

Learning Services

Cisco Training on Demand

Cisco IOS XR IPv6 Routing (XIPv6R)



Overview

Cisco IOS[®] XR IPv6 Routing (XIPv6R) v3.0 Cisco Training on Demand provides technical training to teach you how to successfully deploy IPv6 on routers running IOS XR Software Release 5.1.1 in an existing IPv4–Multiprotocol Label Switching (MPLS) environment. You learn about IPv6 address space allocation and address planning, the evolution from IPv4 to IPv6, key elements affecting IPv6 packets, and how to configure interfaces. You then learn about the similarities between Open Shortest Path First Version 2 (OSPFv2) and OSPFv3, the changes in OSPFv3 to support IPv6, and the commands used to perform basic configurations and troubleshooting of OSPFv3.

You also learn about the commands used for basic Multiprotocol Border Gateway Protocol (MP-BGP) configurations that are specific to IPv6, the IPv6 over IPv4 MPLS network technology, and the IPv6 VPN over an IPv4 MPLS network technology. In addition, you gain knowledge by reviewing fundamental IPv6 behavior, IPv6-supported routing protocols, and mechanisms for tunneling IPv6 through IPv4 and MPLS.

This course also provides extensive hands-on lab exercises involving two service provider core networks and multiple customer sites connected into a multiautonomous system network.

Interested in purchasing this course in volume at discounts for your company? Contact ctod-sales@cisco.com

Duration

The XIPv6R Training on Demand course consists of 9 modules totaling over 11 hours of video instruction along with 7 hands-on lab exercises.

Target Audience

The primary audience for this course includes network operation center (NOC) engineers, network and senior engineers, and support engineers.

Objectives

After completing this course, you should be able to:

- Characterize the types of IPv6 addresses, changes made to the IP packet header, and how neighbor discovery takes place
- Describe the various integration technologies that can be employed in implementing IPv6
- Describe the changes made to IPv4 routing protocols to support IPv6
- Configure IPv6 routing protocols on Cisco IOS XR Software routers and verify operation
- Implement IPv6 provider edge (6PE) in an IPv4–MPLS environment
- Implement IPv6 VPN provider edge (6VPE) in an IPv4–MPLS environment
- Configure and verify operation of IPv6 multicast

Course Prerequisites

The knowledge and skills necessary before attending this course are:

- Knowledge of the IOS XR Software configuration syntax to the extent covered in the CRS-1 Essentials or XR12000 Series Essentials courses
- Ability to establish, without assistance, a configuration for OSPFv2, Intermediate System-to-Intermediate System (IS-IS) Protocol, and BGP with Routing Policy Language (RPL) policies as accomplished in the IOS XR IPv4 Routing course (XIPv4R) labs
- Basic understanding of MPLS configuration and operation as covered in the Cisco CRS-1 Essentials or Cisco XR12000 Series Essentials courses
- Basic understanding of IPv6 concepts as covered in IPv6 Fundamentals (IPVSF)

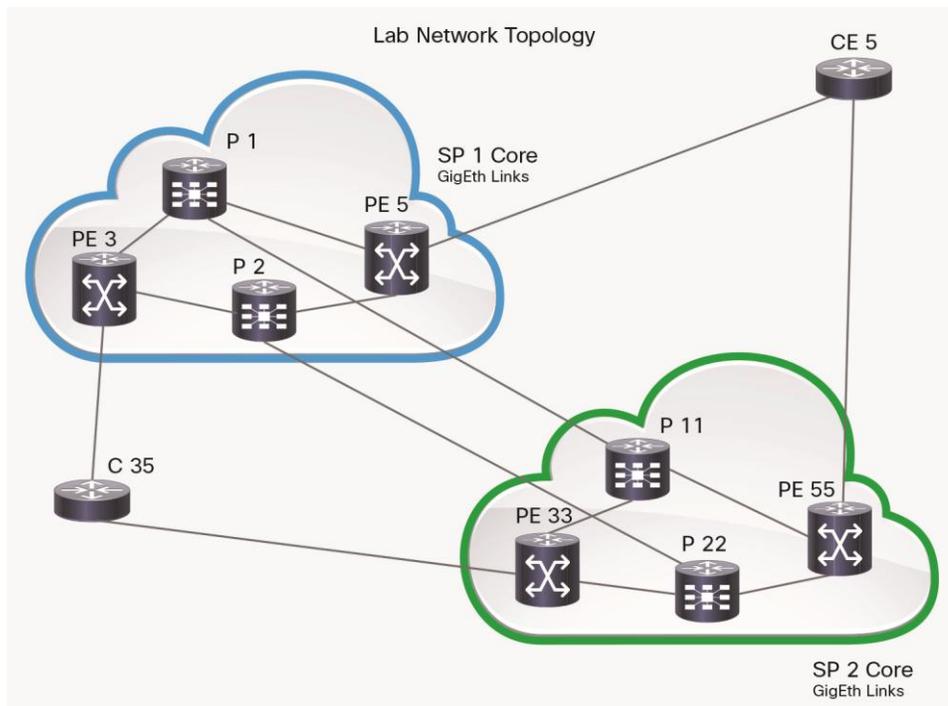
Course Outline

- Module 1: IPv6 Foundations Review
- Module 2: IPv6 Operation and Configuration
- Module 3: OSPFv3 Routing
- Module 4: IS-IS Routing for IPv6
- Module 5: MP-BGP Routing for IPv6
- Module 6: Other IPv6 Routing Protocols
- Module 7: IPv6 Provider Edge
- Module 8: IPv6 VPN Provider Edge
- Module 9: IPv6 Multicast

Labs Outline

This course contains 7 hands-on virtual lab exercises, powered by Cisco Learning Labs and Cisco IOL (IOS Software on Linux).

Sample topology from one of the labs in the course:



The labs included in this course are:

- Lab 1: Enabling IPv6 on Cisco IOS XR
- Lab 2: Configuring OSPFv3 Routing
- Lab 3: Configuring IS-IS Routing for IPv6
- Lab 4: Configuring MP-BGP Routing for IPv6
- Lab 5: Implementing IPv6 Provider Edge
- Lab 6: Implementing IPv6 VPN Provider Edge
- Lab 7: Implementing IPv6 Multicast

Instructor: John Mansholt

John Mansholt has been teaching Cisco technologies since the late 1990s and specializes in service provider, and CCNA® and CCNP® products. His approach to presenting subjects ranging from connect to access list commands is to keep concepts simple and straightforward with an emphasis on labs and practical implementation. Mansholt has traveled extensively, teaching classes in various locations in North and South America, as well as in numerous places in Europe and Asia.

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