TRAINING OFFERING

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Advanced Junos Service Provider Routing (AJSPR)

CODE:	LENGTH:	PRICE:
JUN_AJSPR	40 Hours (5 days)	£4,250.00

Description

This five-day course is designed to provide students with detailed coverage of OSPF, ISIS, BGP, and routing policy.
Through demonstrations and hands-on labs, students will gain experience in configuring, monitoring, and troubleshooting the Junos operating system and in monitoring device and protocol operations.
This course uses Juniper Networks vMX Series Routers for the hands-on component, but the lab environment does not preclude the course from being applicable to other Juniper hardware platforms running the Junos OS.
This course is based on the Junos OS Release 19.3.

• Junos OS
• M Series
• MX Series
• PTX Series
The Advanced Junos Service Provider Routing (AJSPR) is an advanced-level course. Relevant Juniper Product • T Series

Objectives

• 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.
• List key differences between OSPFv2 and OSPFv3.
• Describe OSPF area types and operations.
• Configure various OSPF area types.
• Summarize and restrict routes.
• Identify some scenarios in a service provider network that can be solved using routing policy or specific configuration options.
• Use routing policy and specific configuration options to implement solutions for various scenarios.
• Describe how to troubleshoot OSPF.
• Explain the concepts and operation of IS-IS.
• Describe various IS-IS link-state protocol data unit (LSP) types.
• List IS-IS adjacency rules and troubleshoot common adjacency issues.
• Configure and monitor IS-IS.
• Display and interpret the link-state database (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 how to troubleshoot IS-IS.
• 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 and explain the operation of those attributes.
• 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 command-line interface (CLI) commands.
• Describe the operation of BGP route reflection.
• Configure a route reflector.
• Describe the operation of a BGP confederation.

• Configure confederations.
• Describe peering relationships in a confederation.
• Describe how to troubleshoot BGP.
• Describe how to troubleshoot routing policy

Audience

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

Prerequisites

Students should have intermediate-level networking knowledge and an understanding of the Open Systems Interconnection (OSI) model and the TCP/IP protocol suite.
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.

Programme

Day 1 Course Introduction OSPF • OSPFv2 Review • Link-State Advertisements • Protocol Operations • OSPF Authentication
• OSPFv3 LAB: Configuring OSPF OSPF Areas • Review of OSPF Areas • Stub Area Operation • Stub Area Configuration
• NSSA Operation • NSSA Configuration • Route Summarization LAB: Advanced OSPF Advanced OSPF Options
• OSPF Multi-area Adjacencies • External Reachability • Virtual Links LAB: Advanced OSPF Options Day 2
Troubleshooting OSPF • Troubleshooting OSPF Adjacency Issues • Troubleshooting LSDB Consistency Issues
• Troubleshooting OSPF Routing Issues • Case Study – Adjacency Issues LAB: Troubleshooting OSPF IS-IS • Overview of IS-IS
• IS-IS PDUs • Neighbors and Adjacencies • Configuring and Monitoring IS-IS Lab: IS-IS Configuration and Monitoring
Advanced IS-IS Operations • IS-IS Operations • IS-IS Configuration Options • IS-IS Routing Policy
LAB: Advanced IS-IS Configuration Options and Routing Policy Day 3 Multilevel IS-IS Networks • Level 1 and Level 2 Operations
• Multilevel Configuration LAB: Configuring a Multilevel IS-IS Network Troubleshooting IS-IS • IS-IS Troubleshooting Overview
• Case Study LAB: Troubleshooting IS-IS BGP • Review of BGP • BGP Operations • BGP Path Selection and Options
• Configuration Options LAB: Configuring BGP Day 4 BGP Attributes and Policy—Part 1 • BGP Policy • Next Hop
• Origin and MED • AS Path LAB: BGP Attributes – Part 1 BGP Attributes and Policy—Part 2 • Origin • Multi-Exit Discriminator
• Communities LAB: BGP Attributes – Part 2 Route Reflection and Confederations • Route Reflection Operation
• Configuration and Routing Knowledge • BGP Confederations LAB: Scaling BG Day 5 BGP FlowSpec • DDoS Overview
• DDoS Mitigation Techniques • FlowSpec Overview • Configuring and Monitoring FlowSpec LAB: BGP FlowSpec
Troubleshooting BGP • BGP Troubleshooting • Case Study: Neighborship Issues LAB: Troubleshooting BGP
Troubleshooting Policy • Routing Policy Overview • Policy Structure • Using Regular Expressions • Useful Commands
• Case Studies LAB: Troubleshooting Routing Policy
The following Appendix can be covered, if time permits, and is requested by the delegate/s prior to booking:
Appendix A: BGP Route Damping • Route Flap and Damping Overview • Route Damping Parameters
• Configuring and Monitoring Route Damping LAB: BGP Route Damping

Follow on courses

Recommended Next Course JNCIE-SP Bootcamp

Test and Certification

Associated Certification JNCIP-SP

Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
17 Jun 2024	Virtual Training Class - TP	BST	English	Instructor Led Online		£4,250.00

Additional Information

This training is also available as onsite training. Please contact us to find out more.