Advanced Junos Enterprise Routing
AJER

Delivery Type: Classroom
Duration: 3 days

Overview

This three-day course is designed to provide students with the tools required for implementing, monitoring, and troubleshooting Layer 3 components in an enterprise network. Detailed coverage of OSPF, Border Gateway Protocol (BGP), class of service (CoS), and multicast is strongly emphasized. Through demonstrations and hands-on labs , students will gain experience in configuring and monitoring the Junos operating system and in monitoring device and protocol operations.

Pre-Requisites

Attendees should meet the following prerequisites:
Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) model and the TCP/IP protocol suite. Students should also have working experience with basic routing principles.
Students should also attend the Introduction to the Junos Operating System (IJOS), Junos Routing Essentials (JRE), and Junos Intermediate Routing (JIR) courses prior to attending this class.

Objectives

After you complete this course you will be able to:
- ✓ Describe the various OSPF link-state advertisement (LSA) types.
- ✓ Explain the flooding of LSAs in an OSPF network.
- ✓ Describe the shortest-path-first (SPF) algorithm.
- ✓ Describe OSPF area types and operations.
- ✓ Configure various OSPF area types.
- ✓ Summarize and restrict routes.
- ✓ Identify scenarios requiring routing policy or a specific configuration option.
- ✓ Describe basic BGP operation.
- ✓ List common BGP attributes.
- ✓ Explain the route selection process for BGP.
- ✓ Describe how to alter the route selection process.
- ✓ Configure some advanced options for BGP peers.
- ✓ Describe various BGP attributes in detail.
- ✓ Manipulate BGP attributes using routing policy.
- ✓ Describe common routing policies used in the enterprise environment.
- ✓ Explain how attribute modifications affect

routing decisions.

✓ Implement a routing policy for inbound and outbound traffic using BGP.

✓ Describe IP multicast traffic flow.

✓ Identify the components of IP multicast.

✓ Explain how IP multicast addressing works.

✓ Describe the need for reverse path forwarding (RPF) in multicast.

✓ Explain the role of Internet Group Management Protocol (IGMP) and describe the available IGMP versions.

✓ Configure and monitor IGMP.

✓ Identify common multicast routing protocols.

✓ Describe rendezvous point (RP) discovery options.

✓ Configure and monitor Protocol Independent Multicast–Sparse Mode (PIM-SM).

✓ Configure and monitor RP discovery mechanisms.

✓ Describe the basic requirements, benefits, and caveats of source-specific multicast (SSM).

✓ List the address ranges used for SSM.

✓ Illustrate the role of Internet Group Management Protocol version 3 (IGMPv3) and PIM-SM in an SSM implementation.

✓ Configure and monitor SSM.

✓ Identify environments that might require a modified CoS implementation.

✓ Describe the various CoS components and their respective functions .

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✓ Explain the CoS processing along with CoS defaults on SRX Series Services Gateways devices .

✓ Describe situations when some CoS features are used in the enterprise.

✓ Implement some CoS features in an enterprise environment.

Target Audience

This course benefits individuals responsible for configuring and monitoring devices running the Junos OS.

Certification

This course is recommended training for the following exam(s):

- ✓ JN0-643 - Juniper Networks Certified Internet Professional (JNCIP-ENT)
- ✓ Follow on Courses
- ✓ The following course(s) are recommended for further study:
- ✓ AJEX - Advanced Junos Enterprise Switching