

Implementing Cisco Multicast (MCAST) v2.0

What you'll learn in this course

The **Implementing Cisco Multicast (MCAST) v2.0** course teaches you the fundamentals of IP multicasting, including multicast applications, sources, receivers, group management, and IP multicast routing protocols such as Protocol Independent Multicast (PIM) used within a single administrative domain. You will learn about issues in switched LAN environments and reliable IP multicasting, and technical solutions for simple deployments of IP multicast within a provider or customer network. The course reviews the configuration and troubleshooting guidelines for implementation of IP multicast on Cisco® routers. Labs offer hands-on experience to help you prepare to deploy IP multicast successfully.

Course duration

- Instructor-led training: 5 days with hands-on lab practice

How you'll benefit

This course will help you:

- Gain a solid understanding of the fundamentals of IP multicasting
- Understand the configuration and troubleshooting guidelines for implementation of IP multicast on Cisco routers
- Prepare to deploy IP multicast within a provider or customer network

Who should enroll

- Network professionals
- Systems engineers
- Partners
- Customers

How to enroll

- For instructor-led training, visit the [Cisco Learning Locator](#).
- For private group training, visit [Cisco Private Group Training](#).

Technology areas

- Networking

Course details

Objectives

After taking this course, you should be able to:

- Describe IP multicast services
- Identify IP multicast issues on a data link layer

- Explain why Protocol Independent Multicast Sparse Mode (PIM-SM) is the most current scalable IP multicast routing protocol
- Describe Rendezvous Point (RP) distribution solutions
- Recognize the drawbacks of the PIM-SM and describe two extensions to provide possible solutions
- Explain basic concepts of Multiprotocol BGP (MP-BGP) and its use in the IP multicast environment
- Configure and deploy Multicast Source Discovery Protocol (MSDP) in the interdomain environment
- Describe solutions to mitigate security issues in the IP multicast network
- Describe the process of monitoring and maintaining multicast high-availability operations
- Design multicast-related application and network solutions in customer and service provider networks

Prerequisites

We recommend that you have the following knowledge and skills before taking this course:

- Work experience and configuration skills for Cisco routers and LAN switches

Outline

- Course Introduction
- IP Multicast Concepts and Technologies
 - Introducing IP Multicast
 - Understanding the Multicast Service Model
 - Defining Multicast Distribution Trees and Forwarding
 - Reviewing Multicast Protocols
- Multicast on the LAN
 - Mapping Layer 3 to Layer 2
 - Working with Cisco Group Management Protocol
 - Using Internet Group Management Protocol (IGMP) Snooping
- PIM Sparse Mode
 - Introducing Protocol Independent Multicast Sparse Mode
 - Understanding PIM-SM Protocol Mechanics
 - Using PIM-SM in a Sample Situation
 - Configuring and Monitoring PIM-SM
- Rendezvous Point Engineering
 - Identifying RP Distribution Solutions
 - Implementing Auto-RP
 - Using PIMv2 Bootstrap Router (BSR)
 - Using Anycast RP and MSDP
- PIM Sparse Mode Protocol Extensions
 - Introducing Source-Specific Multicast (SSM)
 - Configuring and Monitoring SSM
 - Reviewing Bidirectional PIM
 - Configuring and Monitoring Bidirectional PIM

- Multiprotocol Extensions for BGP
 - Introducing MP-BGP
 - Configuring and Monitoring MP-BGP
- Interdomain IP Multicast
 - Examining Dynamic Interdomain IP Multicast
 - Explaining Multicast Source Discovery Protocol
 - Using MSDP Source-Active (SA) Caching
 - Configuring and Monitoring MSDP
- IP Multicast Security
 - Introducing IP Multicast and Security
 - Securing a Multicast Network
- Multicast Optimization and High-Availability Features
 - Using Multicast Optimization and High-Availability Features
- Applications of Multicast
 - Exploring IP Multicast and Video Applications
 - Using IP Multicast in Mission-Critical Environments
 - Exploring How Enterprise IT Uses IP Multicasting Globally

Lab outline

- Layer 2 and Layer 3 Multicast
- PIM-SM Protocol Basics
- PIM-SM Protocol Mechanics and Timers
- PIM Sparse-Dense Mode and Manual RP Configuration
- Configuring Dynamic RP Information Distribution
- Bidirectional PIM
- Source-Specific Multicast
- Anycast RP, External MP-BGP, and MSDP Peering




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