



The market leader Communications Training

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# Introduction to IP Networking

I-day course

This 1-day course provides those that are new to technology with a platform to assess and to begin installing TCP/IP based systems.

Organisations from the largest enterprises to the smallest SME environment are discovering that in order to link their systems across the Internet, or their own WAN (Wide Area Networks), they require a truly heterogeneous protocol suite capable of providing a common denominator in both the operating system and software development.

The huge mass of deployed TCP/IP systems, together with the inescapable impact of the Internet has made TCP/IP that protocol. This course provides a technical introduction to TCP/IP, providing design exercises and troubleshooting scenarios for effective and controlled implementation and management of hardware and software based systems.

## Course Overview

### Introduction

- The TCP/IP protocol suite
- TCP/IP Standards
- Request for comments

### TCP/IP Protocol Architecture

- Network interface layer; Internet layer; Transport layer; Application layer

### Internet Protocol

- Structure, IP header; fragmentation & reassembly
- Internet Control Message Protocol (ICMP)
- Internet Group Message Protocol (IGMP)

### Transmission Control Protocol

- Structure, TCP header; fragmentation & reassembly
- Source & Destination Ports
- The TCP three way handshake including sliding windows,

### Application Layer Protocols

- FTP, HTTP, Telnet, SMTP, DNS

### Troubleshooting tools

- Ping, tracer, ipconfig, arp, nbstat & netstat

### IP Addressing

- Dotted decimal notation, address classes, network & host addresses, subnet masks,
- Determining subnet addresses, the all zeros & ones addresses,
- Extended subnet masks, variable length subnet masks, classless inter-domain routing

### Public & Private Addresses

- Network address translation
- Port forwarding, Proxies, Virtual servers

### Domain Names

- Host name resolution & DNS, NetBIOS name resolution, principles of IP routing, static & dynamic IP routing protocols, the routing process, longest prefix matching

### IP Version 6

- Introduction to IPng or Ipv6, 6to4 protocol, network address translation for Ipv6

80% Theory 20% Practical

▶ **Qualification**  
CNet Certificate

▶ **Who should attend**  
IT Managers, Project Managers,  
Network Managers, CTO's,  
Facilities Managers,  
Data Centre Managers  
Designers and Consultants.

▶ **Related Training**  
Introduction to LANs & WANs  
Configuring Routing Protocols  
Configuring Switches & VLANs  
Design of VoIP Networks

▶ **Course objectives**  
Delegates gain an understanding of TCP/IP design and components

▶ **Prerequisites**  
Some knowledge of networking  
or completion of Intro to LAN/WAN

▶ **Course Location**  
Bury St Edmunds  
Suffolk

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