

The following example shows information for the installation requests. The **verbose** keyword is used to display detailed information including file changes, impact to processes, and impact to DLLs.

```
 R
P/0/0/CPU0:router(admin)# show install log 2 verbose

Sun Feb 15 17:11:07.491 PST DST
Install operation 2 started by user 'user1' via CLI at 01:40:26 PST Tue Feb 10 2009.
(admin) install add
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-diags.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-doc.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-fpd.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-k9sec.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mcast.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mgbl.pie-3.8.0.30I.SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mpls.pie-3.8.0.30I.SIT_IMAGE
Install operation 2 completed successfully at 02:08:26 PST Tue Feb 10 2009.

Install logs: Install operation 2 '(admin) install add
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-diags.pie-3.8.0.30I. SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-doc.pie-3.8.0.30I.SI T_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-fpd.pie-3.8.0.30I.SI T_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-k9sec.pie-3.8.0.30I. SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mcast.pie-3.8.0.30I. SIT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mgbl.pie-3.8.0.30I.S IT_IMAGE
  /tftp://172.23.16.81/auto/tftpboot-users/user1/c12k-mpls.pie-3.8.0.30I.S IT_IMAGE
    started by user 'user1' via CLI at 01:40:26 PST Tue Feb 10 2009. Part 1 of 2
(add software): Started Info: The following packages are now available to be activated:
Info: Info: disk0:c12k-diags-3.8.0.30I Info: disk0:c12k-doc-3.8.0.30I
Info: disk0:c12k-fpd-3.8.0.30I Info: disk0:c12k-k9sec-3.8.0.30I
Info: disk0:c12k-mcast-3.8.0.30I Info: disk0:c12k-mgbl-3.8.0.30I
Info: The packages can be activated across the entire router.
```

```
Info: Part 1 of 2 (add software): Completed successfully Part 2 of 2 (activate software):
Started
Info: The following sequence of sub-operations has been determined to Info: minimize any
impact:
--More--
```

The following example shows all installation requests in reverse order, such that the most recent requests are displayed first:

```
RP/0/0/CPU0:router(admin)# show install log reverse

Install operation 2 started by user 'user_a' via CLI at 12:33:10 GMT Mon Oct 29 2008.
(admin) install add /tftp:/xx-tftp/user_a/c12k-fpd.pie
Install operation 2 completed successfully at 12:35:19 GMT Mon Oct 29 2008.
------------------------------------------------------------------------------

Install operation 1 started by user 'user_a' via CLI at 12:31:07 GMT Mon Oct 29 2007.
(admin) install add /tftp:/xx-tftp/user_a/c12k-mgbl.pie
Install operation 1 completed successfully at 12:32:12 GMT Mon Oct 29 2008.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install add, page 23	Adds the contents of a PIE file to a storage device.
install commit, page 37	Makes the current active software set persistent across RP reloads.
install deactivate, page 39	Removes a package from the active software set.
install remove, page 49	Deletes inactive packages from a storage device.
install rollback to, page 53	Rolls back the software set to a saved installation point or to the last committed installation point.
install verify packages, page 61	Verifies the consistency of a previously installed software set with the package file from which it originated.

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

device **:** *package*	Device and package, expressed in concatenated form (for example, disk0:c12k-mgbl-3.8.0). For the *device:* argument, the value is a specified storage device, typically **disk0:**.
all	Displays all installed packages on the system or SDR.
brief	(Optional) Displays only the name and version of packages.
detail	(Optional) Displays detailed information including impact to processes and nodes, vendor information, card support, and component information.
verbose	(Optional) Displays the information included in the keyword, plus information about dynamic link libraries (DLLs).

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

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.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

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

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

  disk0:c12k-mini-3.4.0
  disk0:c12k-admin-3.4.0
  disk0:c12k-base-3.4.0
  disk0:c12k-fwdg-3.4.0
  disk0:c12k-lc-3.4.0
  disk0:c12k-os-mbi-3.4.0
  disk0:c12k-rout-3.4.0
  disk0:c12k-mgbl-3.4.0
  disk0:c12k-mpls-3.4.0
  disk0:c12k-diags-3.4.0
  disk0:c12k-k9sec-3.4.0
  disk0:c12k-mcast-3.4.0
```

The following sample shows output from the **show install package** command with the **detail** keyword:

```
RP/0/0/CPU0:router(admin)# show install package disk0:c12k-mgbl-3.3.1 detail

  disk0:c12k-mgbl-3.3.1
      c12k-mgbl V3.3.1[Default]  manageability
      Vendor : Cisco Systems
      Desc   : manageability
      Build  : Built on Mon Jun 26 11:08:42 UTC 2006
      Source : By iox28.cisco.com in /auto/ioxws57/nightly/r33x_12000_06.06.26 fo8
      Card(s): RP
```

```
          Restart information:
            Default:
              parallel impacted processes restart
          Components in package disk0:c12k-mgbl-3.3.1, package  c12k-mgbl:
              emweb V[r33x/1]  Agranat/Virata Emweb embedded web server
              ipsla V[r33x/1]  IP SLA Agent (formerly known as Service Assurance Agen)
              cfg-sh-mgbl V[r33x/1]  LR shared plane manageability config
              doc-hfr-mgbl V[r33x/2]  Contains the man page documentation for HFR mans
              snmp-pingmib V[r33x/1]  Ping Management Information Base (MIB)
              man-xml-infra V[r33x/1]  Generic infrastructure for XML support
              snmp-assetmib V[r33x/1]  CISCO ASSET Management Information Base (MIB)
              package-compat V[r33x/1]  This is to collect package^Mcompatibility infs
              package-manage V[r33x/6]  This is to collect package^Mcompatibility infe
              snmp-sensormib V[r33x/1]  Sensor  Management Information Base (MIB)
              man-xml-cli-ops V[r33x/1]  Handler for XML which contains CLI requests
              man-xml-mda-ops V[r33x/1]  Handler for XML which contains MDA requests
              snmp-disman-mib V[r33x/1]  Event MIB Implementation
              generic-xmlagent V[r33x/1]  Generic XML Agent
              man-xml-ttyagent V[r33x/1]  XML Telnet/SSH agent
              snmp--disman-mib V[r33x/1]  EXPRESSION-MIB implementation
              snmp-bulkfilemib V[r33x/1]  Bulk File Management Information Base (MIB)
              man-xml-alarm-ops V[r33x/1]  The XML Operations Provider for alarms.
              snmp-ftpclientmib V[r33x/1]  FTP Client Management Information Base (MI)
              c12000-iox-mgb-cwi V[r33x/2]  Craft Web Interface related binaries and e
              man-xml-cfgmgr-ops V[r33x/1]  Handler for XML which contains CfgMgr reqs
              manageability-perf V[r33x/1]  Performance Management Component for Manay
              snmp-assetmib-enhi V[r33x/2]  CISCO ENHANCED IMAGE MIB
              snmp-frucontrolmib V[r33x/2]  CISCO-FRU-CONTROL MIB Implementation in EA
```

Table 5: show install package Field Descriptions, page 94 describes the significant fields shown in the display.

Table 5: show install package Field Descriptions

Field	Description
disk0:c12k-rout-3.8.0	Storage device and the name of the package that has been installed.
c12k-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.
Card(s)	Card types supported by the package.
Restart information	Restart impact on processes or nodes.
Components in package	Components included in the package.

Related Commands

Command	Description
show install, page 64	Displays active packages.
show install active, page 68	Displays active software packages.

Command	Description
	Displays committed active packages.
	Displays inactive packages in the active software set.
	Displays the entries stored in the logging installation buffer.
	Displays information about the packages contained in a PIE file.
	Displays the origin of a component, package, or file.

show install pie-info

To display information about a package installation envelope (PIE) installation file, use the **show install pie-info** command in EXEC or administration EXEC mode.

show install pie-info *device***:***package* [**brief**| **detail**| **verbose**]

Syntax Description

device **:** *package*	Device, directory path, and package, expressed in concatenated form.
brief	(Optional) Displays summary information.
detail	(Optional) Displays detailed information.
verbose	(Optional) Displays comprehensive information.

Command Default   Displays summary information.

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Support was added for the **detail** , and **verbose** keywords.
Release 3.4.0	Support was added for EXEC mode.
	The **summary** keyword was replaced by the **brief** keyword.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Use the **install pie-info** command to display information about a specified PIE installation file.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

The following example illustrates sample output from the **install pie-info** command. The default display shows the package name, expiration date, and file size:

```
RP/0/0/CPU0:router(admin)# show install pie-info disk1:/
c12k
-mgbl-p.pie-3.8.0

Contents of pie file '/disk1:/c12k-mgbl-p.pie-3.8.0':
  Expiry date       : Jan 19, 2007 02:55:56 UTC
  Uncompressed size : 17892613
  c12k-mgbl-3.8.0
```

The following example illustrates sample output from the **install pie-info** command with the **detail** keyword. This command displays additional information including vendor, build date supported cards, and component information:

```
RP/0/0/CPU0:router(admin)# show install pie-info disk1:/
c12k
-mgbl-p.pie-3.8.0 detail
Contents of pie file '/disk1:/c12k-mgbl-p.pie-3.8.0':
  Expiry date       : Jan 19, 2007 02:55:56 UTC
  Uncompressed size : 17892613
  c12k-mgbl-3.8.0
  c12k-mgbl V3.8.0[00]  Manageability Package
  Vendor : Cisco Systems
  Desc   : Manageability Package
  Build  : Built on Wed May 10 08:04:58 UTC 2006
  Source : By edde-bld1 in /vws/aga/production/3.8.0/c12k/workspace for c28
  Card(s): RP
  Restart information:
    Default:
      parallel impacted processes restart
      Components in package c12k-mgbl-3.8.0, package
c12k-mgbl:
manageability-cwi V[r33x/2]  Craft Web Interface related binaries ae
c12k-feature-ipsla V[r33x/1]  IPSLA time stamping feature
          doc-c12k-mgbl V[r33x/2]  Contains the
  man page documentation for c12ksemweb V[r33x/1]
  Agranat/Virata Emweb embedded web server
  generic-xmlagent V[r33x/1]  Generic XML Agent
  ipsla V[r33x/1]  IP SLA Agent (formerly known as Service Assurance )
  manageability-perf V[r33x/1]  Performance Management Component for y
  man-xml-alarm-ops V[r33x/1]  The XML Operations Provider for alarms.
  man-xml-cfgmgr-ops V[r33x/1]  Handler for XML which contains CfgMgrs
  man-xml-cli-ops V[r33x/1]  Handler for XML which contains CLI reques
  man-xml-infra V[r33x/1]  Generic infrastructure for XML support
  man-xml-mda-ops V[r33x/1]  Handler for XML which contains MDA reques
  man-xml-ttyagent V[r33x/1]  XML Telnet/SSH agent
  cfg-sh-mgbl V[r33x/1]  LR shared plane manageability config
  package-compat V[r33x/1]  This is to collect package^Mcompatibilitys
  package-manage V[r33x/3]  This is to collect package^Mcompatibilitye
  snmp-assetmib V[r33x/1]  CISCO ASSET Management Information Base (M)
  snmp-bulkfilemib V[r33x/1]  Bulk File Management Information Base ()
  snmp-assetmib-enhi V[r33x/1]  CISCO ENHANCED IMAGE MIB
  snmp-disman-mib V[r33x/1]  Event MIB Implementation
  snmp--disman-mib V[r33x/1]  EXPRESSION-MIB implementation
```

```
snmp-frucontrolmib V[r33x/1]  CISCO-FRU-CONTROL MIB Implementation A
snmp-ftpclientmib V[r33x/1]  FTP Client Management Information Base)
snmp-pingmib V[r33x/1]  Ping Management Information Base (MIB)
snmp-sensormib V[r33x/1]  Sensor  Management Information Base (MIB)
```

Table 6: show install pie-info Field Descriptions, page 98 describes the significant fields shown in the display.

Table 6: show install pie-info Field Descriptions

Field	Description
Contents of pie file	Storage device, directory, and name of the package.
Expiry date	Date when the package expires and can no longer be added to a router.
Uncompressed size	File size of the package after it is added to a local storage device.
c12k-mgbl-3.4.0	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.
Card(s)	Card types supported by the package.
Restart information	Restart impact on processes or nodes.
Components in package	Components included in the package.

Related Commands

Command	Description
show install active, page 68	Displays active software packages.
show install committed, page 80	Displays committed active packages.
show install inactive, page 84	Displays inactive packages in the active software set.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install package, page 92	Displays information about a package.
show install request, page 99	Displays the list of incomplete installation manager requests.
show install which, page 105	Displays the origin of a component, package, or file.

show install request

To display the list of incomplete installation requests, running and queued, use the **show install request** command in EXEC or administration EXEC mode.

show install request [detail]

Syntax Description

detail	(Optional) Displays detailed information.

Command Default   No default behavior or values

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	Command syntax was changed from **show install requests** to **show install request** .
Release 3.4.0	Support was added for EXEC mode.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Cisco IOS XR software processes only one installation request per secure domain router (SDR) at a time. The **show install request** command displays any incomplete request that is currently running.

Use the **show install request** command in administration EXEC mode to display installation operations for all SDRs in the system. In EXEC mode, this command displays only the installation requests for that SDR.

Note The default of installation commands is asynchronous mode, meaning that the command runs in the background and the EXEC prompt is returned as soon as possible. Performing a command in synchronous mode allows the installation process to finish before the prompt is returned.

Tip These requests cannot be stopped by pressing **Ctrl-C**. To stop a request, use the **install attach** command to attach to the operation, then press **Ctrl-C** and select the "abort" option.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

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

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show install request

Install operation 17 'install add /tftp://172.31.255.255/dir/19mcast' started by user
'user_b' at 14:38:45 UTC Thu Mar 30 2006. The operation is 1% complete 2,017KB
downloaded The operation can still be aborted.
```

The following example shows sample output from the **show install request** command when no installation operations are running:

```
RP/0/0/CPU0:router(admin)# show install request

There are no install requests in operation.
```

Related Commands

Command	Description
install activate, page 13	Adds software functionality to the active software set.
install add, page 23	Adds the contents of a PIE file to a storage device.
install deactivate, page 39	Removes a package from the active software set.
install remove, page 49	Deletes inactive packages from a storage device.
install rollback to, page 53	Rolls back the software set to a saved installation point or to the last committed installation point.
install verify packages, page 61	Verifies the consistency of a previously installed software set with the package file from which it originated.

show install rollback

To display the software set associated with a saved installation point, use the **show install rollback** command in EXEC or administration EXEC mode.

Administration EXEC Mode

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

EXEC Mode

show install rollback {*point-id*| *label*} [**detail**| **summary**] [**location** *node-id*]

Syntax Description

point-id	Installation point ID number.
label	Label associated with an installation point ID.
detail	(Optional) Displays a detailed summary of information for a system, SDR, or node, including the packages contained in a composite package.
summary	(Optional) Displays a summary of information in a system or SDR.
sdr *sdr-name*	(Optional) Displays information for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR. This option is in administration EXEC mode only.
location *node-id*	(Optional) Displays information for a designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	The command was moved to administration EXEC mode only.
	Support was added for the keywords and arguments: **sdr** *sdr-name*, **detail**, and **summary**.
Release 3.4.0	Support was added for EXEC mode.

Release	Modification
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

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

Use the command to display the software set associated with a saved installation point. To display the available rollback points, use the online help system. For example: **show install rollback ?** .

Tip   This command can be used with the **install rollback to** command to verify the software set associated with a saved installation point before rolling back to the saved installation point.

Displaying Information for a Specific SDR or All Nodes

- 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.

- To display information for all SDRs in the system, enter the command in administration EXEC mode, without the **sdr** keyword.

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 packages that are used by the **install rollback to** command. Use the **detail** keyword to display additional information, including the individual packages included in the composite packages.

Tip   Use the **clear install rollback oldest** command to delete saved installation points from the installation buffer.

Task ID	Task ID	Operations
	pkg-mgmt	read

Examples   In the following example, the command with the **?** option displays the available rollback points:

```
RP/0/0/CPU0:router# admin
RP/0/0/CPU0:router(admin)# show install rollback ?

   0  ID of the rollback point to show package information for
   2  ID of the rollback point to show package information for
```

In the following example, the command displays the packages for a specific rollback point. This display summarizes the packages that are used by the **install rollback to** command:

```
RP/0/0/CPU0:router(admin)# show install rollback 1

Tue Jul 28 08:13:36.367 DST
ID: 1, Label:
Timestamp: 05:44:21 DST Wed Jul 15 2009

Secure Domain Router: Owner

  Node 0/2/CPU0 [LC(E5-CEC-v2)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.9.0.14I/0x21/gsr/ucode/mbiprp-lc.ucode
    Rollback Packages:
      disk0:c12k-ipsec-service-3.9.0.14I
      disk0:c12k-fpd-3.9.0.14I
      disk0:c12k-firewall-3.9.0.14I
      disk0:c12k-diags-3.9.0.14I
      disk0:c12k-k9sec-3.9.0.14I
      disk0:c12k-mcast-3.9.0.14I
      disk0:c12k-mpls-3.9.0.14I
      disk0:c12k-mini-3.9.0.14I

  Node 0/3/CPU0 [LC(E5-CEC-v2)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.9.0.14I/0x21/gsr/ucode/mbiprp-lc.ucode
    Rollback Packages:
      disk0:c12k-ipsec-service-3.9.0.14I
  --More--
```

In the following example, the command with the **detail** keyword displays additional information for the packages, including the individual packages included in the composite packages:

```
RP/0/0/CPU0:router(admin)# show install rollback 1 detail

ID: 1, Label:
Timestamp: 05:44:21 DST Wed Jul 15 2009

Secure Domain Router: Owner

  Node 0/2/CPU0 [LC(E5-CEC-v2)] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/c12k-os-mbi-3.9.0.14I/0x21/gsr/ucode/mbiprp-lc.ucode
    Rollback Packages:
      disk0:c12k-ipsec-service-3.9.0.14I
      disk0:c12k-fpd-3.9.0.14I
      disk0:c12k-firewall-3.9.0.14I
```

```
        disk0:c12k-diags-3.9.0.14I
        disk0:c12k-k9sec-3.9.0.14I
        disk0:c12k-mcast-3.9.0.14I
        disk0:c12k-mpls-3.9.0.14I
        disk0:c12k-mini-3.9.0.14I
            disk0:c12k-lc-3.9.0.14I
            disk0:c12k-fwdg-3.9.0.14I
            disk0:c12k-admin-3.9.0.14I
            disk0:c12k-base-3.9.0.14I
            disk0:c12k-os-mbi-3.9.0.14I
  --More--
```

describes the significant fields shown in the display.

Table 7: show install rollback Field Descriptions

Field	Description
Boot Image	Minimum boot image (MBI) used to boot the node.
Rollback Packages	Packages that are rolled back.

Related Commands

Command	Description
clear install rollback oldest, page 9	Deletes saved installation points from the installation buffer.
install rollback to, page 53	Rolls back the software set to a saved installation point or to the last committed installation point.

show install which

To display the origin of a named process, component, or package, use the **show install which** command in EXEC or administration EXEC mode.

show install which {**component** *name* **[verbose]**| **file** *filename*} [**sdr** *sdr-name*| **location** *node-id*]

Syntax Description

component *name*	Displays the package information for the component specified in the *name* argument.
verbose	(Optional) Displays summary, component, and file information for each component.
file *filename*	Displays the package information for the file specified in the *filename* argument.
sdr *sdr-name*	(Optional. Administration EXEC mode only.) Displays information for a specific secure domain router (SDR). The *sdr-name* argument is the name assigned to the SDR.
location *node-id*	(Optional) Displays information for the designated node. The *node-id* argument is expressed in *rack*/*slot*/*module* notation.

Command Default   The default search is performed for the active software set.

Command Modes   EXEC

Administration EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.3.0	This command was supported in both EXEC mode and administration EXEC mode. Support was removed for the **files** keyword. Support was added for the **verbose** keyword. Support was added for the **sdr** *sdr-name* keyword and argument.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.

Release	Modification
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

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

Use the **show install which** command to display information about a named process, component, or package. Information is shown for each node where the process, component, or package is located.

This command returns the same data in EXEC mode and administration EXEC mode.

Displaying Information for a Specific SDR or All SDRs

- 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.

- To display information for all SDRs in the system, enter the command in administration EXEC mode, without the **sdr** keyword.

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.

Note If the process, component, or package is not located on that node, an error message is displayed.

Verbose Information

Use the **verbose** keyword to display additional information, including component and file information for each package.

Task ID

Task ID	Operations
pkg-mgmt	read

Examples

The following example shows cisco discovery protocol (CDP) information for a single node. The **show install which** command is entered with the **file** and **location** keywords specified:

```
RP/0/0/CPU0:router# show install which file cdp location 0/1/cpu0

Tue Feb  3 12:40:31.517 PST DST
Node 0/1/CPU0 has file cdp for boot package
/disk0/c12k-os-mbi-3.8.0.28I/gsr/ucode/mbiprp-lc.ucode
   from c12k-base
Package:
    c12k-base
        c12k-base V3.8.0.28I[SIT_IMAGE]  Base Package for 124xx
        Vendor : Cisco Systems
        Desc   : Base Package for 124xx
        Build  : Built on Mon Dec 22 07:56:11 PST 2008
        Source : By sjc-lds-364 in
/auto/ioxbuild5/production/3.8.0.28I.SIT_IMAGE/c12k/workspace
        for c4.2.1-p0
        Card(s): RP, RP-PRP3, DRP, DRPSC, OC3-POS-4, OC12-POS, GE-3, OC12-POS-4, OC48-POS,

        E3-OC48-POS, E3-OC12-POS-4, E3-OC3-POS-16, E3-OC3-POS-8, E3-OC3-POS-4, E3-OC48-CH,

        E3-OC12-CH-4, E3-GE-4, E3-OC3-ATM-4, E3-OC12-ATM-4, E5-CEC, E5-CEC-v2, SE-SEC,
EZ24-4x10GE,
        EZ24-40x1GE, EZ40-40x1GE, EZ40-4x10GE, EZ40-8x10GE, E3-OC12-CH-1
        Restart information:
          Default:
            parallel impacted processes restart

Component:
    cdp.4k V[ci-38/10]  Cisco Discovery Protocol (CDP)

File:
    cdp
        Card(s)             : LC
        File type           : Server
        Remotely-hosted     : No
        Local view          : /pkg/bin/cdp
        Local install path  : /disk0/c12k-base-3.8.0.28I/bin/cdp
        Central install path : /disk0/c12k-base-3.8.0.28I/lc/bin/cdp
```

The following example shows the message displayed if the specified process, component, or package is not active on a node:

```
RP/0/0/CPU0:router# show install which file cdp location 0/1/CPU0

File cdp not active on node 0/6/CPU0
```

Table 8: show install which Field Descriptions

Field	Description
Package:	Name of the package that contains the file or component being described.
c12k-base V3.8.0	Name and release number 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.
Component:	Component name and version number.
File:	Name of the of the process or DLL file that information is being specified for.
Card(s)	Supported card types on which the file can be used.
Local view	Generic directory path used to access the file on the nodes where it is used.
Local install path	Local directory path where the file is stored.
Central install path	Directory path where the file is stored on RP and SC nodes.

Related Commands

Command	Description
show install, page 64	Displays active packages.
show install active, page 68	Displays active software packages.
show install inactive, page 84	Displays inactive packages in the active software set.
show install committed, page 80	Displays committed active packages.
show install log, page 88	Displays the entries stored in the logging installation buffer.
show install package, page 92	Displays information about a package.
show install request, page 99	Displays the list of incomplete installation manager requests.