Learning Services
Cisco Training on Demand
Introduction to MPLS VPN Bootcamp

Overview
The Introduction to MPLS-VPN Bootcamp Cisco® Training on Demand course is part of the Cisco Technical Assistance Center (TAC) curriculum. This course takes a close look at Multiprotocol Label Switching (MPLS) VPNs and enables you to plan, configure, and verify the implementation of MPLS-VPN. Examples of topics covered include virtual routing and forwarding instances (VRFs), MPLS and Label Distribution Protocol (LDP) concepts, and customer-edge–provider-edge (CE-PE) routing protocols.

This course also concentrates on how MPLS labels are created for Layer 3 IPv4 prefixes and VPNv4 prefixes, and highlights the differences between label switching and IPv4 prefix switching. Also included is information pertaining to how those labels are distributed among routers using LDP, the various data structures used by Cisco Express Forwarding to store prefix and label information, VPN label and transport label, and how labels are applied to packets and used to switch packets through an MPLS network.

In addition to instructor presentations of concepts, a considerable portion of the course content is various configuration examples that are demonstrated by the instructor in the video sessions. You should be aware that this course was originally developed for the Cisco Technical Assistance Center (TAC). The lab exercises can be used to teach troubleshooting skills for MPLS VPN networks but should not be deployed in a production environment.

Interested in purchasing this course in volume at discounts for your company? Contact ctod-sales@cisco.com.

Duration
The Introduction to MPLS VPN Bootcamp Training on Demand course consists of 5 modules and 24 lessons, totaling approximately 8 hours of video instruction, along with 5 hands-on lab exercises.
Target Audience
This course is designed for technical professionals who are responsible for designing, implementing, or supporting Cisco MPLS VPN technology.

Objectives
After completing this course, you should be able to:

- Describe the features of MPLS VPN
- Describe how MPLS VPN labels are assigned and distributed
- Configure and troubleshoot frame-mode MPLS VPN on Cisco IOS® platforms
- Describe the MPLS VPN peer-to-peer architecture and explain the routing and packet forwarding model in this architecture
- Provide an overview of MPLS VPN forwarding, features, and benefits
- Define MPLS VPN terminology

Course Prerequisites
Before taking this course, you should have working knowledge and skills about the following:

- Thorough understanding of network fundamentals and the ability to construct simple LANs
- Ability to establish Internet connectivity
- Basic working knowledge of managing network device security
- Ability to describe IPv6 basics
- Basic working knowledge of troubleshooting VLAN issues, providing details on how the Standard for the Exchange of Product Model Data (STEP) works, configuring EtherChannel, and a thorough understanding of the idea behind Layer 3 redundancy
- Practical experience in troubleshooting IP connectivity
- Practical knowledge of the characteristics, functions, and components of a WAN configuration, troubleshooting an Enhanced Interior Gateway Routing Protocol (EIGRP) in an IPv4 environment, and configuring EIGRP for IPv6
- Ability to configure, verify, and troubleshoot multiarea Open Shortest Path First (OSPF)
- Thorough understanding of Simple Network Management Protocol (SNMP), system logging (syslog), NetFlow, and the management of Cisco device configurations, Cisco IOS images and licenses

Course Outline
- Module 1: Introduction to MPLS
- Module 2: VRFs
- Module 3: MPLS-VPN Control Plane
- Module 4: CE-PE Routing Protocols
- Module 5: Miscellaneous MPLS-VPN
**Labs Outline**

This course contains five hands-on virtual lab exercises, powered by Cisco Learning Labs and Cisco IOL (Cisco IOS Software on Linux). The topology for all labs is shown in Figure 1.

**Figure 1.** Topology for All Labs in MPLS VPN Bootcamp Course

The labs included in this course are:

- Lab 1: VRF-Lite
- Lab 2: OSPF CE-PE Routing
- Lab 3: EIGRP CE-PE Routing
- Lab 4: BGP CE-PE Routing
- Lab 5: Miscellaneous

**Instructor: Charles Stizza**

Charles Stizza is currently a member of the Data Center Switching TAC team. With more than 15 years of IT experience, his expertise extends to a variety of technologies, including Layer 3 routing, data centers, and virtualization. When not teaching or supporting Cisco customers, Stizza spends time mentoring professionals and helping them realize their potential.

**Supported Configurations**

Cisco Training on Demand videos are supported on PCs, Macs, and tablets using one of the following browsers, or later: Mozilla Firefox 30, Google Chrome 35, and Apple Safari 6. The labs are supported on PCs and Macs, but not on tablets.
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