Introduction to the Junos Operating System

Duration: 3 Days Course Code: IJOS Version: 19.2

Overview:

This three-day course provides students with the foundational knowledge required to work with the Junos operating system and to configure Junos devices. The course provides a brief overview of the Junos device families and discusses the key architectural components of the software. Key topics include user interface options with a heavy focus on the command-line interface (CLI), configuration tasks typically associated with the initial setup of devices, interface configuration basics with configuration examples, secondary system configuration, and the basics of operational monitoring and maintenance of Junos devices. The course then delves into foundational routing knowledge and configuration examples including general routing concepts, routing policy, and firewall filters. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and monitoring basic device operations. This course is based on Junos OS Release 19.2R1.8.

Target Audience:

Individuals responsible for configuring and monitoring devices running the Junos OS.

Objectives:

- **After you complete this course you will be able to:**
- Describe the basic design architecture of the Junos OS.
- Navigate within the Junos CLI.
- Perform tasks within the CLI operational and configuration modes.
- Restore a Junos device to its factory-default state.
- Perform initial configuration tasks.
- Configure and monitor network interfaces.
- Describe user configuration and authentication options.
- Perform secondary configuration tasks for features and services such as system logging (syslog) and tracing, Network Time Protocol (NTP), configuration archival, and SNMP.
- Monitor basic operation for the Junos OS and devices.
- Identify and use network utilities.
- Upgrade the Junos OS.
- Perform file system maintenance and password recovery on a Junos device.
- Navigate within the Junos J-Web interface.
- Explain basic routing operations and concepts.
- View and describe routing and forwarding tables.
- Configure and monitor static routing.
- Configure and monitor OSPF.
- Explain the evaluation of routing policy and firewall filters.
- Identify instances where you might use routing policy.
- Write and apply a routing policy.
- Identify instances where you might use firewall filters.
- Write and apply a firewall filter.
- Describe the operation and configuration for unicast reverse path forwarding (RPF).
- Follow recommended procedure to open a JTAC support case.
- Access support resources.
- Use the customer support Website.
- Access and use customer support tools
- Use FTP to transfer large files to JTAC.
- Identify high-level security challenges in today's networks.
- Explain the value of implementing security solutions.
- Identify key factors in Juniper Networks' security focus.
- Describe some differences between IPv4 and IPv6.
- List IPv6 address types and describe the IPv6 addressing format.
- Enable an interface for IPv6 operation.
- Configure and monitor routing for IPv6 environments.
- Tunnel IPv6 traffic over and IPv4 network.

- Describe the framework for routing policy and firewall filters.

Prerequisites:

Attendees should meet the following prerequisites:

- Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite.

Testing and Certification

The Introduction to the Junos Operating System (IJOS) is recommended preparation for the JNCIA-Junos (JNO-102) exam

Follow-on-Courses:

- JIR - Junos Intermediate Routing
- JSE - Junos Space Essentials

Content:

Junos Operating System Fundamentals

- The Junos OS
- Traffic Processing
- Overview of Junos Devices

User Interface Options: The Junos CLI

- User Interface Options
- The Junos CLI: CLI Basics
- The Junos CLI: Operational Mode
- The Junos CLI: Configuration Mode

User Interface Options: The J-Web Interface

- User Interface Options
- The Junos CLI: CLI Basics
- The Junos CLI: Operational Mode
- The Junos CLI: Configuration Mode
- Lab 1: User Interface Options

Initial Configuration

- Factory-Default Configuration
- Initial Configuration
- Interface Configuration
- Lab 2: Initial System Configuration

Secondary System Configuration

- User Configuration and Authentication
- System Logging and Tracing
- Network Time Protocol
- Archiving Configurations
- SNMP
- Lab 3: Secondary System Configuration

Operational Monitoring and Maintenance

- Monitoring Platform and Interface Operation
- Network Utilities
- Maintaining the Junos OS
- Password Recovery
- System Clean-Up
- Lab 4: Operational Monitoring and Maintenance

Interface Configuration Examples

- Review of the Interface Configuration Hierarchy
- Interface Configuration Examples
- Using Configuration Groups

Routing Fundamentals

- Routing Concepts: Overview of Routing
- Routing Concepts: The Routing Table
- Routing Concepts: Routing Instances
- Static Routing
- Dynamic Routing
- Lab 5: Routing Fundamentals

Routing Policy

- Routing Policy Overview
- Case Study: Routing Policy
- Lab 6: Routing Policy

Firewall Filters

- Firewall Filters Overview
- Case Study: Firewall Filters
- Unicast Reverse-Path-Forwarding Checks
- Lab 7: Firewall Filters

Class of Service

- CoS Overview
- Traffic Classification
- Traffic Queueing
- Traffic Scheduling
- Case Study: CoS
- Lab 8: Class of Service

JTAC Procedures

- Opening a Support Case
- Customer Support Tools
- Transferring Files to JTAC

Juniper Security Concepts

- Security Challenges
- Juniper Networks' Security Focus

Apendix A: IPv6 Fundamentals

- IPv6 Addressing
- Protocols and Services
- Configuration

Additional Information:

RELEVANT JUNIPER PRODUCTSACX SeriesAppsecureContrailEX SeriesJSA SeriesJunos OSJunos SpaceM SeriesMX SeriesNFX SeriesPTX SeriesQFabricQFX SeriesSRX SeriesT Series

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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