Enterprise Computing Solutions - Education Services

TRAINING OFFERING

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Junos Troubleshooting in the NOC (JTNOC)

CODE:	LENGTH:	PRICE:
JUN_JTNOC	32 Hours (4 days)	£3,400.00

Description

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, and working with JTAC.
This course uses virtual MX devices in the lab and is based on Junos OS Release 19.3R2.
The Junos Troubleshooting in the NOC (JTNOC) course is an introductory-level course. Relevant Juniper Product
• Software • Junos OS • Support • Routing • Switching • EX Series • SRX Series • M Series • MX Series • PTX Series • T Series • Service Provider Routing and Switching Track • Enterprise Routing and Switching Track

Objectives

After successfully completing this course, you should be able to:
• Reduce the time it takes to identify and isolate the root cause of an issue impacting your network.
• Describe Junos products and related information and recovery options.
• List various tools that can be used to troubleshoot Junos devices. • Explain Junos CLI commands 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. • Describe JTAC procedures and how to navigate the customer support site.

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.

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 attend the Introduction to the Junos Operating System (IJOS) course, or have equivalent experience prior to attending this class.

Programme

Day 1 Course Introduction Troubleshooting as a Process • Before You Begin • The Troubleshooting Process
• Challenging Network Issues Junos Product Families • The Junos OS • Control Plane and Data Plane • Field-Replaceable Units
• Junos Product Families Lab 1: Identifying Hardware Components Troubleshooting Toolkit • Troubleshooting Tools
• Best Practices Lab 2: Monitoring Tools and Establishing a Baseline Day 2 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 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 Control Plane Protection
• Protection Overview • DDoS Protection • Loopback Filter Lab 5: Monitoring and Verifying DDoS Protection

Data Plane – Interfaces • Interface Properties • General Interface Troubleshooting • Ethernet Interface Troubleshooting
Lab 6: Monitoring and Troubleshooting Ethernet Interfaces Day 3 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
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 Remote Oscillation Lab 8: Troubleshooting Routing Protocols High Availability
• High Availability Overview • Graceful routing Engine Switchover • Graceful Restart • Nonstop Active Routing and Bridging
• Unified In-Service Software Upgrade Day 4 Network Monitoring • SNMP • RMON • Telemetry • Flow Monitoring
Lab 9: Monitoring the Network vMX Troubleshooting • vMX Overview • Troubleshooting Lab 10: Monitoring vMX JTAC Procedures
• Opening a Support Case • Customer Support Tools • The Content of a PR • Transferring Files to JTAC
The following Appendices be covered, if time permits, and are requested by the delegate/s prior to booking:
Appendix A: Interface Troubleshooting • Interface Troubleshooting Chart • Troubleshooting Various Interface Types
Appendix B: Junos RPM • RPM Overview • RPM Components • RPM Configuration • RPM Monitoring

Further Information

Day 1 Chapter 1: Course Introduction Chapter 2: Troubleshooting as a Process Before You Begin The Troubleshooting Process Challenging Network Issues The Troubleshooting Process Lab Chapter 3: Junos Product Families The Junos OS Control Plane and Data Plane Field-Replaceable Units Junos Product Families Identifying Hardware Components Lab Chapter 4: Troubleshooting Toolkit Troubleshooting Tools Best Practices Monitoring Tools and Establishing a Baseline Lab Day 2 Chapter 5: 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 Chapter 6: 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 Chapter 7: Data Plane: Interfaces Interface Properties General Interface Troubleshooting Ethernet Interface Troubleshooting Monitoring and Troubleshooting Ethernet Interfaces Lab Chapter 8: 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 Day 3 Chapter 9: Staging and Acceptance Testing Physical Inspection and Power-on General System Checks Interface Testing Chapter 10: Troubleshooting Routing Protocols Troubleshooting OSPF Troubleshooting BGP Troubleshooting Routing Loops and Route Oscillation Troubleshooting Routing Protocols Lab Chapter 11: High Availability High Availability Overview Graceful Routing Engine Switchover Graceful Restart Nonstop Active Routing and Bridging Unified In-Service Software Upgrade Chapter 12: Network Monitoring SNMP RMON Flow Monitoring Monitoring the Network Lab Chapter 13: JTAC Procedures Opening a Support Case Customer Support Tools The Content of a PR Transferring Files to JTAC Appendix A: Interface Troubleshooting Interface Troubleshooting Chart Troubleshooting Various Interface Types

Session Dates

On request. Please Contact Us

Additional Information

This training is also available as onsite training. Please contact us to find out more.