

Chapter 47

Monitoring Redundant CFEBs

You monitor redundant Compact Forwarding Engine Boards (CFEBs) in the M10i router. A CFEB provides route lookup, filtering, and switching on incoming data packets, then directs outbound packets to the appropriate interface for transmission to the network. (See Table 129.)

The M10i router CFEB can process 16 million packets per second (Mpps).

The CFEB communicates with the Routing Engine using a dedicated 100-Mbps Fast Ethernet link that transfers routing table data from the Routing Engine to the forwarding table in the integrated ASIC. The link is also used to transfer from the CFEB to the Routing Engine routing link-state updates and other packets destined for the router that have been received through the router interfaces.

Table 129: Checklist for Monitoring the CFEB

Monitor CFEB Tasks	Command or Action
Understanding Redundant CFEBs on page 618	
Displaying Redundant CFEB Hardware Information on page 620	show chassis hardware
Displaying CFEB Mastership on page 620	
1. Check CFEB LEDs on page 620	Look at the LEDs on the CFEB faceplate located on the rear of the router above the power supplies.
2. Display the CFEB Status on page 621	show chassis cfeb
Display CFEB Alarms on page 621	See “Checking for CFEB Alarms” on page 423. For conditions that trigger CFEB alarms, see “Display the Current Router Alarms” on page 61.
Verifying CFEB Failure on page 621	See “Verifying CFEB Failure” on page 621.
Returning the CFEB on page 621	See “Return the Failed Component” on page 86 or follow the procedure in the appropriate hardware guide.

Understanding Redundant CFEBs

Purpose Monitor redundant CFEBs so they can provide route lookup, filtering, and switching on incoming data packets and direct outbound packets to the appropriate interface for transmission to the network.

What Are Redundant CFEBs Two CFEBs are installed in the M10i router. The M10i router CFEB processes 16 Mpps.

The CFEB performs the following functions:

Route lookups—Performs route lookups using the forwarding table stored in the synchronous SRAM (SSRAM).

Shared memory management—Uniformly allocates incoming data packets throughout the router's shared memory.

Outgoing data packets transfer—Passes data packets to the destination FIC or PIC when the data is ready to be transmitted.

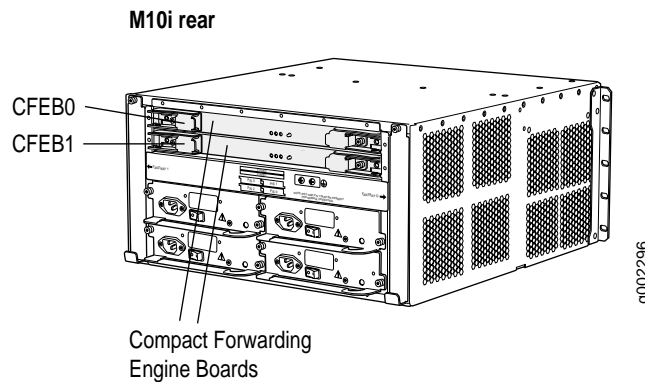
Exception and control packet transfer—Passes exception packets to the microprocessor on the CFEB, which processes almost all of them. The rest are sent to the Routing Engine for further processing. Any errors originating in the Packet Forwarding Engine and detected by the CFEB are sent to the Routing Engine using system log messages.

(M7i router only) Built-in tunnel interface—Encapsulates arbitrary packets inside a transport protocol, providing a private, secure path through an otherwise public network.

The built-in tunnel interface on the CFEB is configured the same way as a PIC. For information about configuring the built-in tunnel interface, see the *JUNOS Network Interfaces and Class of Service Configuration Guide*.

(M7i router only) Optional Adaptive Services PIC—Integrated (ASP-I)—Provides one or more services on one PIC. See “Adaptive Services PIC—Integrated (ASP-I)” on page 11 for more information.

One or two CFEBs can be installed into the midplane from the rear of the chassis, as shown in Figure 233 on page 619. Only one CFEB is active at a time; the optional second CFEB is in standby mode. By default, the CFEB in slot CFEB 0 is active. To modify the default, include the appropriate cfeb statement at the [edit chassis redundancy] hierarchy level of the configuration, as described in the section about CFEB redundancy in the *JUNOS System Basics Configuration Guide*.

Figure 233: M10i Router CFEB Location

CFEBs are hot-pluggable. Removing the standby CFEB has no effect on router function. If the active CFEB fails or is removed from the chassis, the effect depends on how many CFEBs are installed:

If there is one CFEB, forwarding halts until the CFEB is replaced and functioning again. It takes approximately one minute for the replaced CFEB to boot and become active. Reading in router configuration information can take additional time, depending on the complexity of the configuration.

If there are two CFEBs, forwarding halts while the standby CFEB boots and becomes active, which takes approximately one minute. Synchronizing router configuration information can take additional time, depending on the complexity of the configuration.

See Also Host Redundancy Overview on page 463

Monitoring the CFEBs on page 417

Monitoring Redundant CFEBs on page 617

Monitoring the Routing Engine on page 125

Monitoring Redundant Routing Engines on page 491

Displaying Redundant CFEB Hardware Information

Action To view redundant CFEB hardware information, use the following command-line interface (CLI) command:

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

Sample Output

```
user@host> show chassis hardware
Hardware inventory:
Item      Version  Part number  Serial number  Description
Chassis           31655      M10i
Midplane    REV 04   710-008920   CD7925      M10i Midplane
Power Supply 0 Rev 05   740-008537   QE16399     AC Power Supply
Power Supply 1 Rev 05   740-008537   QF11145     AC Power Supply
HCM slot 0     REV 01   710-010580   CE1729      M10i HCM
HCM slot 1     REV 01   710-010580   CE1769      M10i HCM
Routing Engine 0 REV 00   740-011202   1000525660   RE-850
Routing Engine 1 REV 00   740-011202   1000540499   RE-850
CFEB slot 0     REV 03   750-010465   CC7348      Internet Processor II
CFEB slot 1     REV 03   750-010470   CC7350      Backup
[...Output truncated...]
```

What It Means The command output shows that two CFEBs are installed in the M10i router. The command output also displays the CFEB version level, part number, serial number, and description.

Displaying CFEB Mastership

Steps To Take To display CFEB mastership, follow these steps:

1. Check CFEB LEDs on page 620
2. Display the CFEB Status on page 621

Step 1: Check CFEB LEDs

Three LEDs—a green LED labeled OK, a red LED labeled FAIL, and a blue LED labeled MASTER—indicate CFEB status.

Action Look at the LEDs on the CFEB faceplate. The CFEB is located on the rear of the router above the power supplies (see Figure 233 on page 619). Table 130 describes the CFEB LED states.

Table 130: CFEB LEDs

Label	Color	State	Description
OK	Green	On steadily	CFEB is running normally.
		Blinking	CFEB is starting up.
FAIL	Red	On steadily	CFEB is not operational or is in reset mode.
MASTER	Blue	On steadily	CFEB is functioning as master.

Step 2: Display the CFEB Status

Action To display CFEB status to show mastership, use the following CLI command:

```
user@host> show chassis cfeb
```

Sample Output

```
user@host> show chassis cfeb
CFEB status:
Slot 0 information:
  State                Master
  Intake temperature    29 degrees C / 84 degrees F
  Exhaust temperature   38 degrees C / 100 degrees F
  CPU utilization        3 percent
  Interrupt utilization  0 percent
  Heap utilization       10 percent
  Buffer utilization     22 percent
  Total CPU DRAM        128 MB
  Internet Processor II  Version 1, Foundry IBM, Part number 164
  Start time:           2004-09-28 03:07:54 PDT
  Uptime:               9 days, 18 hours, 36 minutes, 15 seconds
Slot 1 information:
  State                Backup
  Intake temperature    29 degrees C / 84 degrees F
  Exhaust temperature   38 degrees C / 100 degrees F
  CPU utilization        3 percent
  Interrupt utilization  0 percent
  Heap utilization       10 percent
  Buffer utilization     22 percent
  Total CPU DRAM        128 MB
  Internet Processor II  Version 1, Foundry IBM, Part number 164
  Start time:           2004-09-28 03:07:54 PDT
  Uptime:               9 days, 18 hours, 36 minutes, 15 seconds
```

What It Means The command output displays which CFEB is master and backup, as well as other environmental and memory information.

Display CFEB Alarms

Action To display CFEB alarms, see “Checking for CFEB Alarms” on page 423. For conditions that trigger CFEB alarms, see “Display the Current Router Alarms” on page 61.

Verifying CFEB Failure

Action To verify CFEB failure, see “Verifying CFEB Failure” on page 621.

Returning the CFEB

Action To replace the CFEB, see “Return the Failed Component” on page 86, or follow the procedure in the *M10i Internet Router Hardware Guide*.

