



Cisco CRS Carrier Routing System General Maintenance Guide

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Cisco CRS Carrier Routing System General Maintenance Guide

This document describes general maintenance procedures for your Cisco Carrier Routing System.

Identifying Fiber-Optic Connectors Associated with Fabric Link Errors

This section describes how to identify the fiber-optic connectors associated with fabric link reporting errors in a multi-chassis or back-to-back configuration. After you identify the connector, you can use the Cisco CRS-1 fiber-optic cleaning kit (CRS-FIBER-CLN-KIT=) to clean the optics on the S2 card, S13 card, optical interface module (OIM), and optical array cables.



Note All the commands are executed at the RP card command prompt in Admin mode.

Procedure

Step 1 Enter the **show controllers fabric plane all statistics** command to display the uncorrectable errors (UCE) on the fabric planes.

Example:

```
RP/2/RP0/CPU0:MC-CRS-1(admin)# show controllers fabric plane all statistics
Fri Sep  4 17:58:00.933 UTC
Plane          In          Out          CE          UCE          PE
                Cells       Cells       Cells       Cells       Cells
-----
0                20564102    80773268     0            0            0
1                22801175    89592744    699926959    2561572     0
2                 39058       39058        475          0            0
3                9495689    36542750    11371891     30850       0
4                11683860    45287501     0            0            0
5                13998290    54538612    2431479      3208        0
6                16221740    63454514     0            0            0
7                18363539    72043440    13335        0            0
```

This example shows that fabric planes 1, 3, and 5 have uncorrectable errors in the UCE column.

Step 2 Enter the **show controllers fabric plane *plane-id* statistics detail** command for a specified fabric plane to display the link type of the UCE.

Example:

```
RP/2/RP0/CPU0:MC-CRS-1(admin)# show controllers fabric plane 5 statistics detail

The fabric plane number is 5
  Total number of providers for the statistics: 3
  Total received data cells: 14039642
  . . .

  Total transmitted data cells: 54704922
  . . .
```

```

Total received correctable errored cells: 2431480
. . .

Total received uncorrectable errored cells: 3208
Total received uncorrectable errored cells at S1: 0
Total received uncorrectable errored cells at S2: 890
Total received uncorrectable errored cells at S3: 2318
. . .

Total received parity error cells: 0
Total unicast lost cells: 0
Total multicast lost cells: 25043
Last clearing of "show controller fabric plane" counters never

```

This example shows plane 5 has UCEs for link type S2 and S3.

Step 3 Enter the **show controllers fabric link port{s1tx | s2rx | s3rx} all statistics** command to display statistics for all links in all planes. The link type corresponds to the link type identified in the previous example.

Example:

```
RP/2/RP0/CPU0:MC-CRS-1(admin)# show controllers fabric link port s2rx all statistics
```

SFE Port R/S/M/A/P	In Data Cells	In Idle Cells	CE Cells	UCE Cells	PE Cells
. . .					
F0/SM2/SP/1/20	0	0	0	0	0
F0/SM2/SP/1/21	0	0	0	0	0
F0/SM2/SP/1/22	0	0	0	0	0
F0/SM2/SP/1/23	0	0	0	0	0
F0/SM2/SP/1/24	0	0	0	0	0
F0/SM2/SP/1/25	0	0	0	0	0
F0/SM2/SP/1/26	10303	6413558155	1081809	1294	0
F0/SM2/SP/1/27	776	2254274060	4758839	0	0
F0/SM2/SP/1/28	0	0	0	0	0
. . .					

This example shows link F0/SM2/SP/1/26 with UCE. Note down all links with UCE.

After a few minutes, enter the **show controllers fabric link port{s1tx | s2rx | s3rx} all statistics** command again. If the UCE Cells counters are incrementing, proceed with the following corrective steps immediately.

Step 4 Enter the **show controllers fabric pod optics power location link-location | i link-number** command to display the link details from the FCC to the LCC. The *link-location* is the R/S/M portion of the link in the previous example (F0/SM2/SP). The *link-number* is the entire link in the previous example (F0/SM2/SP/1/26).

Example:

```
RP/2/RP0/CPU0:MC-CRS-1(admin)# show controllers fabric pod optics power location F0/SM2/SP | i
F0/SM2/SP/1/26
Fri Sep 4 18:20:21.354 UTC

s2rx/F0/SM2/SP/1/26 J8L1.2 RX5.14 P13L2.3 -15.2dBm (Lp----) <= s1tx/2/SM1/SP/0/77 J2L4.2 TX1.14
N/A +0.8dBm (-----)
```

The highlighted values (J8L1.2, P13L2.3, and J2L4.2) indicate the physical location of the connectors on the FCC and the LCC.

The **-15.2dBm (Lp----)** output indicates low power on this link.

Step 5 Use the following information to locate the physical connectors.

Table 1: J8L1.2 Location on the S2 Card in the FCC

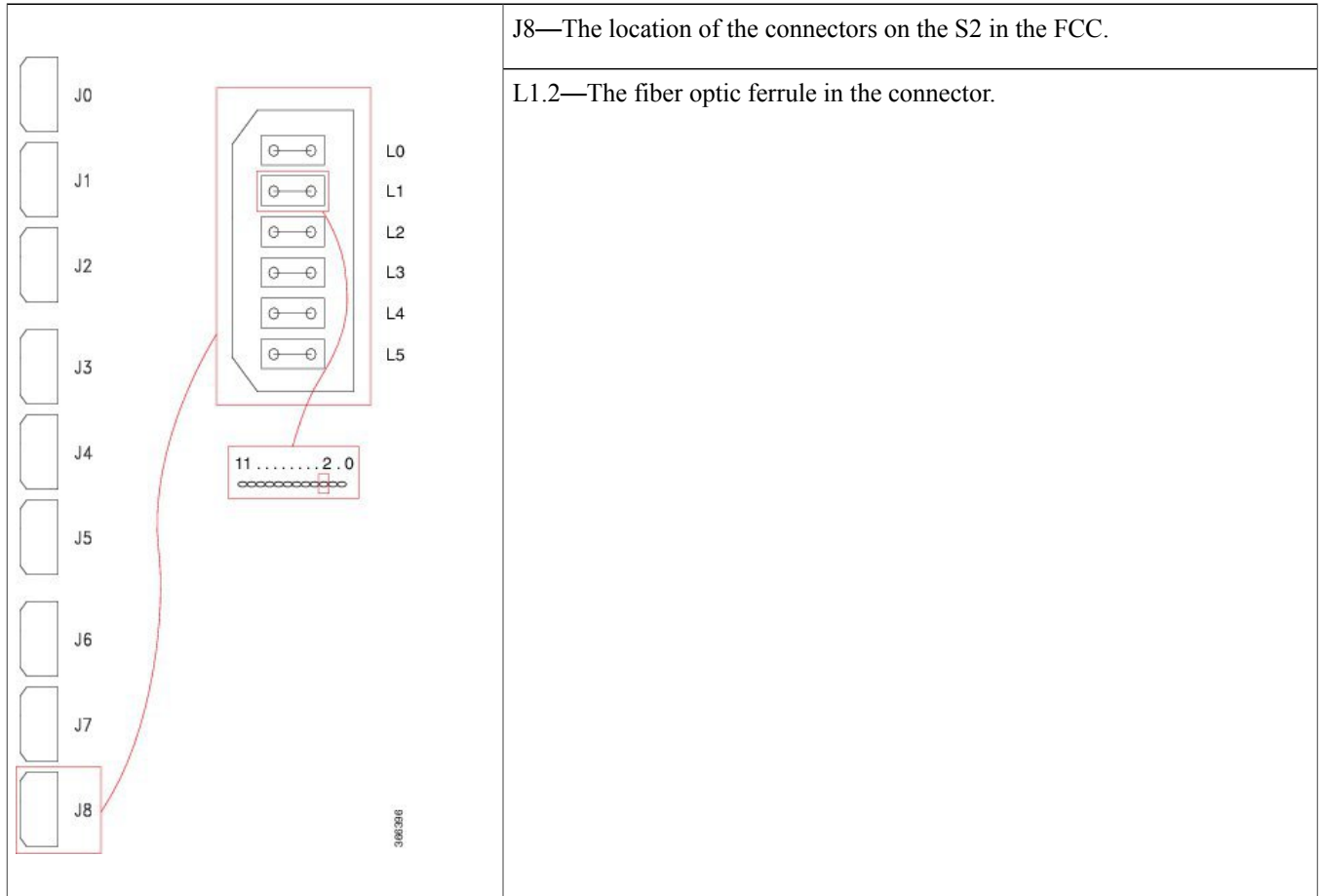
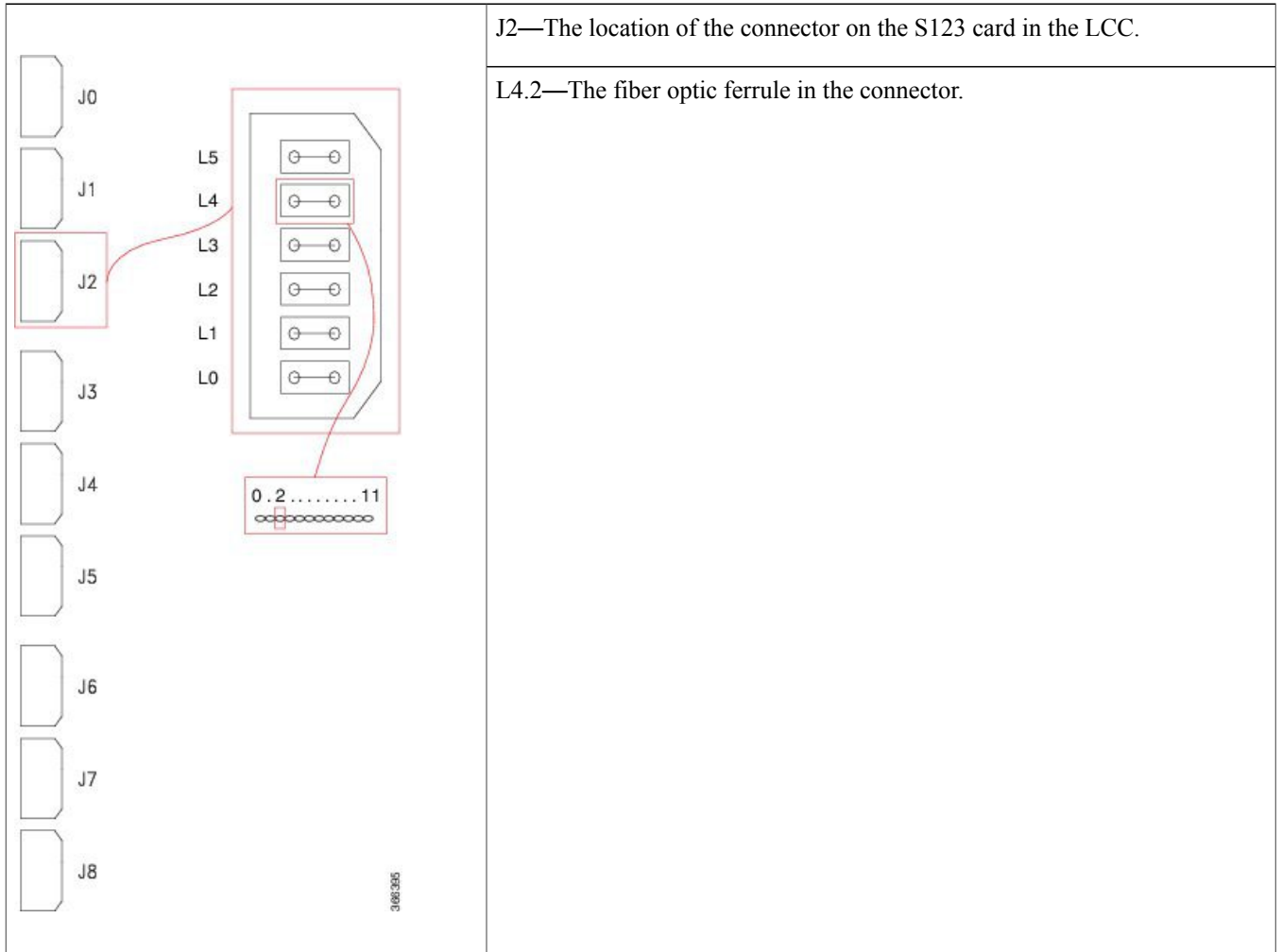


Table 2: P13L2.3 Location on the OIM and S2 Card in the FCC

<p>The diagram illustrates the location of the P13L2.3 connector on an Optical Interface Module (OIM) and an S2 card. On the left, the OIM card is shown with ports P1 through P14. The P13 port is highlighted with a red box. On the right, the S2 card is shown with ports P1 through P14. The P13 port is also highlighted with a red box. A detailed view of the P13 connector shows four ferrules labeled L1, L2, L3, and L4. The L2 ferrule is highlighted with a red box. The diagram is labeled with 'OIM', 'S2', 'P1', 'P2', 'P13', 'P14', 'L1', 'L2', 'L3', 'L4', and '385204'.</p>	<p>P13—The location of the high-density backplane-mounted (HBMT) connector on the optical interface module (OIM) and S2 card in the FCC.</p> <p>L2.3—The fiber optic ferrule in the HBMT connector.</p>
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Table 3: J2L4.2 Location on the S123 Card in the LCC



J2—The location of the connector on the S123 card in the LCC.

L4.2—The fiber optic ferrule in the connector.

Step 6 Refer to the [Cisco CRS-1 Carrier Routing System Fiber-Optic Cleaning Guide](#) for detailed instructions on cleaning the optics on the S2 card, S13 card, optical interface module (OIM), and optical array cables.

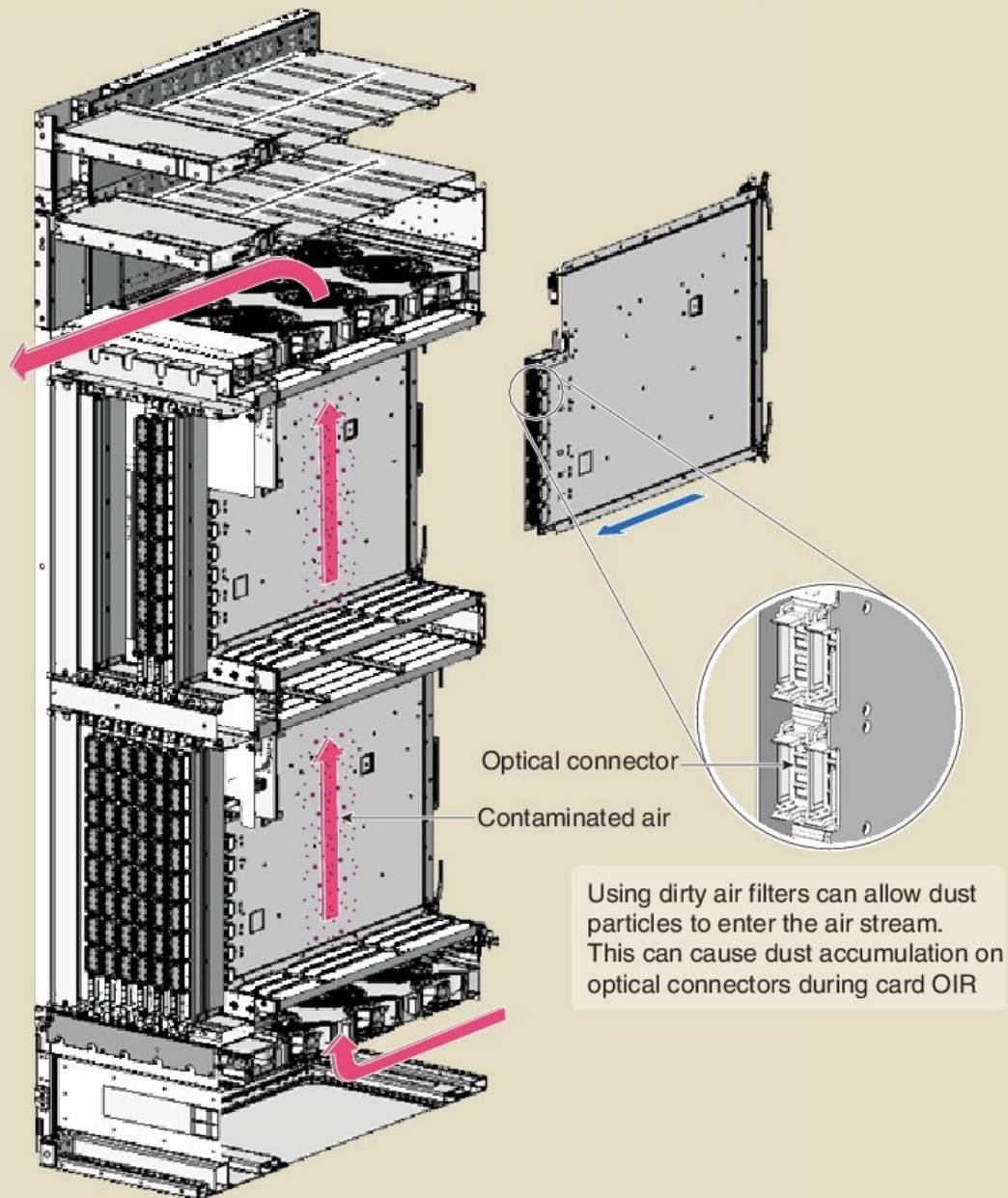
Air Filter Maintenance



Caution Periodic maintenance of the air filter is required to maintain proper air flow in the system as well as to avoid optical contamination. Inspect the air filter every three months (or more often in dusty environments) and replace the air filter if found to be dirty. We recommend that you replace the air filter at regular maintenance intervals. The interval may vary between 3 and 12 months, depending on the environment. The air filter should not be re-used as per the recommendations from NEBS GR-63 Issue 2/3/4.

Cisco CRS Chassis Maintenance – Air Filter

Air filters are compliant with NEBS-GR-63 standards



Air filter maintenance schedule:

- Periodic inspection – Every three months. If dirty, replace with a new air filter.
- Replacement – Every 12 months.

For air filter replacement instructions, refer to the Installation Guide for your chassis.

For air filter replacement procedures, refer to the following links:

- [Cisco CRS Carrier Routing System Fabric Card Chassis](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Enhanced Router \(CRS-16/S-B\)](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Router \(CRS-16/S\)](#)
- [Cisco CRS Carrier Routing System 8-Slot Line Card Chassis Enhanced Router \(CRS-8/S-B\)](#)
- [Cisco CRS Carrier Routing System 8-Slot Line Card Chassis Router \(CRS-8/S\)](#)
- [Cisco CRS Carrier Routing System 4-Slot Line Card Chassis Router \(CRS-4/S\)](#)

Handling Fan Trays and Power Supplies

Fan Trays

For fan tray information, refer to the following links:

- [Cisco CRS Carrier Routing System Fabric Card Chassis](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis](#)
- [Cisco CRS Carrier Routing System 8-Slot Line Card Chassis](#)
- [Cisco CRS Carrier Routing System 4-Slot Line Card Chassis](#)

Power Supplies

For power component information, refer to the following links:

- [Cisco CRS Carrier Routing System Fabric Card Chassis](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis](#)
- [Cisco CRS Carrier Routing System 8-Slot Line Card Chassis](#)
- [Cisco CRS Carrier Routing System 4-Slot Line Card Chassis](#)

Handling Line Cards

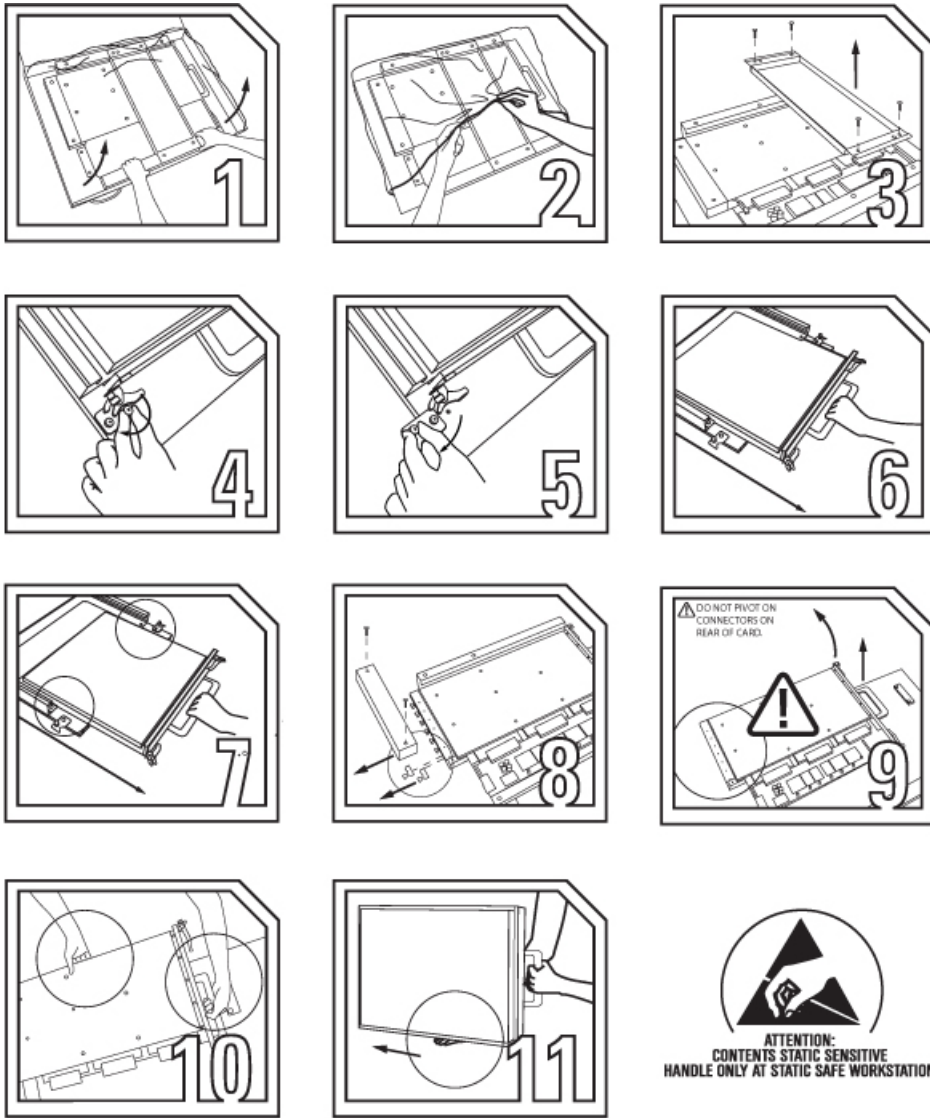


Note Attach an ESD-preventive wrist strap to your wrist and connect its leash to one of the ESD connection sockets on the rear side of the chassis or a bare metal surface on the chassis.



Caution Line cards have functionally sensitive components. Any impacts or shocks to the line card can cause damage to the line card and its components.

To remove a line card from the shipping box, follow these instructions:



FAILURE TO PROPERLY UTILIZE CISCO'S PACKAGING MAY RESULT IN BOARD DAMAGE OR LOSS.

366404

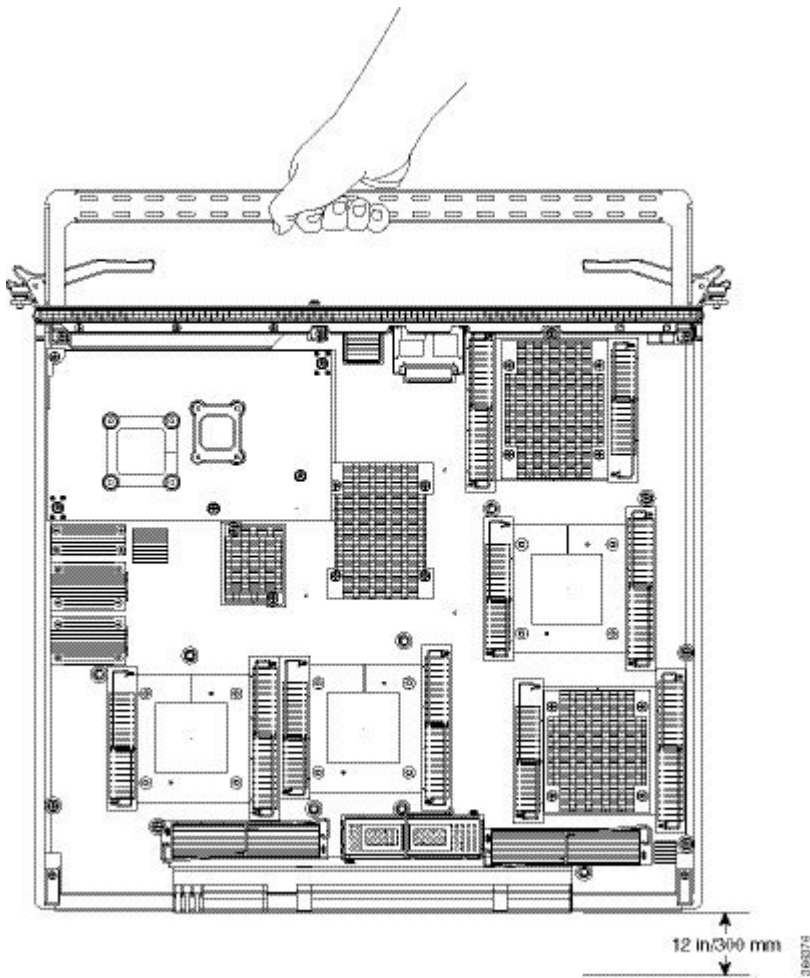
Observe the following guidelines:

- Lift the line card from the box by holding the line card handle.
- Avoid touching the card circuitry or any connectors.
- Visually inspect the connector pins on the card before you insert it into the chassis.



Note Do not attempt to install a card with bent pins, because this may damage the chassis midplane connectors.

- While carrying the line card to the chassis for installation, keep a minimum ground clearance of 12 in (30 cm).



- The card carrier (located along the line card edges) should not be bumped, either to the floor or any other objects. Any damage to the edges can cause the issues when installing the line card in the card cage slot.

Sanitizing Media Devices

When decommissioning hardware, use the following commands to remove user and system data from embedded media devices:

- **write erase**—Use this command to remove user configurations such as port data, zone and link information, port switch and server names. This command will also clear the CMOS area.
- **erase nvram:** and **erase nvram-raw:**—Use these commands to erase the NVRAM file system partition and the NVRAM raw data partition.

```
RP/0/RP0/CPU0:router# erase nvram:
Erase operation will destroy IOS/ENA files in "nvram:". Continue? [confirm] y
```

- **format filesystem: location {node-id | all }** —Use this command to format a file system.

- *filesystem*—Name of the file system to format, followed by a colon. Possible values are **bootflash:**, **disk0:**, **disk0a:**, **disk1:**, **disk1a:**, **harddisk:**, **harddiska:**, and **harddiskb:** .
- *node-id*—Specifies the node where the file system is located. The *node-id* argument is expressed in the *rack/slot/module* notation. Use the **all** keyword to indicate all nodes.

```
RP/0/RP1/CPU0:router(admin)# format disk0: location 2/RP0/cpu0
Fri Mar 23 16:54:45.054 IST
```

```
Format will destroy all data on "disk0:". Continue? [confirm] y
```

```
Warning: "disk0:" - partition is boot device on target node - format operation on this device will restart
the node and package will be re-synchronized.
```

```
Force the format operation on "disk0:" Continue? [confirm] y
```

```
Info: "disk0:" - node is restarting to complete format operation.
```

- **clear logging onboard**—Use this command to erase all Onboard Failure Logging (OBFL) data.



Caution

The **clear logging onboard** command permanently deletes all OBFL data for a node or for all nodes. Do not clear the OBFL logs without specific reasons because the OBFL data is used to diagnose and resolve problems in FRUs.



Caution

If OBFL is actively running on a card, issuing the **clear logging onboard** command can result in a corrupt or incomplete log at a later point in time. OBFL should always be disabled before this command is issued.

```
RP/0/RP0/CPU0:router# clear logging onboard
RP/0/RP0/CPU0:router# show logging onboard location node-id
```




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