Certified Network Engineer for IPv6 (CNE6) Silver

Duration: 4 Days

COURSE DESCRIPTION

In the rapidly evolving world of network infrastructure, IPv6 has become a critical technology for modern network design and implementation. **Certified Network Engineer for IPv6 (CNE6) Silver** course is a comprehensive training program designed to equip network professionals with advanced skills in IPv6 networking technologies. Participants will gain in-depth knowledge of IPv6 addressing, network configuration, transition mechanisms, and best practices for deploying and managing IPv6 networks. Through a blend of theoretical concepts and practical hands-on training, this course prepares engineers to effectively design, implement, and troubleshoot IPv6 network environments.

COURSE OUTLINE

1. Introduction to IPv6

- History of Internet
- Global IP Address Resource
- Management
- Issues with IPv4 Addressing
- Comparison between IPv4 and IPv6
- Goals in designing IPv6
- Key features of IPv6
- Common Misconceptions
- Can We Use IPv6 Now?
- Five Steps On The Path To IPv6
- Hardware and Software Support for IPv6

2. IPv6 Addressing Architecture

- IPv6 Address Type
- IPv6 Address Representation
- IPv6 Address Scope
- IPv6 Addressing Hierarchy
- IPv6 Subnetting
- IPv6 Auto-configuration
- IPv6 Special Address
- Autoconfiguration: EUI- 64
- Comparison summary between IPv4 and IPv6

3. IPv6 Packet Structure and Header Formats

- Comparison between IPv4 and IPv6 headers
- IPv6 Extension Headers
- How it Works?

4. ICMPv6 and Neighbour Discovery

- ICMPv6 Header
- ICMPv6 Header Type
- Neighbour Discovery Protocol (NDP)
  - Router Discovery

NETWORK TRAINING CENTER CO.,LTD. (NTC) | www.trainingcenter.co.th
Call us today 0-2634-7993-4
177/1 BUI Bldg., 14th Fl., Unit 1, 3 & 4, Surawongse Rd., Suriyawongse, Bangrak, Bangkok, THAILAND | Email: sales@trainingcenter.co.th

        - Prefix Discovery
        - Parameter Discovery
        - Address Auto configuration
        - Address resolution
        - Next-hop determination
        - Neighbor Unreachability
        - Detection
        - Duplicate Address Detection
        - Redirect
    - IPv6 Address State
    - Neighbour Cache Entry States

5. Transition Mechanisms

- Co-existence
    - Dual stack
    - Dual IP Layers
    - Bump In Stack
- Translation
    - NAT64
- Tunnelling
    - Manual tunnels
    - 6over4
    - 6to4
    - ISATAP
    - GRE
    - Tunnel Broker
- Dual Stack Transition Case Studies
    - Lessons learnt
    - Tunnel MTU and Path Discovery
    - Key Factors for successful transition
    - Transition Security Issues

6. Hands-on Lab

- IPAM Configuration
- Address autoconfiguration
- Configuring static route
- Configuring IPv6 manual tunnel
- Configuring 6to4
- Configuring ISATAP

PREREQUISITES

- Some familiarity with computer networking (e.g. IPv4)
- No prior certifications required, CCNA or other network certifications may be helpful

WHO SHOULD ATTEND

Network engineers, Network Security Engineers or Network Software Developers

NETWORK TRAINING CENTER CO.,LTD. (NTC) | www.trainingcenter.co.th
Call us today 0-2634-7993-4
177/1 BUI Bldg., 14th Fl., Unit 1, 3 & 4, Surawongse Rd., Suriyawongse, Bangrak, Bangkok, THAILAND | Email: sales@trainingcenter.co.th