



Networking Primer for Voice over IP

Course Objectives

This Networking Primer course will give delegates a good understanding of LANs, WANs and Voice over IP.

It is aimed at those who want to move into the world of VoIP and require a solid foundation before attending any other telephony manufacturers IP based PBX courses. It can also be taken as a standalone course.

Being a modular training course, delegates can work through all modules or simply choose the module they really need.

Each module has its own 'mini' quiz at the end to help delegates 'gauge' how well they are doing and the 'Final' Accreditation test is available from the delegates own 'Course' list page on the main site.

The Modules are as follows

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| What is Voice over IP? | This is an introduction module that sets out the scope of the course and introduces the concepts of LANs and WANs. |
| Networking Components | This module is designed to introduce you to Data networks and how devices connect to them. It does this by describing the most commonly used topologies and cabling types in use today. |
| Ethernet | Ethernet is the predominant force in networking today and this module introduces all of the concepts needed to understand this specification along with introducing basic network components like LAN cards and LAN switches. |
| The OSI Model | The OSI Model was designed to break networking components and software into 'bite-size' interoperable chunks. This module explains the 7 layers of the OSI model and compares them to the real world implementation of the TCP/IP layered model. |
| WANS | Wide Area Networks connect buildings, homes and people together. This module aims to explain what a WAN is and how they work along with explaining some WAN protocols such as PPP, ADSL and Frame Relay. |

TCP/IP Networks

This module explains how TCP/IP networks work by describing the functionality of each TCP/IP layer. By understanding these layers you will understand how a TCP/IP network works which will give you a good understanding of how voice can be carried across an IP network.

TCP/IP Addresses

IP Addresses, Subnet Masks, Default Gateways. It's all here and delivered to you in a way so that you will understand what these numbers are for and how they work with each other.

DHCP

This Module introduces the Dynamic Configuration protocol (DHCP) and describes what it is, how it works and how it works in a multi-network environment along with introducing some troubleshooting commands.

Troubleshooting

Follow the tips in this module and you will be able to solve the majority of problems you will encounter on a Network.

LAN Monitoring

This module teaches you how to use a Network monitoring program to analyse traffic on the network in order to help troubleshoot even the trickiest problems..

Switches and VLANS

This module explains the fundamental operation of a LAN switch along with the important concepts of Virtual LANs (VLANs).

Routing

Routers are used on the edge of networks to pass data onto a WAN and within Layer 3 LAN switches. This module describes how routers work along with a brief explanation of Routing protocols such as RIP, IGRP and EIGRP.

Wireless

Wireless is one of the fastest moving areas in the world of networking. This module explains the basics of Wireless networking along with information on securing your wireless network.

IP Applications and Services

So many other services can be found on a network and some, if not all, will have an impact on how your voice will work. This module looks at services such as FTP, TFTP, Firewalls, NAT, Proxy Server, DNS and VPNS.

VoIP

This module introduces the different implementations of Voice over IP and describes the basics of codecs, signalling, the real time protocol (RTP), quality of service (QoS) and the basics of network design to reduce delay and jitter that can affect the quality of voice on a network.