

## Course Outline

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**Course Title:** T9104-Migrating from IPv4 to IPv6  
**Course Duration:** 3 Days Classroom without labs  
5 Days Classroom with hands on labs  
5 Days Webinar

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### Section 1

Welcome, Introductions, House rules, course agenda.

### Section 2

The need for migration

- Inherent weaknesses of IPv4
- Features of IPv6
- Why after over 10 years of hype are we now taking IPv6 seriously
  - Current motivators for migrating

### Section 3

IPv6 In detail

- IPv6 addresses
  - Notation methods
  - Address types and structure
    - Unicast
    - Multicast
    - Anycast
    - Site local addresses
    - Link local addresses
- Subnetting with IPv6
- IPv6 Protocol structure
- ICMPv6
  - Neighbour Discovery Protocol
  - Route Discovery Protocol
  - ICMPv6 Messaging
  - ICMPv6 diagnostic tools
- IPv6 and other protocols
  - ISIS
  - OSPF
  - RIP
  - BGP
  - DNS
  - DHCP

Lab 1 Building and configuring a simple IPv6 Network

### Section 4

#### IPv6 QOS

- IPv6 flow labels and MPLS
- Packet marking with IPv6
- IPv6 packet prioritisation and queuing methods

Lab 2 Designing and setting up QOS policies on IPv6

### Section 5

#### IPv6 and Security

- IPv6 and IPsec
- IPv6 security extension header
- IPv6 encryption and authentication

Lab 3 IPv6 security configuration and testing

### Section 6

#### Migrating from IPv4 to IPv6

- Tunnelling 4 in 6 and 6 into 4
  - Terado tunnelling
- Dual stacking routers
- Integrating IPv6 and MPLS
- Integrating IPv6 and Diffserve
- Client, Servers and other edge devices and IPv6
  - Microsoft Windows®
  - Linux
  - Unix
- Deployment of new Vs. upgrading
- Designing a migration strategy

Lab 4 Migrating from IPv4 to IPv6