

Junos Enterprise Switching (JEX)

Duration: 2 Days **Course Code: JUN_JEX** **Delivery Method: Virtual Learning**

Overview:

This two-day course is designed to provide students with intermediate switching knowledge and configuration examples using Junos Enhanced Layer 2 Software (ELS).

This course includes an overview of switching concepts and operations, VLANs, the Rapid Spanning Tree Protocol (RSTP), 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 operating system (OS) and in monitoring device operations.

This course uses Juniper Networks EX4300 Series Ethernet switches for the hands-on components, but lab environment does not preclude the course from being applicable to other Juniper hardware platforms running Junos OS.

This course is based on Junos OS Release 21.4R1.12.

Course Level

Junos Enterprise Switching (JEX) is an intermediate-level course.

Relevant Juniper Product

- EX Series • QFX Series

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

This course benefits individuals responsible for configuring and monitoring EX Series switches running Junos Enhanced Layer 2 Software (ELS)

Objectives:

- 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).
- 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.

operations.

- • List some advantages of using RSTP over STP.
- • Configure and monitor RSTP.

- • Explain the concepts of Multiple Spanning Tree Protocol (MSTP).
- • Configure and monitor MSTP.
- • Discover, configure, and troubleshoot EX Series switches using Junos Space Network Director.

Prerequisites:

- Basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite
- Complete the Introduction to the Junos Operating System (IJOS) course, or equivalent knowledge

Testing and Certification

JNCIS-ENT exam topics are based on the content of the recommended instructor-led training courses, as well as the additional resources.

- Exam code: JN0-348
- Written exam
- Administered by Pearson VUE
- Exam length: 90 minutes
- Exam type: 65 multiple-choice questions
- Pass/fail status is available immediately
- Software Release:
 - o Junos 18.4
 - o Junos Space Network Director 3.1

The JNCIS-ENT certification is valid for three years.

Exams can be purchased and scheduled at <https://home.pearsonvue.com/junipernetworks/>

Follow-on-Courses:

Advanced Junos Enterprise Switching (AJEX)

Content:

Day 1	• Explain and configure loop protection on spanning tree	• Explain nonstop active routing (NSR)
Course Introduction	• Explain and configure root protection on spanning tree	• Explain nonstop bridging (NSB)
Layer 2 Switching	Lab 3: Implementing Spanning Tree	Virtual Chassis
• Describe Ethernet bridging basic	Day 2	• Describe operational details of Virtual Chassis
• Configure and monitor Layer 2 switching operations	LAGs and RTGs	• Implement Virtual Chassis and verify its operation
Lab 1: Implementing Layer 2 Switching	• Describe link aggregation groups (LAGs) and redundant trunk groups (RTGs)	Deploy Virtual Chassis
Switching Design Considerations	• Configure and monitor LAG and RTG	• Configure and monitor Virtual Chassis
• Explain switching terminologies and design considerations	Lab 4: Implementing LAGs and RTGs 10 Storm Control	Lab 7: Implementing Virtual Chassis Systems
• Describe various Enterprise Switching platforms	• Describe storm control features	The following Appendices can be covered if requested at the time of booking and subject to time during the course:
Implement VLANs	• Configure and monitor storm control features	Appendix A: Junos Space Network Director
• Define VLANs	Layer 2 Firewall Filters	• Describe Junos Space Network Director
• Create VLANs	• Describe firewall filter support for EX Series switches	• Configure Junos Space Network Director
• Monitor VLANs	• Implement and monitor the effects of a firewall filter	Appendix B: MSTP
Implement VLAN Features	Lab 5: Implementing Storm Control and Firewall Filters	• Explain the operations of MSTP
• Describe voice LAN concepts and operations	Port Security—MAC Limiting, MAC Learning, and MACsec	• Configure and verify MSTP
• Describe native LAN concepts and operations	• Describe MAC limiting, MAC learning, and MACsec	Appendix C: Mist Integration with EX Series Switches
• Describe and implement IRB interfaces	• Configure MAC limiting, MAC learning, and MACsec	• Explain mist solution and supported devices
Lab 2: Implementing Virtual Networks	• Monitor MAC limiting, MAC learning, and	• Describe provisioning and deployment process
Spanning Tree Overview		Appendix D: Mist Wired Assurance
• Explain the operations of STP		

• Explain the operations of RSTP	MACsec	• Describe the deployment options
Deploy Spanning Tree	Port Security—DHCP Snooping, Dynamic ARP Inspection, and IP Source Guard	• Explain wired assurance SLE and their classifiers
• Configure STP and RSTP	• Describe DHCP snooping, dynamic ARP inspection, and IP source guard	• Describe the role of Mist within campus and branch architecture
• Monitor STP and RSTP	• Configure DHCP snooping, dynamic ARP inspection, and IP source guard	Appendix E: ELS and Non-ELS Configuration
Spanning Tree Protection Features	• Monitor DHCP snooping, dynamic ARP inspection, and IP source guard	• Configure switching options
• Explain and configure BPDU protection on spanning tree	Lab 6: Implementing Port Security	• Understand IRB and RVI interfaces and its configuration
	High Availability—GRES, NSR, and NSB	• Describe Q-in-Q VLAN tagging
	• Overview of high availability networks	
	• Explain graceful Routing Engine switchover (GRES)	

Additional Information:

Delegates will receive an official set of e-kit courseware approximately 1 week prior to the start of the course.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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