



# Cisco Remote PHY Fault Management

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This document describes how to configure the events for fault management on the Cisco cBR Series Converged Broadband Router.

- [Information About Fault Management, on page 1](#)
- [How to Configure RPD Events, on page 2](#)
- [Configuration Examples , on page 4](#)
- [Feature Information for R-PHY Fault Management, on page 4](#)

## Information About Fault Management

Fault management on RPD is required for remote monitoring, detection, diagnosis, reporting, and correcting the issues.

The Fault management module provides the following support:

- RPD can send events to the CCAP core
- CCAP core can get events from RPD
- Send RPD events using SNMP traps
- On the CCAP core, view log in to the CLI
- SNMP poll events are supported

## RPD Event Reporting

An RPD logs events, generates asynchronous notifications that indicate malfunction situations, and notifies the operator about important events. The RPD event reporting includes two methods of reporting.

- During the initialization of RPD, CCAP core synchronizes events from the RPD.
- During run-time operations, RPD notifies the CCAP Core of the events

## Restrictions for Configuring RPD Events

Following restrictions are applicable:

A maximum of 1000 events are retained on Cisco cBR. The RPD retains 1000 events locally and 1000 events in pending state.

## How to Configure RPD Events

### Configuring RPD Events

You can configure an event profile and apply it to RPD. Use the following commands to configure RPD events:

```
enable
configure terminal
cable profile rpd-event profile_id
  priority {emergency|alert|critical|error|warning|notice|informational|debug}
  {0x0|0x1|0x2|0x3}
  enable-notify
```

- 0x0—No log
- 0x1— Save log in RPD local storage
- 0x2—Report to Cisco cBR
- 0x3— Save log in RPD local storage and report to Cisco cBR

You must enable-notifications for the RPD to report any event to the Core.

### Applying the Event Profile to RPD

Use the following commands to apply the Event Profile to an RPD:

```
enable
configure terminal
cable rpd rpd_name
  rpd-event profile profile_id
```




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**Note** If RPD is online when changing the profile, reset the RPD, after you change the profile.

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### Enable RPD Event Trap

You can enable RPD event traps to send RPD events using SNMP traps. Use the following commands to configure RPD event traps:

```
enable
configure terminal
snmp-server enable traps rpd-event priority
```

Priority can be 1-8, where:

- 1—Enable RPD event trap for emergency priority

- 2— Enable RPD event trap for alert priority
- 3— Enable RPD event trap for critical priority
- 4— Enable RPD event trap for error priority
- 5— Enable RPD event trap for warning priority
- 6— Enable RPD event trap for notice priority
- 7— Enable RPD event trap for informational priority
- 8— Enable RPD event trap for debug priority

The priority higher than the selected priority is also displayed.

### Configure SNMP Trap Server

You can configure SNMP trap server on the cable modem using the following commands:

```
enable
configure terminal
Router# snmp-server host ip_address traps version 2c public udp-port port_number
```

where,

- *ip\_address*—IP address of the server
- *port\_number*—UDP port number assigned to receive the SNMP traps. The same port number must also be configured on the SNMP server.

## Getting RPD Events

To retrieve events from RPD, use the **cable rpd [RPD IP|RPD MAC|all] event {locallog|pending}** command, as given in the following example:

```
Router#cable rpd 30.84.2.111 event pending
```

## Clearing All Events on Cisco cBR Database

To remove all Events on Cisco cBR, use the **clear cable rpd all event** command, as given in the following example:

```
Router#clear cable rpd all event
```

## Viewing the RPD Events

To view all RPD Events, use the **show cable rpd [RPD IP|RPD MAC] event** command as given in the following example.

```
Router# show cable rpd 93.3.50.7 event
RPD          EventId      Level Count  LastTime      Message
0004.9f00.0861 66070204  Error  1    Feb21 12:11:06 GCP Connection Failure
CCAP-IP=30.85.33.2;RPD-ID=0004.9f00.0861;
```

```
0004.9f00.0861 2148074241 Error 1 Feb21 12:11:25 Session failed:connecting timeout,
@SLAVE: 93.3.50.7:None --> 30.85.33.2:8190;RPD-ID=0004.9f00.0861;
```

## Viewing RPD Events Using Log

To view all RPD Events, use the show logging command, as given in the following example.

```
Router# show logging | include RPD-ID=0004.9f00.0861
004181: Feb 21 12:18:59.649 CST: %RPHYMAN-3-RPD_EVENT_ERROR: CLC5: rphyman:
GCP Connection Failure CCAP-IP=30.85.33.2;RPD-ID=0004.9f00.0861;EVENT-ID=66070204;
FirstTime=2017-2-21,12:11:6.0;
LastTime=2017-2-21,12:11:6.0;
Count=1;PendingQueue;
004185: Feb 21 12:19:18.875 CST: %RPHYMAN-3-RPD_EVENT_ERROR: CLC5: rphyman:
Session failed:connecting timeout, @SLAVE: 93.3.50.7:None --> 10.10.10.12:1190;
RPD-ID=0004.9f00.0861;
EVENT-ID=2148074241;
FirstTime=2017-2-21,12:11:25.0;
LastTime=2017-2-21,12:11:25.0;
Count=1;PendingQueue;
```

## Configuration Examples

This section provides example for the fault management configuration on Cisco cBR-8.

### Example: RPD Event Configuration

```
enable
configure terminal
cable profile rpd-event 6
  priority emergency 0x3
  priority alert 0x3
  priority critical 0x3
  priority error 0x3
  priority warning 0x3
  priority notice 0x3
  priority informational 0x3
  enable-notify
cable rpd node6
  identifier badb.ad13.5e08
  core-interface Te3/1/5
    principal
    rpd-ds 0 downstream-cable 3/0/17 profile 10
    rpd-us 0 upstream-cable 3/0/34 profile 13
  r-dti 16
  rpd-event profile 6
```

## Feature Information for R-PHY Fault Management

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 [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn) link. An account on the [Cisco.com](http://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 1: Feature Information for R-PHY Fault Management**

<b>Feature Name</b>	<b>Releases</b>	<b>Feature Information</b>
R-PHY Fault Management	Cisco 1x2 / Compact Shelf RPD Software 3.1	This feature was integrated into the Cisco Remote PHY Device.

