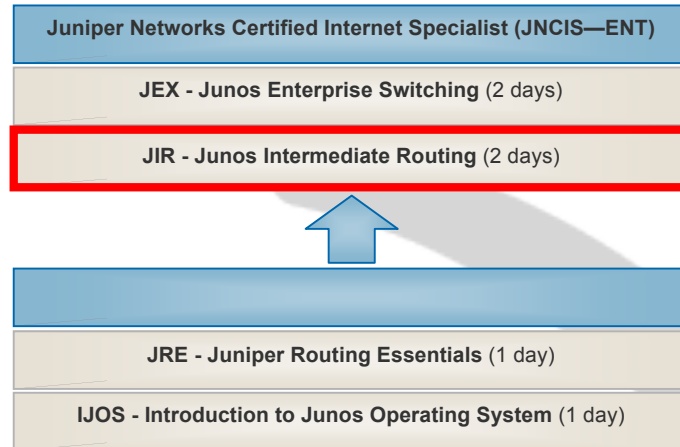




## JUNIPER JUNOS ENTERPRISE ROUTING & SWITCHING



### Junos Intermediate Routing (JIR)

#### Course Overview

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 tunnelling, 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.

#### Objectives

After successfully completing this course, you should 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 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.



**Target Audience**

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

**Course Level**

Intermediate

**Prerequisites**

Students should:

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

Students should attend the following courses:

- IJOS
- JRE

**Course Contents**

**Chapter 1: Course Introduction**

**Chapter 2: Protocol-Independent Routing**

- Static Routes
- Aggregated Routes
- Generated Routes
- Martian Addresses
- Routing Instances
- Lab 1: Protocol-Independent Routing

**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
- Lab 2: Load Balancing and 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
- Lab 3: Open Shortest Path First

**Chapter 5: Border Gateway Protocol**

- Overview of BGP
- BGP Attributes
- IBGP Versus EBGP
- Configuring and Monitoring BGP
- Lab 4: Border Gateway Protocol

**Chapter 6: IP Tunneling**

- Overview of IP Tunneling
- GRE and IP-IP Tunnels
- Implementing GRE and IP-IP Tunnels
- Lab 5: IP Tunneling

**Chapter 7: High Availability**

- Overview of High Availability Networks
- GR
- Graceful RE Switchover
- Nonstop Active Routing
- BFD
- VRRP
- Lab 6: High Availability

**Appendix A: IPv6**

- Introduction to IPv6
- Routing Protocol Configuration Examples
- Tunneling IPv6 over IPv4
- Lab 7 (Optional): IPv6

**Appendix B: IS-IS**

- Overview of IS-IS
- Overview of IS-IS PDUs
- Adjacency Formation and DIS Election
- Configuring and Monitoring IS-IS
- Basic IS-IS Troubleshooting
- Lab 8 (Optional): IS-IS

**Appendix C: Routing Information Protocol**

- Introduction to RIP
- RIP Configuration Examples
- Monitoring and Troubleshooting RIP

**Cost AUD \$1,599 inc. GST**

For Available Dates & Terms and Conditions see:  
[www.crystalecho.com](http://www.crystalecho.com)

