

IP6FD v3.0 - IPv6 Fundamentals, Design, and Deployment

Course Outline

Module 1: Introduction to IPv6

- Lesson 1: Explaining the Rationale for IPv6
- Lesson 2: Evaluating IPv6 Features and Benefits
- Lesson 3: Understanding Market Drivers

Module 2: IPv6 Operations

- Lesson 1: Understanding the IPv6 Addressing Architecture
- Lesson 2: Describing the IPv6 Header Format
- Lesson 3: Enabling IPv6 on Hosts
- Lesson 4: Enabling IPv6 on Cisco Routers
- Lesson 5: Using ICMPv6 and Neighbor Discovery
- Lesson 6: Troubleshooting IPv6

Module 3: IPv6 Services

- Lesson 1: IPv6 Mobility
- Lesson 2: Describing DNS in an IPv6 Environment
- Lesson 3: Understanding DHCPv6 Operations
- Lesson 4: Understanding QoS Support in an IPv6 Environment
- Lesson 5: Using Cisco IOS Software Features

Module 4: IPv6-Enabled Routing Protocols

- Lesson 1: Routing with RIPng
- Lesson 2: Examining OSPFv3
- Lesson 3: Examining Integrated IS-IS
- Lesson 4: Examining EIGRP for IPv6
- Lesson 5: Understanding MP-BGP
- Lesson 6: Configuring IPv6 Policy-Based Routing
- Lesson 7: Configuring FHRP for IPv6
- Lesson 8: Configuring Route Redistribution

Module 5: IPv6 Multicast Services

- Lesson 1: Implementing Multicast in an IPv6 Network
- Lesson 2: Using IPv6 MLD

Module 6: IPv6 Transition Mechanisms

Lesson 1: Implementing Dual-Stack

Lesson 2: Describing IPv6 Tunneling Mechanisms

Module 7: IPv6 Security

Lesson 1: Configuring IPv6 ACLs

Lesson 2: Using IPsec, IKE, and VPNs

Lesson 3: Discussing Security Issues in an IPv6 Transition Environment

Lesson 4: Understanding IPv6 Security Practices

Lesson 5: Configuring Cisco IOS Firewall for IPv6

Module 8: Deploying IPv6

Lesson 1: Examining IPv6 Address Allocation

Lesson 2: Understanding the IPv6 Multihoming Issue

Lesson 3: Identifying IPv6 Enterprise Deployment Strategies

Module 9: IPv6 and Service Providers

Lesson 1: Identifying IPv6 Service Provider Deployment

Lesson 2: Understanding Support for IPv6 in MPLS

Lesson 3: Understanding 6VPE

Lesson 4: Understanding IPv6 Broadband Access Services

Module 10: IPv6 Case Studies

Lesson 1: Planning and Implementing IPv6 in Enterprise Networks

Lesson 2: Planning and Implementing IPv6 in Service Provider Networks

Lesson 3: Planning and Implementing IPv6 in Branch Networks

Lab Outline

Lab 2-1: Enabling IPv6 on Hosts

Lab 2-2: Using Neighbor Discovery

Lab 3-1: Using Prefix Delegation

Lab 4-1: Routing with OSPFv3

Lab 4-2: Routing with IS-IS

Lab 4-3: Routing with EIGRP

Lab 4-4: Routing with BGP and MP-BGP

Lab 5-1: Multicasting

Lab 6-1: Implementing Tunnels for IPv6

Lab 7-1: Configuring Advanced ACLs

Lab 7-2: Implementing IPsec and IKE

Lab 7-3: Configuring Cisco IOS Firewall

Lab 9-1: Configuring 6PE and 6VPE