Reducing Power Consumption

This document describes how to reduce power consumption on the Cisco cBR Series Converged Broadband Router.

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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Finding Feature Information

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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	**Cisco IOS-XE Release 16.5.1 and Later Releases** Cisco cBR-8 Supervisor: • PID—CBR-SUP-250G • PID—CBR-CCAP-SUP-160G	**Cisco IOS-XE Release 16.5.1 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 • PID—CBR-CCAP-LC-40G • PID—CBR-CCAP-LC-40G-R • PID—CBR-CCAP-LC-G2-R • PID—CBR-SUP-8X10G-PIC • PID—CBR-2X100G-PIC Digital PICs: • PID—CBR-DPIC-8X10G • PID—CBR-DPIC-2X100G Cisco cBR-8 Downstream PHY Module: • PID—CBR-D31-DS-MOD Cisco cBR-8 Upstream PHY Modules: • PID—CBR-D31-US-MOD

Information About Reducing Power Consumption

A Cisco cBR-8 CCAP line card has two downstream PHY modules. The first downstream PHY module has port number 0 through port number 3. The second downstream PHY module has port number 4 through port number 7. Each downstream PHY module consumes approximately 70W of power even if no RF channels are used. By default, both downstream PHY modules are powered up.

To reduce power consumption in the Cisco cBR-8, you can power down the second downstream PHY module.

The power-saving configuration is retained for supervisor card reload, supervisor high availability, LCHA, and LCPR configurations.

Restrictions for Setting Up Power-Saving Configuration

The following restrictions are applicable for setting up power-saving configuration:

- Before powering down the second downstream PHY module, you must shut down the downstream controllers.
- You cannot power down the downstream PHY module on a redundant line card.
- The redundant line card must be in the hot standby mode.

Configure Reduction of Power Consumption

Before powering down the second downstream PHY module, you must shut down the downstream controllers.

To shut down downstream controllers 4 to 7, run the following commands:

```
Router# enable
Router# configure terminal
Router(config)# controller integrated-Cable slot/subslot/port
Router (config-controller)# shutdown
```

The following example shows how to shut down downstream controllers 4 to 7.

```
Router# enable
Router# configure terminal
Router(config)# controller integrated-Cable 1/0/4
Router (config-controller)# shutdown
```

To power down the second downstream PHY module, run the following commands:

```
Router# enable
Router# configure terminal
Router(config)# cable downstream power-down-2nd-module slot
```

The following example shows how to power down the PHY module in slot 1.

```
Router# enable
Router# configure terminal
Router(config)# cable downstream power-down-2nd-module slot 1
```

Verifying the Power-Saving Configuration

After powering down the second downstream PHY module, the power consumption in downstream controllers 4 to 7 changes to 0.

To check power consumption in downstream controllers 4 to 7, run the following command:

```
Router# show cable card 1/0 ds-phy display | include Watts

Port0-3 Power Consumption 82781 (mWatts), Port4-7 Power Consumption 53443 (mWatts)
```

To check power consumption in downstream controllers 4 to 7 after powering down the downstream PHY module, run the following command.

```
Router#show cable card 1/0 ds-phy display | include Watts
Port0-3 Power Consumption 82781 (mWatts), Port4-7 Power Consumption 0 (mWatts)
```

The second downstream PHY module information shows *Powered down to save energy* when the **show cable card slot/sub-slot ds-phy display | include detected** command is run.

Feature Information for Reducing Power Consumption

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 Reducing Power Consumption

Feature Name	Releases	Feature Information
Reducing Power Consumption	Cisco IOS XE Fuji 16.9.1a	This feature was introduced in Cisco IOS XE Fuji 16.9.1 on the Cisco cBR Series Converged Broadband Routers.