

## Megaplex-4

**MS-JNPR**

## IP/MPLS Edge Router Module



- Full-featured high-availability IP/MPLS edge router
- Megaplex-4 TDM and voice service over IP/MPLS networks using Layer 2 VPN, VPLS, IPVPN
- Megaplex-4 Ethernet and IP service over IP/MPLS networks using Layer 2 VPN, VPLS, IPVPN
- High availability with two cards per chassis providing card level redundancy (optional)
- Protection based on IP/MPLS mechanisms, such as FRR and VPLS multi-homing

The MS-JNPR multiservice module adds to Megaplex-4 a carrier-class IP/MPLS router, based on Juniper's successful virtualized MX router series (vMX).

**IP/MPLS ROUTER**

MS-JNPR features the same broad set of IPv4/IPv6 and MPLS capabilities available in the MX Series portfolio. This includes comprehensive VPN support at:

- Layer 2 (virtual private LAN service, L2 circuits, L2VPN, and EVPN)
- Layer 2.5/MPLS (LDP, RSVP, P2MP LDP, and RSVP, with class of service/QoS)
- Layer 3 (unicast and multicast L3VPNs with CoS/QoS), BNG/LNS, and a variety of multicast techniques (physical interface module, Internet Group Management Protocol, Multicast Listener Discovery, multicast generic routing encapsulation).

Additionally, the router employs advanced routing protocols such as EVPN and Source Packet Routing in Networking (SPRING).

As an extension to MPLS core networks, vMX offers feature consistency with the physical MX Series platforms, including:

- High-performance virtual broadband network gateway (BNG) capabilities
- L2TP network server/Layer-2 Tunneling Protocol (LNS/L2TP)
- Point-to-Point Protocol over Ethernet (PPPoE)
- Dynamic Host Configuration Protocol (DHCPv4/DHCPv6)
- DHCP client, server and relay
- Pseudowire Headend Termination (PWHT)
- Static and dynamic (RADIUS) subscriber interface.

Additionally, vMX supports IPsec for secure routing between clouds, between private and hybrid clouds, and between cloud-based and on-premise resources.

Together, these sophisticated features help users build advanced, virtualized, and distributed networks.

The module occupies two module slots in the Megaplex-4 chassis.

**MARKET SEGMENTS AND APPLICATIONS**

The MS-JNPR module provides an effective solution for power utilities, water utilities, gas and oil firms, transportation companies (railways, ATC) and government bodies (such as army) which intend to migrate their operational networks to new MPLS-based networks, while keeping their legacy services intact and enabling gradual migration from TDM to packet services. The IT/OT convergence and the fact that many companies already use MPLS for their IT networks, can be a driver for integrating MPLS into access devices like Megaplex-4.

**INTEROPERABILITY**

MS-JNPR operates with Juniper MX devices and Juniper SRX/vSRX.

**RESILIENCY**

MS-JNPR features a vast range of IP/MPLS redundancy mechanisms, both at the link level (such as FRR) and at the card level (such as VPLS multi-homing), when two cards are used in a chassis.



# MS-JNPR

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### MANAGEMENT

Megaplex-related features are managed via Megaplex-4 CLI and RADview.

The Router application (vMX) is managed via Juniper MX series management tools, such as Juniper MX CLI and Juniper CSD.

Juniper CSD (Connectivity Services Director) is a robust and holistic application that facilitates automated design and provisioning of Layer-2 VPN, Layer 3-VPN services and MPLS infrastructure.

vMX CLI is accessible via the remote SSH.

### Specifications

#### IP/MPLS ROUTER

##### VMX 17.4 feature set

#### ETHERNET INTERFACE

Number of Ports	1
Type	1000Base-FX
Connector	SFP socket

SFP Transceivers	SFP5/5D, SFP6/6D, SFP7/7D, SFP8/8D
Maximum Frame Size	9600 bytes

#### CONTROL PORT

Interface	RS-232, UART
Baud Rate	115200 bps
Connector	RJ-45

#### USB PORT

For factory use only

#### RESILIENCY

Card/router- and link-level redundancy	Based on VMX IP/MPLS mechanisms (FRR, VPLS multi-homing, VRRP, etc)
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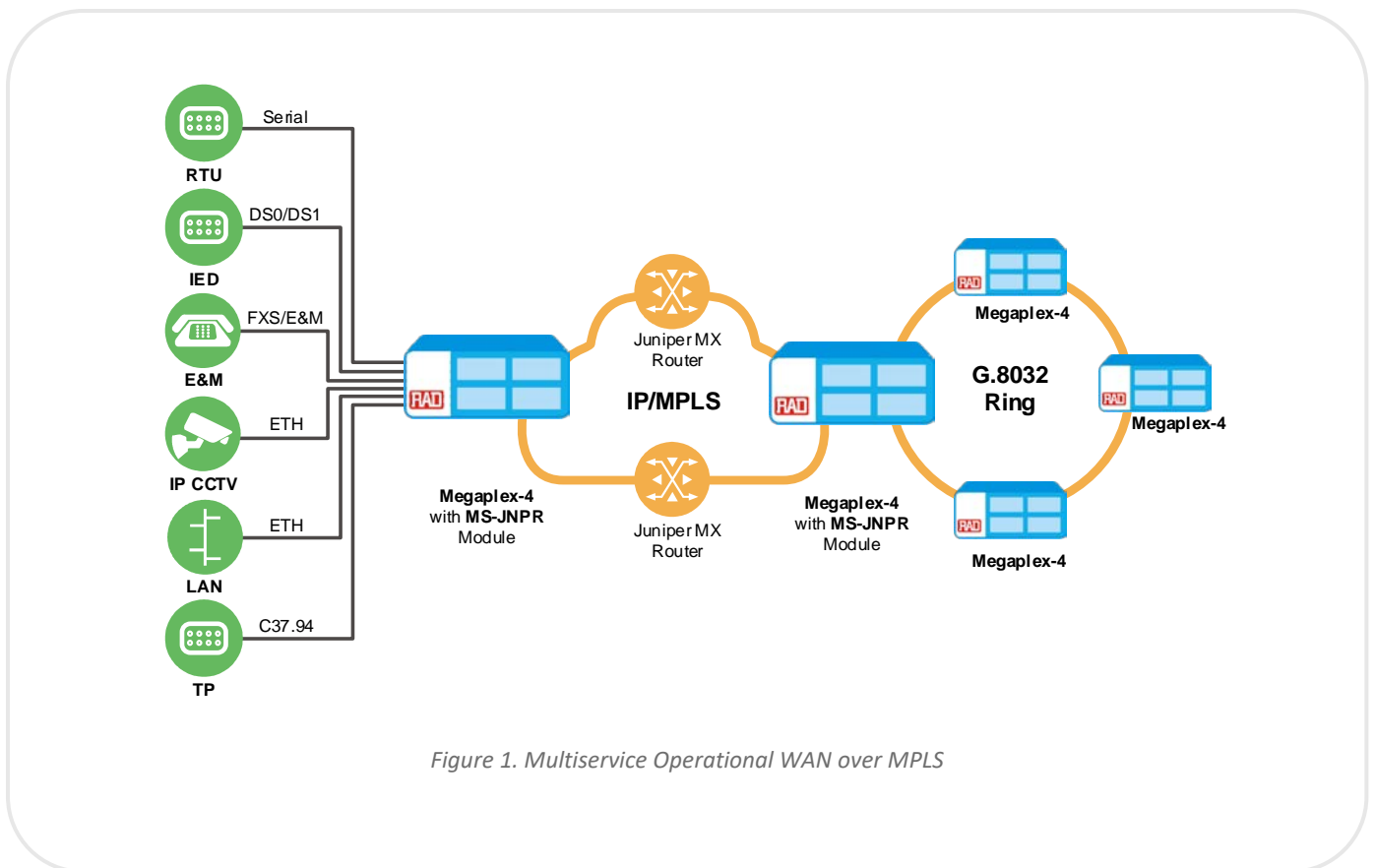


Figure 1. Multiservice Operational WAN over MPLS

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## IP/MPLS Edge Router Module

### DIAGNOSTICS

<b>LED Indicators</b>	RDY (green): The module is up and running
	LINK (green) – for GbE port:
	<ul style="list-style-type: none"> <li>On: the port is connected to an active Ethernet hub or switch</li> <li>Off: Ethernet link is not detected</li> </ul>
	ACT (yellow) – for GbE port:
	<ul style="list-style-type: none"> <li>On or Blinking (in accordance with the traffic): ETH frames are received or transmitted</li> <li>Off: ETH frames are not received and transmitted</li> </ul>

### GENERAL

<b>Processor</b>	Xeon D 8-core processor
<b>Environment</b>	
<b>Operating Temperature</b>	-10°C to +55°C (14°F to 131°F)
<b>Storage Temperature</b>	-20°C to 70°C (-4°F to 158°F)
<b>Humidity</b>	Humidity: up to 95%, non-condensing
<b>Power</b>	
<b>Power Consumption</b>	55W max

### Ordering

#### MP-4100M-MS/JNPR/X8C/VMX250M

Multiservice module, VMX-250M perpetual license (125 Mb full duplex), Xeon D, 8 cores, premium full-feature set

#### MP-4100M-MS/JNPR/X8C/VMX1G

Multiservice module, VMX-1G perpetual license (0.5 Gb full duplex), Xeon D, 8 cores, premium full-feature set

#### MP-4100M-MS/JNPR/X8C/VMX5G

Multiservice module, VMX-5G perpetual license (2.5 Gb full duplex), Xeon D, 8 cores, premium full-feature set

#### MP-4100M-MS/JNPR/X8C/AVMX5G

Multiservice module, VMX-5G perpetual license (2.5 Gb full duplex), Xeon D, 8 cores, 16 L3VPN instances, full scale L2/L2.5, L3 features

It is mandatory to order a RADcare Project Assurance package for operating MS-JNPR. To order it, please contact your Sales Representative.

### OPTIONAL ACCESSORIES

#### Recommended SFP Transceivers

##### SFP-5D

Gigabit Ethernet, DDM, internal calibration, 850 nm, multimode, VCSEL, 0.55 km (0.3 mi)

##### SFP-8D

Gigabit Ethernet, DDM, internal calibration, 1310 nm, single mode, laser, 40.0 km (24.8 mi)

#### International Headquarters

24 Raoul Wallenberg St., Tel Aviv 6971923, Israel  
Tel 972-3-6458181 | Fax 972-3-7604732  
Email [market@rad.com](mailto:market@rad.com)

#### North American Headquarters

900 Corporate Drive, Mahwah, NJ 07430, USA  
Tel 201-529-1100 | Toll Free: 800-444-7234 | Fax: 201-529-5777  
Email [market@radusa.com](mailto:market@radusa.com)



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