

Junos Security (JSEC)

Engineering Simplicity

COURSE LEVEL

JSEC is an intermediate-level course.

AUDIENCE

This course benefits operators of SRX Series devices. These operators include network engineers, administrators, support personnel, and reseller support personnel.

PREREQUISITES

Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite. Students should also complete the *Introduction to the Junos Operating System (IJOS)* course, or have equivalent experience prior to attending this class.

ASSOCIATED CERTIFICATION

[JNCIS-SEC](#)

RELEVANT JUNIPER PRODUCT

- Security
- Junos OS
- SRX Series
- vSRX Series

RECOMMENDED NEXT COURSE

Advanced Junos Security (AJSEC)

CONTACT INFORMATION

training@juniper.net

COURSE OVERVIEW

This five-day course covers the configuration, operation, and implementation of SRX Series Services Gateways in a typical network environment. Key topics within this course include: security zones, security policies, Network Address Translation (NAT), IPsec VPNs, and chassis clustering.

Through demonstrations and hands-on labs, students will gain experience in configuring the Junos OS and monitoring device operations of Junos security devices. This course uses Juniper Networks SRX Series Services Gateways for the primary hands-on component.

This course is based on Junos OS Release 17.4R1.16 and the vSRX virtual appliance.

OBJECTIVES

- Describe traditional routing and security.
- Provide an overview of SRX Series Services Gateway devices and the Junos OS software architecture.
- Describe the logical packet flow and session creation performed by SRX Series Services Gateway devices.
- Describe, configure, and monitor zones.
- Describe, configure, and monitor security policies.
- Troubleshoot security zones and policies.
- Describe, configure, and monitor NAT, as implemented on Junos security platforms.
- Explain the purpose and mechanics of IP Security (IPsec) virtual private networks (VPNs).
- Implement and monitor route-based IPsec VPNs.
- Implement and monitor Hub-and-Spoke VPNs, Group VPNs, and ADVPNs.
- Troubleshoot IPsec VPNs.
- Describe, configure, and monitor chassis clusters.
- Troubleshoot chassis clusters.

COURSE CONTENT

Day 1

1	COURSE INTRODUCTION
2	Introduction to Junos Security <ul style="list-style-type: none"> • Traditional Routing and Security • Architecture Overview of Junos Security Devices • Logical Packet Flow through Junos Security Devices • J-Web Overview
3	Zones and Screen Options <ul style="list-style-type: none"> • Zones Overview • Zone Configuration • Monitoring Security Zones • Configuring Screen Options • Screen Options Case Study LAB 1: Zones and Screen Options

4	Security Policies <ul style="list-style-type: none"> • Security Policy Overview • Policy Components • Security Policy Configuration in J-Web • Policy Case Study (CLI) • Policy Case Study (J-Web) LAB 2: Security Policies
5	Advanced Security Policy <ul style="list-style-type: none"> • Session Management • Junos ALGs • Policy Scheduling • Logging • Advanced Security Policy Lab 3: Advanced Policy Options

Day 2

6	Troubleshooting Zones and Policies <ul style="list-style-type: none"> • General Troubleshooting for Junos Devices • Troubleshooting Tools • Troubleshooting Zones and Policies • Zone and Policy Case Studies Lab 4: Troubleshooting Security Zones and Policies
7	Network Address Translation <ul style="list-style-type: none"> • NAT Overview • Source NAT • Destination NAT • Static NAT • Proxy ARP Lab 5: Network Address Translation

8	Advanced NAT <ul style="list-style-type: none"> • Persistent NAT • DNS Doctoring • IPv6 with NAT • Advanced NAT Scenarios • Troubleshooting NAT Lab 6: Advanced NAT
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Day 3

9 **IPsec VPN Concepts**

- VPN Types
- Secure VPN Requirements
- IPsec Tunnel Establishment
- IPsec Traffic Processing

11 **Hub-and-Spoke VPNs**

- Hub-and-Spoke VPN Overview
- Hub-and-Spoke Configuration and Monitoring

Lab 8: Hub-and-Spoke VPNs

10 **IPsec VPN Implementation**

- IPsec VPN Configuration
- IPsec VPN Case Study
- Proxy IDs and Traffic Selectors
- Monitoring IPsec VPNs

Lab 7: Implementing IPsec VPNs

12 **Group VPNs**

- Group VPN Overview
- Group VPN Configuration and Monitoring

Lab 9: Group VPNs

Day 4

13 **PKI and ADVPNs**

- Public Key Infrastructure Overview
- PKI Configuration
- ADVPN Overview
- ADVPN Configuration and Monitoring

Lab 10: PKI and ADVPNs

15 **Troubleshooting IPsec**

- IPsec Troubleshooting Overview
- Troubleshooting IKE Phase 1 and 2
- IPsec Logging
- IPsec Case Studies

Lab 12: Troubleshooting IPsec

14 **Advanced IPsec**

- NAT with IPsec
- Class of Service with IPsec
- Best Practices
- Routing OSPF over IPsec
- IPsec with Overlapping Addresses
- IPsec with Dynamic Gateway IP Addresses

Lab 11: Advanced IPsec VPN Solutions

16 **Chassis Cluster Concepts**

- Chassis Clustering Overview
- Chassis Cluster Components
- Chassis Cluster Operation

Day 5

17 **Chassis Cluster Implementation**

- Chassis Cluster Configuration
- Advanced Chassis Cluster Options

Lab 14: Implementing Chassis Clusters

A **SRX Series Hardware**

- Branch SRX Platform Overview
- Mid-Range SRX Platform Overview
- High-End SRX Platform Overview
- SRX Traffic Flow and Distribution
- SRX Interfaces

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Troubleshooting Chassis Clusters

- Troubleshooting Chassis Clusters
- Chassis Cluster Case Studies

Lab 14: Troubleshooting Chassis Clusters

B

Virtual SRX

- Virtualization Overview
- Network Virtualization and SDN
- Overview of the Virtual SRX
- Deployment Scenarios
- Integration with AWS