
OPERATING JUNIPER NETWORKS SWITCHES IN THE ENTERPRISE (OJXE)

Course No: EDU-JUN-OJXE

Length: Four days

Course Overview

This four-day course discusses the configuration of Juniper Networks EX-series switches in a typical network environment. Key topics include a platform overview, user configuration interfaces, initial and secondary system configuration tasks, operational monitoring of an EX-series switch, Ethernet switching concepts, spanning tree protocol, inter-VLAN routing, switching security protocols and features, IP telephony features, and design and implementation considerations.

Objectives

- Describe common deployment options for the EX-series switches.
- Perform operational monitoring tasks typically associated with EX-series switches.
- Install and configure an EX-series switch in a network.
- Form a Virtual Chassis system by connecting multiple EX-4200 switches.
- Configure and monitor virtual local area networks (VLANs).
- Create a loop-free network environment using the spanning tree protocol (STP).
- Implement inter-VLAN routing using static and dynamic methods.
- Define and apply routing policy and firewall filters.
- Secure a switch port using available port access security features.
- Configure and monitor IP telephony features such as PoE, voice VLAN, and LLDP.
- Design and implement a Layer 2 network using EX-series switches.

Intended Audience

The primary audiences for this course are end users of J-series platforms, which include the following:

- Network engineers;
- Support personnel;
- Reseller support; and
- Others responsible for implementing Juniper Networks Enterprise Routing products.

Course Level

OJXE is an introductory-level course.

Prerequisites

The OJXE prerequisite is a basic understanding of the TCP/IP protocols.

While not required, familiarity with the command-line interface of a routing platform or UNIX system is helpful.

Course Contents

Day 1

Chapter 1: Course Introduction

Chapter 2: Introduction to Juniper Networks Enterprise Switches

- Overview of Enterprise Switching Platforms
- Architecture and Packet Flow
- Network Management Options

Chapter 3: User Interface Options

- User Interface Options
- Active and Candidate Configurations
- Using the J-Web Graphical User Interface
- Using the JUNOS Software Command-Line Interface
- Lab 1: User Interface Options

Chapter 4: Installation and Initial Configuration

- Installation Guidelines
- Rescue and Factory-Default Configurations
- Configuration Checklist
- Initial Configuration Options
- Lab 2: Initial Configuration

Chapter 5: Secondary System Configuration

- User Configuration and Authentication
- System Logging and Tracing
- Network Time Protocol
- Network Time Protocol
- System Logging and Tracing
- Network Time Protocol
- Archiving Configurations
- Dynamic Host Configuration Protocol
- Simple Network Management Protocol
- Lab 3: Secondary System Configuration

Chapter 6: Operational Monitoring and Maintenance

- Monitoring Platform Operation
- Network Utilities
- Maintaining JUNOS Software
- File System Maintenance and Password Recovery
- Lab 4: Operational Monitoring

Day 2

Chapter 7: Virtual Chassis

- Virtual Chassis Overview
- Deployment Options and Installation
- Management and Operation
- Lab 5: Virtual Chassis Monitoring Interface Operation

Chapter 8: Interface Support, Configuration, and Monitoring

- Interface Support and Configuration
- Monitoring Interface Operation
- Interface Features
- Lab 6: Interface Configuration

Chapter 9: Ethernet Switching and Virtual LANs

- Ethernet LANs
- Bridging Basics
- VLANs
- Configuring and Monitoring VLANs
- Routed VLAN Interface
- Lab 7: Ethernet Switching and VLANs

Chapter 10: Spanning Tree Protocol

- Overview of Spanning Tree Protocol
- Overview of Rapid Spanning Tree Protocol
- Overview of Multiple Spanning Tree Protocol
- Configuring and Monitoring STP, RSTP, and MSTP
- Overview of Redundant Trunk Group
- Configuring and Monitoring Redundant Trunk Group
- Lab 8: Spanning Tree

Day 3

Chapter 11: Inter-VLAN Routing

- Overview of Inter-VLAN Routing
- Routing Support on EX-series Switches
- Routing Table and Route Preference
- Static Routing
- Lab 9a: Static Routing
- OSPF
- Lab 9b: OSPF
- Virtual Router Redundancy Protocol
- Lab 9c: VRRP

Chapter 12: Routing Policy and Firewall Filters

- Policy Framework
- Routing Policy Overview
- Configuring and Monitoring Routing Policy
- Firewall Filter Overview
- Configuring and Monitoring Firewall Filters
- Lab 10: Routing Policy and ACLs

Chapter 13: Switching Security

- MAC Limiting
- DHCP Snooping
- Dynamic ARP Inspection
- 802.1X
- Lab 11: Switching Security s

Day 4

Chapter 14: IP Telephony Services

- Power over Ethernet
- Voice VLAN
- LLDP
- LLDP-MED
- Lab 12: IP Telephony Services

Chapter 15: Design and Implementation of Layer 2 Network

- Network Development Life Cycle
- Network Design Assistance
- Implementation Examples
- Case Study
- Lab 13: Design and Implementation