Advanced Junos Enterprise Switching (AJEX)

Engineering Simplicity

COURSE LEVEL

Advanced Junos Enterprise Switching (AJEX) is an advanced-level course.

AUDIENCE

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

PREREQUISITES

Students should have an intermediate-level of 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, and the Junos Enterprise Switching (JEX) course prior to attending this class.

ASSOCIATED CERTIFICATION

JNCIP-ENT

RELEVANT JUNIPER PRODUCT

- Switching
- EX Series
- Junos OS

RECOMMENDED NEXT COURSE

JNCIE-ENT Bootcamp

CONTACT INFORMATION

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COURSE OVERVIEW

This two-day course is designed to provide detailed coverage of virtual LAN (VLAN) operations, Multiple Spanning Tree Protocol (MSTP) and VLAN Spanning Tree Protocol (VSTP), authentication and access control for Layer 2 networks, IP telephony features, class of service (CoS) and monitoring and troubleshooting tools and features supported on the EX Series Ethernet Switches. Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos operating system and in monitoring device and protocol operations. This course uses Juniper Networks EX 4300 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. Optional lab components are available allowing attendees to perform network management and troubleshooting tasks using Junos Space Network Director 3.0. This course is based on Junos OS Release 17.1R1.8.

OBJECTIVES

- Restrict traffic flow within a VLAN.
- Manage dynamic VLAN registration.
- Tunnel Layer 2 traffic through Ethernet networks.
- Review the purpose and operations of a spanning tree.
- Implement multiple spanning-tree instances in a network.
- Implement one or more spanning-tree instances for a VLAN.
- List the benefits of implementing end-user authentication.
- Explain the operations of various access control features.
- Configure and monitor various access control features.
- Describe processing considerations when multiple authentication and access control features are enabled.
- Describe some common IP telephony deployment scenarios.
- Describe features that facilitate IP telephony deployments.
- Configure and monitor features used in IP telephony deployments.
- Explain the purpose and basic operations of CoS.
- Describe CoS features used in Layer 2 networks.
- Configure and monitor CoS in a Layer 2 network.
- Describe a basic troubleshooting method.
- List common issues that disrupt network operations.
- Identify tools used in network troubleshooting.
- Use available tools to resolve network issues.
- Discover, configure, and troubleshoot EX Series switches using Junos Space Network Director.

Course content subject to change. See www.juniper.net/courses for the latest details.

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COURSE CONTENT

Day 1

| 1 | **COURSE INTRODUCTION** |

| 2 | **Advanced Ethernet Switching** |

- Virtual Local Area Networks
- Automating VLAN Administration
- Tunneling Layer 2 Traffic

LAB 1: Advanced Ethernet Switching

| 3 | **Advanced Spanning Tree** |

- Spanning Tree Review
- MSTP
- VSTP
- Advanced Spanning Tree Troubleshooting

LAB 2: Advanced Spanning Tree

| 4 | **Authentication and Access Control** |

- Authentication Overview
- Access Control Features
- Overview of Authentication Processing

LAB 3: Authentication and Access Control

Day 2

| 5 | **Deploying IP Telephony Features** |

- Deployment Scenarios
- IP Telephony Features
- Case Study: Deploying IP Telephony Features

LAB 4: Deploying IP Telephony Features

| 6 | **Class of Service** |

- Class of Service Review
- Processing and Feature Overview
- Case Study: Implementing Class of Service
- Junos Space Network Director CoS Profiles
- Troubleshooting Class of Service

LAB 5: Class of Service

| 7 | **Monitoring and Troubleshooting Layer 2 Networks** |

- Introduction to Monitoring and Troubleshooting
- Monitoring and Troubleshooting Tools
- Case Studies

LAB 6: Monitoring and Troubleshooting

| 8 | **Appendix A: ELS and Non-ELS Configuration Examples** |

- Switch Options
- IRB and VLAN Interfaces
- Q-in-Q Tagging

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