Junos Troubleshooting in the NOC

Duration: 3 Days   Course Code: JTNOC   Version: 17.a

Overview:

This four-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, securing the control plane, staging and acceptance methodology, troubleshooting routing protocols, monitoring the network, troubleshooting vMX devices, working with JTAC, and using Automated Support and Prevention (ASAP). This course uses virtual MX devices in the lab and is based on Junos OS Release 17.3R1.10.

Target Audience:

The course content is aimed at operators of devices running the Junos OS in a NOC environment. These operators include network engineers, administrators, support personnel, and reseller support personnel.

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.

- Describe control plane protection features.

- 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 Telemetry Interface, Junos Traffic Vision (formerly known as JFlow), and port mirroring.

- Monitor and troubleshoot vMX routers.

- Become familiar with JTAC procedures.

- Become familiar with Automated Support and Prevention tools in Junos Space.

Content:

Day 1:

1. Course Introduction

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

- The Junos OS
- Control Plane and Data Plane
- Field-Replaceable Units
- Junos Product Families
- Lab 1: Identifying Hardware Components

4 .Troubleshooting Toolkit :

- Troubleshooting Tools
- Best Practices
- Lab 2: Monitoring Tools and Establishing a Baseline

5. Hardware and Environmental Conditions:

- Hardware Troubleshooting Overview
- Memory and Storage
- Boot Monitoring
- Hardware-Related System Logs
- Chassis and Environmental Monitoring
- Lab 3: Monitoring Hardware and Environmental Conditions
- 6 Control Plane
- Control Plane Review
- System and User Processes
- Monitoring Routing Tables and Protocols
- Monitoring Bridging
- Monitoring the Address Resolution Protocol
- Lab 4: Control Plane Monitoring and Troubleshooting

7. Control Plane Protection :

- Protection Overview
- DDOS Protection
- Loopback Filter
- Lab 5: Monitoring and Verifying DDOS Protection

8. Data Plane – Interfaces:

- Interface Properties
- General Interface Troubleshooting
- Ethernet Interface Troubleshooting
- Lab 6: Monitoring and Troubleshooting Ethernet Interfaces

Day 3:

9 .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
- Lab 7: Isolate and Troubleshoot PFE Issues

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

11. Troubleshooting Routing Protocols :

- Troubleshooting OSPF
- Troubleshooting BGP
- Troubleshooting Routing Loops and Remote Oscillation
- Lab 8: Troubleshooting Routing Protocols

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

Day 4:

11. Troubleshooting Routing Protocols:

- Troubleshooting OSPF
- Troubleshooting BGP
- Troubleshooting Routing Loops and Remote Oscillation
- Lab 8: Troubleshooting Routing Protocols

12. High Availability:

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

13. Network Monitoring :

- SNMP
- RMON
- Telemetry
- Flow Monitoring
- Lab 9: Monitoring the Network

14 .vMX Troubleshooting:

- vMX Overview
- Troubleshooting
- Lab 10: Monitoring vMX

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

16 .Automated Support and Prevention :

- Overview
- Service Now
- Service Insight
- Lab 11: Automated Support and Prevention

A Interface Troubleshooting :

- Interface Troubleshooting Chart
- Troubleshooting Various Interface Types

Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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