Implementing Cisco Switched Networks (CS-SWITCH)

Modality: Virtual Classroom

Duration: 5 Days

CLC: 35 Units

About the course:

Internet Protocol Switching, commonly referred to as IP Switching, is considered to be a more effective routing procedure as it routes data packets far quicker compared to traditional routing by expending Layer 3 Switches. This advanced level Cisco course will teach you all about planning, organization, as well as validating the deployment of composite enterprise switching resolutions. All enrolled in this course will obtain in-depth knowledge of the process of organizing and improving any switched infrastructure, via STP, VLANs, MSTP, RSTP, and HRSP. Additionally, they will also learn about securing a switched infrastructure. A fundamental element of this course is that the candidates will get to learn about new theories and gain practical experience of using the system, thereby honing their skills further. The practical training, usually known as labs teach about the application of Cisco IOS Software using Layer 2 and Layer 3 features along with a CLI maintained version on IOS. Moreover, the knowledge gained from this course, will help the student in preparing for the 300-115 SWITCH: Executing Cisco IP Switched Networks Exam.

Cisco certified network engineers, can earn up to **$77,484/-** on average, per annum.

Course Objectives:

Once the course is complete, the IT professional will be able to:

- Explain the use of SDM patterns, along with categorized campus structure, LLDP, elementary switch operation, and PoE.
- Explain the use of VTP, and understand the process of incorporating trunks, VLANs, DHCP in IPv4 and IPv6 setting as well as organizing port aggregation.
- Understand the process of incorporating as well as improving the STP mechanism relevant to a network - PVSTP+, RPVSTP+, or MSTP
- Understand the process of routing arrangement on a multi-layer switch
- Understand the process of organizing SNMP, port imaging, NTP, IP SLA, and validating VSS and StackWise Operations
- Understand the process of incorporating First Hop redundancy in IPv4 and IPv6 settings
- Understand the process of securing and protecting campus network based on best practices.

Audience:

The course is designed to be undertaken by the following:

- Network Advisors
- Cisco Station Partners
- System Engineers
- System Integrators

Pre-requisites:

Prior to opting for this course, it is recommended to have knowledge of the following, however, it is not mandatory to possess it.

- Network Ground Rules
- Develop WAN (IPv4 and IPv6) and Internet connectivity
- The process of handling network device safety
- Troubleshooting IP Connectivity (IPv4 and Ipv6)
- The process of legalizing a medium sized LAN using multiple assisting VLANs, switches, straddling tree and trunking.
- The process of organizing as well as troubleshooting OSPF (IPv4 and IPv6) and EIGRP
- The process of constructing devices for Syslog, SNMP, and Net Flow Access
- The process of handling Cisco IOS images, Cisco device configurations, and related certificates

Recommended Pre-Requisite Courses:

- Joining Cisco Networking Devices Part 1 v3.x (ICND1)
- CCNAX Boot camp Intersecting Cisco Networking Devices Accelerated (ICND1+ICND2) (CCNAX)
- Interconnecting Cisco Networking Devices Part 2 v3.x (ICND2)

Course Outline:

Lesson 1: Basic Concepts and Network Design

- Analyzing Campus Network Structure
- Comparing Layer 2 and Multilayer Switches
- Using Cisco SDM Templates
- Implementing LLDP
- Implementing PoE

Lesson 2: Campus Network Architecture

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

Lesson 3: Spanning Tree Implementation

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

Lesson 4: Configuring Inter-VLAN Routing

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

Lesson 5: Implementing High Availability Networks

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

Lesson 6: First Hop Redundancy Implementation

- Configuring Layer 3 Redundancy with HSRP
- Configuring Layer 3 Redundancy with VRRP
- Configure VRRP With Load Balancing
- Configuring Layer 3 Redundancy with GLBP
- Configuring First Hop Redundancy for IPv6

Lesson 7: Campus Network Security

- Implementing Port Security

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

Lab Outline
The following discovery labs are included in this course:

- Discovery 1: Investigating the CAM
- Discovery 2: Configuring VLANs and Trunks
- Discovery 3: VTP Operation
- Discovery 4: Exploring DHCP
- Discovery 5: Obtaining IPv6 Address Dynamically
- Discovery 6: EtherChannel Configuration and Load Balancing
- Discovery 7: Discovering and Modifying STP Behavior
- Discovery 8: RootGuard
- Discovery 9: Configuring MST
- Discovery 10: Routing with an External Router
- Discovery 11: Routing on a Multilayer Switch
- Discovery 12: NTP Configuration
- Discovery 13: IP SLA Echo Configuration
- Discovery 14: Configuring and Tuning HSRP
- Discovery 15: Configure VRRP and Spot the Differences from HSRP
- Discovery 16: Configure GLBP
- Discovery 17: Port Security

The following challenge labs are included in this course:

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

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