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Learning Style: On Demand

Technology: Cisco

Difficulty: Intermediate

Course Duration: 40 Hours

## Implementing Cisco MPLS - On Demand (MPLS 3.0)



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## **Course Outline:**

### **Module 1: MPLS Concepts**

- Introducing basic MPLS concepts
- MPLS labels and label stack
- Identifying MPLS applications

### **Module 2: Label Assignment and Distribution**

- Discovering LDP neighbors
- Introducing typical label distribution in Frame-Mode MPLS
- Convergence in Frame-Mode MPLS

### **Module 3: Frame-Mode MPLS Implementation on Cisco IOS Platforms**

- 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

### **Module 4: MPLS Virtual Private Network Technology**

- Virtual Private Networks
- MPLS VPN Architecture
- MPLS Virtual routing model
- Forwarding MPLS VPN packets

### **Module 5: MPLS VPN Implementation**

- Using MPLS VPN Mechanisms of Cisco IOS Platforms
- Configuring an MP-BGP session between PE routers
- Configuring VRF tables
- 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

### **Module 6: Complex MPLS VPNs**

- Overlapping VPNs
- Central Services VPNs
- Introducing Managed CE routers service

## Module 7: Internet Access and MPLS VPNs

- Combining internet access with MPLS VPNs
- Implementing internet access in the MPLS VPN environment

## Module 8: MPLS Traffic Engineering Overview

- MPLS traffic engineering components
- MPLS traffic engineering operations
- Configuring MPLS traffic engineering on Cisco IOS platforms
- Monitoring basic MPLS TE on Cisco IOS Platforms

### Labs:

- Implement the service provider's and customer's IP addressing and IGP routing
- Implement the core MPLS environment in the service provider network
- Implement EIGRP based VPNs
- Implement OSPF Based MPLS VPNs
- Implement BGP based MPLS VPNs
- Implement MPLS traffic engineering

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