

JNCIP-SP Exam Objectives (Exam: JN0-661)

This list provides a general view of the skill set required to successfully complete the specified certification exam.

OSPF

- Describe the concepts, operation and functionality of OSPFv2 or OSPFv3
 - OSPF area types and operations
 - LSA flooding through an OSPF multi-area network
 - DR/BDR operation
 - SPF algorithm
 - Metrics, including external metric types
 - Summarize and restrict routes
 - Virtual links
 - OSPFv2 vs OSPFv3
- Given a scenario, demonstrate knowledge of how to configure or monitor single-area and multi-area OSPF
 - Implement OSPF routing policy

IS-IS

- Describe the concepts, operation, or functionality of IS-IS
 - IS-IS areas/levels and operations
 - LSP flooding through an IS-IS multi-area network
 - DIS operation
 - SPF algorithm
 - Metrics, including wide metrics
 - Route summarization and route leaking
- Given a scenario, demonstrate knowledge of how to configure or monitor single-area and multi-area IS-IS
 - Implement IS-IS routing policy

BGP

- Describe the concepts, operation, or functionality of BGP
 - BGP route selection process
 - Next hop resolution
 - BGP attributes – concept and operation
 - BGP communities

- Regular expressions
- Multipath
- Multihop
- Load balancing
- Advanced BGP options
- BGP route damping
- Multiprotocol BGP
- Describe the concepts, operation or functionality of BGP scaling mechanisms
- Route reflection
- Confederations
- Given a scenario, demonstrate knowledge of how to configure or monitor BGP
- Implement BGP routing policy

Class of Service (CoS)

- Describe the concepts, operation, or functionality of Junos CoS
- CoS processing on Junos devices
- CoS header fields
- Forwarding classes
- Classification
- Packet loss priority
- Policers, including tricolor marking and hierarchical policers
- Schedulers
- Drop profiles
- Shaping
- Rewrite rules
- Hierarchical scheduling (H-CoS) characteristics (high-level only)
- Given a scenario, demonstrate knowledge of how to configure or monitor CoS

IP Multicast

- Describe the concepts, operation, or functionality of IP multicast
- Components of IP multicast, including multicast addressing
- IP multicast traffic flow
- Any-Source Multicast (ASM) versus Source-Specific Multicast (SSM)
- RPF – concept and operation
- IGMP
- PIM dense-mode and sparse-mode
- Rendezvous point (RP) – concept, operation, discovery, election
- SSM – requirements, benefits, address ranges
- MSDP, including single and multi-PIM domains

- Anycast RP
- Routing policy and scoping
- Given a scenario, demonstrate knowledge of how to configure or monitor IGMP, PIM-DM, PIM-SM (including SSM) and MSDP
- Implement IP multicast routing policy

Advanced MPLS

- Describe the concepts, operation, or functionality of MPLS
- Routing table integration options for traffic engineering
- Routing policy to control path selection
- Advanced MPLS features
- Administrative groups
- Advanced CSPF options
- Implement MPLS routing policy

Layer 3 VPNs

- Describe the concepts, operation, or functionality of Layer 3 VPNs
- Traffic flow – control and data planes
- Full mesh vs. hub-and-spoke topology
- VPN-IPv4 addressing
- Route distinguishers
- Route targets
- Route distribution
- Site of origin
- Sham links
- vrf-table-label
- Layer 3 VPN scaling
- IPv6 Layer 3 VPNs
- Layer 3 VPN Internet access options
- Given a scenario, demonstrate knowledge of how to configure or monitor the components of Layer 3 VPNs
- Describe the concepts, operation or functionality of multicast VPNs
- Next-generation MVPNs (NG-MVPN)
- Flow of control and data traffic in an MVPN
- Describe Junos support for carrier-of-carriers or interprovider VPN models

Layer 2 VPNs

- Describe the concepts, operation, or functionality of BGP Layer 2 VPNs
- Traffic flow – control and data planes
- Forwarding tables

- Connection mapping
- Layer 2 VPN NLRI
- Route distinguishers
- Route targets
- Layer 2 VPN scaling
- Describe the concepts, operation, or functionality of LDP Layer 2 circuits
- Traffic flow – control and data planes
- Virtual circuit label
- Layer 2 interworking
- Describe the concepts, operation, or functionality of VPLS
- Traffic flow – control and data planes
- BGP VPLS label distribution
- LDP VPLS label distribution
- Route targets
- VPLS Multihoming
- Site IDs
- Describe the concepts, operation, or functionality of EVPN
- Traffic flow – control and data planes
- MAC learning and distribution
- EVPN Multihoming
- BGP EVPN label distribution
- Given a scenario, demonstrate knowledge of how to configure or monitor Layer 2 VPNs
- BGP Layer 2 VPNs
- LDP Layer 2 circuits
- EVPNs
- VPLS