training code: MPLS / ENG DL 5d / EN

Implementing Cisco MPLS v3.1

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.

Cisco Continuing Education Program - CE

Taking part in authorised training allows you to obtain extra points necessary to maintain certification.

MPLS: 40 points CE

Training recipients

The training is intended for network administrators, network engineers, network managers and systems engineers who would like to implement MPLS (Multiprotocol Label Switching)

Benefits

Acquiring the ability to implement the architecture, operation, detection and removal of errors in networks using MPLS and MPLS VPN. Ability to design MAN and WAN networks based on IP using MPLS and MPLS VPN.

Training program

1. MPLS Concepts
   - Introducing Basic MPLS Concepts
   - Introducing MPLS Labels and Label Stack
   - Identifying MPLS Applications
2. Label Assignment and Distribution
   - Discovering LDP Neighbors
   - Introducing Typical Label Distribution in Frame-Mode MPLS
   - Introducing Convergence in Frame-mode MPLS
3. Frame-Mode MPLS Implementation on Cisco IOS Platforms
   - Introducing 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
4. MPLS VPN technology
   - Introducing VPNs
   - Introducing MPLS VPN Architecture
   - Introducing the MPLS VPN Routing Model
   - Forwarding MPLS VPN Packets
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
6. Complex MPLS VPNs
   - Introducing Overlapping VPNs
   - Introducing Central Services VPNs
   - Introducing the Managed CE Routers Service
7. Internet Access and MPLS VPNs
   - Combining Internet Access with MPLS VPNs
   - Implementing Internet Access in the MPLS VPN Environment
8. MPLS TE Overview
   - Introducing MPLS TE Components
   - Understanding MPLS TE Operations
   - Configuring MPLS TE on Cisco IOS Platforms

- Monitoring Basic MPLS TE on Cisco IOS Platforms

Labs

1. Implement the SP and Customer IP Addressing and IGP Routing
2. Implement the Core MPLS Environment in the Service Provider Network
3. Challenge 3: Implement EIGRP-Based VPNs
4. Implement OSPF-Based MPLS VPNs
5. Implement BGP Based MPLS VPNs
6. Implement MPLS TE

Expected preparation of the participant

Knowledge of IGP routing protocols and BGP protocol.

Training Includes

- 5 days with instructor training
- Trainer’s supervision
- Contact with community
- Coursebook
- Lab environment

Training method

- lecture
- workshops

Duration

5 days / 35 hours

Language

- Training: English
- Materials: English