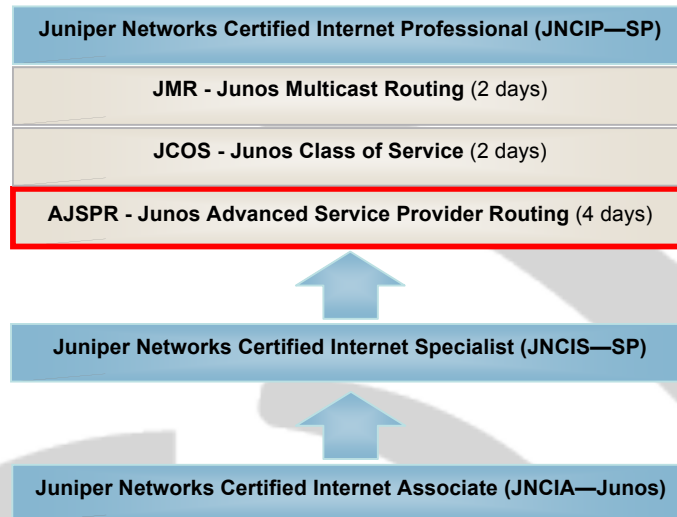




JUNIPER JUNOS SERVICE PROVIDER ROUTING & SWITCHING



Advanced Junos Service Provider Routing (AJSPR)

Course Overview

This four-day course provides detailed coverage of OSPF, IS-IS, BGP, and routing policy and how these elements are implemented in a service provider's network. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and in monitoring device and protocol operations.

Objectives

After successfully completing this course are able to:

- Describe the various OSPF LSA types
- Explain the flooding of LSAs in an OSPF network
- Describe the purpose and operations of the SPF algorithm
- List key differences between OSPFv2 and OSPFv3
- Describe OSPF area types and operations
- Configure various OSPF area types
- Summarize and restrict routes in an OSPF network
- Identify scenarios requiring routing policy or a specific configuration option
- Use routing policy and configuration options to solve a given scenario
- Explain the concepts and operation of IS-IS
- Describe various IS-IS link-state PDU (LSP) types
- List IS-IS adjacency rules and troubleshoot common adjacency issues
- Configure and monitor IS-IS
- Display and interpret the LSDB
- Perform advanced IS-IS configuration options
- Implement IS-IS routing policy
- Explain the default operation in multiarea IS-IS
- Describe IS-IS address summarization methods
- Configure and monitor a multiarea IS-IS network
- 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
- Explain the causes for route instability
- Describe the effect of damping on BGP routing
- Explain the default behavior of damping on links
- Control damping using routing policy
- View damped routes using CLI commands
- Describe the operation of BGP route reflection
- Configure and monitor a route reflector
- Describe the operation of a BGP confederation
- Describe peering relationships in a BGP confederation
- Configure and monitor BGP confederations



Target Audience

This course benefits individuals responsible for implementing, monitoring, and troubleshooting Layer 3 components in a service provider's network.

Course Level

Advanced

Prerequisites

Students should:

- have an understanding of the OSI model.
- know the TCP/IP protocol suite

Students should attend the following courses:

- IJOS
- JRE
- JIR

Day One

Chapter 1: Course Introduction

Chapter 2: OSPF

- OSPFv2 Review
- Link State Advertisements
- Protocol Operations
- OSPF Authentication
- OSPF Authentication
- Lab 1: OSPF Multarea Networks

Chapter 3: OSPF Areas

- Review of OSPF Areas
- Stub Area Operation
- Stub Area Configuration
- NSSA Operation
- NSSA Configuration
- Route Summarization
- Lab 2: Configuring and Monitoring OSPF Areas and Route Summarization

Chapter 4: OSPF Case Studies and Solutions

- Virtual Links
- OSPF Multiarea Adjacency
- External Reachability
- Lab 3: Advanced OSPF Options and Routing Policy

Day Two

Chapter 5: IS-IS

- Overview of IS-IS
- IS-IS PDUs
- Neighbors and Adjacencies
- Configuring and Monitoring IS-IS
- Lab 4: IS-IS Configuration and Monitoring

Chapter 6: Advanced IS-IS Operations and Configuration Options

- IS-IS Operations
- IS-IS Configuration Options
- IS-IS Routing Policy
- Lab 5: Advanced IS-IS Configuration Options and Routing Policy

Chapter 7: Multilevel IS-IS Networks

- Level 1 and Level 2 Operations
- Multilevel Configuration
- Lab 6: Configuring a Multilevel IS-IS Network

Day Three

Chapter 8: BGP

- Review of BGP
- BGP Operations
- BGP Path Selection and Options
- Configuration Options
- Lab 7: BGP

Chapter 9: BGP Attributes and Policy—Part 1

- BGP Policy
- Next Hop
- Origin and MED
- AS Path
- Lab 8: BGP Attributes: Next Hop, Origin, MED, and AS Path

Day Four

Chapter 10: BGP Attributes and Policy—Part 2

- Local Preference
- Communities
- Lab 9: BGP Attributes: Local Preference and Communities

Chapter 11: Route Reflection and Confederations

- Route Reflection Operation
- Configuration and Routing Knowledge
- BGP Confederations
- Lab 10: Scaling BGP

Chapter 12: BGP Route Damping

- Route Flap and Damping Overview
- Route Damping Parameters
- Configuring and Monitoring Route Damping
- Lab 11: Route Damping

Cost AUD \$3,299 inc. GST

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