Implementing Cisco Multicast (MCAST)

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

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

Recommended knowledge and training

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

How to enroll

To enroll in the MCAST course or explore our larger catalog of courses on Cisco Digital Learning, contact us at <training@fastlane-mea.com>

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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