



Operations of Cisco Cloud Native Broadband Router

Cisco cnBR supports day-to-day operations of the Data-over-Cable Service Interface Specifications (DOCSIS) system from the deployment to the monitoring for optimal operations. This chapter describes utilities to facilitate typical workflows during such operations.

- [RPD Cutover, on page 1](#)
- [RPD Operations, on page 2](#)

RPD Cutover

Cisco cnBR Manager supports the Remote PHY Device (RPD) Cutover process through a GUI-based step-by-step wizard to move the RPDs from an existing cBR-8 system to a Cisco cnBR. RPD cutover assumes the Cisco cnBR is operational and the related service group (SG) configuration is ready before running this wizard. The wizard focuses on step-by-step instructions, preparation, and post verification including cable modem, CPE, and RF signal.

Prerequisites for RPD Cutover

- Target RPD is online and connected to cBR-8 system.
- Cisco cnBR is operational and healthy.
- Target SG is configured and verified on Cisco cnBR.
- SG configuration has the correct Secure Software Download (SSD) configuration.
- The SSD Image is in the TFTP or HTTP server.
- Network connectivity between Cisco cnBR and target cutover RPD is available.

Perform RPD Cutover from cBR-8 to Cisco cnBR

Choose **cnBR Manager > Remote PHY Device Management** from the Cisco Operations Hub main menu and click **Cutover RPD** to start RPD Cutover. The wizard presents fields for entry in sets on a progressive series of interface pages.

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- Step 1** Set target details at the Connection page.
- Select or input original cBR-8 Access Protocol, IP Address, Username, Password, and Enable Password.
 - Click **Connect to cBR-8** to see all RPDs on the cBR-8 available for selection.
 - Select the target RPD to cutover and target Cisco cnBR.
 - Fill in expected values for the `CM online ratio threshold after cutover:` (for example: 95) and `Max wait-time after cutover init:` (for example: 40) fields.
 - Click **Next Step**.
- Step 2** Get prechecks done at the Pre-Check page.
- This step automatically performs prechecks. If a check fails, correct the failure, and click the rerun icon to rerun the precheck.
 - After all prechecks are complete, manually update the RPD CCAP-CORE-List from cBR-8 to Cisco cnBR at the DHCP server.
 - If the same CM/CPE IP scopes must move from the original cBR-8 to Cisco cnBR on DHCP server, move it.
 - Check the confirm check box when it is complete.
 - Click **Start Cutover** to start the RPD cutover process.
- Step 3** View progress and summary information at the Cutover page.
- Click **Next Step** when the RPD successfully comes online on Cisco cnBR and the target Cable Modem comes online within the time that is specified in the MAX wait-time field.
- Step 4** Get postchecks done at the Post-Check page.
- After these checks are complete, click **Next Step**.
- Step 5** View the Summary Report at the Report page. If there is any issue during this task, click **View Details** to get more information. Rollback tips are available in case you want to rollback when the cutover is not successful.
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RPD Operations

cnBR Manager allows you to add, edit, delete, and replace RPDs serviced by a Cisco cnBR using the Configurator interface. This section provides step-by-step instructions to add, edit, delete, and replace RPDs.

Add RPDs

Before you begin

- Use an existing template or create new SG and L3 templates. See [Configure cnBR using cnBR Manager](#) for steps to create new SG templates and L3 templates.
- Have the MAC address of the target RPD at hand.

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- Step 1** Log in to the Cisco Operations Hub.
- Step 2** Choose **cnBR Manager > Remote PHY Device Management** from the Cisco Operations Hub main menu and click **Add RPD**.

Step 3 Select the Cisco cnBR and enter the target RPD information.

cnBR, RPD MAC, RPD Name, SG Name, SG Template, and L3 Template are required fields.

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Step 4 To configure Video Services, check the **Configure Video Services** check box.

- a) Click **Add Template**.
- b) Select the Downstream port and Video QAM Template from the drop-down lists.

On selection of a Video QAM Template, the Cisco Operations Hub populates the default values of startSessionId, groupAddress, sourceAddress, and idInSg. You can edit the values as necessary.

Note Video QAM is only applicable to Downstream ports.

- c) Click the **Save** icon after providing all the inputs.

You can add multiple Video QAM Templates per Downstream port.

Step 5 Click **Next Step**.

Step 6 Wait for the cnBR Manager to complete the automated prechecks. Check the box at the bottom of the checklist to confirm that RPD is physically connected. Click **Next Step**.

The cnBR Manager starts to add the RPD. The progress is displayed in this page.

Step 7 If the operation is successful, click **Next Step**.

If it fails, the cnBR Manager displays a message to let you know that this step has failed.

Step 8 Wait for the cnBR Manager to perform the automated postchecks. Click **Next Step**.

The cnBR Manager displays a summary report that has the results of the operation.

What to do next

If adding the RPD fails during Steps 6 or 7, the cnBR Manager displays the error information. Use this information to diagnose and correct the problem. After you fix the problem, restart the **Add RPD** operation from Step 1. If the problem resolution requires a change in the configuration, delete and add the RPD again with the updated configuration.

Edit RPDs

Table 1: Feature History

Feature Name	Release Information	Feature Description
Simplified RPD Parameter Editing	Cisco cnBR 21.1	You can use the Configurator interface to edit SG/L3 template and other parameters of online RPDs instead of deleting and readding the RPD with new parameters.

Before you begin

- Have the MAC address of the target RPD at hand.

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- Step 1** Log in to the Cisco Operations Hub.
- Step 2** Choose **cnBR Manager > Remote PHY Device Management** from the Cisco Operations Hub main menu and click **Edit RPD**.
- Step 3** Select the Cisco cnBR Cluster, RPD MAC address, SG Template and/or L3 Template. You can also update RPD Location attributes in this step. Click **Next Step**.
- Note** If you updated the parameters of an existing SG / L3 template or created a new template, to apply this particular template to the RPD, select it in this step. The new parameters will be applied after the RPD edit operation is successful.
- Step 4** Wait for the cnBR Manager to complete the RPD edit operation. This may take a few minutes. Click **Next Step**.
- Step 5** Wait for the cnBR Manager to perform the automated post checks. Click **Next Step**
- Note** This step will be skipped if there is error in the previous step.
- Step 6** The cnBR Manager displays a detailed summary report at the end of the RPD edit operation.
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Delete RPDs

Before you begin

- Have the MAC address of the target RPD at hand.

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- Step 1** Log in to the Cisco Operations Hub.
- Step 2** Choose **cnBR Manager > Remote PHY Device Management** from the Cisco Operations Hub main menu and click **Delete RPD**.
- Step 3** Select the Cisco cnBR and the target RPD and click **Next Step**.
- Step 4** Wait for the cnBR Manager to check if the target cnBR is ready. Check the box to confirm you want to delete the RPD and click **Start Delete**.

The cnBR Manager starts to delete RPD. The progress is displayed in this page.

- Step 5** If the operation is successful, click **Next Step**. If it fails, the cnBR Manager displays a message to inform you that this step has failed; skip to Step 8.
- Step 6** Wait for the cnBR Manager to perform the automated postchecks. Click **Next Step**. (If Step 6 fails, the cnBR Manager skips this step.)
- Step 7** The cnBR Manager displays a summary report that has the results of the operation.
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What to do next

If deleting the RPD fails at Steps 6 or 7, the cnBR Manager displays the error information. Use this information to diagnose and correct the problem. After you fix the problem, restart the **Delete RPD** operation from Step 1.

Replace RPDs

Before you begin

- Have the MAC addresses of the target RPD and the new RPD at hand.
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- Step 1** Log in to the Cisco Operations Hub.
- Step 2** Choose **cnBR Manager > Remote PHY Device Management** from the Cisco Operations Hub main menu and click **Replace RPD**.
- Step 3** Select the Cisco cnBR and the existing RPD you want to replace. Enter the MAC address of the new RPD and the maximum wait time for the new RPD to be online. Click **Next Step**.
- Note** New RPDs need at least 12 minutes to come online.
- Step 4** Wait for the cnBR Manager to complete automated prechecks. Check the box at the bottom of the checklist to confirm that the RPD is physically connected. Click **Start Replace**.
The cnBR Manager starts to replace RPD. The progress is displayed in this page.
- Step 5** If the operation is successful, click **Next Step**. If it fails, the cnBR Manager displays a message to inform you that this step has failed; skip to Step 8.
- Step 6** Wait for the cnBR Manager to perform the automated postchecks. Click **Next Step**. (If Step 6 fails, the cnBR Manager skips this step.)
- Step 7** The cnBR Manager displays a summary report that has the results of the operation.
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What to do next

If replacing the RPD failed at Steps 6 or 7, the cnBR Manager displays the error information. Use this information to diagnose and correct the problem. After you fix the problem, restart the **Replace RPD** operation from Step 1.

Monitor RPDs

After you add or replace an RPD serviced by Cisco cnBR, you can use the **RPD Overview** of the **cnBR Manager - Remote PHY Device Management** window to monitor the status of the RPD. The **RPD List Summary** page in Grafana also has the same details.

Figure 1: RPD List Summary Dashboard

