



Information about Cisco Smart PHY

Cisco Smart PHY is a highly resilient cloud-native solution for installing, configuring, monitoring, and troubleshooting Remote PHY Devices (RPD) serviced by Cisco cBR-8 routers.

Smart PHY significantly simplifies RPD deployments thereby improving operational efficiency and reducing the total cost of ownership for Communication Service Providers (CSPs).

Smart PHY focuses on:

- Simplifying Distributed Access Architecture (DAA) deployment
- Providing Device Lifecycle management for RPDs
- Dynamic RPD Resource Management & CIN traffic engineering
- Enabling Common DHCP policy
- RPD GCP Redirect Management
- Surfacing Advanced Monitoring, Troubleshooting, and Cluster Health Metrics for network insights
- Enabling Programmatic API control for easy third party integration
- [Benefits of Cisco Smart PHY, on page 1](#)
- [Configuring DAA Infrastructure, on page 2](#)
- [How to Use Cisco Smart PHY, on page 2](#)

Benefits of Cisco Smart PHY

Below are some of the benefits of using the Cisco Smart PHY application:

- Zero-Touch discovery of RPDs as they are connected to the CIN
- Error free RPD Provisioning, which is validated by YANG data models
- Deployment validation ensures that unauthorized changes are detected and flagged
- RPD Software management
- REST-based API eases integration with third party systems

Configuring DAA Infrastructure

This section describes the steps that you should take to ensure your Distributed Access Architecture (DAA) infrastructure works with Smart PHY.

Configuring DHCP

To establish a GCP session with Smart PHY, and later to be GCP-redirected to the appropriate CCAP Cores, the RPDs must first discover Smart PHY’s Converged Interconnect Network (CIN) virtual IP address.

Discovery is performed using DHCP. The DHCP servers assigning leases to RPDs must include the CIN virtual IP address of Cisco Smart PHY in the suboption 61 CCAP Cores, under DHCP option 43.

To configure suboption 61 CCAP Cores under DHCP option 43, contact your DHCP software vendor.

Configuring Cisco cBR-8 for Smart PHY

Smart PHY collects SNMP traps and syslog messages to determine and report the operational status of Cisco cBR-8 routers and RPDs.

Enabling Syslog

You can configure your cBR-8 routers to send syslog messages to Smart PHY, including the messages for Line Card high availability (HA) events.

To enable syslog, enter the following commands on your cBR-8 routers:

```
configure terminal
logging host <Smart PHY CIN Virtual IP Address> transport [tcp|udp]
port 8514
logging trap informational
cable logging layer2events
```

Enabling SNMP Traps

You can configure your cBR-8 routers to send SNMP traps to Smart PHY.

To enable SNMP traps on your cBR-8 router, enter the following commands:

```
configure terminal
snmp-server host <Smart PHY CIN Virtual IP address> version 2c public udp-port <port-number>
```

How to Use Cisco Smart PHY

Table 1: Feature History

Feature Name	Release information	Description
Modernized and Refreshed Smart PHY UI for System Settings and Appearance	Cisco Smart PHY 22.2	The Smart PHY UI has been completely refreshed and modernized with a new look and feel, and streamlined workflows.

This section describes how to use the Cisco Smart PHY application:

- [Logging into Smart PHY UI, on page 3](#)
- [Provisioning an RPD, on page 3](#)

Logging into Smart PHY UI

- Step 1** In the browser's address bar, enter `https://<fqdn>` or `https://<Cisco Smart PHY master virtual IP address>.nip.io`. The access URL is based on the initial cluster configuration.
- When you access Cisco Smart PHY for the first time, the browser may display a warning that the site is untrusted or the connection is not private. The warning is due to Smart PHY's use of a self-signed certificate. Follow the browser prompts to add a security exception.
- Step 2** Log in through the Cisco Operations Hub UI using the password that you provided during the initial installation. The **Welcome** page appears.
- Step 3** Click the **Cisco Smart PHY** box to open the application. The Cisco Smart PHY **Overview** page appears. To open the Cisco Smart PHY application each time after you log in, check the checkbox for **Open Smart PHY at login**.
- Step 4** To exit the web GUI, close the browser window or log out using the option in the main menu.
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Overview

When you access Smart PHY from the Operations Hub's Welcome page, or if you have configured Smart PHY to open at login, your browser automatically loads Smart PHY's Overview page.

The Smart PHY Overview provides you with a centralized view of Inventory and Provisioning data. Displayed statistics include the number of RPDs, CCAP Cores, Credential Profiles, RPD Associations, and Service Definitions present in the system.

The Overview page is accessible by clicking the Operations Hub main menu, then navigating to **Smart PHY > Overview**.

If you are interested in viewing more detailed cluster specific Smart PHY metrics, please visit Operations Hub's **Dashboards** section.

Provisioning an RPD

- Step 1** Create a Credential Profile. For more information, see [Creating a New Credential Profile](#).
- Step 2** Add the Cisco cBR-8 router to the inventory. For more information, see [Adding Devices through GUI](#) and [Importing Devices in Bulk](#).

Step 3 Create a Service Definition.

For more information, see [Creating Service Definitions](#).

Step 4 Create an RPD Association.

Step 5 Save the changes.

For more information, see [Remote PHY Device Association](#).

Note After providing all the mandatory parameters, Smart PHY pushes the RPD's configuration to the Cisco cBR-8 router. When the RPD boots, the RPD establishes a GCP session with Smart PHY. Smart PHY GCP-redirects the RPD to the DOCSIS Principal Core configured in the RPD Association, post which the RPD's status in Smart PHY is `Online`.
