



# Cisco IOS-XE In-Service Software Upgrade Process

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Cisco cBR-8 Routers support the In-Service Software Upgrades (ISSU) for redundant platforms.

Your software release may not support all the features that are documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. The Feature Information Table at the end of this document provides information about the documented features and lists the releases in which each feature is supported.

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 the Cisco cBR Series Routers



### Note

The hardware components that are 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	<b>Cisco IOS-XE Release 16.5.1 and Later Releases</b> Cisco cBR-8 Supervisor: <ul style="list-style-type: none"> <li>• PID—CBR-SUP-250G</li> <li>• PID—CBR-CCAP-SUP-160G</li> </ul>	<b>Cisco IOS-XE Release 16.5.1 and Later Releases</b> Cisco cBR-8 CCAP Line Cards: <ul style="list-style-type: none"> <li>• PID—CBR-LC-8D30-16U30</li> <li>• PID—CBR-LC-8D31-16U30</li> <li>• PID—CBR-RF-PIC</li> <li>• PID—CBR-RF-PROT-PIC</li> <li>• PID—CBR-CCAP-LC-40G</li> <li>• PID—CBR-CCAP-LC-40G-R</li> <li>• PID—CBR-CCAP-LC-G2-R</li> <li>• PID—CBR-SUP-8X10G-PIC</li> <li>• PID—CBR-2X100G-PIC</li> </ul> Digital PICs: <ul style="list-style-type: none"> <li>• PID—CBR-DPIC-8X10G</li> <li>• PID—CBR-DPIC-2X100G</li> </ul> Cisco cBR-8 Downstream PHY Module: <ul style="list-style-type: none"> <li>• PID—CBR-D31-DS-MOD</li> </ul> Cisco cBR-8 Upstream PHY Modules: <ul style="list-style-type: none"> <li>• PID—CBR-D31-US-MOD</li> </ul>



**Note** Do not use DPICs (8X10G and 2x100G) to forward IP traffic, as it may cause buffer exhaustion, leading to line card reload.

The only allowed traffic on a DPIC interface is DEPI, UEPI, and GCP traffic from the Cisco cBR-8 router to Remote PHY devices. Other traffic such as DHCP, SSH, and UTSC should flow via another router, since DPICs cannot be used for normal routing.

# Information about In-Service Software Upgrade

Cisco cBR-8 Routers support the In-Service Software Upgrades (ISSU) for redundant platforms. The ISSU process allows software to be updated or otherwise modified while packet forwarding continues with the benefit of LCHA.

For the Cisco cBR Series Routers, ISSU-compatibility depends on the software subpackage being upgraded and the hardware configuration.

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 on an SUP, and running subpackages from different versions of Cisco IOS-XE can cause unexpected router behavior.

## How to Configure In-Service Software Upgrade

This section describes the configuration of the ISSU feature:

### Configuring Subpackage Upgrade

#### Subpackages Upgrade

Subpackage upgrade allows a subset of the running software to be upgraded. It is intended for patching small and targeted fix instead of full image upgrade. Subpackage upgrade supports both single and dual SUP setup.

#### Single SUP Subpackages Upgrade

##### Before you begin

Be sure to complete the following prerequisites before running the ISSU process:

- Config register autoboot enabled.
- Target patch copied to active SUP in the same directory of the packages.conf file system is booted up with.
- If needed copy patch info file to SUP.
- Enough bootflash disk space on SUP.

##### Procedure

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b>  Router> <b>enable</b>	Enables privileged EXEC mode. <ul style="list-style-type: none"><li>• Enter your password if prompted.</li></ul>

	Command or Action	Purpose
<b>Step 2</b>	<b>request platform software package install rp <i>rp-slot</i> file bootflash:</b>  <b>Example:</b>  <pre>Router# request platform software package install rp 1 file bootflash:cbrsup-universalk9.03.17.00.S.156-1.S-std.SPA.bin</pre>	Upgrades the cBR-8 router with one SUP using subpackages ISSU procedure.

## Dual SUPs Subpackages Upgrade

### Before you begin

Be sure to complete the following prerequisites before running the ISSU process:

- Standby SUP must be in hot standby.
- Config register autoboot enabled.
- Both SUP in sub-package mode, running same base image and patches from same path.
- Target patch copied to active SUP in the same directory of the packages.conf file system is booted up with.
- If needed copy patch info file to both SUPs.
- Enough bootflash disk space on both SUPs.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b>  <pre>Router&gt; enable</pre>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>request platform software package install node file bootflash:</b>  <b>Example:</b>  <pre>Router# request platform software package install node file bootflash:cbrsup-universalk9.03.17.00.S.156-1.S-std.SPA.bin</pre>	Upgrades the cBR-8 router with dual SUPs using subpackages ISSU procedure.

## Line Card Only In-Service Software Upgrade

If the upgrade fails or you cancel manually at line card upgrade stage, you can initiate a line card only upgrade.

Use the **request platform software package install node linecard-only** command to upgrade only the line card to the same version as the one in the current active SUP, the customer can choose to upgrade one line card or all the line cards in the chassis.

Use this command together with the **request platform software package install node file *file-path* noreload linecard** command to upgrade SUP first, and then upgrade the line card.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> <pre>Router&gt; enable</pre>	Enables privileged EXEC mode. Enter your password if prompted.
<b>Step 2</b>	<b>request platform software package install node linecard-only</b> <b>Example:</b> <pre>Router# request platform software package install node linecard-only all</pre>	Upgrade all line cards to the same version as the one in the current active SUP.

## ISSU Upgrade Across Major Releases

Starting from Cisco IOS XE Fuji 16.7.1 release, ISSU can upgrade cbr-8 between major releases.

**Step 1** Copy the base image to active and standby SUPs. Copy the ISSU target image to active SUP.

```
copy <location>/<base_image> <location_active_sup>
copy <location>/<base_image> <location_standby_sup>
copy <location>/<target_image> <location_active_sup>
```

**Step 2** Expand base image to both SUPs at the same folder.

```
request platform software package expand file <location_active_sup>/<base_image>
request platform software package expand file <location_standby_sup>/<base_image>
```

**Step 3** Config register for auto boot (eg) config-reg 0x2102.

```
config-register 0x2102
boot system <location_active_sup>/packages.conf
```

**Step 4** Save then reload router via subpackage mode.

```
reload
```

**Step 5** After boot up, verify base image loaded using **show version running** and check more.

**Step 6** Copy the target image to active SUP in the same location as before.

```
copy <location>/<target_image> <location_active_sup>
```

**Step 7** Using Request command to do ISSU.

```
request platform software package install node file <location_active_sup>/<target_image>
```

## 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.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for In-Service Software Upgrade

Use Cisco Feature Navigator to find information about the 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 the <https://cfnng.cisco.com/> link. An account on the Cisco.com page is not required.



**Note** The following table lists the software release in which a given feature is introduced. 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 Fuji 16.7.1	This feature was integrated on the cisco cBR Series Converged Broadband Routers.