
Implementing Cisco Service Provider VPN Services (SPVI) V1.0

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Implementing Cisco Service Provider VPN Services (SPVI) V1.0

Course Duration

5 Days

Course Price

\$4,295.00
43 CLCs

Methods of Delivery

In-Person ILT
Virtual ILT
Onsite ILT

About this Class

The Implementing Cisco Service Provider VPN Services (SPVI) v1.0 course prepares you to manage end-customer Virtual Private Network (VPN) environments built over a common service provider Multiprotocol Label Switching (MPLS) backbone. You will complete hands-on labs to reinforce MPLS VPN fundamental concepts, benefits, and classification, MPLS components, MPLS control plane and data plane operations, MPLS VPN routing using Virtual Routing and Forwarding (VRF), Layer 2 and Layer 3 MPLS VPNs, IPv6 MPLS VPN implementations, IP Multicast VPNs, and shared services VPNs. The course also covers solutions for deploying MPLS VPN crossing multiple Service Provider domains that improve the use of network bandwidth. This course prepares you for the 300-515 Implementing Cisco® Service Provider VPN Services (SPVI) exam. By passing this exam, you earn the Cisco Certified Specialist - Service Provider VPN Services Implementation certification, and you satisfy the concentration exam requirement for the CCNP® Service Provider certification. This course also earns you 40 Continuing Education (CE) credits towards recertification.

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How you will benefit

This class will help you:

- Gain valuable skills in reinforcing MPLS VPN fundamental concepts, benefits, and classifications
- Learn to configure optional paths for traffic to avoid network congestion
- Earn 40 CE credits toward recertification
- Prepare to take the 300-515 SPVI exam

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- Network Administrators
- Network Engineers
- Network Supervisors
- Network Managers
- Network Operations Center (NOC) Personnel
- Network Designers
- Network Architects
- Channel Partners

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Objectives

After taking this course, you should be able to:

- Describe VPN concepts and operation in a Service Provider environment
- Implement Layer 3 MPLS VPN operations in a Service Provider environment
- Implement Layer 3 Inter-domain MPLS VPN services traversing multiple Service Providers
- Implement Layer 3 Multicast MPLS VPN operations in a Service Provider environment
- Troubleshoot typical issues in Layer 3 MPLS VPN environments
- Implement Layer 2 VPN operations in a Service Provider environment
- Troubleshoot Layer 2 VPN issues in a Service Provider network
- Implement MPLS VPN solutions for IPv6 environments
- Troubleshoot MPLS VPN solutions for IPv6 environments

Prerequisites

Before taking this course, you should have Service Provider knowledge at the professional level, equivalent to the material in the following Cisco courses:

- Building Cisco Service Provider Next-Generation Networks Part 1 (SPNGN1) v1.2
- Building Cisco Service Provider Next-Generation Networks Part 2 (SPNGN2) v1.2
- Deploying Cisco Service Provider Network Routing (SPROUTE)

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Course Outline

Module 1: Introducing VPN Services

- VPN Fundamentals
- MPLS VPN Control Plane Operation

Module 2: Troubleshooting MPLS VPN Underlay

- Troubleshoot Core Interior Gateway Protocol (IGP)
- Troubleshoot Border Gateway Protocol (BGP)

Module 3: Implementing Layer 3 MPLS VPNs

- Multiprotocol BGP (MP-BGP) Routing Requirements in MPLS VPNs
- Provider Edge to Customer Edge (PE-to-CE) Routing Requirements in Layer 3 MPLS VPNs

Module 4: Implementing Layer 3 Interdomain MPLS VPNs

- Inter-Autonomous System (AS) for Layer 3 MPLS VPNs
- Content Security and Control (CSC) for Layer 3 MPLS VPNs

Module 5: Implementing Layer 3 Multicast MPLS VPNs

- Multicast VPN (MVPN) Fundamentals
- Implement Intranet MVPN

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Course Outline

Module 6: Troubleshooting Intra-AS Layer 3 VPNs

- Troubleshoot PE-CE Connectivity
- Troubleshoot PE-to-Route Reflector

Module 7: Implementing Layer 2 VPNs

- Layer 2 Service Architecture and Carrier Ethernet Services
- Refresh on Traditional Ethernet LAN (E-LAN), E-Line, and E-Tree Solutions

Module 8: Troubleshooting Layer 2 VPNs

- Troubleshoot Common Issues for Traditional E-Line, E-LAN, and E-Tree Ethernet Solutions
- Troubleshoot Common Issues for Ethernet VPN (EVPN) Native, EVPN Virtual Private Wire Service (VPWS), and EVPN Integrated Routing and Bridging (IRB) Solutions

Module 9: Implementing Layer 3 IPv6 MPLS VPNs

- Classical Solutions for Deploying IPv6 over IPv4 Environments
- Using 6VPE to Deploy IPv6 Connectivity over MPLS Environment

Module 10: Troubleshooting Layer 3 IPv6 MPLS VPNs

- Troubleshooting PE-to-PE Connectivity

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Lab Outline

Lab 1: Verify the Service Provider Backbone Operation for MPLS VPN

Lab 2: Work with VRF Instances

Lab 3: Troubleshoot the MPLS VPN Backbone

Lab 4: Configure MP-BGP as the PE-CE Routing Protocol

Lab 5: Configure and Verify PE-to-CE Routing Requirements

Lab 6: Enable Shared Services VPN

Lab 7: Deploy Internet Access as a VPN Service

Lab 8: Troubleshoot Layer 3 MPLS VPN End-Customer Connectivity

Lab 9: Implement Different EVPN Solutions

Lab 10: Troubleshoot EVPN VPWS

Lab 11: Implement IPv6 VPN Provider Edge Router (6VPE)