Upgrade and Downgrade Guide for Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 9.x

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Upgrading to Cisco 1x2 / Compact Shelf RPD Software 9.x

Upgrade Cisco RPD and Cisco cBR-8 Router

The following scenarios are supported for upgrading the RPD and Cisco cBR-8 router.

Table 1: Cisco 1x2 / Compact Shelf RPD Software 9.4

Cisco cBR-8 Original Version	RPD Original Version	RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	RPD Upgrade Version	RPD State After Upgrade
Lower than 17.3.1x	Lower than 9.4	online	17.3.1x	9.4	online
Lower than 17.3.1x	Lower than 9.4	init(gcp)	17.3.1x	9.4	online

Table 2: Cisco 1x2 / Compact Shelf RPD Software 9.3

Cisco cBR-8 Original Version	RPD Original Version	RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	RPD Upgrade Version	RPD State After Upgrade
Lower than 17.3.1x	Lower than 9.3	online	17.3.1x	9.3	online
Lower than 17.3.1x	Lower than 9.3	init(gcp)	17.3.1x	9.3	online

Table 3: Cisco 1x2 / Compact Shelf RPD Software 9.2

Cisco cBR-8 Original Version	Cisco RPD Original Version	Cisco RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	Cisco RPD Upgrade Version	Cisco RPD State After Upgrade
Lower than 17.3.1w	Lower than 9.2	online	17.3.1w	9.2	online
Lower than 17.3.1w	Lower than 9.2	init(gcp)	17.3.1w	9.2	online

Table 4: Cisco 1x2 / Compact Shelf RPD Software 9.1

Cisco cBR-8 Original Version	Cisco RPD Original Version	Cisco RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	Cisco RPD Upgrade Version	Cisco RPD State After Upgrade
Lower than 17.3.1w	Lower than 9.1	online	17.3.1w	9.1	online
Lower than 17.3.1w	Lower than 9.1	init(gcp)	17.3.1w	9.1	online

Prerequisites

Before upgrading the system, make sure that the following requirements are met:

- Console access for both SUP line cards is required.

- Download the files from the Cisco.com Software Center.

Table 5: Upgrade File Download Location

RPD Version	Download Files
Cisco RPD 9.4	• Cisco IOS XE Amsterdam 17.3.1x **cbrsup-universalk9.17.03.01x.SPA.bin**: https://software.cisco.com/download/home/286283913/type/282046477/release/Amsterdam-17.3.1x • RPD 9.4 **RPD-V9-4.itb.SSA**: https://software.cisco.com/download/home/286316518/type/286316917/release/9.4
Cisco RPD 9.3	• Cisco IOS XE Amsterdam 17.3.1x **cbrsup-universalk9.17.03.01x.SPA.bin**: https://software.cisco.com/download/home/286283913/type/282046477/release/Amsterdam-17.3.1x • RPD 9.3 **RPD-V9-3.itb.SSA**: https://software.cisco.com/download/home/286316518/type/286316917/release/9.3

RPD Version	Download Files
Cisco RPD 9.2	• Cisco IOS XE Amsterdam 17.3.1w **cbrsup-universalk9.17.03.01w.SPA.bin**: https://software.cisco.com/download/home/286283913/type/282046477/release/Amsterdam-17.3.1w • RPD 9.2 **RPD-V9-2.itb.SSA**: https://software.cisco.com/download/home/286316518/type/286316917/release/9.2
Cisco RPD 9.1	• Cisco IOS XE Amsterdam 17.3.1w **cbrsup-universalk9.17.03.01w.SPA.bin**: https://software.cisco.com/download/home/286283913/type/282046477/release/Amsterdam-17.3.1w • RPD 9.1 **RPD-V9-1.itb.SSA**: https://software.cisco.com/download/home/286316518/type/286316917/release/9.1

Note   For more information on how to upgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Amsterdam 17.3.x.

When upgrading Cisco cBR-8 router, if there is any difference between the procedure for upgrading the Cisco cBR-8 Routers for Cisco IOS XE Amsterdam 17.3.x and the following steps, the Cisco cBR-8 Upgrade Guide prevails.

Upgrade Procedure for Cisco RPD and Cisco cBR-8 Router

Step 1   Copy the required Cisco IOS XE package to bootflash and stby-bootflash:

```
copy <location>/<Cisco IOS XE software download filename> bootflash:
copy <location>/<Cisco IOS XE software version>.SPA.bin stby-bootflash:
```

Step 2   Verify the Cisco IOS XE package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:<Cisco IOS XE software download filename>
verify /md5 stby-bootflash:<Cisco IOS XE software download filename>
```

Step 3   Back up the current running config to bootflash.

```
copy running-config bootflash:pre-upgrade.cfg
```

Step 4   Check the system status before the upgrade.

Save the information to compare against the system status after the upgrade. For commands on checking the status, see the **show** commands at the end of this section.

Step 5   Copy the Cisco RPD image to a TFTP server that is accessible by the RPDs.

Step 6   Verify the current RPD software version by running the following command:

```
show cable rpd sw-version
```

Step 7 Upgrade all RPD images to the required version by using SSD from the Cisco cBR-8 router.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_version_file_path>
```

Note The **all** command is not recommended in large-scale RPD deployments. If you have a larger number of RPDs, it is recommended to upgrade the RPD per line card or per Organizationally Unique Identifier (OUI).

Step 8 Verify RPD SSD status.

The status shows as `downloading`.

```
cable rpd all ssd status
```

Step 9 Verify that all RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

Step 10 Configure the chassis to boot the system with Cisco IOS XE version image. Save the running configuration.

```
configure terminal
no boot system
boot system bootflash:<Cisco IOS XE software download filename>
config-register 0x2102
end
copy running-config startup-config
```

Step 11 Reload and start the Cisco cBR-8 router.

```
Reload
```

Step 12 Adjust the RPD type/max-carrier/base-power as necessary.

If you upgrade the Compact Shelf from Cisco IOS XE Everest 16.5.x or Cisco IOS XE Everest 16.6.x to Cisco IOS XE Fuji 16.7.x or later, you must change the RPD type to **shelf**. By default the RPD type is **Node**. Adjust the related base-power according to your requirement.

Step 13 Verify that the RPDs have been upgraded to new version and are online.

```
show cable rpd
show cable rpd sw-version
```

The following **show** commands can be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**

- **show cable modem voice**
- **show cable calls**
- **show cable licenses all**
- **show inventory**
- **show log**
- **show cable rpd**
- **show cable modem summary total**
- **show cable rpd lcha**
- **show running**
- **show tech**

Upgrade Cisco RPD Software

Before you begin

Before upgrading the system, make sure the following requirements are met:

- All RPDs are in init(gcp), init(clock), or online state.
- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286316518/type

  For example: RPD V9.5: **RPD-V9-5.itb.SSA**

SUMMARY STEPS

1. Copy the Cisco RPD softwre image package to a TFTP server where it can be accessed by the RPDs.
2. Verify the current RPD software version.
3. Upgrade all RPDs image to the latest version through SSD.
4. Verify the RPD SSD status. It will show the status as **downloading**.
5. Verify that all RPDs have downloaded the new image.
6. Verify that the RPDs have been upgraded to new version and are online.

DETAILED STEPS

	Command or Action	Purpose
Step 1	Copy the Cisco RPD softwre image package to a TFTP server where it can be accessed by the RPDs.	
Step 2	Verify the current RPD software version.	`show cable rpd sw-version`

	Command or Action	Purpose
Step 3	Upgrade all RPDs image to the latest version through SSD.	`cable rpd all ssd <tftp_server_ip> tftp <rpd_version_file_path>` **Note** The **all** command is not recommended in large scale RPD deployment. If you have many RPDs, it is recommended to upgrade the RPD per line card or per OUI.
Step 4	Verify the RPD SSD status. It will show the status as **downloading**.	`cable rpd all ssd status`

Step 5	Verify that all RPDs have downloaded the new image.	`cable rpd all ssd status`
		`show cable rpd`
		
		You can also use **cable rpd slot <slot_num> ssd status** to check upgrade status for each line card.

Step 6	Verify that the RPDs have been upgraded to new version and are online.	`show cable rpd`
		`show cable rpd sw-version`
		
		These **show** commands might be used during the verification test:
		
		• **show version**
		• **show platform**
		• **show platform diag**
		• **show environment**
		• **show environment power**
		• **show platform hardware slot P <0-5> mcu status**
		• **show facility-alarm status**
		• **show redundancy**
		• **show redundancy line card all**
		• **show ip ospf neighbor**
		• **show cable modem voice**
		• **show cable calls**
		• **show cable licenses all**
		• **show inventory**
		• **show log**

	Command or Action	Purpose
		• **show cable rpd**
		• **show cable modem summary total**
		• **show cable rpd lcha**
		• **show running**
		• **show tech**

Upgrade Cisco cBR-8 Router

This section explains the procedure to upgrade only the Cisco cBR-8 router.

The following scenarios are supported in upgrading the Cisco cBR-8 router.

Cisco cBR-8 Original Version	Cisco RPD Version	Cisco RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	Cisco RPD State After Upgrade
Lower than 17.3.1x	9.x	init(gcp)	17.3.1x	online

Before upgrading the system, make sure the following requirements are met:

- The firmware versions are not lower than the ones listed in Firmware versions table. Otherwise upgrade the firmware versions, see Upgrading the Cisco cBR-8 Router Firmware.

- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286283913/type

    - IOS XE Software Version 17.3.1x: **cbrsup-universalk9.17.03.01x.SPA.bin**

- Console access for both SUPs are required.

✎

Note   For information on how to upgrade the cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Amsterdam 17.3.x.

These **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**

- **show redundancy**

- **show redundancy line card all**

- **show ip ospf neighbor**

- **show cable modem voice**

- **show cable calls**

- **show cable licenses all**

- **show inventory**

- **show log**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

- **show running**

- **show tech**

Downgrade from Cisco 1x2 / Compact Shelf RPD Software 9.x

Downgrade Cisco RPD and Cisco cBR-8 Router

The following scenarios are supported in downgrading the RPD and cBR-8 router.

Cisco cBR-8 Original Version	Cisco RPD Original Version	Cisco RPD State Before Upgrade	Cisco cBR-8 Upgrade Version	Cisco RPD Upgrade Version	Cisco RPD State After Upgrade
17.3.1x	9.x	online	Lower than 17.3.1x	Lower than 9.x	online
17.3.1x	9.x	online	Lower than 17.3.1x	Lower than 9.x	init(gcp)

Before downgrading the system, make sure the following requirements are met:

- Download two files from the following Cisco.com Software Center URL:
  - IOS XE Software: https://software.cisco.com/download/home/286283913/type
    - IOS XE Software Version 17.3.1w
    - IOS XE Software Version 17.2.x
    - IOS XE Software Version 16.12.x
    - IOS XE Software Version 16.10.x
    - IOS XE Software Version 16.9.x
    - IOS XE Software Version 16.8.x
    - IOS XE Software Version 16.7.x
    - IOS XE Software Version 16.6.x

- RPD Software: https://software.cisco.com/download/home/286316518/type

  - RPD Software Version 9.x

  - RPD Software Version 8.x

  - RPD Software Version 7.x

  - RPD Software Version 6.x

  - RPD Software Version 5.x

  - RPD Software Version 4.x

  - RPD Software Version 3.x

  - RPD Software Version 2.x

- Console access for both SUPs are required.

Downgrade Procedure for Cisco RPD and Cisco cBR-8 Router

Step 1   Copy Cisco IOS XE software package to bootflash: and stby-bootflash:

```
copy <location>/<ios_xe_software_file> bootflash:
copy <location>/<ios_xe_software_file> stby-bootflash:
```

Step 2   Verify Cisco IOS XE software package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:<ios_xe_software_file>
verify /md5 stby-bootflash:<ios_xe_software_file>
```

Step 3   Backup the current running config to bootflash:

```
copy running-config bootflash:pre-upgrade.cfg
```

Step 4   Check the system status prior to upgrade.

We recommend that you save the information to compare against the system status after the upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

Step 5   Copy the Cisco RPD image package to a TFTP server that is accessible by the RPDs.

Step 6   Verify the current RPD software version.

Step 7
```
show cable rpd sw-version
```

Step 8   Downgrade all RPDs image via SSD from cBR-8.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_file_path>
```

Note   The **all** command is not recommended in large scale RPD deployment. If you have many RPDs, it is recommended to upgrade the RPD per line card or per OUI.

Step 9   Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

Step 10   Verify that all RPDs have downloaded the new image.

```
cable rpd all ssd status
show cable rpd
```

Step 11   Configure the chassis to boot the system with target Cisco IOS XE image. Save the running configuration.

```
Configure terminal
no boot system
boot system bootflash:<ios_xe_software_file>
config-register 0x2102
end
copy running-config startup-config
```

Step 12   Reload and start the cBR-8 router.

```
Reload
```

Step 13   Check that all the RPDs have been downgraded to the target version and that they are online.

```
show cable rpd
show cable rpd sw-version
```

These **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**

- **show cable modem voice**

- **show cable calls**

- **show cable licenses all**

- **show inventory**

- **show log**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

- **show running**

- **show tech**

Downgrade Cisco RPD

Before you begin

Make sure the following requirements are met:

- Download new image file from the following Cisco.com Software Center URL:

  https://software.cisco.com/download/home/286316518/type

  - RPD Software Version 9.x

  - RPD Software Version 8.x

  - RPD Software Version 7.x

  - RPD Software Version 6.x

  - RPD Software Version 5.x

  - RPD Software Version 4.x

  - RPD Software Version 3.x

  - RPD Software Version 2.x

SUMMARY STEPS

1. Copy the Cisco RPD image package to a TFTP server that is accessible by the RPDs.
2. Verify the current RPD software version.
3. Downgrade all RPDs image via SSD.
4. Verify the RPD SSD status. It will show the status as downloading.
5. Verify that all RPDs have downloaded the new image.

6. Check that all the RPDs have been downgraded to the target version and that they are online.

DETAILED STEPS

	Command or Action	Purpose
Step 1	Copy the Cisco RPD image package to a TFTP server that is accessible by the RPDs.	
Step 2	Verify the current RPD software version.	`show cable rpd sw-version`
Step 3	Downgrade all RPDs image via SSD.	**`cable rpd all ssd <tftp_server_ip> tftp <rpd_file_path>`** **Note** The **all** command is not suggested in large scale RPD deployment. If you have too many RPDs, it is recommended to upgrade the RPD per line card or per OUI.
Step 4	Verify the RPD SSD status. It will show the status as downloading.	`cable rpd all ssd status`
Step 5	Verify that all RPDs have downloaded the new image.	`cable rpd all ssd status` `show cable rpd`

Step 6	Check that all the RPDs have been downgraded to the target version and that they are online.	`show cable rpd`
		`show cable rpd sw-version`
		
		These **show** commands might be used during the verification test:
		
		• **show version**
		
		• **show platform**
		
		• **show platform diag**
		
		• **show environment**
		
		• **show environment power**
		
		• **show platform hardware slot P <0-5> mcu status**
		
		• **show facility-alarm status**
		
		• **show redundancy**
		
		• **show redundancy line card all**
		
		• **show ip ospf neighbor**
		
		• **show cable modem voice**

Command or Action	Purpose
	• **show cable calls**
	• **show cable licenses all**
	• **show inventory**
	• **show log**
	• **show cable rpd**
	• **show cable modem summary total**
	• **show cable rpd lcha**
	• **show running**
	• **show tech**

Downgrade Cisco cBR-8 Router

The following scenarios are supported in downgrading the cBR-8 router.

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
17.3.1x	Lower than 9.x	init(gcp)	Lower than 17.3.1x	online

Before downgrading the system, make sure the following requirements are met:

• Download new image file from the following Cisco.com Software Center URL:

https://software.cisco.com/download/home/286283913/type

    • IOS XE Software Version 17.3.1w

    • IOS XE Software Version 17.2.x

    • IOS XE Software Version 16.12.x

    • IOS XE Software Version 16.10.x

    • IOS XE Software Version 16.9.x

    • IOS XE Software Version 16.8.x

    • IOS XE Software Version 16.7.x

    • IOS XE Software Version 16.6.x

• Console access for both SUPs are required.

Note For information on how to downgrade the cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Amsterdam 17.3.x.

The following **show** commands might be used during the verification test:

- **show version**
- **show platform**
- **show platform diag**
- **show environment**
- **show environment power**
- **show platform hardware slot P <0-5> mcu status**
- **show facility-alarm status**
- **show redundancy**
- **show redundancy line card all**
- **show ip ospf neighbor**
- **show cable modem voice**
- **show cable calls**
- **show cable licenses all**
- **show inventory**
- **show log**
- **show cable rpd**
- **show cable modem summary total**
- **show cable rpd lcha**
- **show running**
- **show tech**

Cisco RPD and Cisco cBR-8 Router Version Compatibility

Before proceeding with the upgrading or downgrading operation, be aware that 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 RPD Software Version	Compatible Cisco cBR-8 Router Software Version
Cisco 1x2 / Compact Shelf RPD Software 9.3 and 9.4	Cisco IOS XE Amsterdam 17.3.1x
Cisco 1x2 / Compact Shelf RPD Software 9.1 and 9.2	Cisco IOS XE Amsterdam 17.3.1w
Cisco 1x2 / Compact Shelf RPD Software 8.5 and 8.6	Cisco IOS XE Amsterdam 17.2.1 Cisco IOS XE Gibraltar 16.12.1z
Cisco 1x2 / Compact Shelf RPD Software 8.4	Cisco IOS XE Gibraltar 16.12.1z
Cisco 1x2 / Compact Shelf RPD Software 8.3	Cisco IOS XE Amsterdam 17.2.1
Cisco 1x2 / Compact Shelf RPD Software 8.2	Cisco IOS XE Gibraltar 16.12.1y Cisco IOS XE Amsterdam 17.2.1
Cisco 1x2 / Compact Shelf RPD Software 8.1	Cisco IOS XE Amsterdam 17.2.1
Cisco 1x2 / Compact Shelf RPD Software 7.7, 7.8 and 7.8.1	Cisco IOS XE Gibraltar 16.12.1y
Cisco 1x2 / Compact Shelf RPD Software 7.6.1	Cisco IOS XE Gibraltar 16.12.1z
Cisco 1x2 / Compact Shelf RPD Software 7.6	Cisco IOS XE Gibraltar 16.12.1x Cisco IOS XE Gibraltar 16.12.1y
Cisco 1x2 / Compact Shelf RPD Software 7.5	Cisco IOS XE Gibraltar 16.12.1x
Cisco 1x2 / Compact Shelf RPD Software 7.4 and 7.4.1	Cisco IOS XE Gibraltar 16.12.1w Cisco IOS XE Gibraltar 16.12.1x
Cisco 1x2 / Compact Shelf RPD Software 7.3	Cisco IOS XE Gibraltar 16.12.1w

Cisco RPD Software Version	Compatible Cisco cBR-8 Router Software Version
Cisco 1x2 / Compact Shelf RPD Software 7.1 and 7.2	Cisco IOS XE Gibraltar 16.10.1g Cisco IOS XE Gibraltar 16.12.1
Cisco 1x2 / Compact Shelf RPD Software 6.7, 6.7.1 and 6.7.2	Cisco IOS XE Gibraltar 16.10.1d Cisco IOS XE Gibraltar 16.10.1f (Cisco IOS XE Gibraltar 16.10.1f is not recommended for RPD deployment)
Cisco 1x2 / Compact Shelf RPD Software 6.6 and 6.6.1	Cisco IOS XE Gibraltar 16.10.1f (Cisco IOS XE Gibraltar 16.10.1f is not recommended for RPD deployment)
Cisco 1x2 / Compact Shelf RPD Software 6.4, 6.4.1, 6.5 and 6.5.1	Cisco IOS XE Gibraltar 16.10.1d
Cisco 1x2 / Compact Shelf RPD Software 6.1, 6.2 and 6.3	Cisco IOS XE Gibraltar 16.10.1c
Cisco 1x2 / Compact Shelf RPD Software 5.x	Cisco IOS XE Fuji 16.9.x
Cisco 1x2 / Compact Shelf RPD Software 4.x	Cisco IOS XE Fuji 16.8.x
Cisco 1x2 / Compact Shelf RPD Software 3.x	Cisco IOS XE Fuji 16.7.x
Cisco 1x2 / Compact Shelf RPD Software 2.x	Cisco IOS XE Everest 16.6.x