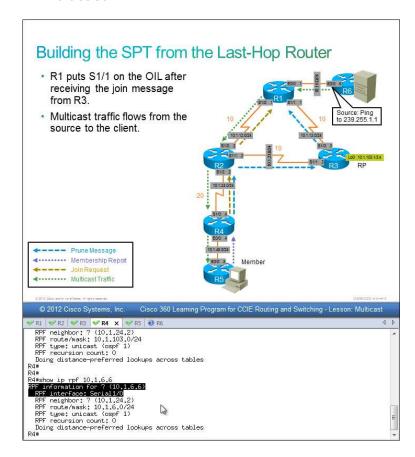# Cisco 360 Learning Program for CCIE Routing and Switching Self-Paced Lessons: IP Multicast

The centerpiece of this Lesson Module is the Configuring IP Multicast Routing video on demand (VoD) instruction. The split-screen format of each VoD module provides the powerful learning experience of shadowing a Cisco CCIE who is configuring and explaining IP Multicast

Duration: Three Hours and Forty Five Minutes

Each VoD is approximately 15–30 minutes in length, and the VoD modules are grouped into six blocks.

Target Audience

The IP Multicast lesson is for professional-level networking engineers who have 3–5 years of network engineering experience or who have completed the Cisco CCNP certification. This self-paced Lesson Module is for engineers who want to develop expert level skills in networking

Recommended Prerequisites and Corequisites

A CCNP level of understanding of IP routing is required. It is also recommended that this lesson be completed with these lessons:

- CCIE R&S Lesson: Interior Gateway Routing Protocols (IGP's)
- CCIE R&S Lesson: Border Gateway Protocol (BGP)
- CCIE R&S Lesson: Troubleshooting

Lesson Module Objectives

Upon completion of this self-paced Lesson Module, learners should be able to formulate well-defined mental simulations to perform the following IP Multicast tasks with the minimally described parameters that are commonly found in CCIE-level tasks:

- Attain a basic understanding of IP Multicast
- Formulate an opening moves strategy to implement and troubleshoot IP Multicast
- Perform the configuration and troubleshooting of the IP Multicast routing protocols

Lesson Module Outline

The VoDs in this Lesson Module discuss these topics:

Block 1: Reviewing Basic Multicast Operations

- Reviewing methods of sending IP packets
- Reviewing IP multicast addressing
- IP multicast group membership
- Multicast distribution trees
- Multicast forwarding
- Protocol Independent Multicast
- Recommended reading

Block 2: PIM Dense Mode Operations

- PIM dense mode
- Potential issues with PIM-DM

Block 3: PIM Sparse Mode Operations

- Comparison of multicast modes

- PIM sparse mode operations

- RP considerations

Block 4: PIM Protocol Extensions

- Source-Specific Multicast

- Bidirectional PIM

Block 5: Interdomain Multicast Protocols

- Multicast Source Discovery Protocol

- Anycast RP

- MBGP extensions for IP multicast

Block 6: Identifying Strategies for Multicast Tasks

- Multicast opening-moves options analysis

- Troubleshooting a preexisting PIM-SM multicast configuration

- Common reasons for failure of an IP multicast configuration

For More Information

For more information about Cisco 360 Learning Program for CCIE Routing and Switching, go to www.cisco.com/go/360.

The Cisco 360 Learning Program for CCIE Routing and Switching Learning Portal is available at http://cisco360.cisco.com.

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