



The market leader in Communications Training

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# Advanced LAN Design & Network Engineering

## 5-day course

The programme builds on the LAN Design Course moving from the small to medium sized business into the Enterprise scale network.

The course is designed to equip existing Network Engineers, IT installation and project managers with the skills and knowledge to understand the elements of modern enterprise networks and to be able to specify and understand the integrated approach required.

On successful completion, delegates will have the knowledge and skills to design and engineer a multimedia IP based enterprise network for a large company

### Course Content

#### Designing high speed backbone networks

- Copper/fibre
- Gigabit SX/LX
- 10Gigabit
- Fibre Channel & Infiniband

#### Network models

- Open Systems Interconnect
- TCP/IP
- Cisco Hierarchical model

#### Advanced TCP/IP

- IPv4 headers & operation
- Sub-netting & Super-netting
- IPv6 contrasts & design

#### Network infrastructures for corporate networks

- VLANs a& prioritisation
- High density switch design in the core network
- Spanning tree & RapidTree Protocols
- Layer 3 switching

#### Concepts & design issues in Voice over IP

- Importance of QoS schemes
- Bandwidth management, optimisation a& compressions schemes
- SIP, G703, H323
- Video conferencing
- IPTelevision

#### Designing Wide Area Networks

- Support for multimedia & voice traffic
- ATM
- Prioritisation schemes at the IP Layer including MPLS, RSVP, Intserv & Diffserv

#### Introduction to designing & specifying Comms Rooms

- Redundant Cabling
- Electrical supply & backup
- Cabinet design including Air Conditioning.

#### Network management, monitoring & documentation

- Designing a Network Monitoring Solution
- The importance of documentation
- Management Procedures

#### Securing the Enterprise

- Security Policies & Procedures
- Attack types & Defenses
- Tools, Tips & Technologies to defend the network

60% Theory 40% Practical

#### ▶ Qualification

BICSI CEC's: 40 ITS, 40 RCDD & 40 NTS  
CNet Certificate

#### ▶ Who should attend

Network technicians, Installation engineers, IT personnel, Pre-Sales Consultants and those seeking to become involved in LAN network design

#### ▶ Related Training

CompTIA Network+  
CompTIA Security+  
Wireless LAN Design & Installation  
Design of Voice over IP Networks  
Convergence Data Networking & Telephony

#### ▶ Course objectives

On successful completion, delegates will have the knowledge and skills to design and engineer a multimedia IP based enterprise network for a large company"

#### ▶ Prerequisites

A good knowledge and understanding of copper and fibre optic cabling systems is as well as basic knowledge of IP switch configuration and routing.  
Pass of the LAN Design Course, Network + or equivalent

#### ▶ Course Location

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Suffolk



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