

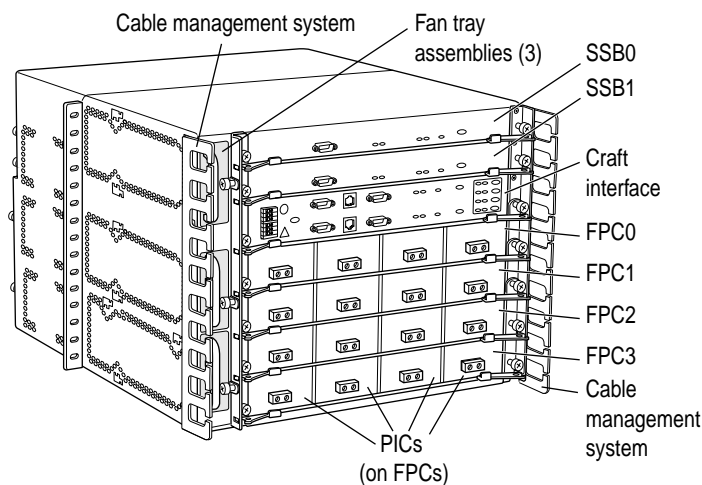
Chapter 4

M20 Internet Router Overview

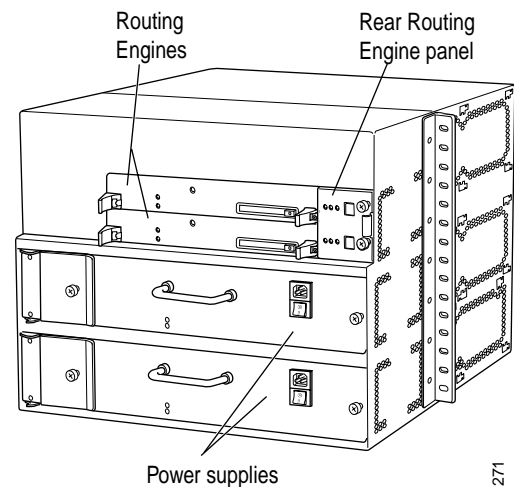
The M20 Internet router provides dedicated access, public and private peering, and hosting sites for medium core IP networks. The M20 router supports the JUNOS software which provides router configuration and monitoring. (See Figure 4.)

Figure 4: M20 Router

Front



Rear



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The M20 router includes the router-specific System and Switch Board (SSB) that provides route lookup, filtering, and sampling to the destination Flexible PIC Concentrator (FPC). The SSB contains both the Internet Processor II application-specific integrated circuit (ASIC) and the Distributed Buffer Manager ASIC, and makes forwarding decisions, distributes data cells throughout memory, processes exception and control packets, monitors system components, and controls FPC resets. You can install up to two SSBs.

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 M20 and M40 router 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 M20 router Internet Processor II ASIC forwards packets at a throughput rate of up to 20Gigabits per second (Gbps). An optional redundant switching fabric and Routing Engine increase system availability and ensure automatic failover in case of component failure. 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.

M20 Router Components

Table 6 lists the major M20 router components and characteristics.

Table 6: M20 Router Major Hardware Components

Component	Quantity	Function	Redundant	Field-Replaceable	Offline Button
Cooling system	3 fan trays and 1 rear Routing Engine fan	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	1–4	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 needed voltages to components	Yes	Hot-removable, hot-insertable	–
Routing Engine	1–2	Handles routing protocols and maintains routing tables	Yes	Hot-pluggable	Yes
SSB	1–2	Performs router lookups, manages shared memory, and transfers control packets	Yes	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 M20 Router Components

See the following chapters for information about monitoring the M20 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 SSB” on page 405

“Monitoring Redundant SSBs” on page 605

