Introduction

This release notes contain information about downloading and installing Cisco 1x2 / Compact Shelf RPD Software 2.1 and its maintenance releases. It also provides new and changed information, hardware support, limitations and restrictions, and caveats for Cisco 1x2 / Compact Shelf RPD Software 2.1 and its maintenance releases.

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 on Cisco.com, you can find field notices athttp://www.cisco.com/en/US/customer/support/tsd_products_field_notice_summary.html.

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

Note Cisco 1x2 / Compact Shelf RPD Software 2.1 is generally available for field deployment. However, we recommend that you validate and qualify Cisco 1x2 / Compact Shelf RPD Software 2.1 in a limited field trial with your specific network configuration requirements in order to ensure a smoother, faster, and successful field deployment.

This chapter includes the following sections:

System Requirements

These sections describe the system requirements for Cisco 1x2 / Compact Shelf RPD Software and its maintenance releases:

Memory Requirements for Cisco 1x2 / Compact Shelf RPD Software 2.2

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

Table 1: Memory Recommendations for the Cisco Remote-PHY Device

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs From
CISCO RPHY 2.2	NXP LS1043A	RPD-V2-2.itb.SSA	1G Bytes	Bootflash:

Memory Requirements for Cisco 1x2 / Compact Shelf RPD Software 2.1

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

Table 2: Memory Recommendations for the Cisco Remote-PHY Device

Feature Set	Cisco RPHY Processor	Software Image	Fixed Memory	Runs
CISCO RPHY 2.1	NXP LS1043A	RPD_V2_THROTTLE_hardware_certificate_20170725_070002.itb.rel.sign.SSA	1G Bytes	Boot

Hardware Supported

For detailed information about the hardware supported in Cisco 1x2 / Compact Shelf RPD Software and its maintenance releases, 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 for Cisco 1x2 / Compact Shelf RPD Software 2.2

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 ver
Cisco RPD Software, version v2.2, build by rpd-release, on 2017-10-24 09:06:29
Branch information:
        RPD branch: (detached from RPD_V2_2_20171024)
        OpenRPD branch: (detached from RPD_V2_2_20171024)
        SeresRPD branch: (detached from RPD_V2_2_20171024)

System image file is:
current image is /bootflash/RPD-V2-2.itb.SSA.act

Bootloader version:
Primary:  U-Boot 2016.01 (Apr 12 2017 - 09:13:28 +0800) *
Golden:   U-Boot 2016.01 (Apr 12 2017 - 09:13:28 +0800)

IOFPGA version:
IOFPGA: 0x0351
SECVER: 0x17042101
```

```
System uptime:
05:15:34 up 4 min,  load average: 0.76, 0.63, 0.26

System CPU information:
processor       : 0
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 1
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 2
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 3
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4


System memory information:
MemTotal:         898128 kB
MemFree:          210184 kB
MemAvailable:     277148 kB
Buffers:            2260 kB
Cached:            71732 kB

Hardware Information:
Hardware Version              : 1.1
Product Number (PID)          : RPHY-RPD
PCA Serial Number             : CAT2109E1C9
Asset ID                      : P1B-13
System MAC Address            : 10:04:9f:b1:13:00
R-PHY#
```

Note System image file name for a factory installed image is */bootflash/RPD-V2-2.itb*. System image file name for a Secure Software Download(SSD) from the Cisco software download page is */bootflash/RPD-V2-2.itb.SSA*.

Determining the Software Version for Cisco 1x2 / Compact Shelf RPD Software 2.1

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 ver
Cisco RPD_hardware_certificate Software, version RPD_hardware_certificate_V2.1_20170725011837,
 build by rpd-release, on 2017-07-25 01:18:37
Branch information:
        RPD branch: (detached from RPD_V2_THROTTLE_NIGHTLY_20170725_070002)
        OpenRPD branch: (detached from RPD_V2_THROTTLE_NIGHTLY_20170725_070002)
        SeresRPD branch: (detached from RPD_V2_THROTTLE_NIGHTLY_20170725_070002)

System image file is:
current image is /bootflash/RPD-V2.1_20170725011837.itb.rel.sign.SSA.act

Bootloader version:
Primary:  U-Boot 2016.01 (Apr 12 2017 - 09:13:28 +0800) *
Golden:   U-Boot 2016.01 (Apr 12 2017 - 09:13:28 +0800)

IOFPGA version:
IOFPGA: 0x0354
SECVER: 0x17051701

System uptime:
09:37:07 up 12 min,  load average: 1.45, 1.19, 0.69

System CPU information:
processor       : 0
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 1
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 2
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4

processor       : 3
Features        : fp asimd evtstrm aes pmull sha1 sha2 crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant     : 0x0
CPU part        : 0xd03
CPU revision    : 4
```

```
System memory information:
MemTotal:         898128 kB
MemFree:          154928 kB
MemAvailable:     221128 kB
Buffers:            2268 kB
Cached:            79328 kB

Hardware Information:
Hardware Version               : 1.1
Product Number (PID)           : GS7K-RPD-1X2
PCA Serial Number              : CAT2109E1D1
Asset ID                       : P1B-2
System MAC Address             : 10:04:9f:b1:02:00
R-PHY#
```

Note System image file name for a factory installed image is */bootflash/RPD-V2.1_20170725011837.itb.rel.sign*. System image file name for a Secure Software Download(SSD) from the Cisco software download page is */bootflash/RPD-V2.1_20170725011837.itb.rel.sign.SSA.act*.

Microcode Software for Cisco 1x2 / Compact Shelf RPD Software 2.2

This section describes microcode software that is supported for the Cisco cBR Series Converged Broadband Routers.

For more information, see the Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Everest 16.6.1 guide.

Microcode Software for Cisco IOS XE Release 16.6.1

This section describes microcode software that is supported for the Cisco cBR Series Converged Broadband Routers.

For more information, see the Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Everest 16.6.x guide.

New and Changed Information

The following sections list the new hardware and software features supported on the Cisco cBR Series Converged Broadband Routers in this release:

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.2

There are no new software features in Cisco 1x2 / Compact Shelf RPD Software 2.2.

New Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.1

BFS QAM Configuration

The BFS provides a mechanism for a standardized downloading of applications, games, images, and other data formats required by the applications. The BFS QAM enables the router to transfer the broadcast data from an EC to the target platform such as a set-top unit.

Remote PHY DOCSIS 3.1 OFDM Channel Configuration

Cisco cBR routers support DS OFDM channels in an R-PHY system. The OFDM-channel-support includes one OFDM channel for each Remote PHY device (RPD) with a channel bandwidth up to 192 MHz and the modulation up to 4096 QAM.

Remote PHY PowerKey VOD

The line cards in R-PHY mode on Cisco cBR-8 supports session-based PowerKey VOD. PowerKEY VOD allows the operator to provide secure, encrypted video streams to a particular subscriber over the RF plant.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.2

There are no modified software features in Cisco 1x2 / Compact Shelf RPD Software 2.2.

Modified Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.1

Remote PHY Pre-encrypted Broadcast Video

The Cisco cBR-8 line card provides support for the broadcast video and to the WAN ports for receiving Multi program Transport Streams (MPTS). The Cisco cBR passes the MPTS streams in its entirety to multiple RPDs in the network to provide an output on their RF ports.

Cisco Remote PHY Out-of-Band

Cisco RPD 2.1 system supports OOB 55-2. The OOB 55-2 system has a scheduled TDMA upstream, which is intolerant to packet network latency.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.2

There are no integrated features in Cisco 1x2 / Compact Shelf RPD Software 2.2 release.

Integrated Software Features in Cisco 1x2 / Compact Shelf RPD Software 2.1

There are no integrated features in Cisco 1x2 / Compact Shelf RPD Software 2.1 release.

MIBs

To locate and download MIBs for selected platforms, Cisco IOS XE releases, and feature sets, use Cisco MIB Locator found at the following URL:

https://mibs.cloudapps.cisco.com/ITDIT/MIBS/servlet/index

MIBs in Cisco 1x2 / Compact Shelf RPD Software 2.2

There are no new MIBs in the Cisco 1x2 / Compact Shelf RPD Software 2.2 release.

MIBs in Cisco 1x2 / Compact Shelf RPD Software 2.1

There are no new MIBs in the Cisco 1x2 / Compact Shelf RPD Software 2.1 release.

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.