
Implementing Cisco MPLS

Duration: 5 Days **Course Code: MPLS**

Overview:

The Implementing Cisco MPLS (MPLS) course is designed to provide lectures and comprehensive hands-on labs ranging from technology basics to more updated features and functions such as complex VPNs. The focus of the course is on MPLS technology issues as they apply to service providers and on how to configure new features and functions in an existing routed environment. A basic introductory level of some of the more updated features and functions like Traffic Engineering is introduced on a concept level only.

Target Audience:

This course is designed for: Network administrators and technicians who are responsible for implementing and troubleshooting basic IP multicast-enabled networks within a single domain. Pre-sales and post-sales technical engineers who are responsible for designing, implementing, and troubleshooting MPLS networks or solutions that are based on MPLS technology.

Objectives:

- Upon completing this course, the learner will be able to meet these overall objectives:
 - Describe the features of MPLS
 - Describe how MPLS labels are assigned and distributed
 - Configure and troubleshoot frame-mode MPLS on Cisco IOS platforms
 - Describe the MPLS peer-to-peer architecture and explain the routing and packet-forwarding model in this architecture
 - Configure, monitor, and troubleshoot VPN operations
 - Describe 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
 - Describe the tasks and commands that are necessary to implement MPLS TE
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Prerequisites:

To gain the prerequisite skills and knowledge, Cisco strongly recommends knowledge of the following courses:

- Interconnecting Cisco Networking Devices Part 1 (ICND1)
 - Interconnecting Cisco Networking Devices Part 2 (ICND2)
 - Implementing Cisco IP Routing (ROUTE)
 - Configuring BGP on Cisco Routers (BGP)
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Follow-on-Courses:

- MPLST – Implementing Cisco MPLS Traffic Engineering and Other Features
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Content:

MPLS Features

- Describing Basic MPLS Concepts
- Describing MPLS Labels and Label Stack
- Identifying MPLS Applications

Label Assignment and Distribution

- Discovering LDP Neighbors
- Describing Typical Label Distribution in Frame-Mode MPLS
- Describing Convergence in Frame-Mode MPLS

Frame-Mode MPLS Implementation on Cisco IOS Platforms

- Using Cisco Express Forwarding 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

MPLS Virtual Private Network Technology

- Introducing Virtual Private Networks
- Introducing MPLS VPN Architecture
- Introducing the MPLS VPN Routing Model
- Forwarding MPLS VPN Packets

MPLS VPN Implementation

- 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
- Configuring OSPF as the Routing Protocol Between PE and CE Routers
- Configuring BGP as the Routing Protocol Between PE and CE Routers
- Troubleshooting MPLS VPNs

Complex MPLS VPNs

- Introducing Overlapping VPNs
- Introducing Central Services VPNs
- Using Advanced VRF Import and Export Features
- Introducing the Managed CE Routers Service

Internet Access and MPLS VPNs

- Combining Internet Access with MPLS VPNs
- Implementing Separate Internet Access and VPN Services
- Implementing Internet Access as a Separate VPN

MPLS Traffic Engineering Overview

- Introducing Traffic Engineering Concepts
- Understanding MPLS TE Components
- Configuring MPLS Traffic Engineering on Cisco IOS Platforms
- Monitoring Basic MPLS TE on Cisco IOS Platforms

Further Information:

For More information, or to book your course, please call us on +254 713 027 191

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