# IPv6 Fundamentals, Design and Deployment v3.0

**IP6FD**

**Delivery Type:** Classroom
**Duration:** 5 days

## Overview

This five-day course provides network engineers and technicians who are working in the enterprise sector with the knowledge and skills that are needed to study and configure the IP version 6 (IPv6) features of Cisco IOS Software. This course provides an overview of IPv6 technologies; covers IPv6 design and implementation; describes IPv6 operations, addressing, routing, services, and transition; and describes the deployment of IPv6 in enterprise and service provider networks. Hands-on labs and case studies are used to provide possible deployment scenarios.

## Pre-Requisites

**Attendees should meet the following prerequisites:**

✓ Cisco CCNA® certification. ICND1 and ICND2 or CCNABC required
✓ A CCNP level understanding of networking and routing is required -ROUTE is recommended although no formal certification at CCNP level is required.
✓ Working knowledge of the Microsoft Windows operating system.

## Target Audience

The primary audience for this course is network engineers and technicians who are working in the enterprise sector

## Certification

**Recommended preparation for exam(s):**

- No applicable exam

## Objectives

**After you complete this course you will be able to:**

✓ Describe the factors that led to the development of IPv6, and the possible uses of this new IP structure
✓ Describe the structure of the IPv6 address format, how IPv6 interacts with data link layer technologies, and how IPv6 is supported in Cisco IOS Software
✓ Describe the nature of changes to DNS and DHCP to support IPv6, and how networks can be renumbered using both services
✓ Understand the updates to IPv4 routing protocols needed to support IPv6 topologies
✓ Understand multicast concepts and IPv6 multicast specifics

- ✓ Describe IPv6 transition mechanisms and which methods will be most effective in your network
- ✓ Describe security issues, how security for IPv6 is different than for IPv4, and emerging practices for IPv6-enabled networks
- ✓ Describe the standards bodies that define IPv6 address allocation, as well as one of the leading IPv6 deployment issues, multihoming
- ✓ Describe the deployment strategies that service providers are facing when deploying IPv6
- ✓ Describe case studies for enterprise, service provider, branch, and access networks.