

## **JNCIS-SP Exam Objectives (Exam: JN0-360)**

This list provides a general view of the skill set required to successfully complete the specified certification exam. Topics listed are subject to change.

### **Protocol-Independent Routing**

- Identify the concepts, operation and functionality of various protocol-independent routing components
- Static, aggregate, and generated routes
- Martian addresses
- Routing instances, including RIB groups
- Load balancing
- Filter-based forwarding
- Demonstrate knowledge of how to configure and monitor various protocol-independent routing components
- Static, aggregate, and generated routes
- Load balancing
- Filter-based forwarding

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

- Identify the concepts, operation and functionality of OSPF
- Link-state database
- OSPF packet types
- Router ID
- Adjacencies and neighbors
- Designated router (DR) and backup designated router (BDR)
- OSPF area and router types
- LSA packet types
- Demonstrate knowledge of how to configure, monitor and troubleshoot OSPF
- Areas, interfaces and neighbors
- Additional basic options
- Routing policy application
- Troubleshooting tools

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

- Identify the concepts, operation and functionality of IS-IS
- Link-state database
- IS-IS PDUs
- TLVs
- Levels and areas
- Designated intermediate system (DIS)
- Metrics
- Demonstrate knowledge of how to configure, monitor and troubleshoot OSPF
- Areas, interfaces and neighbors
- Additional basic options
- Routing policy application
- Troubleshooting tools

## **Border Gateway Protocol (BGP)**

- Identify the concepts, operation and functionality 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 and monitor BGP
- Groups and peers
- Additional basic options
- Routing policy application

## **Layer 2 Bridging and VLANs**

- Identify the concepts, operation, and functionality of Layer 2 bridging for the Junos OS
- Service Provider switching platforms
- Bridging elements and terminology
- Frame processing
- Virtual Switches

- Provider bridging (e.g., Q-in-Q tunneling)
- Identify the concepts, benefits, and functionality of VLANs
- Port modes
- Tagging
- MVRP
- IRB
- Demonstrate knowledge of how to configure, monitor and troubleshoot Layer 2 bridging and VLANs
- Interfaces and ports
- VLANs
- MVRP
- IRB
- Provider bridging

## **Spanning-Tree Protocols**

- Identify the concepts, benefits, operation, and functionality of Spanning Tree Protocol and its variants
- STP, RSTP, MSTP and VSTP concepts
- Port roles and states
- BPDUs
- Convergence and reconvergence
- Spanning-tree security
- Demonstrate knowledge of how to configure, monitor and troubleshoot STP and its variants
- Spanning-tree protocols - STP, RSTP, MSTP, VSTP
- BPDU, loop and root protection

## **Multiprotocol Label Switching (MPLS) and MPLS VPNs**

- Identify the concepts, operation, and functionality of MPLS
- MPLS terminology
- MPLS packet header
- End-to-end packet flow and forwarding
- Labels and the label information base (LIB)
- MPLS and routing tables
- RSVP
- LDP
- Identify the concepts, benefits, operation, and functionality of MPLS VPNs

- VPN routing tables
- Layer 3 VPN terminology and components
- BGP Layer 2 VPN terminology and components
- LDP Layer 2 circuit terminology and components
- Virtual private LAN service (VPLS) terminology and components
- MPLS VPN control plane traffic flow
- MPLS VPN data plane traffic flow
- Demonstrate knowledge of how to configure and monitor MPLS
- MPLS forwarding
- RSVP-signaled and LDP-signaled LSPs

## **IPv6**

- Identify the concepts, operation and functionality of IPv6
- IPv4 vs. IPv6
- Address types, notation and format
- Address scopes
- Autoconfiguration
- Tunneling
- Demonstrate knowledge of how to configure and monitor IPv6
- Interfaces
- Static routes
- Dynamic routing - OSPFv3, IS-IS, BGP
- IPv6 over IPv4 tunneling

## **Tunnels**

- Identify the concepts, requirements and functionality of IP tunneling
- Tunneling applications and considerations
- GRE
- IP-IP
- Demonstrate knowledge of how to configure and monitor IP tunnels
- GRE configuration
- IP-IP configuration

## **High Availability**

- Identify the concepts, benefits, applications and requirements of high availability
- Link aggregation groups (LAG) and multichassis LAGs (MC-LAGs)
- Graceful restart (GR)
- Graceful Routing Engine switchover (GRES)
- Nonstop active routing (NSR)
- Nonstop bridging (NSB)
- Bidirectional Forwarding Detection (BFD)
- Virtual Router Redundancy Protocol (VRRP)
- Unified In-Service Software Upgrade (ISSU)
- Ethernet Ring Protection (ERP)
- Demonstrate knowledge of how to configure and monitor high availability component
- LAG, MC-LAG
- Additional basic options
- GR, GRES, NSR and NSB
- VRRP
- ISSU