

## Chapter 29

# Monitoring the CIP

You monitor the Connector Interface Panel (CIP) to ensure management connection to the M40e, M160, M320, T320, and T640 routing node Routing Engines, Building Integrated Timing Source (BITS) interfaces for the Miscellaneous Control Subsystem (MCS), and alarm relay contacts. (See Table 91.)

**Table 91: Checklist for Monitoring the CIP**

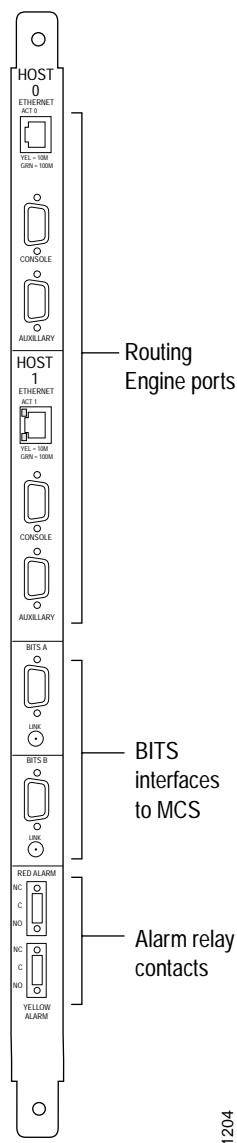
Tasks for Monitoring the CIP	Command or Action
<b>Understanding the CIP on page 382</b>	
<b>Monitoring the CIP Status on page 384</b>	show chassis environment
<b>Checking for CIP Alarms on page 385</b>	
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1. Check the CIP Connection on page 386	Check the connector screws on the CIP faceplate.
2. Check the Ethernet Port Functionality on page 386	1. Connect to the Ethernet port. 2. Check the LINK LED. 3. Run the JUNOS software CLI.
3. Performing a CIP Swap Test on page 387	1. Power down the router. 2. Remove the CIP. 3. Replace the CIP with one that you know works. 4. Power on the router.
<b>Getting CIP Hardware Information on page 388</b>	
1. Display CIP Hardware Information on page 388	show chassis hardware
2. Locating the CIP Serial Number ID Label on page 389	Look on the top of the left side of the CIP.
<b>Replacing the CIP on page 389</b>	Power down the router. To replace and return a CIP, follow the instructions in the M40e or M160 router hardware guide.

## Understanding the CIP

**Purpose** Inspect the CIP to ensure connection to the Routing Engines, BITS interfaces for the MCS, and alarm relay contacts.

**What Is the CIP** The CIP provides an interface through which you can connect to the M40e and M160 Routing Engines, BITS interfaces for the MCS, and alarm relay contacts (see Figure 157).

**Figure 157: CIP Component**



The CIP has two sets of ports you use to connect the Routing Engines to external management devices. From these management devices, you can use the JUNOS software command-line interface (CLI) to configure and monitor the router.

The upper set of ports, labeled HOST0, connect to the Routing Engine in slot RE0, and the lower set of ports, labeled HOST1, connect to the Routing Engine in slot RE1.

Each HOST port set includes the following ports:

**ETHERNET**—Connects the Routing Engine through an Ethernet connection to a management LAN (or any other device that plugs into an Ethernet connection) for out-of-band management. The port uses an autosensing RJ-45 connector to support both 10-Mbps and 100-Mbps connections. Two small LEDs on the left edge of the port indicate the connection in use: the amber LED lights for a 10-Mbps connection and the green LED lights for a 100-Mbps connection.

**CONSOLE**—Connects the Routing Engine to a system console through an RS-232 (EIA-232) serial cable.

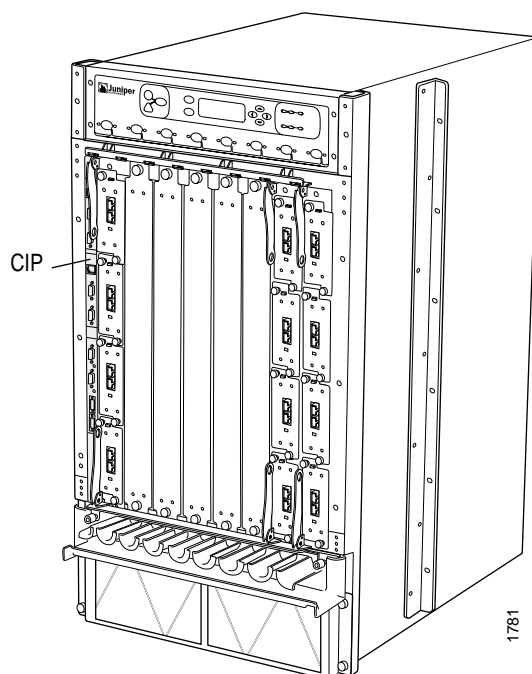
**AUXILIARY**— Connects the Routing Engine to a laptop, modem, or other auxiliary device through an RS-232 (EIA-232) serial cable.

At the center of the CIP are two ports labeled BITS A and BITS B. These are the BITS connectors to the MCS. The router does not support BITS input, so these ports currently do not function.

The CIP has two sets of alarm relay contacts for connecting the router to external alarm devices. Whenever a system condition triggers either the red or yellow alarm on the craft interface, the alarm relay contacts are also activated. The alarm relay contacts are located below the BITS interface ports.

The CIP is located on the left side of the M40e and M160 router Flexible PIC Concentrator (FPC) card cage (see Figure 158).

**Figure 158: M40e and M160 Router CIP Location**



The CIP is field-replaceable, but is not hot-removable, hot-insertable, or hot-pluggable. You must power down the router before removing or installing it.

**See Also** Maintaining the Cable Management System, Cables, and Connectors on page 275

Monitoring the Routing Engine on page 125

## Monitoring the CIP Status

**Action** To monitor the CIP status, use the following CLI command:

```
user@host> show chassis environment
```

**Sample Output**

```
user@host> show chassis environment
Class Item      Status  Measurement
[...Output truncated...]
Misc CIP        OK
```

**What It Means** The command output displays the status for the CIP, which can be OK, Absent, or Failed.

## Checking for CIP Alarms

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- Steps To Take** To check for CIP alarms, follow these steps:
1. Display Current CIP Alarms on page 385
  2. Display CIP Error Messages in the System Log File on page 385
  3. Display CIP Error Messages in the Chassis Daemon Log File on page 386

### Step 1: Display Current CIP Alarms

**Action** To display the current CIP alarms, use the following CLI command:

```
user@host> show chassis alarms
```

**Sample Output**

```
user@host> show chassis alarms
2 alarms currently active
Alarm time      Class Description
2002-06-11 20:45:08 UTC Major Connector Interface Panel Missing
2002-06-11 20:45:07 UTC Major fxp0: ethernet link down
```

**What It Means** The command output displays the alarm date, time, severity level, and description. fxp0 is the Ethernet connection to a management LAN.

### Step 2: Display CIP Error Messages in the System Log File

**Action** To display the CIP error messages in the system log file, use the following CLI command:

```
user@host> show log messages
```

**Sample Output**

```
user@host> show log messages
Jun 11 20:45:07 hissy-re0 /kernel: fxp0: link media DOWN 10Mb / half-duplex
Jun 11 20:45:07 hissy-re0 craftd[556]: Major alarm set, fxp0: ethernet link down
Jun 11 20:45:07 hissy-re0 alarmd[555]: Alarm set: fxp0 color=RED, class=ETHER, reason=fxp0: ethernet link down
Jun 11 20:45:07 hissy-re0 mib2d[560]: SNMP_TRAP_LINK_DOWN: ifIndex 1, ifAdminStatus up(1), ifOperStatus
down(2), ifName fxp0
Jun 11 20:45:08 hissy-re0 craftd[556]: Major alarm set, Connector Interface Panel Missing
Jun 11 20:45:08 hissy-re0 alarmd[555]: Alarm set: CIP color=RED, class=CHASSIS, reason=Connector Interface Panel
Missing
```

**What It Means** The messages system log file records the time the failure or event occurred, the severity level, a code, and a message description. You can also use the show log messages | match cip command to see specific error messages that are generated when a CIP fails or is offline. Use this information to diagnose a power supply problem and to let the Juniper Networks Technical Assistance Center (JTAC) know what error messages were generated and the router events that occurred before and after the problem. For more information about system log messages, see the *JUNOS System Log Messages Reference*.

### Step 3: Display CIP Error Messages in the Chassis Daemon Log File

**Action** To display CIP error messages in the chassis daemon (chassisd) log file, use the following CLI command:

```
user@host> show log chassisd
```

**Sample Output**

```
user@host> show log chassisd
Jun 11 20:45:08 *** inventory change ***
Jun 11 20:45:08 CIP set alarm 0x1
Jun 11 20:45:08 alarm op fru 34 op 1 reason 1
Jun 11 20:45:08 send: red alarm set, class 100 obj 112 reason 1
Jun 11 20:45:08 CIP removed
```

**What It Means** The chassisd database provides the date, time, and a component status message. The chassisd database is dynamic. It is initialized at router startup and is updated when components are added or removed.

## Verifying CIP Failure

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**Steps To Take** To verify CIP failure, follow these steps:

1. Check the CIP Connection on page 386
2. Check the Ethernet Port Functionality on page 386
3. Performing a CIP Swap Test on page 387

### Step 1: Check the CIP Connection

If the CIP is not seated properly, it will not function.

**Action** To check the CIP connection, check the screws on the top and bottom of the CIP faceplate and make sure that the CIP is properly seated in the slot.

### Step 2: Check the Ethernet Port Functionality

**Action** To check the Ethernet port, plug an Ethernet cable into the Ethernet port on the CIP.

If the host module is operational, the LINK LED (either the yellow 10-Mbps LED or the green 100-Mbps LED) will flash to register Ethernet activity. If you can run the CLI, the CIP is installed correctly.

### Step 3: Performing a CIP Swap Test



**CAUTION:** Before performing a swap test, always check for bent pins in the midplane and check the CIP for stuck pins in the connector. Pins stuck in the component connector can damage other good slots during a swap test.

**Action** To perform a swap test on a CIP, follow these steps:

1. Place an electrostatic bag or antistatic mat on a flat, stable surface to receive the CIP.
2. Attach an electrostatic discharge (ESD) strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
3. On the console or other management device connected to each Routing Engine, enter CLI operational mode and issue the following command to shut down the router software. For more information, see the *JUNOS Protocols, Class of Service, System Basics Command Reference*.

```
user@host> request system halt
```

Do not continue until all software processes have shut down.

4. Flip both circuit breaker switches on the circuit breaker box to the OFF (O) position.
5. Disconnect any external devices connected to the CIP.
6. Loosen the screws on the top and bottom of the CIP faceplate.
7. Grasp the CIP and slide it out of the chassis.
8. Check the CIP connector to the router chassis midplane. Look for bent pins.
9. Place the CIP in the electrostatic bag or on the antistatic mat prepared in Step 1.



**CAUTION:** Be sure to slide the CIP straight out of the slot to avoid damaging the connecting pins on the front of the midplane.

10. Carefully insert the CIP into the left side of the FPC card cage, following the guides on the top and bottom of the card cage.



**NOTE:** The components on the CIP are on the left side of the board, unlike the components of an FPC, which are on the right side. Verify that the components are on the left before inserting the CIP.

11. Slide the CIP into the chassis until it contacts the midplane.



**CAUTION:** Be sure to slide the CIP straight into the slot to avoid damaging the connecting pins on the front of the midplane.

12. Tighten the screws on the top and bottom of the CIP faceplate.
13. Reattach any external devices connected to the CIP.
14. Power on the router. See the instructions in the M40e or M160 router hardware guide.
15. To verify that the CIP is installed correctly, plug an Ethernet cable into the CIP port labeled ETHERNET for the appropriate host module.

When the host module is operational, one of the activity indicator LEDs on the Ethernet port (either the amber 10-Mbps LED or the green 100-Mbps LED) will flash to indicate activity. If you can issue CLI commands over the connection, the CIP is installed correctly.

## Getting CIP Hardware Information

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**Steps To Take** To get the CIP hardware information, follow these steps:

1. Display CIP Hardware Information on page 388
2. Locating the CIP Serial Number ID Label on page 389

### **Step 1: Display CIP Hardware Information**

**Action** To display the CIP hardware information, use the following CLI command:

```
user@host> show chassis hardware
```

**Sample Output**

```
user@host> show chassis hardware
Hardware inventory:
Item      Version  Part number  Serial number  Description
Chassis           51135      M160
[...Output truncated...]
CIP          REV 02  710-001593  AA9564
[...Output truncated...]
```

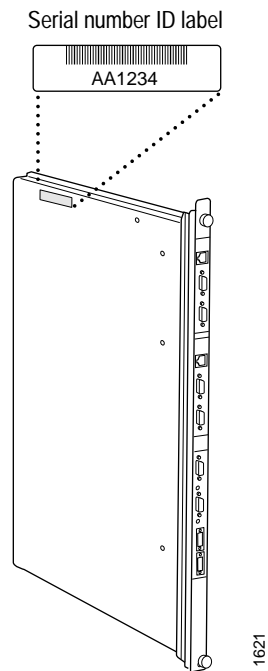
**What It Means** The command output displays the CIP slot number, revision level, part number, and serial number.



## Step 2: Locating the CIP Serial Number ID Label

**Action** To locate the CIP serial number ID label, look on the top of the left side of the CIP (see Figure 159).

**Figure 159: CIP Serial Number ID Label**



## Replacing the CIP

The CIP is field-replaceable, but is not hot-removable, hot-insertable, or hot-pluggable. You must power down the router before removing or installing it.

**Action** To replace a the CIP, see “Return the Failed Component” on page 86, or the procedure to return a field-replaceable unit in the M40e or M160 router hardware guide.

