



Release Notes for Cisco Remote PHY Device, Cisco 1x2/Compact Shelf RPD Software 10.x

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CHAPTER

1

What's New in Cisco 1x2/Compact Shelf RPD 10.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.

This document contains information about downloading and installing Cisco 1x2 / Compact Shelf RPD Software 10.7 and its maintenance releases. It also provides new and changed information, hardware support information, limitations, and caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7.1 and its maintenance releases.

We recommend that you view the field notices for this release to see that 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 Cisco1x2 / Compact Shelf RPD Software 10.7.1 is generally available for field deployment. To ensure a smoother, faster, and successful field deployment, we recommend that you validate and qualify the software in a limited field trial.

The versions of Cisco cBR-8 router and RPD must be compatible. If the versions are not compatible, the RPD remains in the **init(gcp)** state. The following table provides information on the compatible cBR-8 and RPD versions:

- Cisco cBR-8 IOS XE Dublin 17.12.1x is interoperable with RPD 10.7.1.
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- [New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7, on page 3](#)
- [New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6.1, on page 6](#)
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- [New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.1, on page 15](#)

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7.1

There are no new software features for Cisco 1x2 / Compact Shelf RPD Software 10.7.1 release.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.7 release are

Support for TLV 67

Cisco RPD 10.7 supports TLV 67 UsOfdmaInitialRangingIuc. For details, see the following table:

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints	Comments
UsOfdmaInitialRangingIuc	Complex TLV	67	variable		
NumSubcarriers	UnsignedShort	67.1	2	R	
Guardband	UnsignedShort	67.2	2	R	

You can use the **show ofdma config** command to obtain the initial ranging configuration:

```
R-PHY#show ofdma config
OFDMA Channel Configuration
...
UCD Message
  UCD fields
    UCID : 16
    CCC : 5
    DSID : 0
    ticks per frame : 1179
    mslot per frame : 237
    Initial Ranging : 128
...
```

Support for TLV 69

Cisco RPD 10.7 supports TLV 69 UsOfdmaDataIuc. For details, see the following table:

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints	Comments
UsOfdmaInitialRangingIu	Complex TLV	69	variable		
DataIuc	UnsignedByte	69.1	1	N/A	Key
StartMinislot	UnsignedByte	69.2	1	N/A	Key
FirstSubcarrierId	UnsignedShort	69.3	2	R	
NumConsecutiveMinislots	UnsignedByte	69.4	1	R	
MinislotPilotPattern	UnsignedByte	69.5	1	R	
DataSymbolModulation	UsOfdmaModulationType	69.6	1	R	

You can use the **show ofdma config** command to obtain the initial ranging configuration:

```
R-PHY#show ofdma config
OFDMA Channel Configuration
...
OFDMA Profile Table:
IUC Bit Loading Pilot Pattern Consec Mslot
5 4096-QAM 9 236
6 2048-QAM 9 236
9 1024-QAM 9 236
13 1024-QAM 10 1
13 128-QAM 11 1
13 1024-QAM 9 48
13 32-QAM 8 150
13 1024-QAM 9 32
```

Support for TLV 78.4 and TLV 78.5

Cisco RPD 10.7 supports TLV 78.4 LateMaps and TLV78.5 IllegalMaps. For details, see the following table:

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints	Comments
LateMaps	UnsignedLong	78.4	8	R	
IllegalMaps	UnsignedLong	78.5	8	R	

Support for TLV 75.5

Cisco RPD 10.7 supports TLV 75.5 operStatusDsOob552. For details, see the following table:

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints	Comments
operStatusDsOob552	OperStatusType	75.5	1	R	

Support for TLV 12.4

Cisco RPD 10.7 supports TLV 12.4 Oob55d2ModuleIndex. TLV12.4 is a TLV which identifies a particular SCTE 55-2 module on the RPD. An SCTE 55-2 module has a single modulator, so this TLV also identifies a single DsOob55d2 downstream channel. For details, see the following table:

Interface Container TLV	Status/Performance sub-TLV	Interface Selector sub-TLV	Interface Selector type constraint
RfChannel(16)	DsOob552Perf(75)	RfChannelSelector(12)	RfChannelType(12.2) = DsOob55d2(10)
		Index: Oob55d2ModuleIndex(12.4)	



Note For detail information, go through Section B5.2.4 RfChannelSelector TLV in the document Data-Over-Cable Service Interface Specifications, CM-SP-R-PHY-I17.

Decision Pending IRA Support

RPD 10.7 supports IRA with CoreMode DecisionPending.

When a CCAP Core needs additional information from the RPD or additional time to make the redirection decision, the CCAP Core can send a GCP message indicating a decision is pending



Note For detail information, go through Section B.3.2.13IRA: Decision Pending in the document Data-Over-Cable Service Interface Specifications, CM-SP-R-PHY-I17.

GCP Keepalive Monitoring support

RPD 10.7 support to configure the GcpIdleTime for GCP keepalive instead of using the TCP keepalive timers



Note For detail information, go through Section 7 GCP CONNECTIVITY VERIFICATION AND RECOVERY in the document Data-Over-Cable Service Interface Specifications, CM-SP-R-PHY-I17.

Secure Factory reset log saving in ACT2 support

RPD 10.7 support to save a log in ACT2 for Secure Factory reset

You can use the **show logging secure-resetlog** command to obtain the secure factory result:

```
R-PHY#show logging secure-resetlog
OFDMA Channel Configuration
-----
Secure factory reset on RPD10049fb11300
- MMC Data Sanitization at /dev/mmcblk0
  START : Mon Aug 28 18:45:21 UTC 2023
  END   : Mon Aug 28 20:40:23 UTC 2023
  STATUS : Success
```

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6.1

There are no new software features for Cisco 1x2 / Compact Shelf RPD Software 10.6.1 release

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.6 release are:

4 OFDM Channel Support

RPD 10.6 supports 4 OFDM downstream channels per one downstream RF port of 1x2 RPD

Multiple Spectrum Acquisition Circuits on 1 port support

RPD 10.6 supports 2 SACs(1 wideband SAC and 1 narrowband SAC) on a single port at the same time

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.5

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.5 release are:

TLV58 read function support

RPD 10.5 supports readcount, read by index, and read by leaf for TLV58 StaticPwConfig



Note For detail information, go through the *Reading of Interface and Array ROTs* section in the document *Data-Over-Cable Service Interface Specifications, CM-SP-R-PHY*.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.4

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.4 release are:

Support for TLV 98.3

Starting from Cisco 1x2 / Compact Shelf RPD Software 10.4 release, TLV 98.3 BaseTargetRxPower is supported.

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints	Comments
BaseTargetRxPower	Short	98.3	2	R/W	TenthdBmV per 1.6 MHz

You can use the **show vga** command to obtain the TLV98.3 configuration:

```
R-PHY# show vga
OOB US S/W VGA Gain:
  Port0: 11
  Port1: 11

OOB US Default Gain Calculated:
  Port0: 11
  Port1: 11

Enable Upstream Calibration: TRUE

Upstream Calibration - Port0: 10 0 Port1: 10 0
VGA of platform: CSHELF
VGA Setting: Power values below in reference to 0dBmV/6.4Mhz
Port0: 0x12 (+8db)
Port1: 0x12 (+8db)
NB-GAIN Setting:
Port 0 (SCQAM0)
  receiver 1 : 31(0x1f) adj:-0.4:-0.2 db
  receiver 2 : 32(0x20) adj:-0.1:+0.1 db
  receiver 3 : 32(0x20) adj:-0.1:+0.1 db
  receiver 4 : 32(0x20) adj:-0.1:+0.1 db
  receiver 5 : 32(0x20) adj:-0.1:+0.1 db
  receiver 6 : 32(0x20) adj:-0.1:+0.1 db
  receiver 7 : 32(0x20) adj:-0.1:+0.1 db
  receiver 8 : 32(0x20) adj:-0.1:+0.1 db
  receiver 9 : 32(0x20) adj:-0.1:+0.1 db
  receiver 10: 32(0x20) adj:-0.1:+0.1 db
  receiver 11: 32(0x20) adj:-0.1:+0.1 db
Port 1 (SCQAM1)
  receiver 1 : 31(0x1f) adj:-0.4:-0.2 db
  receiver 2 : 32(0x20) adj:-0.1:+0.1 db
  receiver 3 : 32(0x20) adj:-0.1:+0.1 db
  receiver 4 : 32(0x20) adj:-0.1:+0.1 db
  receiver 5 : 32(0x20) adj:-0.1:+0.1 db
  receiver 6 : 32(0x20) adj:-0.1:+0.1 db
  receiver 7 : 32(0x20) adj:-0.1:+0.1 db
  receiver 8 : 32(0x20) adj:-0.1:+0.1 db
  receiver 9 : 32(0x20) adj:-0.1:+0.1 db
  receiver 10: 32(0x20) adj:-0.1:+0.1 db
  receiver 11: 32(0x20) adj:-0.1:+0.1 db
TLV 98.3 Setting:
Supp range for TLV 98.3: -200 to 100 TenthdBmV per 1.6MHz
Port 0 : Disabled
User Config value: --
Port 1 : Disabled
User Config value: --
OFDMA pwrAdjust Setting:
Port 0
Value not set as tlv98.3 disabled for this port
Port 1
Value not set as tlv98.3 disabled for this port
```

DLM for OFDM Support

Cisco 1x2 / Compact Shelf RPD Software 10.4 adds RPD support DLM for the ofdm channel.

You can use the **show downstream dlm counter** command to obtain the DLM counters.

```
R-PHY#show downstream dlm counter
DLM RX Count:      872
DLM TX Count:      872
Bad Format Drop:    0
Bad Code Field Drop: 0
Bad Session Drop:  0
```

Support for TLV93 Oob55d2Config Read Functionality

Cisco 1x2 / Compact Shelf RPD Software 10.4 adds support for TLV93 Oob55d2Config read by count and read by leaf.



Note For detailed information, check the *Reading of Interface and Array ROTs* section in the document *Data-over-Cable Service Interface Specifications, CM-SP-R-PHY*.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.3

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.3 release are:

Link Redundancy Down-Up Mode Support

Starting from Cisco 1x2 / Compact Shelf RPD Software 10.3 release, Link Redundancy Down-Up Mode is supported.

RPD backhaul has three working modes:

- Link-redundancy down-up mode: you can only observe one virtual backhaul interface which always binds to active TenGigabitEthernet port. Only one TenGigabitEthernet port is up.
- Link-redundancy up-up mode: you can only observe one virtual backhaul interface which always binds to active TenGigabitEthernet port. Two TenGigabitEthernet ports are up and only one is working.
- Daisy-chain mode: works for daisy-chain topology RPD. Each RPD is daisy-chained with the next RPD, and the last RPD connects to the CIN.



Note Daisy-chain mode is the default RPD backhaul mode. If you upgrade RPD from release 8.1 or lower version without mode configuration, RPD backhaul will work in daisy-chain mode.

Changing RPD backhaul mode needs hard-reset RPD to take effect.

For more information, refer to [Link Redundancy Down-Up Mode, on page 30](#).

Read Function Support

Cisco 1x2 / Compact Shelf RPD Software 10.3 adds support to TLV95 NdrConfig read by count and read by leaf.



Note For detailed information, check the *Reading of Interface and Array ROTs* section in the document *Data-Over-Cable Service Interface Specifications, CM-SP-R-PHY*.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.2

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.2 release are:

Supports Read Function

Cisco RPD Software 10.2 supports readcount, read by index, and read by leaf for the following TLVs.

- TLV65 UsScQamChannelConfig
- TLV66 UsOfdmaChannelConfig
- TLV100.20 CrashDataFileStatus

Cisco RPD Software 10.2 supports readcount and read by leaf for the following TLVs.

- TLV91 DsOob55d1
- TLV92 UsOob55d1
- TLV94 NdfConfig

For a read request, the CCAP Core can select an Array ROT or Interface ROT down to a leaf. For example, the CCAP Core can issue a read request for UsScQamChannelConfig.AdminState(TLV 65.1). As the result, the RPD returns just this one leaf sub-TLV value.

For a read request, the CCAP Core can select an Array ROT or Interface ROT by index. For example, the CCAP Core can issue a read request for RfChannelIndex 0 UsScQamChannelConfig (TLV 65). As the result, the RPD returns the object with this index.

A top level *ReadCount* (TLV 26) defines how many index sets of the ROT are to be returned in a read response, beginning with the starting index that is set. For example, use ReadCount(26) TLV to read the first three objects from the Interface ROT UsScQamChannelConfig (TLV 65). ReadCount is 3, the starting index is RfChannelIndex 0, and the existing objects are indexed 0–7. The read response includes three objects with RfChannelIndex 0, RfChannelIndex 1, and RfChannelIndex 2.



Note For more information, see the *Reading of Interface and Array ROTs* section in *Data-over-Cable Service Interface Specifications, CM-SP-R-PHY*.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.1

The new software features for Cisco 1x2 / Compact Shelf RPD Software 10.1 release are:

Supports Sub TLVs of TLV 79 UsOfdmaChannelPerf

Cisco RPD supports the following sub TLVs under TLV 79 UsOfdmaChannelPerf:

Attribute/TLV Name	Object Type	TLV Type	TLV Value Field Length	Constraints
DiscardedRequests	UnsignedLong	79.6	8	R
ProbeGrants	UnsignedLong	79.7	8	R
LateMinislots	UnsignedLong	79.11	8	R
IllegalMinislots	UnsignedLong	79.12	8	R

Supports Read Function

RPD 10.1 supports readcount, read by index, and read by leaf for the following TLVs.

- TLV60 CcapCoreIdentification
- TLV61 DsRfPort
- TLV62 DsScQamChannelConfig
- TLV64 DsOfdmProfile
- TLV88 MultiCore

RPD 10.1 supports readcount and read by leaf for the following TLVs.

- TLV90 Ssd

RPD 10.1 supports read by index for the following TLVs.

- TLV93 Oob55d2Config

For a read request, the CCAP Core can select an Array ROT or Interface ROT down to a leaf. For example, the CCAP Core can issue a read request for CcapCoreIdentification.IsPrincipal(TLV 60.4). As the result, the RPD returns just this one leaf sub-TLV value.

For a read request, the CCAP Core can select an Array ROT or Interface ROT by index. For example, the CCAP Core can issue a read request for index CcapCoreIdentification.Index(TLV 60.1). As the result, the RPD returns the object with this index.

A top level *ReadCount* (TLV 26) defines how many index sets of the ROT are to be returned in a read response, beginning with the starting index that is set. For example, use ReadCount(26) TLV to read the first three objects from the Array ROT CcapCoreIdentification (TLV 60). ReadCount is 3, and the starting index is index 0, and the existing objects are indexed 0–3 and index 20. The read response includes three objects with index 0, index 1, and index 2.



Note For more information, see the *Reading of Interface and Array ROTs* section in *Data-over-Cable Service Interface Specifications, CM-SP-R-PHY*.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7.1

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.7.1 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.7 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6.1

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.6.1 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.6 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.5

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.5 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.4

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.4 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.3

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.3 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.2

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.2 release.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.1

There are no modified software features for Cisco 1x2 / Compact Shelf RPD Software 10.1 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7.1

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.7.1 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.7

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.7 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6.1

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.6.1 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.6

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.6 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.5

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.5 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.4

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.4 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.3

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.3 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.2

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.2 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 10.1

There are no new integrated software features for Cisco 1x2 / Compact Shelf RPD Software 10.1 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.7.1

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.7.1 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.7

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.7 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.6.1

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.6.1 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.6

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.6 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.5

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.5 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.4

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.4 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.3

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.3 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.2

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.2 release.

New Hardware Features in Cisco 1x2 / Compact Shelf RPD Software 10.1

There are no new hardware features for Cisco 1x2 / Compact Shelf RPD Software 10.1 release.



CHAPTER 2

Caveats

This chapter describes open severity 1 and 2 caveats and select severity 3 caveats.

The *Open Caveats* section lists open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.

The bug IDs are sorted alphanumerically.

The *Caveats* section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.

- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7.1, on page 17](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7.1, on page 18](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7, on page 18](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7, on page 18](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6.1, on page 18](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6.1, on page 19](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6, on page 19](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6, on page 19](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.5, on page 19](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.5, on page 20](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.4, on page 20](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.4, on page 20](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.3, on page 20](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.3, on page 20](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.2, on page 21](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.2, on page 21](#)
- [Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.1, on page 21](#)
- [Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.1, on page 21](#)
- [Cisco Bug Search, on page 22](#)

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7.1

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.7.1 release.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7.1

Identifier	Headline
CSCwj25440	Failure with video multicast during cBR8 Linecard Switchover
CSCwi86180	RPD OFDMA Codeword Issue
CSCwi68157	CMs in partial mode - OFMDA leak issue on RPD side

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7

Identifier	Headline
CSCwi45790	Negative scenario validation failure for wrong channel type and module index values
CSCwi48767	RPD report "Internal Server Error" when use GCPP to send TLV69 with invalid key.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.7

Identifier	Headline
CSCwh58483	Change TLV 100.24.2.2 to 4 bytes
CSCwfl4122	RPD PTP did not recover after time adjustments
CSCwi30846	RPD still reports old location info during re-connection scenario
CSCwi54455	No RPD CLI response over SSH
CSCwh23781	Duplicated record observed in RPD local buffer for ctrl_rpd_init_prov_info
CSCwf32159	RPD randomly rebooted stating 802.1x Failure, when 802.1x authentication is not enabled.

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6.1

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.6.1 release.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6.1

Identifier	Headline
CSCwf54649	RPD OFDMA channel power level improvement for 2nd OFDMA channel
CSCwh46211	OFDMA receiver pwrAdjust incorrect after switching upstream controller-profile

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.6 release.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.6

Identifier	Headline
CSCwe94696	RPD returns incorrect value for TLV 50.49.1 and TLV 50.49.2
CSCwf76955	RPD should support allocate-write for TLV 88
CSCwd26857	2 OFDM channels and 25Khz subc, profile gets downgraded and traffic goes on ctrl profile
CSCwe62909	OFDM channel impairment issue on 1x2 RPD
CSCwe41079	1RU rpd: 2 OFDM channels and 25Khz subc, profile gets downgraded and traffic goes on ctrl profile
CSCwe69467	Change ClipMargin to 3.0 db for 1x2 RPD
CSCwe28492	RPD: OFDMA stuck and not processes maps, add problem detection and OFDMA re-init

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.5

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.5 release

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.5

Identifier	Headline
CSCwd49325	Add back docsRphyRpdIfPhysEntSensorPrecision
CSCwd13377	Allow 409.6MHz span configuration
CSCwc83078	Spectrum capability MinRepeatPeriod report value 25us was not right

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.4

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.4 release

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.4

Caveat ID Number	Description
CSCwb58378	cbr8 with RPD: Modems in DS partial service. DEPI established on the cbr8 but channel not on RPD
CSCwb67478	RPD: failure when verifying internal timing-sync from PTP to DOCSIS
CSCwb89938	RPHY - TLV 66.13 TargetRxPowerAdjust should be signed short integer
CSCwb99455	TimeIQ mode data decode issue
CSCwc13364	Support TLV78 UsScQamChannelPerf as dynamic instances

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.3

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.3 release.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.3

There are no new resolved caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.3 release.

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.2

There are no new open caveats in the Cisco 1x2 / Compact Shelf RPD Software 10.2 release.

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.2

Caveat ID Number	Description
CSCvz16804	RPD lose sync due to frequency drifting over 50 PPM
CSCvz74173	RPD crash with 'show tech' when displaying 'show ofdma trap'
CSCvz76022	Fix problem of 1RU Shelf and RPD node's tilt control capability report

Open Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.1

Caveat ID Number	Description
CSCvz12933	UDP checksum of outgoing non-event PTP packets (Announce, delay-response, etc) shall always remain 0
CSCvz16804	RPD lose sync due to frequency drifting over 50 PPM

Resolved Caveats for Cisco 1x2 / Compact Shelf RPD Software 10.1

Caveat ID Number	Description
CSCvy03046	55d2 Upstream configuration disappears after 55d2 Restart followed by TLV Read from GCPP server
CSCvy24127	Cannot log into CLI - /tmp Disk Full
CSCvy27092	PNM UTSC functionality is not sending any TFTP Bulk Upload When only enable US port1
CSCvy75708	'show cable rpd interface-ipv6' didn't list all RPDs
CSCvy77789	RPD:17.6.1 ECE sw with RPD 9.5 offline

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.

Save Search Load Saved Search Clear Search Email Current Search

Search For: Examples: CSCtd10124, router crash, etc...

Product: Series/Model Select from list

Releases: Affecting or Fixed in these Release Enter release number

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You can filter the search results by last modified date, bug status (open, resolved), severity, rating, and support cases.

Save Search Load Saved Search Clear Search Email Current Search

Search For: Examples: CSCtd10124, router crash, etc...

Product: Series/Model Select from list

Releases: Affecting or Fixed in these Release

Filter: Modified Date: Status: Severity: Rating: Support Cases: Bug Type: Customer Visible

Viewing 1 - 25 of 132 results Sort by Export Results to Excel

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Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.



CHAPTER 3

Supported Packages and System Requirements

- [Memory Requirements, on page 23](#)
- [Hardware Supported, on page 24](#)
- [Determining the Software Version, on page 25](#)

Memory Requirements



Note Memory is not configurable for the Cisco Remote PHY device.

Table 1: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.7.1

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.7.1	NXP LS1043A	RPD-V10-7-1.itb.SSA	1G Bytes	Bootflash:

Table 2: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.7

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.7	NXP LS1043A	RPD-V10-7.itb.SSA	1G Bytes	Bootflash:

Table 3: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.6.1

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.6.1	NXP LS1043A	RPD-V10-6-1.itb.SSA	1G Bytes	Bootflash:

Table 4: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.6

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.6	NXP LS1043A	RPD-V10-6.itb.SSA	1G Bytes	Bootflash:

Table 5: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.5

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.5	NXP LS1043A	RPD-V10-5.itb.SSA	1G Bytes	Bootflash:

Table 6: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.4

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.4	NXP LS1043A	RPD-V10-4.itb.SSA	1G Bytes	Bootflash:

Table 7: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.3

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.3	NXP LS1043A	RPD-V10-3.itb.SSA	1G Bytes	Bootflash:

Table 8: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.2

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.2	NXP LS1043A	RPD-V10-2.itb.SSA	1G Bytes	Bootflash:

Table 9: Memory Recommendations for the Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 10.1

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 10.1	NXP LS1043A	RPD-V10-1.itb.SSA	1G Bytes	Bootflash:

Hardware Supported

For detailed information about the hardware supported in Cisco 1x2 / Compact Shelf RPD Software 10.7.1, see:

http://www.cisco.com/c/en/us/td/docs/cable/cbr/installation/guide/b_cbr_how_and_what_to_order.html.

Determining the Software Version

Cisco 1x2 / Compact Shelf RPD Software 10.7.1

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.7.1, build by rpd-release, on 2024-03-25 10:38:42
Branch information:
  RPD branch: (HEAD detached at RPD_V10_7_1_20240325)
  OpenRPD branch: (HEAD detached at RPD_V10_7_1_20240325)
  SeresRPD branch: (HEAD detached at RPD_V10_7_1_20240325)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.7.1_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-7-1.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.7

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.7, build by rpd-release, 2024-01-07 23:24:47
Branch information:
  RPD branch: (HEAD detached at RPD_V10_7_20240108)
  OpenRPD branch: (HEAD detached at RPD_V107_20240108)
  SeresRPD branch: (HEAD detached at RPD_V10_7_20240108)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.7_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-7.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.6.1

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.6.1, build by rpd-release, on 2023-10-10 23:19:01
Branch information:
  RPD branch: (HEAD detached at RPD_V10_6_1_20231011)
  OpenRPD branch: (HEAD detached at RPD_V10_6_1_20231011)
  SeresRPD branch: (HEAD detached at RPD_V10_6_1_20231011)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.6.1_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-6.1.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.6

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version EXEC** command:

```
R-PHY#show version
Cisco RPD Software, version v10.6, build by rpd-release, 2023-07-19 00:53:10
Branch information:
  RPD branch: (HEAD detached at RPD_V10_6_20230719)
  OpenRPD branch: (HEAD detached at RPD_V10_6_20230719)
  SeresRPD branch: (HEAD detached at RPD_V10_6_20230719)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.6_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-6.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.5

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version EXEC** command:

```
R-PHY#show version
Cisco RPD Software, version v10.5, build by rpd-release, on 2023-01-11 08:02:41
Branch information:
  RPD branch: (HEAD detached at RPD_V10_5_20230111)
  OpenRPD branch: (HEAD detached at RPD_V10_5_20230111)
  SeresRPD branch: (HEAD detached at RPD_V10_5_20230111)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.5_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-5.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.4

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version EXEC** command:

```
R-PHY#show version
Cisco RPD Software, version v10.4, build by rpd-release, on 2022-07-22 00:02:22
Branch information:
  RPD branch: (HEAD detached at RPD_V10_4_20220722)
  OpenRPD branch: (HEAD detached at RPD_V10_4_20220722)
  SeresRPD branch: (HEAD detached at RPD_V10_4_20220722)
```




Note The system image file name of the factory installed image is */bootflash/RPD-V10.4_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-4.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.3

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.3, build by rpd-release, on 2022-01-18 04:11:30
Branch information:
RPD branch: (HEAD detached at RPD_V10_3_20220118)
OpenRPD branch: (HEAD detached at RPD_V10_3_20220118)
SeresRPD branch: (HEAD detached at RPD_V10_3_20220118)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.3_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-3.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.2

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.2, build by rpd-release, on 2021-10-21 11:19:26
Branch information:
RPD branch: (HEAD detached at RPD_V10_2_20211021)
OpenRPD branch: (HEAD detached at RPD_V10_2_20211021)
SeresRPD branch: (HEAD detached at RPD_V10_2_20211021)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.2_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-2.itb.SSA.act*.

Cisco 1x2 / Compact Shelf RPD Software 10.1

To determine the version of the Cisco 1x2 RPD software running on your Cisco Remote PHY Device, log in and enter the **show version** EXEC command:

```
R-PHY#show version
Cisco RPD Software, version v10.1, build by rpd-release, on 2021-07-29 05:03:35
Branch information:
RPD branch: (HEAD detached at RPD_V10_1_20210729)
OpenRPD branch: (HEAD detached at RPD_V10_1_20210729)
SeresRPD branch: (HEAD detached at RPD_V10_1_20210729)
```



Note The system image file name of the factory installed image is */bootflash/RPD-V10.1_hardware_certificate.itb.rel.sign.SSA*. The system image file name of the Secure Software Download (SSD) from the Cisco software download page is */bootflash/RPD-V10-1.itb.SSA.act*.



CHAPTER 4

Other Important Information

- [Cisco RPD and Cisco cBR Version Compatibility](#), on page 29
- [Cisco RPD Documentation References](#), on page 30
- [Supported Transceiver Modules](#), on page 30
- [Link Redundancy Down-Up Mode](#), on page 30

Cisco RPD and Cisco cBR Version Compatibility

The versions of Cisco cBR-8 router and RPD must be compatible. If the versions are not compatible, the RPD remains in the **init(gp)** state. The following table provides information on the compatible Cisco cBR-8 and RPD versions:

Cisco RPD Software Version	Compatible Cisco cBR-8 software Version
Cisco 1x2 / Compact Shelf RPD Software 10.7.1	Cisco IOS XE Dublin 17.12.1x
Cisco 1x2 / Compact Shelf RPD Software 10.7	Cisco IOS XE Dublin 17.12.1x
Cisco 1x2 / Compact Shelf RPD Software 10.6.1	Cisco IOS XE Dublin 17.12.1w Cisco IOS XE Cupertino 17.9.1y1
Cisco 1x2 / Compact Shelf RPD Software 10.6	Cisco IOS XE Dublin 17.12.1
Cisco 1x2 / Compact Shelf RPD Software 10.5	Cisco IOS XE Cupertino 17.9.1x
Cisco 1x2 / Compact Shelf RPD Software 10.4	Cisco IOS XE Bengaluru 17.6.1z
Cisco 1x2 / Compact Shelf RPD Software 10.3	Cisco IOS XE Bengaluru 17.6.1x
Cisco 1x2 / Compact Shelf RPD Software 10.2	Cisco IOS XE Bengaluru 17.6.1w
Cisco 1x2 / Compact Shelf RPD Software 10.1	Cisco IOS XE Bengaluru 17.6.1

Cisco RPD 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 1x2 / Compact Shelf RPD Software 10.x is generally available for field deployment. To ensure a smoother, faster, and successful field deployment, we recommend that you validate and qualify the software in a limited field trial.

For information on Cisco RPD, go through the following documents:

- Cisco Remote PHY Devices for Cisco 1x2/Compact Shelf RPD Software 10.x documentation
- Cisco Remote PHY Device Software Configuration Guide for Cisco 1x2/Compact Shelf RPD Software 10.x

Supported Transceiver Modules

For more information on the supported transceiver modules, see [Transceiver Module Group \(TMG\) Compatibility Matrix](#).

Link Redundancy Down-Up Mode

Starting from Cisco 1x2 / Compact Shelf RPD Software 10.3 release, Link Redundancy Down-Up Mode is supported.

RPD backhaul has three working modes:

- Link-redundancy down-up mode: you can only observe one virtual backhaul interface which always binds to active TenGigabitEthernet port. Only one TenGigabitEthernet port is up.
- Link-redundancy up-up mode: you can only observe one virtual backhaul interface which always binds to active TenGigabitEthernet port. Two TenGigabitEthernet ports are up and only one is working.
- Daisy-chain mode: works for daisy-chain topology RPD Each RPD is daisy-chained with the next RPD, and the last RPD connects to the CIN.



Note Daisy-chain mode is the default RPD backhaul mode. If you upgrade RPD from release 8.1 or lower version without mode configuration, RPD backhaul will work in daisy-chain mode.

Changing RPD backhaul mode needs hard-reset RPD to take effect.

When you enable link-redundancy down-up mode:

- Only one virtual backhaul interface VBH0 is available.
- Virtual backhaul interface always binds to active TenGigabitEthernet port. One TenGigabitEthernet port works in active mode and the other one works in standby mode.
- The first reachable TenGigabitEthernet port is the active port. The DHCP process gets the IP address and determines the active TenGigabitEthernet port.
- Link state change triggers port switchover. When the active TenGigabitEthernet port is down, VBH0 binds to the standby TenGigabitEthernet port.
- Port switch can cause 7-9 seconds traffic interruption.

Configure RPD Backhaul Mode

You can configure RPD backhaul mode in two different ways:

- Use **backhaul daisy-chain|link-redundancy** command to configure RPD backhaul mode between daisy-chain mode and link-redundancy mode.

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#backhaul link-redundancy down-up
Enable link redundancy plus mode [UP/DOWN]
Please Reload to Take effect.
R-PHY(config)#end
R-PHY#
```

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#backhaul link-redundancy up-up
Enable link redundancy mode [UP/UP]
Please Reload to Take effect.
R-PHY(config)#end
R-PHY#
```

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#backhaul daisy-chain
Enable daisy chain mode
Please Reload to Take effect.
R-PHY(config)#end
```

Daisy-chain mode is the default RPD backhaul mode. You can restore RPD to daisy-chain mode by using the **no backhaul link-redundancy {down-up|up-up}** command.

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#no backhaul link-redundancy down-up
Restore daisy chain mode
Please Reload to Take effect.
R-PHY(config)#end
R-PHY
```

```
R-PHY>enable
R-PHY#configure terminal
R-PHY(config)#no backhaul link-redundancy up-up
Restore daisy chain mode
Please Reload to Take effect.
```

```
R-PHY(config)#end
R-PHY
```

- Use VendorSpecificExtension TLV BackhaulLinkMode (TLV 21.18) to configure RPD backhaul mode.

Attribute Name	Type	Access	Type Constraints	Units	TLV Type	TLV Value Field Length
Mode	UnsignedByte	Read Write	automatic(0) daisy-chain(1) ether-ring(2) link-redundancy up-up(3) link-redundancy down-up(4)		21.18.1	1

Mode: TLV 21.18.1. This attribute represents the configuration of the RPD backhaul interface mode. Currently we support only daisy-chain(1) mode, link-redundancy up-up(3) mode, and link-redundancy down-up(4) mode.

Verify RPD Backhaul Mode

To verify the status of the backhaul interface, use the **show interface info** command as shown in the following example:

```
R-PHY#show interface info
Backhaul configured as Link Redundancy UP/DOWN
Backhaul 0: BH-UP
Backhaul 1: BH-UP
=====
vbh0      Link encap:Ethernet  HWaddr BA:DB:AD:13:2B:C2
          inet6 addr: fe80::b8db:adff:fe13:2bc2/64 Scope:Link
          inet6 addr: 2001:3:140:50::2/64 Scope:Global
          UP BROADCAST RUNNING MULTICAST  MTU:2350  Metric:1
          RX packets:21625527 errors:0 dropped:0 overruns:0 frame:0
          TX packets:10837720 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2148943462 (2.0 GiB)  TX bytes:1214490776 (1.1 GiB)
```

To check the RPD link-redundancy information, history, and status, use the commands as shown in the following example:

```
R-PHY#show redundancy
Redundant System Information :
-----
Current system uptime:          7430.45 seconds
Switchovers Counter:           6
Last switchover reason:        BH 1 Down

R-PHY#show redundancy history
Mode   Reason   BH-Intf  Date                uptime
LRED   BH 0 Down  BH 1      Tue Jan 11 03:33:46 2022  5648.342s
LRED   BH 1 Down  BH 0      Tue Jan 11 03:37:11 2022  5853.383s
LRED   BH 0 Down  BH 1      Tue Jan 11 03:42:24 2022  6166.342s

R-PHY#show redundancy status
Initial Active: BH 0
```

Current Active: BH 1
Last switchover: 6166.342s Tue Jan 11 03:42:24 2022

