# Leveraging Cisco IOS XR VPN Services (XRVPNS)

**Category:** Networking & Security | **Vendor:** Cisco

**Duration:** 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

## Course Information

**Delivery Format:** Instructor Led - Online

## Course Overview

The Leveraging IOS XR VPN Services (XRVPNS) training teaches you how to implement and troubleshoot Layer 2 and Layer 3 Virtual Private Network services in a service provider network operating on Cisco IOS XR software. Cisco IOS XR is the foundational operating system of most service provider networks and operates Cisco’s service provider portfolio of network devices. You will learn how to implement a label switched network infrastructure for the enablement of VPN services using Multiprotocol Label Switching (MPLS) or Segment Routing (SR). You will also learn how to implement and troubleshoot both IPv4 and IPv6 Layer 3 VPN services and Multicast VPN services using IOS XR. In addition, you will learn how to implement Ethernet VPN (EVPN) services including EVPN Integrated Routing and Bridging (EVPN IRB) and EVPN-SR data center fabric. Finally, you will learn how to implement EVPN advanced features.

How You'll Benefit

This training will help you:

- Learn how to implement and troubleshoot Layer 2 and Layer 3 Virtual Private Network services in a service provider network operating on Cisco IOS XR software.
- Gain knowledge of protocols, solutions, and designs to acquire professional-level and expert-level networking roles.
- Earn 24 CE credits toward recertification.

## About This Course

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## Who Should Attend

- Network Engineers
- Systems Engineers
- Network Administrators
- Network Managers
- Network Designers

## Prerequisites & Entry Requirements

**General Prerequisites:**

The knowledge and skills you are expected to have before attending this course are:

- Familiarity with service provider network operation
- Familiarity with Cisco IOS XR software configuration and operation
- Ability to implement and troubleshoot routing protocol including OSPF, IS-IS, and Border Gateway Protocol (BGP) in a service provider network

These skills can be found in the following Cisco Learning Offerings:

- Understanding Cisco Service Provider Network Foundations (SPFNDU)
- Fundamentals of Cisco IOS XR Software (IOSXRE)

## Learning Outcomes

**Upon successful completion of this course, participants will be able to:**

- mplement and configure MPLS and describe MPLS label propagation in service provider networks
- Describe the main factors leading to the development and deployment of segment routing, describe the various types of segments that are used in segment routing, describe the Segment Routing Global Block (SRGB), and configure and verify Intermediate System to Intermediate System (IS-IS) and Open Shortest Path First (OSPF) segment routing operation
- Implement and configure Segment Routing IPv6
- Describe the components and functionality of Layer 3 MPLS VPNs implementation in Cisco IOS XR Software deployments
- Identify the routing protocol and LDP information necessary for Layer 3 MPLS VPN troubleshooting
- Discuss Multicast LDP (MLDP) implementation and troubleshooting method for Layer 3 multicast MPLS VPN
- Implement MPLS VPN solutions for IPv6 environments
- Describe common issues and fixes for provider edge to provider edge (PE-PE) and provider edge to customer edge (PE-CE) connectivity in an IPv6 MPLS VPN environment
- Implement Layer 2 VPN operations in a service provider environment
- Explain how EVPN gets around the problems that regular Layer 2 VPNs have, what the model for EVPN delivery is, and how to implement and troubleshoot EVPN solutions
- Explain the advantages of EVPN IRB, how it is implemented, and how to troubleshoot problems when building EVPN IRB solutions
- Demonstrate how to configure EVPN-SR data center fabric solutions
- Explain advanced EVPN features to support network engineers in designing, implementing, and troubleshooting complex EVPN networks

## Detailed Course Outline

- Cisco IOS XR Software MPLS Operation and Implementation
- Segment Routing Fundamentals
- Segment Routing IPv6
- Layer 3 MPLS VPN Implementation with Cisco IOS XR Software
- Layer 3 MPLS VPN Troubleshooting

- Layer 3 Multicast MPLS VPN Implementation
- Layer 3 IPv6 MPLS VPNs Implementation
- Layer 3 IPv6 MPLS VPN Troubleshooting
- Layer 2 VPNs and Ethernet Services Fundamentals
- Cisco IOS XR Software EVPN Operation and Implementation
- Cisco IOS XR Software EVPN IRB
- EVPN-SR Data Center Fabric
- EVPN Advanced Features

**Skills You Will Learn:**

- mplement and configure MPLS and describe MPLS label propagation in service provider networks<br>- Describe the main factors leading to the development and deployment of segment routing, describe the various types of segments that are used in segment routing, describe the Segment Routing Global Block (SRGB), and configure and verify Intermediate System to Intermediate System (IS-IS) and Open Shortest Path First (OSPF) segment routing operation<br>- Implement and configure Segment Routing IPv6<br>- Describe the components and functionality of Layer 3 MPLS VPNs implementation in Cisco IOS XR Software deployments<br>- Identify the routing protocol and LDP information necessary for Layer 3 MPLS VPN troubleshooting<br>- Discuss Multicast LDP (MLDP) implementation and troubleshooting method for Layer 3 multicast MPLS VPN<br>- Implement MPLS VPN solutions for IPv6 environments<br>- Describe common issues and fixes for provider edge to provider edge (PE-PE) and provider edge to customer edge (PE-CE) connectivity in an IPv6 MPLS VPN environment<br>- Implement Layer 2 VPN operations in a service provider environment<br>- Explain how EVPN gets around the problems that regular Layer 2 VPNs have, what the model for EVPN delivery is, and how to implement and troubleshoot EVPN solutions<br>- Explain the advantages of EVPN IRB, how it is implemented, and how to troubleshoot problems when building EVPN IRB solutions<br>- Demonstrate how to configure EVPN-SR data center fabric solutions<br>- Explain advanced EVPN features to support network engineers in designing, implementing, and troubleshooting complex EVPN networks

# Frequently Asked Questions

### Q: What delivery options are available for Leveraging Cisco IOS XR VPN Services (XRVPNS)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

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### Q: How many CPD hours does this course provide?

The 3-day Leveraging Cisco IOS XR VPN Services (XRVPNS) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

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### Q: What is the duration of the Leveraging Cisco IOS XR VPN Services (XRVPNS) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

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### Q: Do you provide corporate training for Leveraging Cisco IOS XR VPN Services (XRVPNS)?

Yes, we provide corporate training, dedicated training, and closed classes for Leveraging Cisco IOS XR VPN Services (XRVPNS). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

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### Q: What related terms do people search for?

Popular related searches include: Leveraging Cisco IOS XR VPN Services, Cisco Networking, XRVPNS

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## Q: Why choose Nexus Human for Leveraging Cisco IOS XR VPN Services (XRVPNS)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

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## Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Leveraging Cisco IOS XR VPN Services (XRVPNS) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.


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