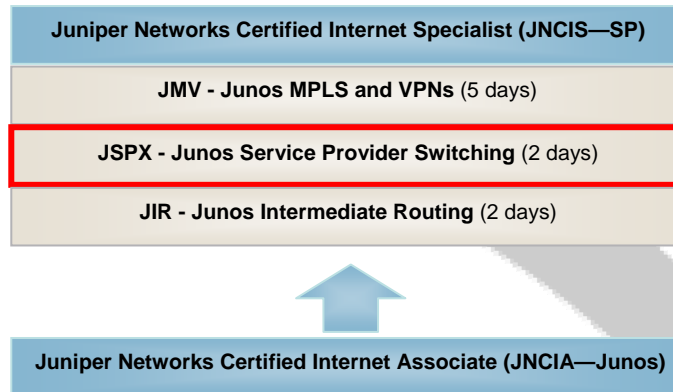




## JUNIPER JUNOS SERVICE PROVIDER SWITCHING & ROUTING



### Junos Service Provider Switching (JSPX)

#### Course Overview

This two-day course provides students with intermediate switching knowledge and configuration examples. The course includes an overview of switching concepts such as LANs, Layer 2 address learning, bridging, virtual LANs (VLANs), provider bridging, provider backbone bridging, VLAN translation, spanning-tree protocols, and Ethernet Operation, Administration, and Maintenance (OAM). This course also covers Junos operating system-specific implementations of Integrated Routing and Bridging (IRB) interfaces, routing instances, virtual switches, load balancing, and port mirroring.

#### Objectives

After successfully completing this course, you should be able to:

- Describe carrier Ethernet.
- Describe the different Ethernet standards organizations.
- Describe the Layer 2 services that are available on the MX Series 3D Universal Edge Routers.
- Describe the function of an Ethernet LAN.
- Describe learning and forwarding in a bridging environment.
- Describe Ethernet frame filtering.
- Implement VLAN tagging.
- Implement IRB.
- Implement a Layer 2 firewall filter.
- Describe the usage of a routing instance.
- Describe the function of a virtual router.
- Describe the function of a virtual switch.
- Implement a virtual switch.
- Describe interconnecting routing instances.
- Describe the different Institute of Electrical and Electronics Engineers (IEEE) VLAN stacking models.
- Describe the components of provider bridging.
- Configure and monitor provider bridging.
- Describe the components of provider backbone bridging.
- Configure and monitor provider backbone bridging.
- Explain the purpose of the Spanning Tree Protocol (STP).
- Describe the basic operation of the STP, the Rapid Spanning Tree Protocol (RSTP), the Multiple Spanning Tree Protocol (MSTP), and the VLAN Spanning Tree Protocol (VSTP).
- Configure and monitor the STP, the RSTP, the MSTP, and the VSTP.
- Explain the purpose of bridge protocol data unit (BPDU), loop, and root protection.
- Explain typical OAM features.
- Describe the basic operation of link fault management (LFM).
- Describe the basic operation of connectivity fault management (CFM).
- Configure and monitor Ethernet OAM.
- Describe the basic operation of Ethernet Ring Protection (ERP).
- Configure and monitor ERP.



### 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
- JIR

### Day One

#### Chapter 1: Course Introduction

#### Chapter 2: Carrier Ethernet

- Ethernet in the WAN
- Ethernet Standards Organizations
- MX Series Layer 2 Features

#### Chapter 3: Ethernet Switching and Virtual LANs

- Ethernet LANs
- Bridging
- Configuring and Monitoring VLANs
- Configuring and Monitoring IRB
- Layer 2 Address Learning and Forwarding
- Layer 2 Firewall Filtering
- Lab 1: Ethernet Switching and VLANs

#### Chapter 4: Virtual Switches

- Routing Instances Overview
- Configuring and Monitoring Virtual Switches
- Interconnecting Routing Instances
- Lab 2: Virtual Switches

### Day Two

#### Chapter 5: Provider Bridging

- Expanding the Bridged Network
- Provider Bridging
- Configuring and Monitoring Provider Bridging
- Provider Backbone Bridging
- Configuring and Monitoring Provider Backbone Bridging
- Lab 3: Provider Bridging

#### Chapter 6: Spanning-Tree Protocols

- Overview of STP
- Overview of RSTP
- Overview of MSTP
- Overview of VSTP
- Configuring and Monitoring Spanning-Tree Protocols
- Understanding BPDU, Loop, and Root Protection
- Lab 4: MSTP

#### Chapter 7: Ethernet OAM

- OAM Overview
- LFM
- CFM
- Configuring and Monitoring
- Lab 5: Ethernet OAM

#### Chapter 8: Ethernet Ring Protection

- ERP Overview
- Configuring and Monitoring ERP
- Lab 6: Ethernet Ring Protection

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

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