cSRX CONTAINER FIREWALL

Product Overview

The cSRX Container Firewall delivers a complete virtual firewall solution, including advanced security, automated life cycle, and policy management capabilities for both service providers and enterprises. The cSRX empowers security professionals to deploy and scale firewall and advanced security detection and prevention in highly dynamic container environments.

Product Description

Cloud-based technologies have accelerated the growth in adoption of container platforms over the last decade. The use of containers as a low footprint foundation for running microservices has introduced another layer of infrastructure that needs to be secured. With Juniper Connected Security, organizations can provide industry-leading security for their containerized workloads, extending visibility and enforcement down to the communications between individual microservices within an application.

Like all aspects of IT, containers need to be secured, and administrators need visibility into data flows moving in and out of these containers. Monolithic applications are difficult to scale, and incredibly inefficient when scaling is achieved. This has been driving developers to split applications into microservices for the past two decades, and microservices are driving the adoption of containers.

The Juniper Networks® cSRX Container Firewall, a containerized version of the Juniper Networks SRX Series Services Gateways, provides visibility into the network, allowing organizations to respond more quickly to emerging threats. Individual containerized applications or microservices can be provided with their own unified threat management (UTM)-capable next-generation firewall (NGFW), or even an entire chain of network security services, depending on the need.

The cSRX supports easy, flexible, and highly scalable deployment options that cover a variety of customer use cases, including application protection within the container, microsegmentation, or as an edge gateway for secure IoT deployments through a Docker container management solution. The cSRX also supports SDN via Juniper Networks Contrail® Enterprise Multicloud, OpenContrail®, and other third-party solutions, and it can be integrated with other next-generation cloud orchestration tools such as OpenStack.

Service providers offering differentiated security services to huge subscriber bases are looking for significantly higher density than what is offered by virtual machine (VM)-based firewalls. By adopting a microservices approach, paying only for the services they use and reducing the need to deploy high-density security solutions in the infrastructure, service providers can drive down both CapEx and OpEx.

Enterprises that are migrating to a virtual cloud based on microservices can also take advantage of the cost savings, faster boot time, and greater visibility while maintaining the same security policies across their public and private clouds.

Deployed as part of Contrail Edge Cloud, the cSRX can participate in network function service chains. Acting as a "bump in the wire" between two data flows and a target container, the cSRX adds security enforcement points where none have existed before, offering the most comprehensive network security for Kubernetes deployments.

Architecture and Key Components

Advanced Security Services

Implementing nonintegrated legacy systems built around traditional firewalls and individual standalone appliances and software is no longer effective protecting against today's sophisticated attacks. Juniper's advanced security suite enables users to deploy multiple technologies to meet the unique and evolving needs of modern organizations and the constantly changing threat landscape. Real-time updates ensure that the technologies, policies, and other security measures are always current.

The cSRX Container Firewall delivers a versatile, powerful, and virtualization-specific set of advanced security services, including UTM, intrusion detection and prevention (IDP), and application control and visibility services through Juniper Networks AppSecure.

Simple Configuration

The cSRX Container Firewall supports "bump-in-the-wire" L2 and L3 deployment using two basic features: zones and policies. The default configuration contains, at a minimum, a "trust" and an "untrust" zone. The trust zone is used for configuration and attaching the internal network to the cSRX, while the untrust zone is commonly used for unknown and therefore suspect networks. The cSRX comes with a default policy to secure and eliminate the wait time while policies are still being defined.

Virtual Network Functions for Rapid Security Deployment

To achieve business agility, customers increasingly leverage an SDN framework to instantiate virtual private clouds on demand but require a consistent security posture. Deploying virtualized network functions (VNFs) addresses the critical requirement, however, most available VNFs—especially when it comes to security services—aren't suitable for rapid deployments due to their size and boot times. A VNF could take up to three minutes to boot, and it requires static reservation of resources like vCPU and vRAM. While this might be currently acceptable, customers looking to increase the breadth of their infrastructure security coverage prefer a smaller, faster, more lightweight security VNF.

Capacity and Performance

You can scale the capacity of the cSRX by increasing the allocated amount of virtual memory used to expand the number of sessions supported. Table 1 shows the cSRX scale-up performance applied to a cSRX container based on its supported sizes: small, medium, and large. The default size for a cSRX container is large. Table 2 provides the performance characteristics of large cSRX containers.

Table 1: cSRX Services Gateway Key Capacity Metrics

Capacity	cSRX Small	cSRX Medium	cSRX Large
Virtual CPU	2	2	2
Memory	256 MB	1 GB	4 GB
Maximum concurrent sessions	8000	64,000	512,000

Table 2: cSRX Services Gateways Key Performance Metrics

Performance[1]	cSRX Large
Firewall throughput, large packet (1514 B)	1.4 Gbps
Firewall throughput, IMIX	480 Mbps
Application visibility and control[2]	750 Mbps
Intrusion prevention system (IPS)-recommended sig-natures	1.8 Gbps

[1] All performance numbers are "up to" and will depend on underlying hardware configuration (some server configurations may perform better). Performance, capacity, and features listed are based on cSRX running Junos® OS 18.1R1 release and are measured under ideal testing conditions. Actual results may vary based on Junos OS releases and by deployments.

[2] Throughput numbers based on HTTP traffic with 44 KB transaction size.

Features and Benefits

The cSRX Container Firewall comes with the following features and associated benefits:

- Offers a small footprint and delivers highly agile advanced security services in a container form factor

- Secures containers with the industry's first containerized firewall

- Integrates with Contrail Enterprise Multicloud to deliver microsegmentation, encryption, and L4-L7 firewall for microservices

- Leverages the same advanced security features as the SRX Series Services Gateways

- Defends against an increasingly sophisticated threat landscape by integrating powerful UTM, IPS, and application visibility and control capabilities for a comprehensive threat management framework

- Provides management flexibility with Network Configuration Protocol (NETCONF) to support integration with third-party management and cloud orchestration tools

- Supports SDN and NFV via integration with Contrail Multicloud, OpenContrail, and other third-party solutions

- Participates in network function service chains, offering high availability as well as containerized security that scales individual network functions as needed

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services 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.

Ordering Information

For more information about Juniper Networks cSRX Container Firewall, please visit www.juniper.net/us/en/products-services/security/srx-series/csrx or contact the nearest Juniper Networks sales representative.

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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