



TRAINING OFFERING

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CODE:	LENGTH:	PRICE:
JUN_AJSPR	5 days	£3,650.00

Description

This five-day course is designed to provide students with detailed coverage of OSPF, IS-IS, 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 17.1.

- Junos OS
- M Series
- MX Series
- PTX Series

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 (IJS), Junos Routing Essentials (JRE), and Junos Intermediate Routing (JIR) courses prior to attending this class.

Programme

OSPF	OSPF Areas
• OSPFv2 Review	• Review of OSPF Areas
• Link-State Advertisements	• Stub Area Operation
• Protocol Operations	• Stub Area Configuration
• OSPF Authentication	• NSSA Operation
	• NSSA Configuration
	• Route Summarization

Day 1 Course Introduction LAB: OSPF Multiarea Networks LAB: OSPF Route Summarization

OSPF Case Studies and Solutions

- | | | |
|------------------------------|------------------------|-----------------------------|
| • Virtual Links | Troubleshooting OSPF | IS-IS |
| • OSPF Multiarea Adjacencies | • Troubleshooting OSPF | • Overview of IS-IS |
| • External Reachability | | • IS-IS PDUs |
| | | • Neighbors and Adjacencies |

LAB: Advanced OSPF Options and Routing Policy Day 2 Lab: OSPF Troubleshooting • Configuring and Monitoring IS-IS
Lab: IS-IS Configuration and Monitoring

Advanced IS-IS Operations and Configuration Options

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|-------------------------------|----------------------------------|
| • IS-IS Operations | Multilevel IS-IS Networks |
| • IS-IS Configuration Options | • Level 1 and Level 2 Operations |
| • IS-IS Routing Policy | • Multilevel Configuration |

Lab: Advanced IS-IS Configuration Options and Routing Policy Day 3 LAB: Configuring a Multilevel IS-IS Network

Troubleshooting IS-IS

- Troubleshooting IS-IS

LAB: IS-IS Troubleshooting

BGP	BGP Attributes and Policy—Part 1
• Review of BGP	• BGP Policy
• BGP Operations	• Next Hop
• BGP Path Selection and Options	• Origin and MED
• Configuration Options	• AS Path

LAB: BGP and BGP Attributes Day 4 LAB: BGP Attributes: Next Hop, Origin, MED, and AS Path

BGP Attributes and Policy—Part 2

- Local Preference
- Communities

Lab: BGP Attributes: Local Preference and Communities

Route Reflection and Confederations

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|---------------------------------------|--|
| • Route Reflection Operation | BGP Route Damping |
| • Configuration and Routing Knowledge | • Route Flap and Damping Overview |
| • BGP Confederations | • Route Damping Parameters |
| | • Configuring and Monitoring Route Damping |

LAB: Scaling BGP

Day 5 LAB: BGP Route Damping

Troubleshooting BGP Troubleshooting Policy
• Troubleshooting BGP • Troubleshooting Policy

LAB: BGP Troubleshooting LAB: Policy Troubleshooting

Follow on courses

Recommended Next Course JNCIE-SP Bootcamp

Test and Certification

Associated Certification JNCIP-SP

Session Dates

On request. Please [contact us](#)

Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)