Cisco IOS-XE In-Service Software Upgrade Process

Cisco cBR-8 Routers support the following software upgrade procedure:

- 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 Subpackage upgrade modes.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://tools.cisco.com/ITDIT/CFN/. An account on http://www.cisco.com/ is not required.

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Hardware Compatibility Matrix for Cisco cBR Series Routers

Note The hardware components introduced in a given Cisco IOS-XE Release are supported in all subsequent releases unless otherwise specified.

Table 1: Hardware Compatibility Matrix for the Cisco cBR Series Routers

Cisco CMTS Platform	Processor Engine	Interface Cards
Cisco cBR-8 Converged Broadband Router	**Cisco IOS-XE Release 3.15.0S and Later Releases** Cisco cBR-8 Supervisor: • PID—CBR-CCAP-SUP-160G • PID—CBR-CCAP-SUP-60G • PID—CBR-SUP-8X10G-PIC	**Cisco IOS-XE Release 3.15.0S and Later Releases** Cisco cBR-8 CCAP Line Cards: • PID—CBR-LC-8D30-16U30 • PID—CBR-LC-8D31-16U30 • PID—CBR-RF-PIC • PID—CBR-RF-PROT-PIC Cisco cBR-8 Downstream PHY Modules: • PID—CBR-D30-DS-MOD • PID—CBR-D31-DS-MOD Cisco cBR-8 Upstream PHY Modules: • PID—CBR-D30-US-MOD

Prerequisites for Performing ISSU

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

- The router has two SUP setup.
- Standby SUP must be in hot standby.
- Auto-boot is enabled.
- Both SUP are in the sub-package mode, running the same image from the same path.
- Target consolidated image is copied to active SUP in the same directory of the packages.conf file that the system is booted up with.
- At lease 700MB free space on bootflash of both SUP.

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 cBR Series Routers

For the Cisco cBR Series Routers, ISSU-compatibility depends on the software subpackage being upgraded and the hardware configuration. Consolidated packages are ISSU-compatible in dual SUP configurations only and have other limitations described later in this document.

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 cBR Series Routers are designed to run one version of Cisco IOS XE for all consolidated packages and subpackages on an SUP, and running subpackages from different versions of Cisco IOS XE can cause unexpected router behavior.

In Service One-Shot Software Upgrade Procedure

In service one-shot software upgrade procedure enables you to upgrade or downgrade software using a single command. One-shot ISSU needs minimal user intervention or monitoring. 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.

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

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**request platform software package install node bootflash:** **Example:** `Router# request platform software package install node bootflash:subpkg_3_16/cbrsup-universalk9.03.16.00.S.155-3.S-std.SPA.bin`	Upgrades the cBR-8 router using one-shot ISSU procedure.

In Service One-Shot Software Upgrade Rollback

If the customer is not satisfied with the new package after the upgrade, the system can go back to previous working state using rollback operation. It contains 3 separate commands: rollback RP0, rollback RP1 and then reload the system.

Note Rollback operation can only go back one step in the history. If the customer wants to go back several steps, multiple rollback operations are needed.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.

Step 2	**request platform software package install rp** *rp-slot* **rollback**
	
	Example:
	
	`Router# request platform software package install rp 0 rollback`
	`Router# request platform software package install rp 1 rollback`
		Go back to previous working state.

Step 3	**reload** **Example:** `Router# reload`	Reboot the router.

Additional References

The following sections provide references related to the ISSU feature.

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for ISSU

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

Note The below table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for ISSU

Feature Name	Releases	Feature Information
ISSU	Cisco IOS-XE Release 3.16.0S	This feature was introduced on the Cisco cBR Series Converged Broadband Routers.