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## Junos Troubleshooting in the NOC

**Duration: 3 Days**    **Course Code: JTNOG**

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### Overview:

This three-day course is designed to provide introductory troubleshooting skills for engineers in a network operations center (NOC) environment. Key topics within this course include troubleshooting methodology, troubleshooting tools, hardware monitoring and troubleshooting, interface monitoring and troubleshooting, troubleshooting the data plane and control plane on devices running the Junos operating system, staging and acceptance methodology, troubleshooting routing protocols, monitoring the network, and working with JTAC.

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### Target Audience:

This course is designed for: Operators of devices running the Junos OS in a NOC environment. These operators include network engineers, administrators, support personnel, and reseller support personnel.

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### Objectives:

- Upon completing this course, the learner will be able to meet these overall objectives:
  - Reduce the time it takes to identify and isolate the root cause of an issue impacting your network.
  - Gain familiarity with Junos products as they pertain to troubleshooting.
  - Become familiar with online resources valuable to Junos troubleshooting.
  - Gain familiarity with Junos tools used in troubleshooting.
  - Identify and isolate hardware issues.
  - Troubleshoot problems with the control plane.
  - Troubleshoot problems with interfaces and other data plane components.
  - Describe the staging and acceptance methodology.
  - Troubleshoot routing protocols.
  - Describe how to monitor your network with SNMP, RMON, Junos Traffic Vision (formerly known as JFlow), and port mirroring.
  - Become familiar with JTAC procedures.
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### Prerequisites:

The knowledge and skills that a learner must have before attending this course are as follows:

- Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite
- To gain the prerequisite skills and knowledge, Juniper strongly recommends the knowledge of the following courses:
- Introduction to the Junos Operating System (IJOS)
  - Junos Routing Essentials (JRE)

### Testing and Certification

Recommended as preparation for:

- JN0-690 - Junos Troubleshooting
- JN0-690 is one of the exams required for the Juniper Support Certification Tracks.
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## Content:

### Troubleshooting as a Process

- Before You Begin
- The Troubleshooting Process
- Challenging Network Issues
- The Troubleshooting Process Lab

### Junos Product Families

- The Junos OS
- Control Plane and Data Plane
- Field-Replaceable Units
- Junos Product Families
- Identifying Hardware Components Lab

### Troubleshooting Toolkit

- Troubleshooting Tools
- Best Practices
- Monitoring Tools and Establishing a Baseline Lab

### Hardware and Environmental Conditions

- Hardware Troubleshooting Overview
- Memory and Storage
- Boot Monitoring
- Hardware-Related System Logs
- Chassis and Environmental Monitoring
- Monitoring Hardware and Environmental Conditions Lab

### Control Plane

- Control Plane Review
- System and User Processes
- Monitoring Routing Tables and Protocols
- Monitoring Bridging
- Monitoring the Address Resolution Protocol
- Control Plane Monitoring and Troubleshooting Lab

### Data Plane: Interfaces

- Interface Properties
- General Interface Troubleshooting
- Ethernet Interface Troubleshooting
- Monitoring and Troubleshooting Ethernet Interfaces Lab

### Data Plane: Other Components

- Definition of a Data Plane Problem
- Data Plane Components
- Data Plane Forwarding
- Load-Balancing Behavior
- Firewall Filters and Policers
- Data Plane Troubleshooting Case Study
- Isolate and Troubleshoot PFE Issues Lab

### Staging and Acceptance Testing

- Physical Inspection and Power-on
- General System Checks
- Interface Testing

### Troubleshooting Routing Protocols

- Troubleshooting OSPF
- Troubleshooting BGP
- Troubleshooting Routing Loops and Route Oscillation
- Troubleshooting Routing Protocols Lab

### High Availability

- High Availability Overview
- Graceful Routing Engine Switchover
- Graceful Restart
- Nonstop Active Routing and Bridging
- Unified In-Service Software Upgrade

### Network Monitoring

- SNMP
- RMON
- Flow Monitoring
- Monitoring the Network Lab

### JTAC Procedures

- Opening a Support Case
- Customer Support Tools
- The Content of a PR
- Transferring Files to JTAC

## Further Information:

For More information, or to book your course, please call us on +254 713 027 191

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