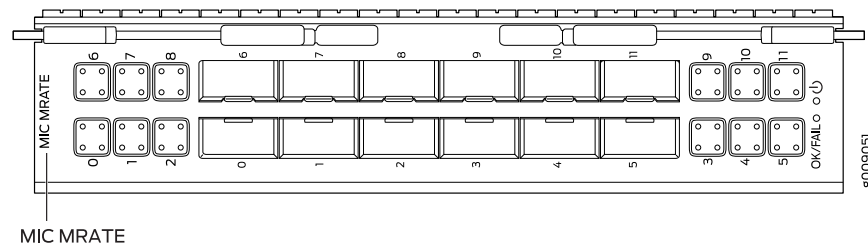


MIC MRATE

Figure 35: 12-Port Multi-Rate MIC with QSFP+



Software release	<ul style="list-style-type: none"> Junos OS Release 15.1F5 with Junos Continuity Junos OS release 16.1R1 and later <p>For information about which MPCs support this MIC, see “MIC/MPC Compatibility” on page 26. For information about which MICs are supported on MX Series routers, see “MICs Supported by MX Series Routers” on page 18.</p>
Description	<ul style="list-style-type: none"> Twelve Gigabit Ethernet ports that support quad small form-factor pluggable plus (QSFP+) transceivers Power requirement; <ul style="list-style-type: none"> When installed into MPC8E: 1.250 A @ 48 V (60 W) When installed into MPC9E, or into MPC8E operating in 1.6 Tbps upgrade mode (licensed feature): 1.771 A @ 48 V (85 W) Weight: 3.9 lb (1.77 kg) Model number: MIC-MRATE Name in the CLI: MRATE-12xQSFPX-XGE-XLGE-CGE
Hardware features	<ul style="list-style-type: none"> The ports are numbered 0 through 11. Twelve Gigabit Ethernet QSFP+ ports, each of which can be configured as a 40-Gigabit Ethernet port or as four 10-Gigabit Ethernet ports by using a breakout cable. Eight out of the twelve ports can be configured as 100-Gigabit Ethernet ports. Port numbers 0 through 3, and 6 through 9 are the eight 100-Gigabit Ethernet ports. When used in MX2K-MP8CE: <ul style="list-style-type: none"> 4 ports out of the total 12 support 100-Gigabit Ethernet speed Maximum aggregate port capacity across ports 0 through 5 should not exceed 240 Gbps Maximum aggregate port capacity across ports 6 through 11 should not exceed 240 Gbps When used in MX2K-MPC9E: <ul style="list-style-type: none"> 8 ports out of the total 12 support 100-Gigabit Ethernet speed Maximum aggregate port capacity across ports 0 through 5 should not exceed 400 Gbps Maximum aggregate port capacity across ports 6 through 11 should not exceed 400 Gbps <p>Table 25 on page 199 lists the configurable Gbps Ethernet port speeds for each port.</p>
Software features	<ul style="list-style-type: none"> Supports rate selectability at the port level. By default, the ports are configured as 10-Gigabit Ethernet ports. Supports remote port identification.

Cables and connectors **TIP:** You can use the [Hardware Compatibility Tool](#) to find information about the pluggable transceivers supported on your Juniper Networks device.

The list of supported transceivers for the MX Series is located at <https://pathfinder.juniper.net/hct/category/#catKey=100001&modelType;=All&pf;=MX+Series>.

LEDs

- **OK/FAIL LED**, one bicolor:
 - Steady green—MIC is functioning normally.
 - Yellow—MIC has failed.
- **Link LED**, one green per port (4 per QSFP+ cage):
 - Steady green—Link is up.
 - Off—Link is down or disabled.

Each QSFP+ cage contains four LEDs, logically numbered from 0 through 3. These numbers help you identify the corresponding cable when a breakout cable (4x10 Gigabit) is connected to a port. On an installed MRATE MIC, the orientation of these LEDs is as follows: upper left **0**, upper right **1**, lower left **2**, and lower right **3**.

Table 25: MIC MRATE Gigabit Ethernet Port Speed Capabilities

Port #	4x10 Gbps Ethernet	40 Gbps Ethernet	100 Gbps Ethernet
0	yes	yes	yes
1	yes	yes	yes
2	yes	yes	yes
3	yes	yes	yes
4	yes	yes	no
5	yes	yes	no
6	yes	yes	yes
7	yes	yes	yes
8	yes	yes	yes
9	yes	yes	yes
10	yes	yes	no
11	yes	yes	no

Related Documentation

- *Junos Continuity Software User Guide (Junos OS Release 14.1R4 and Later Releases)*
- *Understanding Interface Naming Conventions for MIC-MRATE*
- *Understanding Rate Selectability*