



Summary of Technology Training Courses

HN Networks

HN Networks specialises in delivering training in Datacommunication and Telecommunication technologies.

We offer a range of standard training courses as well as providing a customisation service where we will specifically tailor a course to a particular client's needs.

Core Training Courses

| | | |
|---|------------------------------|--------------------------------------|
| • Understanding Voice over IP | View Summary | View detail (online) |
| • Understanding Voice Technologies and Networking | View Summary | View detail (online) |
| • Understanding IP and IP Networking | View Summary | View detail (online) |
| • CCNA 640-801 Exam Preparation Training | View Summary | View detail (online) |
| • CCNA INTRO 640-821 Exam Preparation Training | View Summary | View detail (online) |
| • CCNA ICND 640-811 Exam Preparation Training | View Summary | View detail (online) |
| • Understanding Multi Protocol Label Switching (MPLS) | View Summary | View detail (online) |
| • Understanding Ethernet LANs | View Summary | View detail (online) |
| • Understanding Asynchronous Transfer Mode (ATM) | View Summary | View detail (online) |
| • Understanding Frame Relay | View Summary | View detail (online) |
| • Introduction to Telecommunications | View Summary | View detail (online) |
| • Introduction to Datacommunications | View Summary | View detail (online) |

Receive the Training That You Want

You can see from the above list of training courses that we offer a range of different subjects covering various areas related to Local Area Networks (LANs) and Wide Area Networks (WANs).

Of course, the training agendas presented may not meet your specific requirements. If this is the case then we will be very happy to customise the training to meet your requirements. If you would like to discuss this option, then please feel free to contact us. We will be very pleased to talk about your requirements, offering advice where required, and there is absolutely no obligation on your part.

There are a number of ways to contact us as follows:

Telephone: **+44 (0) 1628 622187**

Email: info@hn-networks.co.uk

Web: <http://www.hn-networks.co.uk>

Understanding Voice over IP (2 days)

See the detail on our web site: http://www.hn-networks.co.uk/voice_over_ip.html

1. Introduction to voice over IP (VoIP)
2. Overview of the voice technologies relevant to voice over IP
3. Overview of the IP technologies relevant to voice over IP
4. The H.323 framework for voice over IP
5. Session Initiation Protocol - SIP for voice over IP
6. MGCP and Megaco / H.248 for voice over IP
7. Voice over IP applications
8. QoS requirements and solutions with voice over IP
9. Other considerations with voice over IP

Understanding Voice Technologies and Networking (3 days)

See the detail on our web site: <http://www.hn-networks.co.uk/voice.html>

1. Introduction to Voice Communications
2. Digital Voice
3. The Telephone
4. The Telephone Exchange
5. Digital Voice Transmission
6. E1 Digital Voice Interface
7. DS-1 (T1) Digital Voice Interface
8. Signalling on Analogue Interfaces
9. Signalling on Digital Interfaces
10. Overview of Basic Rate ISDN
11. Voice/Speech Compression
12. Speech Impairments
13. Echo and Echo Control
14. Voice and Data Integration
15. Voice over Frame Relay (VoFR)
16. Voice and Telephony Over ATM (VTOA)
17. Voice over IP (VoIP)

Understanding IP and IP Networking (3 days)

See the detail on our web site: <http://www.hn-networks.co.uk/ip.html>

1. Introduction to IP
2. The IP Layer
3. IP Support Protocols
4. Transport Layer Protocols
5. Application Layer Protocols
6. Routing with IP
7. IP Version 6 (IPv6)
8. Security and IP
9. Quality of Service (QoS) and IP
10. IP and Multi Protocol Label Switching (MPLS)
11. Voice over IP

CCNA 640-801 Exam Preparation Training (5 days)

See the detail on our web site: <http://www.hn-networks.co.uk/ccna.html>

1. Layered Communication Models: OSI and TCP/IP Models
2. Ethernet Fundamentals
3. Cisco Router Fundamentals and Configuration
4. Cisco LAN Switch Fundamentals
5. LAN Switching Fundamentals
6. The Spanning Tree Protocol (STP) and the Rapid Spanning Tree Protocol (RSTP)
7. Virtual LANs (VLANs) and Trunking
8. Internet Protocol (IP) Fundamentals
9. Routing IP, Static Routing and Routing Protocols
10. RIP (Routing Information Protocol), IGRP (Interior Gateway Routing Protocol) and RIP Version 2
11. OSPF (Open Shortest Path First) and EIGRP (Enhanced Interior Gateway Routing Protocol)
12. Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) Fundamentals
13. Wide Area Networking (WAN) Fundamentals
14. Point-to-point WAN Protocols
15. ISDN (Integrated Services Digital Network) and DDR (Dial-on-demand Routing)
16. Frame Relay
17. IP Access Control Lists

CCNA INTRO 640-821 Exam Preparation Training (4 days)

See the detail on our web site: http://www.hn-networks.co.uk/ccna_intro.html

1. Introduction to Computer Networking in LANs and WANs
2. Layered Communication Models: OSI and TCP/IP Models
3. Ethernet Fundamentals
4. LAN Cabling Fundamentals
5. Wide Area Networking (WAN) Fundamentals
6. Internet Protocol (IP) Fundamentals
7. Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) Fundamentals
8. LAN Switching Fundamentals
9. Cisco LAN Switch Fundamentals
10. Virtual LANs (VLANs) and Trunking with Cisco Switches
11. Cisco Router Fundamentals and Configuration
12. Dynamic Routing Protocols
13. Remote Access via the WAN

CCNA ICND 640-811 Exam Preparation Training (5 days)

See the detail on our web site: http://www.hn-networks.co.uk/ccna_icnd.html

1. Review of LAN Switching
2. The Spanning Tree Protocol (STP) and the Rapid Spanning Tree Protocol (RSTP)
3. Virtual LANs (VLANs) and Trunking
4. The Internet Protocol (IP) Layer, IP Addressing and Subnetting
5. Routing IP, Static Routing and Routing Protocols
6. RIP (Routing Information Protocol), IGRP (Interior Gateway Routing Protocol) and RIP Version 2
7. OSPF (Open Shortest Path First) and EIGRP (Enhanced Interior Gateway Routing Protocol)
8. ICMP, TCP, UDP, FTP and TFTP
9. Point-to-point WAN Protocols
10. ISDN (Integrated Services Digital Network) and DDR (Dial-on-demand Routing)
11. Frame Relay
12. IP Access Control Lists

Understanding Multi Protocol Label Switching (2 days)

See the detail on our web site: <http://www.hn-networks.co.uk/mpls.html>

1. MPLS: The Need For a New Solution
2. Label Distribution and Signalling
3. Frame Relay, ATM and MPLS
4. MPLS Traffic Engineering
5. Supporting Differentiated Services (Diff-Serv) with MPLS
6. Virtual Private Networks (VPNs)
7. Voice over MPLS
8. Introduction to Optical Networks and MPLS

Understanding Ethernet LANs (2 days)

See the detail on our web site: <http://www.hn-networks.co.uk/ethernet.html>

1. Introduction to, overview of and history of Ethernet
2. Ethernet frames, MAC addresses, collisions and CSMA/CD
3. The older Ethernet – 10BASE-5 (Thick Ethernet) and 10BASE-2 (Thin Ethernet)
4. Ethernet on UTP – Unshielded Twisted Pair
5. Ethernet on fibre (fiber) optic cable
6. 10Mbit/s Ethernet
7. Fast Ethernet – 100Mbit/s Ethernet
8. Gigabit Ethernet – 1Gbit/s Ethernet
9. Switched Ethernet
10. Spanning Tree with Ethernet switches
11. VLANs – Virtual LANs using Ethernet switches
12. 10 Gigabit Ethernet – 10Gbit/s Ethernet

Understanding Asynchronous Transfer Mode - ATM (3 days)

See the detail on our web site: <http://www.hn-networks.co.uk/atm.html>

ATM Technology

1. Introduction to ATM
2. The standards for ATM
3. The ATM layer
4. The Physical layer
5. The ATM Adaptation Layer (AAL)
6. ATM Service Categories and Traffic Management
7. Signalling for SVCs and Soft-PVCs
8. ATM Network Management, ILMI and OAM
9. Private Network-Network (Network-Node) Interface - PNNI

Applications on ATM

10. Voice and Telephony over ATM
11. MPEG-2 Video over ATM
12. IP over ATM (Layer 2 support)
 - RFC1483: Multiprotocol Encapsulation over AAL5
 - RFC1577 and RFC2225: Classical IP and ARP over ATM
 - LAN Emulation (LANE): Versions 1 and 2
13. IP over ATM (Layer 3 support)
 - Multiprotocol over ATM (MPOA)
 - Multiprotocol Label Switching (MPLS)
14. Frame Relay/ATM Interworking

Understanding Frame Relay (2 days)

See the detail on our web site: http://www.hn-networks.co.uk/frame_relay.html

1. Introduction to Frame Relay
2. User-to-Network and Network-to-Network Interfaces
3. High Speed Frame Relay and ATM to Frame Relay Interworking
4. Handling real-world and time sensitive traffic
5. Voice and Video over Frame Relay
6. Defining and Measuring Service Levels
7. Synergies of Frame Relay, IP and ATM - New Developments
8. Further Aspects of Frame Relay

Introduction to Telecommunications (2 days)

See the detail on our web site: http://www.hn-networks.co.uk/intro_to_telecomms.html

1. Introduction to Telecommunications
2. Digital Voice (Analogue to Digital Conversion)
3. Digital Voice Transmission and Multiplexing of Multiple Channels
4. The 2Mbit/s Framed Interface
5. Signalling System Number 7 (SS7)
6. Integrated Services Digital Network (ISDN) and its Applications
7. Transmission Systems - PDH and SDH
8. Introduction to Data Communication Protocols
9. Voice and Data Integration

Introduction to Datacommunications (2 days)

See the detail on our web site: http://www.hn-networks.co.uk/intro_to_datacomms.html

1. Data Communication Concepts
2. Local Area Networks (LANs)
3. LAN Interconnection
4. Other Types of LAN
5. The Internet Protocol (IP) and 'TCP/IP'
6. Routing with IP
7. The Internet
8. Wide Area Network (WAN) Protocols
9. Overview of Transmission Systems - PDH and SDH
10. Some Other 'hot' Topics in the Datacommunications Industry

To find out more detail about our current range of training courses, please refer to our web site at:

<http://www.hn-networks.co.uk>

Alternatively, please feel free to call us on +44 (0) 1628 622187 if you wish to discuss your training requirements or simply need further information.