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Learning Style: On Demand

Technology: Cisco

Difficulty: Intermediate

Course Duration: 40 Hours

Implementing Cisco Service Provider VPN Services (SPVI) v1.0 - On Demand



About this course:

The Implementing Cisco Service Provider VPN Services (SPVI) v1.0 course prepares you to manage end-customer 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 helps you prepare for the Implementing Cisco Service Provider VPN Services (300-515 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.

Course Objective:

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

Audience:

This course is for network professionals who need to learn the techniques to implement, configure, monitor, and support service provider VPN solutions based on MPLS backbones.

- Network administrators
- Network engineers
- Network supervisors
- Network managers
- Network Operations Center (NOC) personnel
- Network designers
- Network architects
- Channel partners

Prerequisite:

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)

In the new certification program, foundational material is covered in these courses:

- Implementing and Administering Cisco Solutions (CCNA)
- Understanding Cisco Service Provider Network Foundations (SPFNDU)
- Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR)

Course Outline:

Introducing VPN Services

VPN Fundamentals
MPLS VPN Control Plane Operation

Troubleshooting MPLS VPN Underlay

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

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

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

Implementing Layer 3 Multicast MPLS VPNs

Multicast VPN (MVPN) Fundamentals
Implement Intranet MVPN

Troubleshooting Intra-AS Layer 3 VPNs

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

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

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

Implementing Layer 3 IPv6 MPLS VPNs

Classical Solutions for Deploying IPv6 over IPv4 Environments
Using 6VPE to Deploy IPv6 Connectivity over MPLS Environment
Troubleshooting Layer 3 IPv6 MPLS VPNs
Troubleshooting PE-to-PE Connectivity

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