Manage RPDs

Add and Assign RPDs

Step 1   Choose Cisco Operations Hub main menu > **Smart PHY** > **RPD Automation** > **RPD Assignment**.

RPD Assignment can be specified manually or by importing a CSV file.

Step 2   Click ⊕ icon to assign a service template to an RPD.

Fill in all the fields.

Field Name	Description
RPD Parameters	
Shelf	Select the check box to configure Cisco Remote PHY Shelf 7200, Cisco Remote PHY Shelf 300, or Cisco Remote PHY Shelf 600.
	This feature is supported only from Cisco IOS XE Gibraltar 16.12.1z on Cisco cBR-8 routers.
	The following fields are enabled when you select this check box:
	• Base Power (dBmV)
	• Tilt Pivot Freq (Hz)
	• Tilt Slope (dBmV)
	RPD does not restart after updating these high availability (HA) parameters.

Field Name	Description
Enforce Controller compatibility with IOS XE 17.6.1	When you enable this option, Cisco Smart PHY generates Cisco IOS XE Bengaluru 17.6.1 compatible controller configurations for Cisco cBR-8 routers running versions of Cisco IOS XE earlier than 17.6.1.
RPD Name	Name for the RPD. This RPD name is also used in the `cable rpd` CLI command.
RPD MAC Address	MAC address of the RPD.
Node Segmentation	Node segmentation of the RPD: 1x1, 1x2, or 2x2.
Service Definition	Service Definition as created in the **Service Definitions** tab. If Cisco Smart PHY does not manage the principal CCAP core and if the **Principal Core** field is empty, then this **Service Definition** field is optional.
Disable Network Delay	The default is value is **No**. • No—Apply network delay from service definition to RPD. • Yes—Do not apply network delay from service definition to RPD. Changing this value to `yes` is service impacting, if the RPD's assigned Service Definition/Template has network-delay configured.
Latitude	Latitude of the RPD (GPS coordinates)
Longitude	Longitude of the RPD (GPS coordinates)
RPD Description	Description for the RPD
Cable DSG TGs	Semicolon separated list of DOCSIS Set-Top Gateway (DSG) Tunnel Group (TG) identifications. If present, this list overrides the list from the Service Definition.
Data / Principal Core	
Principal Core	The name of the managed Cisco cBR-8 router or the unmanaged Core, which is the Principal Converged Cable Access Platform (CCAP) Core for the RPD. If you choose a managed Principal Core, the Core must provide the RPD with data and narrowband digital forward (NDF)/narrowband digital return (NDR) services. This core may also provide the following services: • Out-of-band (OOB) SCTE 55–1 • Video services: If there is no separate auxiliary Video Core
Principal Core Interface	If the Principal Core is a managed Cisco cBR-8 router, choose the complete name of the TenGigabitEthernet DPIC interface used to deliver data service. Leave this field empty if there is no Principal Core or if the principal core is unmanaged.
SSD Profile	If the Principal Core is a managed cBR-8 router, enter the Secure Software Download (SSD) profile ID. If the Principal Core is Unmanaged, leave this field empty.

Table 1: First and Second Logical DS/US Pairing

Field Name	Description
Downstream Physical Port	Downstream RPD port of the logical pairing. Always `0` for the first pairing and not applicable to second pairing for 1x1 or 1x2 node segmentation. May be `0` or `1` for 2x2 node segmentation.
Base Power (dBmV)	The base channel power for Compact Shelf. Set the base power level. Following is the available ranges for the **Base Power**: • Node RPDs: 20 -22 • Shelf RPDs: 24–61
Tilt Pivot Freq (Hz)	Frequency of the tilt pivot point. The valid range is 0-121800000. Tilt pivot point is the maximum frequency point where the Tilt Slope is applicable.
Tilt Slope (dBmV)	Set the tilt slope. The valid range is 0–8.
Upstream Physical Port	Upstream RPD Port of the logical pairing. May be "0" or "1." Not applicable to second pairing for 1x1 node segmentation.
DS Data Service Group	All RPDs with the same data service group share the downstream controller for Data Service (Virtual Splitting for Data). Not applicable to second pairing for 1x1 or 1x2 node segmentation.
US Data Service Group	Upstream data service group allows multiple RPDs to share the same upstream controller for upstream data traffic. Not applicable to second pairing for 1x1 node segmentation.

Table 2: Video Configuration

| Field Name	Description
Video Core	Name of the Cisco cBR-8 router, which is the auxiliary CCAP core for the RPD that provides video services. Leave this field empty if principal core provides the video services.
Video Core Interfaces	List of complete names of the TenGigabitEthernet DPIC interfaces to be used for Video Services.

Field Name	Description
Video Service Groups	Video service group (VSG) names. Video is forwarded only in the downstream direction.
	Not applicable to second pairing for 1x1 or 1x2 node segmentation.
	Important Cisco Smart PHY does not allow configuring a VSG on a Downstream Port 1 (ds1) with `broadcast` keyword through the Cisco cBR-8 CLI. If you try to configure, the CLI shows an error.
	Cisco Smart PHY maps a VSG to a video interface based on the order of the VSGs and interfaces if a VSG can map to more than one interface:
	• A VSG can map to more than one video interface if the video interface list includes both ports 0 and 2 or both ports 4 and 6 of one Cisco cBR-8 Series 8x10G Remote PHY Digital Physical Interface Card (CBR-DPIC-8X10G).
	• Cisco Smart PHY maps the first VSG to a matching Principal Core interface if present; otherwise, it maps the first VSG to the first matching video interface.
	• Cisco Smart PHY maps second, third, and fourth VSGs to the highest numbered matching video interfaces.
	Cisco Smart PHY reorders video interfaces and VSGs, so that a video interface that matches the Principal Core interface and the associated VSGs are listed first.

Table 3: OOB & Additional Core Configuration

Field Name	Description
OOB Core	Name of the Cisco cBR-8 router which is the CCAP core for the RPD that provides out-of-band (OOB) SCTE 55–1 service and NDF/NDR services.
	This field must match either the **Principal Core** or the auxiliary **Video Core**. Leave this field empty if the OOB 55–1 and NDF/NDR services are not used.
OOB Core Interface	Complete name of the TenGigabitEthernet DPIC interface to be used for out-of-band 55–1 and NDF/NDR service.
	Leave this field empty if the OOB 55–1 and NDF/NDR services are not used.
Downstream VOM ID	OOB 55–1 Downstream Virtual out-of-band Modulator (VOM) Identification (ID). If present, this value overrides the value from the Service Definition.
Downstream VOM Profile	OOB 55–1 Downstream VOM profile. If present, this value overrides the value from the Service Definition.
Upstream VARPD ID	OOB 55–1 Upstream Virtual Advanced Return Path Demodulator (VARPD) ID. If present, this value overrides the value from the Service Definition.

Field Name	Description
Upstream VARPD Profile	OOB 55–1 Upstream VARPD profile for first logical Downstream/Upstream (DS/US) pairing. If present, this value overrides the value from the Service Definition.
	The upstream VARPD profile (upstreamVarpdProfile) and the second upstream VARPD profile (secondUpstreamVarpdProfile) can have the same value. For more details, see Common OOB 55-1 US Profile for Cisco RPD 1x2/2x2, on page 10.
Second Upstream VARPD Profile	OOB 55–1 Upstream VARPD profile for second logical Downstream/Upstream (DS/US) pairing. If present, this value overrides the value from the Service Definition.
	The upstream VARPD profile (upstreamVarpdProfile) and the second upstream VARPD profile (secondUpstreamVarpdProfile) can have the same value. For more details, see Common OOB 55-1 US Profile for Cisco RPD 1x2/2x2, on page 10.
Additional Cores	Add additional unmanaged Cores to the `GCP Redirect` list by selecting them here. You can select multiple additional cores.
	You can configure multiple unmanaged Cores. If an unmanaged core is added as a principal Core, the same core cannot be configured again as an additional core. Thus, the unmanaged Principal Core and the unmanaged Additional Core fields are mutually exclusive.
Downstream Controller Profile	Primary downstream CCAP controller profile.
Upstream Controller Profile	Primary upstream CCAP controller profile.

Or to import a CSV file, click the icon, select the file and click **Import**.
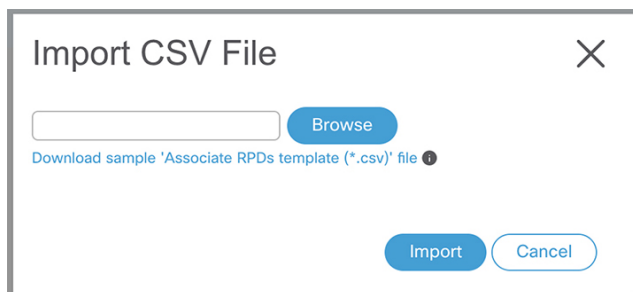
Step 3   Click **Save**.

Step 4   Click **Assign**.

Create a New Service Definition

Step 1   Choose Cisco Operations Hub main menu > **Smart PHY** > **RPD Automation** > **Service Definitions**.

Step 2   Click + **Create New**.

Step 3   Enter a name and description.

If you have many service definitions, make the name and description as informative as possible because that information is displayed on the **RPD Assignment** and **Overview** tabs.

Step 4   (Optional) Check the **Set as Default** check box.

Step 5   Enter the definitions for the Service Definition.

When a device is added or updated using this service definition, the content you specify here is applied to the device. All fields that are not marked as optional are mandatory.

Cisco Smart PHY supports unique downstream (DS) and upstream (US) configurations for each port of RPD 2x2.

Table 4: Service Definition Parameters

Name	Description	Service Affecting Parameter
Name	Name of the service definition	NA
Description	A brief description on service definition	No
Event Profile	RPD Event Profile Set	No
R-DTI Profile	Remote DOCSIS Timing Interface (R-DTI) Set	No
Pilot Tone Profile	Pilot tone profile.	Yes
Cable DSG TGs	DSG tag IDs.	Yes
First Logical DS/US Pairing		
Service Group Profile	Pre-existing Cable Service Profile-Group on the Cisco cBR-8 router.	Yes
Downstream Controller Profile	Primary downstream CCAP controller profile.	Yes
RF Power Profiles	Apply one or more RF Power Adjust Profile(s) to modify the RPD's Downstream RF channel power output.	No
Upstream Controller Profile	Primary upstream CCAP controller profile.	Yes
Second Logical DS/US Pairing		
Enable	Select the check box to enable the second logical DS/US pairing. The Cisco Smart PHY application supports different controller profiles and fiber node configurations for second logical pairing in 2x2 RPD.	Yes
Service Group Profile	Pre-existing Cable Service Profile-Group on the Cisco cBR-8 router.	Yes
Downstream Controller Profile	Secondary downstream CCAP controller profile.	Yes

Name	Description	Service Affecting Parameter
RF Power Profiles	Apply one or more RF Power Adjust Profile(s) to modify the RPD's Downstream RF channel power output.	No
Upstream Controller Profile	Secondary upstream CCAP controller profile.	Yes
Enable MAC Domain Splitting	Select the check box to split a MAC domain between two fiber-nodes that share the same downstream controller.	Yes
Network Delay	Network delay has two options: • **DLM**—System periodically measures the network latency between the CCAP core and the RPD, and dynamically updates the cable map advance. Range is interval in seconds. The valid range for measuring DLM is 1–420 seconds. *Measure only*—Choose to measure network latency between the CCAP core and the RPD. This option is not for updating the cable map advance. You can select this option for a service definition in use, but cannot deselect it. • **Static**—The cable map advance is adjusted by a fixed amount. The valid range is 30–100,000 microseconds. This range is the Converged Interconnect Network (CIN) delay in microseconds. CIN is the network between the CCAP core and RPD. You can change the network-delay range for a service definition in use. For more details, see *DEPI Latency Measurement in the Service Template* section in this document.	No
Out Of Band		
Downstream VOM ID	OOB 55–1 Downstream Virtual out-of-band Modulator (VOM) identification (ID).	No
Downstream VOM Profile	OOB 55–1 Downstream VOM profile.	No
Upstream VARPD ID	OOB 55–1 Upstream Virtual Advanced Return Path Demodulator (VARPD) ID.	No
Upstream VARPD Profile	OOB 55–1 Upstream VARPD profile for first logical downstream/upstream (DS/US) pairing. The upstream VARPD profile (upstreamVarpdProfile) and the second upstream VARPD profile (secondUpstreamVarpdProfile) can have the same value. For more details, see Common OOB 55-1 US Profile for Cisco RPD 1x2/2x2, on page 10.	No

Name	Description	Service Affecting Parameter
Second Upstream VARPD Profile	OOB 55–1 Upstream VARPD profile for second logical downstream/upstream (DS/US) pairing. The upstream VARPD profile (upstreamVarpdProfile) and the second upstream VARPD profile (secondUpstreamVarpdProfile) can have the same value. For more details, see Common OOB 55-1 US Profile for Cisco RPD 1x2/2x2, on page 10.	No
NDF/NDR		
Pseudowire Name	**NDF** Narrowband digital forward pseudowire name. Supports up to three pseudowire names and profile ID sets per DS port. **NDR** Narrowband digital return pseudowire name. Supports up to three pseudowire names and profile ID sets per US port.	No
Profile ID	• NDF—NDF profile ID corresponding to the above NDF pseudowire. • NDR—NDR profile ID corresponding to above NDF pseudowire.	No
NDF: Port	Downstream port, Port 0, or Port 1 to apply NDF pseudowire name and profile ID for a 2x2 RPD.	No
NDR: Port	Upstream port, Port 0, or Port 1 to apply NDR pseudowire name and profile ID for a 2x2 RPD.	No
Load Balance	Paste the load balance XML text in the text field. Use the ntool to convert the XML configuration from the Cisco cBR-8 router to the required XML format.	No

Step 6   Click **Save** or **Save & Assign**.

Edit Service Definition

You can edit service definition parameters dynamically even when RPDs are associated to those service definitions. You can then apply the changes to one or more RPDs already running that specific service definition.

However, you cannot apply the service definition parameters that lead to a service disruption or `config push error` in the Cisco cBR-8 router to RPDs that are already provisioned. You can save those service definitions in the Cisco Smart PHY application and apply them to new RPD associations.

When RPDs are associated to a service definition, you cannot apply some of the parameters to the existing RPDs, after updating them. For more details, see Table 1. Reprovision the RPDs if you want to apply the changes. In addition, if the Cisco cBR-8 router is in maintenance mode, you cannot propagate these changes to the RPDs. In these scenarios, configuration error messages appear in the **RPD Details** panel.

Step 1   Choose **RPD Automation** > **Service Definitions**.

Step 2   Click the service definition which you want to edit and update the required fields.

Step 3   Click **Save** or **Save & Assign**.

Save the changes to the Cisco Smart PHY database and then you can assign it to one or more RPDs running this service definition. The **Save & Assign** button is disabled when the service impacting parameters are updated.

Provision RPD for Video Support

Cisco Smart PHY can be configured to use distinct Cisco cBR-8 routers as the DOCSIS Principal core and auxiliary video core.

The DOCSIS configuration is pushed to the Principal core and the video configuration is pushed to the specified Video Auxiliary core. You can configure the OOB core to be either the Principal core or the Video Auxiliary core. The OOB 55-1 and NDF/NDR configurations are pushed to the OOB core through the OOB core interface. You can configure only the Pilot tone, SSD, and DLM on the Principal core.

☞

Important   When integrating Viavi with RPD, NDF or NDR must be configured on the Principal Core. Viavi communicates with the core using SNMP MIBs that are only available on the Principal Core.

Cisco Smart PHY can also provision an RPD for supporting video using a standalone Cisco cBR-8 router and use Cisco cnBR or some other Core that is not managed by Cisco Smart PHY, as the Principal core.

If the principal core is not managed by Cisco Smart PHY and you do not have OOB 55-1 configuration on the auxiliary video core, the RPD Assignment does not require Service Definition configuration.

✏

Note   If RPD is online with both Principal Core and separate Video Auxiliary Core, and you remove the Video Core configuration, the RPD reboots and becomes online with only the Principal Core.

If the RPD is online with only the Principal Core, and later if you configure a separate Video Auxiliary Core, the RPD does not reboot automatically. You must manually reboot the RPD to get it to redirect to the new Video Core. After the RPD reboots, it becomes online with both cores.

⚠

Caution   When you use the REST API to provision an RPD with separate video cores, you must use only version 2 (V2) RPD-pairing REST API. If you use V1 RPD-pairing API to provision an RPD with separate video cores, it may lead to data corruption. Also, version 1 (V1) of the RPD-pairing REST API does not support features such as 1x2 node segmentation, 2x2 node segmentation, OOB override, DLM, or separate video cores.

Common OOB 55-1 US Profile for Cisco RPD 1x2/2x2

The Cisco cBR-8 router supports configuring the same profile to both upstream physical RF ports in an RPD. Service providers can expand the OOB 55-1 service group on to the second US port without the need for extra hardware.

This feature is available only in the following versions of Cisco cBR-8 series routers:

- Cisco IOS XE Fuji 16.8.1 and earlier

- Cisco IOS XE Amsterdam 17.3.1x and later

Example

```
cable rpd SAME_OOB_US_PROFILE
identifier 2222.5555.2323
core-interface Te6/1/2
principal
rpd-ds 0 downstream-cable 6/0/1 profile 1
rpd-us 0 upstream-cable 6/0/1 profile 1
rpd-us 1 upstream-cable 6/0/2 profile 1
core-interface Te6/1/2
rpd-ds 0 downstream-oob-vom 1 profile 100
rpd-us 0 upstream-oob-varpd 1 profile 101
rpd-us 1 upstream-oob-varpd 1 profile 101
r-dti 1
rpd-event profile 0
cable fiber-node 2
downstream Downstream-Cable 6/0/1
downstream sg-channel 0 23 downstream-Cable 6/0/1 rf-channel 0 23
upstream Upstream-Cable 6/0/1
upstream sg-channel 0 1 upstream-Cable 6/0/1 us-channel 0 1
upstream sg-channel 2 3 peer-node-us
service-group managed md 0 Cable 6/0/1
service-group profile ram_SG1
cable fiber-node 3
downstream Downstream-Cable 6/0/1
downstream sg-channel 0 23 downstream-Cable 6/0/1 rf-channel 0 23
upstream Upstream-Cable 6/0/2
upstream sg-channel 2 3 upstream-Cable 6/0/2 us-channel 0 1
upstream sg-channel 0 1 peer-node-us
service-group managed md 0 Cable 6/0/1
service-group profile ram_SG1
```

In REST API, the following restrictions are applicable:

- OOB is enabled only if the following four parameters are configured within the specified range:

  - downstreamVomId

  - downstreamVomProfile

  - upstreamVarpdId

  - upstreamVarpdProfile

- The NDF configuration is independent of the OOB downstream and upstream configurations.

- NDR configuration is independent of OOB downstream and upstream configurations.

REST set-service-template

```
{
  "autoAccept": false,
  "defaultFlag": false,
  "dlmMeasureOnly": false,
  "dsgTunnelGroupIDs": "1",
  "elementsList": [
    {
      "description": "Service profile with 1.5Gbps Data Service. 16x4 DS/US SG channels",
      "downstreamControllerProfile": 0,
      "downstreamVomId": 1,
      "downstreamVomProfile": 1,
      "eventProfile": 0,
      "mdSplitting": false,
      "rdtiConfig": 0,
      "serviceGroupName": "SGProfile",
      "serviceType": "Data",
      "svcNdfProfiles": [
        {
          "portNum": 0,
          "profileId": 100,
          "pwName": "name1"
        }
      ],
      "svcNdrProfiles": [
        {
          "portNum": 0,
          "profileId": 100,
          "pwName": "name1"
        }
      ],
      "upstreamControllerProfile": 0,
      "upstreamVarpdId": 1,
      "upstreamVarpdProfile": 1
    }
  ],
  "loadBalanceXml": "XML String",
  "name": "Gold",
  "networkDelayDlm": 10,
  "networkDelayStatic": "null",
  "pilotToneProfile": 0,
  "secondUpstreamVarpdProfile": 1
}
```

REST get-service-template Response Content Type

```
{
  "autoAccept": false,
  "defaultFlag": false,
  "dlmMeasureOnly": false,
  "dsgTunnelGroupIDs": "1",
  "elementsList": [
    {
      "description": "Service profile with 1.5Gbps Data Service. 16x4 DS/US SG channels",
      "downstreamControllerProfile": 0,
      "downstreamVomId": 1,
      "downstreamVomProfile": 1,
      "eventProfile": 0,
      "mdSplitting": false,
      "rdtiConfig": 0,
      "serviceGroupName": "SGProfile",
      "serviceType": "Data",
      "svcNdfProfiles": [
        {
          "portNum": 0,
          "profileId": 100,
```

```
          "pwName": "name1"
        }
      ],
      "svcNdrProfiles": [
        {
          "portNum": 0,
          "profileId": 100,
          "pwName": "name1"
        }
      ],
      "upstreamControllerProfile": 0,
      "upstreamVarpdId": 1,
      "upstreamVarpdProfile": 1
    }
  ],
  "error": {
    "errorCode": "RecordNotFound",
    "errorMessage": "Record not found : <Record type> <identifier>",
    "errorTag": "Record not found",
    "errorType": "User"
  },
  "loadBalanceXml": "XML String",
  "name": "Gold",
  "networkDelayDlm": 10,
  "networkDelayStatic": "null",
  "pilotToneProfile": 0,
  "rpdsAssigned": 0,
  "rpdsProvisioned": false,
  "secondUpstreamVarpdProfile": 1,
  "status": "Success or Failure. If Failure check Error field for error details."
}
```

Configure Video Service

You can configure video service in Cisco cBR-8 router through Cisco Smart PHY by wiring the video interfaces and video service groups (VSG).

Cisco Smart PHY provides a clear mapping between VSG and video interfaces. RPD node segmentation determines the number of VSGs that you can choose for a video interface.

To add a new video interface, choose Cisco Operations Hub main menu > **RPD Automation** > **RPD Assignment** and click the button.

You can import CSV files from the previous versions of the Cisco Smart PHY application. You can also import a database that is exported from a previous version of the Cisco Smart PHY application.

Configure VSG using API

You can also configure VSG using the Cisco Smart PHY API `setrpdpairinglist`.

This API is backward compatible. It has an extra `videointerfaces` field under `port-config`. The existing video service group mapping with the video interfaces remains without any changes.

Example: Sample RPD Pairing API

```
{
  "setrpdpairinglist": [
    {
      "name": "rpd03",
      "previousname": "rpd03",
      "macaddress": "00049f320825",
      "description": null,
      "approvalstate": "approved",
      "servicetemplate": "d8-sg-split-rdti1",
      "gpslocation": {
        "genericlocation": "",
        "latitude": "",
        "longitude": ""
      },
      "ssdprofileid": 1,
      "disablenetworkdelay": false,
      "preconfigure": true,
      "nodesegmentation": "rpd_1x1",
      "additionalcores": [
        "2004:172:30:0:2eab:a4ff:feff:f36c"
      ],
      "assignedcores": [
        {
          "servicetype": "data",
          "mgmtcore": "video-lwr-s-d8.cisco.com",
          "rpdconnectioninterface": "tengigabitethernet9/1/0",
        },
        {
          "servicetype": "video",
          "mgmtcore": "video-lwr-s-d8.cisco.com",
```

```
                 "rpdconnectioninterface": "tengigabitethernet9/1/0",
               },
             {
                 "servicetype": "video",
                 "mgmtcore": "video-lwr-s-d8.cisco.com",
                 "rpdconnectioninterface": "tengigabitethernet9/1/6",
               },
             {
                 "servicetype": "oob",
                 "mgmtcore": "video-lwr-s-d8.cisco.com",
                 "rpdconnectioninterface": "tengigabitethernet9/1/0",
               }
           ],
           "portconfigs": [
             {
                 "dsport": 0,
                 "usport": 0,
                 "dsservicegroup": "sg-9-0-0",
                 "usservicegroup": "sg-upstream-9-0-0",
                 "videoservicegroups": [
                   "vsg1",  // Index 0 is read along with video interface index 0
                   "vsg2",  // Index 1 is read along with video interface index 1
                   "vsg3"   // Index 2 is read along with video interface index 2
                 ],
                 "videointerfaces":[
                   "tengigabitethernet9/1/0", // Index 0 is read along with vsg index 0
                   "tengigabitethernet9/1/6", // Index 1 is read along with vsg index 1
                   "tengigabitethernet9/1/6" // Index 2 is read along with vsg index 2
                 ]
               }
           ]
         }
       ]
   }
```

### Restrictions and Limitations

- If you use the `setrpdpairinglist` API without the `videoInterfaces` attribute under `port-configs`, Cisco SmartPHY performs an ambiguity resolution. This process does not provide a clear one-to-one mapping.

- If two or more VSGs are configured under the same interface, the `videointerfaces` must repeat to match the one-to-one mapping.

- Add the video interfaces under port-config also in the assigned-cores. If not, the application shows an error.

- The size of the list of video interfaces and the VSGs must be the same.

- Map a VSG to only one interface. However, you can map it to the same interface in a different port.

- If you configure a video interface without mapping to a VSG, the application ignores the video interface.

View RPD History

Step 1   Choose Cisco Operations Hub main menu > **Smart PHY** > **RPD Automation** > **RPD Assignment**.

**Step 2** Select the RPD and click the **Details** button.

The RPD window shows the RPD Summary, RPD State History, RPD CLI, and RPD Automation Errors.
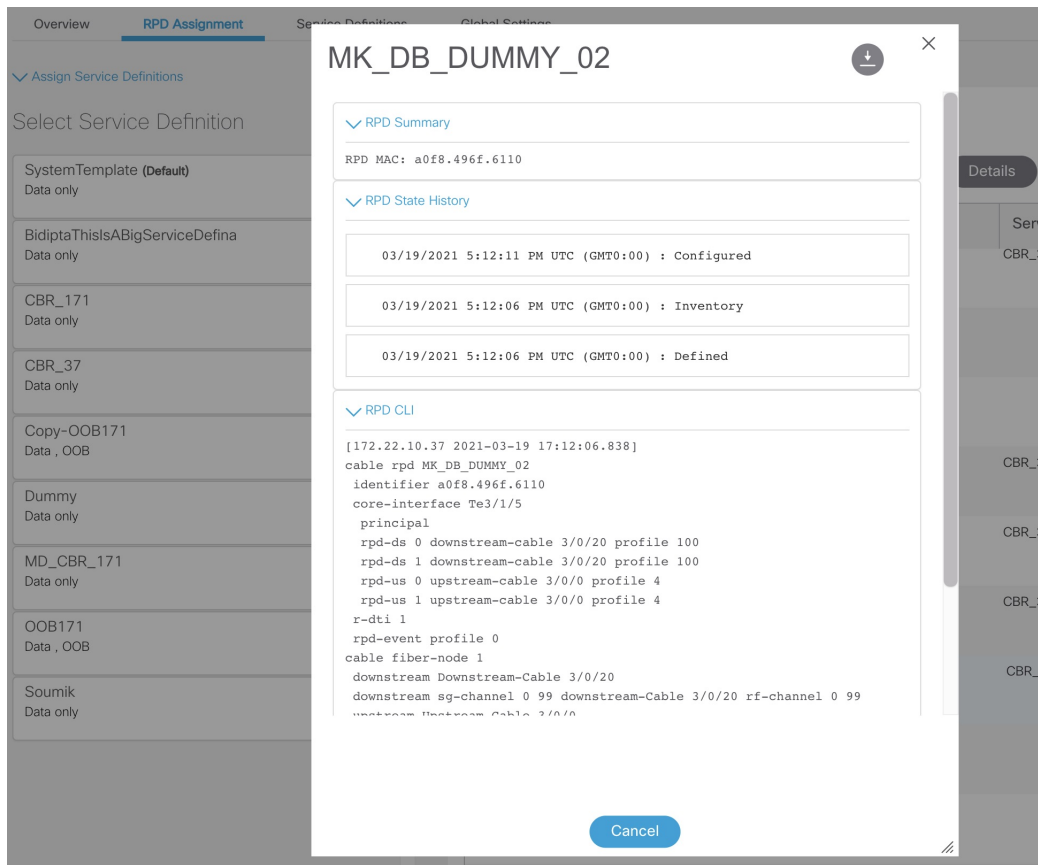
GCP Redirect Configuration

Cisco Smart PHY application supports GCP-redirects in compliance with the I15 revision of the CableLabs Remote PHY specification. By default, the pre-I15 GCP-redirect behavior is applied to all RPDs. You must enable the I15 GCP-redirect behavior.

Figure 1: GCP Redirect Configuration
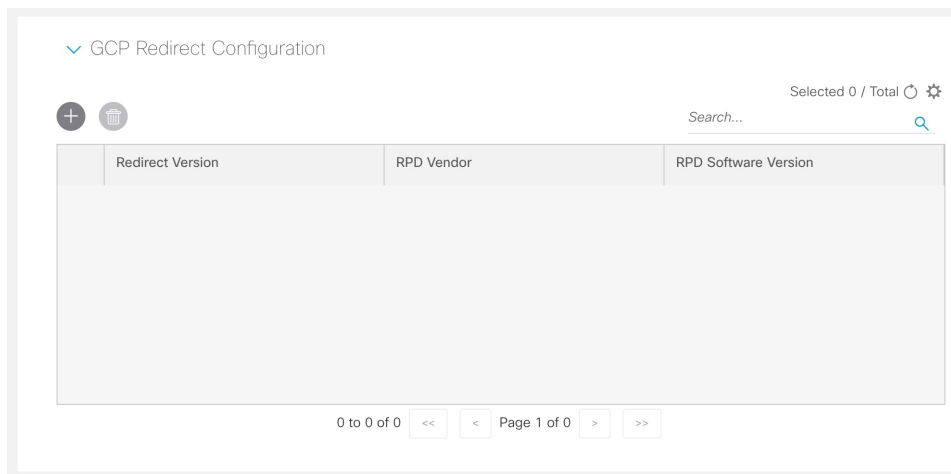
Configure I15 GCP Redirect

Cisco Smart PHY provides the flexibility to configure I15 compliant GCP redirect messages. I15 GCP redirect messages are enabled based on the RPD vendor and the RPD software version. If a matching pattern is available, Cisco Smart PHY initiates GCP redirect message in I15 format. Or the Cisco Smart PHY application continues to send pre-I15 GCP-redirect messages. In such environments, Cisco Smart PHY provides both exact pattern match and regex patterns.

Before configuring I15 GCP Redirect, ensure that your RPDs are compatible with I15 of the Remote PHY specification.

I15 GCP Redirect APIs

Following are the I15 GCP Redirect APIs:

set-redirect-version

The API is used to add GCP redirect version details.

API URL: `https:///rpd-service-manager/rpdorch/v2/gcp/set-redirect-version`

Add the following fields in the request payload:

Field Name	Description
redirectVersion	GCP Redirect Version
rpdVendor	RPD Vendor name
rpdVersion	RPD Software Version

In the following example, Cisco Smart PHY searches for an exact match in the RPD vendor value, while evaluating the software version against a regex pattern:

```
{
  "redirectVersion": "I15",
  "rpdVendor": "**Cisco**",
```

```
    "rpdVersion": "v9.*"
 }
```

remove-redirect-version

The API is used to remove an already configured GCP redirect record from the Cisco Smart PHY application.

API URL: `https:///rpd-service-manager/rpdorch/v2/gcp/remove-redirect-version`

Add the following fields in the request payload:

Field Name	Description
rpdVendor	RPD Vendor name
rpdVersion	RPD Software Version

Example:

```
{
    "rpdVendor": "Cisco",
        "rpdVersion": "v9.*"
 }
```

query-redirect-version

The API is used to query all GCP-redirect version details from the Cisco Smart PHY application.

API URL: `https:///rpd-service-manager/rpdorch/v2/gcp/query-redirect-version`.

This API does not have any parameters.

I15 GCP-redirect Result Notification

The Cisco Smart PHY application displays the result of the `GCP Redirect Notification` in the **Associate RPD Details** panel.

When redirect errors occur, Cisco Smart PHY displays the RPD status as `GcpRedirectError`. The `GcpRedirected` state indicates that the redirect message is processed successfully by the RPD.

I15 GCP-redirect Result Notification