

Implementing Cisco MPLS (MPLS) v3.1

Duration: 5 Days

COURSE DESCRIPTION

This course is designed to introduce you to MPLS concepts, installation, migration, operation, inspection, and troubleshooting. You'll start with an overview of MPLS and its operation, after which you'll concentrate on MPLS Virtual Private Network (VPN) deployment. The MPLS fundamentals covered in this class will provide theory and hands-on knowledge to implement, integrate, and deploy an MPLS infrastructure. The MPLS VPN lecture and labs will cover the models, diversity, implementation, troubleshooting, and flexibility of MPLS VPNs.

COURSE OBJECTIVES

This class will help you:

- Understand the features of MPLS
- Learn how to configure and troubleshoot Frame mode MPLS on Cisco IOS platforms
- Learn how the MPLS VPN model can be used to implement managed services and internet access

COURSE OUTLINE

1. MPLS Concepts

- MPLS Labels and Label Stack
- MPLS Applications

2. MPLS Label Assignment and Distribution

- Discovering LDP Neighbors
- Label Distribution in Frame-Mode MPLS
- Convergence in Frame-Mode MPLS
- MPLS Label Allocation, Distribution, and Retention Modes

3. Frame-Mode MPLS Implementation on Cisco IOS Platforms

- CEF Switching
- Configuring Frame-Mode MPLS
- Monitoring Frame-Mode MPLS
- Troubleshooting Frame-Mode MPLS

4. MPLS Virtual Private Network (VPN) Technology

- VPN Categorization
- MPLS VPN Architecture
- MPLS VPN Routing Model
- MPLS VPN Packet Forwarding

5. MPLS VPN Implementation

- MPLS VPN Mechanisms
- Configuring VRF Tables
- Configuring an MP-BGP Session Between PE Routers
- Configuring Routing Protocols Between PE and CE Routers
 - RIP
 - EIGRP
 - OSPF
 - BGP
- Monitoring MPLS VPN Operation
- Troubleshooting MPLS VPN

6. Complex MPLS VPNs

- Central Services VPNs
- Managed CE Router Service
- MPLS Managed Services

7. Integrated Internet Access with MPLS VPNs

- VPN Internet Access Topologies
- VPN Internet Access Implementation Methods
- Separating Internet Access from VPN Services
- Internet Access Backbone as a Separate VPN

8. MPLS Traffic Engineering

- Traffic Engineering (TE) Concepts
- MPLS TE Components
- MPLS TE Operations
- Configuring MPLS TE on Cisco IOS Platforms
- Monitoring Basic MPLS TE on Cisco IOS

PREREQUISITES

BGP, QoS, MPLS or equivalent background

WHO SHOULD ATTEND

Network Administrators, Network Engineers, Network Managers, Systems Engineers (who would like to implement MPLS and MPLS Traffic Engineering) and anyone responsible for designing, implementing, or troubleshooting MPLS networks or solutions based on MPLS technology.