Voltage Thresholds for AC Power Supply Module Mode Control

This document describes how to configure the voltage thresholds for switching modes in AC Power SupplyModule (PSM).

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	**Cisco IOS-XE Release 16.5.1 and Later Releases** Cisco cBR-8 Supervisor: • PID—CBR-SUP-250G • PID—CBR-CCAP-SUP-160G • PID—CBR-CCAP-SUP-60G • PID—CBR-SUP-8X10G-PIC	**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 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 • PID—CBR-D31-US-MOD

Information about Voltage Thresholds for AC PSM Mode Control

Configuring voltage thresholds help switch between different modes when power budget provided by AC PSMs is not sufficient to power Field Replaceable Units (FRUs).

Overview of Voltage Thresholds for AC PSM Mode Control

The AC PSM can operate in either 120V or 220V mode.

When the input voltage is between 70V and 197V, the PSM operates in the 120V mode with 1300W power capacity. When input voltage drops below 85V, the PSM powers down completely and its power capacity becomes 0W.

When the input voltage is greater than 197V, the PSM operates in the 220V mode with 3000W power capacity. When input voltage drops below 190V, the PSM switches to the 120V mode and its power capacity decreases to 1300W.

To allow users configure mode switching, two new hystersis thresholds Voff_3000W and Von_3000W have been provided. The hystersis thresholds define when the PSM should switch modes and can be configured using CLI commands.

For example, if *Voff_3000W* is configured as 180V, the PSM switches to the 120V mode with 1300W capacity when input voltage drops below 180V. If *Von_3000W* is configured as 200V, the PSM switches to the 220V mode when input voltage increases to more than 200V.

Table 2: Voltage Thresholds for Mode Control

Threshold	Default Value	Configurable Range
Voff_3000W	190V	The value of Voff_3000W can be 170V or greater. The value of Von_3000W can be 200V or lesser. The value of Voff_3000W must be less than the value of Von_3000W.
Von_3000W	197V	

How to Configure Voltage Thresholds for AC PSM Mode Control

Configuring Voltage Thresholds for AC PSM Mode Control

To configure voltage thresholds, run the **platform power protection ac220v voff von** command as shown below:

```
Router# configure terminal
platform power protection ac220v voff von
```

To use the default voltage thresholds, run the **no platform power protection ac220v** command as shown below:

```
Router# configure terminal
no platform power protection ac220v
```

Note By default, power protection action is disabled to avoid service outage. If protection action is disabled, any online FRU is not powered down in the event of insufficient power budget, but any newly installed line card is not powered up.

To enable the power protection action, run the **platform power protection action shutdown linecard** command:

```
Router# configure terminal
platform power protection action shutdown linecard
```

Verifying Voltage Thresholds for AC PSM Mode Control

To verify the voltage thresholds configuration, use the **sh run** command as shown in the example below:

```
Router# configure terminal
Router (config)# sh run | i protection
platform power protection ac220v 180 200
```

Configuration Examples

This section provides configuration examples for the voltage threshold feature.

Example: Configuring Voltage Thresholds for AC PSM Mode Control

The following example shows how to configure voltage thresholds:

```
Router# configure terminal
platform power protection ac220v 180 200
```

The following example shows how to disable DPS:

```
Router# configure terminal
no platform power protection ac220v
```

Feature Information for Voltage Thresholds for AC PSM Mode Control

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 3: Feature Information for Voltage Thresholds for AC PSM Mode Control

Feature Name	Releases	Feature Information
Voltage Thresholds for AC PSM Mode Control	Cisco IOS XE Fuji 16.7.1	This feature was introduced in Cisco IOS XE Fuji 16.7.1 on the Cisco cBR Series Converged Broadband Routers.