
Junos Service Provider Switching

Duration: 2 Days **Course Code: JSPX**

Overview:

The Junos Service Provider Switching (JSPX) 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, 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. Furthermore, this course covers the basics of Multiple VLAN Registration Protocol (MVRP), link aggregation groups (LAGs), and multichassis LAG (MC-LAG).

Target Audience:

This course is designed for: Individuals responsible for configuring and monitoring devices running the Junos OS

Objectives:

- Upon completing this course, the learner will be able to meet these overall objectives:
 - 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.
 - Describe and implement MVRP.
 - 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.
 - 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.
 - Describe the basic operation of LAGs and MC-LAGs.
 - Configure and monitor a LAG.
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Prerequisites:

The knowledge and skills that a learner must have before attending

Testing and Certification

Recommended as preparation for:

this course are as follows:

- Basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite.

To gain the prerequisite skills and knowledge, Juniper strongly recommends the knowledge of the following courses:

- Introduction to the Junos Operating System (IJOS)
- Junos Routing Essentials (JRE)
- Junos Intermediate Routing (JIR)

- JN0-360 - Juniper Networks Certified Internet Specialist - Service Provider (JNCIS-SP)
JSPX is one of the courses required for the **Juniper Networks Certified Internet Specialist - Service Provider (JNCIS-SP)** Certification

Follow-on-Courses:

- Junos MPLS and VPNs (JMV)

The JIR, JSPX and JMV courses are required for the **Juniper Networks Certified Internet Specialist - Service Provider (JNCIS-SP)** Certification

Content:

Carrier Ethernet

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

Ethernet Switching and Virtual LANs

- Ethernet LANs
- Bridging
- Configuring and Monitoring VLANs
- Automating VLAN Administration
- Configuring and Monitoring IRB
- Layer 2 Address Learning and Forwarding
- Layer 2 Firewall Filtering

Virtual Switches

- Routing Instances Overview
- Configuring and Monitoring Virtual Switches
- Interconnecting Routing Instances

Provider Bridging

- Expanding the Bridged Network
- Provider Bridging
- Configuring and Monitoring Provider Bridging

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

Ethernet OAM

- OAM Overview
- LFM
- CFM
- Configuring and Monitoring Ethernet OAM
- High Availability and Network Optimization
- ERP Overview
- Configuring and Monitoring ERP
- LAG Overview
- Configuring and Monitoring a LAG

Further Information:

For More information, or to book your course, please call us on +254 713 027 191

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