

JNCIP-ENT Exam Objectives (Exam: JN0-643)

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

OSPF

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

BGP

- Describe the concepts, operation and functionality of BGP
- o BGP route selection process
- o Next hop resolution
- o BGP attributes - concept and operation
- o BGP communities
- o Regular expressions
- o Load balancing - multipath, multihop, forwarding table
- o NLRI families - inet, inet6
- o Advanced BGP options
- Given a scenario, demonstrate knowledge of how to configure and monitor BGP
- o Implement BGP routing policy

IP Multicast

- Describe the concepts, operation and functionality of IP multicast
- o Components of IP multicast, including multicast addressing
- o IP multicast traffic flow
- o Any-Source Multicast (ASM) vs. Source-Specific Multicast (SSM)
- o RPF - concept and operation
- o IGMP, IGMP snooping
- o PIM dense-mode and sparse-mode
- o Rendezvous point (RP) - concept, operation, discovery, election
- o SSM - requirements, benefits, address ranges
- o Anycast RP
- o MSDP
- o Routing policy and scoping
- Given a scenario, demonstrate knowledge of how to configure and monitor IGMP, PIM-DM and PIM-SM (including SSM)
- o Implement IP multicast routing policy

Ethernet Switching and Spanning Tree

- Describe the concepts, operation and functionality of advanced Ethernet switching
- o Filter-based VLANs
- o Private VLANs
- o Dynamic VLAN registration using MVRP
- o Tunnel Layer 2 traffic through Ethernet networks
- o Layer 2 tunneling using Q-in-Q and L2PT
- Given a scenario, demonstrate knowledge of how to configure and monitor advanced Ethernet switching
- Describe the concepts, operation and functionality of advanced spanning tree protocols, including MSTP and VSTP
- Given a scenario, demonstrate knowledge of how to configure and monitor MSTP and VSTP

Layer 2 Authentication and Access Control

- Describe the operation of various Layer 2 authentication and access control features
- o Authentication process flow
- o 802.1x - concepts and functionality
- o MAC RADIUS
- o Captive portal
- o Server fail fallback
- o Guest VLAN
- o Considerations when using multiple authentication/access control methods
- Given a scenario, demonstrate how to configure and monitor Layer 2 authentication and access control

IP Telephony Features

- Describe the concepts, operation and functionality of features that facilitate IP telephony deployments
 - o Power over Ethernet (PoE)
 - o LLDP and LLDP-MED
 - o Voice VLAN
- Given a scenario, demonstration how to configure and monitor Layer 2 authentication and access control

Class of Service (CoS)

- Describe the concepts, operation and functionality of JunosCoS for Layer 2/3 networks
 - o CoS processing on Junos devices
 - o CoS header fields
 - o Forwarding classes
 - o Classification
 - o Packet loss priority
 - o Policers
 - o Schedulers
 - o Drop profiles
 - o Shaping
 - o Rewrite rules
- Given a scenario, demonstrate knowledge of how to configure and monitor CoS for Layer 2/3 networks.