SERVICE PROVIDER ROUTING AND SWITCHING, SPECIALIST (JNCIS-SP)

Earn a specialist-level certification that demonstrates competency in routing and switching implementations in the Junos operating system

One of four certifications in the Service Provider Routing and Switching track, the JNCIS-SP, 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 Intermediate Routing
- Junos Service Provider Switching
- Junos MPLS Fundamentals

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-SP certification exam

Protocol-Independent Routing

Identify the concepts, operation, or functionality of various protocol-independent routing components:

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

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

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

OSPF

Identify the concepts, operation, or functionality of OSPF:

- Link-state database
- OSPF packet types
- Router ID
- Adjacencies and neighbors
- Designated router and backup designated router
- OSPF area and router types
- Link-state advertisement (LSA) packet types

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

- Areas, interfaces, and neighbors
- Additional basic options
- Routing policy application
- Troubleshooting tools

IS-IS

Identify the concepts, operation, or functionality of IS-IS:

- Link-state database
- IS-IS protocol data units (PDUs)
- Type, length, values (TLVs)
- Adjacencies and neighbors
- Levels and areas
- Designated intermediate system (DIS)
- Metrics

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

- Levels, interfaces, and adjacencies
- Additional basic options
- Routing policy application
- Troubleshooting tools

BGP

Identify the concepts, operation, or functionality of BGP:

- BGP basic operation
- BGP message types
- Attributes
- Route/path selection process
- Internal and external BGP (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

Layer 2 Bridging or VLANs

Identify the concepts, operation, or functionality of Layer 2 bridging for Junos OS:

- Service provider switching platforms
- Bridging elements and terminology
- Frame processing
- Virtual switches
- Provider bridging (Q-in-Q tunneling)

Identify the concepts, benefits, or functionality of VLANs:

- Port modes
- Tagging
- Integrated Routing and Bridging (IRB)

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

- Interfaces and ports
- VLANs
- IRB
- Provider bridging

Spanning-Tree Protocols

Identify the concepts, benefits, operation, or functionality of Spanning Tree Protocol and its variants:

- Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), and VLAN Spanning Tree Protocol (VSTP) concepts
- Port roles and states

- Bridge Protocol Data Units (BPDUs)
- Convergence and reconvergence
- Spanning-tree security

Demonstrate knowledge of how to configure, monitor, or troubleshoot STP and its variants:

- Spanning-tree protocols (STP, RSTP, MSTP, VSTP)
- BPDU, loop and root protection

MPLS

Identify the concepts, operation, or functionality of MPLS:

- MPLS terminology
- MPLS packet header
- End-to-end packet flow and forwarding
- Labels and the label information base
- MPLS and routing tables
- RSVP
- LDP
- Segment routing

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

- MPLS forwarding
- RSVP-signaled and LDP-signaled Label-Switched Paths (LSPs)

IPv6

Identify the concepts, operation, or functionality of IPv6:

- IPv4 versus IPv6
- Address types, notation, and format
- Address scopes
- Autoconfiguration
- Tunneling
- Interfaces
- Static routes
- Dynamic routing (OSPFv3, IS-IS, BGP)
- IPv6 over IPv4 tunneling

Demonstrate knowledge of how to configure, monitor, or troubleshoot IPv6:

Tunnels

Identify the concepts, requirements, or functionality 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

Identify the concepts, benefits, applications, or requirements of high availability:

- Link aggregation groups (LAGs) and multichassis LAGs (MC-LAGs)
- Graceful restart
- graceful Routing Engine switchover (GRES)
- Nonstop bridging (NSB)
- Nonstop active routing (NSR)
- Bidirectional Forwarding Detection (BFD)
- Virtual Router Redundancy Protocol (VRRP)
- Unified in-service software upgrade (unified ISSU)

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

- LAG
- Graceful restart, GRES, NSB, and NSR
- Virtual Router Redundancy Protocol (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

JN0-363

Prerequisite Certification

JNCIA-Junos

Delivered by

Pearson VUE

Exam Length

90 minutes

Exam Type

65 multiple-choice questions

Software Versions

- Junos OS 21.2

Recertification

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

About Juniper Networks

At Juniper Networks, we are dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world's greatest challenges of well-being, sustainability and equality.