

COURSE **Implementing Cisco MPLS (MPLS) v2.2**

CODE **TRN-MPLS**

DURATION 5 Days

COURSE

This is a 5 day Instructor-led course. This course replaces version 2.1 with the following enhancements:

- Improved labs
- Clearer explanations
- More information on VPNs
- An introduction to Traffic Engineering
- Correction of errors in previous version
- Elimination from course of ATM-related references

WHO SHOULD ATTEND

- Channel Partners/Resellers
- Customers / Employees
- Systems Engineers

COURSE OBJECTIVES

After completing this course the student should be able to:

- Describe how the service provider infrastructure is attacked
- Describe the features of MPLS
- Describe how MPLS labels are assigned and distributed
- Identify the Cisco IOS tasks and command syntax necessary to implement MPLS on frame-mode Cisco IOS platforms
- Describe the MPLS peer-to-peer architecture and explain the routing and packet forwarding model in this architecture
- Identify the Cisco IOS command syntax required to successfully configure, monitor, and troubleshoot VPN operations

- Identify how the MPLS VPN model can be used to implement managed services and Internet access
- Describe the various Internet access implementations that are available and the benefits and drawbacks of each model
- Provide an overview of MPLS Traffic Engineering

COURSE OUTLINE

Introducing Basic MPLS Concepts

Introducing MPLS Labels and Label Stack

Identifying MPLS Applications

Discovering LDP Neighbors

Establishing the Service Provider IGP Routing Environment

Introducing Typical Label Distribution in Frame-Mode MPLS

Introducing Convergence in Frame-Mode MPLS

Introducing MPLS Label Allocation, Distribution, and Retention Modes

Introducing CEF Switching

Configuring Frame-Mode MPLS on Cisco IOS Platforms

Monitoring Frame-Mode MPLS on Cisco IOS Platforms

Troubleshooting Frame-Mode MPLS on Cisco IOS Platforms

Establishing the Core MPLS Environment

Introducing Virtual Private Networks

Introducing Overlay and Peer-to-Peer VPNs

Categorizing VPNs

Introducing MPLS VPN Architecture

Introducing MPLS VPN Routing Model

Forwarding MPLS VPN Packets

Using MPLS VPN Mechanisms of Cisco IOS Platforms

Configuring VRF Tables

Configuring an MP-BGP Session Between PE Routers

Configuring Small-Scale Routing Protocols Between PE and CE Routers

Monitoring MPLS VPN Operations

Initial MPLS VPN Setup

Running EIGRP Between PE and CE Routers

Configuring OSPF as the Routing Protocol Between PE and CE routers

Running OSPF Between PE and CE Routers

Running OSPF Between PE and CE Routers - complete

Configuring BGP as the Routing Protocol Between PE and CE routers

Troubleshooting MPLS VPNs

Running BGP Between PE and CE Routers

PREREQUISITES

Cisco Certified Network Associate (CCNA) certification or equivalent level of working knowledge and experience, completion of CCNA Basics and ICND courseware is recommended training for CCNA. Equivalent knowledge and skill that can be acquired by attending Cisco's training courses Building Scalable Cisco Internetworks (BSCI) and Configuring BGP on Cisco Routers (BGP). Practical experience with deploying and operating networks based on Cisco network devices and Cisco IOS is strongly recommended. The QoS course is highly recommended because QoS knowledge is assumed in several sections of the course.