



SRX1500 SERVICES GATEWAY

Next-Generation Firewall for the Distributed Enterprise

Product Overview

The SRX1500 Services Gateway is a next-generation firewall and security services gateway offering outstanding protection, performance, scalability, availability, and security service integration. Designed for port density, a high-performance security services architecture, and seamless integration of networking and security in a single platform, the SRX1500 is best suited for client protection in enterprise campus, regional headquarters or cloud-based security solutions with a focus on application visibility and control, intrusion prevention, and advanced threat protection. The SRX1500 is powered by Junos OS, the industry-leading operating system that keeps the world's largest and most mission-critical enterprise networks secure.

Product Description

The Juniper Networks® SRX1500 Services Gateway is a high-performance next-generation firewall and security services gateway that protects mission-critical enterprise campuses, regional headquarters, and data center networks. The SRX1500 is the only product in its class that not only provides best-in-class security and threat mitigation capabilities, but also integrates carrier-class routing and feature-rich switching in a single platform.

The SRX1500 delivers a next-generation security solution that supports the changing needs of cloud-enabled enterprise networks. Whether rolling out new services in an enterprise campus, connecting to the cloud, complying with industry standards, or achieving operational efficiency, the SRX1500 helps organizations realize their business objectives while providing scalable, easy to manage, secure connectivity and advanced threat mitigation capabilities. The SRX1500 protects key corporate assets as a next-generation firewall, acts as an enforcement point for cloud-based security solutions, and provides application visibility and control to improve the user and application experience.

A combination of new hardware and software architectures on the SRX1500 add significant performance improvements to a small 1 U form factor. The key to the SRX1500 hardware is the security flow accelerator, a programmable high-speed Layer 4 firewall chip, and a powerful x86-based security compute engine for advanced security services like application visibility, intrusion prevention, and threat mitigation capabilities. The SRX1500 software architecture leverages these programmable hardware components and virtualization to deliver high-speed firewall performance, application visibility, and intrusion prevention while lowering total cost of ownership (TCO).

The SRX1500 is purpose-built to protect 10GbE network environments, consolidating multiple security services and networking functions in a highly available appliance. It supports up to 9 Gbps of firewall performance, 3 Gbps of intrusion prevention, and 4 Gbps of IPsec VPN in enterprise campus, regional headquarters, and data center deployments.

SRX1500 Highlights

The SRX1500 Services Gateway delivers a full complement of next-generation firewall capabilities that use advanced application identification and classification to enable greater visibility, enforcement, control, and protection over the network. It provides detailed analysis on application volume and usage, fine-grained application control policies to allow or deny traffic based on dynamic application name or group names, and prioritization of traffic based on application information and contexts.

The SRX1500 recognizes more than 3,500 applications and nested applications in plain-text or SSL encrypted transactions. The SRX1500 also integrates with Microsoft Active Directory and combines user information with application data to provide network-wide application and user visibility and control.

For the perimeter, the SRX1500 Services Gateway offers a comprehensive suite of application security services, threat defenses, and intelligence services to protect networks from the latest content-borne threats. Integrated threat intelligence via Juniper Networks Spotlight Secure offers adaptive threat protection against command and control (C&C)-related botnets and policy enforcement based on GeoIP. Integrating the Juniper Networks Sky Advanced Threat Prevention solution, or working with the Juniper Networks ATP Appliance, the SRX1500 detects and enforces automated protection against known malware and zero-day threats with a very high degree of accuracy.

The SRX1500 enables agile SecOps through automation capabilities that support Zero Touch Deployment, Python scripts for orchestration, and event scripting for operational management.

Along with Juniper Contrail Service Orchestration, the SRX1500 delivers fully automated SD-WAN to both enterprises and service providers. A Zero-Touch Provisioning (ZTP) capability greatly simplifies branch network connectivity for initial deployment and ongoing management. Due to its high performance and scale, the SRX1500 acts as a VPN hub and terminates VPN/secure overlay connections in the various SD-WAN topologies.

The SRX1500 Services Gateway runs Juniper Networks Junos® operating system, a proven, carrier-hardened network OS that powers the top 100 service provider networks around the world. The rigorously tested carrier-class routing features of IPv4/IPv6, OSPF, BGP, and multicast have been proven in over 15 years of worldwide deployments.

Features and Benefits

Business Requirement	Feature/Solution	SRX1500 Advantages
High performance	Up to 9 Gbps of firewall performance	<ul style="list-style-type: none"> Best suited for enterprise campus and data center edge deployments Addresses future needs for scale and feature capacity
High quality end-user experience	Application visibility and control	<ul style="list-style-type: none"> Detects 3,500+ Layer 3-7 applications, including Web 2.0 Controls and prioritizes traffic based on application and use role Inspects and detects applications inside the SSL encrypted traffic
Threat protection	Intrusion prevention system (IPS), antivirus, anti-spam, Spotlight Secure, Juniper Sky Advanced Threat Prevention, Juniper ATP Appliance	<ul style="list-style-type: none"> Provides real-time updates to IPS signatures and protects against exploits Implements industry-leading antivirus and URL filtering Delivers open threat intelligence platform that integrates with third-party feeds Protects against zero-day attacks
Professional-grade networking services	Routing, switching, and secure wire	<ul style="list-style-type: none"> Supports carrier-class advanced routing, quality of service (QoS), and services Offers flexible deployment modes (L1/L2/L3)
Highly secure	IPsec VPN, secure boot	<ul style="list-style-type: none"> Provides high-performance IPsec VPN with dedicated crypto engine Simplifies large VPN deployments with auto VPN and group VPN Verifies binaries that execute on the hardware with secure boot
High reliability	Chassis cluster, redundant power supply	<ul style="list-style-type: none"> Provides stateful configuration and session synchronization Supports active/active and active/backup deployment scenarios Offers highly available hardware with dual PSU, dual storage
Easy to manage and scale	On-box GUI, Security Director	<ul style="list-style-type: none"> Enables centralized management for auto provisioning, firewall policy management, Network Address Translation (NAT), and IPsec VPN deployments Includes simple easy-to-use on-box GUI for local management
Lower TCO	Junos OS	<ul style="list-style-type: none"> Integrates routing, switching, and security in a single device Reduces OpEx with Junos OS automation capabilities



SRX1500

SRX1500 Services Gateway Specifications

Software Specifications

Firewall Services

- Stateful and stateless firewall
- Zone-based firewall
- Screens and distributed denial of service (DDoS) protection

- Protection from protocol and traffic anomalies
- Integration with Pulse Unified Access Control (UAC)
- Integration with Aruba Clear Pass Policy Manager
- User role-based firewall
- SSL Inspection

Network Address Translation (NAT)

- Source NAT with Port Address Translation (PAT)
- Bidirectional 1:1 static NAT
- Destination NAT with PAT
- Persistent NAT
- IPv6 address translation

VPN Features

- Tunnels: Generic routing encapsulation (GRE)¹, IP-IP¹, IPsec
- Site-site IPsec VPN, auto VPN, group VPN
- IPsec crypto algorithms: Data Encryption Standard (DES), triple DES (3DES), Advanced Encryption Standard (AES-256), AES-GCM
- IPsec authentication algorithms: MD5, SHA-1, SHA-128, SHA-256
- Pre-shared key and public key infrastructure (PKI) (X.509)
- Perfect forward secrecy, anti-reply
- IPv4 and IPv6 IPsec VPN
- Multi-proxy ID for site-site VPN
- Internet Key Exchange (IKEv1, IKEv2), NAT-T
- Virtual router and quality-of-service (QoS) aware
- Standard-based dead peer detection (DPD) support
- VPN monitoring

High Availability Features

- Virtual Router Redundancy Protocol (VRRP)
- Stateful high availability
 - Dual box clustering
 - Active/passive
 - Active/active
 - Configuration synchronization
 - Firewall session synchronization
 - Device/link detection
 - In-Service Software Upgrade (ISSU)
- IP monitoring with route and interface failover

Application Security Services²

- Application visibility and control
- Application-based firewall
- Application QoS
- Application-based advanced policy-based routing

Threat Defense and Intelligence Services³

- Intrusion prevention
- Antivirus
- Antispam
- Category/reputation-based URL filtering
- Spotlight Secure threat intelligence
- Protection from botnets (command and control)
- Adaptive enforcement based on GeoIP
- Juniper Sky Advanced Threat Prevention, a cloud-based SaaS offering, to detect and block zero-day attacks
- Juniper ATP Appliance, a distributed, on-premises advanced threat prevention solution to detect and block zero-day attacks

Routing Protocols

- IPv4, IPv6
- Static routes
- RIP v1/v2
- OSPF/OSPF v3
- BGP with Route Reflector
- IS-IS
- Multicast: Internet Group Management Protocol (IGMP) v1/v2; Protocol Independent Multicast (PIM) sparse mode (SM)/dense mode (DM)/source-specific multicast (SSM); Session Description Protocol (SDP); Distance Vector Multicast Routing Protocol (DVMRP); Multicast Source Discovery Protocol (MSDP); Reverse Path Forwarding (RPF)
- Encapsulation: VLAN, Point-to-Point Protocol over Ethernet (PPPoE)
- Virtual routers
- Policy-based routing, source-based routing
- Equal-cost multipath (ECMP)

QoS Features

- Support for 802.1p, DiffServ code point (DSCP), EXP
- Classification based on VLAN, data-link connection identifier (DLCI), interface, bundles, or multifield filters
- Marking, policing, and shaping
- Classification and scheduling
- Weighted random early detection (WRED)
- Guaranteed and maximum bandwidth
- Ingress traffic policing
- Virtual channels
- Hierarchical shaping and policing

Switching Features

- ASIC-based Layer 2 forwarding
- MAC address learning
- VLAN addressing and integrated routing and bridging (IRB) support
- Link aggregation and LACP
- LLDP and LLDP-MED
- STP, RSTP, MSTP
- MVRP
- 802.1X authentication

Network Services

- Dynamic Host Configuration Protocol (DHCP) client/server/relay
- Domain Name System (DNS) proxy, dynamic DNS (DDNS)
- Juniper real-time performance monitoring (RPM) and IP monitoring
- Juniper flow monitoring (J-Flow)
- Bidirectional Forwarding Detection (BFD)
- Two-Way Active Measurement Protocol (TWAMP)
- IEEE 802.3ah Link Fault Management (LFM)
- IEEE 802.1ag Connectivity Fault Management (CFM)

¹GRE, IP-IP, and VRRP are not supported in stateful high-availability mode

²Available as part of Juniper Software Enhanced (JSE/JE) software package or advanced security subscription license.

³Offered as advanced security subscription license

Advanced Routing Services

- Packet mode
- MPLS (RSVP, LDP)
- Circuit cross-connect (CCC), translational cross-connect (TCC)
- L2/L2 MPLS VPN, pseudowires
- Virtual private LAN service (VPLS), next-generation multicast VPN (NG-MVPN)
- MPLS traffic engineering and MPLS fast reroute

Management, Automation, Logging, and Reporting

- SSH, Telnet, SNMP
- Smart image download
- Juniper CLI and Web UI
- Juniper Networks Junos Space and Security Director
- Python
- Junos OS even, commit and OP scripts
- Application and bandwidth usage reporting
- Auto installation
- Debug and troubleshooting tools

Hardware Specifications

Specification	SRX1500
Connectivity	
Total onboard ports	16x1GbE and 4x10GbE
Onboard RJ-45 ports	12x1GbE
Onboard small form-factor pluggable (SFP) transceiver ports	4x1GbE
Onboard SFP+ ports	4x10GbE
Out-of-Band (OOB) management ports	1x1GbE
Dedicated high availability (HA) ports	1x1GbE (SFP)
PIM slots	2
Console (RJ-45 + miniUSB)	1
USB 2.0 ports (type A)	1
Memory and Storage	
System memory (RAM)	16 GB
Primary boot storage (mSATA)	16 GB
Secondary storage (SSD)	100 GB
Dimensions and Power	
Form factor	1 U
Size (WxHxD)	17.5 x 1.75 x 18.2 in (44.45 x 4.44 x 46.22 cm)
Weight (device and PSU)	16.1 lb (7.30 kg)
Redundant PSU	1+1
Power supply	AC/DC (external)
Average power consumption	150 W
Average heat dissipation	512 BTU / hour
Maximum current consumption	2.5A (for AC PSU); 6.2A (for DC PSU)
Maximum inrush current	50A by 1 AC cycle
Acoustic noise level	66.5dBA

Specification	SRX1500
Airflow/cooling	Front to back
Operating temperature	32° to 104° F (0° to 40° C)
Nonoperating temperature	4° to 158° F (-20° to 70° C)
Operating humidity	10% to 90% noncondensing
Nonoperating humidity	5% to 95% noncondensing
Meantime between failures (MTBF)	9.78 years (85,787 hours)
FCC classification	Class A
RoHS compliance	RoHS 2
FIPS 140-2	Level 2 (Junos 15.1X49-D100)

Performance and Scale

Parameter	SRX1500
Routing/firewall (64 B packet size) Mpps ⁴	1.7
Routing/firewall (IMIX packet size) Gbps ⁴	5
Routing/firewall (1,518 B packet size) Gbps ⁴	9
IPsec VPN (IMIX packet size) Gbps ⁴	1.3
IPsec VPN (1,400 B packet size) Gbps ⁴	4
Application visibility and control in Gbps ⁵	5
Recommended IPS in Gbps ⁵	3
Next-generation firewall in Gbps ⁵	1.5
Route table size (RIB/FIB) (IPv4 or IPv6)	2 million / 1 million
Maximum concurrent sessions (IPv4 or IPv6)	2,000,000
Maximum security policies	16,000
Connections per second	50,000
NAT rules	8,000
Media access control (MAC) table size	64,000
IPsec VPN tunnels	2,000
GRE tunnels	2,000
Maximum security zones	512
Maximum virtual router	512
Maximum VLANs	3,900
AppID sessions	512,000
IPS sessions	512,000
URL filtering sessions	512,000

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services.

⁴Performance numbers based on UDP packets and RFC2544 test methodology

⁵Performance numbers based on HTTP traffic with 44 KB transaction size

Ordering Information

The SRX1500 offers a number of flexible ordering options. Customers can choose the Junos software package for each SRX1500 purchased based on their needs. Two Junos software packages are available with the SRX1500 hardware: Junos Software Base (JSB/JB) and Junos Software Enhanced (JSE/JE). All routing, firewall, IPSec, and advanced networking services are included in the JSB/JB package. The JSE/JE package includes all JSB capabilities, plus application security services (application identification, application firewall, application QoS, and application routing). Advanced security services intrusion prevention, content security, and Juniper Sky Advanced Threat Prevention are offered as annual subscription-based services with any of the Junos software packages.

	SRX1500-SYS-JB	SRX1500-SYS-JE
Hardware	Included	Included
Management (CLI, JWEB, SNMP, Telnet, SSH)	•	•
Ethernet switching (L2 Forwarding, IRB, LACP etc)	•	•
L2 Transparent, Secure Wire	•	•
Routing (RIP, OSPF, BGP, Virtual router)	•	•
Multicast (IGMP, PIM, SSDP, DMVRP)	•	•
Packet Mode	•	•
Overlay (GRE, IP-IP)	•	•
Network Services (J-Flow, DHCP, QOS, BFD)	•	•
Stateful Firewall, Screens, ALGs	•	•
NAT (static, SNAT, DNAT)	•	•
IPSec VPN (Site-Site VPN, Auto VPN, Group VPN)	•	•
Firewall policy enforcement (UAC, Aruba CPPM)	•	•
Chassis Cluster, VRRP, ISSU	•	•
Automation (Junos scripting, auto-installation)	•	•
MPLS, LDP, RSVP, L3 VPN, pseudo-wires, VPLS	•	•
Application Security (AppID, AppFW, AppQOS, AppRoute)		•

Base System Model Numbers

Product Number	Description
SRX1500-SYS-JB-AC	SRX1500 Services Gateway includes hardware (16GbE, 4x10GbE, 16G RAM, 16G Flash, 100G SSD, AC PSU, cable and RMK) and Junos Software Base (firewall, NAT, IPSec, routing, MPLS and switching)
SRX1500-SYS-JB-DC	SRX1500 Services Gateway includes hardware (16GbE, 4x10GbE, 16G RAM, 16G Flash, 100G SSD, DC PSU, cable and RMK) and Junos Software Base (firewall, NAT, IPSec, routing, MPLS and switching)
SRX1500-SYS-JE-AC	SRX1500 Services Gateway includes hardware (16GbE, 4x10GbE, 16G RAM, 16G Flash, 100G SSD, AC PSU, cable and RMK) and Junos Software Enhanced (firewall, NAT, IPSec, routing, MPLS, switching and application security)
SRX1500-SYS-JE-DC	SRX1500 Services Gateway includes hardware (16GbE, 4x10GbE, 16G RAM, 16G Flash, 100G SSD, DC PSU, cable and RMK) and Junos Software Enhanced (firewall, NAT, IPSec, routing, MPLS, switching and application security)

Accessories

Product Number	Description
JPSU-400W-AC	Juniper Power Supply Unit, 400W AC, Slim 1RU Form Factor
JPSU-650W-DC-AFO	Juniper 650W DC Power Supply (Port Side to FRU Side Air Flow)

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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