Document Generated: 10/13/2026

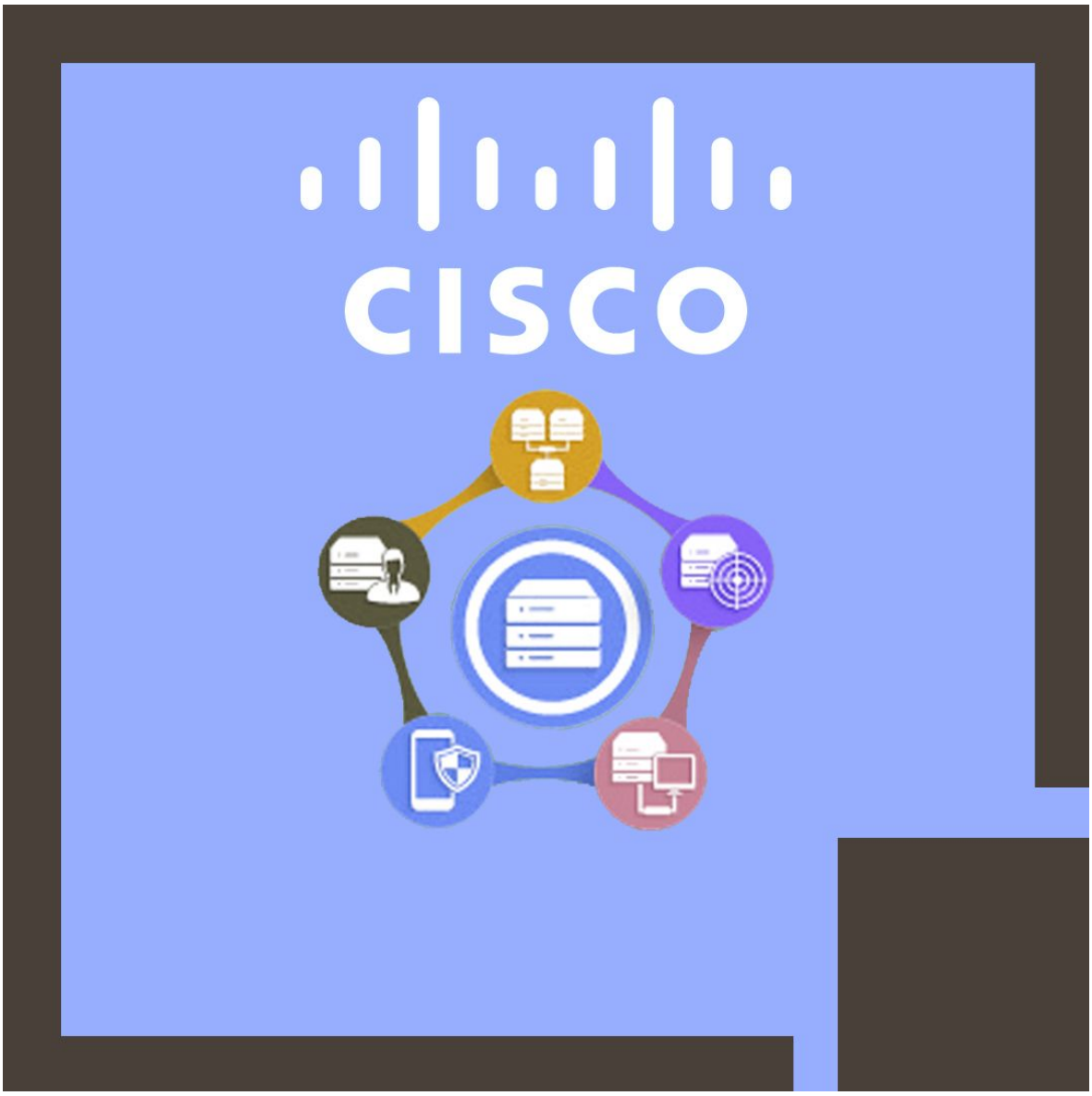
Learning Style: On Demand

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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