

Chapter 5

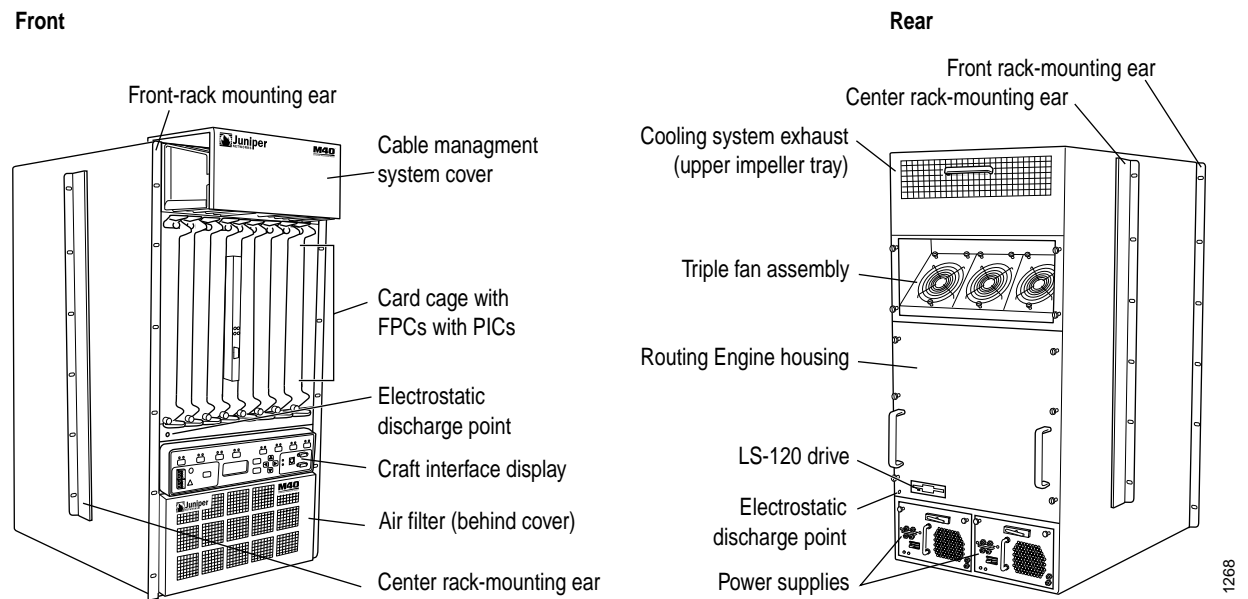
M40 Internet Router Overview



NOTE: See the End-of-sale and End-of-service Announcement for the M40 routing platform and products at <https://www.juniper.net/support/eol/>.

The M40 Internet router provides high-speed forwarding performance, packet processing, and port density for high-growth core IP networks. The M40 router supports the JUNOS software which provides router configuration and monitoring. (See Figure 5.)

Figure 5: M40 Router



The M40 router includes the router-specific System Control Board (SCB). The SCB contains the Internet Processor II application-specific integrated circuit (ASIC) and performs sampling, filtering, and packet forwarding decisions. The SCB processes exception and control packets, monitors system components, and controls Flexible PIC Concentrator (FPC) resets.

Physical Interface Cards (PICs) are available in supported media types, including Asynchronous Transfer Mode (ATM), Channelized, DS3, E1, E3, T1, Ethernet, SONET/SDH, and IP services. The M40 router provides the bandwidth to grow networks to OC48c/STM16 speeds. The M20 and M40 FPCs and PICs are interchangeable, and most of the PICs can also be used in the M40e Internet router. For more information about supported PICs and FPCs for each M-series router type, see the appropriate PIC installation guide.

The M40 router Internet processor II ASIC forwards packets at a throughput rate of up to 40 Gigabits per second (Gbps). The ASIC technology provides such packet processing as route lookups, filtering, sampling, rate limiting, load balancing, buffer management, switching, and encapsulation and de-encapsulation of IP services. The M40 router delivers the bandwidth required to grow networks to OC48c/STM16 speeds in a cost-effective manner.

M40 Router Components

Table 7 lists the major M40 router components and characteristics.

Table 7: M40 Router Major Hardware Components

Component	Quantity	Function	Redundant	Field-Replaceable	Offline Button
Cooling system	2 impeller trays and 1 fan assembly (3 fans)	Cools router components	Yes	Hot-removable, hot-insertable	–
Craft interface	1	Displays the status and allows you to perform control functions	–	Hot-removable, hot-insertable	–
FPC	1–8	Connects PICs to other components and houses shared memory	–	Hot-removable, hot-insertable	Yes
PIC	1–4 per FPC	Provides interfaces to various network media	–	Hot-removable, hot-insertable	–
Power supply	2 AC or 2 DC	Distributes voltages to components	Yes	Hot-removable, hot-insertable	–
Routing Engine	1	Handles routing protocols and maintains routing tables	–	Hot-pluggable	–
SCB	1	Performs router lookups, monitors systems, and transfers control packets	–	Hot-pluggable	–

Field-replaceable units (FRUs) are router components that can be replaced at the customer site. Replacing FRUs requires minimal router downtime. There are three types of FRUs:

Hot-removable and hot-insertable—You can remove and replace the component without powering down the router or interrupting the routing functions.

Hot-pluggable—You can remove the component without powering down the router, but routing functions are interrupted until the replacement is installed.

Requires router shutdown—You must power down the router before removing the component.

Monitoring M40 Router Components

See the following chapters for information about monitoring the M40 router components:

“Monitoring the Router Chassis” on page 107

“Monitoring the Routing Engine” on page 125

“Monitoring Redundant Routing Engines” on page 491

“Monitoring FPCs” on page 163

“Monitoring PICs” on page 183

“Monitoring the Craft Interface” on page 197

“Monitoring Power Supplies” on page 217

“Monitoring Redundant Power Supplies” on page 507

“Monitoring the Cooling System” on page 251

“Monitoring Redundant Cooling System Components” on page 523

“Maintaining the Cable Management System, Cables, and Connectors” on page 275

“Monitoring the SCB” on page 393

