

Advanced HPE Networking Junos OS troubleshooting

Revision 26A

Course overview

This three-day, advanced-level course provides network engineers with advanced skills to diagnose and resolve complex failures on devices running HPE Networking Junos OS. Using a consistent lab environment based on the XYZ Corporation network, students troubleshoot realistic fault scenarios across switching, routing, MPLS, security, and multicast domains. The course covers a broad range of technologies, including Ethernet switching, Ethernet VPN–Virtual Extensible LAN (EVPN-VXLAN) IP fabrics, OSPF, IS-IS, BGP, MPLS Layer 3 VPNs (L3VPNs), stateful firewall security, SRX chassis clusters, site-to-site and remote access IPsec VPNs, application security, multicast, and class of service (CoS). Each topic follows a structured troubleshooting methodology that students can apply to production networks.

Through instructor-led scenarios and hands-on labs, students develop systematic troubleshooting workflows and gain practical experience isolating and fixing root causes. This course is based on Junos OS Release 25.2R1.8.

Course level

Advanced-level course

Audience

The primary audience for this course includes:

- Network engineers responsible for operating and maintaining HPE Networking Junos Operating System devices in enterprise or service provider environments.
- Network engineers who diagnose and resolve complex failures across routing, switching, MPLS, and security domains.
- Individuals preparing for the Juniper Networks Certified Internet Specialist (JNCIS) or higher certification tracks.

Prerequisites

- Completion of the [Junos Intermediate Routing](#) and [Junos Troubleshooting](#) courses, or equivalent experience
- Working knowledge of OSPF, IS-IS, and BGP configuration and operation on Junos OS
- Working knowledge of Ethernet switching, VLANs, and aggregated Ethernet on HPE Networking EX switches
- Familiarity with SRX firewalls, including security zones, security policies, and the Junos OS flow module
- Understanding of MPLS and L3VPN concepts is recommended but not required

Related products

- HPE Networking Junos Operating System
- HPE Networking EX Switches
- HPE Juniper Networking MX Routers

- HPE Networking SRX Firewalls

Objectives

- Troubleshoot Ethernet switching.
- Troubleshoot a data center IP fabric.
- Troubleshoot OSPF routing.
- Troubleshoot IS-IS routing.
- Troubleshoot BGP routing.
- Troubleshoot route oscillation and routing loops.
- Troubleshoot MPLS networks.
- Troubleshoot stateful firewall security.
- Troubleshoot SRX chassis clusters.
- Troubleshoot IPsec VPNs.
- Troubleshoot remote access VPNs.
- Troubleshoot AppSecure services.
- Troubleshoot multicast networks.
- Troubleshoot CoS.

Course contents

DAY 1

Module 01: Introduction to the course network

- Explain the headquarters data center network
- Discuss the service provider network
- Describe the remote branch office network
- Describe the capabilities of the Junos MCP server
- **Lab 01: Examining the lab network**

Module 02: Troubleshooting Ethernet switching

- Diagnose and repair common Ethernet switching problems
- **Lab 02: Troubleshooting Ethernet switching**

Module 03: Troubleshooting a data center IP fabric

- Troubleshoot the EVPN-VXLAN IP fabric in the headquarters data center
- **Lab 03: Troubleshooting the headquarters IP fabric**

Module 04: Troubleshooting OSPF

- Troubleshoot OSPF adjacencies in a single-area network
- Troubleshoot OSPF routing in a multi-area network
- **Lab 04: Troubleshooting OSPF**

Module 05: Troubleshooting IS-IS

- Troubleshoot IS-IS adjacencies
- Troubleshoot IS-IS routing in a multi-area network
- **Lab 05: Troubleshooting IS-IS**

DAY 2

Module 06: Troubleshooting BGP

- Troubleshoot BGP adjacencies
- Troubleshoot BGP routing
- **Lab 06: Troubleshooting BGP**

Module 07: Troubleshooting route oscillation and routing loops

- Diagnose and repair route oscillations and routing loops
- **Lab 07: Troubleshooting route oscillations and routing loops**

Module 08: Troubleshooting MPLS

- Diagnose and repair MPLS Layer 3 VPN services
- **Lab 08: Troubleshooting MPLS**

Module 09: Troubleshooting stateful firewall security

- Diagnose and repair security problems on a stateful firewall
- **Lab 09: Troubleshooting stateful security**

Module 10: Troubleshooting chassis clusters

- Diagnose and repair out-of-band cluster management
- Diagnose and repair fabric link issues
- Diagnose and repair data plane issues
- **Lab 10: Troubleshooting SRX chassis clusters**

DAY 3

Module 11: Troubleshooting IPsec VPNs

- Diagnose and repair IPsec tunnel failures
- Diagnose and repair IPsec tunnel connectivity
- **Lab 11: Troubleshooting IPsec VPNs**

Module 12: Troubleshooting remote access VPNs

- Diagnose and repair remote access VPN issues
- **Lab 12: Troubleshooting remote access VPNs**

Module 13: Troubleshooting application security

- Diagnose and repair problems implementing application security
- **Lab 13: Troubleshooting application security**

Module 14: Troubleshooting multicast

- Diagnose and repair problems with multicast networks
- **Lab 14: Troubleshooting multicast**

Module 15: Troubleshooting class of service

- Explain the CoS topology
- Diagnose and repair CoS-based IPsec VPNs
- Diagnose and repair CoS problems within the service provider network
- **Lab 15: Troubleshooting class of service**

SELF-STUDY MODULES

Module 16: Junos OS troubleshooting commands

- Examine helpful Junos OS troubleshooting commands

Resources

[All-Access Training Pass](#)

[On-Demand](#)

[Courses](#)

[Schedule](#)

[Learning Paths](#)

[Certification](#)

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