

## Chapter 1

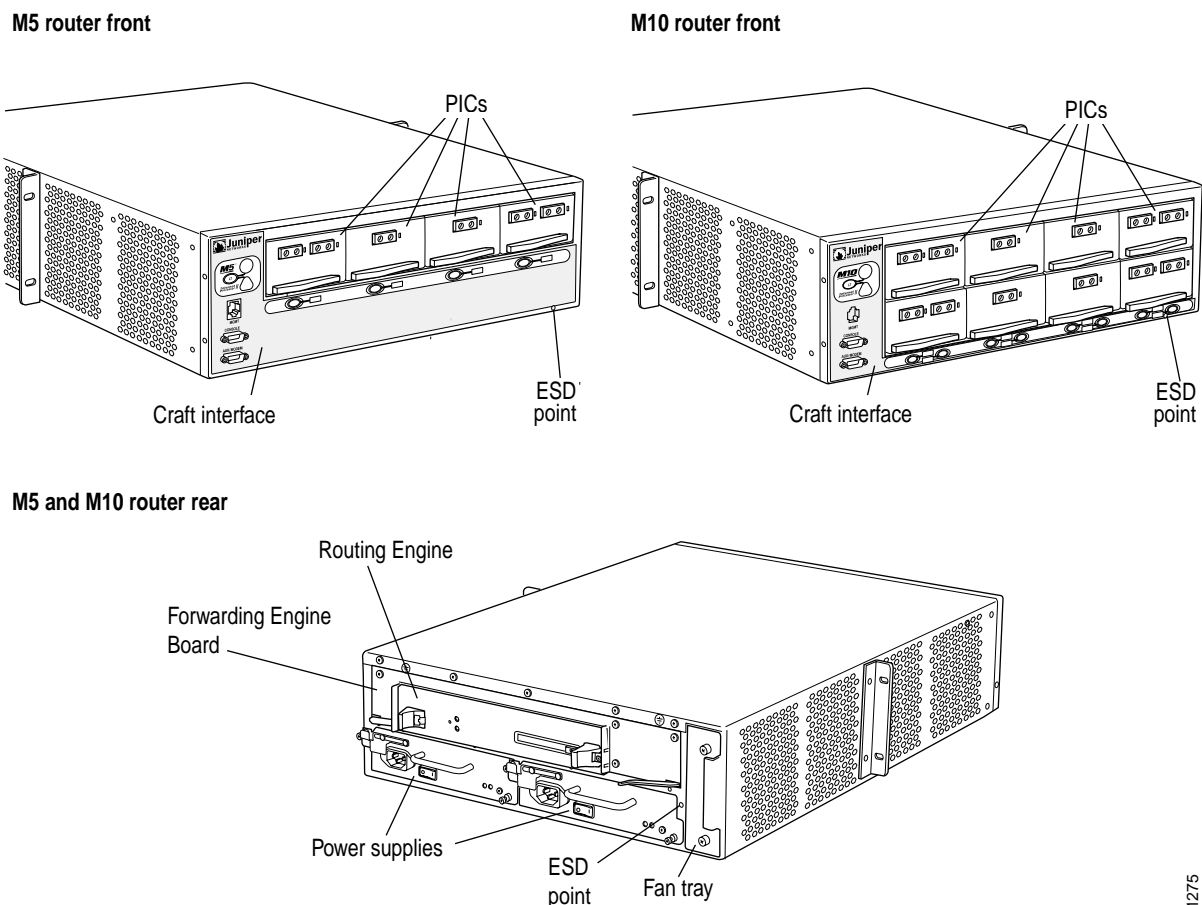
# M5 and M10 Internet Router Overview



**NOTE:** See the End-of-sale and End-of-service Announcement for the M5 and M10 routing platforms and products at <https://www.juniper.net/support/eol/>.

The M5 and M10 Internet routers provide edge and core applications for small IP networks where space and power are at a premium. The routers support the JUNOS software which provides router configuration and monitoring. (See Figure 1.)

Figure 1: M5 and M10 Routers



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The M5 and M10 routers include the router-specific Forwarding Engine Board (FEB) component that provides route lookup, filtering, and sampling, as well as switching to the destination Physical Interface Card (PIC). The FEB performs the function of the Flexible PIC Concentrators (FPCs) on other M-series routers. The FEB contains the Internet Processor II application-specific integrated circuit (ASIC), two distributed Buffer Manager ASICs, and two I/O Manager ASICs, and is responsible for making forwarding decisions, distributing packets throughout memory, and forwarding notification of outgoing packets.

The M5 and M10 routers provide a wide range of high-performance interfaces from T1 and E1 through OC12c/STM4 (for the M5 router) or OC48c/STM16 (for the M10 router). PICs between the two routers are interchangeable. For more information about supported PICs and FPCs for each M-series router type, see the appropriate PIC installation guide.

The M5 and M10 router Internet processor II ASIC forwards packets at a throughput rate of up to 5 Gbps for the M5 router and up to 10 plus Gbps for the M10 router. The ASIC technology provides such packet processing as rate limiting, filtering, and sampling of IP services.

## M5 and M10 Router Components

Table 5 lists the major M5 and M10 router components and characteristics.

**Table 5: M5 and M10 Router Major Hardware Components**

Component	Quantity	Function	Redundant	Field-Replaceable	Offline Button
Cooling system	1 fan tray (3 fans)	Cools router components	Yes	Hot-removable, hot-insertable	–
Craft interface	1	Displays the status and allows you to perform control functions	–	–	–
FEB	1	Connects PICs to other components and houses shared memory	–	Requires router shutdown	–
PIC	1–4 M5 routers 1–8 M10 routers	Provides interfaces to various network media	–	Hot-removable, hot-insertable	Yes
Power supply	2 AC or 2 DC	Distributes needed voltages to components	Yes	Hot-removable, hot-insertable	–
Routing Engine	1	Handles routing protocols and maintains routing tables	–	Requires router shutdown	–

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 M5 and M10 Router Components

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See the following chapters for information about monitoring the M5 and M10 router components:

“Monitoring the Router Chassis” on page 107

“Monitoring the Routing Engine” on page 125

“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 FEB” on page 453

