

COURSE OVERVIEW

This three-day course provides students with the knowledge to troubleshoot switching, routing, and security features. This course builds off the *Juniper Technical Support Fundamentals* and *Junos Troubleshooting* courses and helps network engineers further their network troubleshooting capabilities. Key topics include troubleshooting dynamic routing protocols such as OSPF, IS-IS, BGP, switching protocols, Ethernet VPN–Virtual Extensible LAN (EVPN-VXLAN) network, MPLS, multicast, class of service (CoS), stateful firewall features, IPsec VPNs (site-to-site and remote access), chassis clusters, next-generation firewall features, and vSRX Series devices. The course is based on Junos OS Release 23.1R1.

COURSE LEVEL

Advanced

AUDIENCE

Individuals responsible for troubleshooting Juniper devices running Junos OS, which includes network operators, engineers, administrators, support personnel, and reseller support personnel

PREREQUISITES

- [Junos Troubleshooting](#) course, or equivalent knowledge

RELATED JUNIPER PRODUCTS

- SRX Series
- QFX Series
- MX Series
- vSRX

RECOMMENDED NEXT COURSE

- [Advanced Junos Enterprise Switching](#)
- [Advanced Junos Enterprise Routing](#)
- [Advanced Juniper Security](#)
- [Advanced Junos Service Provider Routing](#)
- [Junos Layer 3 VPNs](#)
- [Junos Layer 2 VPNs](#)
- [Junos Multicast Routing](#)
- [Junos Class of Service](#)

CONTACT YOUR REGIONAL EDUCATION SERVICES TEAM:

Americas: training-amer@juniper.net

EMEA: training-emea@juniper.net

APAC: training-apac@juniper.net

OBJECTIVES

- Describe components of the network used in the course and discuss the network topology.
- Discuss common problems related to implementation of Ethernet switching.
- Discuss common problems related to implementation of IP fabric with EVPN-VXLAN protocols.
- Diagnose problems with OSPF adjacencies and provide solutions.
- Diagnose problems with OSPF routing and provide solutions.
- Diagnose problems with IS-IS adjacencies and provide solutions.
- Diagnose problems with IS-IS routing and provide solutions.
- Diagnose problems with BGP adjacencies and provide solutions.
- Diagnose problems with BGP routing and provide solutions.
- Diagnose and solve problems with route oscillations and routing loops.
- Diagnose problems with the MPLS Layer 3 VPN service and provide solutions.
- Diagnose problems with stateful firewalls and provide solutions.
- Diagnose problems with chassis cluster out-of-band management and provide solutions.
- Diagnose problems with chassis cluster fabric link and provide solutions.
- Diagnose problems with chassis cluster data plane and provide solutions.
- Diagnose problems with IPsec VPN establishment and provide solutions.
- Diagnose problems with traffic flow through IPsec VPN and provide solutions.
- Diagnose problems with remote access VPN establishment and provide solutions.
- Diagnose problems with the implementation of next-generation firewall features and provide solutions.
- Diagnose problems with multicast implementation and provide solutions.
- Diagnose problems with CoS-based IPsec VPNs and provide solutions.
- Diagnose problems with consistent CoS implementation across the network and provide solutions.

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COURSE CONTENTS

DAY 1

1	Course Introduction
2	Introduction to the Course Network <ul style="list-style-type: none">Describe components of the network used in the course and discuss the network topology Lab 1: Introduction to the Course Network
3	Troubleshooting Switching <ul style="list-style-type: none">Discuss common problems related to implementation of Ethernet switching Lab 2: Troubleshooting Ethernet Switching
4	Troubleshooting IP Fabrics with EVPN-VXLAN Architecture <ul style="list-style-type: none">Discuss common problems related to implementation of IP fabric with EVPN-VXLAN protocols Lab 3: Troubleshooting EVPN-VXLAN IP Fabric
5	Troubleshooting OSPF <ul style="list-style-type: none">Diagnose problems with OSPF adjacencies and provide solutionsDiagnose problems with OSPF routing and provide solutions Lab 4: Troubleshooting OSPF
6	Troubleshooting IS-IS <ul style="list-style-type: none">Diagnose problems with IS-IS adjacencies and provide solutionsDiagnose problems with IS-IS routing and provide solutions Lab 5: Troubleshooting IS-IS

DAY 2

7	Troubleshooting BGP <ul style="list-style-type: none">Diagnose problems with BGP adjacencies and provide solutionsDiagnose problems with BGP routing and provide solutions Lab 6: Troubleshooting BGP
8	Troubleshooting Route Oscillations and Routing Loops <ul style="list-style-type: none">Diagnose and solve problems with route oscillations and routing loops Lab 7: Troubleshooting Route Oscillations and Routing Loops
9	Troubleshooting MPLS <ul style="list-style-type: none">Diagnose problems with the MPLS Layer 3 VPN service and provide solutions Lab 8: Troubleshooting MPLS
10	Troubleshooting Stateful Firewall Security <ul style="list-style-type: none">Diagnose and solve problems with stateful firewalls and provide solutions Lab 9: Troubleshooting Stateful Firewall Security
11	Troubleshooting Chassis Clusters <ul style="list-style-type: none">Diagnose problems with chassis cluster out-of-band management and provide solutionsDiagnose problems with chassis cluster fabric link and provide solutionsDiagnose problems with chassis cluster data plane and provide solutions Lab 10: Troubleshooting Chassis Clusters

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COURSE CONTENTS (continued)

DAY 3

- 12 Troubleshooting IPsec VPNs**
- Diagnose problems with IPsec VPN establishment and provide solutions
 - Diagnose problems with traffic flow through IPsec VPN and provide solutions

Lab 11: Troubleshooting IPsec VPNs

- 13 Troubleshooting Remote Access VPNs**
- Diagnose problems with remote access VPN establishment and provide solutions

Lab 12: Troubleshooting Remote Access VPNs

- 14 Troubleshooting Next-Generation Firewall Features**
- Diagnose problems with implementation of next-generation firewall features and provide solutions

Lab 13: Troubleshooting AppSecure

- 15 Troubleshooting Multicast**
- Diagnose problems with multicast implementation and provide solutions

Lab 14: Troubleshooting Multicast

- 16 Troubleshooting Class of Service**
- Diagnose problems with CoS-based IPsec VPNs and provide solutions
 - Diagnose problems with consistent CoS implementation across the network and provide solutions

Lab 15: Troubleshooting CoS

SELF-STUDY MODULE

- 17 Troubleshooting Commands**

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