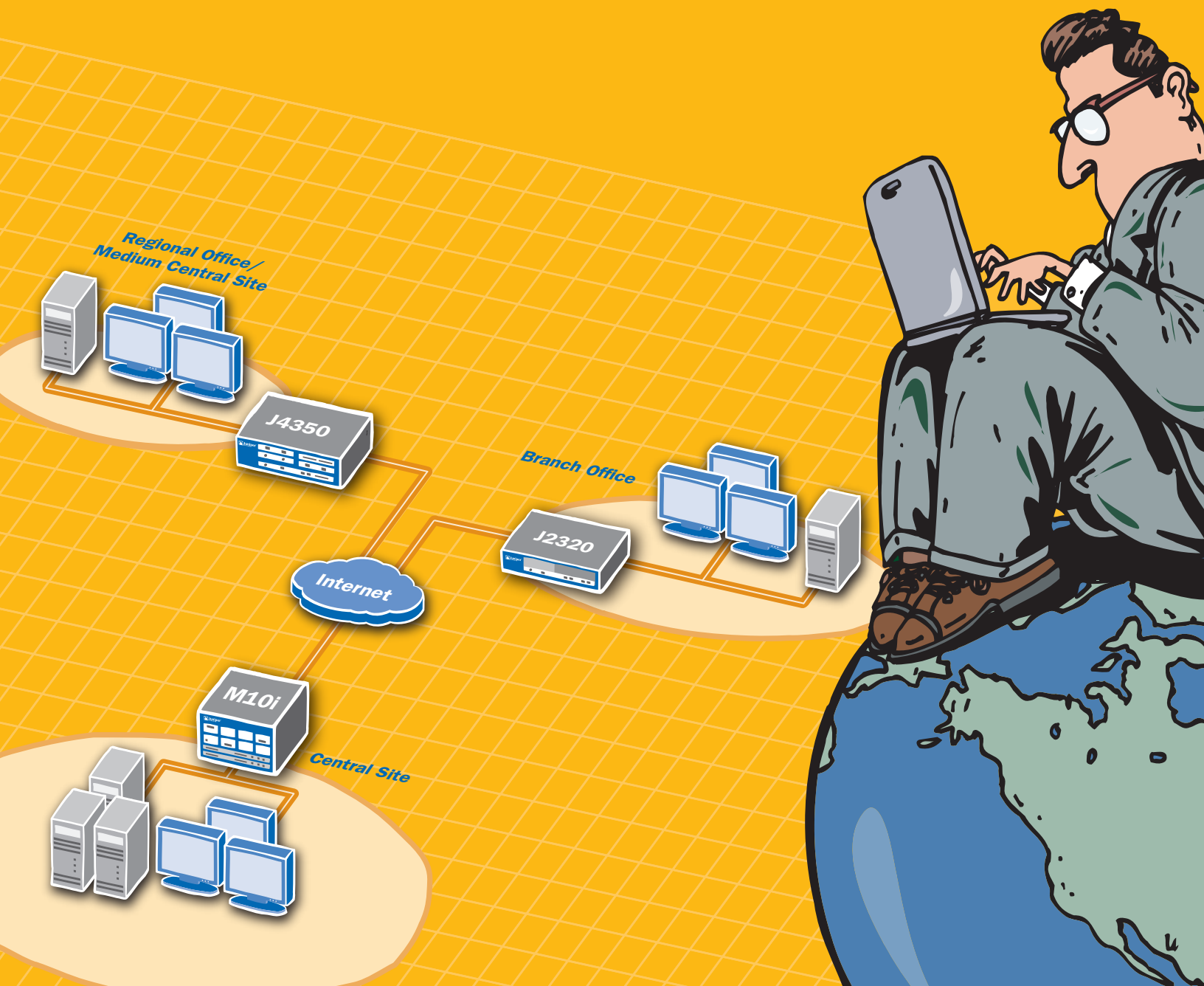


# Juniper Networks Enterprise Routers – New Levels of Security, Availability, Predictable Performance, and Operations Agility for Today’s High-Performance Businesses

Juniper Networks M-series and J-series Routers





Juniper Networks J2320



Juniper Networks J2350



Juniper Networks J4350



Juniper Networks J6350



Juniper Networks M71



Juniper Networks M101



Juniper Networks M120

## Networks Must Evolve to Meet the Needs of the High-performance Business

Today's business environment is becoming more dynamic and competitive as information technology increases the pace of change and fundamentally alters business models. IT departments are being asked to support a more distributed enterprise, enable new business processes to improve employee efficiency, comply with new government regulations, and lower infrastructure costs. Networks and applications are also being consolidated, moving to a converged IP infrastructure for reasons of both cost and operational efficiency.

Juniper Networks enterprise router solutions help high-performance businesses meet these challenges with new levels of security, availability, performance, and operational simplicity. With products to connect remote, branch, and regional offices; central sites; and data centers, Juniper Networks router solutions provide unmatched flexibility and value for the enterprise.

### Product Highlights

- Predictable gigabit and greater performance for branch offices, central sites, and data centers.
- Breadth of enterprise routing portfolio, interface options, and performance levels to suit the diverse needs of today's businesses.
- Services integration for the branch or remote locations in the network to shorten deployment time and reduce operational costs.
- Comprehensive quality of service (QoS) functions that classify, prioritize, and schedule traffic for applications such as VoIP
- High levels of security through an architecture design that fully protects the control plane and ensures operators can dynamically add filters while under attack.
- Advanced features for attack detection, complex filtering, and secure administration.
- High-availability systems with modular, fault-tolerant software, error-resilient configuration and a range of vanguard techniques to ensure nonstop router processes such as graceful restart, hitless Routing Engine switchover, and hot-swappable interfaces.
- One common Juniper Networks JUNOS software code base. Software stability is enhanced through a rigorous development process. The single code base streamlines deployment and software upgrades and offers multiple tools for platform implementation and management.
- Support for advanced services, such as MPLS, IPv6, QoS, multicast, security services, and accounting to securely deliver and manage mission-critical data and applications.
- A single, simplified operations experience, which makes it possible for users who are new to JUNOS software to quickly adapt to the new software. Many advanced operations functions are included to protect against user error and proactively assure system health.

# Introduction

## Juniper Enterprise Router Portfolio

Juniper's next-generation routing architecture provides the solid, reliable, high-performance foundation upon which today's real-time, critical networking applications can be delivered. Juniper Networks offers a comprehensive enterprise routing portfolio consisting of the J-series Services Routers and the M-series Multiservice Routers.

The J-series routers are typically deployed at remote offices or branch locations. These routers include the Juniper Networks J2320 and J2350 for smaller offices, the J4350 for medium-size branches, and the J6350 for large branches or regional offices.

The M-series enterprise routers, including the Juniper Networks M7i, M10i, and M120, are typically deployed in head office locations where high-performance packet processing is required such as Internet access gateways, WAN aggregation devices, data center routers or backbone routers. Both the J-series and M-series routers run the same proven JUNOS software modular operating system, designed to run multiple functions in parallel on assigned processing resources and delivering high stability with the flexibility to enable advanced, next-generation routing services.

## Connecting Remote Offices

Juniper Networks J-series routers provide up to Gigabit Ethernet performance for enterprise remote, branch, and regional offices. They run modular JUNOS software which offers many advanced services (MPLS, IPv6, QoS, multicast, and so forth) and security (stateful firewall and IPSec VPN) at no additional charge. The J-series routers ease deployment and reduce operational costs by integrating key branch location services such as routing, security, and IP telephony into one easy-to-operate platform. J-series routers offer modular flexibility, performance headroom, and extensible memory to meet future demands, providing unmatched reliability, investment protection, and value for the enterprise.

Enhanced services available in JUNOS software on J-series which include security and clustering services offer inseparable routing and security for improved network performance and latency together with chassis clustering for stateful high-availability and systems level resiliency in complex routing environments.

### J2320 Features

- Up to 600 Mbps performance
- Four built-in Gigabit Ethernet ports
- Three modular interface slots that support a variety of WAN, LAN, and services options
- Ideal for one or two broadband, T1, or E1 interfaces with integrated services

### J2350 Features

- Up to 750 Mbps performance
- Four built-in Gigabit Ethernet ports
- Five modular interface slots that support a variety of WAN, LAN, and services options
- Ideal for multiple broadband, T1, or E1 interfaces with multiple integrated services

### J4350 Features

- Up to 1 Gbps performance
- Four built-in Gigabit Ethernet ports
- Six modular interface slots that support a variety of WAN, LAN, and services options. Two of these slots are enhanced-performance slots that provide additional performance to multiple Gigabit Ethernet configurations.
- Ideal for DS3, E3, and Metro Ethernet interfaces with integrated services

### J6350 Features

- Up to 2 Gbps performance
- Four built-in Gigabit Ethernet ports
- Six modular interface slots that support a variety of WAN, LAN, and services options. Four of these slots are enhanced performance slots that provide additional performance to multiple Gigabit Ethernet configurations.
- Ideal for multiple DS3, E3 and Metro Ethernet interfaces with integrated services
- Optional redundant power supplies for high system availability

### M7i Features

- Up to 1-Gigabit Ethernet/OC-12 WAN performance
- Four PIC slots and built-in 2x Fast Ethernet or Gigabit Ethernet links
- Forwarding Engine Board (FEB) with built-in services module

### M10i Features

- Complete redundancy with dual routing engines, dual forwarding engines, and dual power supplies; redundancy provided with graceful Routing Engine switchover (GRES)
- Up to OC-48/STM-16 WAN performance
- Eight PIC slots for a variety of LAN, WAN, and services PICs

### M120 Features

- 120-gigabit throughput in compact form factor; supports 10-gigabit links at line rate
- Complete in-box redundancy with dual routing engines, 1:1 and N:1 redundancy of forwarding engines, dual switch fabrics, and dual power supplies
- Two slots for 10-Gigabit Ethernet or OC-192; 16 PIC slots for a variety of LAN, WAN and service PICs

## Connecting the Central Office, Data Center, and Enterprise Backbone

The Juniper Networks M7i, M10i, and M120 platforms are ideal enterprise routing solutions for head offices, campuses, and corporate backbones needing reliable, secure, high-performance IP WAN connectivity, Internet access, and services. The hardware-based architecture and the JUNOS software operating system ensure rich packet processing with uncompromising forwarding performance to support latency-sensitive applications such as voice, video, and mission-critical applications. The M7i, M10i, and M120 routers are the choice for consolidating multiple services onto a single IP/MPLS network and delivering performance, reliability, and security to the enterprise environment. The modular architecture enables high-performance and carrier class stability even when services are enabled on these platforms.

## The Benefits of Deploying Juniper Networks Enterprise Routers

Modern IP applications require a smart network that can meet enterprises' diverse set of requirements without compromise. A Juniper Networks enterprise router deployment adds new levels of security, uptime, performance, and operations flexibility with many systems and tools to assist network administrators.

### Juniper Networks Advantages Key Differentiators

#### Strong security

- Modular system architecture defends against attacks by protecting processing resources
- Access to the router is always available—even while under attack
- Additional integrated security services include Network Address Translation (NAT), firewall filters, stateful inspection firewall, and IPsec encryption

#### High uptime

- Network outages are minimized by separating software functions into modular components
- Minor problems cannot proliferate to full system crashes
- Next-generation CLI is designed to help prevent operational errors, maintaining uptime
- Platforms are available with redundant WAN components

#### Predictable high performance

- Gigabit and greater performance for branch offices, central sites, and data centers
- Comprehensive, real-time granular control over network traffic—especially important during periods of high congestion
- QoS mechanisms to classify, prioritize, and schedule traffic to deliver predictable performance
- Consistent WAN throughput rates when advanced services are enabled

#### Operations simplicity

- One software code base across all routing platforms eases operations with straightforward software updates and upgrades
- Fast certification of releases and full interoperability between products
- Features for small and regional remote offices help lower operations costs for installing, managing, monitoring, and maintaining equipment

#### Centralized management

- Automated control of a large number of enterprise routers, eliminating the need to manage individual routers
- Multiple functions such as configuration management, inventory management, and system administration
- Leverages an automated, integrated set of management applications

#### Breadth of portfolio

- Spectrum of products to connect various enterprise locations, including remote, branch, and regional offices, as well as central offices, data centers, and enterprise backbones
- WAN performance from broadband and T1/E1 through OC-192/STM-64 and 10-Gigabit Ethernet
- Wide variety of WAN interface options, including T1, E1, E3, DS3, Fast Ethernet, serial, ISDN BRI, ADSL2/ADSL2+, G.SHDSL, Gigabit Ethernet, 10-Gigabit Ethernet, SONET/SDH, channelized IQ, and ATM2 IQ

## Juniper Networks JUNOS Software in Your Network

Juniper's proven JUNOS software is specifically designed for IP networks and uniquely engineered for high availability and security, simplified operations, and flexible extensibility. Customers deploying JUNOS software benefit from:

- High availability and security to assure services
- Simplified, error-resilient operations, lowering total costs
- Continuous innovation to meet new requirements and enable new applications

Strict adherence to one operating system, enhanced through one process, developed through one modular architecture is at the core of JUNOS software. This foundation makes possible the feature and operations innovation, as well as the high reliability and stability, that JUNOS software is known for.

Over the years JUNOS software based platforms have consistently raised the bar for scale, performance, stability, control, and operations ease, leading the way for IP to become the convergence network of choice in all types of organizations.

### One System

The fundamental architecture and development processes of JUNOS software have allowed it to evolve to accommodate increasingly complex service needs with increasingly stringent performance and reliability requirements.

### One Operating System

JUNOS software is the one code source for all Juniper Networks routers, from the J-series Services Routers for branch offices, up to the Juniper Networks T-series Core Routers for very large data centers. Because it provides a single code base, JUNOS software eases operations tasks and the knowledge that is necessary to maintain and update the system.

### One Process

Juniper methodically enhances JUNOS software through one carefully managed process, where quality and schedule are the top priorities.

Following a set schedule, Juniper delivers four new feature releases and 12 maintenance releases for JUNOS software each year. We have never missed a scheduled release date in more than eight years of consistent, stable software delivery.

The one main line of code assures that new versions include a complete superset of all previously developed features and fixes. The tightly controlled release process demands zero regression errors for all previously released features, fixing any and all critical bugs.

JUNOS software has earned a reputation for stability and consistency because it avoids the many internal permutations and custom patches that can cause habitual crashes. With JUNOS software, customers routinely deploy the first shipping version of each new release. Compare this to many other network operating systems, for which customers typically wait two years or more for generally deployable code.

The one train of code in JUNOS software means there's no need for a complex menu of platform-, interface-, and feature-specific packages or lengthy testing by customers to assure consistency and interoperability across different packages.

### One Architecture

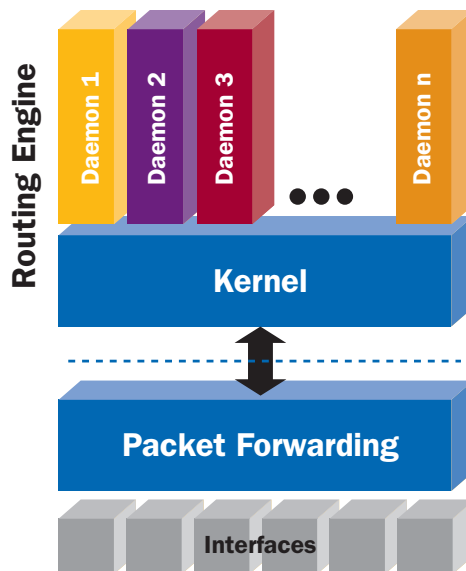
Underlying the methodical enhancement of JUNOS software is one modular software architecture, designed for flexible innovation across many types of hardware platforms.

The JUNOS software architecture provides complete separation of the routing and packet forwarding engines in all platforms to assure performance and to enhance the resiliency and security of the software. The intelligent modularity of the architecture enables all key functions to operate independently, since each has its own dedicated resources and protected memory space. Key advantages of the advanced architecture include the capability to avoid or contain faults, complete integration of new technologies, and flexible adaptation to new hardware platforms.

## Performance-Enabling Services and Support

Juniper is the leader in Performance-Enabling Services. Enterprises and service providers are under tremendous pressure to quickly and continuously align IT with business requirements. Unfortunately, they run the risk of not being able to get maximum value out of their investment quickly enough which can compromise gains. Juniper Network Services Portfolio offers performance-enabling Services designed around a time to value experience that accelerates, extends and optimizes the value of high performance networking, bringing revenue-generating capabilities online faster for bigger productivity gains, faster rollouts of new business models and ventures, greater market reach, and higher levels of customer satisfaction. At the same time, Juniper helps build operational excellence—to maintain required levels of performance, reliability, and availability, scale and adapt to new business requirements, reduce operational costs, and cut exposure to IT risks.

Juniper will continue to introduce innovative time to value services which allow customers to quickly and cost-effectively transform their business.



JUNOS Software Operating System Architecture

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## 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](http://www.juniper.net).

