Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Cisco ASR 1000 Series Aggregation Services Routers support the following software upgrade procedures:

• In-Service Software Upgrades (ISSU) for redundant platforms—The ISSU process allows software to be updated or otherwise modified while packet forwarding continues with minimal interruption. ISSU supports two different software upgrade modes:
  ◦ Consolidated package mode
  ◦ Subpackage mode

The supported platforms include Cisco ASR 1006, ASR 1006-X, ASR 1009-X and Cisco ASR 1013 Routers

• Upgrade process with service impact for non-redundant platforms—Non-hardware-redundant chassis models (such as the Cisco ASR 1001 Router, Cisco ASR 1001-X Router, Cisco ASR 1001-HX Router, Cisco ASR 1002 Router, Cisco ASR 1002-X Router, Cisco ASR 1002-HX Router, and Cisco ASR 1004 Router) do not support ISSU upgrade or downgrade. Instead subpackage software upgrade is supported only if the router is running in subpackage mode. Traffic loss cannot be avoided during the installation of the ESP package as a part of ISSU.

If you want to upgrade the ROMMON and IOS at the same time, perform the steps given below:

• Copy the XE image to the router and configure the boot system to point to the new image.
• Copy the ROMMON package to the router and perform the ROMMON upgrade.
• Reload the router and verify that it boots to the IOS prompt on the new XE image.
• Verify that the new ROMMON image was successfully installed using a show platform.

The following table lists Compatibility matrix of the software upgrade process for various Cisco ASR 1000 Series Aggregation Services Router.

<table>
<thead>
<tr>
<th>Platform</th>
<th>Consolidated Package Upgrade</th>
<th>Subpackage Upgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco ASR 1006 Router</td>
<td>Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 1: Software Upgrade Compatibility Matrix for Various Cisco ASR 1000 Series Aggregation Services Router Platforms
<table>
<thead>
<tr>
<th>Platform</th>
<th>Consolidated Package Upgrade</th>
<th>SubPackage Upgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco ASR 1013 Router</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1004 Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1002 Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1002-X Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1002-F Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1001 Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1001-X Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1006-X Router</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1009-X Router</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1001-HX Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td>Cisco ASR 1002-HX Router</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>

**Finding Support Information for Platforms and Cisco IOS and Catalyst OS Software Images**

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

- Prerequisites for Software Upgrade Processes, page 3
- ISSU Upgrade for Redundant Platforms, page 3
- Upgrade Process with Service Impact for Nonredundant Platforms, page 64
- Minimal Disruptive Restart ISSU, page 134
- Using ISSU to Perform a Consolidated Package Upgrade in a Dual Route Processor Configuration with MDR, page 136
- Using ISSU to Upgrade the Subpackages on a Cisco ASR 1006 Router and Cisco ASR 1013 Router (issu Command Set) with MDR, page 146
- Using ISSU to Upgrade Subpackages on a Cisco ASR 1006 Router or Cisco ASR 1013 Router (request platform command set) with MDR, page 180
- Additional References, page 213
- Feature Information for Software Upgrade Process, page 214
Prerequisites for Software Upgrade Processes

Be sure to complete the following prerequisites for running the ISSU process based on your chassis model:

- Refer to the ISSU compatibility tables in the Release Notes for Cisco ASR 1000 Series Aggregation Services Routers.
- 4 GB of DRAM memory is required for installing software upgrade on a system with RP1 route processor.
- ISSU is supported when the router is running in subpackage mode or in consolidated package mode.
- For the Cisco ASR 1001 Router, Cisco ASR 1001-X Router, ASR1001-HX Router, Cisco ASR 1002-X Router, and ASR1002-HX Router, the Cisco IOS Software redundancy requires 8-GB DRAM and the IOS software redundancy license.

ISSU Upgrade for Redundant Platforms

ISSU represent a full or partial software upgrade of a system from one version to another with minimal outage on the forwarding plane (minimal packet loss) and no outage on the control plane.

Overview of ISSU on the Cisco ASR 1000 Series Routers

For the Cisco ASR 1000 Series Routers, ISSU-compatibility depends on the software subpackage being upgraded and the hardware configuration. Consolidated packages are ISSU-compatible in dual RP configurations only and have other limitations described later in this document. Some RP and ESP software subpackages can be upgraded in service even in single RP or ESP hardware configurations via dual IOS processes running on the RP; others require dual RP or ESP configurations for an ISSU upgrade. The SPA and SIP software subpackages must be upgraded on a per-SPA or per-SIP basis.

If you are updating multiple subpackages, you should also realize that the sequence of the upgrade is important to minimize router downtime for the software upgrade.

The specific procedures in this document represent supported and tested installation sequences. The Cisco IOS XE system software allows other installation sequences for special purposes under the guidance of Cisco customer support representatives, but the steps in this document should be followed otherwise. These steps should be followed completely, as the Cisco ASR 1000 Series Routers are designed to run one version of Cisco IOS XE for all consolidated packages and subpackages on an RP, and running subpackages from different versions of Cisco IOS XE can cause unexpected router behavior.

When performing ISSU upgrades on the Cisco ASR 1000 Series Routers, it is important to remember that minimal interruption upgrades can be performed using either the issu command set or the request platform command set, and that either command set can be used to perform limited interruption individual consolidated package or subpackage upgrades.

Note

ROMmon images are downloaded separately from Cisco IOS XE images and have their own installation procedures, and are therefore not mentioned as part in this document as part of the ISSU upgrade procedure.

The following table provides a list of the Cisco ASR 1000 Series Routers subpackages and whether or not they can be upgraded without losing any network traffic in single and dual RP and ESP configurations using ISSU.
<table>
<thead>
<tr>
<th>Subpackage</th>
<th>Nonredundant RP and ESP</th>
<th>Redundant RP and ESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated package (any)</td>
<td>No (Reload required)</td>
<td>Yes (RP switchover)</td>
</tr>
<tr>
<td>RPBase</td>
<td>No (RP Reload required)</td>
<td>Yes (RP switchover)</td>
</tr>
<tr>
<td>RPControl</td>
<td>Yes (in-service)</td>
<td>Yes (in-service)</td>
</tr>
<tr>
<td>RPAccess</td>
<td>Yes (in-service)</td>
<td>Yes (in-service)</td>
</tr>
<tr>
<td>RPIOS</td>
<td>Yes(^1) (IOS software switchover)</td>
<td>Yes (RP switchover)</td>
</tr>
<tr>
<td>RPBoot</td>
<td>No (^2) (RP reload required)</td>
<td>Yes (RP reload)</td>
</tr>
<tr>
<td>ESPBase</td>
<td>No (^3) (ESP reload required)</td>
<td>Yes(^4) (via ESP switchover)</td>
</tr>
<tr>
<td>ESPX86Base</td>
<td>No (^5) (ESP reload required)</td>
<td>Yes(^6) (via ESP switchover)</td>
</tr>
<tr>
<td>SIPBase(^2)</td>
<td>No (SPAs in SIP do not forward traffic during upgrade)</td>
<td>Yes (With Minimal Disruptive Restart (MDR), traffic is forwarded with minimal interruption)</td>
</tr>
<tr>
<td>SIPSPA(^8)</td>
<td>No (SPAs in SIP do not forward traffic during upgrade)</td>
<td>Yes (With MDR, traffic is forwarded with minimal interruption)</td>
</tr>
<tr>
<td>ELCBase(^9)</td>
<td>No (Built-in SPAs in an Ethernet Line Card (ELC) do not forward traffic during upgrade)</td>
<td>Yes (With MDR, traffic is forwarded with minimal interruption)</td>
</tr>
<tr>
<td>ELCSPA(^10)</td>
<td>No (Built-in SPAs in an ELC do not forward traffic during upgrade)</td>
<td>Yes (With MDR, traffic is forwarded with minimal interruption)</td>
</tr>
<tr>
<td>NIM SSD(^11)</td>
<td>No (NIM reload required)</td>
<td>NA</td>
</tr>
<tr>
<td>NGWIC T1E1(^12)</td>
<td>No (T1E1 do not forward traffic during upgrade)</td>
<td>NA</td>
</tr>
</tbody>
</table>

1 Only supported if software redundancy is configured on the RP.
2 Rpboot and Webui packages are introduced from Polaris 16.x.x release.
3 ESP has to reload to complete ESPBase subpackage upgrade. All router traffic will be lost during ESP upgrade.
4 An ESP switchover occurs as part of the upgrade, so traffic is forwarded with minimal interruption.
ESP has to reload to complete ESPBase subpackage upgrade. All router traffic will be lost during ESP upgrade and ESPX86Base is not included in the RP1 bundle.

An ESP switchover occurs as part of the upgrade, so traffic is forwarded with minimal interruption. ESPX86Base is not included in the RP1 bundle.

Any SIPBase upgrade will require the SPA interfaces to go down during the upgrade for all the SPAs in the SIP.

Any SIPSPA upgrade will require the SPA interfaces for that particular SPA to go down during the upgrade.

Any ELCBase upgrade will require the ELC interfaces to go down during the upgrade for all the SPAs in the SIP. ELCBase is not included in the RP1 bundle.

Any ELCSPA upgrade will require the ELC interfaces for that particular SPA to go down during the upgrade. ELCSPA is not included in the RP1 bundle.

NIM SSD is a built-in module available in ASR 1001-X platform. It is a slot for an extra hardisk, which helps increase the memory.

NGWIC T1E1 is a built-in module available in ASR 1001-X platform, used for serial interface. Any NGWIC T1E1 upgrade will require T1E1 interfaces for that particular SPA to go down during the upgrade.

ISSU Rollback Timer Overview

The Cisco ASR 1000 Series Router ISSU procedure has a rollback timer. Rollback timers are used for ISSU procedures on all Cisco routers that support ISSU, but this section will provide a brief overview of ISSU rollback timers on the Cisco ASR 1000 Series Routers.

During ISSU, the rollback timer begins after the consolidated package or subpackage is loaded. If the upgrade does not move forward in the amount of time specified in the rollback timer, the configuration will automatically "roll back" to the previous configuration and the ISSU upgrade will be cancelled.

Upgrades using the `issu` command set and the `request platform` command set both have the rollback timer option. The `issu` command set always uses a rollback timer; the `request platform` command set does not use a rollback timer unless the `auto-rollback` option is used in the `request platform software package install` command line.

For the `issu` command set, the `issu acceptversion` command can be entered to stop the rollback timer without committing the upgrade during the ISSU upgrade. The `issu commitversion` command can be entered to stop the rollback timer and commit the ISSU upgrade.

For the `request platform` command set, the `request platform software package install rp slot commit` command must be entered to stop the rollback timer only in cases where the `auto-rollback` option is used.

The rollback timer for the `issu` command set can be configured by entering the `issu set rollback-timer` command. The rollback timer when used with the `request platform` command set is specified when you use the `auto-rollback` option when entering the `issu request platform software package install` command.

For ISSU upgrades on Cisco ASR 1000 Series Routers, it may be advisable to set long rollback times when the upgrade is being performed on routers with large configurations.

The amount of time left on the rollback timer during an ISSU upgrade can be checked by entering the `show issu rollback-timer` command.

Software Upgrade with Dual IOS Processes on a Single RP Overview

To complete a software upgrade of an individual subpackage using dual IOS processes on a single RP, SSO must first be enabled.

Software upgrade with dual IOS processes is useful for upgrading the individual RP subpackages that can be upgraded without a router reload. Importantly, note that most subpackage upgrades in a single RP configuration require a hardware reload to complete (whether an RP reload for an RP subpackage, an ESP reload for the ESPBase subpackage, a SIP reload for a SIPBase subpackage, or a SPA reload for the SIPSPA subpackage), so limited interruption upgrades for single RP configurations are not available in most upgrade scenarios.
Cisco IOS XE Software Package Compatibility for ISSU

When upgrading the Cisco IOS XE operating system software using the ISSU process, it is important to determine the compatibility of the upgraded software to your current software and hardware. The ISSU process allows software to be updated or otherwise modified while packet forwarding continues with minimal interruption.

Cisco IOS XE release compatibility using the ISSU process utilizes the SSO functionality to preserve state while software versions on the router differ, as during an upgrade. Most SSO-capable features in each Cisco IOS XE release are ISSU capable. ISSU is only supported if SSO is enabled in the configuration and the system is in a steady state (SSO ready state has been achieved). ISSU compatibility depends on the set of specific feature clients that are in use and whether they support ISSU. All ISSU upgrades include at least one IOS switchover operation. It is important to understand which features are in use and whether these features are ISSU compatible.

Cisco ASR1006, Cisco ASR1006-X, Cisco ASR1009-X, and Cisco ASR 1013 series routers are hardware-redundant chassis. The hardware-redundant chassis has two ESP linecards and two RPs which exchange state using hardware links. The Cisco ASR1002 and ASR1004 Series Routers are not hardware redundant, but are software-redundancy capable. The nonredundant chassis has a single RP and a single ESP, but allows the operation of up to two IOS processes on the single RP to exchange states locally.

Restrictions for ISSU

Restrictions for the ISSU procedures include:

- Different image types must not be run simultaneously.
- For ATM SPAs on the Cisco ASR1000 Series Routers, ISSU from releases prior to Cisco IOS XE Release 2.5.0 to Cisco IOS XE Release 2.5.0, or from Cisco IOS XE Release 2.5.0 to a release prior to Cisco IOS XE Release 2.5.0, is not supported. If you want to perform ISSU in this environment, you must first remove the configuration from the ATM SPAs on the router, and then shut down the SPAs using the shutdown command prior to running the ISSU process.
- Cisco IOS XE releases not listed as compatible in the ISSU compatibility tables must not be run simultaneously (in a Cisco ASR1006 series router or Cisco ASR 1013 series router) or co-installed on any of the Cisco ASR1000 Series Routers since unexpected failures of one or both RPs or state loss can be experienced. Cisco IOS XE releases listed as partially compatible may incur a loss of state. Cisco IOS XE releases listed as requiring an intermediate release are not directly compatible; however, a migration path is available to preserve some or all state by upgrading to a separate intermediate version, as shown in the tables. The tables do not cover nonredundant (software or hardware) environments as no incremental update is possible under those circumstances.
- In Cisco IOS XE Release 3.1S, ISSU upgrade and subpackage software upgrade from Cisco IOS XE Release 2.x.x to Cisco IOS XE Release 3.x.xS, including release 3.1S, are not supported. The ISSU downgrade from Cisco IOS XE Release 3.x.xS, including release 3.1S to 2.x.x, is also not supported.
ISSU upgrade and subpackage software upgrade is restarted from Cisco IOS XE Release 3.1S. Therefore, rebuilds and releases after Cisco IOS XE Release 3.1S will support ISSU and software upgrade and downgrade, based on the ISSU compatibility matrix tables.

- ISSU upgrade or downgrade between Cisco IOS XE 3.x.x release and Polaris 16.x.x release is not supported.

When you run the software upgrade from Cisco IOS XE Release 2.x.x to Cisco IOS XE Release 3.x.xS, you have to load the new image on both RPs, verify that it is good code, change the boot loader variable, and reboot the whole chassis. Failure to do that results in a "wedged" router and the only remedy is physically pull out one of the RPs, boot on the remaining RP, downgrade its code to the same version as the pulled out RP and start the process over again.

**ISSU Upgrade Procedures**

This section contains the following topics:

**Using ISSU to Perform a Consolidated Package Upgrade in a Dual Route Processor Configuration**

Consolidated packages can only be upgraded using ISSU in dual Route Processor configurations. ISSU is not supported for consolidated package upgrades in single Route Processor configurations.

If you want the RPs on your Cisco ASR 1000 Series router to be running using a consolidated package after the ISSU upgrade is complete, use the following instructions:

Note: This procedure will only work if the current RPs are already running consolidated packages.

**SUMMARY STEPS**

1. `ip tftp source-interface gigabitethernet slot/port`
2. `copy tftp: URL-to-target-location`
3. `copy source-file-system:filename standby-destination-filesystem`
4. `dir URL-to-target-location`
5. `issu loadversion rp upgrade-rp-number standby-file-system:filename`
6. `issu runversion`
7. `telnet ip-address port`
8. `issu acceptversion`
9. `issu commitversion`
10. `show version`
11. `hw-module slot RP-slot reload`
## Detailed Steps

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> ip tftp source-interface gigabitethernet slot/port</td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured:</td>
</tr>
<tr>
<td>Example:             slot/port—Specifies the location of the TFTP source-interface.</td>
<td></td>
</tr>
<tr>
<td>Example:             To copy a file using TFTP through the Management</td>
<td>GigabitEthernet 0 command must be entered before entering the copy tftp command.</td>
</tr>
<tr>
<td>Example:             Copy the consolidated package onto the active RP.</td>
<td></td>
</tr>
<tr>
<td>Step 2 copy tftp: URL-to-target-location</td>
<td>Copy the consolidated package onto the standby RP.</td>
</tr>
<tr>
<td>Example:             Copy the consolidated package onto the standby RP.</td>
<td></td>
</tr>
<tr>
<td>Step 3 copy source-file-system:filename</td>
<td>Copy the consolidated package onto the standby RP.</td>
</tr>
<tr>
<td>Example:             Copy the consolidated package onto the standby RP.</td>
<td></td>
</tr>
<tr>
<td>Step 4 dir URL-to-target-location</td>
<td>(Optional) Display the contents of the target directories to confirm the successful copy of the file package.</td>
</tr>
<tr>
<td>Example:             dir URL-to-target-stby-location</td>
<td>(Optional) Display the contents of the target directories to confirm the successful copy of the file package.</td>
</tr>
<tr>
<td>Example:             dir stby-bootflash:</td>
<td>(Optional) Display the contents of the target directories to confirm the successful copy of the file package.</td>
</tr>
<tr>
<td>Example:             dir stby-bootflash:</td>
<td>(Optional) Display the contents of the target directories to confirm the successful copy of the file package.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| **Step 5** | **Command:** `issu loadversion rp upgrade-rp-number standby-file-system:filename`  
**Example:**  
Router# issu loadversion rp 1 file stby-bootflash:asr1000rp1-adventerprisek9.02.01.01.12 2-33.XNA1.bin  
Load the target consolidated package onto the standby RP. After you receive the message indicating that the terminal state has been reached, go on to **Step 6**. |
| **Step 6** | **Command:** `issu runversion`  
**Example:**  
Router# issu runversion  
Run the consolidated package that was loaded in **Step 5**.  
**Note** If this command is entered before the terminal state is reached, a “peer is not online” or “Standby RP is not in terminal state” error message will be seen and the `issu runversion` command will not work. If the `issu runversion` command does not run for these reasons, wait for the “terminal state is reached” message to appear and retry the `issu runversion` command. You can also monitor the terminal state using the `show platform` command. After ISSU runversion is completed, a switchover will automatically occur and the standby RP will become the active RP. |
| **Step 7** | **Command:** `telnet ip-address port`  
**Example:**  
[unix-server-1 ~]$ telnet 172.17.52.157 2003  
Log in to the RP being upgraded, preferably using the RP’s console port, to complete the upgrade. (This is the new active RP, that was the standby RP prior to the ISSU process.)  
**Note** Ensure the hostname does not end in “-stby” after logging into the RP, as this indicates that the RP being accessed is still the standby RP. There are many ways to log on to a console port. The example shows access to the console port from a UNIX host using telnet. |
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 8 issu acceptversion</td>
<td>(Optional) Stops the ISSU rollback timer. This step is optional as long as Step 9 is completed before the rollback timer expires.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# issu acceptversion</td>
<td></td>
</tr>
<tr>
<td>Step 9 issu commitversion</td>
<td>Completes the ISSU upgrade.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td>Step 10 show version</td>
<td>(Optional) Enter the show version, show platform, or show running-configuration commands to confirm that the upgrade completed successfully, as follows:</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example: show platform</td>
<td></td>
</tr>
<tr>
<td>Example: show running-configuration</td>
<td></td>
</tr>
<tr>
<td>Step 11 hw-module slot RP-slot reload</td>
<td>Reload the new software on the Standby RP.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# hw-module slot R0 reload</td>
<td></td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to perform consolidated package upgrade in a dual route processor configuration:

```
Router(config)# ip tftp source-interface gigabitethernet 0
Router(config)# copy tftp bootflash:
Address or name of remote host []? 172.17.16.81
Source filename []? /auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
Accessing tftp://172.17.16.81/auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin...
Loading /auto/tftp-users/user/asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin from 172.17.16.81 (via GigabitEthernet0): !!!!!!
[OK - 20927980 bytes]
20927980 bytes copied in 329.215 secs (635536 bytes/sec)
Router(config)# copy bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin stby-bootflash:
Destination filename [asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin]?
Copy in progress...CCCCCCCC<output removed for brevity>
20927980 bytes copied in 434.790 secs (481216 bytes/sec)
Router(config)# dir bootflash:
Directory of bootflash:
  11 drwx 16384 Dec 4 2007 04:32:46 -08:00 lost+found
  86401 drwx 4096 Dec 4 2007 06:06:24 -08:00 .ssh
  14403 drwx 4096 Dec 4 2007 06:06:38 -08:00 .rollback_timer
  28801 drwx 4096 Jul 21 2008 15:29:25 -07:00 .prst_sync
  43201 drwx 4096 Dec 4 2007 04:34:45 -08:00 .installer
  12 -rw- 208904396 May 28 2008 16:17:34 -07:00 crashinfo_RP_00_00_20080529-162753-DST
  15 -rw- 7516 Jul 2 2008 15:01:39 -07:00 target_support_output.tgz.tgz
  13 -rw- 45977 Apr 9 2008 16:48:46 -07:00 startup-config
  113 -rw- 45977 Apr 9 2008 16:48:46 -07:00 target_support_output.tgz.tgz
  275093 -rw- 275093 May 29 2008 16:27:53 -07:00 crashinfo_RP_00_00_20080529-162753-DST
  75604 -rw- 47071436 May 29 2008 15:45:24 -07:00 asr1000rp1-adventerprisek9.02.01.00.122-33.XNA.bin
  57602 -rw- 5740 May 29 2008 15:45:23 -07:00 asr1000rp1-espbase.02.01.00.122-33.XNA.pkg
  57605 -rw- 20334796 May 29 2008 15:45:25 -07:00 asr1000rp1-rpaccess.02.01.00.122-33.XNA.pkg
  57606 -rw- 22294692 May 29 2008 15:45:27 -07:00 asr1000rp1-rpbase.02.01.00.122-33.XNA.pkg
  57607 -rw- 21946572 May 29 2008 15:45:26 -07:00 asr1000rp1-rpcontrol.02.01.00.122-33.XNA.pkg
  57608 -rw- 48099532 May 29 2008 15:45:27 -07:00 asr1000rp1-rpios-adventreprisek9.02.01.00.122-33.XNA.pkg
  57609 -rw- 34324684 May 29 2008 15:45:28 -07:00 asr1000rp1-sipbase.02.01.00.122-33.XNA.pkg
  57610 -rw- 22124748 May 29 2008 15:45:29 -07:00 asr1000rp1-sipspa.02.01.00.122-33.XNA.pkg
928862208 bytes total (76644352 bytes free)
```
Router# dir stby-bootflash:
Directory of stby-bootflash:
11 drwx 16384 Dec 13 2004 03:45:47 -08:00 lost+found
14657 drwx 4096 Jul 17 2008 16:43:34 -07:00 .rollback_timer
29313 drwx 4096 Dec 13 2004 03:53:00 -08:00 .ssh
12 -rw- 33554432 Dec 13 2004 03:53:49 -08:00 nvram_00100
13 -rw- 20890436 Jun 5 2008 20:12:53 -07:00 .prst_sync
12 -rw- 47071436 Jun 5 2008 20:16:55 -07:00 .prst_sync
14 -rw- 209227980 Jul 17 2008 16:16:07 -07:00 asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
945377280 bytes total (276652032 bytes free)
Router# issu loadversion rp 1 file stby-bootflash:asr1000rp1-adventerprisek9.02.01.01.122-33.XNA1.bin
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting system installation readiness checking ---
Finished system installation readiness checking
--- Starting installation changes ---
Setting up image to boot on next reset
Starting automatic rollback timer
Finished installation changes
SUCCESS: Software will now load.
PE23_ASR-1006#
Jul 21 23:34:27.206: %ASR1000_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
Jul 21 23:34:27.271: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUNDANCY_STATE_CHANGE)
Jul 21 23:37:05.528: %ASR1000_OIR-6-ONLINECARD: Card (rp) online in slot R1
Jul 21 23:37:25.480: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_FOUND(4))
Jul 21 23:37:25.480: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
Jul 21 23:38:47.172: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
Jul 21 23:38:47.173: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Router# issu runversion
--- Starting installation state synchronization ---
Finished installation state synchronization
Initiating active RP failover
SUCCESS: Standby RP will now become active
PE23_ASR-1006#
System Bootstrap, Version 12.2(33r)XN2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2008 by cisco Systems, Inc.
<additional output removed for brevity>
Technical Support: http://www.cisco.com/techsupport
Using ISSU to Upgrade the Subpackages in a Dual Route Processor Configuration

This section provides instructions on performing an ISSU upgrade on a Cisco ASR 1000 Series Router with dual RPs that is currently running individual subpackages.

This section covers the following topics:

Using ISSU to Upgrade the Subpackages on a Cisco ASR 1006 Router, ASR1006-X Router, ASR1009-X Router, or ASR 1013 Router (issu Command Set)

This section provides the instructions for performing an ISSU upgrade using subpackages on a Cisco ASR 1006 Router, ASR1006-X Router, ASR1009-X Router, or ASR 1013 Router with a dual RP setup using the issu command set.

This procedure can only be performed if the current ASR 1006 Router, ASR1006-X Router, ASR1009-X Router, or ASR 1013 Router have two active RPs and both RPs are running subpackages.
SUMMARY STEPS

1. show version
2. copy running-config startup-config
3. mkdir URL-to-directory-name
4. ip tftp source-interface gigabitethernet port
5. copy tftp: URL-to-target-location
6. request platform software package expand file URL-to-consolidated-package
7. dir target-URL
8. copy file-system: asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP
10. issu loadversion rp standby-RP file target-standbyRP-URL-for-sub-packages:asr1000rp*version*.pkg force
11. hw-module slot standby-RP reload
12. issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-[sipbase,sipspa]*version*.pkg slot SIP-slot-number force
15. issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp*version*.pkg force
16. show version active-RP provisioned
17. redundancy force-switchover
18. request platform software package clean

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show version</td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td>Example: show version active-rp installed</td>
<td>• show version and show version active-rp installed—Verify the running version of the Cisco IOS XE software on the router, and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td>Example: dir filesystem: directory</td>
<td>• dir—Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td>Example: show platform</td>
<td>• show platform—Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td>Example: show redundancy states</td>
<td></td>
</tr>
</tbody>
</table>
### Command or Action

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><code>copy running-config startup-config</code></td>
</tr>
<tr>
<td>3</td>
<td><code>mkdir URL-to-directory-name</code></td>
</tr>
<tr>
<td>4</td>
<td><code>ip tftp source-interface gigabitethernet port</code></td>
</tr>
<tr>
<td>5</td>
<td><code>copy tftp URL-to-target-location</code></td>
</tr>
</tbody>
</table>

### Purpose

- **Step 2**: After you have confirmed that the system states are acceptable, save the current configuration to the startup configuration.

- **Step 3**: Create a directory to store the consolidated package and subpackages. This directory must be created in most cases because the consolidated packages and subpackages have to be separated from the subpackages that booted the router at this step of the procedure.

- **Step 4**: Specifies the Gigabit Ethernet TFTP source-interface to be configured: slot/port—Specifies the location of the TFTP source-interface.

  **Note**: To copy a file using TFTP through the Management Ethernet interface, the `ip tftp source-interface GigabitEthernet 0` command must be entered before entering the `copy tftp` command.

- **Step 5**: Copy the consolidated package file into the directory created in Step 3 of this procedure. The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>routerarestored</td>
<td>router are stored (the directory containing the packages.conf provisioning file from which the router was booted).</td>
</tr>
<tr>
<td>Tip</td>
<td>It is recommended that you copy the package onto a usb: or harddisk: file system for space considerations when performing this step of the procedure.</td>
</tr>
<tr>
<td>Step 6 request platform software package expand file URL-to-consolidated-package</td>
<td>Extract the subpackages out of the consolidated package file into the temporary directory.</td>
</tr>
<tr>
<td>Example: request platform software package expand file usb0:221subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin</td>
<td></td>
</tr>
<tr>
<td>Step 7 dir target-URL</td>
<td>(Optional) Display the directory to confirm that the files were extracted.</td>
</tr>
<tr>
<td>Example: dir usb0:221subs</td>
<td></td>
</tr>
<tr>
<td>Step 8 copy file-system::asr1000rp2-espx86base.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
<tr>
<td>Example: copy file-system::asr1000rp2-espx86base.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td>Note From Polaris 16.x.x release, the new packages rpboot and webui are introduced, which needs to be copied as well.</td>
</tr>
<tr>
<td>Example: copy file-system::asr1000rp2-rpaccess.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system::asr1000rp2-rpbase.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system::asr1000rp2-rpcontrol.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system::asr1000rp2-rpios.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-sipbase.version.pkg</code></td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-sipspa.version.pkg</code></td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-elcbase.version.pkg</code></td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-elcspa.version.pkg</code></td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>usb0:221subs/asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
</tbody>
</table>
### Command or Action

<table>
<thead>
<tr>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the standby RP are currently stored.</td>
</tr>
</tbody>
</table>

**Note** From Polaris 16.x.x release, the new packages `rpboot` and `webui` are introduced, which needs to be copied as well.

**Example:**
```
Router# copy usb0:221subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**
```
Router# copy usb0:221subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**
```
Router# copy usb0:221subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**
```
Router# copy usb0:221subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

<table>
<thead>
<tr>
<th>Step 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the standby RP are currently stored.</td>
</tr>
</tbody>
</table>

**Note** From Polaris 16.x.x release, the new packages `rpboot` and `webui` are introduced, which needs to be copied as well.

**Example:**
```
copy file-system::asr1000rp2-espx86base.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**
```
copy file-system::asr1000rp2-rpaccess.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**
```
copy file-system::asr1000rp2-rpbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**
```
copy file-system::asr1000rp2-rpcontrol.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**
```
copy file-system::asr1000rp2-rpios.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**
```
copy file-system::asr1000rp2-sipbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-sipspa.version.pkg</code></td>
<td></td>
</tr>
<tr>
<td>URL-to-directory-of-sub-packages-standby-RP</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-elcbase.version.pkg</code></td>
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<tr>
<td>URL-to-directory-of-sub-packages-standby-RP</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-elcspa.version.pkg</code></td>
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</tr>
<tr>
<td>URL-to-directory-of-sub-packages-standby-RP</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
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<tr>
<td>stby-bootflash:</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg</code></td>
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<td>stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
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</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>Router# copy usb0:221subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
</tbody>
</table>
### Command or Action

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</code></td>
</tr>
</tbody>
</table>

### Step 10

**issu loadversion rp standby-RP file**

*target-standbyRP-URL-for-sub-packages:* `asr1000rp*version*.pkg force`

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>issu loadversion rp 1 file stby-bootflash:asr1000rp*03.13.00.S.154-3.S-ext*.pkg force</code></td>
</tr>
</tbody>
</table>

### Step 11

**hw-module slot standby-RP reload**

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>hw-module slot R1 reload</code></td>
</tr>
</tbody>
</table>

### Step 12

**issu loadversion rp active-RP file**

*URL-to-active-file-system:* `asr1000rp2-{sipbase,sipspa}*version*.pkg`

*slotSIP-slot-number* `force`

<table>
<thead>
<tr>
<th><strong>Example:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# <code>hw-module slot R1 reload</code></td>
</tr>
</tbody>
</table>

### Purpose

Upgrade the RP subpackages on the standby RP, where the "rp*" wildcard is specified to capture all of the RP subpackages for the desired upgrade release.

### Note

- From Polaris 16.x.x release, the image name starts with `asr1000rp86`. Hence, the keyword `rp86*` can be used during upgrade or downgrade between Polaris 16.x.x releases.

### Step 11

Reload the standby RP.

### Step 12

Upgrade the SIP and SPA subpackages for each SIP on the router.

### Note

- This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step.

### Tip

- You can use the `show ip interface brief` command to identify which slots contain SIPS and SPAs. The interfaces with three numbers (in the form `SIP-number/SPA-number/interface-number`) identify the SIP and SPA locations in the router.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong> issu commitversion</td>
<td>Note: The pattern options used in this CLI (sipbase and sipspa) were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the &quot;ISSU Procedures (Prior to Cisco IOS XE Release 2.1.2)&quot; section for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# issu loadversion rp 0 file bootflash:asr1000rp2-{sipbase,sipspa}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
<td>Upgrade the ELC and SPA subpackages for each ELC on the router.</td>
</tr>
<tr>
<td><strong>Step 13 issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-{elcbase,elcspa}<em>version</em>.pkg slotSIP-slot-numberforce</strong></td>
<td>Note: This step must be completed for one ELC at a time, and repeated for each ELC installed on the router before performing the next step. Tip: You can use the show ip interface brief command to identify which slots contain ELCs and SPAs. The interfaces with three numbers (in the form ELC-number/SPA-number/interface-number) identify the ELC and SPA locations in the router. Note: The pattern options used in this CLI (elcbase and elcspa) were introduced in Cisco IOS XE Release 3.10S and are not available in previous Cisco IOS XE Releases.</td>
</tr>
<tr>
<td><strong>Example:</strong> issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# issu loadversion rp 0 file bootflash:asr1000rp2-{elcbase,elcspa}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 14 issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-esp<em>version</em>.pkg slot standby-ESP-slot</strong></td>
<td>Upgrade the ESP Base subpackage on the standby and the active ESPs. After entering the issu loadversion rp command on the active RP, the ESP switchover will occur automatically. Minimal traffic interruption will occur as a result of this switchover.</td>
</tr>
<tr>
<td><strong>Example:</strong> issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-esp<em>version</em>.pkg slot active-ESP-slot</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# issu loadversion rp 0 file bootflash:asr1000rp2-esp<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# issu commitversion</td>
<td></td>
</tr>
</tbody>
</table>
### ISSU Upgrade Procedures

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# issu loadversion rp 0 file bootflash:asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 0</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# issu commitversion</code></td>
<td></td>
</tr>
</tbody>
</table>

#### Step 15 `issu loadversion rp` active-RP file
Upgrade all of the subpackages on the active RP.

**URL-to-active-file-system:** `asr1000rp*version*.pkg force`

**Example:**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Router# issu loadversion rp 0 file bootflash:asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg force</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# issu commitversion</code></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.

**Note:**
From Polaris 16.x.x release, the image name starts with `asr1000rpx86`. Hence, the keyword `rpx86` can be used during upgrade or downgrade between Polaris 16.x.x releases.

#### Step 16 `show version` active-RP provisioned
(Optional) Confirm that the subpackages are provisioned and installed.

**Example:**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Router# show version active-RP provisioned</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# show version active-RP installed</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# show version r0 provisioned</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# show version r0 installed</code></td>
<td></td>
</tr>
</tbody>
</table>

#### Step 17 `redundancy force-switchover`
Force an RP switchover to complete the upgrade.

**Example:**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Router# redundancy force-switchover</code></td>
<td></td>
</tr>
</tbody>
</table>

#### Step 18 `request platform software package clean`
(Optional) Removes all unused subpackages files from the router.

**Example:**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>Router# request platform software package clean</code></td>
<td></td>
</tr>
</tbody>
</table>
The following example shows ISSU upgrade using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup using the `issu` command set.

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
System image file is "bootflash:Active_Dir/packages.conf"
<output removed for brevity>
cisco ASR1013 (RP2) processor with 4208889K/6147K bytes of memory.
Processor board ID FOX1343GJGC 20 Gigabit Ethernet interfaces
6 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
1925119K bytes of eUSB flash at bootflash:
780820K bytes of SATA hard disk at harddisk:
Configuration register is 0x2102
Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
--------- ------------------- --------------------- -----------------
2 ASR1000-SIP40 ok 1d03h
2/0 SPA-1X10GE-L-V2 ok 1d03h
2/1 SPA-1X10GE-L-V2 ok 1d03h
2/2 SPA-1X10GE-L-V2 ok 1d03h
2/3 SPA-1X10GE-L-V2 ok 1d03h
4 ASR1000-2T+20X1GE ok 1d03h
4/0 BUILT-IN-2T+20X1GE ok 1d03h
R0 ASR1000-RP2 ok, active 1d03h
R1 ASR1000-RP2 ok, standby 1d03h
F0 ASR1000-ESP100 ok, active 1d03h
F1 ASR1000-ESP100 ok, standby 1d03h
P0 ASR1013-FWR-AC ok 1d03h
P1 ASR1013-FWR-AC ok 1d03h
P2 ASR1013-FWR-AC ok 1d03h
P3 ASR1013-FWR-AC ps, fail 1d03h
Slot CPLD Version Firmware Version
--------- ------------------- ---------------------------------------
2 00200800 15.3(3r)S
4 00200800 15.2(1r)S
R0 10021901 15.3(3r)S
R1 10021901 15.3(3r)S
F0 12071700 15.3(3r)S
F1 12071700 15.3(3r)S
Router# show version r0 installed
Packaged: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: a624f70f68c60292f4482433f43af92c87f05c4
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25 18.48, by: mcpre
File SHA1 checksum: 3a967514289c0af3c5d4e42f0e37bd9f4e8538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.48, by: mcpre
File SHA1 checksum: 87b11f863f67fddf2610ee0769b929baab4c3efad
<output removed for brevity>
Router# dir bootflash:Active_Dir/
Directory of bootflash:/Active_Dir/
20 -rw- 41104412 Aug 3 2013 15:05:40 +05:30
asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
21 -rw- 50285296 Aug 3 2013 15:05:40 +05:30
asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
22 -rw- 82514676 Aug 3 2013 15:05:40 +05:30
asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
23 -rw- 101084628 Aug 3 2013 15:05:40 +05:30
asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg
```
Router# show redundancy states
  my state = 13 -ACTIVE
  peer state = 8 -STANDBY HOT
  Mode = Duplex
  Unit = Primary
  Unit ID = 48

Redundancy Mode (Operational) = aso
Redundancy Mode (Configured) = aso
Redundancy State = aso
Maintenance Mode = Disabled
Manual Swact = enabled
Communications = Up
client count = 108
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0

Router# copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

Router# mkdir harddisk:Target_Subs
Create directory filename [Target_Subs]?
Created dir harddisk:/Target_Subs

Router# request platform software package expand file
harddisk:Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin to
harddisk:Target_Subs
Verifying parameters
Validating package type
Copying package files
SUCCESS: Finished expanding all-in-one software package.

Router# dir harddisk:Target_Subs/  
Directory of harddisk:/Target_Subs/
3358722 -rw- 569597380 Aug 4 2013 18:45:38 +05:30
asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
7864099 -rw- 37557200 Aug 4 2013 18:46:43 +05:30
asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
7864100 -rw- 51194832 Aug 4 2013 18:46:43 +05:30
asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
7864101 -rw- 80657364 Aug 4 2013 18:46:43 +05:30
asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
7864102 -rw- 95446456 Aug 4 2013 18:46:43 +05:30
asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
7864097 -rw- 9381 Aug 4 2013 18:46:43 +05:30
asr1000rp2-packages-adventerprisek9.03.13.00.S.154-3.S-ext.conf
7864103 -rw- 23350232 Aug 4 2013 18:46:43 +05:30
asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
7864104 -rw- 37694900 Aug 4 2013 18:46:44 +05:30
asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
7864105 -rw- 45536216 Aug 4 2013 18:46:44 +05:30
asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
7864106 -rw- 118754284 Aug 4 2013 18:46:44 +05:30
asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
7864107 -rw- 38380500 Aug 4 2013 18:46:44 +05:30
asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
7864108 -rw- 61760468 Aug 4 2013 18:46:44 +05:30
asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
7864098 -rw- 10165 Aug 4 2013 18:46:44 +05:30 packages.conf
Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

ISSU Upgrade Procedures

78704144384 bytes total (9254879232 bytes free)
Router# copy harddisk:Target_Sub/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Active_Dir/ Destination filename [Active_Dir/asr1000rp2-
espbase.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC80657364 bytes copied in 11.951 secs (6749005 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
95446546 bytes copied in 14.213 secs (6715433 bytes/sec)
Router# Copy harddisk:Target_Sub/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
20350232 bytes copied in 3.441 secs (6785885 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
36764900 bytes copied in 5.590 secs (6733637 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
45556216 bytes copied in 6.797 secs (6699458 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
bootflash:
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
118754284 bytes copied in 17.798 secs (6672339 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]
Copy in progress...CCCCC
38597526 bytes copied in 5.962 secs (6437521 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
61759648 bytes copied in 9.408 secs (6564676 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-ecbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-ecbase.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
37557200 bytes copied in 5.650 secs (6647292 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-eicspa.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-eicspa.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
51194832 bytes copied in 7.397 secs (6921026 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCC
80657364 bytes copied in 132.765 secs (607520 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC5446456 bytes copied in 177.587 secs (537463 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
23350232 bytes copied in 55.396 secs (421515 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]
Copy in
progress...CCCCC
37694900 bytes copied in 86.199 secs (437301 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
45536216 bytes copied in 101.527 secs (448513 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
118754284 bytes copied in 212.646 secs (558460 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
38380500 bytes copied in 83.162 secs (461515 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
61760468 bytes copied in 119.391 secs (517296 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
37557200 bytes copied in 57.106 secs (657675 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC
51194832 bytes copied in 87.453 secs (585398 bytes/sec)
Router# issu checkversion rp 1 file
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of IOSD package
  WARNING: requires software redundancy on target RP
  WARNING: or on-reboot parameter
  WARNING: Automatically setting the on-reboot flag
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Checking if resulting candidate package set would be complete

Finished candidate package set construction

--- Starting compatibility testing ---

Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped

Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility

Finished compatibility testing

SUCCESS: Software is ISSU compatible.

Router# issu loadversion rp 1 file

--- Starting local lock acquisition on R0 ---

Finished local lock acquisition on R0

--- Starting installation state synchronization ---

Finished installation state synchronization

--- Starting local lock acquisition on R1 ---

Finished local lock acquisition on R1

--- Starting file path checking ---

Finished file path checking

--- Starting image file verification ---

Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg

Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP

Processing image file constraints
Creating candidate provisioning file

--- Starting candidate package set construction ---

Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete

Finished candidate package set construction

--- Starting compatibility testing ---

Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped

Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility

Finished compatibility testing

--- Starting list of software package changes ---

Old files list:

Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software

SUCCESS: Finished installing software.
*Aug 4 19:21:45.424 IST: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 2
*Aug 4 19:21:48.382 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/0
*Aug 4 19:21:48.733 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/1
*Aug 4 19:21:49.083 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/2
*Aug 4 19:21:49.430 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/3
*Aug 4 19:21:58.121 IST: %LINK-3-UPDOWN: SIP2/0: Interface EOBC2/1, changed state to up
*Aug 4 19:22:02.302 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/0
*Aug 4 19:22:02.518 IST: %LINK-3-UPDOWN: SIP2/1: Interface EOBC2/1, changed state to up
Aug 4 19:22:06.113 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/1
Aug 4 19:22:06.082 IST: %TRANSCEIVER-6-INSERTED: SIP2/1: transceiver module inserted in TenGigabitEthernet2/1/0
Aug 4 19:22:08.080 IST: %LINK-3-UPDOWN: SIP2/2: Interface EOBC2/1, changed state to up
Aug 4 19:22:11.627 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/2
Aug 4 19:22:12.523 IST: %LINK-3-UPDOWN: SIP2/3: Interface EOBC2/1, changed state to up
Aug 4 19:22:16.657 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/3

Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed

Router# issu loadversion rp 0 file bootflash:Active_DIR/asr1000rp2-{elcbase,elcspa}*03.13.00.S.154-3.S-ext*.pkg slot 4
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
*AUG 4 19:22:05.767 IST: %IOSXE_OIR-6-OFFLINECARD: Card (cc) offline in slot 4
*AUG 4 19:22:05.770 IST: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 4/0, interfaces disabled
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*AUG 4 19:24:05.041 IST: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 4
*AUG 4 19:24:14.250 IST: %OSXE_OIR-6-INSSPA: SPA inserted in subslot 4/0
*AUG 4 19:24:34.196 IST: %LINK-3-UPDOWN: SIP4/0: Interface EOBUn/1, changed state to up
*AUG 4 19:25:27.923 IST: %LINK-3-UPDOWN: Interface GigabitEthernet4/0/0, changed state to down
*AUG 4 19:25:40.915 IST: %SPA_OIR-6-ONLINECARD: SPA (BUILT-IN-2T+20X1GE) online in subslot 4/0
*AUG 4 19:25:53.574 IST: %LINK-3-UPDOWN: Interface GigabitEthernet4/0/0, changed state to up
*AUG 4 19:25:53.582 IST: %LINK-3-UPDOWN: Interface GigabitEthernet4/0/1, changed state to up
Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 1
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
SUCCESS: Installation changes committed
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Aug 4 19:29:16.751 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F1
Aug 4 19:29:19.172 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Active
with no Standby
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
ISSU Upgrade Procedures

Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

*Aug 4 19:30:50.972 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 preparing image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:30:51.362 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 startup init image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:30:53.088 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F1

Router> issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router> issu loadversion rp 0 file
bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 0
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Aug 4 19:31:14.730 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 running init image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:31:15.079 IST: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
Finished image file verification
--- Starting candidate package set construction ---
Finished candidate package set construction
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
Old files list:
   Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
   Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
No new package files added
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP0
Applying final IPC and database definitions
*Aug 4 19:32:46.539 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F1 redundancy state is Active
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:34:19.748 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 preparing image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:34:20.139 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 startup init image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:34:21.858 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F0
*Aug 4 19:34:43.958 IST: %CPPHA-7-READY: F0: cpp_ha: CPP 0 loading and initialization complete
*Aug 4 19:34:44.190 IST: %IOSXE-6-PLATFORM: F0: cpp_cp: Process
CPP_FILTER_EA_EVENT_API_CALL_REGISTER
*Aug 4 19:34:46.890 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Standby
Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:Active_Dir/asa1000rp2*03.13.00.S.154-3.S-ext*.pkg
force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-ecbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-ecspaa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espb.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.*
Found asr1000rp2-sispaa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package requires software reboot of target RP.

Processing image file constraints
Creating candidate provisioning file

--- Starting candidate package set construction ---
Verifying existing software set
Creating working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete

--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility

Finished compatibility testing

--- Starting list of software package changes ---
Old files list:
- Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg

New files list:
- Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg

Finished list of software package changes

--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file

Finished commit of software changes

SUCCESS: Software provisioned. New software will load on reboot.

Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
----- ----------- ------------- ------------------
2 ASR1000-SIP40 ok 1d04h
2/0 SPA-1X10GE-L-V2 ok 1d04h
2/1 SPA-1X10GE-L-V2 ok 1d04h
2/2 SPA-1X10GE-L-V2 ok 1d04h
2/3 SPA-1X10GE-L-V2 ok 1d04h
4 ASR1000-2T+20X1GE ok 1d04h
4/0 BUILT-IN-2T+20X1GE ok 1d04h
R0 ASR1000-RP2 ok, active 1d04h
R1 ASR1000-RP2 ok, standby 1d04h
P0 ASR1000-ESP100 ok, standby 1d04h
F0 ASR1000-ESP100 ok, active 1d04h
F1 ASR1013-FWR-AC ok 1d04h
P1 ASR1013-FWR-AC ok 1d04h
P2 ASR1013-FWR-AC ok 1d04h
P3 ASR1013-FWR-AC ps, fail 1d04h
Slot CPLD Version Firmware Version
----- --------------- ---------------------
2 00200800 15.3(3r)S
4 00200800 15.2(4r)S
R0 10021901 15.3(3r)S
R1 10021901 15.3(3r)S
F0 12071700 15.3(3r)S
Router# show version R0 provisioned
Package: Provisioning File, version: n/a, status: active
  File: bootflash:Active_Dir/packages.conf, on: RP0
    Built: n/a, by: n/a
    File SHA1 checksum: c79075780592aac1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP0
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: 4f655c54bb95b4df24a0d25ebf97cf8527c69e9
Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: 8a0a45ea5c7a656c0eef6726174461584f182c78
Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
    Built: 2013-07-25_23.00, by: mcpre
    File SHA1 checksum: 85e9eab826bff2194ef6726174461584f182c78
Package: rpaccess, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: a360dff0fd76a91ae67cd9116c97b62f5ab09
Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/1
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: 8a0a45ea5c7a656c0eef6726174461584f182c78
Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP0/1
    Built: 2013-07-25_23.00, by: mcpre
    File SHA1 checksum: 85e9eab826bff2194ef6726174461584f182c78
<some output removed for brevity>
Router# show version R0 provisioned
Package: Provisioning File, version: n/a, status: active
  File: bootflash:Active_Dir/packages.conf, on: RP0
    Built: n/a, by: n/a
    File SHA1 checksum: c79075780592aac1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: active
  File: bootflash:Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP0
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: 4f655c54bb95b4df24a0d25ebf97cf8527c69e9
Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: active
  File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
    Built: 2013-07-25_22.55, by: mcpre
    File SHA1 checksum: 8a0a45ea5c7a656c0eef6726174461584f182c78
  File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
    Built: 2013-07-25_23.00, by: mcpre
    File SHA1 checksum: 85e9eab826bff2194ef6726174461584f182c78
<some output removed for brevity>
Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]
<output removed for brevity>
Router# request platform software package clean
Cleaning up unnecessary package files
Using ISSU to Upgrade Subpackages on a Cisco ASR 1006 Router, ASR1006-X Router, ASR1009-X Router, or ASR 1013 Router (request platform command set)

This procedure can only be performed if the current ASR 1006 router or ASR 1013 router has two active RPs and both RPs are running subpackages.

To perform an ISSU upgrade using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup using the request platform command set, follow the following instructions.
### SUMMARY STEPS

1. `show version`
2. `mkdir URL-to-directory-name`
3. `ip tftp source-interface gigabitethernet port`
4. `copy tftp: URL-to-target-location`
5. `request platform software package expand file URL-to-consolidated-package`
6. `dir target-URL`
7. `copy file-system:asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP`
8. `copy file-system:asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-standby-RP`
9. `request platform software package install rp standby-RP file target-stanbyRP-URL-for-sub-packages::asr1000rp*version*.pkg force`
10. `hw-module slot standby-RP reload`
11. `request platform software package install rp active-RP file URL-to-active-file-system:asr1000rp-{sipbase,sipspa}*version*.pkg slotSIP-slot-numberforce`
12. `request platform software package install rp active-RP file URL-to-active-file-system:asr1000rp-{elcbase,elcspa}*version*.pkg slotELC-slot-numberforce`
15. `show version active-RP provisioned`
16. `redundancy force-switchover`
17. `request platform software package clean`

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show version</td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td>Example: <code>show version active-rp installed</code></td>
<td>• <code>show version</code> and <code>show version active-rp installed</code>—Verify the running version of the Cisco IOS XE software on the router, and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td>Example: <code>show version standby-rp installed</code></td>
<td>• <code>dir</code>—Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td>Example: <code>dir filesystem:&lt;directory&gt;</code></td>
<td>• <code>show platform</code>—Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td>Example: <code>show platform</code></td>
<td></td>
</tr>
</tbody>
</table>

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**Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide**

38
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td>Example:</td>
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<tr>
<td>Step 2 <strong>mkdir</strong> <em>URL-to-directory-name</em></td>
<td>Creates a directory to store the consolidated package and subpackages. This directory must be created in most cases because the consolidated packages and subpackages have to be separated from the subpackages that booted the router at this step of the procedure.</td>
</tr>
<tr>
<td>Example:</td>
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<tr>
<td>Example:</td>
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</tr>
<tr>
<td>Step 3 <strong>ip tftp source-interface gigabitethernet port</strong></td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured: slot/port—Specifies the location of the TFTP source-interface. <strong>Note</strong> To copy a file using TFTP through the Management Ethernet interface, the <em>ip tftp source-interface GigabitEthernet 0</em> command must be entered before entering the <em>copy tftp</em> command.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 4 <strong>copy tftp: URL-to-target-location</strong></td>
<td>Copies the consolidated package file into the directory created in <strong>Step 2</strong>. The consolidated package in this step should not be copied into the same directory where the</td>
</tr>
</tbody>
</table>
### Command or Action

**Example:**

Router# `copy tftp: usb0:221subs`

### Purpose

Subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).

**Tip**

It is recommended that you copy the package onto a usb: or harddisk: file system for space considerations when performing this step of the procedure.

#### Step 5

**request platform software package expand file** `URL-to-consolidated-package`

**Example:**

```
Router# request platform software package expand file
usb0:221subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
```

**Note**

Take extra care to extract the subpackages to a temporary subdirectory and do not delete any of the files currently running the router at this point of the procedure. To erase the files that were running on the router before the ISSU upgrade, enter the `request platform software package clean` command after the ISSU upgrade has been completed.

#### Step 6

**dir** `target-URL`

**Example:**

```
Router# dir usb0:221subs
```

(Optional) Displays the directory to confirm that the files were extracted.

#### Step 7

**copy file-system::asr1000rp2-espbase.version.pkg**

**URL-to-directory-of-sub-packages-active-RP**

**Example:**

```
copy file-system::asr1000rp2-espbase.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system::asr1000rp2-rpaccess.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system::asr1000rp2-rpbase.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system::asr1000rp2-rpcontrol.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

Copies the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>copy file-system:asr1000rp2-rpios.version.pkg</td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>copy file-system:asr1000rp2-sipbase.version.pkg</td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>copy file-system:asr1000rp2-sipspa.version.pkg</td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>copy file-system:asr1000rp2-elcbase.version.pkg</td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>copy file-system:asr1000rp2-elcspa.version.pkg</td>
<td>URL-to-directory-of-sub-packages-active-RP</td>
</tr>
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<td>Example:</td>
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<td>Example:</td>
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<td>Example:</td>
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</tr>
<tr>
<td>Router# copy usb0:221subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
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<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# copy usb0:221subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# copy usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
<td></td>
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<tr>
<td>Example:</td>
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<td>Example:</td>
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<tr>
<td>Router# copy usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
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<td>Example:</td>
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</tbody>
</table>

Example:

```
Router# copy usb0:221subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg bootflash:
```
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 8**  
```python
copy file-system:asr1000rp2-espbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```
| Copies the subpackages out of the temporary directory into the directory on the router where the subpackages running the standby RP are currently stored. |

**Example:**  
```python
copy file-system:asr1000rp2-espbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-rpaccess.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-rpbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-rpcontrol.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-rpios.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-sipbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-sipspa.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-elcbase.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
copy file-system:asr1000rp2-ecspa.version.pkg
URL-to-directory-of-sub-packages-standby-RP
```

**Example:**  
```python
Router# copy usbo:221subs/asr1000rp2-esphase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
```
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# copy</td>
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</tr>
<tr>
<td>usb0:221subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>stby-bootflash:</td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Router# copy</td>
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<tr>
<td>usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>stby-bootflash:</td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Router# copy</td>
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<tr>
<td>usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>stby-bootflash:</td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Router# copy</td>
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</tr>
<tr>
<td>usb0:221subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>stby-bootflash:</td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Router# copy</td>
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</tr>
<tr>
<td>usb0:221subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg</td>
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</tr>
<tr>
<td>stby-bootflash:</td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Router# copy</td>
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</tr>
<tr>
<td>usb0:221subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>stby-bootflash:</td>
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<tr>
<td>Command or Action</td>
<td>Purpose</td>
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<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
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<tr>
<td>Example:</td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# copy usb0:221subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg</td>
<td>Upgrades the RP subpackages on the standby RP, where the &quot;rp*&quot; wildcard is specified to capture all of the RP subpackages for the desired upgrade release.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
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<td>Example:</td>
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<tr>
<td>Router# copy usb0:221subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg</td>
<td></td>
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<tr>
<td>Example:</td>
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<tr>
<td>Example:</td>
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</tr>
<tr>
<td>Router# copy usb0:221subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 9 request platform software package install rp standby-RP file</td>
<td>Upgrades the RP subpackages on the standby RP, where the &quot;rp*&quot; wildcard is specified to capture all of the RP subpackages for the desired upgrade release.</td>
</tr>
<tr>
<td>target-standbyRP-URL-for-sub-packages:asr1000rp<em>version</em>.pkg force</td>
<td>Note From Polaris 16.x.x release, the image name starts with asr1000rp86. Hence, the keyword rp86* can be used during upgrade or downgrade between Polaris 16.x.x releases.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 10 hw-module slot standby-RP reload</td>
<td>Reloads the standby RP.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 11 request platform software package install rp active-RP file</td>
<td>Upgrades the SIP and SPA subpackages for each SIP on the router.</td>
</tr>
<tr>
<td>URL-to-active-file-system:asr1000rp2-{sipbase,sipspa}<em>version</em>.pkg</td>
<td></td>
</tr>
<tr>
<td>slotSIP-slot-numberforce</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
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<td><strong>Example:</strong></td>
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<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Router# request platform software package install rp 0 file</strong></td>
<td><strong>Note</strong> This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step. <strong>Tip</strong> You can use the <code>show ip interface brief</code> command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form <code>SIP-number/SPA-number/interface-number</code>) identify the SIP and SPA locations in the router.</td>
</tr>
<tr>
<td><code>bootflash:asr1000rp2-[sipbase,sipspa]*03.13.00.S.154-3.S-ext*.pkg</code> slot 2 force</td>
<td></td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Router# request platform software package install rp 0 file</strong></td>
<td><strong>Note</strong> The pattern options used in this CLI (sipbase and sipspa) were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the ISSU Procedures (Prior to Cisco IOS XE Release 2.1.2), on page 62 for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures</td>
</tr>
<tr>
<td><code>bootflash:asr1000rp2-[sipbase,sipspa]*03.13.00.S.154-3.S-ext*.pkg</code> slot 4 force</td>
<td><strong>Step 12</strong> Upgrades the ELC and SPA subpackages for each ELC on the router. <strong>Note</strong> This step must be completed for one ELC at a time, and repeated for each ELC installed on the router before performing the next step. <strong>Tip</strong> You can use the <code>show ip interface brief</code> command to identify which slots contain ELCs and SPAs. The interfaces with three numbers (in the form <code>ELC-number/SPA-number/interface-number</code>) identify the ELC and SPA locations in the router.</td>
</tr>
<tr>
<td><strong>Step 13 request platform software package install rp active-RP file</strong></td>
<td><strong>Note</strong> The pattern options used in this CLI (elcbase and elcspa) were introduced in Cisco IOS XE Release 3.10S and are not available in previous Cisco IOS XE Releases</td>
</tr>
<tr>
<td><code>URL-to-active-file-system:asr1000rp2-[elcbase,elcspa]*version*.pkg</code> slot ELC-slot-number force</td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><strong>Router# request platform software package install rp 0 file</strong></td>
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<td><strong>Example:</strong></td>
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<td><strong>Example:</strong></td>
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</tr>
<tr>
<td><strong>request platform software package install rp active-RP file</strong></td>
<td><strong>Step 13</strong> Upgrades the ESP Base subpackage on the standby and the active ESPs. <strong>After entering the <code>issu loadversion rp</code> command on the active RP, the ESP switchover will occur automatically. Minimal traffic interruption will occur as a result of this switchover.</strong></td>
</tr>
<tr>
<td><code>URL-to-active-file-system:asr1000rp2-esp*version*.pkg</code> slot standby-ESP-slot</td>
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<td><strong>Example:</strong></td>
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<tr>
<td>Command or Action</td>
<td>Purpose</td>
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<tr>
<td>Example:</td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file</td>
<td></td>
</tr>
<tr>
<td>bootflash:asr1000rp2-esp<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file</td>
<td></td>
</tr>
<tr>
<td>bootflash:asr1000rp2-esp<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0</td>
<td></td>
</tr>
<tr>
<td><strong>Step 14</strong> request platform software package install rp <strong>active-RP</strong> file</td>
<td>Upgrades all of the sub-packages on the active RP.</td>
</tr>
<tr>
<td><strong>URL-to-active-file-system:</strong> asr1000rp<em>version</em>.pkg force</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
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<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file</td>
<td></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>From Polaris 16.x.x release, the image name starts with asr1000rp86. Hence, the keyword rpx86* can be used during upgrade or downgrade between Polaris 16.x.x releases.</td>
</tr>
<tr>
<td><strong>Step 15</strong> show version <strong>active-RP</strong> provisioned</td>
<td>(Optional) Confirms the subpackages are provisioned and installed.</td>
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<tr>
<td>Example:</td>
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<td>Example:</td>
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<tr>
<td>Router# show version r0 provisioned</td>
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<td>Example:</td>
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<td>Example:</td>
<td></td>
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<tr>
<td>Router# show version r0 installed</td>
<td></td>
</tr>
<tr>
<td><strong>Step 16</strong> redundancy force-switchover</td>
<td>Forces an RP switchover to complete the upgrade.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
</tbody>
</table>
### ISSU Upgrade Procedures

This example shows ISSU upgrade using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup:

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
System image file is "bootflash:Active_Dir/packages.conf"

Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
--------- ------------------- --------------------- -----------------
2 ASR1000-SIP40 ok 1d03h
2/0 SPA-1X10GE-L-V2 ok 1d03h
2/1 SPA-1X10GE-L-V2 ok 1d03h
2/2 SPA-1X10GE-L-V2 ok 1d03h
2/3 SPA-1X10GE-L-V2 ok 1d03h
4 ASR1000-2T+20X1GE ok 1d03h
4/0 BUILTIN-2T+20X1GE ok 1d03h
R0 ASR1000-RP2 ok, active 1d03h
R1 ASR1000-RP2 ok, standby 1d03h
F0 ASR1000-ESP100 ok, active 1d03h
F1 ASR1000-ESP100 ok, standby 1d03h
P0 ASR1013-PWR-AC ok 1d03h
P1 ASR1013-PWR-AC ok 1d03h
P2 ASR1013-PWR-AC ok 1d03h
P3 ASR1013-PWR-AC ps, fail 1d03h
Slot CPLD Version Firmware Version
--------- ------------------- ---------------------------------------
2 00200800 15.3(3r)S
4 00200800 15.2(1r)S
R0 10021901 15.3(3r)S
R1 10021901 15.3(3r)S
F0 12071700 15.3(3r)S
F1 12071700 15.3(3r)S

Router# show version r0 installed
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a

File SHA1 checksum: a624f70f68c60292f4482433f43af9d92487a55c4
```
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 3a9675142898cfac350d4e42f0e37bd9f4e48538

Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 87b11f863f67dfb261e0ee0769b929baab43efad

Router# dir bootflash:Active_Dir
Directory of bootflash:/Active_Dir/
20 -rw- 41104112 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
21 -rw- 50285296 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
22 -rw- 82514676 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
23 -rw- 101084628 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
24 -rw- 17012724 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espx86base.03.12.01.S.154-2.S.conf
25 -rw- 114612988 Aug 3 2013 15:05:41 +05:30 asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
26 -rw- 49899864 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
27 -rw- 46557940 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
30 -rw- 39012724 Aug 3 2013 15:05:40 +05:30 asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
31 -rw- 60957428 Aug 3 2013 15:05:41 +05:30 asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
32 -rw- 9838 Aug 3 2013 15:05:41 +05:30 packages.conf
1940303872 bytes total (503164928 bytes free)

Router# show redundancy states
my state = 13
-ACTIVE peer state = 8 -STANDBY HOT
Mode = Duplex
Unit = Primary
Unit ID = 48
Redundancy Mode (Operational) = sso
Redundancy Mode (Configured) = sso
Redundancy State = sso
Maintenance Mode = Disabled
Manual Swact = enabled
Communications = Up
client count = 108
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0

Router# copy running-config startup-config
Destination filename [startup-config]? Building configuration...
[OK]

Router# mkdir harddisk:Target_Subs
Create directory filename [Target_Subs]?

Router# request platform software package expand file
harddisk:Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin to
harddisk:Target_Subs
Verifying parameters
Validating package type
Copying package files
SUCCESS: Finished expanding all-in-one software package.

Router# dir harddisk:Target_Subs
Directory of harddisk:/Target_Subs/
7684101 -rw- 80697364 Aug 4 2013 18:46:43 +05:30
Router# copy harddisk:Target_Subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
80657364 bytes copied in 11.951 secs (6749005 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
9546456 bytes copied in 14.213 secs (6715438 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
23350232 bytes copied in 3.441 secs (6785885 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
37694900 bytes copied in 5.598 secs (6699458 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
45536216 bytes copied in 6.797 secs (6699458 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
118754284 bytes copied in 17.798 secs (6623339 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
38380500 bytes copied in 5.962 secs (6437521 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
38380500 bytes copied in 5.962 secs (6437521 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
61760468 bytes copied in 9.408 secs (6564676 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg bootflash:
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]?  
Copy in progress...CCCCC
37557200 bytes copied in 5.650 secs (6647292 bytes/sec)
51194832 bytes copied in 7.397 secs (6921026 bytes/sec)
# Router# copy harddisk:Target_Sub/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
80657364 bytes copied in 132.765 secs (607520 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
95446456 bytes copied in 177.587 secs (537463 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
23350232 bytes copied in 55.392 secs (421515 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
37694900 bytes copied in 83.199 secs (461515 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
38380500 bytes copied in 83.162 secs (461515 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
61760468 bytes copied in 119.391 secs (517296 bytes/sec)
# Router# copy harddisk:Target_Sub/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
35755200 bytes copied in 87.106 secs (405735 bytes/sec)
Router# copy harddisk:Target_Sub/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
stby-bootflash:
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC
51194832 bytes copied in 87.453 secs (585398 bytes/sec)
Router# request platform software package install rp 1 file
stby-bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of IOSD package
  WARNING: requires software redundancy on target RP
  WARNING: or on-reboot parameter
  WARNING: Automatically setting the on-reboot flag
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.

Router# hw-module slot r1 reload
Proceed with reload of module? [confirm]Y

*Aug 4 19:14:01.721 IST: %IOSXE_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
*Aug 4 19:14:01.761 IST: %REDUNDANCY=3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
*Aug 4 19:14:01.761 IST: %REDUNDANCY=3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Aug 4 19:14:01.761 IST: %REDUNDANCY=3-STANDBY_LOST: Standby processor fault (PEER_REDUndANCY STATE_CHANGE)
*Aug 4 19:14:03.594 IST: % REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Aug 4 19:17:35.443 IST: %IOSXE_OIR-6-ONLINECARD: Card (rp) online in slot R1
*Aug 4 19:17:48.061 IST: % REDUNDANCY=5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_FOUND(4))
*Aug 4 19:17:48.061 IST: % REDUNDANCY=5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_REDUndANCY STATE_CHANGE(5))
*Aug 4 19:19:08.798 IST: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

Router# request platform software package install rp 0 file
Finished: request_platform software package install rp 0 file
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
   Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
   Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software

SUCCESS: Finished installing software.

*Aug 4 19:21:45.424 IST:
%IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 2

*Aug 4 19:21:48.382 IST:
%IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/0

*Aug 4 19:21:48.733 IST:
%IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/1

*Aug 4 19:21:49.083 IST:
%IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/2

*Aug 4 19:21:49.430 IST:
%IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/3

*Aug 4 19:21:58.121 IST:
%LINK-3-UPDOWN: SIP2/1: Interface EOB2C/1, changed state to up

*Aug 4 19:22:02.302 IST:
%ISA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/0

*Aug 4 19:22:02.518 IST:
%TRANSCEIVER-6-INSERTED: SIP2/0: transceiver module inserted in TenGigabitEthernet2/0/0

*Aug 4 19:22:06.113 IST:
%SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/1

*Aug 4 19:22:08.080 IST:
%LINK-3-UPDOWN: SIP2/2: Interface EOB2C/1, changed state to up

*Aug 4 19:22:11.627 IST:
%SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/2

*Aug 4 19:22:12.523 IST:
%LINK-3-UPDOWN: SIP2/3: Interface EOB2C/1, changed state to up

*Aug 4 19:22:16.657 IST:
%SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/3

*Aug 4 19:22:16.648 IST:
%TRANSCEIVER-6-INSERTED: SIP2/3: transceiver module inserted in TenGigabitEthernet2/3/0

Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed

Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2-{elcbase,elcspa}*03.13.00.S.154-3.3-ext*.pkg slot 4
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.3-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.3-ext.pkg
Verifying image file locations
Inspecting image file types

SUCCESS: Finished installing software.
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# issu commitversion
Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
 Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 1
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on RU
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-espbase.03.13.00.8.154-3.S-ext.pkg
  Found asr1000rp2-espx86base.03.13.00.8.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-espbase.03.13.00.8.154-3.S-ext.pkg
  Added asr1000rp2-espx86base.03.13.00.8.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP1
Applying final IPC and database definitions
*Aug 4 19:29:16.751 IST: %OSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F1
*Aug 4 19:29:18.172 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Active with no Standby
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software

SUCCESS: Finished installing software.

Aug 4 19:30:50.972 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 preparing image 
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*AUG 4 19:30:51.362 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 startup init image 
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:30:53.088 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F1

Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed

Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 0
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Creating candidate provisioning file
*Aug 4 19:31:14.730 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 running init image 
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:31:15.079 IST: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
*Aug 4 19:31:15.509 IST: %IOSXE-6-PLATFORM: F1: cpp_cp: Process
CPP_PFILTER_EA_EVENT_API_CALL_REGISTERProcessing candidate provisioning file
*Aug 4 19:31:18.010 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Active
  with ready Standby
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:Candidate software combination not found in compatibility database
WARNING:Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
No new package files added
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP0
Applying final IPC and database definitions
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:34:44.190 IST: %IOSXE-6-PLATFORM: F0: cpp_cp: Process
CPP_PFILTER_EA_EVENT__API_CALL__REGISTER
*Aug 4 19:34:46.890 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Standby
complete
*Aug 4 19:34:46.890 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F1 redundancy state is Active
Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
--------- ------------------- --------------------- -----------------
2 ASR1000-SIP40 ok 1d04h
2/0 SPA-1X10GE-L-V2 ok 1d04h
2/1 SPA-1X10GE-L-V2 ok 1d04h
2/2 SPA-1X10GE-L-V2 ok 1d04h
2/3 SPA-1X10GE-L-V2 ok 1d04h
4 ASR1000-2T+20X1GE ok 1d04h
4/0 BUILT-IN-2T+20X1GE ok 1d04h
R0 ASR1000-RP2 ok, active 1d04h
R1 ASR1000-RP2 ok, standby 1d04h
F0 ASR1000-ESP100 ok, standby 1d04h
F1 ASR1000-ESP100 ok, active 1d04h
F0 ASR1013-PWR-AC ok 1d04h
F1 ASR1013-PWR-AC ok 1d04h
F3 ASR1013-PWR-AC ps, fail 1d04h
Slot CPLD Version Firmware Version
----------------- --------------------------
2 00200800 15.3(3r)S
4 00200800 15.2(1r)S
R0 10021901 15.3(3r)S
R1 10021901 15.3(3r)S
F0 12071700 15.3(3r)S
F1 12071700 15.3(3r)S
Router# issu commitversion
Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file
--- Starting local lock acquisition on R0 ---
--- Starting installation state synchronization ---
--- Starting file path checking ---
--- Starting image file verification ---
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Removed asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP
--- Starting candidate package set construction ---
Verifying existing software set
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.

Router# show version

--- Provisioning Details ---

Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
SHA1 checksum: c79075780592aecc1312725f42357a034fda2d3b

Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP0
SHA1 checksum: 4f655c54bb95b4da24a0d25eb97c8527c69e9

Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
SHA1 checksum: 8a0a5e5e5ca7656c00ef6f7626174661584cf182c78

--- Post-Provision Details ---

Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]

Router# request platform software package clean
Cleaning up unnecessary package files

--- Output Removed for Brevity ---

Router# show version

--- Provisioning Details ---

Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
SHA1 checksum: c79075780592aecc1312725f42357a034fda2d3b

Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25 18:48, by: mcpre
SHA1 checksum: 3a9675142898cfac350d4e42f0e37bd9f4e48538

Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18:48, by: mcpre
SHA1 checksum: 3a9675142898cfac350d4e42f0e37bd9f4e48538

--- Post-Provision Details ---

Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]

Router# request platform software package clean
Cleaning up unnecessary package files

--- Output Removed for Brevity ---

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide

60
In Service One-Shot Software Upgrade Procedure

In service one-shot software upgrade procedure is an alternate to the standard ISSU procedure that enables you to upgrade or downgrade software using a single command. One-shot ISSU needs minimal user intervention or monitoring. Unlike the standard ISSU procedures, once the upgrade is initiated, the upgrade process cannot be cancelled.

The one-shot upgrade procedure is divided into stages. When a failure occurs, the command execution is stalled and users have to perform the rollback tasks manually. Necessary switchovers are automatically taken care of in one of the upgrade stages. During a switchover, the console and its output are lost. Additional commands are used to connect back to the console.

One-shot upgrade does not support multiple upgrades at the same time.

The request platform software package install node file consolidated file name interface-module-delay secs command is used for the one-shot ISSU procedure.

interface-module-delay is an optional parameter.

The interface-module-delay option specifies the time in seconds to wait after the first SIP and SPA combination has completed its upgrade or reboot before starting the upgrade of the next SIP and SPA. A minimum value of 60 seconds is recommended to ensure that all of the previously restarted SPAs are operational.

Example:

```
routert# request platform software package install node file bootflash interface-module-delay 60
```
The SIP-delay option enables you to delay the SIP restart duration thus enabling you to choose the restart time to minimize traffic loss.

The `request platform software package install node attach` command enables the users to view the last run log that contains the reports of all the stages of the one-shot upgrade.

The `request platform software package install file mdr` command enables the users to initiate the ISSU procedure using MDR.

**ISSU Procedures (Prior to Cisco IOS XE Release 2.1.2)**

These instructions should be followed only if you are upgrading using ISSU to a pre-Cisco IOS XE 2.1.2 release. If you are using Cisco IOS XE Release 2.2.1 or later, follow the earlier instructions in this chapter to perform your ISSU upgrade.

This section contains the following topics:

**Using ISSU to Perform a Consolidated Package Upgrade in a Dual Route Processor Configuration (Prior to Cisco IOS XE 2.1.2)**

This procedure is identical to the procedure used to upgrade post-Cisco IOS XE 2.2 images using ISSU.

**Using ISSU to Upgrade Subpackages (Prior to Cisco IOS XE Release 2.1.2)**

This procedure will work on single RPs configured to run two IOS processes or on routers configured with dual RPs.

Versions of Cisco IOS XE Release 2.1 prior to Cisco IOS XE Release 2.1.2 and versions of Cisco IOS XE Release 2.2 prior to Cisco IOS XE Release 2.2.1 and installations not booted from the RPBase subpackage on Cisco IOS XE Release 2.2.1 or 2.1.2 require a different ISSU upgrade procedure.
SUMMARY STEPS

1. Copy all subpackages other than the RPBase subpackage into the same directory.
2. Install the RP subpackages from the directory simultaneously by using a wildcard statement to capture all of the RP subpackages. This command should capture the RPControl, RPAccess, and RPIOS subpackages without capturing the RPBase subpackage and should be done using the standby bay.
3. Wait for the system to reach SSO ready state. The show platform command can be used to monitor whether both IOS instances are active, and a system message will indicate SSO state has been reached.
4. Use the redundancy force-switchover command to trigger an IOS switchover.
5. Wait for the system to reach SSO ready state. Like in step 3, the state can be monitored by checking system messages or by entering the show platform command.
6. Install the RP subpackages from the directory simultaneously by using a wildcard statement to capture all of the RP subpackages. This command should capture the RPControl, RPAccess, and RPIOS subpackages without capturing the RPBase subpackage and should be done using the standby bay.
7. Install the SIPBASE and SIPSPA packages on each SIP:
8. Install the ESPBASE package on the ESP:
9. Copy the RPBase subpackage into the directory, then upgrade all of the RP subpackages simultaneously. This step will upgrade the RPBase subpackage, which is the last remaining subpackage that requires an upgrade:
10. Enter show version provisioned to confirm that all of the software has been updated.
11. Reload the router using the reload command when appropriate to complete the installation.

DETAILED STEPS

Step 1
Copy all subpackages other than the RPBase subpackage into the same directory.

Step 2
Install the RP subpackages from the directory simultaneously by using a wildcard statement to capture all of the RP subpackages. This command should capture the RPControl, RPAccess, and RPIOS subpackages without capturing the RPBase subpackage and should be done using the standby bay.
Use the asr1000rp1-rp*version.pkg syntax instead of using the {pattern} syntax to complete this upgrade:

request platform software package install rp 1 file stby-bootflash:asr1000rp*02.02.01.122-33.XNB1*.pkg bay 1 force

Step 3
Wait for the system to reach SSO ready state. The show platform command can be used to monitor whether both IOS instances are active, and a system message will indicate SSO state has been reached.

Step 4
Use the redundancy force-switchover command to trigger an IOS switchover.

Step 5
Wait for the system to reach SSO ready state. Like in step 3, the state can be monitored by checking system messages or by entering the show platform command.

Step 6
Install the RP subpackages from the directory simultaneously by using a wildcard statement to capture all of the RP subpackages. This command should capture the RPControl, RPAccess, and RPIOS subpackages without capturing the RPBase subpackage and should be done using the standby bay.
Use the "asr1000rp1-rp*version.pkg syntax instead of using the {pattern} syntax to complete this upgrade:
Upgrade Process with Service Impact for Nonredundant Platforms

Subpackage software upgrade is supported for nonredundant platforms such as Cisco ASR 1001 Router, Cisco ASR1001-X, Cisco ASR 1002, Cisco ASR 1002-X, and ASR 1004 Routers in subpackage mode. This is because the software upgrade procedure on these chassis types requires an RP reload when upgrading the RPBase subpackage at the last step.

During the software upgrade process, there will be outage on the control plane as the entire platform is rebooted so that access to the router operating system and ROMmon is lost for a period of time.
For non-hardware-redundant chassis types, SIP impact can be mitigated by installing SIPs one slot at a time if SPAs are redundant across SIPs (such as when using Gigabit Etherchannel). ESP redundancy provides similar capability for the ESP allowing hitless upgrade of a chassis from one software release to another. Consolidated package mode does not provide such a per-slot staging option and always incurs a traffic loss equivalent to simultaneous OIR of all SIPs.

Note
The Cisco ASR 1002 and ASR 1002-F Routers come by default with 4-GB DRAM. The Cisco ASR 1001 Router comes by default with 4-GB DRAM, and is upgradeable up to 8-GB or 16-GB DRAM.

This section explains how to upgrade subpackages on a Cisco ASR 1001, Cisco ASR 1001-X, Cisco ASR1002, Cisco ASR 1002-X, or Cisco ASR 1004 Router. It contains the following sections:

Configuring SSO on a Cisco ASR 1001, Cisco ASR 1001-X, Cisco ASR 1001-HX, Cisco ASR 1002, Cisco ASR 1002-X, Cisco ASR 1002-HX, or Cisco ASR 1004 Router

The following instructions show how to configure SSO on a Cisco ASR 1001, Cisco ASR 1001-X, Cisco ASR 1001-HX, Cisco ASR 1002, Cisco ASR 1002-X, Cisco ASR 1002-HX, and Cisco ASR 1004 Routers. The standby IOS process is created automatically as part of these configuration steps.

**SUMMARY STEPS**

1. (Optional) Enter the `show version` command to confirm the amount of DRAM on your router:

2. (Optional) Enter `show redundancy states` to see the current HA configuration:

3. Enter `configure terminal` to enter global configuration mode:

4. Enter the `redundancy` command to enter redundancy configuration mode:

5. Enter `mode sso` to enable SSO, or `mode none` to disable dual software redundancy:

6. Return to privileged EXEC mode using any method, such as entering `Ctrl-Z` or the `exit` command multiple times until you get to the `#` router prompt:

7. Enter the `show redundancy states` command to confirm the configured redundancy mode changed to your new configuration.

8. Enter the `copy running-config startup-config` command to save the new configuration, and press `enter` to confirm the filename (or change the name, if desired):

9. After the reload is complete, enter the `show redundancy states` command to confirm the operational redundancy mode has changed to the mode that you configured before.

10. The router must be reloaded for the new HA configuration. Enter the `reload` command to reload the router:

11. (Optional) To confirm an active and a standby IOS process exist, and how the processes are numbered, enter the `show platform` command.

**DETAILED STEPS**

**Step 1**
(Optional) Enter the `show version` command to confirm the amount of DRAM on your router:
Example:

Router# show version
<some output removed for brevity>
32768K bytes of non-volatile configuration memory.
4194304K bytes of physical memory.
921599K bytes of eUSB flash at bootflash:
39004543K bytes of SATA hard disk at bootflash:
Configuration register is 0x2102

In the example `show version` output, the router has 4 GB of DRAM memory.

If you are using a Cisco ASR 1001, Cisco ASR 1001-X, Cisco ASR 1001-HX, Cisco ASR 1002, Cisco ASR 1002-X, Cisco ASR 1002-HX, or Cisco ASR 1004 Router with less than required DRAM memory on the RP, SSO cannot be configured on your RP.

**Step 2** (Optional) Enter `show redundancy states` to see the current HA configuration:

Example:

Router# show redundancy states
my state = 13 -ACTIVE
peer state = 1 -DISABLED
Mode = Simplex
Unit ID = 6
Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured) = Non-redundant
Redundancy State = Non Redundant

In this example, HA for the dual RPs is not configured, as indicated by the non-redundant operational mode.

**Step 3** Enter `configure terminal` to enter global configuration mode:

Example:

Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#

**Step 4** Enter the `redundancy` command to enter redundancy configuration mode:

Example:

Router(config)# redundancy
Router(config-red)#

**Step 5** Enter `mode sso` to enable SSO, or `mode none` to disable dual software redundancy:

Example:

Router(config-red)# mode sso
Router(config-red)# mode none

**Step 6** Return to privileged EXEC mode using any method, such as entering `Ctrl-Z` or the `exit` command multiple times until you get to the `#` router prompt:

Example:

Router(config-red)#^Z
Router#
Router(config-red)#exit
Step 7 Enter the `show redundancy states` command to confirm the configured redundancy mode changed to your new configuration.
In the following example, the configured redundancy mode has been changed to SSO. Note that the operation redundancy mode remains unchanged:

Example:

```
Router# show redundancy states
my state = 13 -ACTIVE
peer state = 1 -DISABLED
Mode = Simplex
Unit ID = 6
Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured) = sso
Redundancy State = Non Redundant
```

Step 8 Enter the `copy running-config startup-config` command to save the new configuration, and press `enter` to confirm the filename (or change the name, if desired):

Example:

```
Router# copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
PE25_ASR-1004#
```

Step 9 After the reload is complete, enter the `show redundancy states` command to confirm the operational redundancy mode has changed to the mode that you configured before.
In this example, the operational redundancy mode has changed to SSO:

Example:

```
Router# show redundancy states
my state = 13 -ACTIVE
peer state = 8 -STANDBY HOT
Mode = Duplex
Unit ID = 6
Redundancy Mode (Operational) = sso
Redundancy Mode (Configured) = sso
Redundancy State = sso
```

Step 10 The router must be reloaded for the new HA configuration. Enter the `reload` command to reload the router:

Example:

```
Router# reload
Proceed with reload? [confirm]
<bootup messages removed for brevity>
```
If you are not using the console port to complete this procedure, your session may be terminated at this point. If you session is terminated, give the router a few minutes to complete the reload and then log into the router.

Example:

```
```

Step 11 (Optional) To confirm an active and a standby IOS process exist, and how the processes are numbered, enter the `show platform` command.
In this example, the `show platform` command output reveals that R0/0 is the active IOS process and R0/1 is the standby IOS process:

**Example:**

```plaintext
Router# show platform
Chassis type: ASR1004

<table>
<thead>
<tr>
<th>Slot</th>
<th>Type</th>
<th>State</th>
<th>Insert time (ago)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>ASR1000-SIP10</td>
<td>ok</td>
<td>00:52:34</td>
</tr>
<tr>
<td>0/0</td>
<td>SPA-2X1GE-V2</td>
<td>ok</td>
<td>00:51:30</td>
</tr>
<tr>
<td>0/1</td>
<td>SPA-2XT3/E3</td>
<td>ok</td>
<td>00:51:24</td>
</tr>
<tr>
<td>R0</td>
<td>ASR1000-RP1</td>
<td>ok</td>
<td>00:52:34</td>
</tr>
<tr>
<td>R0/0</td>
<td>ok, active</td>
<td>00:52:34</td>
<td></td>
</tr>
<tr>
<td>R0/1</td>
<td>ok, standby</td>
<td>00:51:00</td>
<td></td>
</tr>
<tr>
<td>F0</td>
<td>ASR1000-ESP10</td>
<td>ok, active</td>
<td>00:52:34</td>
</tr>
<tr>
<td>P0</td>
<td>ASR1004-PWR-AC</td>
<td>ok</td>
<td>00:51:57</td>
</tr>
<tr>
<td>P1</td>
<td>ASR1004-PWR-AC</td>
<td>ok</td>
<td>00:51:57</td>
</tr>
</tbody>
</table>
```

Using Subpackages for Software Upgrade on a Cisco ASR 1001 Router, Cisco ASR 1001-X Router, Cisco ASR 1001-HX Router, Cisco ASR 1002-X Router or a ASR 1002-HX Router

This section provides instructions on using software upgrade for Cisco ASR 1001 Router, Cisco ASR 1001-X Router, Cisco ASR 1001-HX Router, Cisco ASR 1002-X Router, or Cisco ASR 1002-HX Router running subpackages.

These instructions assume two IOS processes are active on the RP and that the router is already running using subpackages.

**Note**

Step 17 does not have to be performed immediately, and should be done at a convenient time.
SUMMARY STEPS

1. show version
2. redundancy
3. mkdir URL-to-directory-name
4. ip tftp source-interface gigabitethernet port
5. copy tftp: URL-to-target-location
6. request platform software package expand file URL-to-consolidated-package
7. dir target-URL
9. issu loadversion rp 0 file file-system :asr1001-{rpaccess,rpios,rpcontrol}* version-string *.pkg bay standby-bay force
10. issu commitversion
11. redundancy force-switchover
12. show platform
13. issu loadversion rp 0 file file-system :asr1001-{rpaccess,rpios,rpcontrol}* version-string *.pkg bay standby-bay force
14. issu commitversion
15. issu loadversion rp 0 file file-system :asr1001-{rpbase,sipbase,sipspa,espbase} * version *.pkg force
16. show version installed
17. reload

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 show version</td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td>Example: show version installed</td>
<td>• show version and show version installed—Verify the running Cisco IOS XE software on the router and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td>Example: dir filesystem:&lt;directory&gt;</td>
<td>• dir—Confirm that the files that were used to boot the router are located in the specified directory.</td>
</tr>
<tr>
<td>Example: show platform</td>
<td>• show platform—Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td>Example: show redundancy-states</td>
<td>• show redundancy states—Confirm the operational and configured redundancy states.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show version r0 installed</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# dir bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show platform</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show redundancy-states</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> redundancy</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>mode sso</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# redundancy</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config-red)# mode sso</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> mkdir URL-to-directory-name</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# mkdir 221subs</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> ip tftp source-interface gigabitethernet port</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# ip tftp source-interface gigabitethernet 0</td>
<td></td>
</tr>
<tr>
<td>- Configure SSO if it is not already configured.</td>
<td></td>
</tr>
<tr>
<td>- Save the configuration after making this configuration step.</td>
<td></td>
</tr>
<tr>
<td>- Create a directory to store the consolidated package and subpackages.</td>
<td></td>
</tr>
<tr>
<td>- This directory must be created in most cases because the consolidated packages and subpackages have to be separated from subpackages that booted the router at this step of the procedure.</td>
<td></td>
</tr>
<tr>
<td>- Specifies the Gigabit Ethernet TFTP source-interface to be configured:</td>
<td></td>
</tr>
<tr>
<td>- slot/port—Specifies the location of the TFTP source-interface.</td>
<td></td>
</tr>
<tr>
<td>- To copy a file using TFTP through the Management Ethernet interface, the tftp source-interface Gigabitethernet 0 command must be entered before entering the copy tftp command.</td>
<td></td>
</tr>
</tbody>
</table>
### Purpose

**Copy the consolidated package file into the directory created in Step 3.**

The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).

**Tip** It is recommended that you copy the package onto a usb: or hard disk: file system for space considerations when performing this step of the procedure.

### Command or Action

**Step 5**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>copy tftp: URL-to-target-location</code></td>
<td>Copy the consolidated package file into the directory created in Step 3.</td>
</tr>
</tbody>
</table>

**Example:**

```
Router# copy tftp: 221subs
```

**Step 6**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>request platform software package expand file URL-to-consolidated-package</code></td>
<td>Extract the subpackages out of the consolidated package file into the temporary directory.</td>
</tr>
</tbody>
</table>

**Example:**

```
(Optional) dir target-URL

Router# request platform software package expand file usb0:221subs/asr1001-universalk9.03.02.01.S.151-1.S1_2.bin

Example:

Router# dir 221subs
```

**Step 7**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>dir target-URL</code></td>
<td>Display the directory to confirm that the files were extracted.</td>
</tr>
</tbody>
</table>

**Example:**

```
(Optional) dir target-URL

Router# dir 221subs
```

**Step 8**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>copy file-system:asr1001-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP</code></td>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
</tbody>
</table>

**Example:**

```
Copy file-system:asr1001-rpaccess.version.pkg URL-to-directory-of-sub-packages-active-RP

Example:

Copy file-system:asr1001-rpbase.version.pkg URL-to-directory-of-sub-packages-active-RP

Example:


Example:

Copy file-system:asr1001-rpios.version.pkg URL-to-directory-of-sub-packages-active-RP
```
### Purpose

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: <code>copy file-system:asr1001-sipbase.version.pkg</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>copy file-system:asr1001-sipspa.version.pkg</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-espbase.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-rpbase.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-sipbase.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# copy 221subs/asr1001-sipspa.03.02.01.S.151-1.S1_2.pkg bootflash:</code></td>
<td>Upgrade the RPAccess subpackages in the standby bay.</td>
</tr>
<tr>
<td><strong>Step 9</strong> <code>issu loadversion rp 0 file file-system:asr1001-[rpaccess,pios,rpcontrol]* version-string*.pkg bay standby-bay force</code></td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay.</td>
</tr>
<tr>
<td>Example: <code>Router# issu loadversion rp 0 file bootflash:asr1001-[rpaccess,pios,rpcontrol]*03.02.01.S.151-1.S1_2*.pkg bay 1 force</code></td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay.</td>
</tr>
<tr>
<td><strong>Step 10</strong> <code>issu commitversion</code></td>
<td>Once the SSO state is reached, commit the software version.</td>
</tr>
<tr>
<td>Example: <code>Router# issu commitversion</code></td>
<td>Once the SSO state is reached, commit the software version.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Step 11</strong> redundancy force-switchover</td>
<td>Force a switchover from the active IOS process to the standby IOS process.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# redundancy force-switchover</td>
<td></td>
</tr>
</tbody>
</table>

**Note** Your connection to the router may drop and is expected behavior at this point of the procedure in many scenarios. If this step drops your connection to the router, wait a few minutes before reconnecting to the router and then continue the procedure. 

| **Step 12** show platform | (Optional) Monitor system state to ensure both IOS processes are active. |
| **Example:** Router# show platform | |

| **Step 13** issu loadversion rp 0 file file-system :asr1001-{rpaccess,rpios,rpcontrol}*.version-string *.pkg bay standby-bay force | Upgrade the RPAccess, RPIOs, and RPControl subpackages in the standby bay (a different bay than in Step 9). |
| **Example:** Router# issu loadversion rp 0 file bootflash:asr1001-{rpaccess,rpios,rpcontrol}*03.02.01.S.151-1.S1_2*.pkg bay 0 force | |

| **Step 14** issu commitversion | Commit the software version. |
| **Example:** Router# issu commitversion | |

| **Step 15** issu loadversion rp 0 file file-system :asr1001-{rpbase,sipbase,sipspa,espbase}*.version *.pkg force | Upgrade the RP, SIP, SPA, and ESP subpackages for each SIP on the router. |
| **Example:** issu loadversion rp 0 file file-system :asr1001-{rpbase,sipbase,sipspa,espbase}*.version *.pkg force | |

**Note** This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step. 

**Tip** You can use the `show ip interface brief` command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form `SIP-number/SPA-number/interface-number`) identify the SIP and SPA locations in the router.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td>The pattern options used in the CLI (rpbase, sipbase, sipspa, espbase, firmware) were introduced in IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the ISSU Procedures (Prior to Cisco IOS XE Release 2.1.2) on page 62 for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures. Router 1001-HX and ASR 1002-HX Routers are introduced from Polaris 16.x.x release only. Polaris 16.x.x release has 2 new packages i.e. rpboot and webui. Include these 2 packages for upgrade/downgrade between Polaris 16.x.x images at this step.</td>
</tr>
<tr>
<td>For ASR 1001 and ASR 1002-X</td>
<td></td>
</tr>
<tr>
<td><strong>Router# issu loadversion rp 0 file</strong></td>
<td></td>
</tr>
<tr>
<td>bootflash:221subs/asr1001-{rpbase,sipbase,sipspa,espbase}*03.02.01.S.151-1.S1_2.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For ASR 1001-X</td>
<td></td>
</tr>
<tr>
<td><strong>Router# issu loadversion rp 0 file</strong></td>
<td></td>
</tr>
<tr>
<td>file-system :asr1001-{rpbase,sipbase,sipspa,esp,firmware}* version *.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For ASR1001-HX and ASR1002-HX</td>
<td></td>
</tr>
<tr>
<td><strong>Router# issu loadversion rp 0 file</strong></td>
<td></td>
</tr>
<tr>
<td>file-system :asr1000-{rpbase,elcbase,elcspa,espbase}* version *.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For upgrade/downgrade between Polaris 16.x.x releases:</td>
<td></td>
</tr>
<tr>
<td>For ASR1001-HX and ASR1002-HX Routers, <strong>issu loadversion rp 0 file file-system</strong></td>
<td></td>
</tr>
<tr>
<td>:asr1000-{rpbase,rpboot,elcbase,elcspa,espbase}* version *.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For ASR1001-X</td>
<td></td>
</tr>
<tr>
<td><strong>Router# issu loadversion rp 0 file</strong></td>
<td></td>
</tr>
<tr>
<td>bootflash:221subs/asr1001-{rpbase,rpboot,elcbase,elcspa,espbase}*16.02.01.SPA.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For ASR1001-X, <strong>issu loadversion rp 0 file file-system</strong></td>
<td></td>
</tr>
<tr>
<td>:asr1001-{rpbase,rpboot,sipbase,sipspa,esp,firmware}* version *.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>For ASR1001-X</td>
<td></td>
</tr>
<tr>
<td><strong>Router# issu loadversion rp 0 file</strong></td>
<td></td>
</tr>
<tr>
<td>bootflash:221subs/asr1001-{rpbase,rpboot,sipbase,sipspa,esp,firmware}*16.02.01.SPA.pkg force</td>
<td></td>
</tr>
</tbody>
</table>
Purpose
Command or Action | Purpose
--- | ---
Step 16 | (Optional) Verify that the subpackages are properly installed.
**show version installed** | Example:

```
Router# show version installed
```

Step 17 | (Optional) Reload the RP.
**reload** | Example:

```
Router# reload
```

**Tip** The router will continue normal operation even without a reload. You can reload the router during normal maintenance or a slower traffic period. It is highly recommended to reload the router to avoid conflicts in the software base.

**Note** For ASR1001-HX and ASR1002-X Route, the sipbase and sipspa package will be replaced by elcbase and elcspa package. New packages rpboot and webui are introduced from Polaris 16.x.x release.

### Examples

The following example shows the software upgrade for Cisco ASR 1001 Router, Cisco ASR 1001-X Router or Cisco ASR 1002-HX Router running subpackages.

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Experimental Version 15.1(20110301:124851) [asr1001-universalk9.03.02.01.S.151-1.S1]
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Tue 01-Mar-11 06:25 by mcppre
Cisco IOS-XE software, Copyright (c) 2005-2011 by cisco Systems, Inc.
All rights reserved. Certain components of Cisco IOS-XE software are licensed under the GNU General Public License ("GPL") Version 2.0. The software code licensed under GPL Version 2.0 is free software that comes with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such GPL code under the terms of GPL Version 2.0. For more details, see the documentation or "License Notice" file accompanying the IOS-XE software, or the applicable URL provided on the flyer accompanying the IOS-XE software.
ROM: IOS-XE ROMMON
Router uptime is 5 days, 26 minutes
Uptime for this control processor is 5 days, 27 minutes
System returned to ROM by reload
System image file is "bootflash:asr1001-universalk9.03.02.01.S.151-1.S1"
Last reload reason: Reload Command
This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.
A summary of U.S. laws governing Cisco cryptographic products may be found at:
```
If you require further assistance please contact us by sending email to export@cisco.com.

License Info:

<table>
<thead>
<tr>
<th>License UDI:</th>
<th>Device#</th>
<th>PID</th>
<th>SN</th>
<th>UDI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+0</td>
<td>ASR1001</td>
<td>JAE14020AT1</td>
<td>ASR1001:JAE14020AT1</td>
</tr>
</tbody>
</table>

License Package Information for Module: 'asr1001'

<table>
<thead>
<tr>
<th>Module name</th>
<th>Image level</th>
<th>Pri</th>
<th>Config</th>
<th>Valid license</th>
</tr>
</thead>
<tbody>
<tr>
<td>asr1001</td>
<td>adventerprise</td>
<td>1</td>
<td>NO</td>
<td>adventerprise</td>
</tr>
<tr>
<td>asr1001</td>
<td>advipservices</td>
<td>2</td>
<td>NO</td>
<td>advipservices</td>
</tr>
<tr>
<td>asr1001</td>
<td>ipbase</td>
<td>3</td>
<td>NO</td>
<td>ipbase</td>
</tr>
</tbody>
</table>

Cisco ASR1001 (1RU) processor with 3851680K/6147K bytes of memory.
6 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
7762399K bytes of eUSB flash at bootflash:.

Redundancy Mode (Operational) = Non-redundant
Redundancy Mode (Configured) = Non-redundant
Redundancy State = Non Redundant
Manual Swact = disabled (system is simplex (no peer unit))
Communications = Down
Reason: Simplex mode

Client count = 63
Client_notification_TMR = 30000 milliseconds
Keep_alive TMR = 4000 milliseconds
keep_alive_count = 0
keep_alive_threshold = 7
RF debug mask = 0x0

Router# show platform

Chassis type: ASR1001

Slot | Type             | State   | Insert time (ago) |
-----|------------------|---------|------------------|
0    | ASR1001          | ok      | 5d07h            |
0/0  | ASR1001          | ok      | 5d07h            |
0/1  | SPA-2X1GE-V2     | ok      | 5d07h            |
R0   | ASR1001          | ok, active | 5d07h          |
F0   | ASR1001          | ok, active | 5d07h         |
P0   | ASR1001-PWR-AC   | ps, fail | 5d07h            |
P1   | ASR1001-PWR-AC   | ok      | 5d07h            |
P2   | ASR1001-PANTRAY  | ok      | 5d07h            |
Slot | CPLD Version   | Firmware Version |
-----|----------------|------------------|
0    | 1001050E        | 12.2(20090526:143323) [gschnorr-mcp... |
R0   | 10010514        | 12.2(20090526:143323) [gschnorr-mcp... |
P0   | 1001050E        | 12.2(20090526:143323) [gschnorr-mcp... |

Router# mkdir 221subs
Create directory filename [221subs]?
Created dir bootflash:221subs
Router(config)# ip tftp source-interface gigabitethernet 0
Router# copy tftp: 221subs
Address or name of remote host [ ]? 172.27.55.254
Source filename [ ]? /auto/users/asr1001-universalk9.03.02.01.S.151-1.S1_2.bin,12
Accessing tftp://172.27.55.254/auto/users/asr1001-universalk9.03.02.01.S.151-1.S1_2.bin,12...
Loading /auto/users/asr1001-universalk9.03.02.01.S.151-1.S1_2.bin,12 (via GigabitEthernet0):

[OK - 209227980 bytes]
209227980 bytes copied in 880.002 secs (237759 bytes/sec)
Router# request platform software package expand file
221subs/asr1001-universalk9.03.02.01.S.151-1.S1_2.bin
Verifying parameters
Validating package type
Copying package files
SUCCESS: Finished expanding all-in-one software package.
Router# dir 221subs
Directory of 221subs/
72013 -rw- 51904716 Oct 7 2008 15:46:02 -07:00 asr1001-espbase.03.02.01.S.151-1.S1_2.pkg
72004 -rw- 5773 Oct 7 2008 15:46:02 -07:00 asr1001-packages-universalk9.03.02.01.S.151-1.S1_2.conf
72014 -rw- 20533452 Oct 7 2008 15:46:03 -07:00 asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
72015 -rw- 22366156 Oct 7 2008 15:46:03 -07:00 asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
72016 -rw- 27961548 Oct 7 2008 15:46:03 -07:00 asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
72017 -rw- 50942156 Oct 7 2008 15:46:03 -07:00 asr1001-sipbase.03.02.01.S.151-1.S1_2.pkg
72019 -rw- 26366156 Oct 7 2008 15:46:03 -07:00 asr1001-sipspa.03.02.01.S.151-1.S1_2.pkg
72005 -rw- 6290 Oct 7 2008 15:46:03 -07:00 packages.conf
72003 -rw- 224768204 Oct 7 2008 15:38:57 -07:00 asr1001-universalk9.03.02.01.S.151-1.S1_2.bin
92886208 bytes total (466358272 bytes free)
Router# copy 221subs/asr1001-espbase.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-espbase.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
51904716 bytes copied in 5.478 secs (9475122 bytes/sec)
Router# copy 221subs/asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
20533452 bytes copied in 2.346 secs (875257 bytes/sec)
Router# copy 221subs/asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
22366156 bytes copied in 2.857 secs (9228616 bytes/sec)
Router# copy 221subs/asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
27961548 bytes copied in 2.992 secs (9345437 bytes/sec)
Router# copy 221subs/asr1001-sipbase.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-sipbase.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
50942156 bytes copied in 5.719 secs (907529 bytes/sec)
Router# copy 221subs/asr1001-sipspa.03.02.01.S.151-1.S1_2.pkg bootflash:
Destination filename [asr1001-sipspa.03.02.01.S.151-1.S1_2.pkg]?
Copy in progress...CCCC
26366156 bytes copied in 2.857 secs (9228616 bytes/sec)
Router# issu loadversion rp 0 file bootflash:221subs/asr1001-{rpaccess, rppios, rpcontrol}+03.02.01.S.151-1.S1_2.pkg bay 1 force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Determining whether installation is valid
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Determining whether installation is valid
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Found asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Determining whether installation is valid
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1001-rpaccess.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpios-universalk9.03.02.01.S.151-1.S1_2.pkg
  Added asr1001-rpcontrol.03.02.01.S.151-1.S1_2.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting IOS PID: 9275, in slot/bay 0/1
*Mar 15 16:28:50.014: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
*Mar 15 16:28:50.014: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Mar 15 16:28:50.014: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUNDANCY_STATE_CHANGE)
*Mar 15 16:29:29.214: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_FOUND(4))
*Mar 15 16:29:29.214: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
Generating software version information
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
Router#issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]y Manual Swact = enabled
%ASR1000_INFRA-6-CONSOLE_ACTIVE: R0/1 console active. Press RETURN to get star!
*Mar 15 16:30:24.885: %NBAR_HA-5-NBAR_INFO: NBAR sync DONE!
*Mar 15 16:30:25.421: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
*Mar 15 16:30:25.423: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Router# bootflash:221subs/asr1001-{rpaccess, rpios, rpcontrol}*03.02.01.S.151-1.S1_2.pkg bay 0 force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction

--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing

--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing

--- Starting list of software package changes ---
Old files list:
  Removed asr1001-rpaccess.03.02.01.S.151-1.S1.pkg
  Removed asr1001-rpcontrol.03.02.01.S.151-1.S1.pkg
  Removed asr1001-rpios-universalk9.03.02.01.S.151-1.S1.pkg
No new package files added
Finished list of software package changes

--- Starting analysis of software changes ---
Finished analysis of software changes

--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# issu commitversion

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:221subs/asr1001-{rpbase,sipbase,espbase}*03.02.01.S.151-1.S1_2.pkg force
--- Starting local lock acquisition on R0 ---
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of RP Base package
WARNING: Requires software reboot of target RP
WARNING: Automatically setting the on-reboot flag
Processing image file constraints
Creating candidate provisioning file
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
- Removed asr1001-espbase.03.02.01.S.151-1.S1.pkg
- Removed asr1001-rpbase.03.02.01.S.151-1.S1.pkg
- Removed asr1001-sipbase.03.02.01.S.151-1.S1.pkg
- Removed asr1001-sipspa.03.02.01.S.151-1.S1.pkg
New files list:
- Added asr1001-espbase.03.02.01.S.151-1.S1_2.pkg
- Added asr1001-rpbase.03.02.01.S.151-1.S1_2.pkg
- Added asr1001-sipbase.03.02.01.S.151-1.S1_2.pkg
- Added asr1001-sipspa.03.02.01.S.151-1.S1_2.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
SUCCESS: Software provisioned. New software will load on reboot.
Router# reload
Router# issu loadversion rp 0 file bootflash:221subs/asr1001-{rpbase,espbase,espbase}*20160311_012910_V16_2_0_318_2.SSA.pkg force
--- Starting local lock acquisition on R0 ---
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1002x-rpbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Found asr1002x-rpboot.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Found asr1002x-sipbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Found asr1002x-sipspa.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Found asr1002x-espbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of RP Boot package
WARNING: requires software reboot of target RP
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting ISSU compatibility verification ---
WARNING:
WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.
WARNING:
WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.
WARNING:
WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.
WARNING:
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WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.
WARNING:
WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.
WARNING: ISSU between engineering builds with release strings in non-standard format.
Skipping ISSU Software Compatibility checks.

--- Starting list of software package changes ---
Old files list:
Removed asr1002x-espbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318.SSA.pkg
Removed asr1002x-rpbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318.SSA.pkg
Removed asr1002x-rpboot.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318.SSA.pkg
Removed asr1002x-sipbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318.SSA.pkg

New files list:
Added asr1002x-espbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Added asr1002x-rpbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Added asr1002x-rpboot.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg
Added asr1002x-sipbase.BLD_V162_1_THROTTLE_LATEST_20160311_012910_V16_2_0_318_2.SSA.pkg

Finished list of software package changes
--- Starting commit of software changes ---
Upgrading provisioning files
Committing provisioning files
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.

Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (software upgrade Command Set)

This section provides instructions on using software upgrade for Cisco ASR 1002 or 1004 Router running subpackages. Cisco ASR 1002 Router is not supported on Polaris 16.x.x release.
These instructions assume two IOS processes are active on the RP and that the router is already running using subpackages.

Step 17, 18, and 19 does not have to be performed immediately, and can be done at a convenient time.

**SUMMARY STEPS**

1. `show version`
2. `redundancy`
3. `mkdir URL-to-directory-name`
4. `ip tftp source-interface gigabitethernet port`
5. `copy tftp: URL-to-target-location`
6. `request platform software package expand file URL-to-consolidated-package`
7. `dir target-URL`
8. `copy file-system::asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP`
9. `issu loadversion rp 0 file file-system:asr1000rp2-{rpaccess,rpios,rpcontrol}*version-string*.pkg bay standby-bay force`
10. `issu commitversion`
11. `redundancy force-switchover`
12. `show platform`
13. `issu loadversion rp 0 file file-system:asr1000rp2-{rpaccess,rpios,rpcontrol}*version-string*.pkg bay standby-bay force`
14. `issu commitversion`
15. `issu loadversion rp 0 file file-system:asr1000rp2-{sipbase,sipspa}*version*.pkg slot SIP-slot-number force`
16. `issu loadversion rp 0 file file-system:asr1000rp2-{elcbase,elcspa}*version*.pkg slot SIP-slot-number force`
17. `issu loadversion rp 0 file file-system:asr1000rp2-esp*version*.pkg force`
18. `issu loadversion rp 0 file file-system:asr1000rp*version*.pkg`
19. `show version installed`
20. `reload`
21. `request platform software package clean`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>show version</code></td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td><strong>Example:</strong> show version installed</td>
<td>• show version and show version active-rp installed—Verify the running version of</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Example:</strong> dir filesystem:&lt;directory&gt;</td>
<td>Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td><strong>Example:</strong> show platform</td>
<td>Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td><strong>Example:</strong> show redundancy-states</td>
<td>Confirm the operational and configured redundancy states.</td>
</tr>
<tr>
<td><strong>Step 2</strong> redundancy</td>
<td>Configure SSO if it is not already configured.</td>
</tr>
<tr>
<td><strong>Example:</strong> mode sso</td>
<td>Note: Save the configuration after making this configuration step.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router(config)# redundancy</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router(config-red)# mode sso</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> mkdir URL-to-directory-name</td>
<td>Create a directory to store the consolidated package and subpackages.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# mkdir usb0:221subs</td>
<td>This directory must be created in most cases because the consolidated packages and subpackages have to be separated from the subpackages that booted the router at this step of the procedure.</td>
</tr>
</tbody>
</table>
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (software upgrade Command Set)

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 4</strong> ip tftp source-interface gigabitethernet port</td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured: slot/port—Specifies the location of the TFTP source-interface.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router(config)# ip tftp source-interface gigabitethernet 0</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> copy tftp: URL-to-target-location</td>
<td>Copy the consolidated package file into the directory created in Step 3. The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router# copy tftp: usb0:221subs</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> request platform software package expand file URL-to-consolidated-package</td>
<td>Extract the subpackages out of the consolidated package file into the temporary directory. Take extra care to extract the subpackages to a temporary subdirectory and do not delete any of the files currently running the router at this point of the procedure. To erase the files that were running on the router before the ISSU upgrade, enter the request platform software package clean command after the ISSU upgrade has been completed.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>(Optional) dir target-URL</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router# request platform software package expand file</code></td>
</tr>
<tr>
<td></td>
<td><code>usb0:221subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin</code></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router# dir usb0:221subs</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> dir target-URL</td>
<td>(Optional) Display the directory to confirm that the files were extracted.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>Router# dir usb0:221subs</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> copy file-system::asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| **Example:**
  `copy file-system:asr1000rp2-esp86base.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-rpaccess.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-rpbase.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-rpcontrol.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-rpios.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-sipbase.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-sipspa.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-elcbase.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |
| **Example:**
  `copy file-system:asr1000rp2-elcspa.version.pkg`  
  URL-to-directory-of-sub-packages-active-RP |

Example:

```
Router# copy usb0:221subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:
```

Example:

```
Router# copy usb0:221subs/asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg bootflash:
```
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay.</td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
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<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# <code>copy usb0:221subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>Step 9 <code>issu loadversion rp 0 file/file-system:asr1000rp2-{rpaccess,rpios,rpcontrol}*version-string*.pkg</code> bay/standby-bay force`</td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay.</td>
</tr>
</tbody>
</table>

Example:

Router# `issu loadversion rp 0 file bootflash:asr1000rp2-{rpaccess,rpios,rpcontrol}*03.13.00.S.154-3.S-ext*.pkg bay 1 force`
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 10</strong> issu commitversion</td>
<td>Once the SSO state is reached, commit the software version.</td>
</tr>
<tr>
<td>Example: Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Step 11</strong> redundancy force-switchover</td>
<td>Force a switchover from the active IOS process to the standby IOS process.</td>
</tr>
<tr>
<td>Example: Router# redundancy force-switchover</td>
<td></td>
</tr>
<tr>
<td><strong>Step 12</strong> show platform</td>
<td>(Optional) Monitor system state to ensure both IOS processes are active.</td>
</tr>
<tr>
<td>Example: Router# show platform</td>
<td></td>
</tr>
<tr>
<td><strong>Step 13</strong> issu loadversion rp 0 file file-system:asr1000rp2-{rpaccess,ripios,rpcontrol}<em>version-string</em>.pkg bay standby-bay force</td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay (a different bay than in Step 9).</td>
</tr>
<tr>
<td>Example: Router# issu loadversion rp 0 file bootflash:asr1000rp2-{rpaccess,ripios,rpcontrol}<em>03.13.00.S.154-3.S-ext</em>.pkg bay 0 force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 14</strong> issu commitversion</td>
<td>Commit the software version.</td>
</tr>
<tr>
<td>Example: Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Step 15</strong> issu loadversion rp 0 file file-system:asr1000rp2-{sipbase,sipspa}<em>version</em>.pkg slot SIP-slot-number force</td>
<td>Upgrade the SIP and SPA subpackages for each SIP on the router.</td>
</tr>
</tbody>
</table>
| Example: issu commitversion | **Note** This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step. **Tip** You can use the `show ip interface brief` command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form `SIP-number/SPA-number/interface-number`) identify the SIP and SPA locations in the router.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-[sipspa,sipbase]<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-[sipspa,sipbase]<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-[sipspa,sipbase]<em>03.13.00.S.154-3.S-ext</em>.pkg slot 2 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
</tbody>
</table>

**Step 16** issu loadversion rp 0 file file-system:asr1000rp2-{elcspa,elcbase}*version*,pkg slot SLP-slot-number force

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade the ELC and SPA subpackages for each ELC on the router.</td>
<td>This step must be completed for one ELC at a time, and repeated for each ELC installed on the router before performing the next step.</td>
</tr>
<tr>
<td>You can use the show ip interface brief command to identify which slots contain ELCs and SPAs. The interfaces with three numbers (in the form ELC-number/SPA-number/interface-number) identify the ELC and SPA locations in the router.</td>
<td>The pattern options used in this CLI (elcbase and elcspa) were introduced in Cisco IOS XE Release 3.10.2 and are not available in previous Cisco IOS XE Releases.</td>
</tr>
</tbody>
</table>

**Example:**

Repeat this step for each ELC installed in your router before proceeding to the next step.

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-[elcspa,elcbase]<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
</tbody>
</table>

**Note**

The pattern options used in this CLI (sipbase and sipspa) were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the ISSU Procedures (Prior to Cisco IOS XE Release 2.1.2), on page 62 for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures.
### Command or Action and Purpose

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-{elcspa,elcbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-{elcspa,elcbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 2 force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Step 17</strong> issu loadversion rp 0 file file-system:asr1000rp2-esp<em>version</em>.pkg force</td>
<td>Upgrades the ESP Base subpackage and Commits the ESP Base software.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp2-esp<em>03.13.00.S.154-3.S-ext</em>.pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Step 18</strong> issu loadversion rp 0 filefile-system:asr1000rp<em>version</em>.pkg</td>
<td>Upgrades all subpackages, including the RPBase subpackage, which is the last subpackage that needs to be upgraded.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>issu commitversion</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 0 file bootflash:asr1000rp<em>03.13.00.S.154-3.S-ext</em>.pkg</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
</tbody>
</table>

**Note** This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.
### Examples

The following example shows the software upgrade for Cisco ASR 1002 or 1004 Router running sub-packages:

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
System image file is "bootflash:Active_Dir/packages.conf"

Router# show platform
Chassis type: ASR1004
Slot Type State Insert time (ago)
----------------- ---------------------- --------------------- ------------------
0 ASR1000-2T+20X1GE ok 00:04:19
0/0 BUILT-IN-2T+20X1GE ok 00:02:36
1 ASR1000-SIP10 ok 00:04:19
1/0 SPA-2X1GE-V2 ok 00:03:07
1/1 SPA-10X1GE-V2 ok 00:03:00
R0 ASR1000-RP2 ok 00:04:19
R0/0 ok, active 00:04:19
R0/1 ok, standby 00:02:41
F0 ASR1000-ESP40 ok, active 00:04:19
P0 ASR1004-PWR-AC ok 00:03:28
P1 ASR1004-PWR-AC ps, fail 00:03:28

Slot CPLD Version Firmware Version
----------- ------------------- ------------------------
0 00200800 15.2(1r)S
1 07091401 15.3(3r)S
R0 08103002 15.3(3r)S
F0 1003190E 15.3(3r)S

Router# show version installed
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: R0
Built: n/a, by: n/a
File SHA1 checksum: a624f70f68c60292f4482433f43af9d2487a55c4
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: R0 Built: 2013-03-25_18.48, by: mcpre
```
File SHA1 checksum: 3a9675142898c6ac350d4e42f0e37bd9f4e48538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active


File SHA1 checksum: 87b11f6863f67f7df261ee0769b929baab4c3efad

Router# show redundancy states
my state = 13 -ACTIVE
peer state = 8 -STANDBY HOT
Mode = Duplex
Unit = Primary
Unit ID = 48
Redundancy Mode (Operational) = sso
Redundancy Mode (Configured) = sso
Redundancy State = sso
Maintenance Mode = Disabled
Manual Swact = enabled
Communications = Up
client count = 107
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0

Router# mkdir bootflash:harddisk:Target Subs
Create directory filename [Target Subs]?

Router(config)# ip tftp source-interface gigabitethernet 0

Router# copy tftp: harddisk:Target Subs
Address or name of remote host []? 202.153.144.25
Source filename []? /auto/tftp-srg-india/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
destination filename [/Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin]?

Router# request platform software package expand file
harddisk:/Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
Verifying parameters
Validating package type
SUCCESS: Finished expanding all-in-one software package.

Router# dir harddisk:Target Subs
Directory of harddisk:/Target_Subs/
666565 -rw- 10165 Aug 3 2013 13:27:08 +05:30 packages.conf
copy in progress...CCCCC
80657364 bytes copied in 12.085 secs (6674172 bytes/sec)
copy in progress...CCCCC
9546456 bytes copied in 14.687 secs (6498703 bytes/sec)
copy in progress...CCCCC
23350232 bytes copied in 4.047 secs (5769763 bytes/sec)
copy in progress...CCCCC
37694900 bytes copied in 5.978 secs (6305604 bytes/sec)
copy in progress...CCCCC
45536216 bytes copied in 5.970 secs (7627507 bytes/sec)
copy in progress...CCCCC
118754284 bytes copied in 18.501 secs (6418804 bytes/sec)
copy in progress...CCCCC38380500 bytes copied in 4.951 secs (7752070 bytes/sec)
copy in progress...CCCCC61760468 bytes copied in 8.615 secs (7168946 bytes/sec)
copy in progress...CCCCC37557200 bytes copied in 5.255 secs (7146946 bytes/sec)
copy in progress...CCCCC51194832 bytes copied in 7.677 secs (6668599 bytes/sec)
Router# issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp2-{rpaccess,rpios,rpcontrol}*03.13.00.S.154-3.S-ext*.pkg bay 1 force
--- Starting local lock acquisition on R0----
Finished local lock acquisition on R0
---Starting file path checking---
Finished file path checking
---Starting image file verification-----
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Determining whether candidate package set is compatible
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Releasing software
Restarting IOS PID: 21552, in slot/bay 0/1
Applying final IPC and database definitions
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software.
SUCCESS: Finished installing software.
Router# issu commitversion
-- Starting local lock acquisition on R0----
Finished local lock acquisition on R0
-- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router#redundancy force-switchover
Proceed with switchover to standby RP? [confirm]
Manual Swact = enabled
%IOSXE_INFRA-6-CONSOLE_ACTIVE: R0/1 console active. Press RETURN to get started!(OK)
*Aug 3 13:43:52.101 IST: %CMANRP-6-CMHASTATUS: RP switchover, received chassis event to become active
Aug 3 13:43:52.193 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover (PEER_NOT_PRESENT)
Aug 3 13:43:52.194 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover (PEER_DOWN)
Aug 3 13:43:52.194 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover (PEER_REDUNDANCY_STATE_CHANGE)

IOS is ready to switch to primary after chassis confirmation
Aug 3 13:43:52.200 IST: %CMANRP-6-CMHASTATUS: RP switchover, received chassis event became active. Switch to primary (count 1)
Aug 3 13:43:52.733 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0, changed state to down
Aug 3 13:43:53.098 IST: %LINK-3-UPDOWN: Interface Lsmpi0, changed state to up
Aug 3 13:43:53.127 IST: %LINK-3-UPDOWN: Interface EOBC0, changed state to up
Aug 3 13:43:53.127 IST: %LINK-3-UPDOWN: Interface LIIN0, changed state to up
Aug 3 13:43:54.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Lsmpi0, changed state to up
Aug 3 13:43:54.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface EOBC0, changed state to up
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface Null0, changed state to up
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface GigabitEthernet0/0/8, changed state to up
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/2, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/3, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/4, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/5, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/6, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/7, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/9, changed state to administratively down
Aug 3 13:43:55.124 IST: %LINK-5-CHANGED: Interface GigabitEthernet0/0/11, changed state to administratively down
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Null0, changed state to up
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/8, changed state to up
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/10, changed state to up
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/20, changed state to down
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/21, changed state to down

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
*Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/0, changed state to up
*Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to up
*Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/1/0, changed state to up
*Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/1/1, changed state to up
*Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/1/3, changed state to up
*Aug 3 13:44:05.127 IST: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state to up
*Aug 3 13:44:06.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0, changed state to up
*Aug 3 13:44:32.069 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_FOUND(4))
*Aug 3 13:44:32.070 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
*Aug 3 13:44:34.969 IST: %REDUNDANCY-3-IPC: IOS versions do not match.
*Aug 3 13:45:40.946 IST: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

Router# **issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp2-{rpaccess,rpios,rpcontrol}*03.13.00.S.154-3.S-ext*.pkg bay 0 force**
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
---Starting image file verification---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.5-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.5-ext.pkg
Verifying image file locations
Inspecting image file types
Processing candidate package provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file/tmp/issu/provision/sw
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
No new package files added
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
Starting update running software
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restoring IOS PID: 25452, in slot/bay 0/0
*Aug 3 13:48:07.051 IST:  
%REDDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
*Aug 3 13:48:07.052 IST:  
%REDDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Aug 3 13:48:07.052 IST:  
%REDDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUNDANCY_STATE_CHANGE)
*Aug 3 13:48:09.683 IST:  
%RF-5-RF_RELOAD: Peer reload.
Reason: ENSA standby down
*Aug 3 13:48:09.692 IST:  
%REDDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Aug 3 13:48:09.692 IST:  
%REDDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUNDANCY_STATE_CHANGE)
*Aug 3 13:48:50.035 IST:  
%ISSU-3-PEER_IMAGE_NOT_IN_INCOMP_LIST: Peer image (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), version (15.3(3)S) on peer uid (48) is not in the incompatible Images list
*Aug 3 13:48:50.036 IST:  
%ISSU-3-PEER_IMAGE_REM_FROM_INCOMP_LIST: Peer image (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), version (15.3(3)S) on peer uid (48) being removed from the incompatibility list
*Aug 3 13:48:53.521 IST:  
%DYNCMD-7-CMDSET_UNLOADED: The Dynamic Command set from the Shell Manager has been unloaded
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# 
*Aug 3 13:49:57.477 IST:  
%NBAR_HA-5-NBAR_INFO: NBAR sync DONE!
*Aug 3 13:49:57.893 IST:  
%ISSU-3-PEER_IMAGE_Rem_FROM_INCOMP_LIST: Peer image (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), version (15.3(3)S) on peer uid (48) being removed from the incompatibility list
*Aug 3 13:49:57.893 IST:  
%HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEEDED: Bulk Sync succeeded
*Aug 3 13:49:57.895 IST:  
%RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Router# issu commitversion

--- Starting local lock acquisition on R0---
Finished local lock acquisition on R0
Starting installation changes
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp2-{sipbase, sipspa}*03.13.00.S.154-3.S-ext*.pkg slot 1 force

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix file by locate latest matrix file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing-----
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes---
No old package files removed
New files list:
  Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting SIP1
Applying final IPC and database definitions
*Aug 3 13:52:05.767 IST: %IOSXE_OIR-6-OFFLINECARD: Card (cc) offline in slot 1
*Aug 3 13:52:05.770 IST: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 1/0, interfaces disabled
*Aug 3 13:52:05.770 IST: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 1/1, interfaces disabled
*Aug 3 13:52:05.778 IST: %SPA_OIR-6-OFFLINECARD: SPA (SPA-2X1GE-V2) offline in subslot 1/0
*Aug 3 13:52:05.786 IST: %SPA_OIR-6-OFFLINECARD: SPA (SPA-10X1GE-V2) offline in subslot 1/1
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router#
*Aug 3 13:53:00.262 IST: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 1
*Aug 3 13:53:00.901 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 1/0
*Aug 3 13:53:01.194 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 1/1
*Aug 3 13:53:18.148 IST: %LINK-3-UPDOWN: SIP1/0/0: Interface EOBC1/1, changed state to up
*Aug 3 13:53:23.978 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-2X1GE-V2) online in subslot 1/0
*Aug 3 13:53:23.609 IST: %LINK-3-UPDOWN: SIP1/0/0: Interface EOBC1/1, changed state to up
*Aug 3 13:53:26.288 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/0, changed state to up
*Aug 3 13:53:26.471 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/1, changed state to up
*Aug 3 13:53:26.605 IST: %LINK-3-UPDOWN: SIP1/0/0: Interface GigabitEthernet1/0/0, changed state to up
*Aug 3 13:53:31.030 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/3, changed state to down
*Aug 3 13:53:31.042 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/4, changed state to down
*Aug 3 13:53:31.045 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/5, changed state to up
*Aug 3 13:53:31.046 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/6, changed state to down
*Aug 3 13:53:31.048 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/7, changed state to down
*Aug 3 13:53:31.051 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/8, changed state to down
*Aug 3 13:53:31.053 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/9, changed state to down
*Aug 3 13:53:31.312 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/0, changed state to up
*Aug 3 13:53:32.833 IST: %LINK-3-UPDOWN: SIP1/0/0: Interface GigabitEthernet1/1/0, changed state to up
*Aug 3 13:53:33.007 IST: %LINK-3-UPDOWN: SIP1/0/1: Interface GigabitEthernet1/1/7, changed state to down

Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
Starting installation changes
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed

Router# issu loadversion rp 0 file
bootflash:Active_Dir/asr1000rp2-{elcbase,elcspa}*03.13.00.S.154-3.S-ext*.pkg slot 0 force
--- Finished local lock acquisition on R0 ---
Starting file path checking
---Finished file path checking---
Starting image file verification
---Checking image file names-----
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
Generating software version information
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# issu commitversion
-- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:Active.Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase86.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction

--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible

Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking package specific compatibility
Finished compatibility testing

--- Starting impact testing ---
Checking operational impact of change
Finished impact testing

--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes

--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
Starting analysis of software changes---
Starting update running software
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP0

*Aug 3 14:02:51.450 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F0
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router#

*Aug 3 14:04:49.802 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0
preparing image /tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:50.172 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 startup init image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:50.746 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F0
*Aug 3 14:04:55.480 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 running init image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:55.698 IST: %CPPHA-7-READY: F0: cpp_ha: CPP 0 loading and initialization complete
*Aug 3 14:04:55.837 IST: %IOSXE-6-PLATFORM: F0: cpp_cp: Process CPP_PFILTER_EA_EVENT_API_CALL__REGISTER
Router# issu commitversion
-- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
---Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg
-- Starting local lock acquisition on R0
---Finished local lock acquisition on R0
Starting file path checking
Finished file path checking
Starting image file verification
Checking image file names
Locating image files and validating name syntax
    Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
    Founded asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
    Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
    WARNING: In-service installation of RP Base package
    WARNING: requires software reboot of target RP
    WARNING: Automatically setting the on-reboot flag
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Checking merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
    Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
    Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
    Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
    Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
    Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
    Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.
Router# show version r0 provisioned
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf,
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (software upgrade Command Set)
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (software upgrade Command Set)
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (software upgrade Command Set)

File SHA1 checksum: 94763274fc807489410e299a45fd73f3ed967499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/1
File SHA1 checksum: 6d1228b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/1
File SHA1 checksum: 94763274fc807489410e299a45fd73f3ed967499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
File SHA1 checksum: 6d1228b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
File SHA1 checksum: 94763274fc807489410e299a45fd73f3ed967499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File SHA1 checksum: 6d1228b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File SHA1 checksum: 94763274fc807489410e299a45fd73f3ed967499
File is in use, will not delete.
packages.conf

Router# reload
<some output removed for brevity>
Router# request platform software package clean
Cleaning up unnecessary package files
No path specified, will use booted path bootflash:Active_Dir/packages.conf
Cleaning bootflash:Active_Dir
Scanning boot directory for packages ... done.
Preparing packages list to delete ...
asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete.
packages.conf
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (request platform Command Set)

This section provides instructions on using software upgrade for Cisco ASR 1002 or 1004 Router running subpackages using the request platform command set. Cisco ASR 1002 Router is not supported on Polaris 16.x.x release.

These instructions assume two IOS processes are active on the RP and that the router is already running using subpackages.

Note

Step 17, 18, and 19 does not have to be performed immediately, and can be done at a convenient time.
**SUMMARY STEPS**

1. show version
2. redundancy
3. mkdir URL-to-directory-name
4. ip tftp source-interface gigabitethernet port
5. copy tftp: URL-to-target-location
6. request platform software package expand file URL-to-consolidated-package
7. dir target-URL
8. copy file-system: asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP
9. request platform software package install rp 0
   file system: asr1000rp2-{rpaccess, rpios, rpcontrol}*version-string*.pkg bay standby bay force
10. redundancy force-switchover
11. (Optional) show platform
12. request platform software package install rp 0
   file system: asr1000rp2-{rpaccess, rpios, rpcontrol}*version-string*.pkg bay standby bay force
13. request platform software package install rp 0 file
    file system: asr1000rp2-{sipbase, sipspa}*version*.pkg slot SIP-slot-number force
14. request platform software package install rp 0 file file system: asr1000rp2-{elcase, elcspa}*version*.pkg
    slot SIP-slot-number force
15. request platform software package install rp 0 file file system: asr1000rp2-esp*version*.pkg force
16. request platform software package install rp 0 file file system: asr1000rp*version*.pkg
17. show version installed
18. reload
19. request platform software package clean

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td>show version</td>
<td>• show version and show version active-rp installed—Verify the running version of the Cisco IOS XE software on the router, and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td>Example:</td>
<td>• dir—Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td>Example:</td>
<td>• show platform—Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td>show version</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>show platform</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>show redundancy-states</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show version</td>
<td>• show redundancy states—Confirm the operational and configured redundancy states.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show version r0 installed</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# dir bootflash:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show platform</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# show redundancy-states</td>
<td></td>
</tr>
</tbody>
</table>

**Step 2** redundancy

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>mode sso</td>
<td>Configure SSO if it is not already configured.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# redundancy</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config-red)# mode sso</td>
<td>Note Save the configuration after making this configuration step.</td>
</tr>
</tbody>
</table>

**Step 3** mkdir URL-to-directory-name

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>Create a directory to store the consolidated package and subpackages.</td>
</tr>
<tr>
<td>Router# mkdir usb0:221subs</td>
<td>This directory must be created in most cases because the consolidated packages and subpackages have to be separated from the subpackages that booted the router at this step of the procedure.</td>
</tr>
</tbody>
</table>

**Step 4** ip tftp source-interface gigabitethernet port

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured:</td>
</tr>
<tr>
<td>Router(config)# ip tftp source-interface gigabitethernet 0</td>
<td>slot/port—Specifies the location of the TFTP source-interface.</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td><strong>copy tftp:</strong> URL-to-target-location</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>Router# <code>copy tftp: usb0:221subs</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>To copy a file using TFTP through the Management Ethernet interface, the <code>ip tftp source-interface GigabitEthernet 0</code> command must be entered before entering the <code>copy tftp</code> command.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td><strong>request platform software package expand file</strong> URL-to-consolidated-package</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>Router# <code>request platform software package expand file usb0:221subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Copy the consolidated package file into the directory created in Step 3. The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).</td>
</tr>
<tr>
<td><strong>Tip</strong></td>
<td>It is recommended that you copy the package onto a usb: or harddisk: file system for space considerations when performing this step of the procedure.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td><strong>dir</strong> target-URL</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>Router# <code>dir usb0:221subs</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Extract the subpackages out of the consolidated package file into the temporary directory.</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td><strong>copy file-system:</strong> URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>copy file-system::asr1000rp2-espx86base.version.pkg</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Take extra care to extract the subpackages to a temporary subdirectory and do not delete any of the files currently running the router at this point of the procedure. To erase the files that were running on the router before the ISSU upgrade, enter the <code>request platform software package clean</code> command after the ISSU upgrade has been completed.</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td><strong>copy file-system:</strong> URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>copy file-system::asr1000rp2-rpaccess.version.pkg</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td><strong>copy file-system:</strong> URL-to-directory-of-sub-packages-active-RP</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>copy file-system::asr1000rp2-rpaccess.version.pkg</code></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>From Polaris release 16.x.x, two new packages: rpboot and webui are introduced.</td>
</tr>
</tbody>
</table>
### Command or Action

<table>
<thead>
<tr>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
</tr>
</tbody>
</table>

**Example:**

```
copy file-system:asr1000rp2-rpbase.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-rpcontrol.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-rpios.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-sipbase.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-sipspa.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-elcbase.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
copy file-system:asr1000rp2-elcspa.version.pkg
URL-to-directory-of-sub-packages-active-RP
```

**Example:**

```
Router# copy usb0:221subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**

```
Router# copy usb0:221subs/asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**

```
Router# copy usb0:221subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
bootflash:
```

**Example:**

```
Router# copy usb0:221subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
bootflash:
```
### Command or Action

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Command</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 9</strong></td>
<td>request platform software package install rp 0 file file-system:asr1000rp2-{rpaccess,rpios,rpcontrol}<em>version-string</em>.pkg bay standby-bay force</td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay.</td>
</tr>
<tr>
<td><strong>Step 10</strong></td>
<td>redundancy force-switchover</td>
<td>Force a switchover from the active IOS process to the standby IOS process.</td>
</tr>
</tbody>
</table>

**Note**
Your connection to the router often drops and is expected behavior at this point of the procedure in many scenarios. If this step drops your connection to the router, wait a few minutes before reconnecting to the router and then continue to **Step 11**.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 11</strong></td>
<td>(Optional) Monitor system state to ensure both IOS processes are active.</td>
</tr>
<tr>
<td>(Optional) show platform</td>
<td>Example: Router# show platform</td>
</tr>
<tr>
<td><strong>Step 12</strong></td>
<td>Upgrade the RPAccess, RPIOS, and RPControl subpackages in the standby bay, which in this context is the opposite bay used in Step 9.</td>
</tr>
<tr>
<td><strong>Step 13</strong></td>
<td>Upgrade the SIP and SPA subpackages for each SIP on the router.</td>
</tr>
<tr>
<td>request platform software package install rp 0 file file-system:asr1000rp2-{sipbase,sipspa}<em>version</em>.pkg slot SIP-slot-number force</td>
<td>Example: Router# request platform software package install rp 0 file bootflash:asr1000rp2-{sipspa,sipbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
</tr>
<tr>
<td><strong>Step 14</strong></td>
<td>Upgrade the ELC and SPA subpackages for each ELC on the router.</td>
</tr>
<tr>
<td>request platform software package install rp 0 file file-system:asr1000rp2-{elcase,elspa}<em>version</em>.pkg slot SIP-slot-number force</td>
<td>Example: Repeat this step for each ELC installed in your router before proceeding to the next step.</td>
</tr>
</tbody>
</table>

Note: The *pattern* options used in this CLI *(rpaccess, rpios, and rpcontrol)* were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the ISSU Procedures *(Prior to Cisco IOS XE Release 2.1.2)*, on page 62 for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures.

Tip: You can use the *show ip interface brief* command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form *SIP-number*/SPA-number*/interface-number*) identify the SIP and SPA locations in the router.

Note: The *pattern* options used in this CLI *(sipbase and sipspa)* were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases. See the ISSU Procedures *(Prior to Cisco IOS XE Release 2.1.2)*, on page 62 for pre-Cisco IOS XE Release 2.1.2 ISSU upgrade procedures.
### Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (request platform Command Set)

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp2-{elcspa,elcbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 0 force</td>
<td><strong>Tip</strong> You can use the <em>show ip interface brief</em> command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form <code>ELC-number/SPA-number/interface-number</code>) identify the ELC and SPA locations in the router.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp2-{elcspa,elcbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1 force</td>
<td><strong>Note</strong> The <em>pattern</em> options used in this CLI (<code>elcbase</code> and <code>elcspa</code>) were introduced in Cisco IOS XE Release 3.10S and are not available in previous Cisco IOS XE Releases.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp2-{elcspa,elcbase}<em>03.13.00.S.154-3.S-ext</em>.pkg slot 2 force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 15</strong> request platform software package install rp 0 file file-system:asr1000rp2-esp<em>version</em>.pkg force</td>
<td>Upgrade the ESP Base subpackage.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp2-esp<em>03.13.00.S.154-3.S-ext</em>.pkg slot 1 force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 16</strong> request platform software package install rp 0 file file-system:asr1000rp<em>version</em>.pkg</td>
<td>Upgrade all subpackages, including the RPBase subpackage, which is the last subpackage that needs to be upgraded.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp<em>03.13.00.S.154-3.S-ext</em>.pkg</td>
<td><strong>Note</strong> This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.</td>
</tr>
<tr>
<td><strong>Step 17</strong> show version installed</td>
<td>(Optional) Verify that the subpackages are properly installed.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# show version installed</td>
<td></td>
</tr>
<tr>
<td><strong>Step 18</strong> reload</td>
<td>Reload the RP.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# reload</td>
<td><strong>Tip</strong> The router will continue normal operation even without a reload, so you can reload the router during scheduled maintenance or a slower traffic period.</td>
</tr>
<tr>
<td><strong>Step 19</strong> request platform software package clean</td>
<td>(Optional) Removes the unused subpackages from the router.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package clean</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following example shows the software upgrade for Cisco ASR 1002 or 1004 Router running sub-packages:

Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
System image file is "bootflash:Active_Dir/packages.conf"
cisco ASR1004 (RP2) processor with 1546489K/6147K bytes of memory.
Processor board ID FOX1339G0QJ
32 Gigabit Ethernet interfaces
2 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
38608K bytes of physical memory.
93313K bytes of eUSB flash at bootflash:.
78085207K bytes of SATA hard disk at harddisk:
Configuration register is 0x2102
Router# show version installed
Package: Provisioning File, version: n/a, status: active
  File: bootflash:Active_Dir/packages.conf, on: RP0
  Built: n/a, by: n/a
  File SHA1 checksum: a624f70f68c60292f4482433f43af9d92487a55c4
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
  File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
  Built: 2013-03-25_18.48, by: mcpre
  File SHA1 checksum: 3a9675142898cfac350d4e42f0e17bd9f4e48538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
  File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
  Built: 2013-03-25_18.48, by: mcpre
  File SHA1 checksum: 87b11f863f67fdf2610ee0769b929baab4c3efad
<output removed for brevity>
Router# show redundancy states
  my state = 13 -ACTIVE
  peer state = 8 -STANDBY HOT
  Mode = Duplex
  Unit = Primary
  Unit ID = 48
  Redundancy Mode (Operational) = sso
  Redundancy Mode (Configured) = sso
  Redundancy State = sso
  Maintenance Mode = Disabled
  Manual Swact = enabled
  Communications = Up
  client count = 107
  client_notification_TMR = 30000 milliseconds
  RF debug mask = 0x0
Router# show platform
Chassis type: ASR1004
Slot Type State Insert time (ago)
---------- ------- -------------- --------------------- ----------------- ------------------
  0 ASR1000-2T+20X1GE ok 00:04:19
  0/0 BUILT-IN-2T+20X1GE ok 00:02:36
    1 ASR1000-SIP10 ok 00:04:19
  1/0 SPA-2X1GE-V2 ok 00:03:07
  1/1 SPA-10X1GE-V2 ok 00:03:00
  R0 ASR1000-RP2 ok 00:04:19
  R0/0 ok, active 00:04:19
  R0/1 ok, standby 00:02:41
  F0 ASR1000-ESP40 ok, active 00:04:19
  P0 ASR1004-PWR-AC ok 00:03:28
  P1 ASR1004-PWR-AC ps, fail 00:03:28
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (request platform command set)

<table>
<thead>
<tr>
<th>Slot</th>
<th>CPLD Version</th>
<th>Firmware Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>00200800</td>
<td>15.2(1r)S</td>
</tr>
<tr>
<td>1</td>
<td>07091401</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>R0</td>
<td>08103002</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>F0</td>
<td>1003190E</td>
<td>15.3(3r)S</td>
</tr>
</tbody>
</table>

Router# mkdir bootflash:harddisk:Target_Subs
Create directory filename [Target_Subs]?
Created dir harddisk:/Target_Subs
Router# conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# ip tftp source-interface Gigabitethernet 0
Router(config)# end
Router# copy tftp: harddisk:Target_Subs
Address or name of remote host []? 202.153.144.25
Source filename []? /auto/tftp-srg-india/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
Destination filename [/Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin]?
[OK - 569597380 bytes] 569597380 bytes copied in 101.618 secs (5605280 bytes/sec)
Router# request platform software package expand file harddisk:/Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
Verifying parameters
Validating package type
Copying package files
SUCCESSION: Finished expanding all-in-one software package.
Router# dir harddisk:/Target_Subs
Directory of harddisk:/Target_Subs
9666566 -rw- 37557200 Aug 3 2013 13:27:06 +05:30 asr1000rp2-e1cbase.03.13.00.S.154-3.3-ext.pkg
9666567 -rw- 51194832 Aug 3 2013 13:27:07 +05:30 asr1000rp2-e1csa.03.13.00.S.154-3.3-ext.pkg
9666568 -rw- 80657364 Aug 3 2013 13:27:07 +05:30 asr1000rp2-espbase.03.13.00.S.154-3.3-ext.pkg
9666569 -rw- 95446456 Aug 3 2013 13:27:08 +05:30 asr1000rp2-espe86base.03.13.00.S.154-3.3-ext.pkg
9666570 -rw- 23350232 Aug 3 2013 13:27:08 +05:30 asr1000rp2-packages-adventerprisek9.03.13.00.S.154-3.3-ext.conf
9666571 -rw- 37694900 Aug 3 2013 13:27:08 +05:30 asr1000rp2-rpbase.03.13.00.S.154-3.3-ext.pkg
9666572 -rw- 45536216 Aug 3 2013 13:27:08 +05:30 asr1000rp2-rpcontrol.03.13.00.S.154-3.3-ext.pkg
9666573 -rw- 11875428 Aug 3 2013 13:27:08 +05:30 asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.3-ext.pkg
9666574 -rw- 38380500 Aug 3 2013 13:27:08 +05:30 asr1000rp2-sipbase.03.13.00.S.154-3.3-ext.pkg
9666575 -rw- 61760468 Aug 3 2013 13:27:08 +05:30 asr1000rp2-sipspa.03.13.00.S.154-3.3-ext.pkg
9666576 -rw- 10165 Aug 3 2013 13:27:08 +05:30 packages.conf
78704144 bytes total (47541493760 bytes free)
Router# copy harddisk:/Target_Subs/asr1000rp2-espbase.03.13.00.S.154-3.3-ext.pkg bootflash:
Active_Dir/Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.3-ext.pkg]?
Copy in progress...CCCCCCC
80657364 bytes copied in 12.085 secs (6674172 bytes/sec)
Router# copy harddisk:/Target_Subs/asr1000rp2-esp86base.03.13.00.S.154-3.3-ext.pkg bootflash:
Active_Dir/Destination filename [Active_Dir/asr1000rp2-esp86base.03.13.00.S.154-3.3-ext.pkg]?
Copy in progress...CCCCCCC
9666576 bytes copied in 14.687 secs (6498703 bytes/sec)
Router# copy harddisk:/Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.3-ext.pkg bootflash:
Active_Dir/Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.3-ext.pkg]?
Copy in progress...CCCCCCC
3350232 bytes copied in 4.047 secs (5769763 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:  
Active_Dir/Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC  
7694900 bytes copied in 5.978 secs (6305604 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:  
Active_Dir/Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC  
5536216 bytes copied in 5.970 secs (7627507 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:  
Active_Dir/Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC  
118754284 bytes copied in 18.501 secs (6418804 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:  
Active_Dir/Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC  
8380500 bytes copied in 4.951 secs (7752070 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg bootflash:  
Active_Dir/Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCC  
1194832 bytes copied in 7.677 secs (6668599 bytes/sec)
Router# request platform software package install rp 0 file  
bootflash:Active_Dir/asr1000rp2-{rpaccess, rpios, rpcontrol}*03.13.00.S.154-3.S-ext*.pkg bay 1 force
--- Starting local lock acquisition on R0 ---
  Finished local lock acquisition on R0
--- Starting file path checking ---
  Finished file path checking
--- Starting image file verification ---
  Checking image file names
    Locating image files and validating name
      Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
      Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
      Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Verifying image file locations
    Inspecting image file types
    Processing image file constraints
    Creating candidate provisioning file
    Finished image file verification
--- Starting candidate package set construction ---
  Verifying existing software set
  Processing candidate provisioning file
  Constructing working set for candidate package set
  Constructing working set for running package set
  Checking command output
  Constructing merge of running and candidate packages
  Checking if resulting candidate package set would be complete
  Finished candidate package set construction
--- Starting compatibility testing ---
  Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
  Determining whether installation is valid
  Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing---

WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Unblocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting IOS PID: 21552, in slot/bay 0/1
Applying final IPC and database definitions
Reapplying running software
Replacing CLI software
Reapplying running software
Generating software version information
Notifying running software of updates
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.

Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]
Manual Swact = enabled
%IOSXE_INFRA-6-CONSOLE_ACTIVE: R0/1 console active.
Press RETURN to get started!
[OK]

*Aug 3 13:43:52.101 IST: %CMANRP-6-CMHASTATUS: RP switchover, received chassis event to become active
*Aug 3 13:43:52.193 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover (PEER_NOT_PRESENT)
*Aug 3 13:43:52.194 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover (PEER_DOWN)
*Aug 3 13:43:52.194 IST: %REDUNDANCY-3-SWITCHOVER: RP switchover
(PEER_REDUndANCY_STATE_CHANGE)
  Reason: redundancy force-switchover.
  IOS is ready to switch to primary after chassis confirmation
*Aug 3 13:43:52.200 IST: %CMANRP-6-CMHASTATUS: RP switchover, received chassis event became active

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Aug 3 13:43:52.449 IST: %PLATFORM-6-HASTATUS_DETAIL: RP switchover, received chassis event became active. Switch to primary (count 1)
Aug 3 13:43:52.733 IST: %LINK-3-UPDOWN: Interface Lsmpi0, changed state to up
Aug 3 13:43:53.127 IST: %LINK-3-UPDOWN: Interface EOBC0, changed state to up
Aug 3 13:43:53.127 IST: %LINK-3-UPDOWN: Interface LIIN0, changed state to up
Aug 3 13:43:54.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface Lsmpi0, changed state to up
Aug 3 13:43:54.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface EOBC0, changed state to up
Aug 3 13:43:54.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface LIIN0, changed state to up
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface GigabitEthernet0/0/8, changed state to up
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface GigabitEthernet0/0/10, changed state to up
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/20, changed state to down
Aug 3 13:43:55.117 IST: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/0/21, changed state to down
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/8, changed state to up
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/10, changed state to up
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/20, changed state to down
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/0/21, changed state to down
Aug 3 13:43:56.118 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/0, changed state to up
Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to up
Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1/1, changed state to up
Aug 3 13:43:56.120 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1/3, changed state to up
Aug 3 13:44:05.127 IST: %LINK-3-UPDOWN: Interface GigabitEthernet0, changed state to up
Aug 3 13:44:06.127 IST: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0,
changed state to up
*Aug 3 13:44:32.069 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=PEER_FOUND(4))
*Aug 3 13:44:32.070 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
*Aug 3 13:44:34.969 IST: %REDUNDANCY-3-IPC: IOS versions do not match.
*Aug 3 13:45:40.946 IST: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Router# show platform
Chassis type: ASR1004
Slot Type State Insert time (ago)         Slot CPLD Version Firmware Version
--------- ------------------- --------------------- -----------------------------------
0     ASR1000-2T+20X1GE  ok    00:29:33               00200800  15.2(1r)S
1     ASR1000-SIP10     ok    00:29:33               07091401  15.3(3r)S
1/0   SPA-2X1GE-V2     ok    00:05:28               08103002  15.3(3r)S
1/1   SPA-10X1GE-V2    ok    00:05:28               1003190E  15.3(3r)S
R0    ASR1000-RP2      ok, standby 00:01:46
R0/0  ASR1000-RP2      ok, active    00:06:12
R0/1  ASR1000-RP2      ok, standby 00:01:46
R1    ASR1000-RP2      ok, active    00:06:12
F0    ASR1000-ESP40    ok, active    00:29:33
P0    ASR1004-PWR-AC   ok         00:28:42
P1    ASR1004-PWR-AC   ps, fail    00:28:42
Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2-{rpaccess,rpios,rpcontrol}*03.13.00.S.154-3.S-ext*.pkg bay 0 force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING:Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
WARNING: Connection may be lost during installation of IOS package
Finished impact testing
--- Starting list of software package changes ---
Old files list:
Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
No new package files added
Finished list of software package changes
---- Starting commit of software changes ----
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
---- Starting analysis of software changes ----
Finished analysis of software changes
---- Starting update running software ----
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting IOS PID: 25452, in slot/bay 0/0

*Aug 3 13:48:07.051 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
(PER_PERMISSION)
*Aug 3 13:48:07.052 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PER_PERMISSION)
*Aug 3 13:48:07.052 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PER_PERMISSION)
*Aug 3 13:48:07.052 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PER_PERMISSION)
*Aug 3 13:48:07.052 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PER_PERMISSION)
*Aug 3 13:48:07.052 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PER_PERMISSION)

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file
bootflash:Active_DIR/asr1000rp2-{sipbase,sipspa}*03.13.00.S.154-3.S-ext*.pkg slot 1 force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes---
No old package files removed
New files list:
  Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting SIP1
Applying final IPC and database definitions
Aug 3 13:52:05.767 IST: %IOSXE_OIR-6-OFFLINECARD: Card (cc) offline in slot 1
Aug 3 13:52:05.770 IST: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 1/0, interfaces disabled
Aug 3 13:52:05.770 IST: %IOSXE_OIR-6-REMSPA: SPA removed from subslot 1/1, interfaces disabled
Aug 3 13:52:05.778 IST: %SPA_OIR-6-OFFLINECARD: SPA (SPA-2X1GE-V2) offline in subslot 1/0 disabled
Aug 3 13:52:05.786 IST: %SPA_OIR-6-OFFLINECARD: SPA (SPA-10X1GE-V2) offline in subslot 1/1
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 3 13:53:00.262 IST: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 1
*Aug 3 13:53:00.901 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 1/0
*Aug 3 13:53:01.124 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 1/1
*Aug 3 13:53:18.148 IST: %LINK-3-UPDOWN: SPI1/0: Interface EOB1C1/1, changed state to up
*Aug 3 13:53:23.978 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-2XI1GE-V2) online in subslot 1/0
*Aug 3 13:53:23.609 IST: %LINK-3-UPDOWN: SPI1/1: Interface EOB1C1/1, changed state to up
*Aug 3 13:53:26.288 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/0, changed state to up
*Aug 3 13:53:26.471 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/1, changed state to up
*Aug 3 13:53:26.609 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/0/0, changed state to up
*Aug 3 13:53:31.030 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/3, changed state to down
*Aug 3 13:53:31.042 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/4, changed state to up
*Aug 3 13:53:31.046 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/5, changed state to up
*Aug 3 13:53:31.048 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/7, changed state to up
*Aug 3 13:53:31.051 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/8, changed state to up
*Aug 3 13:53:31.053 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/9, changed state to up
*Aug 3 13:53:31.312 IST: %LINK-3-UPDOWN: Interface GigabitEthernet1/1/0, changed state to up
*Aug 3 13:53:32.833 IST: %LINK-3-UPDOWN: SPI1/1: Interface GigabitEthernet1/1/0, changed state to down
*Aug 3 13:53:33.007 IST: %LINK-3-UPDOWN: SPI1/1: Interface GigabitEthernet1/1/7, changed state to down
Router# issu commitversion
-- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2+elcbase,elcspa)*03.13.00.S.154-3.S-ext*.pkg slot 0 force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
---Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg force
--- Starting local lock acquisition on R0 ---
--- Finished local lock acquisition on R0 ---
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-esp*03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraint
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/s
WARNING: Candidate software combination not found in compatibility database
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP0
Applying final IPC and database definitions
*Aug 3 14:02:51.450 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F0
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 3 14:04:49.802 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 preparing image/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:50.172 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 startup init image /tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:50.746 IST: %IOSXE_OIR-6-ONLINECARD: F0: cpp_ha: CPP 0 online in slot F0
*Aug 3 14:04:55.480 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 running init image /tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 3 14:04:55.698 IST: %CPPHA-7-READY: F0: cpp_ha: CPP 0 loading and initialization
complete
*Aug 3 14:04:55.837 IST: %IOSXE-6-PLATFORM: F0: cpp_cp: Process
CPP_PFILTER_EA_EVENT_API_CALL__REGISTER
Router# isu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# request platform software package install rp 0 file bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
  WARNING: Automatically setting the on-reboot flag
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpbas.03.13.00.S.154-3.S-ext.pkg
  Removed asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-rpbas.03.13.00.S.154-3.S-ext.pkg
  Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned.
New software will load on reboot.

Router# show version provisioned
Package: Provisioning File, version: n/a, status: active
  File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
  File SHA1 checksum: c79075780592aec1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/ras1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP0
  Built: 2013-07-25 22.55, by: mcre
  File SHA1 checksum: 4f655c54bb95b4dfa4ad2d5ebf97cf8527c69e9
Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/ras1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0
  Built: 2013-07-25 22.55, by: mcre
  File SHA1 checksum: 8a0a45ea5c7a656c0eef6726174646154f182c78
Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
  Built: 2013-07-25 23.00, by: mcre
  File SHA1 checksum: 85e9eab826bf2f194ef568a56c76453625383ad2
Package: rpaccess, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/ras1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg, on: RP0
  Built: 2013-07-25 22.55, by: mcre
  File SHA1 checksum: a360dff0fd76a9b1ae67cda9116c97b62f5ab09
Package: espbase, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/ras1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg, on: ESP0
  File SHA1 checksum: 2fe0ede154e3f8260b7d45365e812500f0d7b0
Package: esp86base, version: 03.13.00.S.154-3.S-ext, status: n/a
  File: bootflash:Active_Dir/ras1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg, on: ESP0
  Built: 2013-07-25 22.55, by: mcre
Using Subpackages for Software Upgrade on a Cisco ASR 1002 Router or Cisco ASR 1004 Router (request platform Command Set)

File SHA1 checksum: 571b8bb3866341badd6e24de677b98409f0c789c
Package: espbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg, on: ESP1
File SHA1 checksum: 2fe0ede154e3f82607bd453653e8e2500f0d7b0
Package: esp6base, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-esp6base.03.13.00.S.154-3.S-ext.pkg, on: ESP1
Built: 2013-07-25_22.55, by: mcpree
File SHA1 checksum: 571b8bb3866341badd6e24de677b98409f0c789c
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP0
File SHA1 checksum: 3b6a4838972840a995f22e73fd2bae910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP0
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/0
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/0
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/1
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/1
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/2
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/2
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/3
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP0/3
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP1
File SHA1 checksum: 3b6a4838972840a995f22e73fd2bae910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP1
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/0
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/0
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/1
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/1
File SHA1 checksum: 94763274fc80749410e97f3e9d67499
Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc3d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/0
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fcee9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.15.00.S.154-3.S-ext.pkg, on: SIP5/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc3d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fcee9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.15.00.S.154-3.S-ext.pkg, on: SIP5/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc3d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fcee9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.15.00.S.154-3.S-ext.pkg, on: SIP5/3
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc3d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fcee9d67499
Router# reload
<some output removed for brevity>
Router# request platform software package clean
Cleaning up unnecessary package files
No path specified, will use booted path bootflash:Active_Dir/packages.conf
Cleaning bootflash:Active_Dir
Scanning boot directory for packages ... done.
Preparing packages list to delete ... asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-packages-adventerprisek9.03.12.01.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-rpios-dventerprisek9.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
File is in use, will not delete... packages.conf
File is in use, will not delete... packages.conf
File is in use, will not delete... packages.conf
File is in use, will not delete... packages.conf
File is in use, will not delete... packages.conf
Files that will be deleted:
  asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
  asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
  asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
  asr1000rp2-packages-adventerprisek9.03.12.01.S.154-2.S.conf
  asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
  asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
  asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
  asr1000rp2-rpios-dventerprisek9.03.12.01.S.154-2.S.pkg
  asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
  asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
  packages.conf.00-
  packages.conf.01-
  packages.conf.02-
  packages.conf.03-
  packages.conf.04-
  packages.conf.05-
Do you want to proceed? [confirm]y
Deleting file bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-espbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/packages.conf.00- ... done.
Deleting file bootflash:Active_Dir/packages.conf.01- ... done.
Deleting file bootflash:Active_Dir/packages.conf.02- ... done.
Deleting file bootflash:Active_Dir/packages.conf.03- ... done.
Deleting file bootflash:Active_Dir/packages.conf.04- ... done.
Deleting file bootflash:Active_Dir/packages.conf.05- ... done.
SUCCESS: Files deleted.

Minimal Disruptive Restart ISSU

A software upgrade of a SIP in any mode results in the SIP being reset and the occurrence of minimal outage during the upgrade. Minimal Disruptive Restart (MDR) minimizes traffic disruption during a software upgrade and supports consolidated package software upgrade and subpackage software upgrade for SIP-40.

The software upgrade of a SIP using MDR is supported only on the Cisco ASR 1000 Series Aggregation Services routers running Cisco IOS XE Release 3.8S and later.

**Note**

MDR upgrades (both consolidated and subpackage upgrades) are supported only on hardware-redundant dual route processor (RP) and Enhanced Services Processors (ESP) platforms.

**Note**

MDR reduces the downtime (time during which the data plane is unavailable) due to ISSU of a SIP and the SPA(s) within it. The downtime is reduced from 100 seconds to not more than 25 seconds on a SIP reload and from 30 seconds to not more than 10 seconds on a SPA reload. The reload time of a SIP or SPA using a MDR or a non-MDR upgrade remains the same.

MDR for a SIP is permitted if following conditions are met:

- Chassis is hardware redundant (dual RP and dual ESP)
- SIP-type supports MDR.
- At least one MDR-compatible SPA in the SIP should be present for the MDR process.
- All the SPAs associated with the SIP support MDR.
- Both the current software version and the upgrade software version must be ISSU and MDR compatible for both the SIPBase and SIPSIPA subpackages for each SPA type that is present.

The following SPAs support MDR:

- SPA-2X1GE-V2
- SPA-5X1GE-V2
- SPA-8X1GE-V2
- SPA-10X1GE-V2
- SPA-1X10GE-L-V2

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Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide

134
Starting with IOS XE release 3.10S and later, MDR support has been extended to include the following SPAs:

- SPA-2XOC3-POS
- SPA-4XOC3-POS
- SPA-4XOC3-POS-V2
- SPA-8XOC3-POS
- SPA-1XOC12-POS
- SPA-2XOC12-POS
- SPA-4XOC12-POS
- SPA-8XOC12-POS

Effective from Cisco IOS XE Release 3.12S, the Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE) supports Minimal Disruptive Restart (MDR) for ELCBase and ELCSPA packages. MDR support for ASR1000-2T+20X1GE is specifically available on the Cisco ASR 1006 Router and the Cisco ASR 1013 Router with Route Processor 2 (RP2).

For more information on the Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE), see the following documents:

- Cisco ASR 1000 Series Fixed Ethernet Line Card Hardware Installation Guide
- Cisco ASR 1000 Fixed Ethernet Line Card Software Configuration Guide

Use the `request platform software package verify` and `issu checkversion` commands with the `mdr` option to verify the MDR upgrade compatibility of a consolidated package or an individual subpackage.

When performing an ISSU upgrade, you can specify whether the upgrade should use MDR. If you do not specify this, the ISSU upgrade process will remain unchanged.

### Restrictions and Limitations

- MDR is not supported on non-hardware-redundant platforms, such as, Cisco ASR 1001 Router, Cisco ASR 1001-X Router, Cisco ASR 1002 Router, Cisco ASR 1002-X Router, or Cisco ASR 1004 Router, and on hardware-redundant platforms without redundant hardware, such as, Cisco ASR 1006 router, or Cisco ASR 1013 router with only a single RP or ESP.
- MDR is not supported on Polaris 16.x.x release.
- MDR is not supported on SIP10.
- MDR does not support software downgrade.
- To use MDR, both the current software and the upgrade software must be ISSU and MDR compatible.
- If a SIP is performing an MDR upgrade the following events cannot be handled during the upgrade:
  - Fast Reroute (FRR)
  - Automatic protection switching (APS)
  - Ethernet over Multiprotocol Label Switching (EoMPLS) and pseudoWire (PW) down that require an attachment circuit (AC) port to be shut.
High-Availability Considerations

Any high-availability (HA) failover that occurs during MDR-process terminates the process. This includes failures such as active RP IOS failover during the MDR upgrade process or active RP FRU failure in a chassis with redundant hardware during subpackage upgrade.

For MDR upgrade using consolidated packages, upgrade is initiated by the upgraded active RP after the ESP software has been upgraded.

Using ISSU to Perform a Consolidated Package Upgrade in a Dual Route Processor Configuration with MDR

Consolidated packages can only be upgraded using ISSU in dual Route Processor configurations. ISSU is not supported for consolidated package upgrades in single Route Processor configurations.

If you want the RPs on your Cisco ASR 1000 Series router to be running using a consolidated package with MDR after the ISSU upgrade is complete, use the following instructions:

**Note** This procedure will only work if the current RPs are already running consolidated packages.
SUMMARY STEPS

1. `ip tftp source-interface gigabitethernet slot/port`
2. `copy tftp: URL-to-target-location`
3. `copy source-file-system:filename standby-destination-filesystem`
4. `dir URL-to-target-location`
5. `issu checkversion rp upgrade-rp-number file URL mdr {force}`
6. `product="kwdname="issu loadversion rp upgrade-rp-number file standby-file-system:filename mdr {force}`
7. `issu runversion`
8. `telnet ip-address port`
9. `issu acceptversion`
10. `issu commitversion`
11. `show version`
12. `hw-module slot RP-slot reload`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>ip tftp source-interface gigabitethernet slot/port</code></td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured: slot/port—Specifies the location of the TFTP source-interface.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>Router(config)# ip tftp source-interface gigabitethernet 0</code></td>
<td></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>To copy a file using TFTP through the Management Ethernet interface, the <code>ip tftp source-interface GigabitEthernet 0</code> command must be entered before entering the <code>copy tftp</code> command.</td>
</tr>
<tr>
<td><strong>Step 2</strong> <code>copy tftp: URL-to-target-location</code></td>
<td>Copy the consolidated package onto the active RP.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>copy source-file-system:filename standby-destination-filesystem</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> <code>Router# copy tftp bootflash:</code></td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# copy</td>
<td></td>
</tr>
<tr>
<td>bootflash:asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin</td>
<td>(Optional) Display the contents of the target directories to confirm the successful copy of the file package.</td>
</tr>
<tr>
<td>stby-bootflash:</td>
<td></td>
</tr>
</tbody>
</table>

Step 4  
**dir URL-to-target-location**

**Example:**
```
Router# dir URL-to-target-stby-location
```

**Example:**
```
Example: 
```

**Example:**
```
Router# dir bootflash:
```

**Example:**
```
Router# dir stby-bootflash:
```

Step 5  
**issu checkversion rp upgrade-rp-number file URL mdr {force}**

**Example:**
```
```

**Example:**
```
```

**Example:**
```
Router# issu checkversion rp 1 file stby-bootflash:asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin mdr
```

Step 6  
**product="kwdname="issu loadversion rp upgrade-rp-number file standby-file-system:filename mdr {force}**

**Example:**
```
```

**Example:**
```
```

**Example:**
```
Router# issu loadversion rp 1 file stby-bootflash:asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin mdr
```

Step 7  
**issu runversion**

**Example:**
```
```

Run the consolidated package that was loaded in Step 6.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# <strong>issu runversion</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note**  
If this command is entered before the terminal state is reached, a " peer is not online " or " Standby RP is not in terminal state " error message will be seen and the **issu runversion** command will not work. If the **issu runversion** command does not run for these reasons, wait for the “ terminal state is reached ” message to appear and retry the **issu runversion** command. You can also monitor the terminal state using the **show platform** command.  
After ISSU runversion is completed, a switchover will automatically occur and the standby RP will become the active RP.

**Step 8**  
**telnet ip-addressport**

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[unix-server-1 ~]$ <strong>telnet</strong> 172.17.52.157 2003</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>User Access Verification</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Username: <strong>user</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Password: **********</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 9**  
**issu acceptversion**

**Example:**

<table>
<thead>
<tr>
<th>Example:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Optional) Stops the ISSU rollback timer.  
This step is optional as long as Step 10 is completed before the rollback timer expires.
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# issu acceptversion</td>
<td></td>
</tr>
<tr>
<td>Step 10 issu commitversion</td>
<td>Completes the ISSU upgrade.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# issu commitversion</td>
<td></td>
</tr>
<tr>
<td>Step 11 show version</td>
<td>(Optional) Enter the show version, show platform, or show running-configuration commands to confirm that the upgrade completed successfully, as follows:</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
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<td>Example:</td>
<td></td>
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<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Step 12 hw-module slot RP-slot reload</td>
<td>Reload the new software on the Standby RP.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# hw-module slot R0 reload</td>
<td></td>
</tr>
</tbody>
</table>
The following example shows how to perform consolidated package upgrade in a dual route processor configuration:

Router(config)# ip tftp source-interface gigabitethernet 0
Router#copy tftp: bootflash
Address or name of remote host []? 172.17.26.81
Source filename []? asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin
Destination filename [asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin]?!

Accessing tftp://172.17.26.81/asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin...
Loading asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin from 172.17.26.81 (via GigabitEthernet0/0/0): !!!!!!!!
[OK - 577420028 bytes]
577420028 bytes copied in 317.985 secs (1815872 bytes/sec)
Router#

Router#copy bootflash: stby-bootflash:
Source filename []? asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin
Destination filename [asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin]?
Copy in progress...CCCCCCC<output removed for brevity>
577420028 bytes copied in 154.951 secs (3726469 bytes/sec)
Router#

Router# dir bootflash:
Directory of bootflash:/
11 drwx 16384 Sep 26 2011 00:30:14 +00:00 lost+found
20883 drwx 4096 Sep 26 2011 00:30:57 +00:00 .ssh
48193 drwx 4096 Mar 12 2013 20:03:38 +00:00 .prst_sync
128513 drwx 4096 Sep 23 2012 19:08:45 +00:00 .rollback_timer
192770 drwx 4096 Sep 23 2012 19:08:45 +00:00 .installer
16 -r-- 680 Oct 10 2012 20:27:21 +00:00 debug.conf
22 -rw- 1135306 Mar 12 2013 21:17:47 +00:00 policy-250.pkg
224897 drwx 4096 Mar 12 2013 17:32:24 +00:00 virt_strg_pool_bf
13 -r-- 577995644 Mar 12 2013 21:17:20 +00:00 asr1000rp2-adventerprisek9.03.08.00.S.153-1.S.bin
14 -r-- 577420028 Mar 12 2013 21:34:48 +00:00 asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin
192769 drwx 4096 May 30 2012 03:36:18 +00:00 virt_strg_pool_bf
25 -rw- 0 Feb 26 2012 16:16:36 +00:00 virtual-instance-upgrade.conf
1940303872 bytes total (683945984 bytes free)
Router#
dir stby-bootflash:
Directory of stby-bootflash:/
11 drwx 16384 Apr 28 2009 03:43:50 +00:00 lost+found
16065 drwx 4096 Mar 12 2013 18:26:02 +00:00 .installer
20333 drwx 4096 May 30 2012 03:36:52 +00:00 virt_strg_pool_bf
48193 drwx 4096 Mar 12 2013 22:39:32 +00:00 .prst_sync
64257 drwx 4096 Mar 12 2013 18:26:02 +00:00 .rollback_timer
224897 drwx 4096 Mar 12 2013 18:18:18 +00:00 asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin
112449 drwx 4096 Jan 26 2011 16:57:39 +00:00 .ssh
12 -r-- 577995644 Mar 12 2013 21:17:47 +00:00 asr1000rp2-adventerprisek9.03.08.00.S.153-1.S.bin
14 -r-- 577420028 Mar 12 2013 21:18:12 +00:00 asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin
20 -rw- 0 Feb 26 2012 16:16:36 +00:00 virtual-instance-upgrade.conf
1940303872 bytes total (685084672 bytes free)
Router# issu checkversion rp 1 file
stby-bootflash:asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin mdr
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting system installation readiness checking ---
Finished system installation readiness checking
--- Starting image verification ---
Compatibility check with running software on active RP
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Finished image verification
--- Starting mdr compatibility verification ---
Extracting consolidated package content
Checking and verifying packages contained in consolidated package
Creating candidate provisioning file
Processing candidate provisioning file
Finished mdr compatibility verification
SUCCESS: Software is ISSU MDR compatible.
Router# issu loadversion rp 1 file stby-bootflash: asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin mdr
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting system installation readiness checking ---
Finished system installation readiness checking
--- Starting image verification ---
Compatibility check with running software on active RP
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Finished image verification
--- Starting installation changes ---
Setting up image to boot on next reset
Starting automatic rollback timer
Finished installation changes
SUCCESS: Software will now load.
* Mar 14 19:55:44.264: %IOSXE_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
* Mar 14 19:55:44.288: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
* Mar 14 19:55:44.288: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
* Mar 14 19:55:44.288: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUndancy_STATE CHANGE)
* Mar 14 19:55:46.357: % Redundancy mode change to SSO
Router#
* Mar 14 19:59:37.523: %IOSXE_OIR-6-ONLINECARD: Card (rp) online in slot R1
* Mar 14 19:59:46.889: %REDuNDANCy-5-PEER_MONITOR_EVENT: Active detected a standby insertion
  (raw-event=PEER_FOUND(4))
* Mar 14 19:59:46.889: %REDU NDANC Y-5-PEER_MONITOR_EVENT: Active detected a standby insertion
  (raw-event=PEER_REDUndancy_STATE CHANGE(5))
* Mar 14 20:00:58.364: %NBAR HA-5-NBAR_INFO: NBAR sync DONE!
* Mar 14 20:00:58.777: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
* Mar 14 20:00:59.778: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Router# issu runversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting switchover readiness checking ---
Finished switchover readiness checking
SUCCESS: Standby RP will now become active
Initiating active RP failover
Mar 14 20:02:19.797 R0/0: %PMAN-5-EXITACTION: Process manager is exiting: reload fru action requested
Initializing Hardware ...
Calculating the ROMMON CRC ... CRC is correct
System Bootstrap, Version 15.2(1r)S, RELEASE SOFTWARE
Copyright (c) 1994-2011 by cisco Systems, Inc.
Current image running: Boot ROMO
Last reset cause: LocalSoft
[Output removed for brevity]
Press RETURN to get started!
Mar 14 20:02:20:411:787: %REDACTED: REDUNDANCY-3-PEER_MONITOR: PEER_FOUND event on standby
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(1)S, RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2012 by Cisco Systems, Inc.
Compiled Tue 27-Nov-12 11:13 by mcpre
Mar 14 20:10:00.174: %PLATFORM-6-RF_PROG_SUCCESS: RF state STANDBY HOT
Router-stby>
At this point of the procedure, use your UNIX client to log in to the other RP:

```
[unix-server-1 ~]$ telnet 172.17.152.157 2013
User Access Verification
Username: user
Password: ********
Router>
```

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide

Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Examples

changed state to up
*Mar 14 20:04:05.534: %CPPHA-7-START: F1: cpp_ha: CPP 0 preparing image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Mar 14 20:04:05.863: %CPPHA-7-START: F1: cpp_ha: CPP 0 startup init image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Mar 14 20:04:07.781: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F1
*Mar 14 20:04:11.123: %CPPHA-7-START: F1: cpp_ha: CPP 0 running init image
/tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Mar 14 20:04:11.342: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
CPP_PFILTER_EA_EVENT_API_CALL__REGISTER

*Mar 14 20:08:41.443: %PLATFORM-5-RESETCARD: R1/0: card_reset: ESP0 reset to acquire provisioned software
*Mar 14 20:08:41.458: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F0
to acquire provisioned software
*Mar 14 20:08:41.266: %CMCC-5-SPA_MDR_INIT: SIP0: cmcc: SPA0 initiated Minimal Disruptive Restart
*Mar 14 20:08:41.269: %CMCC-5-SPA_MDR_INIT: SIP0: cmcc: SPA1 initiated Minimal Disruptive Restart
*Mar 14 20:08:41.270: %CMCC-5-SPA_MDR_INIT: SIP0: cmcc: SPA2 initiated Minimal Disruptive Restart
*Mar 14 20:08:41.309: %LINK-3-UPDOWN: SIP0/1: Interface GigabitEthernet0/1, changed state to up
*Mar 14 20:08:41.312: %SPA_OIR-6-ONLINECARD: SPA (SPA-8X1GE-V2) online in subslot 0/0
*Mar 14 20:08:41.312: %CMCC-5-SPA_MDR_DONE: SIP0: cmcc: SPA0 completed Minimal Disruptive Restart
*Mar 14 20:08:41.315: %SPA_OIR-6-ONLINECARD: SPA (SPA-8X1GE-V2) online in subslot 0/1
*Mar 14 20:08:41.318: %CMCC-5-SPA_MDR_DONE: SIP0: cmcc: SPA1 completed Minimal Disruptive Restart
*Mar 14 20:08:41.319: %SPA_OIR-6-ONLINECARD: SPA (SPA-8X1GE-V2) online in subslot 0/2

Router# issu acceptversion
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
Cancelling rollback timer
SUCCESS: Rollback timer cancelled
Router# issu commitversion
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1

Router>enable
--- Starting commit readiness checking ---
Finished commit readiness checking
--- Starting installation changes ---
Cancelling rollback timer
Saving image changes
Finished installation changes
Building configuration...

SUCCESS: version committed: bootflash:asr1000rp2-adventerprisek9.03.12.01.S.154-2.S1.bin

After you confirm the software versions and configuration, reload the RP as shown in the following example:

Router# hw-module slot R0 reload
  Proceed with reload of module? [confirm]
*Mar 14 20:31:05.511: %IOSXE_OIR-6-OFFLINECARD: Card (rp) offline in slot R0
*Mar 14 20:31:05.587: %RE Du NDANCY-3-STANDBY LOST: Standby processor fault (PEER_NOT_PRESENT)
*Mar 14 20:31:05.588: %RE Du NDANCY-3-STANDBY LOST: Standby processor fault (PEER_DOWN)
*Mar 14 20:31:05.588: %RE Du NDANCY-3-STANDBY LOST: Standby processor fault
*Mar 14 20:31:07.622: %IOSXE_OIR-6-ONLINECARD: Card (rp) online in slot R0
*Mar 14 20:34:38.988: %RE Du NDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion
*raw-event=PEER_FOUND(4))
*Mar 14 20:34:38.988: %RE Du NDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion
*raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
*Mar 14 20:35:48.023: %HA_CONFIG_SYNC-6-BULK CFGSYNC_SUCCEED: Bulk Sync succeeded
*Mar 14 20:35:49.025: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
Using ISSU to Upgrade the Subpackages on a Cisco ASR 1006 Router and Cisco ASR 1013 Router (issu Command Set) with MDR

SUMMARY STEPS

1. show version
2. copy running-config startup-config
3. mkdir URL-to-directory-name
4. ip tftp source-interface gigabitethernet port
5. copy tftp: URL-to-target-location
6. request platform software package expand file URL-to-consolidated-package
7. dir target-URL
8. copy file-system::asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP
9. copy file-system::asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-standby-RP
10. product="kwdname=" issu checkversion rp standby-RP product="name=" file standby-file-system::asr1000rp*version*.pkg mdr {force}
11. issu loadversion rp standby-RP file target-standbyRP-URL-for-sub-packages:asr1000rp*version*.pkg product="name=">force
12. hw-module slot standby-RP reload
13. issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-{sipbase,sipspa}*version*.pkg slotSIP-slot-number product="name=">mdr {force}
14. issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-{elcbase,elcspa}*version*.pkg slotELC-slot-number mdr product="name=">{force}
15. issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-esp*version*.pkg slot standby-ESP-slot
17. show version active-RP provisioned
18. redundancy force-switchover
19. request platform software package clean

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show version</td>
<td>*(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td>Example: show version active-rp installed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• show version and show version active-rp installed—Verify the running version of the</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Example:</strong> dir filesystem: directory</td>
<td>Cisco IOS XE software on the router, and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td><strong>Example:</strong> show platform</td>
<td>• dir—Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td><strong>Example:</strong> show redundancy states</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> show redundancy states</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show version</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show version r0 installed</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# dir bootflash:</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show platform</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show redundancy states</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2  copy running-config startup-config</strong></td>
<td>After you have confirmed that the system states are acceptable, save the current configuration to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# copy running-config startup-config</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3  mkdir URL-to-directory-name</strong></td>
<td>Create a directory to store the consolidated package and subpackages.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>This directory must be created in most cases because the consolidated packages and subpackages have to be separated from the subpackages that booted the router at this step of the procedure.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# mkdir bootflash:tmp</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| **Step 4**  *
<p>| <code>ip tftp source-interface gigabitethernet port</code> | Specifies the Gigabit Ethernet TFTP source-interface to be configured: slot/port—Specifies the location of the TFTP source-interface.  |
| Example: |  |
| <code>Router(config)# ip tftp source-interface gigabitethernet 0</code> |  |
| <strong>Note</strong> | To copy a file using TFTP through the Management Ethernet interface, the <code>ip tftp source-interface GigabitEthernet 0</code> command must be entered before entering the <code>copy tftp</code> command.  |
| <strong>Step 5</strong> | Copy the consolidated package file into the directory created in <strong>Step 3</strong>.  |
| <code>copy tftp: URL-to-target-location</code> |  |
| Example: |  |
| <code>Router# copy tftp: bootflash:tmp</code> | The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).  |
| <strong>Note</strong> | <code>type=&quot;tip&quot;</code>  |
| | It is recommended that you copy the package onto a usb: or harddisk: file system for space considerations when performing this step of the procedure.  |
| <strong>Step 6</strong> | Extract the subpackages out of the consolidated package file into the temporary directory.  |
| <code>request platform software package expand file URL-to-consolidated-package</code> |  |
| Example: |  |
| <code>Router# request platform software package expand file bootflash:tmp/asr1000rp2-adventerprisek.9.03.13.00.S.154-3.S-ext.bin</code> | Take extra care to extract the subpackages to a temporary subdirectory and do not delete any of the files currently running the router at this point of the procedure. To erase the files that were running on the router before the ISSU upgrade, enter the <code>request platform software package clean</code> command after the ISSU upgrade has been completed.  |
| <strong>Note</strong> |  |
| |  |
| <strong>Step 7</strong> | (Optional) Display the directory to confirm that the files were extracted.  |
| <code>dir target-URL</code> |  |
| Example: |  |
| <code>Router# dir bootflash:tmp</code> |  |</p>
<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td><strong>Step 8</strong></td>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-espbase.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-espx86base.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-rpaccess.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<td><code>copy file-system:asr1000rp2-rpbase.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-rpcontrol.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-rpios.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-sipbase.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-sipspa.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-elcbase.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-elcspa.version.pkg</code> <strong>URL-to-directory-of-sub-packages-active-RP</strong></td>
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<tr>
<td>Command or Action</td>
<td>Purpose</td>
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<td>Example:</td>
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<tr>
<td>router# copy bootflash:tmp/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
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<td>Example:</td>
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<td>router# copy bootflash:tmp/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:</td>
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<td>Command or Action</td>
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<tr>
<td>Example:</td>
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<td>Router# copy bootflash:tmp/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg</td>
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<tr>
<td>bootstrap:</td>
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<td>Example:</td>
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<tr>
<td>Router# copy bootflash:tmp/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg</td>
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<td>bootstrap:</td>
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<tr>
<td>Copy the subpackages out of the temporary directory into the directory on the router where the subpackages running the standby RP are currently stored.</td>
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<tr>
<td>Step 9 copy file-system:asr1000rp2-espbase.version.pkg</td>
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<tr>
<td>URL-to-directory-of-sub-packages-standby-RP</td>
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<td>Example:</td>
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<tr>
<td>copy file-system:asr1000rp2-esp86base.version.pkg</td>
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<td>Example:</td>
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<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg</code></td>
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<td><code>stby-bootflash:</code></td>
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<td>Example:</td>
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<td><code>Router# copy bootflash:tmp/asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg</code></td>
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<td>Example:</td>
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<td>Example:</td>
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<td>Router# <code>copy</code></td>
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<td>Example:</td>
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<tr>
<td>Router# <code>copy</code></td>
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<td>bootflash:tmp/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg`</td>
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<td>stby-bootflash:</td>
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<td>Example:</td>
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<tr>
<td>Router# <code>ccopy</code></td>
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<td>bootflash:tmp/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg`</td>
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<td>stby-bootflash:</td>
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<td>Example:</td>
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<td>Example:</td>
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<tr>
<td>Router# <code>copy</code></td>
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<td>bootflash:tmp/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg`</td>
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<td>stby-bootflash:</td>
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<td>Example:</td>
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<td>Example:</td>
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<tr>
<td><code>Step 10</code></td>
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<tr>
<td><code>product=\&quot;kwdname=\&quot;issu checkversion rp standby-RP product=\&quot;name=\&quot;&gt; file standy-file-system:asr1000rp*version*.pkg mdr {force} \</code></td>
<td>Checks the ISSU MDR software packaging compatibility on the standby Route Processor (RP).</td>
</tr>
<tr>
<td>Example:</td>
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<td>Example:</td>
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</tbody>
</table>
### Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

#### Using ISSU to Upgrade the Subpackages on a Cisco ASR 1006 Router and Cisco ASR 1013 Router (issu Command Set) with MDR

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu checkversion rp 1 file stby-bootflash:asr1000rp2-<em>03.13.00.S.154-3.S-ext</em>pkg mdr</td>
<td>Upgrade the RP subpackages on the standby RP, where the &quot;rp*&quot; wildcard is specified to capture all of the RP subpackages for the desired upgrade release.</td>
</tr>
<tr>
<td><strong>Step 11</strong> issu loadversion rp standby-RP file target-standbyRP-URL-for-sub-packages:asr1000rp<em>version</em>.pkg product=&quot;name&quot;=&gt;force</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# issu loadversion rp 1 file stby-bootflash:asr1000rp2-<em>03.13.00.S.154-3.S-ext</em>pkg force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 12</strong> hw-module slot standby-RP reload</td>
<td>Reload the standby RP.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
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<tr>
<td>Router# hw-module slot R1 reload</td>
<td></td>
</tr>
<tr>
<td><strong>Step 13</strong> issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp2-{sipbase,sipspa}<em>version</em>.pkg slotSIP-slot-number product=&quot;name&quot;=&gt;mdr {force}</td>
<td>Upgrade the SIP and SPA subpackages for each SIP on the router using MDR.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>You can use the <code>show ip interface brief</code> command to identify which slots contain SIPs and SPAs. The interfaces with three numbers (in the form <code>SIP-number/SPA-number/interface-number</code>) identify the SIP and SPA locations in the router.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>The <code>pattern</code> options used in this CLI (<code>sipbase</code> and <code>sipspa</code>) were introduced in Cisco IOS XE Release 2.1.2 and are not available in previous Cisco IOS XE Releases.</td>
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<tr>
<td><strong>Example:</strong></td>
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<tr>
<td>issu commitversion</td>
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<td><strong>Example:</strong></td>
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<tr>
<td>issu commitversion</td>
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### Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

#### Using ISSU to Upgrade the Subpackages on a Cisco ASR 1006 Router and Cisco ASR 1013 Router (issu Command Set) with MDR

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
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</table>
| **Step 14** issu loadversion rp active-RP file<br>
URL-to-active-file-system:asr1000rp2-{elcbase,elcspa}*version*.pkg<br>slotELC-slot-number mdr product="name=">{force} | Upgrade the Ethernet Line Card (ELC) and SPA subpackages for each ELC on the router using MDR. |
| Example: issu commitversion | This step must be completed one ELC at a time, and repeated for each ELC installed on the router before performing the next step. |
| | Note |
| Example: | You can use the `show ip interface brief` command to identify which slots contain ELCs and SPAs. The interfaces with three numbers (in the form `ELC-number/SPA-number/interface-number`) identify the ELC and SPA locations in the router. |
| Example: | Note |
| Router# issu loadversion rp 0 file<br>bootflash:asr1000rp2-{elcbase,elcspa}*version*03.13.00.S.154-3.S-ext*pkg mdr | The pattern options used in this CLI (`elcbase` and `elcspa`) were introduced in Cisco IOS XE Release 3.10S and are not available in previous Cisco IOS XE Releases. |
| Example: issu commitversion | |

| **Step 15** issu loadversion rp active-RP file<br>
URL-to-active-file-system:asr1000rp2-esp*version*.pkg slot standby-ESP-slot | Upgrade the ESP Base subpackage on the standby and the active ESPs. |
| Example: issu commitversion | After entering the `issu loadversion rp` command on the active RP, the ESP switchover will occur automatically. Minimal traffic interruption will occur as a result of this switchover. |
| Example: issu loadversion rp active-RP file<br>
URL-to-active-file-system:asr1000rp2-esp*version*.pkg slot active-ESP-slot | |
| Example: issu commitversion | |
| Example: issu loadversion rp 0 file<br>bootflash:asr1000rp2-esp*version*03.13.00.S.154-3.S-ext*pkg slot 1 | |
| Example: issu commitversion | |
### Command or Action

<table>
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<tbody>
<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>Router# issu loadversion rp 0 file bootflash:asr1000rp2-esp*03.13.00.S.154-3.S-ext*pkg slot 0</code></td>
<td>Upgrade all of the subpackages on the active RP.</td>
</tr>
<tr>
<td><strong>Step 16</strong></td>
<td></td>
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<tr>
<td><code>issu loadversion rp active-RP file URL-to-active-file-system:asr1000rp*version*.pkg force</code></td>
<td>Upgrade all of the subpackages on the active RP.</td>
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<tr>
<td><strong>Note</strong></td>
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<tr>
<td>This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.</td>
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<tr>
<td><strong>Step 17</strong></td>
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<tr>
<td><code>show version active-RP provisioned</code></td>
<td>(Optional) Confirm that the subpackages are provisioned and installed.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>Router# issu loadversion rp 0 file bootflash:asr1000rp2*03.13.00.S.154-3.S-ext*pkg force</code></td>
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<tr>
<td><strong>Step 18</strong></td>
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<tr>
<td><code>redundancy force-switchover</code></td>
<td>Force an RP switchover to complete the upgrade.</td>
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<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>Router# redundancy force-switchover</code></td>
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<tr>
<td><strong>Step 19</strong></td>
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<tr>
<td><code>request platform software package clean</code></td>
<td>(Optional) Removes all unused subpackages files from the router.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
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</tbody>
</table>
The following example shows ISSU upgrade using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup using the `issu` command set.

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
System image file is bootflash:Active_Dir/packages.conf
Cisco ASR1013 (RP2) processor with 4208889K/6147K bytes of memory.
Processor board ID FOX1343GJGC
20 Gigabit Ethernet interfaces
6 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
838608K bytes of physical memory.
1925119K bytes of eUSB flash at bootflash:.
7808207K bytes of SATA hard disk at harddisk:.
Configuration register is 0x2102
```

```
Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
---------- ------------------- --------------------- ----------------- 
2 ASR1000-SIP40 ok 1d03h
2/0 ASR1000-SIP40 ok 1d03h
2/1 SPA-1X10GE-L-V2 ok 1d03h
2/2 SPA-1X10GE-L-V2 ok 1d03h
2/3 SPA-1X10GE-L-V2 ok 1d03h
4 ASR1000-2T+20X1GE ok 1d03h
4/0 BUILT-IN-2T+20X1GE ok 1d03h
R0 ASR1000-RP2 ok, active 1d03h
R1 ASR1000-RP2 ok, standby 1d03h
F0 ASR1000-ESP100 ok, active 1d03h
F1 ASR1000-ESP100 ok, standby 1d03h
P0 ASR1013-PWR-AC ok 1d03h
P1 ASR1013-PWR-AC ok 1d03h
P2 ASR1013-PWR-AC ok 1d03h
P3 ASR1013-PWR-AC ps, fail 1d03h
```

```
Router# show version r0 installed
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: a624f70f68c60292f4482433f43af9d2487a55c4
```

```
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25 18.48, by: mcre
File SHA1 checksum: 3a9675142898c10a350d4e42f0e37bd9f4e8538
```
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18:48, by: mcpre
File SHA1 checksum: 87b1f863f67df2610ee0769b929baab4c3efad
<Route removed for brevity>
Router# dir bootflash:Active_Dir
Directory of bootflash:/Active_Dir/
20 -rw- 41104112 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
21 -rw- 50285296 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
22 -rw- 82514676 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
23 -rw- 101084628 Aug 3 2013 15:05:40 +05:30 asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg
24 -rw- 29012724 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
25 -rw- 49898964 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
26 -rw- 46557940 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
28 -rw- 41954036 Aug 3 2013 15:05:41 +05:30 asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
29 -rw- 60957428 Aug 3 2013 15:05:41 +05:30 asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
19 -rw- 9838 Aug 3 2013 15:05:41 +05:30 packages.conf
1940303872 bytes total (503164928 bytes free)
Router# copy harddisk:Target_Subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCC80657364 bytes copied in 11.951 secs (6749005 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCC 95446456 bytes copied in 14.213 secs (6715433 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCC 23350232 bytes copied in 3.441 secs (6785885 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC3769400 bytes copied in 5.598 secs (6699458 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC45536216 bytes copied in 6.797 secs (6699458 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC118754284 bytes copied in 17.798 secs (6672339 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC38380500 bytes copied in 5.962 secs (6437521 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC61760468 bytes copied in 9.408 secs (6564676 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC51194832 bytes copied in 7.397 secs (6921026 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/ Destination filename [Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]? Copy in progress...CCCCC51194832 bytes copied in 7.397 secs (6921026 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC80657364 bytes copied in 132.765 secs (607520 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC95446456 bytes copied in 177.587 secs (537463 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC23350232 bytes copied in 55.396 secs (421515 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC37694900 bytes copied in 86.199 secs (437301 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC45536216 bytes copied in 101.527 secs (448513 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC118754284 bytes copied in 212.646 secs (558460 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC38380500 bytes copied in 83.162 secs (461515 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC61760468 bytes copied in 119.391 secs (517296 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC37557200 bytes copied in 57.106 secs (657675 bytes/sec)
Router# 
Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]? 
Copy in progress...CCCCC51194832 bytes copied in 87.453 secs (585398 bytes/sec)
Router# 
Router# issu checkversion rp 1 file stby-bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg mdr force
  --- Starting local lock acquisition on R0 ---
  Finished local lock acquisition on R0
  --- Starting installation state synchronization ---
  Finished installation state synchronization
  --- Starting local lock acquisition on R1 ---
  Finished local lock acquisition on R1
  --- Starting file path checking ---
  Finished file path checking
  --- Starting image file verification ---
  Checking image file names
  Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg

Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of IOSD package
  WARNING: requires software redundancy on target RP
  WARNING: or on-reboot parameter
  WARNING: Automatically setting the on-reboot flag
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification

--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction

--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing

--- Starting mdr compatibility verification ---
Finished mdr compatibility verification
SUCCESS: Software is ISSU MDR compatible.
Router#
Router# issu loadversion rp 1 file
stby-bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg force

--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking

--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg

Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of IOSD package
  WARNING: requires software redundancy on target RP
  WARNING: or on-reboot parameter
  WARNING: Automatically setting the on-reboot flag
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
- Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
- Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
- Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.
Router# hw-module slot r1 reload
Proceed with reload of module? [confirm]Y
Router# *Aug 4 19:14:01.721 IST: %IOSXE_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_NOT_PRESENT)
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_DOWN)
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault (PEER_REDUNDANCY_STATE_CHANGE)
*Aug 4 19:14:03.584 IST: %RF-5-RF_RELOAD: Peer reload. Reason: EHS buck standby down
*Aug 4 19:14:03.594 IST: %Redundancy mode change to SSO
Router# *Aug 4 19:17:35.443 IST: %IOSXE_OIR-6-OFFLINECARD: Card (rp) online in slot R1
*Aug 4 19:17:48.061 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_FOUND(4))
*Aug 4 19:17:48.061 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
Router# issu loadversion rp 0 file 

bootflash:Active_Dir/asr1000rp2-{sipbase,sipspa}*03.13.00.S.154-3.S-ext*.pkg slot 2 mdr force

--- Starting local lock acquaisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
   Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
   Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING: Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished mdr compatibility testing
--- Starting mdr compatibility verification ---
Finished mdr compatibility verification
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
   Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
   Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
SIP2 to acquire provisioned software. Applying final IPC and database definitions
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# *Aug 4 19:21:45.424 IST: %IOSXE_OIR-6-ONLINECARD: Card (cc) online in slot 2
*Aug 4 19:21:48.382 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/0
*Aug 4 19:21:48.733 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/1
*Aug 4 19:21:49.430 IST: %IOSXE_OIR-6-INSSPA: SPA inserted in subslot 2/2
*Aug 4 19:21:58.121 IST: %LINK-3-UPDOWN: SIP2/0: Interface EOBC2/1, changed state to up
*Aug 4 19:22:02.302 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/0
*Aug 4 19:22:06.113 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/1
*Aug 4 19:22:08.080 IST: %LINK-3-UPDOWN: SIP2/2: Interface EOBC2/1, changed state to up
*Aug 4 19:22:11.627 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/2
*Aug 4 19:22:16.657 IST: %SPA_OIR-6-ONLINECARD: SPA (SPA-1X10GE-L-V2) online in subslot 2/3
Router# Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# Router#
Router#issu loadversion rp 0 file
harddisk:boot_dir/ASR1000rp2-{elcbase,elcspa}*03.13.00.S.154-3.S.pkg slot 4 mdr
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Finishing image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Determining whether installation is valid
  Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  WARNING: Candidate software combination not found in compatibility database
WARNING:
  Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting mdr compatibility verification ---
WARNING:
  WARNING: ISSU between engineering builds with release strings in non-standard format.
  Skipping MDR Software Compatibility checks.
WARNING:
  WARNING: ISSU between engineering builds with release strings in non-standard format.
  Skipping MDR Software Compatibility checks.
WARNING:
  Finished mdr compatibility verification
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
*Jan 13 00:41:37.778 PST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP0 to acquire provisioned software
*Jan 13 00:41:47.894 PST: %CMCC-5-SPA_MDR_INIT:SIP0: cmcc: SPA0 initiated Minimal Disruptive
Restart Generating softwareversion information
Notifying running software of updates
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router#

Disruptive Restart
Router#
Router#
Router# issu commitversion
*** Starting local lock acquisition on R0 ***
Finished local lock acquisition on R0
*** Starting installation changes ***
Cancelling rollback timer
 Finished installation changes
SUCCESS: Installation changes committed
Router#
Router#
Router# issu loadversion rp 0 file
bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 1
*** Starting local lock acquisition on R0 ***
Finished local lock acquisition on R0
*** Starting installation state synchronization ***
Finished installation state synchronization
*** Starting file path checking ***
Finished file path checking
*** Starting image file verification ***
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
*** Starting candidate package set construction ***
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
*** Starting compatibility testing ***
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw

WARNING: Candidate software combination not found in compatibility database

WARNING: Candidate software combination not found in compatibility database

WARNING: Software sets are identified as compatible

Verifying image type compatibility

Checking IPC compatibility with running software

Checking candidate package set infrastructure compatibility

Checking infrastructure compatibility with running software

Checking package specific compatibility

Finished compatibility testing

--- Starting impact testing ---

Checking operational impact of change

Finished impact testing

--- Starting list of software package changes ---

No old package files removed

New files list:

  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg

  Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg

Finished list of software package changes

--- Starting commit of software changes ---

Updating provisioning rollback files

Creating pending provisioning file

Committing provisioning file

Finished commit of software changes

--- Starting analysis of software changes ---

Finished analysis of software changes

--- Starting update running software ---

Blocking peer synchronization of operating information

Creating the command set placeholder directory

Finding latest command set

Finding latest command shortlist lookup file

Finding latest command shortlist file

Assembling CLI output libraries

Assembling CLI input libraries

Assembling Dynamic configuration files

Applying interim IPC and database definitions

Replacing running software

Replacing CLI software

Restarting software

Restarting ESP1

Applying final IPC and database definitions

Aug 4 19:29:16.751 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F1

*Aug 4 19:29:18.172 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Active with no Standby Generating software version information

Notifying running software of updates

Unblocking peer synchronization of operating information

Unmounting old packages

Cleaning temporary installation files

Finished update running software

SUCCESS: Finished installing software.

Router# issu commitversion

--- Starting local lock acquisition on R0 ---

Finished local lock acquisition on R0

--- Starting installation changes ---

Cancelling rollback timer

Finished installation changes

SUCCESS: Installation changes committed

Router# issu loadversion rp 0 file

bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 0

SUCCESS: Finished installing software.
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Aug 4 19:31:14.730 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 running init image
  /tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:31:15.079 IST: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
* Aug 4 19:31:15.309 IST: %IOSXE-6-PLATFORM: F1: cpp_cp: Process
  CPP_PFILTER_EA_EVENT__API_CALL__REGISTERProcessing candidate provisioning file
*Aug 4 19:31:15.079 IST: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking candidate package set infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg
No new package files added
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
  Finding latest command set
  Finding latest command shortlist lookup file
  Finding latest command shortlist file
  Assembling CLI output libraries
  Assembling CLI input libraries
  Assembling Dynamic configuration files
  Applying interim IPC and database definitions
  Replacing running software
  Replacing CLI software
  Restarting software
Restarting ESP0
Applying final IPC and database definitions
*Aug 4 19:32:46.221 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F0
*Aug 4 19:32:46.673 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmnd: F1 redundancy state is Active
Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
Router# *Aug 4 19:34:19.748 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 preparing image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:34:20.139 IST: %CPPHA-7-START: F0: cpp_ha: CPP 0 startup init image
/tmp/sw/fp/0/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:34:21.858 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F0
*Aug 4 19:34:43.609 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmand: F0 redundancy state is Standby
Router# show platform
Chassis type: ASR1013
Slot Type State Insert time (ago)
--------- ------------------- --------------------- ------------------
2 ASR1000-SIP40 ok 1d04h
2/0 SPA-1X10GE-L-V2 ok 1d04h
2/1 SPA-1X10GE-L-V2 ok 1d04h
2/2 SPA-1X10GE-L-V2 ok 1d04h
2/3 SPA-1X10GE-L-V2 ok 1d04h
4 ASR1000-2T+20X1GE ok 1d04h
4/0 BUILT-IN-2T+20X1GE ok 1d04h
R0 ASR1000-RP2 ok, active 1d04h
R1 ASR1000-RP2 ok, standby 1d04h
F0 ASR1000-ESP100 ok, standby 1d04h
F1 ASR1000-ESP100 ok, active 1d04h
P0 ASR1013-PWR-AC ok 1d04h
P1 ASR1013-PWR-AC ok 1d04h
P2 ASR1013-PWR-AC ok 1d04h
P3 ASR1013-PWR-AC ps, fail 1d04h
Slot CPLD Version Firmware Version
--------- ------------------- ---------------------------------------
2 00200800 15.3(3r)S
4 00200800 15.3(1r)S
R0 10021901 15.3(3r)S
R1 10021901 15.3(3r)S
F0 12071700 15.3(3r)S
F1 12071700 15.3(3r)S
Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router# Router# issu loadversion rp 0 file bootflash:Active_Dir/asr1000rp2*03.13.00.S.154-3.S-ext*.pkg
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elcspsa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espx8base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbasesp.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspsa.03.13.00.S.154-3.S-ext.pkg

Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification

--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction

--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing

--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-elcspsa.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpbasesp.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipspsa.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpbasesp.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.
Router#
Router# show version R0 provisioned
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: c79075780592aec1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpbasesp.03.13.00.S.154-3.S-ext.pkg, on: RP0
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/3
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca

Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/3
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73f73e9d67499

Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 3b6a48397284a995f2273f2bae910b268a7

Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 99f8dc925083b11862a45fd73f73e9d67499

Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide

Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Examples
Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Examples

Router# show version R0 provisioned
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: c79075780592aec1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 3a9675142898cac350d4e42f0e37bd9f4e48538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RPO/0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 87b11f863f67fd2610e0769b929baab643eefad
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg, on: RPO/0
Built: 2013-03-25_18.51, by: mcpre
File SHA1 checksum: b487136319da0a327844d353c77e533c53c56053
Package: rpaccess, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg, on: RPO/0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 032bea36f74b1997b363243c99f02413b5140d
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/1
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 87b11f863f67fd2610e0769b929baab643eefad
Package: rpios-adventerprisek9, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg, on: RPO/1
Built: 2013-03-25_18.51, by: mcpre
File SHA1 checksum: b487136319da0a327844d353c77e533c53c56053
Package: rpaccess, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg, on: RPO/1
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 032bea36f74b1997b363243c99f02413b5140d
Package: rpbase, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP1
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 3a9675142898cac350d4e42f0e37bd9f4e48538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP1/0
Built: 2013-03-25_18.48, by: mcpre
File SHA1 checksum: 87b11f863f67fd2610e0769b929baab643eefad
Package: rpios-adventerprisek9, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg, on: RP1/0
Built: 2013-03-25_18.51, by: mcpre
File SHA1 checksum: b487136319da0a327844d353c77e533c53c56053
Package: rpaccess, version: 03.12.01.S.154-2.S, status: n/a
Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Examples
Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]
<output removed for brevity>
Router# request platform software package clean
Cleaning up unnecessary platform package files
No path specified, will use booted path bootflash:Active_Dir/packages.conf
Cleaning bootflash:Active_Dir
Scanning boot directory for packages ... done.
Preparing packages list to delete ...
  asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
  asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
  asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
  asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
  asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
Using ISSU to Upgrade Subpackages on a Cisco ASR 1006 Router or Cisco ASR 1013 Router (request platform command set) with MDR

This procedure can only be performed if the current ASR 1006 router or ASR 1013 router has two active RPs and both RPs are running subpackages.

To perform an ISSU upgrade with MDR using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup using the request platform command set, follow the following instructions.
### SUMMARY STEPS

1. `show version`
2. `mkdir URL-to-directory-name`
3. `ip tftp source-interface gigabitethernet port`
4. `copy tftp: URL-to-target-location`
5. `request platform software package expand file URL-to-consolidated-package`
6. `dir target-URL`
7. `copy file-system: asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP`
8. `copy file-system: asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-standby-RP`
9. `product="name=">request platform software package verify rp slot file URL mdr {force`
10. `request platform software package install rp standby-RP file target-standbyRP-URL-for-sub-packages: asr1000rp*version*.pkg force`
11. `hw-module slot standby-RP reload`
12. `request platform software package install rp active-RP file URL-to-active-file-system: asr1000rp2-{sipbase,sipspa}*version*.pkg slotSIP-slot-number product="name=">mdr {force`
13. `request platform software package install rp active-RP file URL-to-active-file-system: asr1000rp2-{elcbase,elcspa}*version*.pkg slotELC-slot-number mdr product="name=">{force`
15. `request platform software package install rp active-RP file URL-to-active-file-system: asr1000rp*version*.pkg force`
16. `show version active-RP provisioned`
17. `redundancy force-switchover`
18. `request platform software package clean`

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show version</td>
<td>(Optional) Use the following commands to confirm the current router configuration, as follows:</td>
</tr>
<tr>
<td><strong>Example:</strong> show version active-rp installed</td>
<td>• show version and show version active-rp installed—Verify the running version of the Cisco IOS XE software on the router, and which file was used to boot the router, and where that file is stored.</td>
</tr>
<tr>
<td><strong>Example:</strong> show version standby-rp installed</td>
<td>• dir—Confirm that the files that were used to boot the router are located in the directory.</td>
</tr>
<tr>
<td><strong>Example:</strong> dir filesystem:&lt;directory&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> show platform</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show version</td>
<td>• <strong>show platform</strong>—Confirm the current status of the active and standby RPs.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show version r0 installed</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show version r1 installed</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# dir bootflash:</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# show platform</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>mkdir <strong>URL-to-directory-name</strong></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# mkdir bootflash:tmp</td>
<td>Creates a directory to store the consolidated package and subpackages.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>ip tftp source-interface gigabitethernet <em>port</em></td>
</tr>
<tr>
<td><strong>Example:</strong> Router(config)# ip tftp source-interface gigabitethernet 0</td>
<td>Specifies the Gigabit Ethernet TFTP source-interface to be configured:</td>
</tr>
<tr>
<td></td>
<td>slot/port—Specifies the location of the TFTP source-interface.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>To copy a file using TFTP through the Management Ethernet interface, the <strong>ip tftp source-interface GigabitEthernet 0</strong> command must be entered before entering the <strong>copy tftp</strong> command.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>copy tftp: <strong>URL-to-target-location</strong></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# copy tftp: bootflash:tmp</td>
<td>Copies the consolidated package file into the directory created in Step 2.</td>
</tr>
<tr>
<td></td>
<td>The consolidated package in this step should not be copied into the same directory where the subpackages that are currently running your router are stored (the directory containing the packages.conf provisioning file from which the router was booted).</td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Step 5</strong> request platform software package expand file URL-to-consolidated-package</td>
<td>Tip: It is recommended that you copy the package onto a usb: or harddisk: file system for space considerations when performing this step of the procedure. Extracts the subpackages out of the consolidated package file into the temporary directory. <strong>Note</strong>: Take extra care to extract the subpackages to a temporary subdirectory and do not delete any of the files currently running the router at this point of the procedure. To erase the files that were running on the router before the ISSU upgrade, enter the request platform software package clean command after the ISSU upgrade has been completed.</td>
</tr>
<tr>
<td><strong>Step 6</strong> dir target-URL</td>
<td>(Optional) Displays the directory to confirm that the files were extracted.</td>
</tr>
<tr>
<td><strong>Step 7</strong> copy file-system:asr1000rp2-espbase.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td>Copies the subpackages out of the temporary directory into the directory on the router where the subpackages running the active RP are currently stored.</td>
</tr>
<tr>
<td>Example: copy file-system:asr1000rp2-rpaccess.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system:asr1000rp2-rpbase.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system:asr1000rp2-rpios.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
<tr>
<td>Example: copy file-system:asr1000rp2-sipbase.version.pkg URL-to-directory-of-sub-packages-active-RP</td>
<td></td>
</tr>
</tbody>
</table>
### Using ISSU to Upgrade Subpackages on a Cisco ASR 1006 Router or Cisco ASR 1013 Router (request platform command set) with MDR

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>copy file-system::asr1000rp2-sipspa.version.pkg URL-to-directory-of-sub-packages-active-RP</code></td>
<td></td>
</tr>
<tr>
<td><code>copy file-system::asr1000rp2-elcbase.version.pkg URL-to-directory-of-sub-packages-active-RP</code></td>
<td></td>
</tr>
<tr>
<td><code>copy file-system::asr1000rp2-elespa.version.pkg URL-to-directory-of-sub-packages-active-RP</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
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<td><code>Router# copy bootflash:tmp/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S1.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:</code></td>
<td></td>
</tr>
<tr>
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<td>Purpose</td>
</tr>
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<td>------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg</code></td>
<td>Copies the subpackages out of the temporary directory into the directory on the router where the subpackages running the standby RP are currently stored.</td>
</tr>
<tr>
<td><code>bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
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<tr>
<td><strong>Example:</strong></td>
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<tr>
<td><code>Router# copy bootflash:tmp/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg</code></td>
<td></td>
</tr>
<tr>
<td><code>bootflash:</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> <em>copy file-system:asr1000rp2-espbase.version.pkg</em></td>
<td></td>
</tr>
<tr>
<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-espx86base.version.pkg</code></td>
<td></td>
</tr>
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<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-rpaccess.version.pkg</code></td>
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</tr>
<tr>
<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
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<td><strong>Example:</strong></td>
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<tr>
<td><code>copy file-system:asr1000rp2-rpbase.version.pkg</code></td>
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<tr>
<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
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<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-rpcontrol.version.pkg</code></td>
<td></td>
</tr>
<tr>
<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>copy file-system:asr1000rp2-rpios.version.pkg</code></td>
<td></td>
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<tr>
<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
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<tr>
<td><code>copy file-system:asr1000rp2-sipbase.version.pkg</code></td>
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<td><code>URL-to-directory-of-sub-packages-standby-RP</code></td>
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<td><strong>Example:</strong></td>
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</tr>
<tr>
<td><code>copy file-system:asr1000rp2-sipspa.version.pkg</code></td>
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</tr>
<tr>
<td>copy file-system::asr1000rp2-elcspa.version.pkg URL-to-directory-of-sub-packages-standby-RP</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Router# ccopy bootflash:/tmp/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg</td>
<td></td>
</tr>
<tr>
<td>Router# copy bootflash:/tmp/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>copy bootflash:tmp/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg</code> stby-bootflash:</td>
<td>Verifies the RP subpackages on the standby RP, where the &quot;rp*&quot; wildcard is specified to capture all of the RP subpackages for the desired upgrade release.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>copy bootflash:tmp/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg</code> stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>copy bootflash:tmp/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg</code> stby-bootflash:</td>
<td></td>
</tr>
<tr>
<td><strong>Step 9</strong> <code>product=&quot;name=&quot;&gt;request platform software package verify rp slot file URL mdr {force}</code></td>
<td>Upgrades the RP subpackages on the standby RP, where the &quot;rp*&quot; wildcard is specified to capture all of the RP subpackages for the desired upgrade release.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>request platform software package verify rp 1 file stby-bootflash:asr1000rp2-*03.13.00.S.154-3.S-ext*.pkg</code> mdr</td>
<td></td>
</tr>
<tr>
<td><strong>Step 10</strong> <code>request platform software package install rp standby-RP file target-standbyRP-URL-for-sub-packages:asr1000rp*version*.pkg force</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>request platform software package install rp 1 file stby-bootflash:asr1000rp2-*03.13.00.S.154-3.S-ext*.pkg</code> force</td>
<td></td>
</tr>
<tr>
<td><strong>Step 11</strong> <code>hw-module slot standby-RP reload</code></td>
<td>Reloads the standby RP.</td>
</tr>
<tr>
<td><strong>Example:</strong> Router# <code>hw-module slot R1 reload</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 12</strong> <code>request platform software package install rp active-RP file URL-to-active-file-system:asr1000rp2-{sipbase,sipspa}*version*.pkg slotSIP-slot-number product=&quot;name=&quot;&gt;mdr {force}</code></td>
<td>Upgrades the SIP and SPA subpackages for each SIP on the router using MDR.</td>
</tr>
<tr>
<td><strong>Note</strong> This step must be completed one SIP at a time, and repeated for each SIP installed on the router before performing the next step.</td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Step 13</strong> <code>request platform software package install rp active-RP file</code></td>
<td><strong>Upgrades the ELC and SPA subpackages for each ELC on the router using MDR.</strong></td>
</tr>
<tr>
<td><em>URL-to-active-file-system:asr1000rp2-{elcbase,elcspa}<em>version</em>.pkg</em></td>
<td><strong>Note:</strong> This step must be completed for one ELC at a time, and repeated for each ELC installed on the router before performing the next step.</td>
</tr>
<tr>
<td><em>slot EL-C-slot-number</em> mdr product=&quot;name=&quot;&gt;{force}</td>
<td><strong>Tip:</strong> You can use the <code>show ip interface brief</code> command to identify which slots contain ELCs and SPAs. The interfaces with three numbers (in the form <code>ELC-number/SPA-number/interface-number</code>) identify the ELC and SPA locations in the router.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><strong>Note:</strong> The <code>pattern</code> options used in this CLI (<code>elcbase</code> and <code>elcspa</code>) were introduced in Cisco IOS XE Release 3.10S and are not available in previous Cisco IOS XE Releases.</td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file</td>
<td></td>
</tr>
<tr>
<td><code>bootflash:asr1000rp2-{elcbase,elcspa}*03.13.00.S.154-3*pkg mdr</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 14</strong> <code>request platform software package install rp active-RP file</code></td>
<td><strong>Upgrades the ESP Base subpackage on the standby and the active ESPs.</strong></td>
</tr>
<tr>
<td><em>URL-to-active-file-system:asr1000rp2-esp</em>version*.pkg*</td>
<td><strong>After entering the <code>issu loadversion rp</code> command on the active RP, the ESP switchover will occur automatically. Minimal traffic interruption will occur as a result of this switchover.</strong></td>
</tr>
<tr>
<td><em>slot standby-ESP-slot</em> mdr</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>request platform software package install rp active-RP file</code></td>
<td></td>
</tr>
<tr>
<td><em>URL-to-active-file-system:asr1000rp2-esp</em>version*.pkg*</td>
<td></td>
</tr>
<tr>
<td><em>slot active-ESP-slot</em> mdr</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file</td>
<td></td>
</tr>
<tr>
<td><code>bootflash:asr1000rp2-esp*03.13.00.S.154-3.S-ext*pkg slot 1</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 15</strong> <code>request platform software package install rp active-RP file</code></td>
<td><strong>Upgrades all of the sub-packages on the active RP.</strong></td>
</tr>
<tr>
<td><em>URL-to-active-file-system:asr1000rp</em>version*.pkg force`</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>Command or Action</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router# request platform software package install rp 0 file bootflash:asr1000rp2-03.13.00.S.154-3.S-ext*.pkg force</td>
<td>Note This step is required to ensure that all subpackages on the router were upgraded as part of this procedure, and might upgrade some subpackages that would otherwise be missed in the process.</td>
</tr>
</tbody>
</table>

**Step 16** show version active-RP provisioned

**Example:**
show version active-RP installed

**Example:**
Router# show version r0 provisioned

**Step 17** redundancy force-switchover

**Example:**
Router# redundancy force-switchover

**Step 18** request platform software package clean

(Optional) Removes all unused subpackage files from the router.

---

**Examples**

This example shows ISSU upgrade using subpackages on a Cisco ASR 1006 router or ASR 1013 router with a dual RP setup:

```
Router# show version
Cisco IOS Software, IOS-XE Software (X86_64_LINUX_IOSD-ADVENTERPRISEK9-M), Version 15.3(2)S, RELEASE SOFTWARE (fc1)
<output removed for brevity>
System image file is "bootflash:Active.Dir/packages.conf"
<output removed for brevity>
cisco ASR1013 (RP2) processor with 420889K/6147K bytes of memory.
Processor board ID FOX1343GJGC
20 Gigabit Ethernet interfaces
6 Ten Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
8388608K bytes of physical memory.
1925119K bytes of eUSB flash at bootflash:.
78085207K bytes of SATA hard disk at harddisk:.
Configuration register is 0x2102
```

```
Router# show platform
Chassis type: ASR1013
-----------------  --------------------  ---------------------
Slot  Type  State  Insert time (ago)
---  ------  --------  ---------------------
```
2 ASR1000-SIP40 ok 1d03h
2/0 SPA-1X10GE-L-V2 ok 1d03h
2/1 SPA-1X10GE-L-V2 ok 1d03h
2/2 SPA-1X10GE-L-V2 ok 1d03h
2/3 SPA-1X10GE-L-V2 ok 1d03h
4 ASR1000-2T+20X1GE ok 1d03h
4/0 BUILT-IN-2T+20X1GE ok 1d03h
R0 ASR1000-RP2 ok, active 1d03h
R1 ASR1000-RP2 ok, standby 1d03h
F0 ASR1000-ESP100 ok, active 1d03h
F1 ASR1000-ESP100 ok, standby 1d03h
P0 ASR1013-PWR-AC ok 1d03h
P1 ASR1013-PWR-AC ok 1d03h
P2 ASR1013-PWR-AC ok 1d03h
P3 ASR1013-PWR-AC ps, fail 1d03h

<table>
<thead>
<tr>
<th>Slot</th>
<th>CPLD Version</th>
<th>Firmware Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>00200800</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>4</td>
<td>00200800</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>R0</td>
<td>10021901</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>R1</td>
<td>10021901</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>F0</td>
<td>12071700</td>
<td>15.3(3r)S</td>
</tr>
<tr>
<td>F1</td>
<td>12071700</td>
<td>15.3(3r)S</td>
</tr>
</tbody>
</table>

Router# show version r0 installed
Package: Provisioning File, version: n/a, status: active
  File: bootflash:/Active_Dir/packages.conf, on: RP0
  Built: n/a, by: n/a
  File SHA1 checksum: a624f70f68c60292f4482433f43af9d92487a55c4
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
  File: bootflash:/Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
  Built: 2013-03-25_18.48, by: mcpre
  File SHA1 checksum: 3a9675142898cfac350d4e42f0e37bd9f4e48538
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
  File: bootflash:/Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
  Built: 2013-03-25_18.48, by: mcpre
  File SHA1 checksum: 0b1f8e63f67df62610ee076992baab4c3e8ad

Router# dir bootflash:/Active_Dir
Directory of bootflash:/Active_Dir/
20 -rw- 41104112 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
21 -rw- 50285296 Aug 3 2013 15:05:40 +05:30 asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
22 -rw- 82514676 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
23 -rw- 101084628 Aug 3 2013 15:05:40 +05:30 asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
24 -rw- 29012724 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
25 -rw- 49898964 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
26 -rw- 46557940 Aug 3 2013 15:05:40 +05:30 asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
28 -rw- 41954036 Aug 3 2013 15:05:40 +05:30 asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
29 -rw- 60957428 Aug 3 2013 15:05:40 +05:30 asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
19 -rw- 9838 Aug 3 2013 15:05:40 +05:30 packages.conf
1940303872 bytes total (503164928 bytes free)

Router# show redundancy states
  my state = 13 -ACTIVE
  peer state = 8 -STANDBY HOT
  Mode = Duplex
  Unit = Primary
  Unit ID = 48
  Redundancy Mode (Operational) = aso
  Redundancy Mode (Configured) = aso
  Redundancy State = aso
Maintenance Mode = Disabled
Manual Swact = enabled
Communications = Up
client count = 108
client_notification_TMR = 30000 milliseconds
RF debug mask = 0x0

Router# copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]

Router# mkdir harddisk:Target_Subs
Create directory filename [Target_Subs]?
Created dir harddisk:/Target_Subs

Router#
Router# request platform software package expand file
harddisk:Target_Subs/asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin to
harddisk:Target_Subs
Verifying parameters
Validating package type
Copying package files
SUCCESS: Finished expanding all-in-one software package.

Router#
Router# directory harddisk:Target_Subs
Directory of harddisk:/Target_Subs/
3358722 -rw- 569975780 Aug 4 2013 18:45:38 +05:30
asr1000rp2-adventerprisek9.03.13.00.S.154-3.S-ext.bin
7684099 -rw- 37557200 Aug 4 2013 18:46:43 +05:30
asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
7684100 -rw- 51194832 Aug 4 2013 18:46:43 +05:30
asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
7684101 -rw- 80657364 Aug 4 2013 18:46:43 +05:30
asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
7684102 -rw- 95446456 Aug 4 2013 18:46:43 +05:30
asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
7684099 -rw- 9381 Aug 4 2013 18:46:43 +05:30
asr1000rp2-packages-adventerprisek9.03.13.00.S.154-3.S-ext.conf
7684103 -rw- 23350232 Aug 4 2013 18:46:43 +05:30
asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
7684104 -rw- 37694900 Aug 4 2013 18:46:43 +05:30
asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
7684105 -rw- 45536216 Aug 4 2013 18:46:44 +05:30
asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
7684106 -rw- 118754284 Aug 4 2013 18:46:44 +05:30
asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
7684107 -rw- 38380500 Aug 4 2013 18:46:44 +05:30
asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
7684108 -rw- 61760468 Aug 4 2013 18:46:44 +05:30
asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
7684109 -rw- 118754284 Aug 4 2013 18:46:44 +05:30
packages.conf
787044384 bytes total (9254879232 bytes free)

Router# copy harddisk:Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCC23350232 bytes copied in 11.951 secs (6749005 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCC95446456 bytes copied in 14.213 secs (6715433 bytes/sec)

Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCC37694900 bytes copied in 5.598 secs (6733637 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC45536216 bytes copied in 6.797 secs (6699458 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC118754284 bytes copied in 17.798 secs (6672339 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC38380500 bytes copied in 5.962 secs (6437521 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC61760468 bytes copied in 9.408 secs (6564676 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC37557200 bytes copied in 5.650 secs (6647292 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC80657364 bytes copied in 132.765 secs (607520 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC51194832 bytes copied in 7.397 secs (6921026 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC95446456 bytes copied in 177.587 secs (537463 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC23350232 bytes copied in 55.396 secs (421515 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC37694900 bytes copied in 86.199 secs (437301 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC45536216 bytes copied in 101.527 secs (448513 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC212.646 secs (558460 bytes/sec)
Copy in progress...CCCC61760468 bytes copied in 119.391 secs (517296 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCC37557200 bytes copied in 57.106 secs (657675 bytes/sec)
Router# copy harddisk:Target_Subs/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg stby-bootflash:Active_Dir/
Destination filename [Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg]?
Copy in progress...CCCCCCCCC51194832 bytes copied in 87.453 secs (585398 bytes/sec)
Router# request platform software package verify rp 1 file stby-bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg mdr force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting mdr compatibility verification ---
MDR for CC type [0x762] located at slot [4] not supported by running package version [03.12.01.S.154-2.S]
As SIP4 does not support MDR none of the SPA's within in may be upgraded using MDR
MDR compatibility failed - proceeding with forced MDR-upgrade - some traffic will be impacted during the upgrade
Finished mdr compatibility verification
SUCCESS: Software is ISSU MDR compatible.
Router# request platform software package install rp 1 file
stby-bootflash:Active_Dir/asr1000rp*03.13.00.S.154-3.S-ext*.pkg force
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting local lock acquisition on R1 ---
Finished local lock acquisition on R1
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
  Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
  WARNING: In-service installation of IOSD package
  WARNING: requires software redundancy on target RP
  WARNING: or on-reboot parameter
  WARNING: Automatically setting the on-reboot flag
  WARNING: In-service installation of RP Base package
  WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
  Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg

Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file

Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.

Router# hw-module slot r1 reload
Proceed with reload of module? [confirm]

Router# *Aug 4 19:14:01.721 IST: %IOSXE_OIR-6-OFFLINECARD: Card (rp) offline in slot R1
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
    (PEER_NOT_PRESENT)
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
    (PEER_DOWN)
*Aug 4 19:14:01.761 IST: %REDUNDANCY-3-STANDBY_LOST: Standby processor fault
    (PEER_REDUNDANCY_STATE_CHANGE)
*Aug 4 19:14:03.584 IST: %RF-5-RF_RELOAD: Peer reload. Reason: EHS down
*Aug 4 19:14:03.594 IST: % REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
    insertion (raw-event=PEER_FOUND(4))
*Aug 4 19:17:35.514 IST: %IOSXE_OIR-6-ONLINECARD: Card (rp) online in slot R1

Router# *Aug 4 19:17:35.443 IST: %IOSXE_OIR-6-ONLINECARD: Card (rp) online in slot R1
*Aug 4 19:17:48.061 IST: %REDUNDANCY-5-PEER_MONITOR_EVENT: Active detected a standby
    insertion (raw-event=PEER_REDUNDANCY_STATE_CHANGE(5))
*Aug 4 19:19:08.380 IST: %NBAR_HA-5-NBAR_INFO: NBAR sync DONE!
*Aug 4 19:19:08.797 IST: %HA_CONFIG_SYNC-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
*Aug 4 19:19:08.798 IST: %RF-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

Router# request platform software package install rp 0 file
  bootflash:Active_Dir/asr1000rp2-{sipbase,sipspa}*03.13.00.S.154-3.S-ext*.pkg slot 2 mdr
  force
  --- Starting local lock acquisition on R0 ---
  Finished local lock acquisition on R0
  --- Starting installation state synchronization ---
  Finished installation state synchronization
  --- Starting file path checking ---
  Finished file path checking
  --- Starting image file verification ---
  Checking image file names
  Locating image files and validating name syntax
  Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
  Verifying image file locations
  Inspecting image file types
  Processing image file constraints
  Creating candidate provisioning file
  Finished image file verification
  --- Starting candidate package set construction ---
  Verifying existing software set
  Processing candidate provisioning file
  Constructing working set for candidate package set
  Constructing working set for running package set
  Checking command output
  Constructing merge of running and candidate packages
  Checking if resulting candidate package set would be complete
  Finished candidate package set construction
  --- Starting compatibility testing ---
  Determining whether candidate package set is compatible
  WARNING: Candidate software combination not found in compatibility database
  WARNING: Determining whether installation is valid
  Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
  WARNING: Candidate software combination not found in compatibility database
  WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING: Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting mdr compatibility verification ---
Finished mdr compatibility verification
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
- Added asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
- Added asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
SUCCESS: Finished installing software.
Router#
Router# request platform software package install rp 0 file
bootflash:Active_Dir/asr1000rp2-{elcbase,elcspa}*03.13.00.S.154-3.S-ext*.pkg slot 4
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.png
Found asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.png
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
  Added asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  Added asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Applying final IPC and database definitions
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
*Aug 4 19:41:12.290 IST: %MDR-5-CARD_RESTART: R0/0: card_mdr: Minimal Disruptive Restart
SIP4 to acquire provisioned software
Restart Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software
SUCCESS: Finished installing software.
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
   Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
   Found asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix_file by locate_latest_matrix_file /tmp/issu/provision/sw
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking candidate structure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
No old package files removed
New files list:
   Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
   Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
--- Starting analysis of software changes ---
No old package files removed
New files list:
   Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
   Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting analysis of software changes ---
No old package files removed
New files list:
   Added asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
   Added asr1000rp2-espx86base.03.13.00.S.154-3.S-ext.pkg
Finished list of software package changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP1
Applying final IPC and database definitions
*Aug 4 19:29:16.751 IST: %IOSXE_OIR-6-OFFLINECARD: Card (fp) offline in slot F1
*Aug 4 19:29:18.172 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmnd: F0 redundancy state is Active with no Standby Generating software version information
Notifying running software of updates
Unblocking peer synchronization of operating information
Unmounting old packages
Cleaning temporary installation files
Finished update running software

SUCCESS: Finished installing software.

Router# *Aug 4 19:30:50.972 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 preparing image /tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:30:51.362 IST: %CPPHA-7-START: F1: cpp_ha: CPP 0 startup init image /tmp/sw/fp/1/0/fpx86/mount/usr/cpp/bin/qfp-ucode-esp40
*Aug 4 19:30:53.088 IST: %IOSXE_OIR-6-ONLINECARD: Card (fp) online in slot F1

Issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed

Router# request platform software package install rp 0 file bootflash:Active_Dir/asr1000rp2-esp*03.13.00.S.154-3.S-ext*.pkg slot 0
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.png
Found asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.png
Verifying image file locations
Inspecting image file types
Processing image file constraints
Creating candidate provisioning file
*Aug 4 19:31:15.079 IST: %CPPHA-7-READY: F1: cpp_ha: CPP 0 loading and initialization complete
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
*Aug 4 19:31:18.010 IST: %CMRP-6-FP_HA_STATUS: R0/0: cmdand: F0 redundancy state is Active with ready Standby
Constructing working set for candidate package set

Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
WARNING:
WARNING: Candidate software combination not found in compatibility database
WARNING:
Determining whether installation is valid
Creating matrix file by locate latest matrix file /tmp/issu/provision/sw
Software sets are identified as compatible
Verifying image type compatibility
Checking IPC compatibility with running software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking package specific compatibility
Finished compatibility testing
--- Starting impact testing ---
Checking operational impact of change
Finished impact testing
--- Starting list of software package changes ---
Old files list:
   Removed asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
   Removed asr1000rp2-espx86base.03.12.01.S.154-2.S.pkg
No new package files added

Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file

Finished commit of software changes
--- Starting analysis of software changes ---
Finished analysis of software changes
--- Starting update running software ---
Blocking peer synchronization of operating information
Creating the command set placeholder directory
Finding latest command set
Finding latest command shortlist lookup file
Finding latest command shortlist file
Assembling CLI output libraries
Assembling CLI input libraries
Assembling Dynamic configuration files
Applying interim IPC and database definitions
Replacing running software
Replacing CLI software
Restarting software
Restarting ESP0
Applying final IPC and database definitions

SUCCESS: Finished installing software.
Router#
Router# issu commitversion
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation changes ---
Cancelling rollback timer
Finished installation changes
SUCCESS: Installation changes committed
Router#
Router# request platform software package install rp 0 file
--- Starting local lock acquisition on R0 ---
Finished local lock acquisition on R0
--- Starting installation state synchronization ---
Finished installation state synchronization
--- Starting file path checking ---
Finished file path checking
--- Starting image file verification ---
Checking image file names
Locating image files and validating name syntax
Found asr1000rp2-ebcbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-elspa.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
Found asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
Verifying image file locations
Inspecting image file types
WARNING: In-service installation of IOSD package
WARNING: requires software redundancy on target RP
WARNING: or on-reboot parameter
WARNING: Automatically setting the on-reboot flag
WARNING: In-service installation of RP Base package
WARNING: requires software reboot of target RP
Processing image file constraints
Creating candidate provisioning file
Finished image file verification
--- Starting candidate package set construction ---
Verifying existing software set
Processing candidate provisioning file
Constructing working set for candidate package set
Constructing working set for running package set
Checking command output
Constructing merge of running and candidate packages
Checking if resulting candidate package set would be complete
Finished candidate package set construction
--- Starting compatibility testing ---
Determining whether candidate package set is compatible
Determining whether installation is valid
Determining whether installation is valid ... skipped
Verifying image type compatibility
Checking IPC compatibility for candidate software
Checking candidate package set infrastructure compatibility
Checking infrastructure compatibility with running software
Checking infrastructure compatibility with running software ... skipped
Checking package specific compatibility
Finished compatibility testing
--- Starting list of software package changes ---
Old files list:
  Removed asr1000rp2-ebcbase.03.12.01.S.154+2.S.pkg
  Removed asr1000rp2-elspa.03.12.01.S.154+2.S.pkg
  Removed asr1000rp2-rpaccess.03.12.01.S.154+2.S.pkg
  Removed asr1000rp2-rpbase.03.12.01.S.154+2.S.pkg
Cisco ASR 1000 Series Aggregation Services Routers Software Configuration Guide
Examples
Removed asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
Removed asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg

New files list:
Added asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
Added asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg

Finished list of software package changes
--- Starting commit of software changes ---
Updating provisioning rollback files
Creating pending provisioning file
Committing provisioning file
Finished commit of software changes
SUCCESS: Software provisioned. New software will load on reboot.

Router# show version R0 provisioned
Package: Provisioning File, version: n/a, status: active
File: bootflash:Active_Dir/packages.conf, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: c79075780592aec1312725f4a2357a034fd2a23db

Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP0
File SHA1 checksum: 4f65c54bb95b4da2a4ad25ebf97cf8572c69e9

Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
File SHA1 checksum: a6a45ea5c7a656c0ee6f726174461584f182c78

Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
Built: 2013-07-25 23:00, by: mcpre
File SHA1 checksum: 85e9aeb26bf2f194ef568a56c76453625383ad2

Package: rpaccess, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg, on: RP0/0
File SHA1 checksum: a360dff0fd76a9b1ae67cd9116c97b62f25ab09

Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP0/1
File SHA1 checksum: 8a6a45ea5c7a656c0ee6f726174461584f182c78

Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP0/1
Built: 2013-07-25 23:00, by: mcpre
File SHA1 checksum: 85e9aeb26bf2f194ef568a56c76453625383ad2

Package: rpbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.13.00.S.154-3.S-ext.pkg, on: RP1
File SHA1 checksum: 4f65c54bb95b4da2a4ad25ebf97cf8572c69e9

Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP1/0
File SHA1 checksum: a6a45ea5c7a656c0ee6f726174461584f182c78

Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
Built: 2013-07-25 23:00, by: mcpre
File SHA1 checksum: 85e9aeb26bf2f194ef568a56c76453625383ad2

Package: rpaccess, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg, on: RP1/0
File SHA1 checksum: a360dff0fd76a9b1ae67cd9116c97b62f25ab09

Package: rpcontrol, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg, on: RP1/1
File SHA1 checksum: a6a45ea5c7a656c0ee6f726174461584f182c78

Package: rpios-adventerprisek9, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg, on: RP1/1
Built: 2013-07-25 23:00, by: mcpre
File SHA1 checksum: 85e9aeb26bf2f194ef568a56c76453625383ad2
File SHA1 checksum: 99f8dc925083b1186264e82d93079050db96826
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/0
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/0
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/3
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP1/3
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 3b6a4838972840a995ff22e73fd2bae910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 99f8dc925083b118626a4e82d93079050db96826
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/0
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/0
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/1
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/2
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/3
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f4f340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_DIR/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP2/3
Built: 2013-07-25 21:16, by: mcpre
File SHA1 checksum: 94763274fc807489410299a45fd73f3e9d67499
Software Upgrade Processes Supported by Cisco ASR 1000 Series Routers

Examples
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP4/3
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fee9d67499
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 3b6a4838972840a995ff22e73f2ba910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 99f8dc925083b118626a4e82d9307905d0db96826
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/0
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/0
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fee9d67499
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5/1
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 3b6a4838972840a995ff22e73f2ba910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5/1
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 99f8dc925083b118626a4e82d9307905d0db96826
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 6d12280b5cc33d17d752f475bf340b77ef3451ca
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45fd73fee9d67499
Package: sipbase, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5/3
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 3b6a4838972840a995ff22e73f2ba910b268a7
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: n/a
Built: 2013-07-25 21.16, by: mcpre
File SHA1 checksum: 99f8dc925083b118626a4e82d9307905d0db96826
Package: sipspa, version: 03.13.00.S.154-3.S-ext, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg, on: RP0
Built: n/a, by: n/a
File SHA1 checksum: c79075780592aec1312725f4a2357a034fda2d3b
Package: rpbase, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg, on: RP0
Built: 2013-03-25 18.48, by: mcpre
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.48, by: mcpre
File: bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.51, by: mcpre
Package: rpaccess, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.48, by: mcpre
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.51, by: mcpre
Package: rpaccess, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg, on: RP0/0
Built: 2013-03-25 18.48, by: mcpre
Package: rpcontrol, version: 03.12.01.S.154-2.S, status: active
File: bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg, on: RP0/1
Package: sipspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP0/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
Packet: elcspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg, on: SIP0/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
Packet: sipspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP0/2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
Packet: elcspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg, on: SIP0/2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
Packet: sipspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP0/3
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
Packet: elcspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg, on: SIP0/3
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 644364ae98cbebdaaf5b8d29367db50fc82b17
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb815b5cbaf5fd20a0a0e2aeabd2687347c6921d
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg, on: SIP1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb1d6abd055b191909bc78ccac23b964de15ab8e
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP1/0
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb815b5cbaf5fd20a0a0e2aeabd2687347c6921d
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg, on: SIP1/0
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb1d6abd055b191909bc78ccac23b964de15ab8e
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP1/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb815b5cbaf5fd20a0a0e2aeabd2687347c6921d
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg, on: SIP1/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb1d6abd055b191909bc78ccac23b964de15ab8e
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP1/2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb815b5cbaf5fd20a0a0e2aeabd2687347c6921d
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg, on: SIP1/2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb1d6abd055b191909bc78ccac23b964de15ab8e
Packet: sipbase, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 36a4b39972baa995ff22e73f2dbae91b2b9f71c6
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: fb1d6abd055b191909bc78ccac23b964de15ab8e
Packet: sipbase, version: 03.13.00.S.154-3.S-ext, status: active

Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: f8b155bcafb5f0d20a0a0e2eaeab2d687347e6921d
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP4
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 99f8dc925083b118626a4e82d93079050db96826
Package: sipspa, version: 03.12.01.S.154-2.S, status: inactive
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP4/0
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 6443646e8e8cebbd4af5b8d29367db50f828217
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45f73fcee967499
Package: sipspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP4/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 6443646e8e8cebbd4af5b8d29367db50f828217
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP4/2
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45f73fcee967499
Package: sipspa, version: 03.12.01.S.154-2.S, status: n/a
File: bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg, on: SIP4/3
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 6443646e8e8cebbd4af5b8d29367db50f828217
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5
Built: 2013-07-25_21.16, by: mcpre
File SHA1 checksum: 94763274fc807489410e299a45f73fcee967499
Package: sipbase, version: 03.12.01.S.154-2.S, status: inactive
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP5
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: f8b155bcafb5f0d20a0a0e2eaeab2d687347e6921d
Package: elcbase, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg, on: SIP5
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 2e6b6b1949261873ce5ce189ec19440abfd71c6
Package: sipbase, version: 03.12.01.S.154-2.S, status: inactive
File: bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg, on: SIP5/1
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 6443646e8e8cebbd4af5b8d29367db50f828217
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: active
File: bootflash:Active_Dir/asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg, on: SIP5/2
Built: 2013-03-25_17.28, by: mcpre
File SHA1 checksum: 6443646e8e8cebbd4af5b8d29367db50f828217
Package: elcspa, version: 03.13.00.S.154-3.S-ext, status: active
Built: 2013-03-25_17.28, by: mcpre
Router# redundancy force-switchover
Proceed with switchover to standby RP? [confirm]
<output removed for brevity>
Router# request platform software package clean
Cleaning up unnecessary package files
No path specified, will use booted path bootflash:Active_Dir/packages.conf
Cleaning bootflash:Active_Dir
Scanning boot directory for packages ... done.
Preparing packages list to delete ... 
asr1000rp2-elcbase.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-elcspa.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-espbase.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-esp86base.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-rpaccess.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-rpcontrol.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-rpios-adventerprisek9.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-sipbase.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
asr1000rp2-sipspa.03.13.00.S.154-3.S-ext.pkg
  File is in use, will not delete.
packages.conf
  File is in use, will not delete.

Files that will be deleted:
asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg
asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg
asr1000rp2-espbase.03.12.01.S.154-2.S.pkg
asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg
asr1000rp2-packages-adventerprisek9.03.12.01.S.154-2.S.conf
asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg
asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg
asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg
asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg
asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg
asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg
packages.conf.00-

Do you want to proceed? [confirm]
Deleting file bootflash:Active_Dir/asr1000rp2-elcbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-elcspa.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-espbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-esp86base.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-packages-adventerprisek9.03.12.01.S.154-2.S.conf ...
Deleting file bootflash:Active_Dir/asr1000rp2-rpaccess.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpcontrol.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-rpios-adventerprisek9.03.12.01.S.154-2.S.pkg ...
Deleting file bootflash:Active_Dir/asr1000rp2-sipbase.03.12.01.S.154-2.S.pkg ... done.
Deleting file bootflash:Active_Dir/asr1000rp2-sipspa.03.12.01.S.154-2.S.pkg ... done.
SUCCESS: Files deleted.
Router#
Additional References

The following sections provide references related to the Software Upgrade Process feature.

Related Documents

<table>
<thead>
<tr>
<th>Related Topic</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco IOS XE commands</td>
<td>Cisco IOS Master Commands List, All Releases</td>
</tr>
<tr>
<td>Performing an In Service Software Upgrade</td>
<td>High Availability Configuration Guide, Cisco IOS XE Release 3S</td>
</tr>
</tbody>
</table>

Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.</td>
<td>—</td>
</tr>
</tbody>
</table>

MIBs

<table>
<thead>
<tr>
<th>MIB</th>
<th>MIBs Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>To locate and download MIBs for selected platforms, Cisco IOS XE software releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a></td>
</tr>
</tbody>
</table>

RFCs

<table>
<thead>
<tr>
<th>RFC</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.</td>
<td>—</td>
</tr>
</tbody>
</table>
Technical Assistance

<table>
<thead>
<tr>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</td>
<td><a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a></td>
</tr>
</tbody>
</table>

Feature Information for Software Upgrade Process

Table 3: Feature Information for Software Upgrade Process, on page 214 lists the release history for this feature on the Cisco ASR 1000 Series Routers.

For information on a feature in this technology that is not documented here, see the Cisco ASR 1000 Series Aggregation Services Routers Documentation Roadmap.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS XE software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to [http://www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

**Note**

Table 3: Feature Information for Software Upgrade Process, on page 214 lists only the Cisco IOS XE software releases that introduced support for a given feature in a given Cisco IOS XE software release train. Unless noted otherwise, subsequent releases of that Cisco IOS XE software release train also support that feature.

<table>
<thead>
<tr>
<th>Feature Name</th>
<th>Releases</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDR Support for Cisco ASR 1000 Series Fixed Ethernet Line Card</td>
<td>Cisco IOS XE Release 3.12S</td>
<td>This feature was introduced. Added MDR support for the Cisco ASR 1000 Series Fixed Ethernet Line Card (ASR1000-2T+20X1GE).</td>
</tr>
<tr>
<td>Feature Name</td>
<td>Releases</td>
<td>Feature Information</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cisco ASR1000 Series Fixed Ethernet Line Card</td>
<td>Cisco IOS XE Release 3.10S</td>
<td>This feature was introduced. Added support for the Cisco ASR 1000 Series Fixed Ethernet Line Card.</td>
</tr>
</tbody>
</table>
| Minimal Disruptive Restart ISSU          | Cisco IOS XE Release 3.8S | This feature was introduced. Added support for the following GigabitEthernet SPAs to the Minimal Disruptive Restart (MDR) feature on Cisco ASR 1000 Series Router with SIP40:  
-SPA-2X1GE-V2  
-SPA-5X1GE-V2  
-SPA-8X1GE-V2  
-SPA-10X1GE-V2  
-SPA-1X10GE-L-V2 |
| Software Upgrade Process                 | Cisco IOS XE Release 2.6 | This feature was introduced. Cisco ASR 1000 Series Routers support the following software upgrade procedures:  
- In Service Software Upgrades (ISSU) for redundant platforms  
- Upgrade process with service impact for nonredundant platforms. |