

# Implementing IPv6 Networks

## 5 Day Course

Locations: Mex, D.F.

Date:

## Who Needs to Attend

This course is for technical professionals who are looking to integrate IPv6 into their existing network environment or deploying native IPv6 services.

## Audience Prerequisites

Network professionals with a good working knowledge of all routing protocols.

CCNA (recommended but not required).

BSCI (recommended but not required).



This course is to prepare the student for transitioning to IPv6 based networks and will help network engineers understand, configure, and support Cisco devices running IOS software and covers the IPv6 routing protocols such as RIPng, OSPF, BGP and EIGRP; IPv6 transition mechanisms including tunnels, ISATAP, NAT-PT, and 6to4; and other features.

## Table of Contents

### Chapter 1 Introduction to IPv6

- Explaining the rationale for IPv6
- Evaluating IPv6 features and benefits
- Describing the IPv6 Header Format

### Chapter 2 IPv6 Operations

- Understanding IPv6 Addressing Architecture
- Enabling IPv6 on Cisco Routers
- Defining and Configuring Neighbour Discovery
- Examining Cisco IOS Software Demands
- Describe ICMPv6 Message Types
- Identifying IPv6 Data Link Layer Protocol

### Chapter 3 Advanced IPv6 Topics

- Describing DNS in an IPv6 Environment
- Understanding DHCPv6 Operations
- Understanding DHCPv6 Prefix Delegation

### Chapter 4 IPv6-Enabled Routing Protocols

- Routing with RIPng
- Examining OSPFv3
- Examining EIGRP for IPv6
- Understanding BGP (BGP4+)
- Understanding Support for IPv6 in MPLS

### Chapter 5 Implementing 6PE: IPv6 Provider Edge over MPLS

- IPv6 on the Provider Edge Router
- 6PE Detailed Architecture
- 6PE Forwarding Plane
- Configuring 6PE
- Monitoring Cisco 6PE Configuration and Traffic
- Deployment Scenarios

### Chapter 6 IPv6 Services

- Understanding QoS Support in an IPv6 Environment
- Using Software Features
- Implementing Multicasting in an IPv6 Network

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## IPv6 Practical Work

During the course there will be many opportunities for hands-on work. Each module has detailed exercises or demonstrations associated with it.

## Table of Contents (cont)

### Chapter 7 IPv6 Transition Mechanisms

- Implementing Dual Stack
- Describing IPv6 Tunneling Mechanisms
- Describing NAT-PT

### Chapter 8 Security Issues in IPv6

- Configuring IPv6 ACLs
- Using IPsec and IKE
- Discussing Security Issues in an IPv6 Transition Environment
- Understanding IPv6 Security Practices

### Chapter 9 Examining Mobility

- Deployment of IPv6Content
- Examining Mobile IPv4
- Examining Mobile IPv6
- Understanding Network Mobility

### Chapter 10 Deploying IPv6

- Examining IPv6 Address Allocation
- Understanding the IPv6 Multihoming Issues
- Identifying IPv6 Enterprise Deployment Strategies
- Identifying IPv6 Service Provider Deployment Strategies
- Design and Implementation