

# Cisco IOS XR Layer 3 VPN Implementation and Verification (IOSXR301)

Duration: **2 days**

## Course Overview

The Cisco IOS XR Layer 3 VPN Implementation and Verification (IOSXR301) v1.1 course shows you how to implement and verify Layer 3 VPN services on a Cisco® Internet Network Operating System (IOS) XR network. You will learn how to implement and verify Label Distribution Protocol (LDP) in the core of a service provider network, including implementing LDP session protection, LDP nonstop routing, graceful restart, LDP-IGP (Interior Gateway Protocol) synchronization, LDP auto configuration, and Multiprotocol Label Switching (MPLS) Operations, Administration, and Maintenance (OAM) solutions. You will also learn how to implement and verify intra-AS Layer 3 VPNs using MP-BGP (Multiprotocol Border Gateway Protocol) in core network and various Provider Edge–Customer Edge (PE-CE) route distribution methods, including using static routing and BGP. And you will learn how to implement and verify inter–Autonomous System (AS) Layer 3 VPNs using various methods including inter-AS Layer 3 VPN options A, B, and C.

This course is part of a portfolio of courses designed to help you support and maintain Cisco IOS®XR platforms, including Cisco ASR 9000 Series Aggregation Services Routers and Carrier Routing System CRS-1, CRS-3, and CRS-X; and Cisco Network Convergence System (NCS) Series 1000, 4000, 5000, 5500, and 6000.

## Who should attend?

This course is designed for technical professionals who need to know how to implement Layer 3 VPN services on Cisco IOS XR platforms for a service provider or large enterprise network.

1. Implementation and design engineers
2. Network planning engineers

## Prerequisites

Before attending this course, you should have the following knowledge and skills:

1. Completion of the Introduction to Cisco IOS XR (IOSXR100) course, or equivalent hands-on experience configuring and supporting Cisco IOS XR–based routers
2. Completion of the Cisco IOS XR System Administration (IOSXR200) course, or equivalent hands-on experience configuring and supporting Cisco IOS XR–based routers
3. Efficiently configure Cisco IOS XR software-based platforms

4. Configure and troubleshoot Interior Gateway Protocol (Intermediate System to Intermediate System [IS-IS] Protocol and Open Shortest Path First [OSPF] Protocol) routing
5. Configure and troubleshoot BGP routing

## Course Objectives

This course will help you:

1. Prepare to implement Layer 3 VPN services on Cisco IOS XR platforms
2. Practice what you learn through hands-on labs

After taking this course, you should be able to implement and verify:

1. MPLS LDP in a service provider network
2. Intra-AS Layer 3 VPNs
3. Inter-AS Layer 3 VPNs