



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 Devices** 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

This table lists the features and the releases in which the feature was introduced and gives a small description of the feature.

Table 1: Feature History

Feature Name	Release Information	Feature Description
Out-of-band Services Configuration	Cisco cnBR 21.2	You can create and update OOB configuration templates, and save them to each RPD when you add or edit an RPD.

Before you begin

- Use an existing template or create new SG and L3 templates. For information on how to create new SG templates and L3 templates, see [Configure cnBR using cnBR Manager](#).
- Note the MAC address of the target RPD.

Step 1 Log into Cisco Operations Hub.

Step 2 Click **Cisco Operations Hub > cnBR Manager > Remote PHY Devices > Add RPD**.

Step 3 Select the Cisco cnBR and enter the required RPD details.

cnBR Cluster, RPD MAC, RPD Name, Service Group Name, Service Group Template, and L3 Template are mandatory fields.

Step 4 To create a configuration template for video services, check the **Configure Video and Out-of-band Services** check box. You can create multiple video QAM templates and OOB services templates.

You can also add multiple video QAM templates per downstream port.

Step 5 Enter the following details for the template that you are creating:

This table explains the fields you have to populate in the Configure Video and Out-of-band Services screen to configure Video QAM and Out-of-band Services.

Field	Video QAM Template	OOB Services
Port	Choose only a downstream port.	Choose an upstream or a downstream port.
Template	Choose a video template.	Choose an OOB template.
Start Session ID	Default value is auto-populated. You can edit the value.	Default value is auto-populated. You can edit the value. This field is grayed out for upstream ports as it is not applicable.

Field	Video QAM Template	OOB Services
Group ID	Default value is auto-populated. You can edit the value.	Default value is auto-populated. You can edit the value. This field is grayed out for upstream ports as it is not applicable.
Source ID	Default value is auto-populated. You can edit the value.	Default value is auto-populated. You can edit the value. This field is grayed out for upstream ports as it is not applicable.
Channel ID Range	Default value is auto-populated. You can edit the value.	Default value is auto-populated. You can edit the value. This field is grayed out for upstream ports as it is not applicable.
Action	Click the Save icon. To delete a template, you can click the delete icon.	Click the Save icon. To delete a template, you can click the delete icon.

Step 6 Click **Next Step**.

Wait for the cnBR Manager to complete the automated prechecks.

Step 7 Check the **Please confirm RPD has been connected physically and start RPD config adding** check box at the bottom of the checklist to confirm that the RPD is physically connected. Click **Next Step**.
The cnBR Manager starts to add the RPD. Progress is displayed on this page.

Step 8 If the operation is successful, click **Next Step**.

If the operation fails, the cnBR Manager displays a failure message.

Wait for the cnBR Manager to perform the automated postchecks.

Step 9 Click **Next Step**.

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

What to do next

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

Edit RPDs

This table lists the features and the releases in which the feature was introduced and gives a small description of the feature.

Table 2: Feature History

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

Before you begin

Note the MAC address of the target RPD.

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- Step 1** Log in to the Cisco Operations Hub.
- Step 2** Choose **cnBR Manager > Remote PHY Devices** from the Cisco Operations Hub main menu and click **Edit RPD**.
- Step 3** Choose the Cisco cnBR Cluster and the RPD MAC address.
- For the chosen RPD, you can edit the RPD Name, SG Template, SG Name, L3 Template, and RPD Location attributes. If video, OOB, NDF, or NDR services are also configured for the RPD, you can update the parameters in the template table or add a new template. For more details, see [Add RPDs, on page 2](#).
- Step 4** After updating, click **Next Step**.
- If you updated the parameters of an existing template or added a new template, the new parameters are applied after the RPD edit operation is successful.
- Wait for the cnBR Manager to complete the RPD edit operation. This may take a few minutes.
- Step 5** Click **Next Step**.
- Wait for the cnBR Manager to perform the automated post checks.
- Step 6** Click **Next Step**.
- If an error appears in the previous step, this step is skipped.
- 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** Click **Cisco Operations Hub** > **cnBR Manager** > **Remote PHY Devices** > **Delete RPD**.
- Step 3** Select the **cnBR Cluster** 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.

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** Click **Cisco Operations Hub** > **cnBR Manager** > **Remote PHY Devices** > **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.

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.

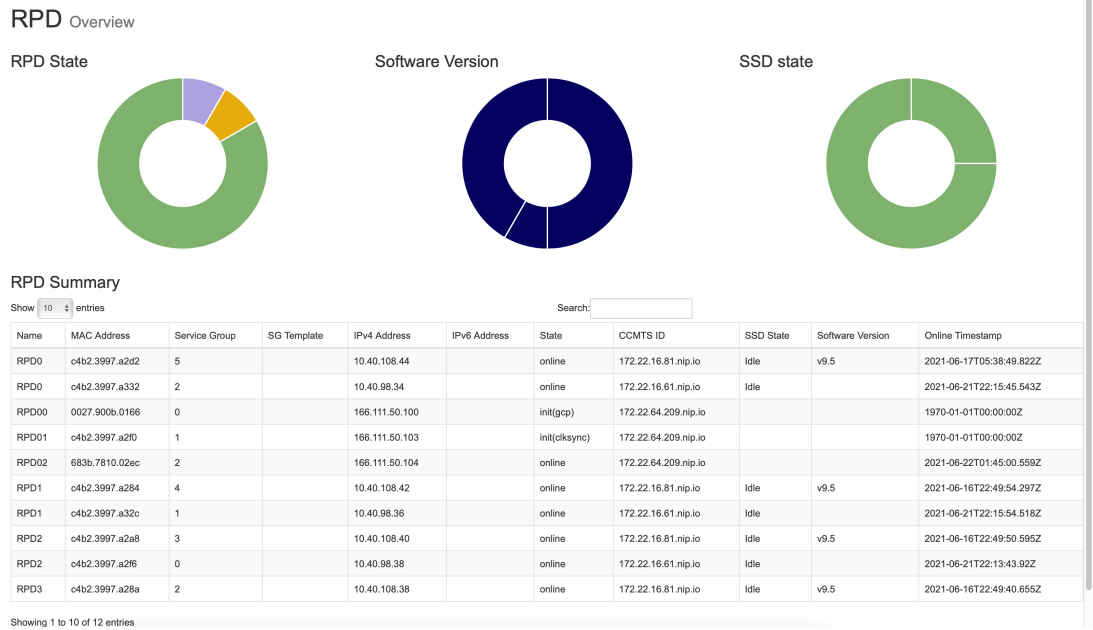
Monitor RPDs

After you add or replace an RPD serviced by Cisco cnBR, you can use the **Inventory** to monitor the status of the RPD.

To view the RPD inventory, click **Cisco Operations Hub > cnBR Manager > Remote PHY Devices > Inventory**.

The **RPD List Summary** dashboard also has the same information.

Figure 1: RPD List Summary Dashboard



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