

# JUNOS ENTERPRISE SWITCHING USING ENHANCED LAYER 2 SOFTWARE (JEX)

Course Code: 7209

This two-day course provides students with intermediate switching knowledge and configuration examples using Junos Enhanced Layer 2 Software.

This two-day course provides students with intermediate switching knowledge and configuration examples using Junos Enhanced Layer 2 Software. This course includes an overview of switching concepts and operations, virtual LANs (VLANs), the Spanning Tree Protocol (STP), port and device security features, and high availability (HA) features.

Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and in monitoring device operations. This course uses Juniper Networks EX Series Ethernet Switches 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. This course is based on Junos OS Release 13.2X51-D20.3.

## What You'll Learn

After successfully completing this course, Students should be able to,

- List the benefits of implementing switched LANs.
- Describe transparent bridging concepts and operations.
- Describe terms and design considerations for switched LANs.
- List enterprise platforms that support Layer 2 switching.
- Configure interfaces for Layer 2 switching operations.
- Display and interpret the Ethernet switching table.
- Explain the concept of a VLAN.
- Describe access and trunk port modes.
- Configure and monitor VLANs.
- Describe voice VLAN and native VLAN concepts.
- Explain inter-VLAN routing operations.
- Configure and monitor inter-VLAN routing.
- Explain when a spanning tree is required.
- Describe STP and Rapid Spanning Tree Protocol (RSTP) operations.
- List some advantages of using RSTP over STP.

- Configure and monitor RSTP.
- Describe the bridge protocol data unit (BPDU), loop, and root protection features.
- Configure and monitor the BPDU, loop, and root protection features.
- List and describe various port security features.
- Configure and monitor port security features.
- Describe the storm control feature.
- Configure and monitor storm control.
- Describe firewall filter support for EX Series Ethernet Switches.
- Implement and monitor the effects of a firewall filter.
- List and describe some features that promote high availability.
- Configure and monitor high availability features.
- Describe the basic concepts and operational details of a virtual chassis.
- Implement a virtual chassis with multiple EX4300 switches.
- Explain the concepts of Ethernet Ring Protection Switching (ERPS).
- Configure and monitor ERPS.
- Explain the concepts of Multiple Spanning Tree Protocol (MSTP).
- Configure and monitor MSTP.

## Who Needs to Attend

This course benefits individuals responsible for configuring and monitoring EX Series switches running Junos ELS.

## 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 Junos Operating System (IJOS) course prior to attending this class.

# JUNOS ENTERPRISE SWITCHING USING ENHANCED LAYER 2 SOFTWARE (JEX)

Course Code: 7209

CLASSROOM LIVE

\$1,595 USD

2 Day

## Classroom Live Outline

### Day 1

Chapter 1: Course Introduction Chapter 2: Layer 2 Switching

- Ethernet Bridging Basics
- Terminology and Design Considerations
- Overview of Enterprise Switching Platforms
- Enabling and Monitoring Layer 2 Switching Operations

Chapter 3: Virtual Networks

- Overview of VLANs
- Configuring and Monitoring VLANs
- Voice VLAN
- Native VLAN
- Routed VLAN Interfaces

Chapter 4: Routing Instances

- Routing Instances Overview
- Configuring and Monitoring Virtual Switches

Chapter 5: Spanning Tree

- Spanning Tree Protocol
- Rapid Spanning Tree Protocol
- Configuring and Monitoring STP and RSTP
- Protection Features: BPDU Protection
- Protection Features: Loop Protection
- Protection Features: Root Protection

### Day 2

## Chapter 6: Port Security

- MAC Limiting
- Persistent MAC Learning
- DHCP Snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard

## Chapter 7: Device Security and Firewall Filters

- Storm Control
- Firewall Filters

## Chapter 8: Virtual Chassis

- Overview of Virtual Chassis
- Configuring and Monitoring a Virtual Chassis

## Chapter 9: High Availability Features

- Overview of High Availability Networks
- Link Aggregation Groups
- Redundant Trunk Groups
- Graceful Routing Engine Switchover (GRES)
- Nonstop Active Routing (NSR)
- Nonstop Bridging (NSB)

## Appendix A:

- Ethernet Ring Protection Switching
- Ethernet Ring Protection Switching (ERPS) Overview
- Configuring and Monitoring ERPS

## Appendix B:

- Multiple Spanning Tree Protocol
- Multiple Spanning Tree Protocol (MSTP) Overview
- Configuring and Monitoring MSTP

## Classroom Live Labs

Lab 1: Implementing Layer 2 Switches

Lab 2: Implementing Virtual Networks

Lab 3: Implementing Spanning Tree

Lab 4: Implementing Port Security

Lab 5: Implementing Storm Control and Firewall Filters

Lab 6: Implementing a Virtual Chassis Systems

Lab 7: Implementing High Availability Features

# JUNOS ENTERPRISE SWITCHING USING ENHANCED LAYER 2 SOFTWARE (JEX)

Course Code: 7209

VIRTUAL CLASSROOM LIVE

\$1,900 USD

2 Day

## Virtual Classroom Live Outline

### Day 1

Chapter 1: Course Introduction Chapter 2: Layer 2 Switching

- Ethernet Bridging Basics
- Terminology and Design Considerations
- Overview of Enterprise Switching Platforms
- Enabling and Monitoring Layer 2 Switching Operations

Chapter 3: Virtual Networks

- Overview of VLANs
- Configuring and Monitoring VLANs
- Voice VLAN
- Native VLAN
- Routed VLAN Interfaces

Chapter 4: Routing Instances

- Routing Instances Overview
- Configuring and Monitoring Virtual Switches

Chapter 5: Spanning Tree

- Spanning Tree Protocol
- Rapid Spanning Tree Protocol
- Configuring and Monitoring STP and RSTP
- Protection Features: BPDU Protection
- Protection Features: Loop Protection
- Protection Features: Root Protection

### Day 2

## Chapter 6: Port Security

- MAC Limiting
- Persistent MAC Learning
- DHCP Snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard

## Chapter 7: Device Security and Firewall Filters

- Storm Control
- Firewall Filters

## Chapter 8: Virtual Chassis

- Overview of Virtual Chassis
- Configuring and Monitoring a Virtual Chassis

## Chapter 9: High Availability Features

- Overview of High Availability Networks
- Link Aggregation Groups
- Redundant Trunk Groups
- Graceful Routing Engine Switchover (GRES)
- Nonstop Active Routing (NSR)
- Nonstop Bridging (NSB)

## Appendix A:

- Ethernet Ring Protection Switching
- Ethernet Ring Protection Switching (ERPS) Overview
- Configuring and Monitoring ERPS

## Appendix B:

- Multiple Spanning Tree Protocol
- Multiple Spanning Tree Protocol (MSTP) Overview
- Configuring and Monitoring MSTP

## Virtual Classroom Live Labs

Lab 1: Implementing Layer 2 Switches

Lab 2: Implementing Virtual Networks

Lab 3: Implementing Spanning Tree

Lab 4: Implementing Port Security

Lab 5: Implementing Storm Control and Firewall Filters

Lab 6: Implementing a Virtual Chassis Systems

Lab 7: Implementing High Availability Features



# JUNOS ENTERPRISE SWITCHING USING ENHANCED LAYER 2 SOFTWARE (JEX)

Course Code: 7209

PRIVATE GROUP TRAINING

2 Day

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