Enterprise Routing and Switching, Professional (JNCIP-ENT)

Earn a professional-level certification that demonstrates competency in networking technology in general and Juniper Networks enterprise routing and switching platforms.

One of four certifications in the Enterprise Routing and Switching track, JNCIP-ENT, Professional, is designed for experienced networking professionals with advanced knowledge of Juniper Networks® Junos® operating system. During the written exam, you will verify your understanding of advanced routing technologies, related platform configuration, and troubleshooting skills.

Recommended Training

- Advanced Junos Enterprise Routing
- Advanced Junos Enterprise Switching

Exam Resources

- Industry/product knowledge
- Juniper TechLibrary

Additional Preparation

- Juniper Learning Portal

Exam Objectives

Here is a high-level view of the skillset required to successfully complete the JNCIP-ENT certification exam.

Interior Gateway Protocols (IGPs)

Describe the concept, operation, or functionality of IGPs:

- OSPFv2
- OSPFv3
- Routing policy

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor IGPs.

Border Gateway Protocol (BGP)

Describe the concept, operation, or functionality of BGP:

- BGP route selection process
- Next-hop resolution
- BGP attributes—concept and operation
- BGP communities
- Load balancing—multipath, multihop, forwarding table
- Network Layer Reachability Information (NLRI) families—inet, inet6
- Advanced BGP options

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor BGP:

- Implement BGP routing policy

IP Multicast

Describe the concept, operation, or functionality of IP multicast:

- Components of IP multicast, including multicast addressing
- IP multicast traffic flow
- Any-source multicast (ASM) vs. source-specific multicast (SSM)
- Reverse Path Forwarding (RPF)—concept and operation
- Internet Group Management Protocol (IGMP), IGMP snooping
- Protocol Independent Multicast (PIM) sparse-mode
- Rendezvous point (RP)—concept, operation, discovery, election
- Anycast RP
- Multicast Source Discovery Protocol (MSDP)
- Routing policy and scoping

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor IP multicast:

- IGMP, PIM-SM (including SSM)
- Implement IP multicast routing policy

Ethernet Switching and Spanning Trees

Describe the concept, operation, or functionality of advanced Ethernet switching:

- Filter-based VLANs
- Private VLANs
- Dynamic VLAN registration using Multiple VLAN Registration Protocol (MVRP)
- Tunnel Layer 2 traffic through Ethernet networks
- Layer 2 tunneling using Q-in-Q and L2PT

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor advanced Ethernet Switching:

- Filter-based VLANs
- Dynamic VLAN registration using MVRP
- Tunnel Layer 2 traffic through Ethernet networks
- Layer 2 tunneling using Q-in-Q and L2PT

Describe the concept, operation, or functionality of advanced spanning-tree protocols, including MSTP or VSTP.

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor MSTP or VSTP.

L2 Authentication and Access Control

Describe the operation of various Layer 2 authentication or access control features:

- Authentication process flow
- 802.1X—concepts and functionality
- MAC RADIUS
- Captive portal
- Server fail fallback
- Guest VLAN
- Considerations when using multiple authentication/access control methods

Given a scenario, demonstrate how to configure, troubleshoot, or monitor Layer 2 authentication or access control.

IP Telephony Features

Describe the concept, operation, or functionality of features that facilitate IP telephony deployments:

- Power over Ethernet (PoE)
- LLDP and LLDP-MED
- Voice VLAN

Given a scenario, demonstrate how to configure, troubleshoot, or monitor features used to support IP telephony deployments.

Class of Service (CoS)

Describe the concept, operation, or functionality of Junos CoS for Layer 2/3 networks:

- CoS processing on Junos devices
- CoS header fields
- Forwarding classes
- Classification
- Packet loss priority
- Policers
- Schedulers
- Drop profiles
- Shaping
- Rewrite rules

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor CoS for Layer 2 or 3 networks.

EVPN

Describe the concept, operation, or functionality of Junos EVPN:

- Route types (e.g., Type 1, 2 3)
- VXLAN
- Multihoming (e.g., active route types)

Given a scenario, demonstrate knowledge of how to configure, troubleshoot, or monitor EVPN.

Exam Details

Exam questions are derived from the recommended training and the exam resources listed above. Pass/fail status is available immediately after taking the exam. The exam is only provided in English.

Exam Code

JN0-650

Prerequisite Certification

JNCIS-ENT

Delivered by

Pearson VUE

Exam Length

90 minutes

Exam Type

65 multiple-choice questions

Software Versions

Junos OS 24.4

Software Versions

Juniper certifications are valid for three years. For more information, see Recertification.

About Juniper Networks

Juniper Networks is leading the convergence of AI and networking. Mist™, Juniper's AI-native networking platform, is purpose-built to run AI workloads and simplify IT operations, assuring exceptional and secure user and application experiences—from the edge to the data center to the cloud. Additional information can be found at juniper.net, X, LinkedIn, and Facebook.

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