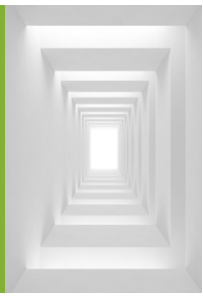
Juniper® Validated Design

JVD Solution Overview: Data Center Next-Generation Firewall Use Case



Executive Summary

The data center holds every organization's most sensitive data and applications, on-premises or in the cloud. No matter the location, keeping the data protected is essential. Understanding and securing data center components is crucial for protecting the organization and its data.

The data center WAN gateway is the entry to the data center. Next-generation firewalls check the incoming and outgoing traffic to protect the data center WAN gateway and ensures that the authorized users and devices have access to the data center. The data center WAN gateway checks the incoming traffic to ensure the hidden malware isn't sneaking in.

Juniper's next-generation firewalls help secure data center environments with industry-leading security that enables IT teams to keep up with an ever-evolving threat landscape. These innovative security devices go beyond port and protocol inspection to provide multi-layered protection, deep packet inspection, application awareness, and intrusion prevention systems that keep the business safe.

A data center firewall must be able to deliver:

- Enhanced security
- Enforcement and application visibility
- Advanced Threat Prevention
- Simplified management
- Scalability and performance

The data center firewall plays a significant role in the data center by offering architectural security control. Organizations place many demands on the data center firewall and relies on a strict set of requirements driven by organizational needs to protect the business. Organizations must ensure that the solution they choose meets their needs, including the scale or breadth of applications they need today and for future needs.

We've created this JVD to show the configuration and rigorous testing that provides confidence and a reference architecture as a guide to configure a data center firewall in a resilient manner. An SRX4600 was deployed for this configuration.

Solution Overview

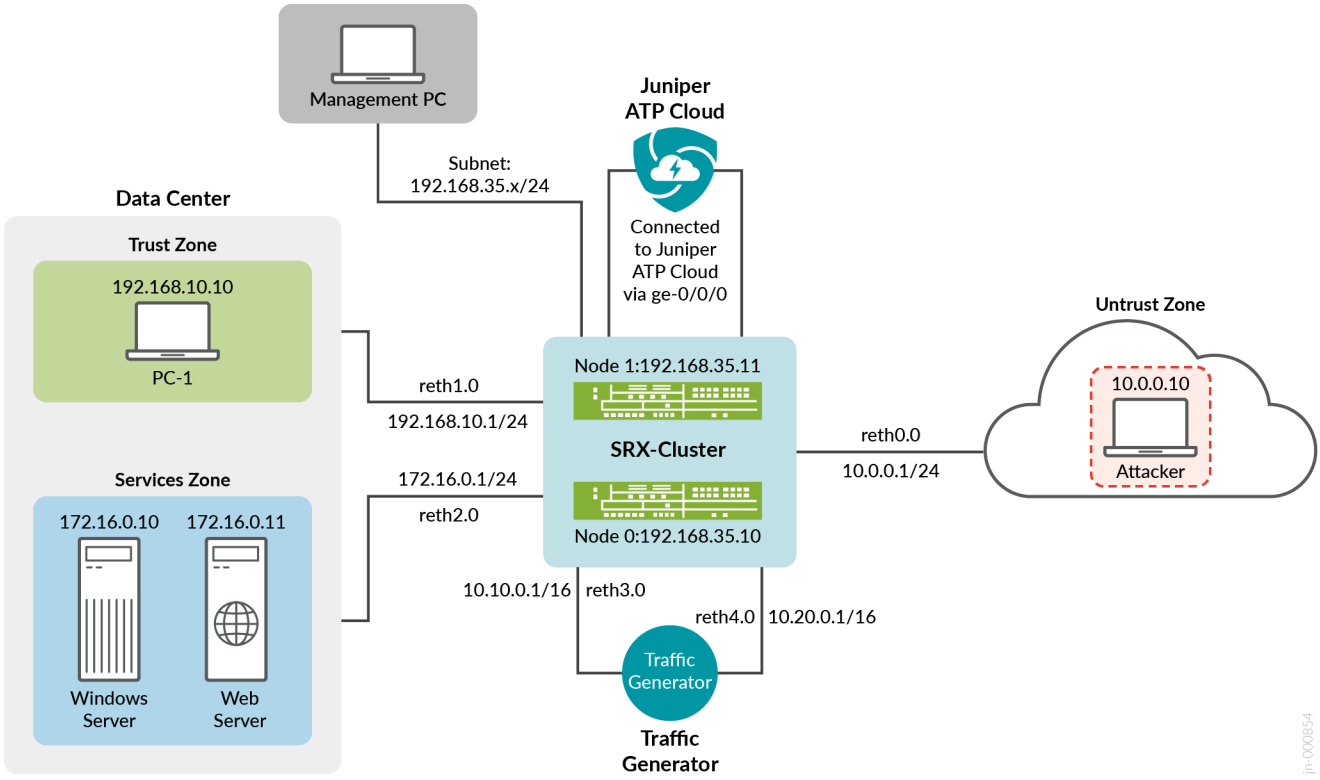
Juniper's approach to a data center security solution starts with improving security while reducing complexity and streamlining operational efficiency, arguably the most critical part of any architectural transformation.

This JVD focuses on the data center WAN gateway deployment with data center firewall. This is the most common deployment for a data center firewall, and typically every organization invests in this solution as a first step. We've assessed the most common implementations and configurations and tested them against prevalent threat types and tactics to confidently guide the IT team in replicating this robust deployment.

The following capabilities are validated in this JVD:

- The firewall configured as a data center WAN gateway.
- Implement features to protect hosted services in the services zone.
- Implement features to protect common services utilized within the data center environment.
- Implement features to protect hosted services from DDoS attacks.
- Implement data center WAN gateway in high availability architecture and test resiliency with different failure scenarios.
- Test performance of the Juniper SRX Series Firewall with long-lived and short-lived sessions and functionality of various security features with peak traffic conditions.

Figure 1: Reference Architecture for the Data Center Firewall



Reference Architecture

This JVD focuses on the next-generation firewall services typically used in the data center. In this example, we've an optimized configuration for commonly utilized security services in the data center and validated that the deployed solutions are working as intended.

The following features are deployed and validated in this JVD:

- Application Security
- Intrusion Detection and Prevention (IDP)
- Advanced Threat Prevention
- Security Intelligence
- Advanced anti-malware
- DNS security
- Screens
- SSL proxy (depends on use case implementation)

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