Data sheet

HPE Networking SRX4700 Firewall

Product description

HPE Networking SRX4700 Firewall is a high performance, next-generation firewall (NGFW) designed for service providers, cloud providers, and large enterprises. In addition, enterprises can deploy the SRX4700 firewall as data center core, data center edge firewalls, and as a secure SD-WAN hub. Combining industry-leading security effectiveness and carrier-grade routing with state-of-the-art switching, this platform delivers robust network security, effective threat protection, and comprehensive automation and mitigation capabilities.

Figure 1: HPE Networking SRX Firewall Series have achieved the highest scores in security effectiveness by Cyber Ratings and NetSecOpen

The SRX4700 delivers NGFW features that support the changing needs of cloud-enabled enterprise networks and data centers. Whether rolling out new services on an enterprise campus, connecting to the cloud seamlessly, complying with industry standards, or achieving operational efficiency, the SRX4700 empowers organizations to operationalize zero trust principles at scale while realizing business objectives. It protects critical corporate assets with features such as intrusion prevention system (IPS), follow-the-user and follow-the-application access policies, and AI predictive threat prevention from HPE. Furthermore, the SRX4700 works with the cloud security solutions of HPE Networking to secure hybrid-cloud environments with networkwide visibility and control, providing consistently secure on-premises and cloud environments.

For cloud providers, service providers, and enterprises, the hardware acceleration in the SRX4700 protects data center core and edge workloads at Layer 7 at wire speed with industry-leading security efficacy. It also adheres to industry-standard EVPN Type 5 and VXLAN protocols within these data centers, enabling the SRX4700 to act as a secure, fabric-aware leaf in the spine-leaf architecture and uniquely streamlining security workflows within the data center. Plus, the SRX4700 does all this while delivering the highest firewall performance per rack unit of any data center firewall available today.

Service providers offering 4G and 5G services can take advantage of the SRX4700's proven software, which secures dozens of Tier 1 service providers around the world. Use cases supported with high performance hardware acceleration include security gateway, Gi/N6 firewall, CGNAT, and roaming firewall. Service providers with power and space constraints can deploy the SRX4700 in both distributed and centralized locations and secure their networks at terabit speeds while consuming only a single rack unit within their data centers.

The SRX4700 participates in HPE Networking connected security distributed services architecture, enabling organizations to scale both horizontally and elastically while simplifying operational management of large-scale firewall networks. With this architecture, several SRX4700 platforms can work together as a single large logical firewall to provide security at higher performance and scale.

Product overview

As data centers evolve from traditional architecture to distributed, the firewall's role needs to expand. Rather than being a perimeter technology, firewalls need to be part of a security fabric woven throughout the network. A security fabric will ensure that security is maintained at every point of connection.

The SRX4700 firewall next-generation firewall is integral to this new architecture, empowering organizations to operationalize security across their networks. This 1U, power-efficient firewall features built-in zero trust, Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN) fabric integration, and AI-predictive threat prevention secure your network. The SRX4700 firewall delivers the industry's highest throughput per rack unit at up to 1.4 Tbps—while supporting 400 Gbps interfaces with wire speed MACsec on all ports.

The HPE Networking SRX4700 Firewall is powered by HPE Networking Junos operating system, the OS that underpins and helps secure the world's largest mission-critical enterprise and service provider networks. It is managed by HPE Networking Security Director, our unified management experience that connects the organization's current deployments with future architectural rollouts. HPE Networking Security Director uses a single policy framework enabling consistent security policies across any environment and expanding zero trust to all parts of the network—from the edge into the data center. This provides unbroken visibility, policy configuration, administration, and collective threat intelligence all in one place.

Architecture and key components

The SRX4700 leverages the innovative architecture of HPE to deliver its high performance and robust security services:

- **Trio ASIC:** At its core, the SRX4700 firewall is powered by our purpose-built Trio ASIC, designed for predictable, high performance security processing. This specialized silicon ensures consistent throughput even when multiple advanced security services are enabled simultaneously
- **EVPN-VXLAN integration:** With native support for EVPN Type 5 and VXLAN protocols, the SRX4700 seamlessly integrates into modern, automated data center fabrics. This allows for security policy enforcement at the fabric edge without needing to break tunnels, simplifying configuration and enhancing agility
- **AI-predictive threat prevention:** The SRX4700 features AI-predictive threat prevention, which uses machine learning to generate custom signatures and provide line-rate anti-malware performance. This ensures high security efficacy and proactive defense against evolving threats
- **Multinode high availability (MNHA):** The SRX4700 supports advanced multinode high availability, offering a resilient HA design that ensures continuous availability and simplified operations, minimizing downtime and operational complexity. MNHA deployments include Layer 2, hybrid, and Layer 3, including geo redundancy across different geographic locations
- **HPE Networking Security Director:** Centralized management of the SRX4700 is provided by HPE Networking Security Director, offering unified policy management, automation, and end-to-end visibility across your security infrastructure

Built-in zero trust

To increase trust and streamline operations, the SRX4700 features several built-in zero trust device capabilities, including an embedded Trusted Platform Module (TPM) 2.0 and cryptographically signed device ID. The SRX4700 supports RFC compliant secure zero touch provisioning (sZTP) to deploy products in your network efficiently, expediently, and remotely. Additionally, the SRX4700 supports MACsec at wire speed, ensuring data integrity, and confidentiality.

Connected security distributed services architecture

The SRX4700 is part of HPE Networking security distributed services architecture, which revolutionizes data center security. With this architecture, firewall performance can scale horizontally by interconnecting traffic forwarding and security services across multiple geographic locations. It also provides automated failover and backup nodes for both forwarding and inspection components. In addition to redundancy and load balancing, HPE Networking connected security distributed services architecture simplifies how large-scale data center firewall networks are managed and operated. Regardless of how many firewall engines across the various form factors (physical, virtual, containerized) are added, they can all be managed as one logical unit. The centralized management eliminates the complexity that has been an unintended consequence of a traditional scale-out approach.

Features and benefits

Business requirement	Feature/solution	HPE Networking SRX4700 Firewall advantages
High performance	Express path+	— Provides automatic offload of all eligible flows for line-rate forwarding without additional configuration — Delivers full inspection services to all flows regardless of size — Requires no trade-offs between performance and security — Meets requirements for enterprise campus and data center edge deployments — Addresses diverse needs and scales for service provider deployments
High-quality end-user experience	Application visibility and control	— Updates application continuously and decodes custom applications — Controls and prioritizes traffic based on application and user role — Inspects and detects applications inside SSL-encrypted traffic, including web and SaaS
Advanced threat protection	NGFW Services: IPS, antivirus, antispam, web filtering HPE Networking SRX Advanced Threat Prevention: sandboxing, encrypted traffic insights, security intelligence feed	— Prevents exploits with 99.9% effectiveness;* signatures update in real time — Protects against known malware and malicious web and DNS traffic — Sandboxing for unknown malware across multiple OS types, including iOS, Windows, Android™, and CentOS — Delivers threat intelligence in an open platform to accommodate for third-party and custom threat feeds — Detects threats hidden inside encrypted traffic without decrypting
Zero-day protection	AI predictive threat prevention	— Predicts and prevents malware at line rate by using AI to effectively identify threats from packet snippets — Eliminates patient-zero infections — Auto-generates protective signatures that remain active for the full attack lifecycle, keeping the network safe from subsequent attacks
Secure data transactions	HPE Networking SRX Secure Connect: IPSec VPN, remote access/SSL VPN	— Provides high performance IPSec VPN with dedicated crypto engine — Offers diverse VPN options for various network designs, including remote access and dynamic site-to-site communications — Simplifies large VPN deployments with auto-VPN — Includes hardware-based crypto acceleration — Secure and flexible remote access SSL VPN
Advanced networking services	Routing, secure wire	— Supports carrier-class advanced routing and quality of service (QoS)
Security embedded into the data center fabric	EVPN-VXLAN (EVPN Type 5 route)	— Enhances tunnel inspection for VXLAN encapsulated traffic with Layer 4-7 security services — Eases operations with Type 5 support through BGP — Does not require decapsulation for EVPN-VXLAN traffic
Reliability	Multinode HA, redundant power supplies	— Provides stateful configuration and session state synchronization — Supports active/active and active/backup deployment scenarios — Offers highly available hardware with redundant power supply unit (PSU) and fans

Features and benefits (continued)

Business requirement	Feature/solution	HPE Networking SRX4700 Firewall advantages
Easy to manage and scale	HPE Networking Security Director, on-box GUI	— Provides centralized management via the HPE unified management experience, including ZTP, unbroken visibility, intelligent rule placement, and simplified policy configuration and automation — Supports network address translation (NAT) and automated IPSec VPN deployments via wizards — Supports on-box GUI
Built-in zero trust capabilities	DevID with TPM 2.0 module	— Verifies the device's trust posture easily — Provides cryptographically signed device ID that supports RFC-compliant sZTP for hardware and software attestation — Mitigates the risks of supply chain attacks
Low TCO	HPE Networking Junos Operating System	— Integrates routing and security capabilities into a single device — Reduces OpEx with Junos OS automation capabilities — Automates integration with other devices running Junos OS, such as MX, PTX, and ACX routers, and EX and QFX switches

* Exploit block rate results tested by CyberRatings' 2023 Enterprise Firewall test report

Figure 2: SRX4700

Software specifications

Firewall services

— Stateful firewall services

— Zone-based firewall

— Screens and distributed denial of service (DDoS) protection

— Protection from protocol and traffic anomalies

— Unified access control (UAC)

— Integration with HPE Mist Networking Access Assurance

Carrier-grade Network Address Translation (CGNAT)

— Carrier-grade Network Address Translation (Large-scale NAT)

— IPv4 and IPv6 address translation NAT44, NAPT44, NAT66, NAPT66, NAT64, NAT46

— Static and dynamic 1-1 translation

— Source NAT with Port Address Translation (PAT)

— Destination NAT with Port Address Translation (PAT)

— Port Block Allocation (PBA)

— Deterministic NAT (DetNAT)

— Port overload

— Persistent NAT (enables EIM/EIF)

— Twice-NAT44

— DS-lite

VPN features

— Tunnels: Site-to-site, hub and spoke, dynamic endpoint, AutoVPN, ADVPN, Group VPN (IPv4/ IPv6/ Dual Stack)

— HPE Networking SRX Secure Connect: Remote access/SSL VPN

— Configuration payload: Yes

— IKE encryption algorithms: Prime, 3DES-CBC, AES-CBC, AES-GCM, Suite B

— Authentication: Preshared key and public key infrastructure (PKI) (X.509)

— Post Quantum Authentication: Post-quantum Pre-shared Key (PPK), Quantum Key Distribution (QKD), Symmetric Key Exchange (SKE)

— Security payload (ESP) protocol

— IPSec authentication algorithms: hmac-md5, hmac-sha-196, hmac-sha-256

— IPSec encryption algorithms: Prime, DES-CBC, 3DES-CBC, AES-CBC, AES-GCM, Suite B

— Perfect Forward Secrecy (PFS), DH-group support (group 14-16, 19-21, 24), anti-replay

— Internet Key Exchange: IKEv1, IKEv2

— Monitoring: Standards-based dead peer detection (DPD) support, VPN monitoring

— VPNs GRE, IP-in-IP, and MPLS

— Hardware acceleration: Inline IPSec (AES-GCM), QAT

High availability (HA) features

— Virtual Router Redundancy Protocol (VRRP): IPv4 and IPv6

— Stateful high availability:

- Multinode HA (MN-HA)
  - Active/active
  - Active/passive
- Configuration synchronization
- Firewall session synchronization
- Device/link detection
- Unified in-service software upgrade (unified ISSU)

— IP monitoring with route and interface failover

Application security services (offered as advanced security subscription license)

— Application visibility and control

— Application QoS

— Advanced/application policy-based routing (APBR)

— Application quality of experience (AppQoE)

— Application-based multipath routing

— User-based firewall

Threat defense and intelligence services (offered as advanced security subscription license)

— Intrusion prevention system

— AI-predictive threat prevention

— Antivirus

— Antispam

— Category/reputation-based URL filtering

— SSL proxy/inspection

— Protection from botnets (command and control)

— Adaptive enforcement based on GeoIP

— HPE Networking SRX Advanced Threat Prevention, a cloud-based SaaS offering to detect and block zero-day attacks

— Adaptive threat profiling

— Encrypted traffic insights

— Security intelligence threat intelligence

— HPE Networking SRX Advanced Threat Prevention virtual 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)
— EVPN-VXLAN (EVPN Type 5 route)

QoS features

— Support for 802.1p, DiffServ code point (DSCP)

— Classification based on interface, bundles, or multifield filters

— Marking, policing, and shaping

— Classification and scheduling

— Weighted random early detection (WRED)

— Guaranteed and maximum bandwidth

— 8 queues per port

Network services

— Dynamic Host Configuration Protocol (DHCP) client/server/relay

— Domain Name System (DNS) proxy, dynamic DNS (DDNS)

— HPE real-time performance monitoring (RPM) and IP monitoring

— Flow monitoring technology

Management, automation, logging, and reporting

— SSH, Telnet, SNMP-MIBs, and Traps

— Smart image download

— HPE CLI, Web UI, NetCONF, XML APIs, RMON

— HPE Networking Security Director

— Python

— HPE Networking Junos operating system events, commit, and OP scripts

— Application and bandwidth usage reporting

— Debug and troubleshooting tools

Hardware specifications

Table 1. SRX4700 firewall hardware specifications

Specification	HPE Networking SRX4700 Firewall
Connectivity	
Total onboard I/O ports	2 x 400GbE (QSFP56-DD) 10 x 100GbE (QSFP28) 16 x 50GbE (SFP56)
Out-of-Band (OOB) management ports	1 Gbps (RJ-45)
Dedicated high availability (HA) ports	1 x 1GbE (SFP) Control 1 x 1GbE (SFP) Data
Console	1 (RJ-45)
USB 3.0 ports (Type A)	1
Storage	
Storage (SSD)	2 x 1 TB M.2 SSD or 1 x 1 TB M.2 SSD + 1 x 2 TB M.2 SSD

Table 1. SRX4700 firewall hardware specifications (continued)

Specification	HPE Networking SRX4700 Firewall
Dimensions and power	
Form factor	1U
Size (W x H x D)	17.4 x 1.7 x 26.5 in. (44.19 x 4.32 x 67.31 cm) With AC PEMs: 17.4 x 1.7 x 27.29 in. (44.19 x 4.32 x 69.32 cm) With DC PEMs: 17.4 x 1.7 x 29.20 in. (44.19 x 4.32 x 74.17 cm)
Weight (device and PSU)	Chassis with AC power supplies: 40 lb (18.2 kg) Chassis with DC power supplies: 42 lb (19.1 kg)
Redundant PSU	1+1
Power supply	2 x 2200W AC PSU redundant 2 x 2200W DC PSU redundant
Maximum current consumption	8.2 A (for 220V AC power) 16.4 A (for 110V AC Lowline power) 37.5 A (for 48V DC power)
Environment and regulatory compliance	
Acoustic noise level	78 dBA at normal fan speed, 92 dBA at full fan speed
Airflow/cooling	Front to back
Operating temperature	32° to 104°F (0° to 40°C at 6000 ft altitude)
Operating humidity	5% to 85% non-condensing
Meantime between failures (MTBF)	133,440 hours (15.23 years)
FCC classification	Class A
RoHS compliance	RoHS 6
NEBS compliance	Designed and tested in accordance with GR-3160 data center requirements

Table 1. SRX4700 firewall hardware specifications (continued)

Specification	HPE Networking SRX4700-700 Firewall	HPE Networking SRX4700-1400 Firewall
Performance and scale		
Firewall throughput[1] (1518/500/IMIX byte UDP)	700 Gbps/700 Gbps/500 Gbps	1.4 Tbps/1.4 Tbps/1 Tbps
IPSec VPN throughput[1] (1400/IMIX byte UDP)	114 Gbps/91 Gbps	170 Gbps/136 Gbps
Application security performance (CPS**)	100 Gbps	150 Gbps
Next-generation firewall (CPS**)[2]	40 Gbps	60 Gbps
Secure web access firewall (CPS**)[3]	32 Gbps	48 Gbps
Advanced threat (CPS**)[4]	13 Gbps	20 Gbps
Connections per second (64B)	1 million	1.5 million
SSL connections per second	21K	31.5K
Maximum concurrent sessions (IPv4 or IPv6)[5]	40 million/70 million	40 million/128 million
Route table size (RIB/FIB) (IPv4)	4 million/1.2 million	4 million/1.2 million
IPSec VPN tunnels	10K	15K
Inline IPSec throughput	250 Gbps	500 Gbps
Inline IPSec VPN tunnels	1000	2000

[1] Throughput numbers based on UDP packets and RFC2544 test methodology

[2] Next-generation firewall performance is measured with firewall, application security, and IPS enabled

[3] Secure web access firewall performance is measured with firewall, application security, IPS, security intelligence, and URL filtering enabled

[4] Advanced threat performance is measured with firewall, application security, IPS, security intelligence, URL filtering, and malware protection enabled

[5] 40M sessions by default. Up to 70M sessions on SRX4700-700 and up to 128M sessions on SRX4700-1400 with hyperscale (L3-L4) mode

**CPS Method: short-lived sessions

Ordering information

To order HPE Networking SRX Firewalls and to access software licensing information, please contact us.

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