



Deploying IPv6 Cisco Networks (5 days) ST21006

COURSE GOAL: This course will help you prepare students for deploying IPv6 in a Cisco network.

PREREQUISITES: Students must have achieved Cisco Certified Entry Network Technician (CCENT) or Cisco Certified Network Associate (CCNA), or have equivalent working knowledge prior to attending this class.

LEARNING OBJECTIVES: This course covers such topics as:

- Understand the fundamentals of IPv6
- Analyze the IPv6 routing protocols
- Determine what changes are necessary in existing networks to support IPv6
- How to implement IPv6 VPN
- Backwards compatibility with IPv4

Key Topics:

I. Market Drivers for IPv6 Adoption

- A. IPv4 Address Exhaustion and the Workaround Options
- B. IPv6 Market Drivers
- C. Commonly Asked Questions About IPv6
- D. Does IPv6 Continue to allow My Enterprise Network to be Multihome to Several Service Providers
- E. IPv6 in the IETF

II. Hierarchical Network Design

- A. Network Design Principles
- B. Enterprise Core Network Design
- C. Enterprise Campus Network Design
- D. Enterprise Network Services Design
- E. Enterprise Data Center Network Design

III. Common IPv6 Coexistence Mechanisms

- A. Native IPv6
- B. Transition Mechanisms
- C. Dual Stack
- D. Manually Configured Tunnel
- E. Protocol Translation/Proxy Mechanisms

- IV. Network Services**
 - A. Multicast
 - B. Quality of Service (QoS)
 - C. IPv6 Routing
 - D. Single Topology
 - E. Multi-Topology

- V. Planning an IPv6 Deployment**
 - A. Determining Where to Begin
 - B. Benefit Analysis
 - C. Cost Analysis
 - D. Planning a Pilot
 - E. Assessment
 - F. Design
 - G. IPv6 Addressing Plan

- VI. Deploying IPv6 in Campus Networks**
 - A. Campus Deployment Models Overview
 - B. General Campus IPv6 Deployment Considerations
 - C. Implementing the Dual-Stack Model
 - D. Implementing the Hybrid Model
 - E. Implementing the Service Block Model

- VII. Deploying Virtualized IPv6 Networks**
 - A. Virtualization Overview
 - B. Network Virtualization
 - C. Desktop Virtualization
 - D. IPv6 and Desktop Virtualization
 - E. Server Virtualization

- VIII. Deploying IPv6 in WAN/Branch Networks**
 - A. WAN/Branch Deployment Overview
 - B. General WAN/Branch IPv6 Deployment Considerations
 - C. WAN/Branch Implementation Examples
 - D. WAN/Branch Deployment Over Native IPv6

- IX. Deploying IPv6 in the Data Center**
 - A. Designing and Implementing a Dual-Stack Data Center
 - B. Implementing IPv6 in a Virtualized Data Center
 - C. Implementing IPv6 for the SAN
 - D. Designing IPv6 Data Center Interconnect

- X. Managing IPv6 Networks**
 - A. Network Management Framework: FCAPS
 - B. IPv6 Network Management Applications
 - C. IPv6 Network Instrumentation
 - D. IPv6 Network Management
 - E. IPv6 Traffic-Monitoring Tools

- XI. Walk Before Running: Building an IPv6 Lab and Starting a Pilot**
 - A. Sample Lab Topology
 - B. Sample Lab Addressing
 - C. Configuring the Networking Devices
 - D. Operating System, Application, and Management Deployment
 - E. Moving to a Pilot