# Junos Service Provider Switching

**Category:** Networking & Security | **Vendor:** Juniper

**Duration:** 16.00 hours (2 days) **13.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

## Course Information

**Delivery Format:** Instructor Led - Online

## 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, 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). This course is based on the Junos OS Release 11.2R1.10.

Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and device operations.

## About This Course

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## Who Should Attend

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

### Prerequisites & Entry Requirements

**General Prerequisites:**

Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite. Students should also attend the Introduction to the Introduction to the Junos Operating System (IJOS) and (!) courses prior to attending this class.

# Learning Outcomes

**Upon successful completion of this course, participants will be able to:**

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.
- 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.

## Detailed Course Outline

Day 1

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
- Automating VLAN Administration
- 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 2

Chapter 5: Provider Bridging

- Expanding the Bridged Network

- Provider Bridging

- Configuring and Monitoring Provider 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 Ethernet OAM

- Lab 5: Ethernet OAM

Chapter 8: High Availability and Network Optimization

- ERP Overview
- Configuring and Monitoring ERP
- LAG Overview
- Configuring and Monitoring a LAG
- Lab 6: High Availability and Network Optimization

**Skills You Will Learn:**

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

# Frequently Asked Questions

### Q: What delivery options are available for Junos Service Provider Switching?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

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### Q: How many CPD hours does this course provide?

The 2-day Junos Service Provider Switching course provides up to 13.0 CPD hours of structured learning. CPD certificates can be provided upon request.

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### Q: What is the duration of the Junos Service Provider Switching training?

The training takes place over 2 day(s), with each day lasting approximately 16.00 hours including breaks for lunch and refreshments.

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### Q: Do you provide corporate training for Junos Service Provider Switching?

Yes, we provide corporate training, dedicated training, and closed classes for Junos Service Provider Switching. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

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### Q: What related terms do people search for?

Popular related searches include: Junos Service Provider Switching, Service Provider Routing and Switching, JSPX

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## Q: Why choose Nexus Human for Junos Service Provider Switching?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

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## Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Junos Service Provider Switching training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.


**Nexus Human**

**Professional Training & Development**

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)


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