

# Enterprise Routing and Switching, Specialist (JNCIS-ENT)

*Earn a specialist-level certification that demonstrates competency in networking technology, plus enterprise routing and switching implementations with the Junos operating system.*

One of four certifications in the Enterprise Routing and Switching track, the JNCIS-ENT, specialist is designed for networking professionals wanting to advance their knowledge of routing and switching implementations using the Junos® operating system. During the written exam, you verify your basic understanding of routing and switching technologies and related platform configuration and troubleshooting skills.

## Exam Preparation

We recommend the following resources to help you prepare for your exam. However, these resources aren't required and using them doesn't guarantee you'll pass the exam.

### Recommended Training

- [Junos OS Intermediate Routing \(JIR\)](#)
- [Junos OS Enterprise Switching \(JEX\)](#)

### 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 JNCIS-ENT certification exam.

#### Layer 2 Switching or VLANs

Identify the concepts, operations, or functionalities of Layer 2 switching for the Junos OS:

- Bridging components

- Frame processing

Describe the concepts, benefits, or functionalities of VLANs:

- Ports
- Tagging
- Native VLANs and voice VLANs
- Inter-VLAN routing

Demonstrate knowledge how to configure, monitor, or troubleshoot Layer 2 switching or VLANs:

- Interfaces and ports
- VLANs
- Inter-VLAN routing

### **Spanning Tree**

Describe the concepts, benefits, operations, or functionalities of the Spanning Tree Protocol (STP):

- STP and Rapid Spanning Tree Protocol (RSTP) concepts
- Port roles and states
- Bridge Protocol Data Units (BPDUs)
- Convergence and reconvergence

Demonstrate knowledge on how to configure, monitor, or troubleshoot Spanning Tree:

- STP
- RSTP

### **Layer 2 Security**

Describe the concepts, benefits, or operations of various Layer 2 protection or security features:

- BPDU, loop or root protection
- Port security, including MAC limiting, DHCP snooping, Dynamic ARP inspection (DAI) or IP source guard
- MACsec
- Storm control

Describe the concepts, benefits, or operations of Layer 2 firewall filters:

- Filter types
- Processing order
- Match criteria and actions

Demonstrate knowledge how to configure, monitor, or troubleshoot Layer 2 security:

- Protection
- Port security
- Storm control
- Firewall filter configuration and application

### **Protocol-Independent Routing**

Describe the concepts, operations, or functionalities of various protocol-independent routing components:

- Static, aggregate, and generated routes
- Martian addresses
- Routing instances, including routing information base (RIB) groups
- Load balancing
- Filter-based forwarding

Demonstrate knowledge how to configure, monitor, or troubleshoot various protocol-independent routing components:

- Static, aggregate, and generated routes
- Load balancing
- Filter-based forwarding

### **Open Shortest Path First (OSPF)**

Describe the concepts, operations, or functionalities of OSPF:

- Link-state database
- OSPF packet types
- Router ID
- Adjacencies and neighbors

- Designated router (DR) and backup designated router (BDR)
- Basic single-area LSA information
- Metrics

Demonstrate knowledge how to configure, monitor, or troubleshoot OSPF:

- Interfaces and neighbors
- Routing policy application
- Troubleshooting tools

### **Intermediate System to Intermediate System (IS-IS)**

Describe the concepts, operations, or functionalities of IS-IS:

- Link-state database
- IS-IS Protocol Data Units (PDUs)
- Type, length, and values (TLVs)
- Adjacencies and neighbors
- Designated intermediate system (DIS)
- Metrics

Demonstrate knowledge of how to configure, monitor, or troubleshoot IS-IS:

- Interfaces and adjacencies
- Additional basic options
- Routing policy application
- Troubleshooting tools

### **BGP**

Describe the concepts, operations, or functionalities of BGP:

- BGP basic operation
- BGP message types
- Attributes
- Route/path selection process
- IBGP and EBGP functionality and interaction

Demonstrate knowledge of how to configure, monitor, or troubleshoot BGP:

- Groups and peers

- Additional basic options
- Routing policy application
- Troubleshooting tools

### **Tunnels**

Describe the concepts, requirements, or functionalities of IP tunneling:

- Tunneling applications and considerations
- Generic Routing Encapsulation (GRE)

Demonstrate knowledge of how to configure, monitor, or troubleshoot IP tunnels:

- GRE

### **High Availability**

Describe the concepts, benefits, applications, or requirements for high availability in a Junos OS environment:

- Link aggregation groups (LAG)
- Redundant trunk groups (RTG)
- Virtual chassis
- Graceful restart
- Graceful Routing Engine switchover (GRES)
- Nonstop active routing (NSR)
- Nonstop bridging (NSB)
- Bidirectional Forwarding Detection (BFD)
- Virtual Router Redundancy Protocol (VRRP)

Demonstrate knowledge of how to configure, monitor, or troubleshoot high availability components:

- LAG and RTG
- Virtual chassis
- GR, GRES, NSB, and NSR
- VRRP

## 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

JNO-352

### Prerequisite Certification

[JNCIA-Junos](#)

### Delivered by

[Pearson VUE](#)

### Exam Length

90 minutes

### Exam Type

65 multiple-choice questions

## Recertification

Juniper certifications are valid for three years. For more information, see [Recertification](#)