

# Advanced Junos Security (AJSEC)

This three-day course, which is designed to build off of the current Junos Security (JSEC) offering, delves deeper into Junos security with advanced coverage of IPsec deployments, virtualization, high availability, advanced Network Address Translation (NAT) deployments, and Layer 2 security with SRX Services Gateway devices. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring advanced security features of the Junos operating system.

## What You'll Learn

- Security supported by the Junos OS
- Junos security handling at Layer 2 vs. Layer 3
- Placement and traffic distribution of the various components of SRX devices
- Configure, utilize, and monitor the various interface types available to the SRX Series product line
- Junos OS processing of Application Layer Gateways (ALGs)
- Alter the Junos default behavior of ALG and application processing
- Implement address books with dynamic addressing
- Compose security policies utilizing ALGs, custom applications, and dynamic addressing for various scenarios
- Junos debugging tools to analyze traffic flows and identify traffic processing patterns and problems
- Junos routing instance types used for virtualization
- Implement virtual routing instances
- Configure route sharing between routing instances using logical tunnel interfaces
- Implement selective packet-based forwarding
- Implement filter-based forwarding
- Implement static, source, destination, and dual NAT in complex LAN environments
- Implement variations of cone or persistent NAT
- Interaction between NAT and security policy
- Implement optimized chassis clustering
- IP version 6 (IPv6) support for chassis clusters
- Differentiate and configure standard point-to-point IP Security (IPsec) virtual private network (VPN) tunnels, hub-and-spoke VPNs, dynamic VPNs, and group VPNs
- Implement OSPF over IPsec tunnels and utilize generic routing encapsulation (GRE) to interconnect to legacy firewalls
- Monitor the operations of the various IPsec VPN implementations
- Public key cryptography for certificates
- Junos tools for troubleshooting Junos security implementations
- Perform successful troubleshooting of some common Junos security issues

## Who Should Attend

- Network technicians and engineers responsible for implementing, monitoring, and troubleshooting Junos security components.

## Prerequisites

- Introduction to the Junos Operating System (IJOS)
- Junos Routing Essentials (JRE)
- Junos Security (JSEC)

## Follow-on Course

## Course Contents

## *Day 1*

### **Chapter 1: Course Introduction**

### **Chapter 2: AppSecure**

- AppSecure Overview
- AppID
- AppTrack
- AppFW
- AppDoS
- AppQoS
- Lab 1: Implementing AppSecure

### **Chapter 3: Junos Layer 2 Packet Handling and Security Features**

- Transparent Mode Security
- Layer 2 Ethernet Switching
- Lab 2: Implementing Layer 2 Security

### **Chapter 4: Virtualization**

- Virtualization Overview
- Routing Instances
- Logical Systems
- Lab 3: Implementing Junos Virtual Routing

## *Day 2*

### **Chapter 5: Advanced NAT Concepts**

- Operational Review
- NAT: Beyond Layer 3 and Layer 4 Headers
- DNS Doctoring
- IPv6 NAT
- Advanced NAT Scenarios
- Lab 4: Advanced NAT Implementations

### **Chapter 6: IPsec Implementations**

- Standard VPN Implementations Review
- Public Key Infrastructure
- Hub-and-Spoke VPNs
- Lab 5: Hub-and-Spoke IPsec VPNs

## *Day 3*

### **Chapter 7: Enterprise IPsec Technologies: Group and Dynamic VPNs**

- Group VPN Overview
- GDOI Protocol
- Group VPN Configuration and Monitoring
- Dynamic VPN Overview
- Dynamic VPN Implementation
- Lab 6: Configuring Group VPNs

## **Chapter 8: IPsec VPN Case Studies and Solutions**

- Routing over VPNs
- IPsec with Overlapping Addresses
- Dynamic Gateway IP Addresses
- Enterprise VPN Deployment Tips and Tricks
- Lab 7: Implementing Advanced IPsec VPN Solutions

## **Chapter 9: Troubleshooting Junos Security**

- Troubleshooting Methodology
- Troubleshooting Tools
- Identifying IPsec Issues
- Lab 8: Performing Security Troubleshooting Techniques

## **Appendix A: SRX Series Hardware and Interfaces**

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