Upgrading to a CRS Back-to-Back System Using Cisco IOS-XR 5.1.1 or Later

This chapter describes how to:

- Upgrade a Cisco CRS-3 single-chassis to a CRS 140 G Back-to-Back System when you are using Cisco IOS-XR version 5.1.1 or later, and
- Upgrade a Cisco CRS-3 or Cisco CRS-X single-chassis to a CRS 400 G Back-to-Back System when you are using Cisco IOS-XR version 5.1.1 or later.

The procedures for upgrading to a CRS 140 G Back-to-Back System and a CRS 400 G Back-to-Back System are similar.

Note If you are using Cisco IOS-XR 4.3.1 or earlier, please see Upgrading to a CRS Back-to-Back System Using Cisco IOS-XR 4.3.1 or Earlier

This chapter contains the following sections:

Prerequisites for Upgrading to a CRS Back-to-Back System

Before You Begin

Prior to upgrading, perform the following steps:

Procedure

Step 1 Prepare the single-chassis system as follows:

a) Obtain the chassis serial number of the current running system which is required for configuration. The serial number is on a chassis label and can be accessed using the **show diag chassis** command, as described in the *Cisco IOS XR Getting Started Guide* .

b) Upgrade the ROM Monitor software to version 2.08 or later, as described in the *Cisco IOS XR ROM Monitor Guide* .

Step 2 Prepare the additional LCC as follows:

a) Ensure that the power to the new LCC is off.
For more information, see the Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Installation Guide .

b) It is recommended to get the back-to-back array cables ready and not connected yet.

Step 3 Follow the steps in Changing the Fabric Addressing Mode, on page 2.

Changing the Fabric Addressing Mode

Next, you must change the fabric addressing mode to 64-bit instead of 128-bit (which is the default in IOS-XR 5.1.1). This can be achieved by setting the ROMMON variable BOOT_WITH_B2B_TAIKO on all of the PRPs in the chassis.

There are two ways to perform this process, depending upon whether or not you have access to the auxiliary ports on all of the PRPs.

If you have access to the auxiliary ports on all of the PRPs, proceed as follows:

Procedure

Step 1 Type the following command:

Example:

```
#satori_test_nvram
```

The output appears as follows:

Example:

```
Thu Dec  5 07:29:06.940 UTC
Choose from one of the following options:
0. Quit
1. dump shadow nvram
2. dump flash
3. write shadow to flash
4. dump usb
5. get rommon variable
6. set rommon variable
7. clean all rommon variables
8. print nv hdr info
9. write to shadow
Enter option :
```

Step 2 Type 6.
The output appears as follows:

Example:

```
Enter rommon VAR to set: [TURBOBOOT]
```

Step 3 Type **BOOT_WITH_B2B_TAIKO**.
The output appears as follows:

Example:

```
Enter value to set rommon VAR: [on,disk0]
```

Step 4 Type 1.
The output appears as follows:

```
Setting BOOT_WITH_B2B_TAIKO=1 ..
Choose from one of the following options:
0. Quit
```

Step 5 Type 0
If you do NOT have access to the auxiliary ports on all of the PRPs, proceed as follows:

Step 6 On the active PRP, type the following command:

Example:

```
RP/0/RP0/CPU0:ios# run satori_test_nvram
```

The output appears as follows:

Example:

```
Thu Dec  5 07:29:06.940 UTC
Choose from one of the following options:
0. Quit
1. dump shadow nvram
2. dump flash
3. write shadow to flash
4. dump usb
5. get rommon variable
6. set rommon variable
7. clean all rommon variables
8. print nv hdr info
9. write to shadow
Enter option :
```

Step 7 Type 6.
The output appears as follows:

Example:

```
Enter rommon VAR to set: [TURBOBOOT]
```

Step 8 Type **BOOT_WITH_B2B_TAIKO**.
The output appears as follows:

Example:

```
Enter value to set rommon VAR: [on,disk0]
```

Step 9 Type 1.

The output appears as follows:

Example:

```
Setting BOOT_WITH_B2B_TAIKO=1 ..
Choose from one of the following options:
0. Quit
```

Step 10 Type 0.

Step 11 Bring down the standby chassis to ROMMON by typing the following commands:

Example:

```
>unset BOOT_WITH_B2B_TAIKO
>set BOOT_WITH_B2B_TAIKO=1
>confreg 0x2
>sync
>reset
```

Step 12 If DRPs are present, bring them down to ROMMON as follows:

a) Reboot using the following command:

Example:

```
>reload location
```

b) Press CTRL+C on both CPUs (CPU0 and CPU1) while booting, and type the following commands on both CPUs:

Example:

```
>unset BOOT_WITH_B2B_TAIKO
>set BOOT_WITH_B2B_TAIKO=1
>confreg 0x2
>sync
>reset
```

Changing the Fabric Addressing Mode

The output appears as follows:

```
Setting BOOT_WITH_B2B_TAIKO=1 ..
Choose from one of the following options:
0. Quit
```

Type 0.

If you do NOT have access to the auxiliary ports on all of the PRPs, proceed as follows:

Procedure

Step 1 On the active PRP, type the following command:

Example:

```
RP/0/RP0/CPU0:ios# run satori_test_nvram
```

The output appears as follows:

Example:

```
Thu Dec  5 07:29:06.940 UTC
Choose from one of the following options:
0. Quit
1. dump shadow nvram
2. dump flash
3. write shadow to flash
4. dump usb
5. get rommon variable
6. set rommon variable
7. clean all rommon variables
8. print nv hdr info
9. write to shadow
Enter option :
```

Step 2 Type 6.

The output appears as follows:

Example:

```
Enter rommon VAR to set: [TURBOBOOT]
```

Step 3 Type **BOOT_WITH_B2B_TAIKO**.

The output appears as follows:

Example:

```
Enter value to set rommon VAR: [on,disk0]
```

Step 4 Type 1.

The output appears as follows:

Example:

```
Setting BOOT_WITH_B2B_TAIKO=1 ..
Choose from one of the following options:
0. Quit
```

Step 5 Type 0.

Step 6 Bring down the standby chassis to ROMMON by typing the following commands:

Example:

```
>unset BOOT_WITH_B2B_TAIKO
>set BOOT_WITH_B2B_TAIKO=1
>confreg 0x2
>sync
>reset
```

Step 7 If DRPs are present, bring them down to ROMMON as follows:

a) Reboot using the following command:

Example:

```
>reload location
```

b) Press CTRL+C on both CPUs (CPU0 and CPU1) while booting, and type the following commands on both CPUs:

Example:

```
>unset BOOT_WITH_B2B_TAIKO
>set BOOT_WITH_B2B_TAIKO=1
>confreg 0x2
>sync
>reset
```

How to Upgrade to a CRS Back-to-Back System

To upgrade a single-chassis system to a CRS Back-to-Back System, you must complete the following tasks:

Upgrading the Fabric Cards

This section describes how to upgrade the fabric cards in a single-chassis system.

Prerequisites

Software Requirements

- Cisco IOS XR Software Release 5.1.1 or later release
- ROMMON 2.08 or later version

Caution The ROM Monitor software must be upgraded to version 2.08 or a later version on all PRPs before a Cisco CRS-3 system is upgraded to Cisco IOS XR Software Release 5.1.1 or later release. If the router is brought up with an incompatible version of the ROM Monitor software, then the standby PRP may fail to boot. For instructions to overcome a boot block in the standby PRP in a single chassis system, see Cisco IOS XR *ROM Monitor Guide* .

Hardware Requirements

Conversion kit, which has the following components:

- Eight fabric cards:
  - CRS-16-FC140/M for CRS 140 G Back-to-Back System, or
  - CRS-16-FC400/M for CRS 400 G Back-to-Back System

- Rear cable management (CRS-16-REAR-CM)
- PRP route processor (if you are using CRS-16-RP-B on a single chassis)

Restrictions

None.

Summary Steps

On a single-chassis system, each fabric card represents one fabric plane. To avoid traffic loss during the upgrade, you must upgrade the switch fabric one plane at a time. To do that, you must replace each FC/S fabric card (CRS-16-FC140/S or CRS-16-FC400/S) with a new FC/M fabric card (CRS-16-FC140/M or CRS-16-FC400/M) and restore service to that fabric plane before upgrading the next fabric plane.

Here are the basic steps to upgrade fabric cards:

Procedure

Step 1 Use CLI commands to prepare each FC/S fabric card (CRS-16-FC140/S or CRS-16-FC400/S) for replacement with an FC/M card (CRS-16-FC140/M or CRS-16-FC400/M).

Step 2 Before you replace any FC/S cards, shut down the plane on each card using the following command: **controllers fabric plane** *planeNumber* **shutdown**.

Step 3 On the fabric card that you want to replace, disable the power using the following command: **hw-module power disable location** *rack* /**SM***slot* /**SP**.

Step 4 Replace each FC/S card (CRS-16-FC140/S or CRS-16-FC400/S) with an FC/M card (CRS-16-FC140/M or CRS-16-FC400/M).

Step 5 Bring up the FC/M card (CRS-16-FC140/M or CRS-16-FC400/M), as follows:

a) Power up the card using the following command: **no hw-module power disable location** *rack* /**SM***slot* /**SP**. Wait for the plates to reach the IOS XR RUN state.

b) For the plane to be upgraded, bring up the control plane using the following command: **controllers fabric plane** *planeNumber* **shutdown data**.

c) Verify that the entire card has booted and all asics have initialized prior to restoring the plane for traffic.

d) Bring up the data plane using the following command: **no controllers fabric plane** *planeNumber* **shutdown**. Verify that the plane state is UP/UP.

Step 6 Repeat *Step 2* through *Step 5* until all planes (0 through 7) are upgraded.

Detailed Steps

Procedure

	Command or Action	Purpose
Step 1	**admin**	Places the router in administration EXEC mode.

	Command or Action	Purpose
	Example: `RP/0/RP1/CPU0:router# admin`	• All commands listed in this procedure should be entered on the pre-existing single-chassis system.
Step 2	**show platform** *rack number*/**/* **Example:** `RP/0/RP1/CPU0:router(admin)# show platform 1/**/*`	Displays the status of all LCC modules in the specified rack. • Replace *rack* with the rack number of the LCC to examine. • Repeat this command for all LCCs. • The state for all modules should be IOS-XR RUN. • It can take a few minutes for all LCC modules to start. **Note** The LCC module status appears only when the **show platform** command is executed in administration EXEC mode.
Step 3	**configure** **Example:** `RP/0/RP1/CPU0:router(admin)#configure`	Places the router in administration configuration mode.
Step 4	**do show controllers fabric plane all** **Example:** `RP/0/RP1/CPU0:router(admin-config)# do show controllers fabric plane all`	Displays the administrative and operational status of all eight fabric planes. • The **do** command prefix allows the EXEC mode **show** command to execute in administration configuration mode. **Caution** To prevent service interruption, do not continue until the administrative and operational status for all eight planes is UP.
Step 5	**controllers fabric plane** *planeNumber* **shutdown** **Example:** `RP/0/RP1/CPU0:router(admin-config)# controllers fabric plane 0 shutdown`	Modifies the target configuration to shut down the specified plane number. • Replace the *planeNumber* parameter with the number of the plane you want to shut down. • The admin/operational state will be DOWN/DOWN.
Step 6	**commit** **Example:** `RP/0/RP1/CPU0:router(admin-config)# commit`	Commits the target configuration to the router running configuration. • This step shuts down the plane identified in the previous step.

	Command or Action	Purpose
Step 7	**hw-module power disable location 0/sm***slotNumber* **/sp** **Example:** `RP/0/RP1/CPU0:router(admin-config)# hw-module power disable location 0/sm0/sp`	Disables the power-on feature on a specific fabric card.
Step 8	**commit** **Example:** `RP/0/RP1/CPU0:router(admin-config)# commit`	Commits the target configuration to the router running configuration. • This step shuts down the plane identified in the previous step.
Step 9	**show platform 0/sm***slotNumber***/sp** **Example:** `RP/0/RP1/CPU0:router(admin)# show platform 0/sm0/sp`	Displays the status of the Rack 0 fabric slot specified by *slotNumber* . Verify that the card is in the UNPOWERED state. **Note** The fabric card status appears only when the **show platform** command is executed in administration EXEC mode.
Step 10	In Rack 0, remove the FC/S card (CRS-16-140FC/S or CRS-16-FC400/S) for the plane that was shut down in Step 5 .	Creates room for the FC/M card (CRS-16-FC140/M or CRS-16-FC400/M) that is required for CRS Back-to-Back System operation.
Step 11	In Rack 0, insert the FC/M card (CRS-16-FC140/M or CRS-16-FC400/M) for the plane that was shut down in Step 5 .	Provides the hardware required for communication with the LCC.
Step 12	**no hw-module power disable location 0/sm***slotNumber* **/sp** **Example:** `RP/0/RP1/CPU0:router(admin-config)# no hw-module power disable location 0/sm0/sp` **Example:**	Re-enables the power-on feature on a specific fabric card.
Step 13	**commit** **Example:** `RP/0/RP1/CPU0:router(admin-config)# commit`	Commits the target configuration to the router running configuration.
Step 14	**do show platform 0/sm***slotNumber***/sp** **Example:** `RP/0/RP1/CPU0:router(admin)# show platform 0/sm0/sp`	Displays the status of the Rack 0 fabric slot specified by *slotNumber* . Verify that the card is in the IOS XR RUN state. **Note** The fabric card status appears only when the **show platform** command is executed in administration EXEC mode.

	Command or Action	Purpose
Step 15	**do show log | inc OPER_UP** **Example:** `RP/0/RP0/CPU0:b2b(admin-config)#do show logging | inc OPER_UP`	Displays the status of the fabric asic. The desired output will show two fabric asics in service for the plane that you just upgraded. If you do not see both asics in the UP state, do not continue. Output appears similar to the following: • SP/0/SM3/SP:May 19 17:51:32.599 : sfe_drvr[131]: %FABRIC-FABRIC_DRVR-6-ASIC_INITIALIZED : Notify FSDB that superstar/0/SM3/SP/0 is OPER_UP. • SP/0/SM3/SP:May 19 17:51:32.600 : sfe_drvr[131]: %FABRIC-FABRIC_DRVR-6-ASIC_INITIALIZED : Notify FSDB that superstar/0/SM3/SP/1 is OPER_UP
Step 16	**controllers fabric plane** planeNumber **shutdown data** **Example:** `RP/0/RP0/CPU0:b2b(admin-config)#controllers fabric plane 3 shutdown data`	Modifies the target configuration to bring up the control part of the specified fabric plane. The suggested admin/operational state of the plane in this state would be DATA_DN/UP, respectively.
Step 17	**do show controllers fabric plane** planeNumber **detail** **Example:** `RP/0/RP1/CPU0:router(admin-config)# do show controllers fabric plane 0 detail`	Displays the status of the plane specified by *planeNumber* . • Verify that the admin/operational state is DATA_DN/UP. • Verify that a capital “D” appears in the Down Flags column. • Wait for the plane to come up before you continue.
Step 18	no controllers fabric plane planeNumber shutdown **Example:** `RP/0/RP1/CPU0:router(admin-config)# no controllers fabric plane 0 shutdown`	Modifies the target configuration to bring up the specified fabric plane. • Verify that the admin/operational state is UP/UP. • This step brings up the previously shutdown plane, which is now configured to use the Back-to-Back LCC.
Step 19	**end** **Example:** `RP/0/RP1/CPU0:router(admin-config)# end`	Changes the mode from administration configuration mode to administration EXEC mode.

	Command or Action	Purpose
Step 20	Repeat Step 2 through Step 19 for each fabric plane.	
Step 21	**show controllers fabric plane all** **Example:** `RP/0/RP1/CPU0:router(admin)# show controllers fabric plane all`	Displays the administrative and operational status of all eight fabric planes. • Verify that all fabric planes are operational and the status is UP/UP. • The plane you just migrated should show a counter increment of 1 in both the up->dn counter and the up->mcast counter.

What to Do Next

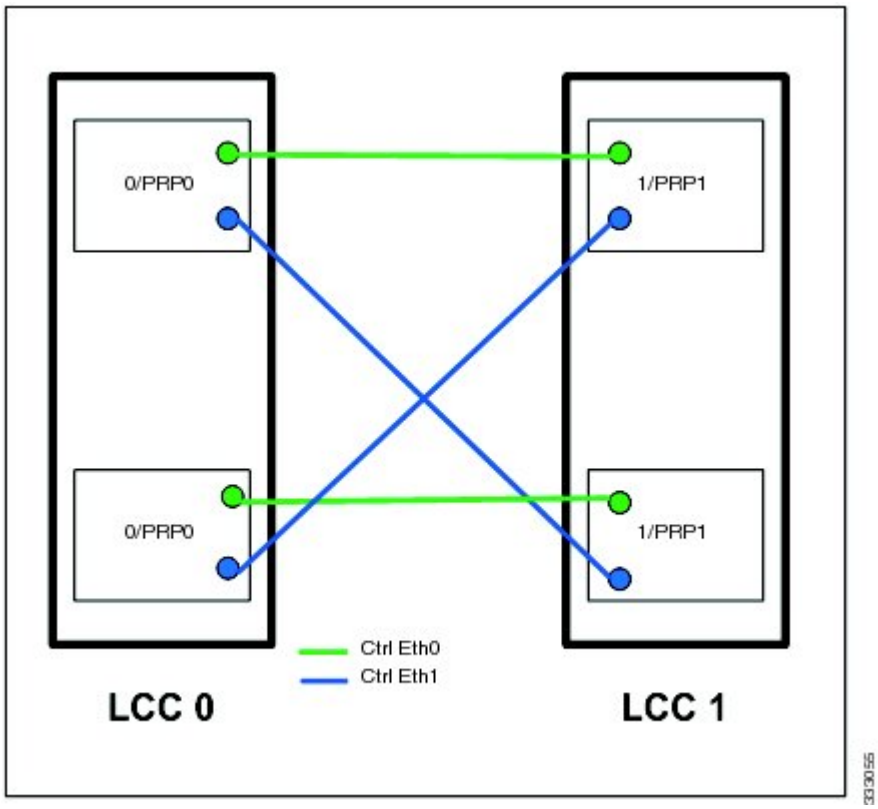
Once the Rack 0 upgrade is completed, the control network must be connected.

Connecting the Control Network

Before the additional LCC can be added to the CRS Back-to-Back System, a control network must be established. The control network allows two LCCs in the CRS Back-to-Back System to communicate with each other. The control function is performed by the PRPs.

This figure shows how the control Ethernet ports of PRPs are interconnected.

Figure 1: Connections within a CRS Back-to-Back System



What to Do Next

Once the control network is connected, add the additional LCC to the CRS Back-to-Back System.

Adding an LCC to a CRS Back-to-Back System

This section describes how to add an LCC to a CRS Back-to-Back System.

Prerequisites

Software Requirements

- Cisco IOS XR Software Release 5.1.1 or later release
- ROMMON 2.08 or later version
- Serial number of new LCC (can be found on front of chassis)

Hardware Requirements

- The additional LCC.
- The control network must be operational and connected to all chassis.
- The power should be off for the LCC to be added.
- PRP route processor (if you are using CRS-16-RP-B on a single chassis)

Restrictions

None.

Summary Steps

Here are the basic steps to add the additional LCC to the CRS Back-to-Back System:

Procedure

Step 1 Backup the exec and admin configs on LCC0.

Step 2 Power ON the LCC (Rack 1) chassis.

Step 3 Interrupt the booting into drop the system (Active and Standby PRP) in ROMMON and verify the rack number (dumpplaneeeprom output ' 0x73rd byte) on the Active PRP.

a) Unset the BOOT variable.
b) Unset the RACK_NUM variable.
c) Unset BOOT_WITH_B2B_TAIKO.
d) Set BOOT_WITH_B2B_TAIKO=1.
e) Unset the TFTP_FILE and TURBOBOOT variables if they are set.
f) Enter the **sync** command to save the current changes.
g) Verify the configuration-register is set to 0x0. The configuration-register setting 0x0 prevents the PRP from syncing to the dSC by keeping the PRP in the ROMMON state.

Step 4 If DRPs are present, bring down both CPUs (CPU0 and CPU1) to ROMMON while booting and type the following commands on both of the CPUs:.

a) Unset BOOT_WITH_B2B_TAIKO.
b) Set BOOT_WITH_B2B_TAIKO=1.
c) Enter the **sync** command to save the current changes.

Step 5 Configure the Active PRP using the following command, which associates LCC 1 serial numbers with the rack number: **dsc serial** *rack serial number* **rack 1**.

Step 6 Configure Rack 1 in fabric rack install-mode using the following command: **controllers fabric rack 1 install-mode**.

Step 7 Connect the B2B fabric cables for all fabric planes.

a) Connect 0/SMx/0,1,2 to 1/SMx/0,1,2.

b) Tighten the connector screws.

Step 8 Boot the LCC Rack 1 by reset from the ROMMON prompt.

Step 9 Verify that IOS XR RUN appears on the PRP faceplates.

Step 10 Verify that all of the eight planes are UP/UP and the plane mode is B2B. Execute the following show command on dSC: **show controllers fabric plane all detail**. The plane state should be UP/UP and the plane mode should be B2B.

Step 11 Check the rack status using the following command: d**o show controllers fabric rack-status all detail**.

Step 12 Remove the fabric install mode for Rack 1. Execute the following command: **no controller fabric rack 1 install-mode.**

Step 13 Verify the status of all racks using the following command: **show controllers fabric rack all**. The plane state and mode for all of the eight planes should be the same as described in *Step10*.

Detailed Steps

Procedure

	Command or Action	Purpose
Step 1	**admin** **Example:** `RP/0/RP1/CPU0:router# admin`	Places the router in administration EXEC mode. • All commands listed in this procedure should be entered on the pre-existing single-chassis system.
Step 2	**configure** **Example:** `RP/0/RP1/CPU0:router(admin)#configure`	Places the router in administration configuration mode.

Step 3	From the ROMMON prompt, enter the following commands.
	
	Example:
	
	`unset BOOT`
	`unset RACK_NUM`
	`unset BOOT_WITH_B2B_TAIKO`
	`set BOOT_WITH_B2B_TAIKO=1`
	`unset TFTP_FILE`
	`unset TURBOBOOT`
	`confreg 0x0`
	`sync`
	`reset`
		From the console of the PRP in the new system, send the break (cntl+c) to disrupt the boot sequence. This places you at the rommon prompt. From here, issue the **set** command. This shows the current variables set on the PRP. If the variables listed are present, unset them as shown. Make sure to use sync at the end to save the changes.

Step 4	**dsc serial** *serialNumber* **rack 1**
	
	Example:
	
	`RP/0/RP1/CPU0:router(admin-config)#`
	`dsc serial TBA08440024 rack 1`
		Configures the additional LCC as Rack 1 in the multishelf system.
		
		• Replace the *serialNumber* parameter with the serial number of the additional LCC.

	Command or Action	Purpose
		• If you are configuring the system from a remote location, you can use a command to display the serial number. For more information, see *Cisco IOS XR Getting Started Guide*.
Step 5	**controllers fabric rack 1 install-mode** **Example:** `RP/0/RP1/CPU0:router(admin-config)# controllers fabric rack 1 install-mode`	Modifies the target configuration to change the Rack 1 configuration to installation mode.
Step 6	**commit** **Example:** `RP/0/RP1/CPU0:router(admin-config)# commit`	Commits the target configuration to the router running configuration.
Step 7	Apply power to the new LCC (Rack 1).	Starts up the second LCC (Rack 1).
Step 8	Interconnects the fabric cards between two LCCs.	Connect all fabric cables that connect the fabric planes in the new LCC to the additional LCCs.

Step 9	From the ROMMON prompt, enter the following commands.
	Example:
	`confreg 0x2`
	`sync`
	`reset`
		Boots the LCC Rack 1 by reset from the ROMMON prompt. Sets the config register to 0x2 and enables boot.

Step 10	**show platform** **Example:** `RP/0/RP1/CPU0:router(admin)# show platform` **Example:**	Displays the status of all LCC modules. • Repeat this command for all LCCs. • The state for all modules should be IOS-XR RUN. • It can take a few minutes for all LCC modules to start. • The LCC module status appears only when the show platform command is executed in administration EXEC mode.
Step 11	**show controllers fabric bundle 1/sm***slotNumber***/sp/***bundle port* **connection** **Example:** `RP/0/RP1/CPU0:router(admin)#show`	Shows whether the fabric connectivity between two LCCs has been successful. The bundle port value ranges from 0 to 2.

	Command or Action	Purpose
	`controllers fabric bundle 1/sm1/sp/1 connection`	In the case of wrong cabling, the CLI shows the following message: `Actual connection data: Please check bundle connection, they appear to be swapped with another bundle.`
Step 12	**do show controllers fabric plane all detail** **Example:** `RP/0/RP1/CPU0:router(admin-config)# show controllers fabric plane all detail`	Displays the status of all planes. Wait for the plane to come up before you continue.
Step 13	**show controllers fabric fsdb-pla rack all** **Example:** `RP/0/RP1/CPU0:router(admin-config)# show controllers fabric fsdb-pla rack all`	Displays fabric plane availability for every destination in the system.
Step 14	**do show controllers fabric rack-status all detail** **Example:** `RP/0/RP1/CPU0:router(admin-config)# do show controllers fabric rack-status all detail`	Displays the status of all racks and additional information for racks in installation mode. • Wait for the status in the Rack in Install and Rack out of Install columns to change to UP for all planes.
Step 15	**do show controllers fabric fabric-backpressure summary** **Example:** `RP/0/RP1/CPU0:router(admin-config)# do show controllers fabric fabric-backpressure summary`	Displays the backpressure status for all racks. • The status for the row labeled “Rack 1: All Groups Received? :” should be “Yes.”
Step 16	**no controllers fabric rack 1 install-mode** **Example:** `RP/0/RP1/CPU0:router(admin-config)# no controllers fabric rack 1 install-mode`	Modifies the target configuration to change the Rack 1 configuration to normal mode.
Step 17	**commit** **Example:** `RP/0/RP1/CPU0:router(admin-config)# commit`	Commits the target configuration to the router running configuration.
Step 18	**do show controllers rack-status all detail**	Displays the status of all racks in the system.

	Command or Action	Purpose
	Example: `RP/0/RP1/CPU0:router(admin-config)# do show controllers rack-status all detail`	• In a properly operating system, the rack status for all racks should be Normal, and the server status should be Present.
Step 19	**do show controllers fabric plane all detail** **Example:** `RP/0/RP1/CPU0:router(admin-config)# do show controllers fabric plane all detail`	Displays the status of all planes. • Verify that a capital "D" appears in the Down Flags column. • Wait for the plane to come up before you continue.

Tips and Troubleshooting

1. Make sure to use the correct B2B fabric/fiber cables.
2. Before the Rack 1 install mode is removed, there will be constant Diag failure because the IngressQ bring up is halted. Online messages similar to the following may appear:

```
RP/0/RP1/CPU0:Jan 17 11:38:41.635 : online_diag_rp[338]: %DIAG-XR_DIAG-3-ERROR : (M) Fabric
 Ping Failure, 2 of 5 nodes failed(L): 1/RP0/CPU0, 1/RP1/CPU0
RP/0/RP1/CPU0:Jan 17 11:38:55.934 : online_diag_rp[338]: %DIAG-XR_DIAG-3-ERROR : (U) Fabric
 Ping Failure - destination node (Level 2) in 1/RP0/CPU0
RP/0/RP1/CPU0:Jan 17 11:39:05.498 : online_diag_rp[338]: %DIAG-XR_DIAG-3-ERROR : (UM) FIM:
 multi-nodes failure detected
```

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport