Course Name: Introduction to Home Networking

Course Overview:
Home Networking has become very popular with the expansion of broadband service offerings. From wired to wireless, this course provides the necessary skills required to implement the right network solution for both residential and small business users. Whether you're dealing with xDSL, cable, or satellite, this course provides the student with the knowledge to understand, install and troubleshoot small to medium sized networks. The majority of the course is hands-on and the attendee will be working with the more common hardware and software used throughout the industry today. We will fine-tune the points or products and techniques of particular importance to your operations. Our skilled instructors and staff will tailor the module to meet your requirements.

Course Length: 3 days

Who should attend?
- Telephone Companies
- Competitive Carrier Organizations
- Contracting Organizations
- Power Companies
- Cable Companies
- Field Engineers
- Data Engineers
- Residential Services Technician
- Installers/Technicians
- Management staff

You will learn:
- What a home network is and why it is needed
- The benefits of home networking
- Troubleshooting common PC problems
- Home networking hardware and software
- How to install and configure routers
- The importance of network security and how to administer it
- How to maintain and troubleshoot an existing home network

Prerequisites: None

Customizable Course: Yes

Course Content:

Networking Overview

- What is a Network
- Why Home Networks
- Network architecture
- Physical Hardware
- Logical network/Protocols

Benefits of Networking

- Sharing resources
- Centralized network management

Sharing Data between PCs

- Logical Topologies
- Ethernet
- Network Types
- Client/Server
- Peer-to-Peer

Cabling

- CAT 3, 5, 5e, 6
- Cross-over
- Straight-Thru
- Cable Length requirements

The PC and Operating System Overview

- Windows 98
- Windows NT
- Windows 2000
- Windows ME
- Windows XP

Lab 1 – Building Cables

- Cross-over cable
- Straight-thru cable

Lab 2 – Install a NIC

- Overview of PC hardware
- Install Network Card
- Test installation

Wireless Networking Overview

Powerline Networking Overview

OSI Model Review

Networking Hardware

- Cabling/Wireless
- Hubs
- Switches
- Routers
- Servers
- Switches

Networking Protocols

- TCP/IP
- IP Basics
- Addressing (Static, Dynamic)

Setting up the Network

- Installing the Hardware
- Cabling
- Configuring the software

Wireless Networking

- How it Works
- Benefits
- Technologies in the LAN

Powerline Networking

- How it Works
- Benefits
- Technologies in the LAN

Router Overview

- How Routers work
- Routers and the Internet
- Routing Tables

Configuring a Router

Communicating with the Router

- Console Port
- Auxiliary Port
- Telnet
- HTTP Server User Interface

Lab 3 – Stations

- After Discussion on Day 2, the students will be directed to hands-on stations where they will perform the following tasks:
  - Installation and configuration of Router.
  - Installation and configuration of Wireless router.
  - Installation and configuration of Powerline router.
  - Network multiple PCs together using a hub.
  - Share files, folders and printers across a network.

Network Administration

- Administering the network
- Network Security
- Firewall Basics

Network Troubleshooting and Maintenance

Lab 4 – Networking

- Students will build a Local network using all available computers in the classroom
- Students must share files, folders and a printer across the network

Lab 5 – Network Troubleshooting

- Students must identify and correct all problems found in their local network

Extensive Hands-on Exercises throughout course