# Implementing Cisco Service Provider VPN Services

**Duration: 5 Days** **Course Code: SPVI** **Version: 1.1** **Delivery Method: Virtual Learning**

## Overview:

The **Implementing Cisco Service Provider VPN Services (SPVI)** training prepares network professionals to implement and support Virtual Private Network (VPN) solutions on top of an MPLS network infrastructure. The goal is to prepare you to deploy, configure, monitor, operate, and troubleshoot end customer VPN environments built over a common Service Provider MPLS backbone. This training also includes labs to reinforce concepts including MPLS VPN fundamentals, benefits, classifications, components, control plane and data plane operations, VPN routing using Virtual Routing and Forwarding (VRF), Layer 3 MPLS VPNs, Layer 2 MPLS VPNs, IPv6 MPLS VPN implementations, IP Multicast VPNs, shared services VPNs, and solutions for deploying MPLS VPN traversing multiple service providers domains.
This training prepares you for the 300-515 SPVI v1.1 exam. If passed, you earn the Cisco Certified Specialist - Service Provider VPN Services Implementation certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Service Provider certification.
**This training also earns you 40 Continuing Education (CE) credits toward recertification.**

*Updated November 2026*

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

## Target Audience:

This class is intended for the following participants:
- Network Administrators
- Network Engineers
- Network Supervisors
- Network Managers
- Network Operations Center (NOC) Personnel
- Network Designers
- Network Architects
- Channel Partners

## Objectives:

- After this course participants 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:

There are no prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are found in the following Cisco Learning

## Testing and Certification

**Recommended as preparation for the following exams:**

- **300-515** - Implementing Cisco® Service Provider VPN Services

Offerings:

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

(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.

## Content:

Course Outline

- Introducing VPN Services
- Troubleshooting MPLS VPN Underlay
- Implementing Layer 3 MPLS VPNs
- Implementing Layer 3 Interdomain MPLS VPNs
- Implementing Layer 3 Multicast MPLS VPNs
- Troubleshooting Intra-AS Layer 3 VPNs
- Implementing Layer 2 VPNs
- Troubleshooting Layer 2 VPNs
- Implementing Layer 3 IPv6 MPLS VPNs
- Troubleshooting Layer 3 IPv6 MPLS VPNs

Lab Outline

- Verify the Service Provider Backbone Operation for MPLS VPN
- Work with VRF Instances
- Troubleshoot the MPLS VPN Backbone
- Configure MP-BGP as the PE-CE Routing Protocol
- Configure and Verify PE-to-CE Routing Requirements
- Enable Shared Services VPN
- Deploy Internet Access as a VPN Service
- Implement Multicast VPN with mLDP
- Troubleshoot Layer 3 MPLS VPN End-Customer Connectivity
- Implement Different EVPN Solutions
- Troubleshoot EVPN VPWS
- Implement 6VPE

## Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

training@globalknowledge.com.eg

www.globalknowledge.com/en-eg/

Global Knowledge,  16 Moustafa Refaat St. Block 1137, Sheraton Buildings, Heliopolis, Cairo