Upgrading and downgrading guide for Cisco Remote PHY Device, Cisco 1x2 / Compact Shelf RPD Software 7.x

First Published: 2019-08-30

Last Modified: 2020-03-11

CONTENTS

Cisco Remote PHY Devices and Cisco cBR Series Converged Broadband Routers 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 software Version
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 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 RPD Software Version	Compatible Cisco cBR-8 software Version
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

Cisco 1x2 / Compact Shelf RPD Software 7.8.1

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.8.1

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1y	Lower than 7.8.1	online	16.12.1y	7.8.1	online
Lower than 16.12.1y	Lower than 7.8.1	init(gcp)	16.12.1y	7.8.1	online

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

- Download the two files from the following Cisco.com Software Center URL:

    - IOS XE Software Version 16.12.1y **cbrsup-universalk9.16.12.01y.SPA.bin**:
      https://software.cisco.com/download/home/286283913/type

    - RPD V7.8.1 **RPD-V7-8-1.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1y package to bootflash and stby-bootflash:

   ```
   copy <location>/cbrsup-universalk9.16.12.01y.SPA.bin bootflash:
   copy <location>/cbrsup-universalk9.16.12.01y.SPA.bin stby-bootflash:
   ```

2. Verify the Cisco IOS XE Gibraltar 16.12.1y package against the md5 hash as provided in the Cisco.com Software center.

   ```
   verify /md5 bootflash:cbrsup-universalk9.16.12.01y.SPA.bin
   verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01y.SPA.bin
   ```

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.8.1 by using SSD from the Cisco cBR-8 router.

   ```
   cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.8.1_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 OUI.

8. Verify RPD SSD status.

   The status will show as `downloading`.

   ```
   cable rpd all ssd status
   ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1y image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01y.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

• RPD V7.8.1: **RPD-V7-8-1.itb.SSA**

1. Copy the Cisco RPD V7.8.1 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.8.1 through SSD.

    `cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.8.1_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.

    ```
    cable rpd all ssd status
    ```

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.

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**

- **show cable rpd**

- **show cable modem summary total**

- **show cable rpd lcha**

- **show running**

- **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1y	7.8.1	init(gcp)	16.12.1y	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 16.12.1y: **cbrsup-universalk9.16.12.01y.SPA.bin**

- Console access for both SUPs are required.

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.8.1

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1y	7.8.1	online	Lower than 16.12.1y	Lower than 7.8.1	online
16.12.1y	7.8.1	online	Lower than 16.12.1y	Lower than 7.8.1	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 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 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.

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
```

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>
```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

  - 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

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

5. Verify that all RPDs have downloaded the new image.

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

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**
- **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**

Downgrading cBR-8 Router Only

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
16.12.1y	Lower than 7.8.1	init(gcp)	Lower than 16.12.1y	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 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 https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

CHAPTER 2

Cisco 1x2 / Compact Shelf RPD Software 7.8

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.8

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1y	Lower than 7.8	online	16.12.1y	7.8	online
Lower than 16.12.1y	Lower than 7.8	init(gcp)	16.12.1y	7.8	online

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

- Download the two files from the following Cisco.com Software Center URL:

    - IOS XE Software Version 16.12.1y **cbrsup-universalk9.16.12.01y.SPA.bin**:
      https://software.cisco.com/download/home/286283913/type

    - RPD V7.8 **RPD-V7-8.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1y package to bootflash and stby-bootflash:

   copy <location>/cbrsup-universalk9.16.12.01y.SPA.bin bootflash:
   copy <location>/cbrsup-universalk9.16.12.01y.SPA.bin stby-bootflash:

2. Verify the Cisco IOS XE Gibraltar 16.12.1y package against the md5 hash as provided in the Cisco.com Software center.

   verify /md5 bootflash:cbrsup-universalk9.16.12.01y.SPA.bin
   verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01y.SPA.bin

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.8 by using SSD from the Cisco cBR-8 router.

   cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.8_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 OUI.

8. Verify RPD SSD status.

   The status will show as `downloading`.

   ```
   cable rpd all ssd status
   ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1y image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01y.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

• RPD V7.8: **RPD-V7-8.itb.SSA**

1. Copy the Cisco RPD V7.8 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.8 through SSD.

cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.8_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.

```
cable rpd all ssd status
```

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.

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**

 • **show cable rpd**

 • **show cable modem summary total**

 • **show cable rpd lcha**

 • **show running**

 • **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1y	7.8	init(gcp)	16.12.1y	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 16.12.1y: **cbrsup-universalk9.16.12.01y.SPA.bin**

 • Console access for both SUPs are required.

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.8

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1y	7.8	online	Lower than 16.12.1y	Lower than 7.8	online
16.12.1y	7.8	online	Lower than 16.12.1y	Lower than 7.8	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 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 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.

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
```

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>
```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

  - 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

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

5. Verify that all RPDs have downloaded the new image.

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

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**
- **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**

Downgrading cBR-8 Router Only

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
16.12.1y	Lower than 7.8	init(gcp)	Lower than 16.12.1y	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 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 https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

CHAPTER 3

Cisco 1x2 / Compact Shelf RPD Software 7.7

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.7

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1x	Lower than 7.7	online	16.12.1x	7.7	online
Lower than 16.12.1x	Lower than 7.7	init(gcp)	16.12.1x	7.7	online

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

- Download the two files from the following Cisco.com Software Center URL:

  - IOS XE Software Version 16.12.1x **cbrsup-universalk9.16.12.01x.SPA.bin**:
    https://software.cisco.com/download/home/286283913/type

  - RPD V7.7 **RPD-V7-7.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

> **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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1x package to bootflash and stby-bootflash:

   ```
   copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin bootflash:
   copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin stby-bootflash:
   ```

2. Verify the Cisco IOS XE Gibraltar 16.12.1x package against the md5 hash as provided in the Cisco.com Software center.

   ```
   verify /md5 bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
   verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
   ```

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.7 by using SSD from the Cisco cBR-8 router.

   ```
   cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.7_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 OUI.

8. Verify RPD SSD status.

   The status will show as `downloading`.

   ```
   cable rpd all ssd status
   ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1x image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

- RPD V7.7: **RPD-V7-7.itb.SSA**

1. Copy the Cisco RPD V7.7 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.7 through SSD.

cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.7_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.

```
cable rpd all ssd status
```

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.

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**

       • **show cable rpd**

       • **show cable modem summary total**

       • **show cable rpd lcha**

       • **show running**

       • **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1x	7.7	init(gcp)	16.12.1x	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 16.12.1x: **cbrsup-universalk9.16.12.01x.SPA.bin**

- Console access for both SUPs are required.

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.7

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1x	7.7	online	Lower than 16.12.1x	Lower than 7.7	online
16.12.1x	7.7	online	Lower than 16.12.1x	Lower than 7.7	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 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 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.

✎

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
   ```

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>
   ```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

  - 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

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

5. Verify that all RPDs have downloaded the new image.

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

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**
- **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**

Downgrading cBR-8 Router Only

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
16.12.1x	Lower than 7.7	init(gcp)	Lower than 16.12.1x	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 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 https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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 1x2 / Compact Shelf RPD Software 7.6

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.6

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1x	Lower than 7.6	online	16.12.1x	7.6	online
Lower than 16.12.1x	Lower than 7.6	init(gcp)	16.12.1x	7.6	online

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

- Download the two files from the following Cisco.com Software Center URL:
  - IOS XE Software Version 16.12.1x **cbrsup-universalk9.16.12.01x.SPA.bin**:
    https://software.cisco.com/download/home/286283913/type
  - RPD V7.6 **RPD-V7-6.itb.SSA**: https://software.cisco.com/download/home/286316518/type
- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1x package to bootflash and stby-bootflash:

   ```
   copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin bootflash:
   copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin stby-bootflash:
   ```

2. Verify the Cisco IOS XE Gibraltar 16.12.1x package against the md5 hash as provided in the Cisco.com Software center.

   ```
   verify /md5 bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
   verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
   ```

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.6 by using SSD from the Cisco cBR-8 router.

   ```
   cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.6_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 OUI.

8. Verify RPD SSD status.

   The status will show as `downloading`.

   ```
   cable rpd all ssd status
   ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1x image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

• RPD V7.6: **RPD-V7-6.itb.SSA**

1. Copy the Cisco RPD V7.6 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.6 through SSD.

cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.6_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.

```
cable rpd all ssd status
```

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.

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**
>
> • **show cable rpd**
>
> • **show cable modem summary total**
>
> • **show cable rpd lcha**
>
> • **show running**
>
> • **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1x	7.6	init(gcp)	16.12.1x	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 16.12.1x: **cbrsup-universalk9.16.12.01x.SPA.bin**

 • Console access for both SUPs are required.

Note　For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.6

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1x	7.6	online	Lower than 16.12.1x	Lower than 7.6	online
16.12.1x	7.6	online	Lower than 16.12.1x	Lower than 7.6	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 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 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.

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
```

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>
```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

    - 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

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

5. Verify that all RPDs have downloaded the new image.

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

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**
- **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**

Downgrading cBR-8 Router Only

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
16.12.1x	Lower than 7.6	init(gcp)	Lower than 16.12.1x	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 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 https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

C H A P T E R 5

Cisco 1x2 / Compact Shelf RPD Software 7.5

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.5

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1x	Lower than 7.5	online	16.12.1x	7.5	online
Lower than 16.12.1x	Lower than 7.5	init(gcp)	16.12.1x	7.5	online

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

- Download the two files from the following Cisco.com Software Center URL:

  - IOS XE Software Version 16.12.1x **cbrsup-universalk9.16.12.01x.SPA.bin**:
    https://software.cisco.com/download/home/286283913/type

  - RPD V7.5 **RPD-V7-5.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1x package to bootflash and stby-bootflash:

   `copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin bootflash:`
   `copy <location>/cbrsup-universalk9.16.12.01x.SPA.bin stby-bootflash:`

2. Verify the Cisco IOS XE Gibraltar 16.12.1x package against the md5 hash as provided in the Cisco.com Software center.

   `verify /md5 bootflash:cbrsup-universalk9.16.12.01x.SPA.bin`
   `verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01x.SPA.bin`

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.5 by using SSD from the Cisco cBR-8 router.

   `cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.5_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 OUI.

8. Verify RPD SSD status.

   The status will show as `downloading`.

   ```
   cable rpd all ssd status
   ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1x image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01x.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

- RPD V7.5: **RPD-V7-5.itb.SSA**

1. Copy the Cisco RPD V7.5 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.5 through SSD.

cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.5_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.
```
cable rpd all ssd status
```

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.

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**
>
> • **show cable rpd**
>
> • **show cable modem summary total**
>
> • **show cable rpd lcha**
>
> • **show running**
>
> • **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1x	7.5	init(gcp)	16.12.1x	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 16.12.1x: **cbrsup-universalk9.16.12.01x.SPA.bin**

- • Console access for both SUPs are required.

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.5

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1x	7.5	online	Lower than 16.12.1x	Lower than 7.5	online
16.12.1x	7.5	online	Lower than 16.12.1x	Lower than 7.5	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 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 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.

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
   ```

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>
   ```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

    - 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

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

5. Verify that all RPDs have downloaded the new image.

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

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**
- **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**

Downgrading cBR-8 Router Only

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
16.12.1x	Lower than 7.5	init(gcp)	Lower than 16.12.1x	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 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 https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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 1x2 / Compact Shelf RPD Software 7.4

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.4

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1	Lower than 7.4	online	16.12.1	7.4	online
Lower than 16.12.1	Lower than 7.4	init(gcp)	16.12.1	7.4	online

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

- Download the two files from the following Cisco.com Software Center URL:

    - IOS XE Software Version 16.12.1 **cbrsup-universalk9.16.12.01.SPA.bin**: https://software.cisco.com/download/home/286283913/type

    - RPD V7.4 **RPD-V7-4.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

1. Copy the Cisco IOS XE Gibraltar 16.12.1 package to bootflash and stby-bootflash:

    copy <location>/cbrsup-universalk9.16.12.01.SPA.bin bootflash:
    copy <location>/cbrsup-universalk9.16.12.01.SPA.bin stby-bootflash:

2. Verify the Cisco IOS XE Gibraltar 16.12.1 package against the md5 hash as provided in the Cisco.com Software center.

    verify /md5 bootflash:cbrsup-universalk9.16.12.01.SPA.bin
    verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01.SPA.bin

3. Back up the current running config to bootflash.

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

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.

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

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

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

7. Upgrade all RPD images to version 7.4 by using SSD from the Cisco cBR-8 router.

    cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.4_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 OUI.

8. Verify RPD SSD status.

    The status will show as `downloading`.

    ```
    cable rpd all ssd status
    ```

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

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

10. Configure the chassis to boot the system with Cisco IOS XE Gibraltar 16.12.1 image. Save the running configuration.

    ```
    configure terminal
    no boot system
    boot system bootflash:cbrsup-universalk9.16.12.01.SPA.bin
    config-register 0x2102
    end
    copy running-config startup-config
    ```

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

    ```
    Reload
    ```

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.

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 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**

Upgrading RPD Only

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

- RPD V7.4: **RPD-V7-4.itb.SSA**

1. Copy the Cisco RPD V7.4 image package to a TFTP server where it can be accessed by the RPDs.

2. Verify current RPD software version.

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

3. Upgrade all RPDs image to V7.4 through SSD.

`cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.4_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.

4. Verify the RPD SSD status. It will show the status as **downloading**.

```
cable rpd all ssd status
```

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.

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**

    • **show cable rpd**

    • **show cable modem summary total**

    • **show cable rpd lcha**

    • **show running**

    • **show tech**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1	7.4	init(gcp)	16.12.1	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 16.12.1: **cbrsup-universalk9.16.12.01.SPA.bin**

    • Console access for both SUPs are required.

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.4

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1	7.4	online	Lower than 16.12.1	Lower than 7.4	online
16.12.1	7.4	online	Lower than 16.12.1	Lower than 7.4	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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

    - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

  - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

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

   - RPD V7.3: **RPD-V7-3.itb.SSA**

   - RPD V7.2: **RPD-V7-2.itb.SSA**

   - RPD V7.1: **RPD-V7-1.itb.SSA**

   - RPD V6.7: **RPD-V6-7.itb.SSA**

   - RPD V6.6: **RPD-V6-6.itb.SSA**

   - RPD V6.5: **RPD-V6-5.itb.SSA**

   - RPD V6.4: **RPD-V6-4.itb.SSA**

   - RPD V6.3: **RPD-V6-3.itb.SSA**

   - RPD V6.2: **RPD-V6-2.itb.SSA**

   - RPD V6.1: **RPD-V6-1.itb.SSA**

   - RPD V5.4: **RPD-V5-4.itb.SSA**

   - RPD V5.3: **RPD-V5-3.itb.SSA**

   - RPD V5.2: **RPD-V5-2.itb.SSA**

   - RPD V5.1.0: **RPD-V5-1.itb.SSA**

   - RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

   - RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

   - RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

 - Console access for both SUPs are required.

Note   For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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:
```

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>
```

3. Backup the current running config to bootflash:.

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

4. Check the system status prior to upgrade. It is recommended that the information is saved to compare against the system status after upgrade. For commands that are used to check the status, see the **show** commands at the end of this section.

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

6. Verify the current RPD software version.

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

7. 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.

8. Verify the RPD SSD status. It will show the status as downloading.

```
cable rpd all ssd status
```

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

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

10. 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
```

11. Reload and start the cBR-8 router.

```
Reload
```

12. 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**

Downgrading RPD Only

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/286316518/type

    - RPD V7.3: **RPD-V7-3.itb.SSA**

    - RPD V7.2: **RPD-V7-2.itb.SSA**

    - RPD V7.1: **RPD-V7-1.itb.SSA**

- RPD V6.7: **RPD-V6-7.itb.SSA**

- RPD V6.6: **RPD-V6-6.itb.SSA**

- RPD V6.5: **RPD-V6-5.itb.SSA**

- RPD V6.4: **RPD-V6-4.itb.SSA**

- RPD V6.3: **RPD-V6-3.itb.SSA**

- RPD V6.2: **RPD-V6-2.itb.SSA**

- RPD V6.1: **RPD-V6-1.itb.SSA**

- RPD V5.4: **RPD-V5-4.itb.SSA**

- RPD V5.3: **RPD-V5-3.itb.SSA**

- RPD V5.2: **RPD-V5-2.itb.SSA**

- RPD V5.1.0: **RPD-V5-1.itb.SSA**

- RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

- RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

- RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

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

2. Verify the current RPD software version.

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

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.

4. Verify the RPD SSD status. It will show the status as downloading.

   ```
   cable rpd all ssd status
   ```

5. Verify that all RPDs have downloaded the new image.

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

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**

- **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**

Downgrading cBR-8 Router Only

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
16.12.1	Lower than 7.4	init(gcp)	Lower than 16.12.1	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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

- IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

- IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

- Console access for both SUPs are required.

Note   For information on how to downgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

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**

CHAPTER 7

Cisco 1x2 / Compact Shelf RPD Software 7.3

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.3

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1	Lower than 7.3	online	16.12.1	7.3	online
Lower than 16.12.1	Lower than 7.3	init(gcp)	16.12.1	7.3	online

Before you begin

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

• Download the two files from the following Cisco.com Software Center URL:

  • IOS XE Software Version 16.12.1 **cbrsup-universalk9.16.12.01.SPA.bin**: https://software.cisco.com/download/home/286283913/type

  • RPD V7.2 **RPD-V7-3.itb.SSA**: https://software.cisco.com/download/home/286316518/type

• Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

Step 1 Copy the Cisco IOS XE Gibraltar 16.12.1 package to bootflash and stby-bootflash:

```
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin bootflash:
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin stby-bootflash:
```

Step 2 Verify the Cisco IOS XE Gibraltar 16.12.1 package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:cbrsup-universalk9.16.12.01.SPA.bin
verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01.SPA.bin
```

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 version 7.3 by using SSD from the Cisco cBR-8 router.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.3_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 OUI.

Step 8 Verify RPD SSD status.

The status will show 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 Gibraltar 16.12.1 image. Save the running configuration.

```
configure terminal
no boot system
boot system bootflash:cbrsup-universalk9.16.12.01.SPA.bin
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
```

What to do next

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**

Upgrading RPD Only

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

  - RPD V7.3: **RPD-V7-3.itb.SSA**

Step 1   Copy the Cisco RPD V7.3 image package to a TFTP server where it can be accessed by the RPDs.

Step 2   Verify current RPD software version.

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

Step 3   Upgrade all RPDs image to V7.3 through SSD.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.3_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
```

What to do next

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**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1	7.3	init(gcp)	16.12.1	online

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.12.1: **cbrsup-universalk9.16.12.01.SPA.bin**

- Console access for both SUPs are required.

What to do next

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.3

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1	7.3	online	Lower than 16.12.1	Lower than 7.3	online
16.12.1	7.3	online	Lower than 16.12.1	Lower than 7.3	init(gcp)

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**
        - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**
        - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

    - RPD Software: https://software.cisco.com/download/home/286316518/type
        - RPD V7.2: **RPD-V7-2.itb.SSA**
        - RPD V7.1: **RPD-V7-1.itb.SSA**
        - RPD V6.7: **RPD-V6-7.itb.SSA**
        - RPD V6.6: **RPD-V6-6.itb.SSA**
        - RPD V6.5: **RPD-V6-5.itb.SSA**
        - RPD V6.4: **RPD-V6-4.itb.SSA**
        - RPD V6.3: **RPD-V6-3.itb.SSA**
        - RPD V6.2: **RPD-V6-2.itb.SSA**
        - RPD V6.1: **RPD-V6-1.itb.SSA**
        - RPD V5.4: **RPD-V5-4.itb.SSA**
        - RPD V5.3: **RPD-V5-3.itb.SSA**
        - RPD V5.2: **RPD-V5-2.itb.SSA**
        - RPD V5.1.0: **RPD-V5-1.itb.SSA**

- RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

- RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

- RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

- Console access for both SUPs are required.

✎

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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. It is recommended that the information is saved to compare against the system status after 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.

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

Step 7 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 8 Verify the RPD SSD status. It will show the status 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 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 11   Reload and start the cBR-8 router.

```
Reload
```

Step 12   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
```

What to do next

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**

Downgrading RPD Only

Before you begin

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/286316518/type

  • RPD V7.2: **RPD-V7-2.itb.SSA**

  • RPD V7.1: **RPD-V7-1.itb.SSA**

  • RPD V6.7: **RPD-V6-7.itb.SSA**

  • RPD V6.6: **RPD-V6-6.itb.SSA**

  • RPD V6.5: **RPD-V6-5.itb.SSA**

  • RPD V6.4: **RPD-V6-4.itb.SSA**

  • RPD V6.3: **RPD-V6-3.itb.SSA**

  • RPD V6.2: **RPD-V6-2.itb.SSA**

  • RPD V6.1: **RPD-V6-1.itb.SSA**

  • RPD V5.4: **RPD-V5-4.itb.SSA**

  • RPD V5.3: **RPD-V5-3.itb.SSA**

  • RPD V5.2: **RPD-V5-2.itb.SSA**

  • RPD V5.1.0: **RPD-V5-1.itb.SSA**

  • RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

  • RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

  • RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

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
```

What to do next

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**

Downgrading cBR-8 Router Only

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
16.12.1	Lower than 7.3	init(gcp)	Lower than 16.12.1	online

Note For information on how to downgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

    - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

    - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

- Console access for both SUPs are required.

What to do next

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 1x2 / Compact Shelf RPD Software 7.2

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.2

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1	Lower than 7.2	online	16.12.1	7.2	online
Lower than 16.12.1	Lower than 7.2	init(gcp)	16.12.1	7.2	online

Before you begin

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

- Download the two files from the following Cisco.com Software Center URL:

  - IOS XE Software Version 16.12.1 **cbrsup-universalk9.16.12.01.SPA.bin**: https://software.cisco.com/download/home/286283913/type

  - RPD V7.2 **RPD-V7-2.itb.SSA**: https://software.cisco.com/download/home/286316518/type

- Console access for both SUP line cards is required.

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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

Step 1 Copy the Cisco IOS XE Gibraltar 16.12.1 package to bootflash and stby-bootflash:

```
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin bootflash:
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin stby-bootflash:
```

Step 2 Verify the Cisco IOS XE Gibraltar 16.12.1 package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:cbrsup-universalk9.16.12.01.SPA.bin
verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01.SPA.bin
```

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 version 7.2 by using SSD from the Cisco cBR-8 router.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.2_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 OUI.

Step 8 Verify RPD SSD status.

The status will show 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 Gibraltar 16.12.1 image. Save the running configuration.

```
configure terminal
no boot system
boot system bootflash:cbrsup-universalk9.16.12.01.SPA.bin
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
```

What to do next

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**

Upgrading RPD Only

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

   - RPD V7.2: **RPD-V7-2.itb.SSA**

Step 1   Copy the Cisco RPD V7.2 image package to a TFTP server where it can be accessed by the RPDs.

Step 2   Verify current RPD software version.

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

Step 3   Upgrade all RPDs image to V7.2 through SSD.

`cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.2_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
```

What to do next

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**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1	7.2	init(gcp)	16.12.1	online

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.12.1: **cbrsup-universalk9.16.12.01.SPA.bin**

- Console access for both SUPs are required.

What to do next

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.2

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1	7.2	online	Lower than 16.12.1	Lower than 7.2	online
16.12.1	7.2	online	Lower than 16.12.1	Lower than 7.2	init(gcp)

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

    - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

    - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

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

    - RPD V7.1: **RPD-V7-1.itb.SSA**

    - RPD V6.7: **RPD-V6-7.itb.SSA**

    - RPD V6.6: **RPD-V6-6.itb.SSA**

    - RPD V6.5: **RPD-V6-5.itb.SSA**

    - RPD V6.4: **RPD-V6-4.itb.SSA**

    - RPD V6.3: **RPD-V6-3.itb.SSA**

    - RPD V6.2: **RPD-V6-2.itb.SSA**

    - RPD V6.1: **RPD-V6-1.itb.SSA**

    - RPD V5.4: **RPD-V5-4.itb.SSA**

    - RPD V5.3: **RPD-V5-3.itb.SSA**

    - RPD V5.2: **RPD-V5-2.itb.SSA**

    - RPD V5.1.0: **RPD-V5-1.itb.SSA**

    - RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

> • RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or
>
> • RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

• Console access for both SUPs are required.

✎

Note   For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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. It is recommended that the information is saved to compare against the system status after 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.

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

Step 7   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 8   Verify the RPD SSD status. It will show the status 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 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 11   Reload and start the cBR-8 router.

```
Reload
```

Step 12   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
```

What to do next

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**

Downgrading RPD Only

Before you begin

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/286316518/type

  - RPD V7.1: **RPD-V7-1.itb.SSA**

  - RPD V6.7: **RPD-V6-7.itb.SSA**

  - RPD V6.6: **RPD-V6-6.itb.SSA**

  - RPD V6.5: **RPD-V6-5.itb.SSA**

  - RPD V6.4: **RPD-V6-4.itb.SSA**

  - RPD V6.3: **RPD-V6-3.itb.SSA**

  - RPD V6.2: **RPD-V6-2.itb.SSA**

  - RPD V6.1: **RPD-V6-1.itb.SSA**

  - RPD V5.4: **RPD-V5-4.itb.SSA**

  - RPD V5.3: **RPD-V5-3.itb.SSA**

  - RPD V5.2: **RPD-V5-2.itb.SSA**

  - RPD V5.1.0: **RPD-V5-1.itb.SSA**

  - RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

  - RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

  - RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

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
```

What to do next

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**

Downgrading cBR-8 Router Only

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
16.12.1	Lower than 7.2	init(gcp)	Lower than 16.12.1	online

Note For information on how to downgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

    - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

    - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

- Console access for both SUPs are required.

What to do next

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 1x2 / Compact Shelf RPD Software 7.1

Upgrading to Cisco 1x2 / Compact Shelf RPD Software 7.1

Upgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
Lower than 16.12.1	Lower than 7.1	online	16.12.1	7.1	online
Lower than 16.12.1	Lower than 7.1	init(gcp)	16.12.1	7.1	online

Before you begin

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

• Download the two files from the following Cisco.com Software Center URL:

• IOS XE Software Version 16.12.1 **cbrsup-universalk9.16.12.01.SPA.bin**: https://software.cisco.com/download/home/286283913/type

• RPD V7.1 **RPD-V7-1.itb.SSA**: https://software.cisco.com/download/home/286316518/type

• Console access for both SUP line cards is required.

> ✎
>
> **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 Gibraltar 16.12.x. When upgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

Step 1 Copy the Cisco IOS XE Gibraltar 16.12.1 package to bootflash and stby-bootflash:

```
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin bootflash:
copy <location>/cbrsup-universalk9.16.12.01.SPA.bin stby-bootflash:
```

Step 2 Verify the Cisco IOS XE Gibraltar 16.12.1 package against the md5 hash as provided in the Cisco.com Software center.

```
verify /md5 bootflash:cbrsup-universalk9.16.12.01.SPA.bin
verify /md5 stby-bootflash:cbrsup-universalk9.16.12.01.SPA.bin
```

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 version 7.1 by using SSD from the Cisco cBR-8 router.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.1_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 OUI.

Step 8 Verify RPD SSD status.

The status will show 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 Gibraltar 16.12.1 image. Save the running configuration.

```
configure terminal
no boot system
boot system bootflash:cbrsup-universalk9.16.12.01.SPA.bin
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
```

What to do next

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**

Upgrading RPD Only

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

    - RPD V7.1: **RPD-V7-1.itb.SSA**

Step 1 Copy the Cisco RPD V7.1 image package to a TFTP server where it can be accessed by the RPDs.

Step 2 Verify current RPD software version.

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

Step 3 Upgrade all RPDs image to V7.1 through SSD.

```
cable rpd all ssd <tftp_server_ip> tftp <rpd_V7.1_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
```

What to do next

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**

Upgrading cBR-8 Router Only

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

cBR-8 original version	RPD version	RPD state before upgrade	cBR-8 upgrade version	RPD state after upgrade
Lower than 16.12.1	7.1	init(gcp)	16.12.1	online

Note For information on how to upgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.12.1: **cbrsup-universalk9.16.12.01.SPA.bin**

- Console access for both SUPs are required.

What to do next

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**

Downgrading from Cisco 1x2 / Compact Shelf RPD Software 7.1

Downgrading RPD and cBR-8 Router

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

cBR-8 original version	RPD original version	RPD state before upgrade	cBR-8 upgrade version	RPD upgrade version	RPD state after upgrade
16.12.1	7.1	online	Lower than 16.12.1	Lower than 7.1	online
16.12.1	7.1	online	Lower than 16.12.1	Lower than 7.1	init(gcp)

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**

        - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**

        - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01e.SPA.bin**

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

        - RPD V6.7: **RPD-V6-7.itb.SSA**

        - RPD V6.6: **RPD-V6-6.itb.SSA**

        - RPD V6.5: **RPD-V6-5.itb.SSA**

        - RPD V6.4: **RPD-V6-4.itb.SSA**

        - RPD V6.3: **RPD-V6-3.itb.SSA**

        - RPD V6.2: **RPD-V6-2.itb.SSA**

        - RPD V6.1: **RPD-V6-1.itb.SSA**

        - RPD V5.4: **RPD-V5-4.itb.SSA**

        - RPD V5.3: **RPD-V5-3.itb.SSA**

        - RPD V5.2: **RPD-V5-2.itb.SSA**

        - RPD V5.1.0: **RPD-V5-1.itb.SSA**

        - RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

        - RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

• RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

• Console access for both SUPs are required.

✎

Note For more information on how to downgrade the Cisco cBR-8 router, see Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x. When downgrading Cisco cBR-8 router, should there be any difference between the steps in Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Gibraltar 16.12.x and the following steps, the Cisco cBR-8 Upgrade Guide would prevail.

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. It is recommended that the information is saved to compare against the system status after 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.

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

Step 7 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 8 Verify the RPD SSD status. It will show the status 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 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 11   Reload and start the cBR-8 router.

```
Reload
```

Step 12   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
```

What to do next

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**

Downgrading RPD Only

Before you begin

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/286316518/type

  - RPD V6.7: **RPD-V6-7.itb.SSA**

  - RPD V6.6: **RPD-V6-6.itb.SSA**

  - RPD V6.5: **RPD-V6-5.itb.SSA**

  - RPD V6.4: **RPD-V6-4.itb.SSA**

  - RPD V6.3: **RPD-V6-3.itb.SSA**

  - RPD V6.2: **RPD-V6-2.itb.SSA**

  - RPD V6.1: **RPD-V6-1.itb.SSA**

  - RPD V5.4: **RPD-V5-4.itb.SSA**

  - RPD V5.3: **RPD-V5-3.itb.SSA**

  - RPD V5.2: **RPD-V5-2.itb.SSA**

  - RPD V5.1.0: **RPD-V5-1.itb.SSA**

  - RPD V4.1.1: **RPD-V4-1-1.itb.SSA**,

  - RPD V3.1.1: **RPD-V3-1-1.itb.SSA**, or

  - RPD V2.1: **RPD-V2.1_20170725011837.itb.rel.sign.SSA**

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
```

What to do next

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**

Downgrading cBR-8 Router Only

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
16.12.1	Lower than 7.1	init(gcp)	Lower than 16.12.1	online

Note For information on how to downgrade the cBR-8 router, see https://www.cisco.com/c/en/us/td/docs/cable/cbr/upgrade/guide/b_cbr_upgrade_16_12.html.

Before you begin

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 16.10.1g: **cbrsup-universalk9.16.10.01g.SPA.bin**,

  - IOS XE Software Version 16.9.1: **cbrsup-universalk9.16.09.01.SPA.bin**,

  - IOS XE Software Version 16.8.1: **cbrsup-universalk9.16.08.01.SPA.bin**,

- Console access for both SUPs are required.

What to do next

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**