Cisco IOS XR Multicast Routing Implementation and Verification (IOSXR302) v1.1

What you’ll learn in this course
The Cisco IOS XR Multicast Routing Implementation and Verification (IOSXR302) v1.1 course shows you how to implement multicast routing and multicast VPNs on Cisco® Internetwork Operating System (IOS) XR platforms. You learn how to implement and verify multicast routing in the core of a Cisco IOS® XR service provider network. You also learn how to implement and verify multicast-enabled services, including multicast VPNs.

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.

Course duration
- Instructor-led training: 2 days
- Virtual instructor-led training: 3 days

How you’ll benefit
This course will help you:
- Prepare to implement multicast routing on Cisco IOS XR platforms
- Practice what you learn through hands-on labs

Who should enroll
This course is designed for technical professionals who need to know how to implement multicast routing on Cisco IOS XR platforms for a service provider or large enterprise network.

- Implementation and design engineers
- Network planning engineers

How to enroll
- For instructor-led training, visit the Cisco Learning Locator
- For private group training, visit Cisco Private Group Training

Technology areas
- Networking
- Service provider
Course details

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

- IPv4 multicast routing
- IPv6 multicast routing
- Label Switched Multicast (LSM)
- Multicast VPNs

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

- Completion of the [Introduction to Cisco IOS XR (IOSXR100)](https://www.cisco.com) course, or equivalent hands-on experience configuring and supporting Cisco IOS XR–based routers
- Completion of the [Cisco IOS XR System Administration (IOSXR200)](https://www.cisco.com) course, or equivalent hands-on experience configuring and supporting Cisco IOS XR–based routers
- Ability to configure Cisco IOS XR software-based platforms
- Ability to configure and troubleshoot Border Gateway Protocol (BGP) routing
- Ability to configure and verify basic Multiprotocol Label Switching (MPLS) functionality
- Basic knowledge and understanding of IPv4 Multicast concepts

Outline

- Multicast Routing
  - Exploring Multicast Routing
  - Exploring Protocol Independent Multicast (PIM)
- Multicast VPNs
  - Multicast VPN Overview
  - Multicast VPN Functionality and Operation
- Label Switched Multicast (LSM)
  - LSM Basics
  - Multicast Label Distribution Protocol (MLDP) Operation and Configuration
  - Resource Reservation Protocol (RSVP)-TE Point-to-Multipoint Operation and Configuration
  - Next-Generation Multicast VPN Overview
- IPv6Multicast
  - Structure of a Multicast IPv6Address
  - Multicast Listener Discovery (MLD) Overview and Operation
  - MLD Configuration and Troubleshooting
  - PIM Overview
  - PIM Rendezvous Points and Source Specific Multicast (SSM)
  - Troubleshooting IPv6 Multicast
  - Design and Deployment Considerations
Lab outline

- Configuring IPv4 Multicast
  - Configure IPv4 Multicast Routing
  - Configure PIM Bootstrap Router (BSR)
- Configuring Multicast VPN
  - Enable MPLS-VPN on Local Provider Edge (PE)
  - Enable Multicast VPN on Local PE
  - Create a Default Multicast Distribution Tree
- Configuring MLDP
  - Configure an MLDP Route Policy
  - Enable MPLSMLDP
  - Verify the MLDP Operation
  - Verify Multicast VPN Operation

Course content is dynamic and subject to change without notice.