

CS-MCAST



CISCO IP MULTICAST NETWORKING

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Intermediate	Cisco Multicast	Instructor Led	N/A

INTRODUCTION

This five-day course thoroughly covers basic IP multicast principles and routing techniques for building and operating enterprise and service provider networks to support applications ranging from video conferencing to data replication.

The course starts with an introduction to data communication in IP networks, followed by network access, Layer 2 and Layer 3 multicast explanations, along with protocol independent multicast (PIM), multicast scoping and design considerations. The final training chapters will cover IPv6 multicast and the operation and troubleshooting of IP multicast networks.

AUDIENCE PROFILE

This course is intended primarily for any professional supporting IP multicast networks.

PREREQUISITES

The knowledge and skills that a learner must have before attending this course are as follows:

- CCNA. Be Familiar with IP Networking and IOS software commands

COURSE OBJECTIVES

On completion of this course, participants should:

- Understand what multicast is and why it is needed
- Review IP multicasting applications and what makes multicast unique
- Understand IP multicast at the access layer, from layered encapsulation to switching multicast frames
- Work with Layer 2 switching domains, IPv4 group addresses, and MAC address maps
- Utilize Layer 3 multicast hosts and understand each PIM mode
- Implement basic forwarding trees and rendezvous points
- Be able to compare multicast forwarding modes: ASM, SSM, and PIM Bidir
- Plan and properly scope basic multicast networks
- Choose the best approach to forwarding replication
- Apply best practices for security and resiliency
- Understand unique IPv6 deployment issues
- Efficiently administer and troubleshoot your IP multicast network

COURSE CONTENT

Lesson 1: Introduction to IP Multicast

- What Problem Does Multicast Solve
- Multicast Applications and Services
- Multicast Packet
- L3 Multicast Is Built on the TCP/IP Protocol Stack
- Important Multicast Groups and Group Considerations

- The History of Multicast

Lesson 2: Network Access and Layer 2 Multicast

- Layered Encapsulation
- MAC Address Mapping
- Switching Multicast Frames
- Group Subscription
- IGMP on the Gateway Router
- IGMP Versions
- Configuring IGMP on a Router

- Mixed Groups: Interoperability Between IGMPv1, v2, and v3
- Layer 2 Group Management
- Snooping
- The Process of Packet Replication in a Switch
- Protecting Layer 2

Lesson 3: IP Multicast at Layer 3

- Multicast Hosts

- Multicast Routing
- PIM Modes

Lesson 4: Protocol Independent Multicast

- RP Overview
- IP Multicast Domains
- Basic PIM Configuration
- Dynamic RP Information Propagation
- Anycast RP
- PIM SSM Configuration

Lesson 5: IP Multicast Design Considerations and Implementation

- Multicast Group Scoping
- Using Group Scoping for Hybrid Designs and RP Placement
- Multicast Traffic Engineering and Forwarding
- IP Multicast Best Practices and Security
- Putting It All Together

Lesson 6: IPv6 Multicast Networks

- IPv6 Fundamentals
- IPv6 Layer 3 Multicast Group Addressing

- IPv6 Layer 2 and Layer 3 Multicast

Lesson 7: Operating and Troubleshooting IP Multicast Networks

- Multicast Troubleshooting Logic
- Multicast Troubleshooting Methodology
- Overview of Common Tools for Multicast Troubleshooting
- Multicast Troubleshooting
- Important Multicast show Commands

ASSOCIATED CERTIFICATIONS & EXAM

There is no exam associated with this course.