

Juniper Networks M7i and M10i Multiservice Routers



The M7i and M10i platforms are ideal enterprise routing solutions for head offices, campuses and corporate backbones needing reliable, secure and high performance IP WAN connectivity, internet access and services. Unlike legacy routers which have monolithic architectures and aging operating systems, the M7i/M10i Multiservice routers boast a hardware based architecture and JUNOS, a modern object oriented operating system. This architecture and JUNOS ensures rich packet processing with uncompromising forwarding performance to support latency sensitive applications such as voice, video, and mission critical applications. The M7i and M10i routers are the choice for consolidating multiple services onto a single IP/MPLS network and delivering performance, reliability, and security to the enterprise environment.

	Juniper Networks M7i/M10i
Internet Protocols	
IPv4	Yes
IPv6	Yes
Routing and Multicast	
OSPF	Yes
BGP	Yes
RIPv2	Yes
Static routes	Yes
IS-IS	Yes
Multicast (IGMPv3, PIM, SDP, DVRMRP, Single Source)	Yes
IP Address Management	
Static	Yes
DHCP relay	Yes
MPLS	
LDP	Yes
RSVP-TE	Yes
Traffic Engineering	Yes
Layer 3 2547 VPN	Yes
Layer 2 VPN	Yes
Virtual Private LAN Service (VPLS)	Yes
Diffserv-aware Traffic Engineering	Yes
MPLS Detour	Yes
MPLS Fast Reroute Link Protection	Yes
MPLS Fast Reroute Node Protection	Yes
Encapsulations	
Ethernet (MAC + VLAN Tagged)	Yes
PPP (Synch)	Yes
PPPoA	Yes
Frame Relay	Yes
ATM	Yes
HDLC	Yes
Serial (RS-232, RS-449, X.21, V.35, EIA-530)	Yes
802.1q support	Yes
MLPPP	Yes ¹
MLFR (FRF.15, FRF.16)	Yes ¹
L2TP (M7i can act as LNS)	Yes ² (M7i)
Traffic Management	
Policing & Shaping	Yes
Class Based Queuing with Prioritization	Yes
WRED	Yes
Queuing based on VLAN/VC/VP/DLCI/Interface/Bundles	Yes
Voice Support	
FRF.12	Yes
LFI ¹	Yes
cRTP ²	Yes
Security	
Stateful Firewall ²	Yes
Attack detection ²	Yes
DOS & DDOS protections	Yes
Tunnels (GRE, IP in IP)	Yes
IPSec DES (56-bit), 3DES (168 bit) encryption ³	Yes
MD5 and SHA-1 authentication	Yes
Packet filters	Yes

	Juniper Networks M7i/M10i	Juniper Networks M7i/M10i
System Management		
JUNOS CLI	Yes	Yes
JUNOScope Manager	Yes	Yes
J-Web browser interface	Planned	Planned
Service Deployment System (SDX)	Yes	Yes
SNMPv2 and SNMP v3	Yes	Yes
JUNOScript XML API	Yes	Yes
SLA and Measurement		
Real-Time Performance Measurement (delay/jitter)	Yes	Yes
Alarm generation on SLA violation	Yes	Yes
J-Flow ²	Yes	Yes
Logging and Monitoring		
Syslog	Yes	Yes
Traceroute	Yes	Yes
MPLS Ping	Yes	Yes
High Availability		
VRRP	Yes	Yes
IETF Graceful Restart	Yes	Yes
Redundant forwarding and routing engines	Yes (M10i)	Yes (M10i)
Graceful Routing Engine Switchover	Yes (M10i)	Yes (M10i)
Administration		
External administrator database	Yes	Yes
RADIUS	Yes	Yes
Configuration rollback	Yes	Yes
Commit confirm for changes	Yes	Yes
Software upgrades	Yes	Yes
Platform		
Dimensions (H x W x D)	3.5 x 17.5 x 18 in 8.9 x 44.5 x 45.7 cm	8.75 x 17.5 x 18 in 22.2 x 44.5 x 45.7 cm
Fixed interfaces	2 Fast Ethernet or 1 Gigabit Ethernet	None
Number of PIC Slots	4 open slots	8 open slots
Available Physical Interface Cards (PIC)	See www.juniper.net	See www.juniper.net
Performance		
Packet Per second	16 Million packets per second	16 Million packets per second
Bits per second	8.4 Gbps	12.8 Gbps
WAN Uplink	up to 1 Gigabit Ethernet	up to OC-48/STM-16
Power System		
Nominal Voltage AC (DC option available)	100-240V AC, 47-63Hz	100-240V AC, 47-63Hz
Current/Power	4-2 Amps, 400 watts	8-4 Amps, 800 watts
Power Supplies Required	1 required, 2 for redundancy	2 required, 3 for redundancy

(1) These features require the Link Services PIC

(2) These features require the optional Adaptive Services Module for the M7i or the Adaptive Services PIC or Adaptive Services II PIC

(3) This features require either ASP, ASM, or ES PIC

	Juniper Networks M7i	Juniper Networks M10i
Environment		
Operating Temperature	32° to 104° F, 0° to 40° C	32° to 104° F, 0° to 40° C
Storage Temperature	-40° to 158° F, -40° to 70° C	-40° to 158° F, -40° to 70° C
Relative Humidity (Operating)	5 to 90% non-condensing	5 to 90% non-condensing

Agency Approvals

Safety	Network Equipment Electromagnetic Compatibility Requirements
CAN/CSA-C22.2 No. 60950-00/UL 60950	Immunity
EN 60825-1	EN 61000-3-2 Power Line Harmonics
EN 60825-2	EN 61000-4-2 ESD
EN 60950	EN 61000-4-3 Radiated Immunity
EMC	EN 61000-4-4 EFT
AS/NZS 3548 Class B (Australia / New Zealand)	EN 61000-4-5 Surge
BSMI Class B (Taiwan)	EN 61000-4-6 Low Frequency Common Immunity
EN 55022 Class B Emissions (Europe)	EN 61000-4-11 Voltage Dips and Sags
FCC Part 15 Class B (USA)	NEBS Compliant
VCCI Class B (Japan)	GR-63-Core: NEBS, Physical Protection
ETSI	GR-1089-Core: EMC and Electrical Safety for Network Telecommunications Equipment
ETS-300386-2 Telecommunication	SR-3580 NEBS Criteria Levels (Level 3 Compliance)

Ordering Information

The parts listed below are available through distributors. For a complete parts list please see the M-series datasheet located at <http://www.juniper.net/products/mseries/100042.html>

M7i Bundles

One chassis, one Fixed Interface Card (FIC) with either 2 x Fast Ethernet or 1 Gigabit Ethernet (GE) includes small form factor pluggable optic module with SX optics), one routing engine with 256M DRAM, one compact forwarding engine board with 256M DRAM, one power supply, one fan tray, JUNOS software, documentation CD. AC bundles include country-appropriate power cable. The Adaptive Services Module option (includes a free NAT/FW multi instance license) can be ordered installed on the compact forwarding engine board by using model numbers in the right column.

Fixed Interface Card with Fast Ethernet	Standard	with Adaptive Services Module
M7i, AC, (US Cable) 2 FE Ports, DOC CD	M7i-AC-2FE-US-B	M7i-AC-2FE-ASM-US-B
M7i, AC (UK Cable), 2 FE Ports, DOC CD	M7i-AC-2FE-UK-B	M7i-AC-2FE-ASM-UK-B
M7i, AC (IT Cable), 2 FE Ports, DOC CD	M7i-AC-2FE-IT-B	M7i-AC-2FE-ASM-IT-B
M7i, AC (EU Cable), 2 FE Ports, DOC CD	M7i-AC-2FE-EU-B	M7i-AC-2FE-ASM-EU-B
M7i, AC (AU Cable), 2 FE Ports, DOC CD	M7i-AC-2FE-AU-B	M7i-AC-2FE-ASM-AU-B
M7i, AC (JP Cable), 2 FE Ports, DOC CD	M7i-AC-2FE-JP-B	M7i-AC-2FE-ASM-JP-B
M7i, DC, 2 FE Ports, DOC CD	M7i-DC-2FE-B	M7i-DC-2FE-ASM-B

Fixed Interface Card with Gigabit Ethernet and SFP	Standard	with Adaptive Services Module
M7i, AC (US Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-US-B	M7i-AC-1GE-ASM-US-B
M7i, AC (UK Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-UK-B	M7i-AC-1GE-ASM-UK-B
M7i, AC (IT Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-IT-B	M7i-AC-1GE-ASM-IT-B
M7i, AC (EU Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-EU-B	M7i-AC-1GE-ASM-EU-B
M7i, AC (AU Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-AU-B	M7i-AC-1GE-ASM-AU-B
M7i, AC (JP Cable), 1 GE Port (w/SFP), DOC CD	M7i-AC-1GE-JP-B	M7i-AC-1GE-ASM-JP-B
M7i, DC, 1 GE Port (w/SFP), DOC CD	M7i-DC-1GE-B	M7i-DC-1GE-ASM-B

Software Licenses for the Adaptive Services Module

J-Flow	S-ACCT
CRTP	S-CRTP
L2TP LNS license for M7i	S-LNS
IPSec	S-ES

M10i bundles

Each bundle includes chassis, one routing engine with 256M DRAM (2 for redundant), one compact forwarding engine board with 256M DRAM (two for redundant), one high availability chassis manager board (two for redundant), two fan trays, two power supplies (three for AC redundancy, four for DC redundancy), JUNOS software, documentation CD. AC bundles include country-appropriate power cables.

	Non-Redundant	Redundant
M10i, AC (US Cable)	M10i-AC-US-B	M10i-AC-HA-US-B
M10i, AC (UK Cable)	M10i-AC-UK-B	M10i-AC-HA-UK-B
M10i, AC (IT Cable)	M10i-AC-IT-B	M10i-AC-HA-IT-B
M10i, AC (EU Cable)	M10i-AC-EU-B	M10i-AC-HA-EU-B
M10i, AC (AU Cable)	M10i-AC-AU-B	M10i-AC-HA-AU-B
M10i, AC (JP Cable)	M10i-AC-JP-B	M10i-AC-HA-JP-B
M10i, DC	M10i-DC-B	M10i-DC-HA-B

M10i/M7i Spares

M10i/M7i Forwarding Engine Spare	FEB-M10i-M7i-S
M7i Forwarding engine Spare with built-in Services Module	FEB-M7i-SVCS-S
Routing Engine board spare. Flash media kit sold separately	RE-400-256-WW-S
M10i Chassis Spare	CHAS-MP-M10i-S
M7i Chassis Spare, 1 built-in GE port	CHAS-MP-M7i-1GE-S
M7i Chassis Spare, 2 built-in FE ports	CHAS-MP-M7i-2FE-S
High Availability Chassis Manager Board for M10i	HCM-M10i-S
M10i/M7i AC Power Supply Spare	PWR-M10i-M7i-AC-S
M10i/M7i DC Power Supply Spare	PWR-M10i-M7i-DC-S
M7i Fan Tray Spare	FANTRAY-M7i-S
M10i Fan Tray Spare	FANTRAY-M10i-S
Flash media kit with 256 MB flash drive and PCMCIA adapter	CF-ADAP-256M-S
Optional RE Memory Upgrade: 256 MB DRAM Module	MEM-RE-256-S

M10i/M7i Physical Interface Cards

Ethernet	
1-Port Gigabit Ethernet IQ PIC (Requires SFP)	PE-1GE-SFP-QPP
1-Port Gigabit Ethernet PIC (Requires SFP)	PE-1GE-SFP
12-port 10/100 TX Ethernet PIC. Includes 3-meter RJ21 cable	PE-12FE-TX
4-port Fast Ethernet PIC, TX interface, RJ45 connector	PE-4FE-TX
ATM	
1-port OC-12/STM4 ATM2 IQ PIC, Single mode, IR	PE-1OC12-ATM2-SMIR
2-port OC-3/STM1 ATM2 IQ PIC, Multi mode	PE-2OC3-ATM2-MM
2-port OC-3/STM1 ATM2 IQ PIC, Single mode, IR	PE-2OC3-ATM2-SMIR
4-port DS3 ATM2 IQ PIC (ships with cable)	PE-4DS3-ATM2
2-port E3 ATM2 IQ PIC (ships with cable)	PE-2E3-ATM2
POS	
1 port SONET/SDH OC12/STM4 PIC, Single-Mode, IR	PE-1OC12-SON-SMIR
2 port SONET/SDH OC3/STM1 PIC, Single-Mode, IR	PE-2OC3-SON-SMIR
2 port SONET/SDH OC3/STM1 PIC, Multi-mode	PE-2OC3-SON-MM
Clear Channel	
4 port DS3 PIC (and cables) with PIC ejector	PE-4DS3
2 port DS3 PIC (and cables) with PIC ejector	PE-2DS3
4-Port E3 IQ PIC	PE-4E3-QPP
2 port E3 PIC (and cables) with PIC ejector	PE-2E3
4-port E1 PIC (75-ohm BNC connectors) (ships with cables)	PE-4E1-COAX
4-port E1 PIC (120-ohm RJ48 connectors)	PE-4E1-RJ48
4-port T1 PIC, (120-ohm, RJ48 connectors)	PE-4T1-RJ48
2 Port EIA-530 PIC (DB-25 Connector)	PE-2EIA530
Channelized	
1-Port Channelized STM1 to DS0 IQ PIC, SM, IR	PE-1CHSTM1-SMIR-QPP
4-Port Channelized DS3 to DS0 IQ PIC, BNC	PE-4CHDS3-QPP
10-Port Channelized E1 to DS0 IQ PIC, RJ48	PE-10CHE1-RJ48-QPP
Services	
Adaptive Services II PIC	PE-AS2
Link Services PIC, 4 ML bundles, 256 LFI links, Tunnel Services	PE-LS-4
Tunnel Services PIC with PIC ejector	PE-TUNNEL

For additional physical interface cards please see www.juniper.net/products/modules/

Interface Accessories

EIA-530 to V.35 cable (DTE) for M-series	CBL-EIA530-V35-DTE
EIA-530 to X.21 cable (DTE) for M-series	CBL-EIA530-X21-DTE
3-meter VHDCI to RJ21 Ethernet cable spare for PE-12FE-TX	CBL-RJ21-MDI-S
3-meter VHDCI to RJ21 Ethernet cable spare for PE-12FE-TX	CBL-RJ21-MDIX-S
10-ft SMZ to BNC coaxial cable spare, for DS3/E3 PICS	CBL-SMZ-BNC-M-S
SFP 1000Base-SX Gigabit Ethernet Optic Module	SFP-1GE-SX



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