# Release Notes for Cisco Smart PHY 3.1.x

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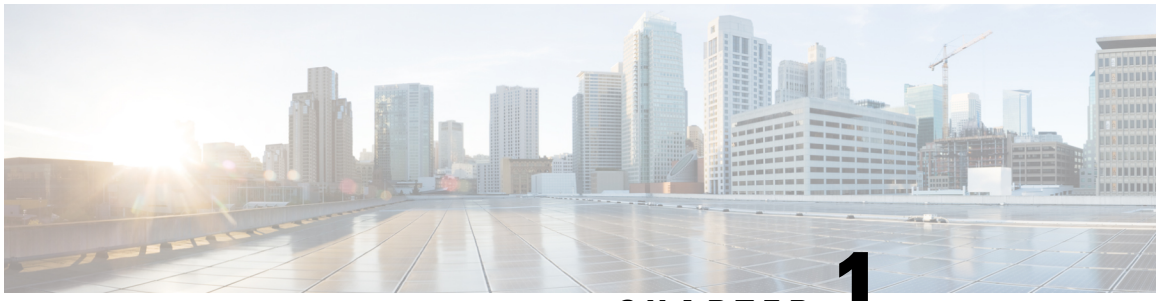

CHAPTER 1

# What's New in Cisco Smart PHY 3.1.x

**Note** Explore the Content Hub, the all new portal that offers an enhanced product documentation experience.

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Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements that were added. It also includes links to detailed documentation, where available.



# New Features in Cisco Smart PHY 3.1.4

The new software features for Cisco Smart PHY 3.1.4 are the following:

### Support for RPD Shelf

Operators can configure the following Remote PHY Shelf RF parameters from the **Add RPD** window of the Cisco Smart PHY application:

- Base Power (dBmV)
- Tilt Pivot Frequency (Hz)
- Tilt Slope (dBmV)

These parameters are supported on the following Cisco Remote PHY Shelfs:

- Cisco Remote PHY Shelf 7200
- Cisco Remote PHY Shelf 600
- Cisco Remote PHY Shelf 300

This feature requires the DOCSIS Principal Core of the shelf to be a Cisco Smart PHY-managed Cisco cBR-8 router running Cisco IOS XE Gibraltar 16.12.1z or later.

Updating these parameters does not cause the Remote PHY Shelf to restart. For more details, see the *Add and Assign RPDs* section of the *Cisco Smart PHY User Guide*.

### Unique Controller Configuration on Each Logical DS and US Pairing

Operators can configure unique downstream and upstream Controller Profiles on each logical DS and US pairings through Service Definitions.

### Unmanaged Core Enhancement

Unmanaged CCAP Cores are now listed along with the managed Cores in the Inventory of the Cisco Smart PHY application.

Operators can choose to assign unmanaged CCAP Cores as either DOCSIS Principal Cores or Additional Auxiliary Cores.

### SSH Key Fetch

Operators can trigger SSH key fetches for Cisco cBR-8 routers that are marked as offline. If the key fetch is successful, Cisco Smart PHY marks the Cisco cBR-8 router as online.

### Manual RPD Sync

Operators can trigger an RPD status synchronization from the Cisco Smart PHY UI. The Cisco Smart PHY application fetches the current RPD status from the managed DOCSIS Principal Core.

### API Enhancement for Cisco cBR-8 Status

Two of the Cisco Smart PHY REST APIs are enhanced to simplify the programmatic control of CCAP Cores:

- `query-core-details` supports filtering on criteria such as CCAP Core `state`.
- `update-ccap-core-status` supports setting all managed CCAP cores to either maintenance or normal modes with the inclusion of the `allCore` parameter.

### Supports 50000 RPDs

The Cisco Smart PHY application supports 50000 RPDs on a 3-node compute cluster. Because the number of RPDs provisioned by Cisco Smart PHY is large, we recommend that the operators work with the Cisco Smart PHY application programmatically through its REST API.

### Deprecated APIs

The following 6 APIs are deprecated in this release:

- `/rpd-service-manager/rpdorch/v1/rpd-pairing/set-rpd-pairing`

- `/rpd-service-manager/rpdorch/v1/rpd-pairing/query-rpd-pairing`
- `/rpd-service-manager/rpdorch/v1/rpd-pairing/query-rpd-mac-pairing`
- `/rpd-service-manager/rpdorch/v1/rpd-pairing/query-rpd-name-pairing`
- `/rpd-service-manager/rpdorch/v1/rpd-pairing/clear-rpd-pairing`
- `/rpd-service-manager/rpdorch/v1/rpd-pairing/delete-rpd-pairing`

# New Features in Cisco Smart PHY 3.1.3

The new software features for Cisco Smart PHY 3.1.3 are the following:

### Platform Enhancements

- Supports Fully Qualified Domain Name (FQDN) to access the web UI and REST APIs.
- OpenID Connect token-based authentication replaces Basic Authentication.
- NGINX replaces Kong API Gateway.
- Admin user password that is entered during installation can be used for logging in. Changing the password when the administrator initially log in, is not mandatory. However, the administrator can change the password at any time.
- Swagger UI is upgraded with JSON Web Token (JWT) authentication.

### Virtual Service Group and Video Interface Configuration

- Explicit 1:1 mapping is enforced between Video Service Group (VSG) and Video Interfaces (VIF).
- The administrator must provide 1:1 mapping between VSG and VIF in the UI or REST API while configuring RPD.
- Narrowcast and broadcast can be in any order as long as the mapping is maintained.
- If 1:1 mapping is not provided, Cisco Smart PHY applies ambiguity resolutions (available from Cisco Smart PHY 3.1.2).

### 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.
- The administrator can configure the same OOB 55-1 upstream profile on both upstream ports of RPD 2x2 and 1x2. Cisco cBR-8 routers must run Cisco IOS XE Amsterdam 17.3.1x or later.
- The Service Definition REST API and web UI allow the administrator to use the same profile in both upstream VARPD profile and second upstream VARPD profile.
- Adding and editing RPD in the RPD Assignment allows the administrator to use the same profile in both upstream VARPD profile and second upstream VARPD profile.

### Maintenance Mode Enhancements

The administrator can change the status of one or more Cisco cBR-8 routers into `Maintenance` mode even if the Cisco cBR-8 routers are offline.

### User Interface Improvements

- Improved UI response time for Inventory, RPD Overview, RPD Assignment, and Service Definition to improve the response time.
- RPD pairing attributes are logically regrouped to improve usability.
- Simplified error message pop-ups.

# New Features in Cisco Smart PHY 3.1.2

The new software features for Cisco Smart PHY 3.1.2 are the following:

### Supports 20000 RPDs

One instance of Cisco Smart PHY supports 20,000 RPDs.

### Video Auxiliary Core

Cisco Smart PHY allows you to configure a video auxiliary Core in addition to the DOCSIS Principal Core for an RPD. The video auxiliary Core must be a Cisco cBR router.

DOCSIS Principal Core can be a different Cisco cBR that is configured by Cisco Smart PHY. Alternatively, DOCSIS Principal Core can be a Cisco Cloud Native Broadband Router (cnBR) that is not configured by Cisco Smart PHY.

You can configure OOB 55-1 on either the DOCSIS Principal Core or the Video Auxiliary Core.

The Inventory window shows statuses of both Principal and Auxiliary Core.

Video Auxiliary Core is supported only on Cisco cBR router running Cisco IOS-XE 17.3.1w or later.

### Cisco cBR Operational Enhancements

Enable or disable the Maintenance mode for one or more Cisco cBR routers. In Maintenance mode, Cisco Smart PHY does not check for liveliness or accept configuration updates on Cisco cBR router.

When a Cisco cBR router is offline, Cisco Smart PHY does not accept or push configuration to that router.

### Fetch SSH Keys

Allows you to view the status of SSH keys and fetch the SSH keys from the UI.

### Swagger API

Reference APIs are available on the Cisco Smart PHY UI.

### DNS Enhancement

Cisco Smart PHY Deployer does not require external DNS resolution of `nip.io` domain and provides an optimized internal DNS resolution for improved performance.

# New Features in Cisco Smart PHY 3.1.1

The Cisco Smart PHY application simplifies the installation, configuration, monitoring, and troubleshooting of Cisco Remote PHY devices (RPD) serviced by Cisco cBR-8 routers. It enables multiple use cases, including the following:

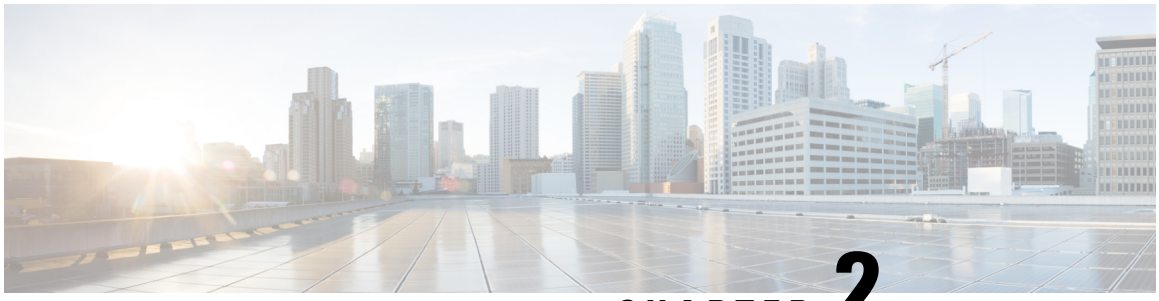
- Distributed Access Architecture (DAA) deployment simplification
- RPD deployment automation
- RPD software lifecycle management
- Traffic engineering

The Cisco Smart PHY application runs on top of Cisco Operations Hub management infrastructure. The Operations Hub uses an infrastructure platform which is common to Cisco cloud native mobility and cable products. The current release provides an Operations Hub version tailored to the requirements of the Cisco Smart PHY application.

The following features are supported in the Cisco Smart PHY 3.1.1 release:

- The deploy script for easily deploying Cisco Smart PHY application and Operations Hub infrastructure on virtual machines (VMs) in a three-node cluster of Cisco Unified Computing System (UCS) servers.
- User interface for dashboard overview and RPD administration.
- User interface, CSV entry, and REST API support for Inventory Management, and RPD cable automation.
    - Service definition template for defining parameters that are common across a group of RPDs.
    - RPD assignment menu for assigning RPDs to CCAP cores, Core interfaces, and service groups; defining RPD-specific parameters.
- Uses GCP-redirect to connect RPDs to multiple CCAP cores, simplifying RPD deployment. The DHCP server only needs to know the IP address of Cisco Smart PHY.
- Sends RPD and fiber node configurations to the Cisco cBR-8 CCAP cores. This feature is compatible with Cisco IOS XE Gibraltar 16.12.1z.
- RPD configuration supports the following:
    - RPD identifier
    - Event, DOCSIS Timing Interface (DTI), Secure Software Download (SSD) profile IDs
    - Core interfaces
    - Upstream and downstream controller and profile IDs for DOCSIS and video
    - NDF, NDR, OOB 55-1 pseudowire, and profile IDs
    - DEPI latency measurement (DLM) settings

- Supports RPD and fiber node configuration with MAC Domain Split
- Supports over 5000 RPDs with 1x1, 1x2, or 2x2 node segmentation.



CHAPTER 2

# Caveats



## Open Caveats in Cisco Smart PHY 3.1.4

The following caveats are found in the Cisco Smart PHY application:

| Caveat ID Number | Description |
|---|---|
| CSCvx75112 | Inventory data is not getting imported all the time, soon after a fresh install. |
| CSCvx76464 | Redis leader election fails at times and the Cisco Smart PHY UI does not work. |

## Resolved Caveats in Cisco Smart PHY 3.1.4

The following caveats are resolved in the Cisco Smart PHY application 3.1.4:

| Caveat ID Number | Description |
|---|---|
| CSCvw76260 | Cisco cBR-8 is getting added to Smart PHY by passing a non-unique UUID. |
| CSCvw80225 | Cisco cBR-8 is not able to come back from maintenance mode. |
| CSCvw81159 | Error 500 seen when v1 version of `SetRPDPairingList` API is used to configure data and video services on RPDs. |

# Open Caveats in Cisco Smart PHY 3.1.3

The following caveat is found in the Cisco Smart PHY application:

| Caveat ID Number | Description |
|---|---|
| CSCvw76260 | Cisco cBR-8 is getting added to Smart PHY by passing a non-unique UUID. |
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| CSCvw81159 | Error 500 seen when v1 version of `SetRPDPairingList` API is used to configure data and video services on RPDs. |

# Resolved Caveats in Cisco Smart PHY 3.1.3

The following caveats are resolved in the Cisco Smart PHY application 3.1.3:

| Caveat ID Number | Description |
|---|---|
| CSCvn25389 | Latency in switching between authentication plugins. |
| CSCvn99646 | UI RPD page displays 502 bad gateway error. |
| CSCvo88956 | Kong does not switch between different authentication plugins after Worker Node power-off. |
| CSCvp07165 | Changing password using the UI users page sometimes fails. |
| CSCvp12529 | Latency seen in creation of Kong Credentials associated with Kong Consumers. |
| CSCvp89858 | Kong pods status remains as CrashLoopBackOffafter new installation of multinode. |
| CSCvp94756 | Cisco Smart PHY does not detect LC switchover or revert back when CBR8 CPU usage is high. |
| CSCvr83277 | UI: RPD Assignment record not updated dynamically with search. |
| CSCvs02350 | Backend: In the service template zero is accepted for secondUpstreamVARPD Profile. |
| CSCvt68898 | `ConfigurePushError` when disable network-delay per RPD in UI. |
| CSCvs02350 | Backend: In the service template zero is accepted for secondUpstreamVARPD Profile. |
| CSCvv78841 | Clear RPD failed from UI due to commit queue failure. |

# Open Caveats in Cisco Smart PHY 3.1.2

The following caveats are found in the Cisco Smart PHY application:

| Caveat ID Number | Description |
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| CSCvn25389 | Latency in switching between authentication plugins. |
| CSCvn99646 | UI RPD page displays 502 bad gateway error. |
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# Resolved Caveats in Cisco Smart PHY 3.1.2

The following caveats are resolved in the Cisco Smart PHY application:

| Caveat ID Number | Description |
|---|---|
| CSCvp94756 | Cisco Smart PHY does not detect LC switchover or revertback when Cisco cBR-8 CPU usage is high. |
| CSCvs63014 | `PushConfig` error gets ignored when deleting is not allowed during LC switchover. |
| CSCvt00378 | Virtual-service-group takes more than 8 minutes to synchronize over to the RPD service manager. |
| CSCvt68898 | `ConfigurePushError` when disabling network-delay per RPD in the UI. |
| CSCvv46603 | RPD is sometimes stuck in `delete pending` state. |
| CSCvv66738 | RPD pairing V2 query returns wrong video after V1 is set with BC first. |
| CSCvv66744 | UI: RPD data doubles in the RPD table when the **Refresh** button is clicked rapidly. |

# Open Caveats in Cisco Smart PHY 3.1.1

The following caveats are found in the Cisco Smart PHY application:

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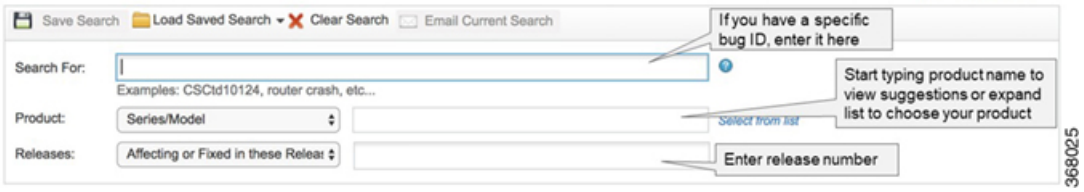
| CSCvs02350 | Backend: In the service template zero is accepted for secondUpstreamVARPD Profile. |
| CSCvt68898 | ConfigurePushError when disable network-delay per RPD in UI. |

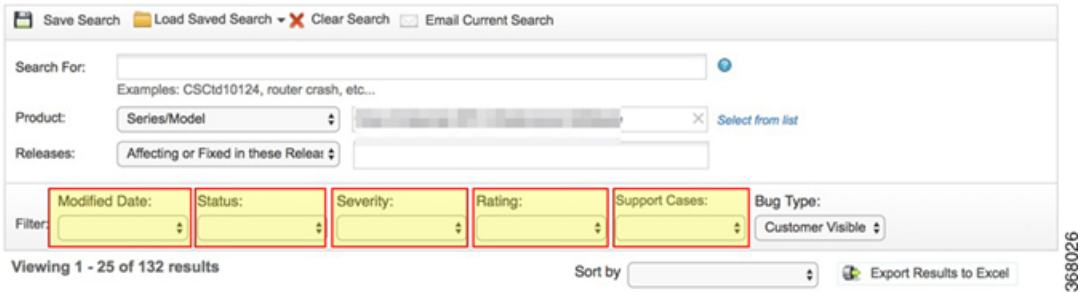
# Cisco Bug Search

Use the Cisco Bug Search Tool to access open and resolved bugs for a release.

The tool allows you to search for a specific bug ID, or for all bugs specific to a product and a release.




You can filter the search results by last modified date, bug status (open, resolved), severity, rating, and support cases.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Load Saved Search
Clear Search
Email Current Search
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Select from list
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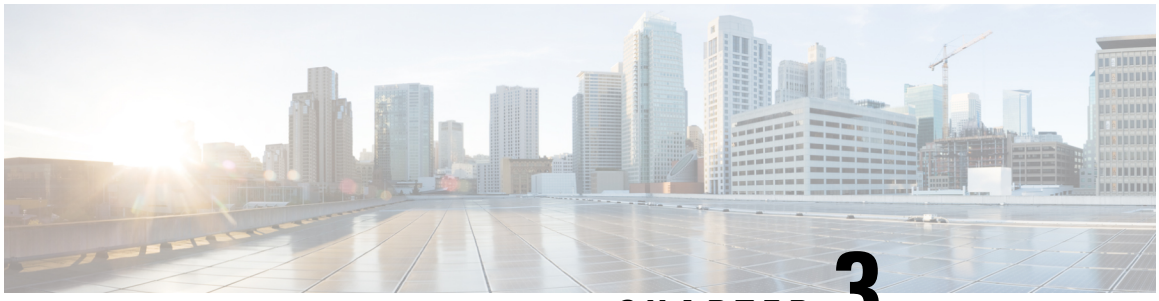

CHAPTER 3

# Other Important Information



# Limitations and Restrictions in Cisco Smart PHY 3.1.x

### Cisco Smart PHY 3.1.5, 3.14, and 3.1.3

The following limitations and restrictions are found in Cisco Smart PHY 3.1.4 and Cisco Smart PHY 3.1.3:

- Upgrading from Cisco Smart PHY 3.1.2 to Cisco Smart PHY 3.1.3 is not available. Deployment of Cisco Smart PHY 3.1.5, 3.1.4, or 3.1.3 requires fresh installation.
- RPD provisioning operations intended for Cisco cBR-8 routers which exhibit high CPU utilization may cause configuration push errors. In this scenario, retry the provisioning operation after the CPU utilization on the Cisco cBR-8 router decreases.
- The Cisco Smart PHY user interface may show slow response when Smart PHY orchestrates 20000 RPDs.

# Cisco Smart PHY Documentation References

We recommend that you view the field notices for this release to see if your software or hardware platforms are affected. If you have an account at Cisco.com, you can find the field notices at http://www.cisco.com/en/US/customer/support/tsd_products_field_notice_summary.html.

If you do not have an account at Cisco.com, you can find the field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html.

**Note** Cisco Smart PHY is generally available for field deployment. However, we recommend that you validate and qualify Cisco Smart PHY in a limited field trial with your specific network configuration requirements in order to ensure a smoother, faster, and successful field deployment.

For information on Cisco Smart PHY, go through the following links:

- Cisco Smart PHY Install and Upgrade Guides
- Cisco Smart PHY User Guide
- Cisco Smart PHY Other Product Documentation