

Implementing Cisco MPLS

DURATION: 5 DAYS

PRICE: USD 4295

CLCs: 43

CE: 40

COURSE CODE: MPLS | **FORMAT:** Lecture & Lab

COURSE DESCRIPTION

The Implementing Cisco Multiprotocol Label Switching training teaches you the high-performance method for forwarding packets through a network. MPLS enables routers at the edge of a network to apply simple labels to packets. This practice allows the edge devices to switch packets according to labels, with minimal lookup overhead. MPLS integrates the performance and traffic-management capabilities of data link Layer 2 with the scalability and flexibility of network Layer 3 routing. When used in conjunction with other standard technologies, MPLS gives the ability to support value-added features.

WHO YOU'LL BENEFIT

- Acquire the skill of implementing MPLS high-performance methods for forwarding packets in a network
- Learn to configure routers at the network edge to apply simple labels to packets
- Gain the knowledge to enable edge devices,

ATM switches, or existing routers to switch packets based on labels within the service provider core

- Master the skill of minimizing lookup overhead in the packet-switching process
- Gain proficiency in integrating the performance and traffic-management capabilities of data-link Layer 2 using MPLS
- Acquire the skill of combining the scalability and flexibility of network Layer 3 routing through MPLS
- Learn to leverage MPLS with other standard technologies to implement value-added features for service providers' networks

WHO SHOULD ENROLL

- Network administrators
- Network engineers
- Network managers
- Systems engineers (who would like to implement MPLS and MPLS Traffic Engineering)

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COURSE OBJECTIVES

Upon completion of the course, students will have the knowledge and skills to:

- 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 PREREQUISITES

It is recommended, but not required, to have the following skills and knowledge before attending this course:

- Intermediate to advanced knowledge of Cisco IOS Software configuration
- Configuring and troubleshooting EIGRP, OSPF, IS-IS and BGP

The following Cisco courses can help you gain the knowledge you need to prepare for this course:

- Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)

SECTIONS

Section 1: Introducing Basic MPLS Concepts

Section 2: Introducing MPLS Labels and Label Stack

Section 3: Identifying MPLS Applications

Section 4: Discovering LOP Neighbours

Section 5: Introducing Typical Label Distribution in Frame-Mode MPLS

Section 6: Introducing Convergence in Frame-Mode MPLS

Section 7: Implementing Frame-Mode MPLS on Cisco IOS Platforms

Section 8: Monitoring and Troubleshooting Frame-Mode MPLS on Cisco IOS Platforms

Section 9: Introducing VPNs

Section 10: Introducing MPLS VPN Architecture

Section 11: Introducing the MPLS VPN Routing Model

Section 12: Forwarding MPLS VPN Packets

Section 13: Implementing an MP-BGP Session Between PE Routers

Section 14: Configuring Small-Scale Routing Protocols Between PE and CE Routers

Section 15: Monitoring MPLS VPN Operations

Section 16: Configuring OSPF as the Routing Protocol Between PE and CE Routers

Section 17: Configuring BGP as the Routing Protocol Between PE and CE Routers

Section 18: Troubleshooting MPLS VPNs

Section 19: Complex MPLS VPNs

Section 20: Internet Access and MPLS VPNs

Section 21: Introducing MPLS TE Components

Section 22: Understanding MPLS TE Operations

Section 23: Configuring MPLS TE on Cisco IOS Platforms

Section 24: Monitoring Basic MPLS TE on Cisco IOS Platforms

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DISCOVERY LABS

Discovery 1: Implement SP and Customer IP Addressing and IGP Routing

Discovery 2: Verify Cisco Express Forwarding Switching

Discovery 3: Enable MPLS

Discovery 4: Change IP TTL Propagation

Discovery 5: Implement the Core MPLS Environment in the Service Provider Network

Discovery 6: Configure MP-IBGP

Discovery 7: Configure the VRF Instances

Discovery 8: Configure RIP as a PE-CE Routing Protocol

Discovery 9: Configure EIGRP as a PE-CE Routing Protocol

Discovery 10: Implement EIGRP-Based MPLS VPNs

Discovery 11: Configure OSPF as a PE-CE Routing Protocol

Discovery 12: Implement OSPF-Based MPLS VPNs

Discovery 13: Configure BGP as a PE-CE Routing Protocol

Discovery 14: Implement BGP-Based MPLS VPNs

Discovery 15: Configure a Central Services VPN

Discovery 16: Configure MPLS TE

Discovery 17: Implement MPLS Traffic Engineering

Instructor Led Training

To view the schedule and secure your site

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