

Implementing Cisco MPLS (MPLS) v3.1

Overview

Implementing Cisco MPLS (MPLS) v3.1 is recommended (although not required) training for individuals seeking CCNP Service Provider certification. The focus of this course is on MPLS technology issues as those issues apply to service providers and on how to configure new features and functions in an existing routed environment.

Multiprotocol Label Switching (MPLS) is a 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 - ATM switches or existing routers in the center of the service provider core 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 allows service providers the ability to support value-added features that are critical for their networks.

Duration

The MPLS v3.0 Training on Demand course is a self-paced course based on the 5-day instructor-led training version. It

consists of 28 sections of instructor video and text, along with interactive activities, 17 hands-on lab exercises, content review questions, and challenge questions.

Target audience

The primary audience for this course is individuals who are responsible for designing, implementing, or troubleshooting MPLS networks or solutions based on MPLS technology. The course is also recommended for individuals seeking the Cisco CCNP service provider certification.

- Network Engineers and Technicians
- Support Engineers
- Systems Engineers
- Network Analysts
- Network Operations Center (NOC) personnel
- Network Infrastructure Architects
- Network Designers
- IT Professionals seeking Cisco certification
- Service Provider Engineers working with [MPLS](#) networks
- VPN Service Providers
- Network Administrators managing [MPLS](#) environments
- Network Consultants providing [MPLS](#)-based solutions
- Technical Education Professionals

Course Prerequisites

To ensure you are well-prepared and can gain the maximum benefit from the Implementing Cisco MPLS (MPLS) 3.0 course, the following are the minimum required prerequisites:

- Basic understanding of networking protocols, specifically routing and switching technologies.
- Familiarity with Cisco IOS® Software command-line interface (CLI).
- Knowledge of Interior Gateway Protocols (IGPs) such as OSPF or EIGRP.
- Basic understanding of BGP (Border Gateway Protocol).
- An understanding of IP addressing and subnetting.
- Some hands-on experience with networking and Cisco equipment is beneficial.

These prerequisites are designed to give you the foundational knowledge needed to grasp advanced MPLS concepts and practices. With this background, you will be better equipped to tackle the course material and practical labs efficiently.

Learning Objectives and Outcomes

- Understand the fundamentals of [MPLS](#) technology and its operation within a service provider network.
- Learn to configure, monitor, and troubleshoot [MPLS](#) on Cisco IOS platforms.
- Gain knowledge of [MPLS](#) Label Distribution Protocol (LDP) and how labels and label stacks are used and managed.
- Identify the various applications and advantages of deploying [MPLS](#) in a network environment.
- Develop skills to implement [MPLS](#) VPNs, including architecture, routing models, and MP-BGP session establishment between provider edge routers.

- Configure and optimize routing protocols (EIGRP, OSPF, BGP) between provider edge (PE) and customer edge (CE) routers within [MPLS](#) VPNs.
- Apply troubleshooting methodologies specific to [MPLS](#) VPNs to quickly resolve network issues.
- Understand and configure complex [MPLS](#) VPNs, including central services and inter-autonomous systems VPNs.
- Learn about the integration of internet access with [MPLS](#) VPNs and the associated considerations.
- Acquire the ability to deploy [MPLS](#) Traffic Engineering, improving network resource utilization and traffic management.