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Implementing Cisco IP Switched Networks (SWITCH)

Learn via: **Classroom/AFA**

Duration: **5 Day**

Overview

Implementing Cisco Switched Networks (SWITCH) v2.0 is a five-day instructor-led training course, designed to help delegates prepare to plan, configure, and verify the implementation of complex enterprise switching solutions for campus environments using the Cisco Enterprise Campus Architecture. These skills are validated in the Cisco CCNP Routing and Switching certification, a professional-level certification specializing in the routing and switching field.

This course is a component of the Cisco CCNP Routing and Switching curriculum. Labs are an important feature of this course with 2 different types of labs being used to aid learning, discovery labs are instructor guided labs through which delegates explore new topics in an interactive way, the challenge Labs are designed to test delegates understanding of the topics being taught and to provide vital hands-on practice.

This course aligns to Exam 300-115 (SWITCH)

Prerequisites

- Knowledge and experience equivalent to having attended the Interconnecting Cisco Network Devices Part 1 Version 2.0 and Interconnecting Cisco Network Devices Part 2 Version 2.0 courses.

In addition, practical experience in installing, operating and maintaining Cisco routers & switches in an enterprise environment is recommended.

Who Should Attend

The primary audience for this course is:

- A network professional who will need to correctly implement switch-based solutions given a network design using Cisco IOS services and features. The typical job roles for this type of professional are network engineers, network operations center (NOC) technical support personnel, or help desk technicians.

The secondary audience for this course is:

- Any individual involved in network operations and support

What You Will Learn

At the end of this course you will be able to:

- Describe the hierarchical campus structure, basic switch operation, use of SDM templates, PoE, and LLDP
- Implement VLANs, trunks, explain VTP, implement DHCP in IPv4 and IPv6 environment, and configure port aggregation
- Implement and optimize STP mechanism that best suits your network - PVSTP+, RPVSTP+, or MST
- Configure routing on a multilayer switch
- Configure NTP, SNMP, IP SLA, port mirroring, and verify StackWise and VSS operation
- Implement First Hop redundancy in IPv4 and IPv6 environments
- Secure campus network according to recommended practices

Outline

Basic Concepts and Network Design

- Analyzing Campus Network Structure
- Comparing Layer 2 and Multilayer Switches

- Using Cisco SDM Templates
- Implementing LLDP
- Implementing PoE

Campus Network Architecture

- Implementing VLANs and Trunks
- Introducing VTP
- Implementing DHCP
- Implementing DHCP for IPv6
- Configuring Layer 2 Port Aggregation

Spanning Tree Implementation

- Implementing RSTP
- Implementing STP Stability Mechanisms
- Implementing Multiple Spanning Tree Protocol

Configuring Inter-VLAN Routing

- Implementing Inter-VLAN Routing Using a Router
- Configuring a Switch to Route

Implementing High Availability Networks

- Configuring Network Time Protocol
- Implementing SNMP Version 3
- Implementing IP SLA
- Implementing Port Mirroring for Monitoring Support
- Verifying Switch Virtualization

First Hop Redundancy Implementation

- Configuring Layer 3 Redundancy with HSRP
- Configuring Layer 3 Redundancy with VRRP
- Configuring Layer 3 Redundancy with GLBP
- Configuring First Hop Redundancy for IPv6

Campus Network Security

- Implementing Port Security
- Implementing Storm Control
- Implementing Access to External Authentication
- Mitigating Spoofing Attacks
- Securing VLAN Trunks
- Configuring Private VLANs

Challenge Labs

- Lab 1: Network Discovery
- Lab 2: Configure DHCP
- Lab 3: Configure DHCPv6
- Lab 4: Configure EtherChannel
- Lab 5: Implementing Rapid Spanning Tree
- Lab 6: Improving STP Configuration
- Lab 7: Configure MST
- Lab 8: Configure Routing Between VLANs Using a Router
- Lab 9: Configure Routing on a Multilayer Switch
- Lab 10:Configure NTP
- Lab 11:Configure Network Monitoring Using IP SLA
- Lab 12: Configure HSRP With Load Balancing
- Lab 13: Configure VRRP With Load Balancing
- Lab 14: Implement GLBP
- Lab 15: Configure HSRP for IPv6
- Lab 16:Controlling Network Access Using Port Security