Advanced Junos Enterprise Switching

COURSE OVERVIEW

This two-day, advanced-level course provides detailed coverage of 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), monitoring and troubleshooting tools and features supported on Juniper Networks® EX Series Switches.
Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos operating system (OS) and monitoring device and protocol operations. This course uses Juniper Networks® EX4300 Switches for the hands-on component, but the 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 21.4R3.

COURSE LEVEL

Advanced Junos Enterprise Switching is an advanced-level course.

AUDIENCE

This course benefits individuals responsible for configuring and monitoring EX Series Switches using Junos OS.

PREREQUISITES

The prerequisites for this course include:

- Basic networking knowledge and an understanding of the OSI reference model and the TCP/IP protocol suite.
- Completion of the *Introduction to the Junos Operating System* course prior to attending this class.
- Completion of the *Junos Enterprise Switching* course prior to attending this class.

RELATED CERTIFICATION

JNCIP-ENT

RELATED JUNIPER PRODUCTS

EX Series

RECOMMENDED NEXT COURSE

Junos Intermediate Routing

OBJECTIVES

- Modify traffic flows within a VLAN.
- Manage dynamic VLAN registration.
- Implement Layer 2 tunnel 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 after enabling multiple authentication and access control features.
- 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.

- List common issues that disrupt network operations.
- Identify tools used in network troubleshooting.
- List available tools to resolve network issues.

COURSE CONTENTS

DAY 1

Module 1: Implementing VLAN Traffic Management

- Explain how to add user traffic to VLANs
- Describe how to restrict traffic flows within a VLAN

Module 2: Advanced Ethernet Switching

- Configure dynamic VLAN registration using MVRP
- Implement Layer 2 tunnel traffic through Ethernet networks

Lab 1: Advanced Ethernet Switching

Module 3: MSTP

- Describe the Spanning Tree Protocol
- Describe the purpose and operations of spanning tree
- Implement multiple spanning-tree instances

Module 4: VSTP

- Describe one or more spanning-tree instances for a VLAN
- Implement one or more spanning-tree instances for a VLAN

Lab 2: Implementing MSTP and VSTP

Module 5: Authentication and Access Control

- Identify the benefits of implementing end-user authentication
- Describe the operations of the 802.1X access control features

Module 6: Access Control Features—MAC RADIUS and Captive Portal

- Configure and monitor MAC RADIUS access control features
- Configure and monitor the captive portal access control features
- Describe processing considerations after enabling multiple authentication and access control features

Lab 3: Authentication and Access Control

DAY 2

Module 7:IP Telephony Features—Power over Ethernet, Neighbor Discovery Using LLDP

- Describe common IP telephony deployment scenarios
- Explain the Power over Ethernet feature of IP telephony
- Describe the neighbor discovery feature of IP telephony

Module 8:IP Telephony Features—Voice VLAN

- Describe IP telephony's voice VLAN feature
- Implement IP telephony features

Lab 4: Deploying IP Telephony Features

Module 9:Class of Service—Overview

- Identify network traffic challenges
- Implement class-of-service

Module 10: Implementing Class of Service

- Configure and monitor class of service in a Layer 2 network
- Perform class-of-service troubleshooting

Lab 5: Implementing Class of Service

Module 11: Introduction to Monitoring and Troubleshooting Layer 2 Enterprise Networks

- Explain the basic troubleshooting flow
- Evaluate troubleshooting steps

Module 12: Monitoring and Troubleshooting Layer 2 Enterprise Networks

- Identify tools used in network troubleshooting
- Use available tools to resolve network issues

Lab 6: Monitoring and Troubleshooting Layer 2 Networks

SELF-STUDY MODULES

Module 13: Juniper Mist Wired Assurance—Overview

- Provide an overview of Juniper Mist Wired Assurance
- Describe the provisioning options and how they work

Module 14: Juniper Mist Wired Assurance, Day One—Deployment and Configuration

- Describe the deployment options and how they work
- Describe the configuration process
- List Wired Assurance SLEs

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