



CISCO LAN SWITCHING

UPGRADE YOUR KNOWLEDGE

LAN Switching Training

Course Overview

The LAN Switching training course aims to provide practical skills on Layer-2 technologies, it's configuration and troubleshooting in enterprise environments. This course is intended for networking professionals looking to sharpen their skills in Layer-2 Networks.

Duration & Module Coverage

Duration: 7 Days (14hrs)

Session Options	Module Coverage
Session Weekdays[4] : 2 hours per day 4 days per week	Day 1 - Modules 1 Day 2 - Module 1 contd. Day 3 - Module 2 Day 4 - Module 3 Day 5 - Module 4 Day 6 – Module 5 Day 7 – Module 6
Session Weekends: 2 hours per day	

Learning Goals

By the end of this course participants will be able to:

1. Demonstrate knowledge of Layer-2 protocols
2. Understand complex Layer-2 network designs.
3. Configuration and troubleshooting skills of all switching protocols.

Pre-Requisites

Understanding of basic computer skills is a pre-requisite for this training.

Teaching Methodology

This is a very hands-on course where participants carry out practical exercises according to the lab guide provided. The concepts are taught through implementation of real-world use-cases. Our exercises have been carefully designed to replicate scenarios participants will face in real life work conditions.

Who Should Take This Course?

This course is designed for network professionals with knowledge of basic networking looking forward to enhance Layer-2 configuration and troubleshooting.



Course Content

1. Layer 2 Technologies

- Ethernet as a protocol
- Frame structure
- Evolution of Local Area Networks
- Transparent Bridging
- Start-up sequence of a switch
- Virtual LAN [VLAN]
- Types of VLANs
- Access Ports
- Trunking and trunk ports
- Dynamic Trunking Protocol
- Types of ether-channel
- VLAN Trunking Protocol
- Inter-VLAN Routing- Router on a stick
- Campus Design Architectures- 3-tier and 2-tier designs

2. Spanning Tree Protocol [STP]

- Need of STP
- Working of STP
- Types of Spanning Tree Protocol- STP, PVSTP, RSTP, RPVSTP
- Multiple Spanning Tree Protocol
- Spanning Tree Protocol Inter-operability
- Tuning STP
- Optimizing STP
- Protecting STP

3. Multi-Layer Switching

- Layer-3 switch
- Switch Virtual Interfaces [SVI]
- Inter-VLAN Routing on a Layer-3 Switch
- Routed Port on a Layer-3 switch
- Routing on Layer-3 Switch

4. Layer-2 Discovery Protocols and Administration

- Cisco Discovery Protocol
- Link Layer Discovery Protocol
- UDLD
- Managing MAC Address Table
- Err-disable on switches
- Remote login in a switch
- PoE Configuration
- Stacking and Aggregation

5. Layer-2 Security

- DHCP Snooping
- IP Source Guard
- Dynamic ARP Inspection
- Port Security



- Private VLAN
- Storm Control
- MAC Security
- Native VLAN Tagging
- 802.1x Authentication
- AAA with RADIUS and TACACS+
- Local Privilege Authentication Fallback

6. Layer-3 High Availability

- First hop Redundancy Protocols
- HSRP
- VRRP
- GLBP

Practical Learning Exercises

A lab guide will be provided to each student with requirement scenarios. Along with lab guide required VMs will be provided to set up individual labs for self practice.

Similarly there would be scenarios for implementing, verifying and troubleshooting all modules covered in the course.