SHI Junos Intermediate Routing 2 Days Instructor LED User Guide

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Product Information

The Junos Intermediate Routing Course JIR is a 2-day instructor-led course designed for network engineers, technical support personnel, reseller support engineers, and others responsible for implementing and/or maintaining the Juniper Networks products covered in this course.

Course Outline

Day 1

- Chapter 1: Course Introduction
- Chapter 2: Protocol-Independent Routing
- Chapter 3: Load Balancing and Filter-Based Forwarding
- Chapter 4: Open Shortest Path First

Day 2

- Chapter 5: Border Gateway Protocol
- Chapter 6: IP Tunneling
- Chapter 7: High Availability

Product Usage Instructions

- **Chapter 1: Course Introduction**
  This chapter provides an introduction to the Junos Intermediate Routing Course, including an overview of the course objectives and target audience.
- **Chapter 2: Protocol-Independent Routing**
  This chapter covers the basics of protocol-independent routing, including the configuration and verification of static routes, aggregate routes, and generated routes.
- **Chapter 3: Load Balancing and Filter-Based Forwarding**
  In this chapter, you will learn about load-balancing techniques and filter-based forwarding. The course will

cover the configuration and verification of load balancing across multiple paths and the implementation of filter-based forwarding policies.

- **Chapter 4: Open Shortest Path First**
  This chapter focuses on the Open Shortest Path First (OSPF) routing protocol. You will learn about OSPF configuration, verification, and advanced features such as OSPF areas and virtual links.
- **Chapter 5: Border Gateway Protocol**
  In this chapter, you will explore the Border Gateway Protocol (BGP) and its configuration. The course will cover BGP peering, route advertisement, and policy-based routing using BGP.
- **Chapter 6: IP Tunneling**
  This chapter delves into IP tunneling and its applications. You will learn about the configuration of GRE tunnels, IP-over-IP tunnels, and IPsec VPN tunnels.
- **Chapter 7: High Availability**
  The final chapter focuses on high availability techniques in Junos. You will learn about redundancy protocols, such as Virtual Router Redundancy Protocol (VRRP) and Graceful Restart, to ensure network availability.

Specifications

- **Course:** Junos Intermediate Routing Course JIR
- **Duration:** 2 days
- **Delivery:** Instructor-led
- **Audience:** Network engineers, technical support personnel, reseller support engineers, and others responsible for implementing and/or maintaining Juniper Networks products covered in this course

About this course

This two-day course provides students with intermediate routing knowledge and configuration examples. The course includes an overview of protocol independent routing features, load balancing and filter-based forwarding, OSPF, BGP, IP tunneling, and high-availability (HA) features. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and monitoring device operations. This course uses Juniper Networks SRX Series Services Gateways 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.

Audience profile

Network engineers, technical support personnel, reseller support engineers, and others responsible for implementing and/or maintaining the Juniper Networks products covered in this course.

At course completion

After completing this course, students will be able to:

- Describe typical uses of static, aggregate, and generated routes.
- Configure and monitor static, aggregate, and generated routes.
- Explain the purpose of Martian routes and add new entries to the default list.
- Describe typical uses of routing instances.
- Configure and share routes between routing instances.

- Describe load-balancing concepts and operations.
- Implement and monitor Layer 3 load balancing.
- Illustrate the benefits of filter-based forwarding.
- Configure and monitor filter-based forwarding.
- Explain the operations of OSPF.
- Describe the role of the designated router.
- List and describe OSPF area types.
- Configure, monitor, and troubleshoot OSPF.
- Describe BGP and its basic operations.
- Name and describe common BGP attributes.
- List the steps in the BGP route selection algorithm.
- Describe BGP peering options and the default route advertisement rules.
- Configure and monitor BGP.
- Describe IP tunneling concepts and applications.
- Explain the basic operations of generic routing encapsulation (GRE) and IP over IP (IP-IP) tunnels.
- Configure and monitor GRE and IP-IP tunnels.
- Describe various high-availability features supported by the Junos OS.
- Configure and monitor some of the highlighted high-availability features.

Course Outline

Day 1 Chapter 1: Course Introduction Chapter 2: Protocol-Independent Routing

- Static Routes
- Aggregated Routes
- Generated Routes
- Martian Addresses
- Routing Instances

Chapter 3: Load Balancing and Filter-Based Forwarding

- Overview of Load Balancing
- Configuring and Monitoring Load Balancing
- Overview of Filter-Based Forwarding
- Configuring and Monitoring Filter-Based Forwarding

Chapter 4: Open Shortest Path First

- Overview of OSPF
- Adjacency Formation and the Designated Router Election
- OSPF Scalability
- Configuring and Monitoring OSPF
- Basic OSPF Troubleshooting

Day 2 Chapter 5: Border Gateway Protocol

- Overview of BGP
- BGP Attributes
- IBGP Versus EBGP
- Configuring and Monitoring BGP

Chapter 6: IP Tunneling

- Overview of IP Tunneling
- GRE and IP-IP Tunnels
- Implementing GRE and IP-IP Tunnels

Chapter 7: High Availability

- Overview of High Availability Networks
- GR
- Graceful RE Switchover
- Nonstop Active Routing
- BFD
- VRRP

Frequently Asked Questions

- **Q: Who is this course designed for?**
  A: This course is designed for network engineers, technical support personnel, reseller support engineers, and others responsible for implementing and/or maintaining Juniper Networks products covered in this course.
- **Q: How long is the course?**
  A: The Junos Intermediate Routing Course JIR is a 2-day course.
- **Q: What will I learn after completing this course?**
  A: After completing this course, students will be able to understand and implement various routing protocols, load balancing techniques, filter-based forwarding, IP tunneling, and high availability features in Junos.

Documents / Resources

	SHI Junos Intermediate Routing 2 Days Instructor LED [pdf] User Guide Junos Intermediate Routing 2 Days Instructor LED, Intermediate Routing 2 Days Instructor LED , Routing 2 Days Instructor LED, Days Instructor LED, Instructor LED, LED

References

- User Manual