



J SERIES SERVICES ROUTERS

J2320, J2350, J4350, AND J6350

Product Overview

Juniper Networks J Series Services Routers extend enterprise applications and deliver reliable connectivity to remote offices with a powerful blend of high-performance network protection and advanced services. J Series Services Routers leverage the modular Junos OS and Juniper's rich product and partner portfolio to consolidate market leading security, application optimization, and voice capabilities onto a single, easy to manage platform. Our innovative security approach inseparably integrates routing and firewalls for exceptional performance. Available options, including integrated Juniper Networks WX application acceleration and integrated voice gateway technology from Avaya, make the J Series the ideal choice for closing the distance between central resources and remote locations.

Product Description

Enterprises are faced with a number of challenges and opportunities by converging voice, video and data to one network. This consolidation of network elements reduces cost by easing deployment of SIP enabled VoIP, real-time high-definition Telepresence and standardizing on a consistent infrastructure network operating system like Juniper Networks® Junos® operating system. These new technologies improve; customer relations, interactions with suppliers, and employee productivity. This mission-critical multi-media network must be always on and always available. To accomplish this, fully integrated stateful security is a key requirement, not merely forwarding packets without regard to the intended application or individual user session. Junos OS provides the high-performance networking infrastructure that helps enterprises implement key initiatives that:

- Integrates routing, firewalling and VPN into one best in class secure router. By securing an enterprise's mission critical information and protecting the network from vulnerabilities and attack, the Juniper Networks J Series Services Router offers a combination of features that increases productivity and reduces costs. With Junos OS release 9.6, the J Series enhances these features with Unified Threat Management, consisting of antivirus, antispam, Web filtering and intrusion prevention system. These advanced security features can eliminate a standalone appliance and be applied with a software key.
- Minimizes the cost of installing and operating a network by deploying J Series. With the modular, protected mode design of Junos OS and the rigorous Junos OS development and testing process, there are fewer system process failures. The single code source of Junos OS makes the qualification of new releases across the network much simpler. In addition, superior configuration management reduces human errors that could lead to network downtime.

Whether you have an enterprise network or a service provider looking for customer premise equipment for an MPLS or IP network, the J Series offers a mix of features that excel at both. By leveraging Junos OS, the J Series can be deployed at medium to large sites and the wide range of interfaces scales the bandwidth as necessary for today's real time communications

Key Hardware Features of the J Series Services Routers

PRODUCT	DESCRIPTION
J2320	<ul style="list-style-type: none"> • Support for T1, E1, Synchronous Serial, ISDN Basic Rate Interface, ADSL2/ADSL2+, G.SHDSL, and Gigabit Ethernet interfaces • Support for integrated IP telephony using the Avaya IG550 Integrated Gateway • Support for application acceleration using the Juniper Networks ISM200 Integrated Services Module • 4 fixed Gigabit Ethernet LAN ports, and 3 PIM slots • 512 MB DRAM default, expandable to 1 GB DRAM • 512 MB compact flash default, upgradeable to 1 GB • Hardware encryption acceleration (optional) • Full UTM; antivirus, antispam, Web filtering, intrusion prevention system (with high memory version) • Unified Access Control (UAC) and content filtering
J2350	<ul style="list-style-type: none"> • Support for T1, E1, Synchronous Serial, ISDN BRI, ADSL/2/2+, G.SHDSL, and Gigabit Ethernet interfaces • Support for integrated IP telephony using the Avaya IG550 Integrated Gateway • Support for application acceleration using the Juniper Networks ISM200 Integrated Services Module • 4 fixed Gigabit Ethernet LAN ports, and 5 PIM slots • 512 MB DRAM default, expandable to 1 GB DRAM • 512 MB compact flash default, upgradeable to 1 GB • Hardware encryption acceleration (optional) • DC version available • NEBS-compliant models available • Full UTM; antivirus, antispam, Web filtering, intrusion prevention system (with high memory version) • Unified Access Control (UAC) and content filtering
J4350	<ul style="list-style-type: none"> • Support for T1, E1, Fast Ethernet, Synchronous Serial, ISDN BRI, ADSL2/ADSL2+, G.SHDSL, DS3, E3, Gigabit Ethernet interfaces • Support for integrated IP telephony using the Avaya IG550 Integrated Gateway • Support for application acceleration using the Juniper Networks ISM200 Integrated Services Module • 4 fixed Gigabit Ethernet LAN ports, 4 PIM slots, and 2 EPIM/PIM slots • DC version available • 512 MB or 1 GB DRAM default, expandable to 2 GB DRAM • 512 MB compact flash default, upgradeable to 1 GB • Hardware encryption acceleration (optional) • NEBS-compliant models available • Full UTM; antivirus, antispam, Web filtering, intrusion prevention system (with high memory version) • Unified Access Control (UAC) and content filtering
J6350	<ul style="list-style-type: none"> • Support for T1, E1, Fast Ethernet, Synchronous Serial, ISDN BRI, ADSL2/ADSL2+, G.SHDSL, DS3, E3, Gigabit Ethernet interfaces • Support for integrated IP telephony using the Avaya IG550 Integrated Gateway • Support for application acceleration using the Juniper Networks ISM200 Integrated Services Module • 4 fixed Gigabit Ethernet LAN ports, 2 PIM slots, and 4 EPIM/PIM slots • DC version available • 1 GB DRAM default, expandable to 2 GB DRAM • 512 MB compact flash default, upgradeable to 1 GB • Hardware encryption acceleration standard • NEBS-compliant models available • Redundant AC or DC power supplies • Full UTM; antivirus, antispam, Web filtering, intrusion prevention system (with high memory version) • Unified Access Control (UAC) and content filtering

Features and Benefits

Secure Routing

Should you use a router and a firewall to secure your network? By building the branch J Series Services Routers with best-in-class routing and firewall capabilities in one product, enterprises don't have to make that choice. Why forward traffic if it's not legitimate?

J Series for the branch checks the traffic to see if it is legitimate, and only forwards it on when it is. This reduces the load on the network, allocates bandwidth for all other mission-critical applications, and secures the network from hacking.

The main purpose of a secure router is to provide firewall protection and apply policies. The firewall (zone) functionality inspects traffic flows and state to ensure that originating and returning information in a session is expected and permitted for a particular zone. The security policy determines if the session can originate in one zone and traverse to another zone. This architectural choice receives packets from a wide variety of clients and servers and keeps track of every session, of every application, and of every user. It allows the enterprise to make sure that only legitimate traffic is on its network and that traffic is flowing in the expected direction.

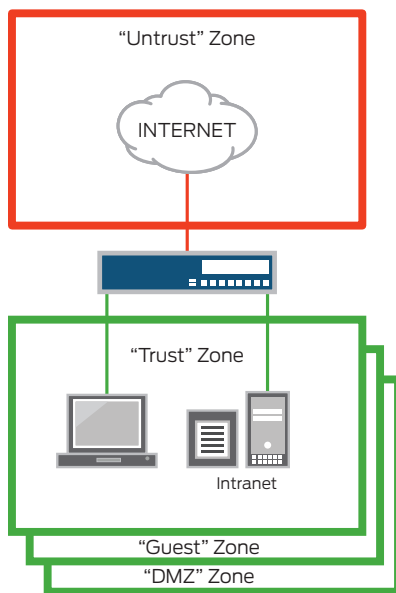


Figure 1: Firewalls, zones and policies

To ease the configuration of a firewall, J Series for the branch uses two features—"zones" and "policies." While these can be user defined, the default shipping configuration contains, at a minimum, a trust and an untrust zone. The trust zone is used for configuration and attaching the LAN to the branch J Series routers. The untrust zone is used for the WAN or Internet interface. To simplify installation and make configuration easier, a default policy is in place that allows traffic originating from the trust zone to flow to the untrust zone. This policy blocks all traffic originating from the untrust zone to the trust zone. A traditional router forwards all traffic without regard to a firewall (session awareness) or policy (origination and destination of a session).

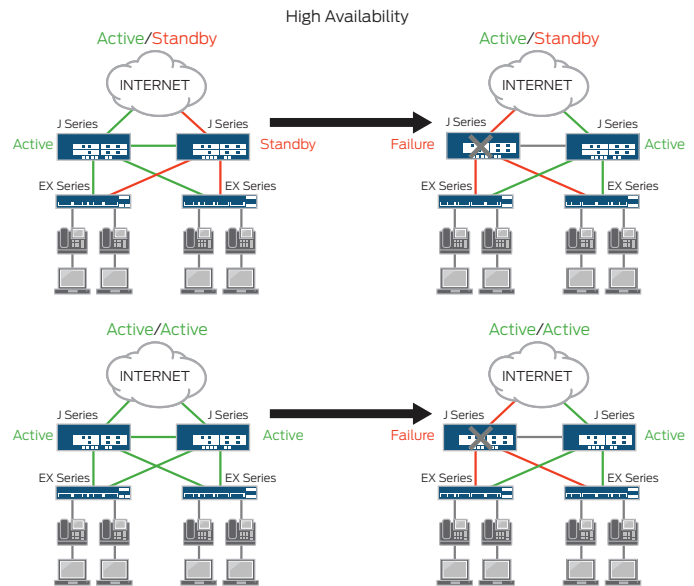


Figure 2: High availability

By using the Web interface or CLI, enterprises can create a series of security policies that will control the traffic from within and in between zones by defining policies. At the broadest level, all types of traffic can be allowed from any source in security zones to any destination in all other zones without any scheduling restrictions. At the narrowest level, policies can be created that allow only one kind of traffic between a specified host in one zone and another specified host in another zone during a scheduled time period.

High Availability

Junos OS Services Redundancy Protocol (JSRP) is a core feature of the J Series for the branch. JSRP enables a pair of security systems to be easily integrated into a high availability network architecture, with redundant physical connections between the systems and the adjacent network switches. With link redundancy, Juniper Networks can address many common causes of system failures, such as a physical port going bad or a cable getting disconnected, to ensure that a connection is available, without having to fail over the entire system. This is consistent with a typical active/standby nature of routing resiliency protocols.

When J Series routers for the branch are configured as an active/active pair, traffic and configuration will be mirrored automatically to provide active firewall and VPN session maintenance in case of a failure. The J Series will now synchronize both configuration and runtime information. As a result, during failover, synchronization of the following information is shared: connection/session state and flow information, IPsec security associations, Network Address Translation (NAT) traffic, address book information, configuration changes, and more. In contrast to the typical router active/standby resiliency protocols such as Virtual Router Redundancy Protocol (VRRP), all dynamic flow and session information is lost and must be reestablished in the event of a failover. Some or all applications sessions will have to restart depending on the convergence time of the links or nodes. By maintaining state, not only is the session preserved, but security is intact. In an unstable network, this active/active configuration also mitigates link flapping affecting session performance.

Session-Based Forwarding Without the Performance Hit

In order to optimize the throughput and latency of the combined router and firewall, Junos OS implements session-based forwarding, an innovation that combines the session state information of a traditional firewall and the next-hop forwarding of a classic router into a single operation. With Junos OS, a session that is permitted by the forwarding policy is added to the forwarding table along with a pointer to the next-hop route. Established sessions have a single table lookup to verify that the session has been permitted and to find the next hop. This efficient algorithm improves throughput and lowers latency for session traffic when compared with a classic router that performs multiple table lookups to verify session information and then to find a next-hop route.

Figure 3 shows the session-based forwarding algorithm. When a new session is established, the session-based architecture within Junos OS verifies that the session is allowed by the forwarding policies. If the session is allowed, Junos OS will look up the next-hop route in the routing table. It then inserts the session and the next-hop route into the session and forwarding table and forwards the packet. Subsequent packets for the established session require a single table lookup in the session and forwarding table, and are forwarded to the egress interface.

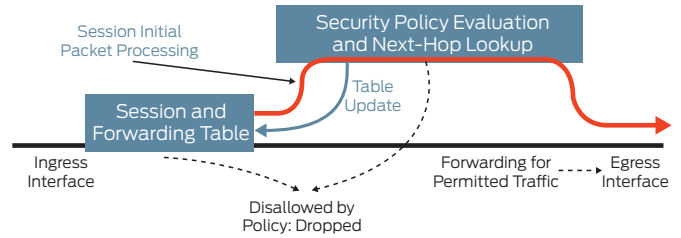


Figure 3: Session-based forwarding algorithm

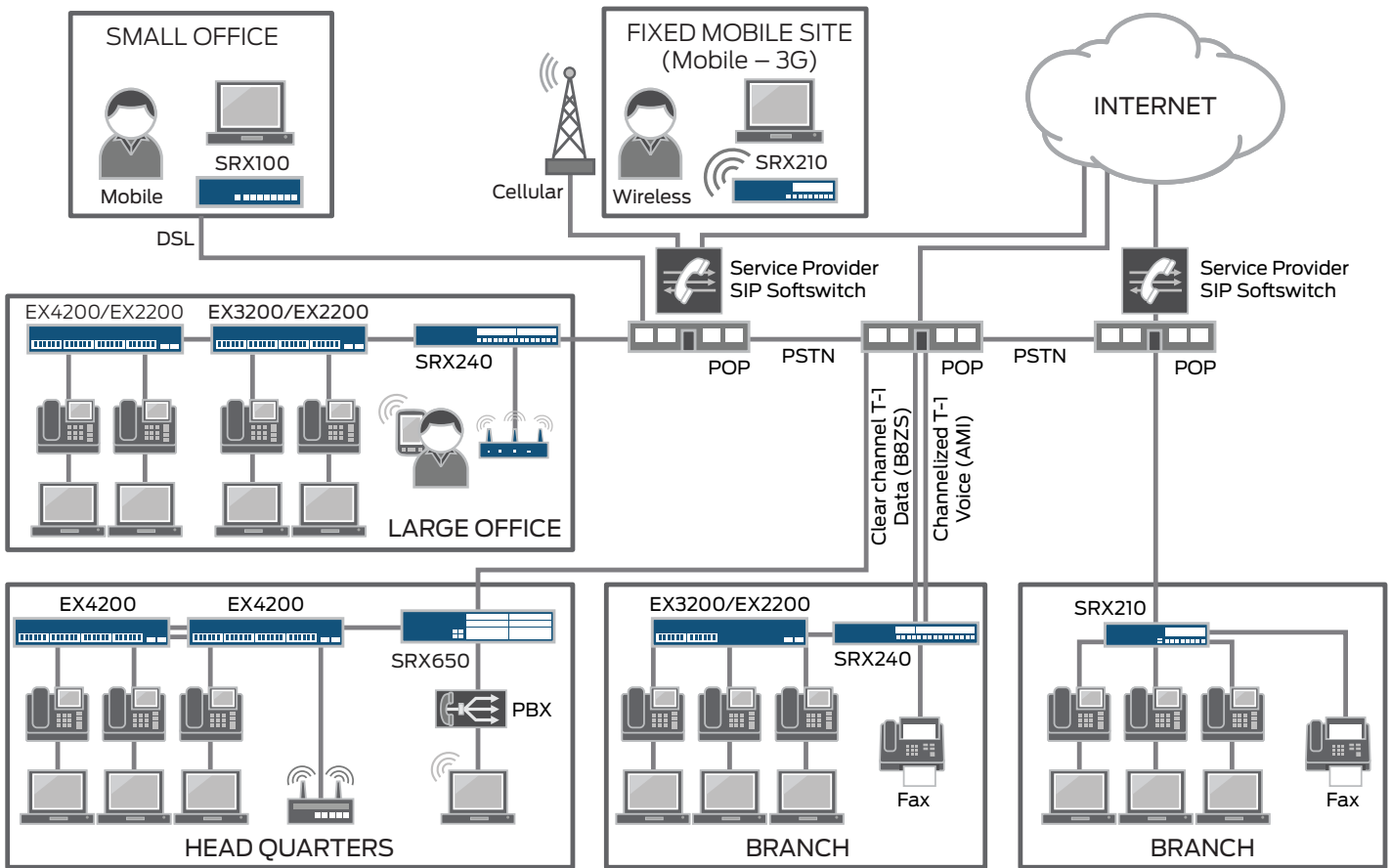


Figure 4: The distributed enterprise

Product Options

Juniper Networks J2320, J2350, J4350, and J6350 Services Routers offer a number of options in terms of LAN and WAN ports, hardware encryption acceleration, power supplies, DRAM, compact flash, and feature licenses.

LAN Ports

All J2320, J2350, J4350, and J6350 Services Routers ship with four fixed 10/100/1000 Ethernet ports. You can add more modular LAN interfaces by ordering the appropriate PIMs, Enhanced PIMs (EPIMs), or Universal PIMs (UPIMs). For more information, see the J Series WAN and LAN modules Ordering Information section on page 14.

WAN Ports

All J2320, J2350, J4350, and J6350 Services Routers ship without fixed WAN ports. The customer can add modular WAN interfaces by ordering the appropriate PIMs. For more information, see the J Series WAN and LAN Modules Part Numbers in the Ordering Information section on page 14.

Hardware Encryption Acceleration

The J2320, J2350, and J4350 are available with optional hardware encryption acceleration. All J6350 models include hardware encryption acceleration by default. If you purchase a J2320, J2350, or J4350 without hardware encryption, you can add it later by ordering the appropriate encryption card.

Power Supply

All J2350, J4350, and J6350 Services Routers ship with either a DC power supply or an AC power supply and include a region-specific power cord. (The J2320 is available with AC power only.) The J6350 supports a second redundant AC or DC power supply, which can be added by ordering SSG-PS-DC or SSG-PS-AC. The region-specific AC power cable for SSG-PS-AC must be ordered separately.

DRAM

The J2320 and J2350 are upgradeable to a maximum of 1 GB DRAM. The J2320 and J2350 models without hardware encryption acceleration (J2320-JB-SC and J2350-JB-SC) come with 512 MB DRAM. All other models come with 1 GB of DRAM.

All J4350 models are upgradeable to a maximum of 2 GB DRAM. The J4350 model that ships without hardware encryption acceleration (J-4350-JB-SC) ships with 512 MB of DRAM. All other J4350 models ship with 1 GB of DRAM.

All J6350 Services Routers ship with 1 GB of DRAM and are upgradeable to 2 GB of DRAM. Order and install two additional JXX50-MEM-512M-S DIMMs.

Note that when upgrading DRAM, DIMMs should always be installed in pairs; for example, to upgrade to 1 GB DRAM, order two JXX50-MEM-512M-S DIMMs. To upgrade to 2 GB DRAM, order four JXX50-MEM-512M-S DIMMs.

With Junos OS Release 9.1 and later, all J Series Services Routers (J2320, J2350, J4350, J6350) must run at least 512 MB of DRAM.

Compact Flash

All J2320, J2350, J4350, and J6350 Services Routers ship with 512 MB of primary compact flash. You can replace that with a larger compact flash by ordering one either JX-CF-512M-S (for 512 MB) or JX-CF-1G-S (for 1 GB).

Table 2: J4350 and J6350 Supported Memory Configurations

TOTAL MEMORY	DIMM 0	DIMM 1	DIMM 2	DIMM 3
512 MB	512 MB			
512 MB	256 MB	–	256 MB	–
1 GB	256 MB	256 MB	256 MB	256 MB
1 GB	512 MB	–	512 MB	–
2 GB	512 MB	512 MB	512 MB	512 MB

Specifications

Protocols

- IPv4, IPv6, ISO Connectionless Network Service (CLNS)

Routing and Multicast

- Static routes
- RIPv2
- OSPF
- BGP
- BGP Router Reflector¹
- IS-IS
- Multicast ((Internet Group Management Protocol (IGMPv3), PIM, Session Description Protocol (SDP), Distance Vector Multicast Routing Protocol (DVMRP), source-specific))
- MPLS

IP Address Management

- Static
- Dynamic Host Configuration Protocol (DHCP) (client and server)
- DHCP relay

Encapsulations

- Ethernet (MAC and tagged)
- Point-to-Point Protocol (PPP) (synchronous)
 - Multilink Point-to-Point Protocol (MLPPP)
- Frame Relay
 - Multilink Frame Relay (MLFR) (FRF.15, FRF.16)
- High-Level Data Link Control (HDLC)
- Serial (RS-232, RS-449, X.21, V.35, EIA-530)
- 802.1q VLAN support
- Point-to-Point Protocol over Ethernet (PPPoE)

Traffic Management

- Marking, policing, and shaping
- Class-based queuing with prioritization
- Weighted random early detection (WRED)
- Queuing based on VLAN, data-link connection identifier (DLCI), interface, bundles, or filters

Security

- Firewall, zones, screens, policies
- Stateful firewall, ACL filters
- Denial of service (DoS) and distributed denial of service (DDoS) protections (anomaly-based)
- Prevent replay attack; Anti-Replay
- Unified Access Control Dynamic Remote
- Unified Threat Management - Licensed on high memory products only²
 - Antivirus, antispam, Web filtering, IPS

Voice Transport

- FRF.12
- Link fragmentation and interleaving (LFI)
- Compressed Real-Time Transport Protocol (CRTP)

High Availability

- VRRP
- Stateful failover and dual box clustering via JSRP
 - Redundant power (optional)

IPv6

- OSPFv3
- IPv6 Multicast Listener Discovery (MLD)
- BGP
- Quality of service (QoS)

SLA and Measurement

- Real-time performance monitoring (RPM)
- Sessions, packets, bandwidth usage
- J-Flow flow monitoring and accounting services

Logging and Monitoring

- Syslog
- Traceroute

Administration

- Juniper Networks Network and Security Manager support
- Juniper Networks STRM Series Security Threat Response Managers support
- Juniper Networks Advanced Insight Solutions support
- External administrator database (RADIUS, LDAP, SecureID)
- Auto configuration
- Configuration rollback
- Rescue configuration with button
- Commit confirm for changes
- Auto record for diagnostics
- Software upgrades
- J-Web

Operating System

All J Series Services Routers ship with the worldwide version of Junos OS, which has standard encryption, as opposed to the US and Canada version, which has strong encryption. You can download the strong encryption version at no charge so long as you can certify eligibility. The download is available from Juniper's Customer Support Center Web site: www.juniper.net/customers/csc/software/.

Feature Licenses

Licenses are required for advanced functionality on the J Series Services Routers. To run the Advanced BGP features, order Advanced BGP (JX-BGP-ADV-LTU). Each license is good for one chassis.

On the high memory versions of the J Series, you can run Unified Threat Management consisting of antivirus, antispam, Web filtering and IPS. These licenses are good for one chassis and available as single features, bundles, single year and multi year ordering options.

¹BGP Route Reflector see ordering information.

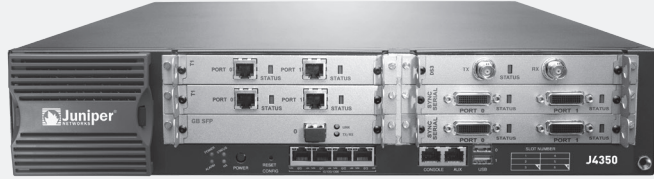
²Unified Threat Management is only supported on high memory versions of J Series and requires a license. See ordering information.



J2320



J2350



J4350



J6350

Product Comparison

SPECIFICATION	J2320	J2350	J4350	J6350
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Maximum Performance and Capacity

Junos OS version tested	Junos OS 9.6	Junos OS 9.6	Junos OS 9.6	Junos OS 9.6
Firewall performance (large packets)	600 Mbps	750 Mbps	2 Gbps	3.5 Gbps
Firewall performance (IMIX)	400 Mbps	500 Mbps	600 Mbps	1 Gbps
Firewall + routing PPS (64 Byte)	150 Kpps	175 Kpps	225 Kpps	400 Kpps
AES256+SHA-1/3DES+SHA-1 VPN performance	125 Mbps	150 Mbps	400 Mbps	900 Mbps
IPsec VPN Tunnels	512 MB / GB DRAM 256 / 512	512 MB / GB DRAM 256 / 512	512 MB / GB DRAM 256 / 512	1 GB / 2 GB DRAM 512 / 1024
IPS (intrusion prevention system)	115 Mbps	130 Mbps	250 Mbps	500 Mbps
Antivirus	25 Mbps	30 Mbps	65 Mbps	130 Mbps
Connections per second	5,000	5,000	10,000	20,000
Maximum concurrent sessions	64 K / 128K	64 K / 128K	64 K / 128 K	256 K / 256 K
DRAM options	512 MB / 1 GB DRAM	512 MB / 1 GB DRAM	512 MB / 1 GB DRAM	512 MB / 1 GB DRAM
Maximum security policies	2048 (1 GB DRAM)	2048 (1 GB DRAM)	5192 (1 GB DRAM)	10384 (2 GB DRAM)
Maximum users supported	Unrestricted	Unrestricted	Unrestricted	Unrestricted

Network Connectivity

Fixed I/O	4 x 10/100/1000BASE-T	4 x 10/100/1000BASE-T	4 x 10/100/1000BASE-T	4 x 10/100/1000BASE-T
I/O slots	3 x PIM	5 x PIM	4 x PIM + 2 x EPIM/PIM	2 x PIM + 4 x EPIM/PIM
Services and Routing Engine slots	N/A	N/A	N/A	N/A
ExpressCard slot (3G WAN)	N/A	N/A	N/A	N/A
WAN/LAN interface options	See ordering information	See ordering information	See ordering information	See ordering information
Optional maximum number of PoE ports	N/A	N/A	N/A	N/A
USB	2	2	2	2

Routing

BGP instances	32	32	32	64
BGP peers	512 MB / 1 GB DRAM 64 / 64	512 MB / 1 GB DRAM 64 / 64	512 MB / 1 GB DRAM 64 / 64	1 GB / 2 GB DRAM 64 / 64
BGP routes	512 MB / 1 GB DRAM 64 K / 400 K	512 MB / 1 GB DRAM 64 K / 400 K	512 MB / 1 GB DRAM 64 K / 400 K	1 GB / 2 GB DRAM 400 K / 1000 K
OSPF instances	512 MB / 1 GB DRAM 32 / 32	512 MB / 1 GB DRAM 32 / 32	512 MB / 1 GB DRAM 32 / 32	1 GB / 2 GB DRAM 64 / 64
OSPF routes	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	1 GB / 2 GB DRAM 10 K / 20 K
RIP v1/v2 instances	512 MB / 1 GB DRAM 32 / 32	512 MB / 1 GB DRAM 32 / 32	512 MB / 1 GB DRAM 32 / 32	1 GB / 2 GB DRAM 64 / 64

SPECIFICATION	J2320	J2350	J4350	J6350
Routing (continued)				
RIP v2 routes	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	1 GB / 2 GB DRAM 10 K / 20 K
Static routes	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	512 MB / 1 GB DRAM 5 K / 10 K	1 GB / 2 GB DRAM 10 K / 20 K
Source-based routing	Yes	Yes	Yes	Yes
Policy-based routing	Yes	Yes	Yes	Yes
Equal-cost multipath (ECMP)	Yes	Yes	Yes	Yes
Reverse path forwarding (RPF)	Yes	Yes	Yes	Yes

MPLS

Layer 2 VPN (VPLS)	Yes	Yes	Yes	Yes
Layer 3 VPN	Yes	Yes	Yes	Yes
LDP	Yes	Yes	Yes	Yes
RSVP	Yes	Yes	Yes	Yes
Circuit Cross-connect (CCC)	Yes	Yes	Yes	Yes
Translational Cross-connect (TCC)	Yes	Yes	Yes	Yes

Multicast

IGMP (v1, v2, v3)	Yes	Yes	Yes	Yes
PIM SM	Yes	Yes	Yes	Yes
PIM source-specific multicast (SSM)	Yes	Yes	Yes	Yes
Multicast inside IPsec tunnel	Yes	Yes	Yes	Yes

IPsec VPN

Concurrent VPN tunnels	256 / 512 (512 MB / 1 GB DRAM)	256 / 512 (512 MB / 1 GB DRAM)	256 / 512 (512 MB / 1 GB DRAM)	512 / 1024 (1 GB / 2 GB DRAM)
Tunnel interfaces	256 / 512 (512 MB / 1 GB DRAM)	256 / 512 (512 MB / 1 GB DRAM)	256 / 512 (512 MB / 1 GB DRAM)	512 / 1024 (1 GB / 2 GB DRAM)
DES (56-bit), 3DES (168-bit) and AES (256-bit)	Yes	Yes	Yes	Yes
MD-5 and SHA-1 authentication	Yes	Yes	Yes	Yes
Manual key, Internet Key Exchange (IKE), public key infrastructure (PKI) (X.509)	Yes	Yes	Yes	Yes
Perfect forward secrecy (DH Groups)	1,2,5	1,2,5	1,2,5	1,2,5
Prevent replay attack	Yes	Yes	Yes	Yes
Dynamic remote access VPN	Yes	Yes	Yes	No
IPsec NAT traversal	Yes	Yes	Yes	Yes
Redundant VPN gateways	Yes	Yes	Yes	Yes

User Authentication and Access Control

Third-party user authentication	RADIUS, RSA SecureID, LDAP	RADIUS, RSA SecureID, LDAP	RADIUS, RSA SecureID, LDAP	RADIUS, RSA SecureID, LDAP
RADIUS accounting	Yes	Yes	Yes	Yes
XAUTH VPN, Web-based, 802.X authentication	Yes	Yes	Yes	Yes
PKI certificate requests (PKCS 7 and PKCS 10)	Yes	Yes	Yes	Yes
Certificate Authorities supported	VeriSign, Entrust, Microsoft, RSA Keon, iPlanet, (Netscape), Baltimore, DoD PKI	VeriSign, Entrust, Microsoft, RSA Keon, iPlanet, (Netscape), Baltimore, DoD PKI	VeriSign, Entrust, Microsoft, RSA Keon, iPlanet, (Netscape), Baltimore, DoD PKI	VeriSign, Entrust, Microsoft, RSA Keon, iPlanet, (Netscape), Baltimore, DoD PKI

Virtualization

Maximum number of security zones	40	40	50	60
Maximum number of virtual routers	25	25	30	60
Maximum number of VLANs	256	256	512	1024

SPECIFICATION	J2320	J2350	J4350	J6350
Encapsulations				
PPP/MLPPP	Yes	Yes	Yes	Yes
MLPPP maximum physical interfaces	6	10	12	12
Frame Relay	Yes	Yes	Yes	Yes
MLFR (FRF .15, FRF .16)	Yes	Yes	Yes	Yes
MLFR maximum physical interfaces	6	10	12	12
HDLC	Yes	Yes	Yes	Yes
Address Translation				
Source NAT with Port Address Translation (PAT)	Yes	Yes	Yes	Yes
Static NAT	Yes	Yes	Yes	Yes
Destination NAT with PAT	Yes	Yes	Yes	Yes
IP Address Assignment				
Static	Yes	Yes	Yes	Yes
DHCP, PPPoE client	Yes	Yes	Yes	Yes
Internal DHCP server	Yes	Yes	Yes	Yes
DHCP relay	Yes	Yes	Yes	Yes
L2 Switching				
VLAN 802.1Q	Yes	Yes	Yes	Yes
Link Aggregation 802.3ad/LACP	Yes	Yes	Yes	Yes
Jumbo Frame (9216 Byte)	Yes	Yes	Yes	Yes
Spanning Tree Protocol (STP) 802.1D, RSTP 802.1w, MSTP 802.1s	Yes	Yes	Yes	Yes
Authentication 802.1x Port based and multiple supplicant	Yes	Yes	Yes	Yes
Traffic Management Quality of Service (QoS)				
Guaranteed bandwidth	Yes	Yes	Yes	Yes
Maximum bandwidth	Yes	Yes	Yes	Yes
Ingress traffic policing	Yes	Yes	Yes	Yes
Priority-bandwidth utilization	Yes	Yes	Yes	Yes
DiffServ marking	Yes	Yes	Yes	Yes
High Availability				
Active/active—L3 mode	Yes	Yes	Yes	Yes
Active/passive—L3 mode	Yes	Yes	Yes	Yes
Configuration synchronization	Yes	Yes	Yes	Yes
VRRP	Yes	Yes	Yes	Yes
Session synchronization for firewall and VPN	Yes	Yes	Yes	Yes
Session failover for routing change	Yes	Yes	Yes	Yes
Device failure detection	Yes	Yes	Yes	Yes
Link failure detection	Yes	Yes	Yes	Yes
Firewall				
Network attack detection	Yes	Yes	Yes	Yes
DoS and DDos protection	Yes	Yes	Yes	Yes
TCP reassembly for fragmented packet protection	Yes	Yes	Yes	Yes
Brute force attack mitigation	Yes	Yes	Yes	Yes
SYN cookie protection	Yes	Yes	Yes	Yes
Zone-based IP spoofing	Yes	Yes	Yes	Yes
Malformed packet protection	Yes	Yes	Yes	Yes

SPECIFICATION	J2320	J2350	J4350	J6350
Unified Threat Management				
Intrusion Prevention System (IPS)	Yes	Yes	Yes	Yes
Protocol anomaly detection	Yes	Yes	Yes	Yes
Stateful protocol signatures	Yes	Yes	Yes	Yes
Intrusion prevention system (IPS) attack pattern obfuscation	Yes	Yes	Yes	Yes
Customer signatures creation	Yes	Yes	Yes	Yes
Frequency of updates	Daily and emergency	Daily and emergency	Daily and emergency	Daily and emergency
Antivirus				
Express AV (packet-based AV)	No	Yes	Yes	Yes
File-based antivirus	Yes	Yes	Yes	Yes
Signature database	Yes	Yes	Yes	Yes
Protocols scanned	POP3, HTTP, SMTP, IMAP, FTP	POP3, HTTP, SMTP, IMAP, FTP	POP3, HTTP, SMTP, IMAP, FTP	POP3, HTTP, SMTP, IMAP, FTP
Antispyware	Yes	Yes	Yes	Yes
Antiadware	Yes	Yes	Yes	Yes
Antikeylogger	Yes	Yes	Yes	Yes
Antispam	Yes	Yes	Yes	Yes
Integrated Web filtering	Yes	Yes	Yes	Yes
Redirect Web filtering	Yes	Yes	Yes	Yes
Content filtering	Yes	Yes	Yes	Yes
Based on MIME type, file extension, and protocol commands	Yes	Yes	Yes	Yes
System Management				
Web UI	Yes	Yes	Yes	Yes
Command-line interface	Yes	Yes	Yes	Yes
Network and Security Manager	Yes	Yes	Yes	Yes
STRM Series	Yes	Yes	Yes	Yes
Flash and Memory				
Memory minimum and maximum (DRAM)	512 MB, 1 GB	512 MB, 1 GB	512 MB, 2 GB	1 GB, 2 GB
Memory slots	4 DIMM	4 DIMM	4 DIMM	4 DIMM
Standard and Maximum Flash memory	512 MB / 1 GB	512 MB / 1 GB	512 MB / 1 GB	512 MB / 1 GB
USB port for external storage	Yes	Yes	Yes	Yes
Dimensions and Power				
Dimensions (W x H x D)	17.5 x 1.75 x 15.1 in (445 x 44 x 383 mm)	17.5 x 1.75 x 15.1 in (445 x 44 x 383 mm)	17.5 x 3.5 x 21.5 in (445 x 89 x 546 mm)	17.5 x 3.5 x 21.5 in (445 x 89 x 546 mm)
Weight	15 lb (6.8 kg) No interface modules, 16.6 lb (7.6 kg) 3 interface modules	16 lb (7.3 kg) No interface modules, 19 lb (8.6 kg) 5 interface modules	23 lb (10.4 kg) No interface modules, 25.3 lb (11.5 kg) 6 interface modules	25 lb (11.3 kg) No interface modules, 1 power supply 30.7 lb (13.9 kg) 6 interface modules, 2 power supplies
Rack mountable	Yes, 1 RU	Yes, 1.5 RU	Yes, 2 RU	Yes, 2 RU
Power supply (AC)	100–240 VAC, 275 W	100–240 VAC, 300 W	100–240 VAC, 350 W	100–240 VAC, 420 W
Average power consumption	80 W	80 W	143 W	166 W
Input frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Maximum current consumption	3.2 A @ 100 VAC	3.5 A @ 100 VAC	5.7 A @ 100 VAC	5.7 A @ 100 VAC
Maximum inrush current	30 A	32 A	32 A	42 A

SPECIFICATION	J2320	J2350	J4350	J6350
Dimensions and Power (continued)				
Average heat dissipation	273 BTU/hour	273 BTU/hour	488 BTU/hour	566 BTU/hour
Maximum heat dissipation	1091 BTU/hour	1195 BTU/hour	1070 BTU/hour	1145 BTU/hour
Power supply (DC)	NA	-48 to -60 VDC, 300 W	-48 to -60 VDC, 420 W	-48 to -60 VDC, 420 W
Redundant power supply (hot swappable)	No	No	No	Yes
Acoustic noise level (Note: Per ISO 7779 Standard)	40.0 dB	59.2 dB	59.3 dB	61.2 dB

Environment

Operational temperature	32° to 122° F (0° to 50° C)	32° to 122° F (0° to 50° C)	32° to 122° F (0° to 50° C)	32° to 122° F (0° to 50° C)
Nonoperational temperature	4° to 158° F (-20° to 70° C)	4° to 158° F (-20° to 70° C)	4° to 158° F (-20° to 70° C)	4° to 158° F (-20° to 70° C)
Humidity	10–90% noncondensing	10–90% noncondensing	10–90% noncondensing	10–90% noncondensing
Mean time between failures (Telcordia model)	7.2 years	6.8 years	7.6 years	12 years with redundant power

Certifications and Network Homologation

USA

Safety certifications	UL 60950-1	UL 60950-1	UL 60950-1	UL 60950-1
EMC certifications	FCC Class B	FCC Class B ¹⁰	FCC Class A	FCC Class A
Network homologation	TIA-968	TIA-968	TIA-968	TIA-966

Canada

Safety certifications	CSA 60950-1	CSA 60950-1	CSA 60950-1	CSA 60950-1
EMC certifications	ICES class B	ICES class B ¹⁰	ICES class A	ICES class A
Network homologation	CS-03	CS-03	CS-03	CS-03

Australia

Safety certifications	AS / NZS 60950-1	AS / NZS 60950-1	AS / NZS 60950-1	AS / NZS 60950-1
EMC certifications	AS / NZS CISPR22 Class B	AS / NZS CISPR22 Class B ¹⁰	AS / NZS CISPR22 Class A	AS / NZS CISPR22 Class A
Network homologation	AS / ACIF S 002, S 016, S 043.1, S043.2	AS / ACIF S 002, S 016, S 043.1, S043.2	AS / ACIF S 002, S 016, S 043.1, S043.2	AS / ACIF S 002, S 016, S 043.1, S043.2

New Zealand

Safety certifications	AS / NZS 60950-1	AS / NZS 60950-1	AS / NZS 60950-1	AS / NZS 60950-1
EMC certifications	AS / NZS CISPR22 Class B	AS / NZS CISPR22 Class B ¹⁰	AS / NZS CISPR22 Class A	AS / NZS CISPR22 Class A
Network homologation	PTC 217, PTC 273	PTC 217, PTC 273	PTC 217, PTC 273	PTC 217, PTC 273

Japan

Safety certifications	CB Scheme	CB Scheme	CB Scheme	CB Scheme
EMC certifications	VCCI Class B	VCCI Class B ¹⁰	VCCI Class A	VCCI Class A
Network homologation	Certificate for Technical Conditions	Certificate for Technical Conditions	Certificate for Technical Conditions	Certificate for Technical Conditions

European Union

Safety certifications	EN 60950-1	EN 60950-1	EN 60950-1	EN 60950-1
EMC certifications	EN 55022 Class B, EN 300386	EN 55022 Class B ¹⁰ , EN 300386	EN 55022 Class A, EN 300386	EN 55022 Class A, EN 300386
Network homologation	CTR 12 / 13, CTR 21, DoC	CTR 12 / 13, CTR 21, DoC	CTR 12 / 13, CTR 21, DoC	CTR 12 / 13, CTR 21, DoC

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services and support, which are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to bring revenue-generating capabilities online faster so you can realize bigger productivity gains and faster rollouts of new business models and ventures. At the same time, Juniper Networks ensures operational excellence by optimizing your network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services/.

Ordering Information

The following tables outline part numbers for J6350, J4350, J2350, and J2320 base systems and options; associated WAN and LAN modules; and additional accessories.

J6350 Base Systems and Options

MODEL NUMBER	DESCRIPTION
J6350 Base System	
J-6350-JB	J6350, Hw-encryption, high memory (1 GB DRAM, 512 MB Flash), 0 PIM cards, 1 AC PSU, w/Junos OS
J-6350-JB-DC	J6350, 512 MB CF, 1 GB RAM, Hw-encryption, 0 PIM cards, 1 DC PSU
J-6350-JB-DC-N-TAA	J6350, 512 MB CF, 1 GB RAM, Hw-encryption, 0 PIM cards, 1 DC PSU, w/Junos OS - NEBS and TAA compliant
J-6350-JB-N-TAA	J6350, 512 MB CF, 1 GB RAM, Hw-encryption, 0 PIM cards, 1 AC PSU, w/Junos OS - NEBS and TAA compliant

J6350 Options

Redundant Power Supply

SSG-PS-DC	DC power supply
SSG-PS-AC	AC power supply

Region-Specific AC Power Cables for SSG-PS-AC

CBL-JX-PWR-AU	Australia
CBL-JX-PWR-CH	China
CBL-JX-PWR-EU	Europe
CBL-JX-PWR-IT	Italy
CBL-JX-PWR-JP	Japan
CBL-JX-PWR-UK	United Kingdom
CBL-JX-PWR-US	USA

Additional DRAM

JXX50-MEM-512M-S	2 GB (2 x JXX50-MEM-512M-S, added to default)
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Primary Compact Flash (Replaces default)

JX-CF-512M-S	512 MB
JX-CF-1G-S	1 GB

Additional Software Feature Licenses

JX-BGP-ADV-LTU	Advanced BGP
JX-JFlow-LTU	J-Flow Accounting
J6350-K-AV	One year subscription for Juniper-Kaspersky AV updates
J6350-K-AV-3	Three year subscription for Juniper-Kaspersky AV updates
J6350-S2-AS	One year subscription for Juniper-Sophos Antispam
J6350-S2-AS-3	Three year subscription for Juniper-Sophos Antispam
J6350-W-WF	One year subscription for Juniper-Websense Integrated Web Filtering
J6350-W-WF-3	Three year subscription for Juniper-Websense Integrated Web Filtering
J6350-IDP	One year subscription for IDP updates
J6350-IDP-3	Three year subscription for IDP updates
J6350-SMB2-CS	One year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS, and IDP
J6350-SMB2-CS-3	Three year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS, and IDP

Interface Modules (Various choices; see page 14)

J4350 Base Systems and Options

MODEL NUMBER	DESCRIPTION
J4350 Base System	
J-4350-JB	J4350, Hw-encryption, high-memory (1 GB DRAM, 512 MB Flash), 0 PIM cards, AC PSU, w/Junos OS
J-4350-JB-DC	J4350, 512 MB CF, 1 GB RAM, Hw-encryption, 0 PIM cards, DC PSU
J-4350-JB-SC	J4350, software encryption, low memory, (512 MB DRAM, 512 MB Flash) 0 PIM cards, AC PSU, w/Junos OS, Software Crypto
J-4350-JB-SC-DC	J4350, software encryption, low memory, (512 MB DRAM, 512 MB Flash) 0 PIM cards, DC PSU, w/Junos OS, Software Crypto
J-4350-JB-DC-N-TAA	J4350, 256 MB CF, 1GB RAM, Hw-encryption, 0 PIM cards, DC PSU, NEBS, w/Junos OS - NEBS and TAA compliant
J-4350-JB-N-TAA	J4350, 256 MB CF, 1GB RAM, Hw-encryption, 0 PIM cards, AC PSU, w/Junos OS - NEBS and TAA compliant

J4350 Options

Additional DRAM for J4350 without encryption acceleration (DRAM upgrades must be installed in matching pairs)

JXX50-MEM-256M-S	512 MB (JXX50-MEM-256M-S, added to default)
JXX50-MEM-512M-S	<ul style="list-style-type: none"> 1 GB (2 x JXX50-MEM-512M-S, replaces default) 2 GB (4 x JXX50-MEM-512M-S, replaces default)

Additional DRAM for J4350 with encryption acceleration (DRAM upgrades must be installed in matching pairs)

JXX50-MEM-512M-S	2 GB (4 x JXX50-MEM-512M-S, replaces default)
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Primary Compact Flash (Replaces default)

JX-CF-512M-S	512 MB
JX-CF-1G-S	1 GB

Additional Software Feature Licenses

JX-BGP-ADV-LTU	Advanced BGP
JX-JFlow-LTU	J-Flow Accounting
J4350-K-AV	One year subscription for Juniper-Kaspersky AV updates
J4350-K-AV-3	Three year subscription for Juniper-Kaspersky AV updates
J4350-S2-AS	One year subscription for Juniper Antispam
J4350-S2-AS-3	Three year subscription for Juniper Antispam
J4350-W-WF	One year subscription for Juniper-Websense Integrated Web Filtering
J4350-W-WF-3	Three year subscription for Juniper-Websense Integrated Web Filtering
J4350-IDP	One year subscription for IDP updates
J4350-IDP-3	Three year subscription for IDP updates
J4350-SMB2-CS	One year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP
J4350-SMB2-CS-3	Three year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP

Interface Modules (Various choices; see page 14)

JXH-HC2-S	Cryptographic Acceleration Module, to be used with J2350-JB-SC only
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J2350 Base Systems and Options

MODEL NUMBER	DESCRIPTION
J2350 Base System	
J2350-JB-SC	J2350, Junos OS, base memory (512 MB), 5 PIM slots, SW security, AC power supply, 19" rack mount
J2350-JB-SC-DC	J2350, Junos OS, base memory (512 MB DRAM, 512 MB Flash), 5 PIM slots, SW encryption, DC power supply, 19" rack mount
J2350-JH	J2350, Junos OS, high memory (1 GB DRAM, 512 MB Flash), 3 PIM slots, HW encryption, AC power supply, 19" rack mount
J2350-JH-DC	J2350, Junos OS, high memory (1 GB), 5 PIM slots, HW Crypto, DC power supply, fan filter, 19" rack mount
J2350-JB-SC-DC-N-TAA	J2350, Junos OS, base memory (512 MB), 5 PIM slots, SW Crypto, DC power supply, fan filter, NEBS, TAA, 19" rack mount
J2350-JB-SC-TAA	J2350, Junos OS, base memory (512 MB), 5 PIM slots, SW Crypto, AC power supply, TAA, 19" rack mount
J2350-JH-DC-N-TAA	J2350, Junos OS, high memory (1 GB), 5 PIM slots, HW Crypto, DC power supply, fan filter, NEBS, TAA, 19" rack mount
J2350-JH-TAA	J2350, Junos OS, high memory (1 GB), 5 PIM slots, HW Crypto, AC power supply, TAA, 19" rack mount

J2350 Options

Additional DRAM for J2350 without encryption acceleration (DRAM upgrades must be installed in matching pairs)

JXX50-MEM-512M-S	1 GB (2 x JXX50-MEM-512M-S, replaces default)
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Primary Compact Flash (Replaces default)

JX-CF-512M-S	512 MB
JX-CF-1G-S	1 GB

Additional Software Feature Licenses

JX-BGP-ADV-LTU	Advanced BGP
JX-JFlow-LTU	J-Flow Accounting
J2350-K-AV	One year subscription for Juniper-Kaspersky AV updates
J2350-K-AV-3	Three year subscription for Juniper-Kaspersky AV updates
J2350-S2-AS	One year subscription for Juniper-Sophos Antispam
J2350-S2-AS-3	Three year subscription for Juniper-Sophos Antispam
J2350-W-WF	One year subscription for Juniper-Websense Integrated Web Filtering
J2350-W-WF-3	Three year subscription for Juniper-Websense Integrated Web Filtering
J2350-IDP	One year subscription for IDP updates
J2350-IDP-3	Three year subscription for IDP updates
J2350-SMB2-CS	One year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP
J2350-SMB2-CS-3	Three year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP

Interface Modules (Various choices; see page 14)

JXH-HC2-S	Cryptographic Acceleration Module, to be used with J2350-JB-SC only
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J2320 Base Systems and Options

MODEL NUMBER	DESCRIPTION
J2320 Base System	
J2320-JB-SC	J2320, Junos OS, base memory (512 MB DRAM, 512 MB Flash), 3 PIM slots, SW security, AC power supply, 19" rack mount
J2320-JB-SC-TAA	J2320, Junos OS, base memory (512 MB DRAM, 512 MB Flash), 3 PIM slots, SW security, AC power supply, TAA 19" rack mount
J2320-JH	J2320, Junos OS, high memory (1 GB DRAM, 512 MB Flash), 3 PIM slots, Hw-encryption, AC power supply, 19" rack mount

J2320 Options

Additional DRAM for J2320 without encryption acceleration (DRAM upgrades must be installed in matching pairs)

J-MEM-512M-S	1 GB (2 x J-MEM-512M-S replaces default)
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Primary Compact Flash (Replaces default)

JX-CF-512M-S	512 MB
JX-CF-1G-S	1 GB

Additional Software Feature Licenses

JX-BGP-ADV-LTU	Advanced BGP
JX-JFlow-LTU	J-Flow Accounting
J2320-K-AV	One year subscription for Juniper-Kaspersky AV updates
J2320-K-AV-3	Three year subscription for Juniper-Kaspersky AV updates
J2320-S2-AS	One year subscription for Juniper -Sophos Antispam
J2320-S2-AS-3	Three year subscription for Juniper -Sophos Antispam
J2320-W-WF	One year subscription for Juniper-Websense Integrated Web Filtering
J2320-W-WF-3	Three year subscription for Juniper-Websense Integrated Web Filtering
J2320-IDP	One year subscription for IDP updates
J2320-IDP-3	Three year subscription for IDP updates
J2320-SMB2-CS	One year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP
J2320-SMB2-CS-3	Three year security subscription for Enterprise - includes Kaspersky AV, WF, Sophos AS and IDP

Interface Modules (Various choices; see page 14)

JXH-HC2-S	Cryptographic Acceleration Module, to be used with J2320-JB-SC only
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WAN and LAN Module Part Numbers

PART NUMBER	DESCRIPTION	SUPPORTED ON J2320, J2350	SUPPORTED ON J4350, J6350
Physical Interface Module (PIM)			
JX-1DS3-S	1-port DS3 PIM	No	Yes
JX-1E3-S	1-port E3 PIM	No	Yes
JX-2T1-RJ48-S	2-port T1 PIM	Yes	Yes
JX-2E1-RJ48-S	2-port E1 PIM	Yes	Yes
JX-2CT1E1-RJ45-S	2-port Channelized T1/E1 PIM	Yes	Yes
JX-2Serial-ISL-S	2-port Synchronous Serial PIM	Yes	Yes
JX-2FE-TX-S	2-port FE PIM	No	Yes
JX-4BRI-S-S	4-port ISDN BRI – S Interface	Yes	Yes
JX-4BRI-U-S	4-port ISDN BRI – U Interface	Yes	Yes
JX-1ADSL-A-S	1-port ADSL Annex A PIM	Yes	Yes
JX-1ADSL-B-S	1-port ADSL Annex B PIM	Yes	Yes
JX-2SHDSL-S	2-port 2-wire or 1-port 4-wire G.SHDSL Interface	Yes	Yes
JX-1DS3-S	1-port DS3 PIM	No	Yes

Enhanced Physical Interface Module (EPIM)			
JXE-1GE-TX-S	1-port Gigabit Copper EPIM	No	Yes
JXE-1GE-SFP-S	1-port Gigabit SFP EPIM	No	Yes
JXE-4FE-TX-S	4-port FE EPIM	No	Yes

Universal Physical Interface Module (UPIM)			
JXU-6GE-SFP-S	6-port SFP Gigabit Ethernet Universal PIM, SFPs sold separately	Yes	Yes
JXU-8GE-TX-S	8-port Gigabit Ethernet 10/100/1000 Copper Universal PIM	Yes	Yes
JXU-16GE-TX-S	16-port Gigabit Ethernet 10/100/1000 Copper Universal PIM	Yes	Yes
JXU-1SFP-S	1-port SFP 100 Mbps or Gigabit Ethernet Universal PIM (SFP sold separately)	Yes	Yes

Integrated Services Modules PIM

INTEGRATED SERVICES MODULE PIM	DESCRIPTION	MINIMUM JUNOS OS	
		J2320/J2350	J4350/J6350
JX-ISM-200-WXC	ISM200 Integrated Services Module	Junos OS 9.1	Junos OS 9.1

Avaya Telephony Gateway Modules and Telephony Interface Modules*

AVAYA PART NUMBER	DESCRIPTION	MINIMUM JUNOS OS	
		J2320/J2350	J4350/J6350
700406978	TGM550 - Media Gateway Module	Junos OS 9.1	Junos OS 9.1
700396138	TIM510 T1/E1 Media Module	Junos OS 9.1	Junos OS 9.1
700396146	TIM514 Analog 4+4 Media Module	Junos OS 9.1	Junos OS 9.1
700396153	TIM 521 BRI Media Module	Junos OS 9.1	Junos OS 9.1
700436645	TGM550-20 Media Gateway Module	Junos OS 9.1	Junos OS 9.1
700436652	TGM550-10 Media Gateway Module	Junos OS 9.1	Junos OS 9.1
700426786	TIM508 Analog 8FXS Media Module	Junos OS 9.1	Junos OS 9.1
700426794	TIM516 Analog 16FXS Media Module	Junos OS 9.1	Junos OS 9.1
700426786	TIM518 Analog 8FXS+8FXO Media Module	Junos OS 9.1	Junos OS 9.1

*Avaya Telephony Gateway Modules and Telephony Interface Modules are available through Avaya resellers and partners.

Small Form Pluggable (SFP) Modules

The one-port 100 Mbps or Gigabit Ethernet Universal PIM and the six-port SFP Gigabit Ethernet Universal PIM require an SFP module to provide the physical interface. The SFP must be ordered separately from the UPIM.

PART NUMBER	DESCRIPTION
JX-SFP-IGE-LX	SFP 1000BASE-LX Gigabit Optical Transceiver SFP Module
JX-SFP-IGE-SX	SFP 1000BASE-SX Gigabit Optical Transceiver SFP Module
JX-SFP-IGE-T	SFP 1000BASE-T Gigabit Copper Transceiver SFP Module
JX-SFP-IFE-FX	SFP 100BASE-FX Optical Transceiver Module (JXU-ISFP-S only)

Serial Interface Cables

The two-port Serial PIM requires separate purchase of serial cables.

PART NUMBER	CABLE TYPE	LENGTH	CONNECTOR TYPE
JX-CBL-EIA530-DCE	EIA530 cable (DCE)	10 ft (3 m)	Female
JX-CBL-EIA530-DTE	EIA530 cable (DTE)	10 ft (3 m)	Male
JX-CBL-RS232-DCE	RS232 cable (DCE)	10 ft (3 m)	Female
JX-CBL-RS232-DTE	RS232 cable (DTE)	10 ft (3 m)	Male
JX-CBL-RS449-DCE	RS449 cable (DTE)	10 ft (3 m)	Female
JX-CBL-RS449-DTE	RS449 cable (DTE)	10 ft (3 m)	Male
JX-CBL-V35-DCE	V.35 cable (DTE)	10 ft (3 m)	Female
JX-CBL-V35-DTE	V.35 cable (DTE)	10 ft (3 m)	Male
JX-CBL-X21-DCE	X.21 cable (DCE)	10 ft (3 m)	Female
JX-CBL-X21-DTE	X.21 cable (DTE)	10 ft (3 m)	Male

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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