

CERTIFICATE OF COURSE COMPLETION

CCNA 1 NETWORKING BASICS



Christian Wilkin

Date : July 13, 2005

Instructor : Wenzler, Siegfried

Location : Saarbrücken

Academy Name : Techn. gewerbliches
BBZ 1 des
Stadtverbandes
Saarbrücken

Instructor's Signature

During the CCNA 1 Course administered by the undersigned instructor, the student was able to proficiently:

- Define and install the necessary hardware and software required to be able to communicate over a network
- Demonstrate the mathematical skills required to work seamlessly with integer decimal, binary, and hexadecimal numbers and simple binary logic
- Define the structure and technologies of modern computer networks
- Define the meaning and application of “bandwidth” as used in networking
- Compare and contrast network communications using the OSI model and the TCP/IP protocol stack
- Describe the major properties and standards associated with copper and optical media used in networks
- Explain the concepts of transmission and reception of wireless signals used in networks
- Install a simple wireless LAN
- Explain the fundamentals of signal transmission on networking media
- Describe the different topologies and physical issues associated with cabling common LANs
- Describe the physical issues associated with cabling networking equipment to work over a WAN link
- Explain the fundamentals of Ethernet media access
- Explain how collisions are detected
- Explain the concepts associated with auto negotiation on Ethernet systems
- Describe the concepts of switching in an Ethernet network
- Compare and contrast collision and broadcast domains, and explain how networks can be segmented
- Demonstrate familiarity with all aspects of IP addressing
- Describe the association of an IP address with a device interface, and the relationship between physical and logical addressing
- Describe the principles and practice of packet switching within IP networks
- Describe routing concepts, and the different methods and protocols used to achieve them
- Describe how the protocols associated with TCP/IP allow host communication to occur
- Describe the fundamental concepts associated with transport layer protocols, and compare the connectionless approach to transport with the connection-oriented one
- List the major TCP/IP application protocols, and briefly define their features and operation

CERTIFICATE OF COURSE COMPLETION

CCNA 2 ROUTERS AND ROUTING BASICS



Christian Wilkin

Date : November 21, 2005

Instructor : Wenzler, Siegfried

Location : Saarbrücken

Academy Name : Techn. gewerbliches
BBZ 1 des
Stadtverbandes
Saarbrücken

Instructor's Signature

During the CCNA 2 Course administered by the undersigned instructor, the student was able to proficiently:

- Identify the key characteristics of common wide area networking (WAN) configurations and technologies
- Compare and contrast common WAN and LAN technologies
- Describe the role of a router in a WAN
- Explain the fundamental operation of the router operating system (IOS)
- Establish communication between a terminal device and the router IOS
- Use IOS for router analysis, configuration, and repair
- Identify and describe the major internal and external components of a router
- Connect router Fast Ethernet, Serial WAN, and console ports
- Perform, save, and test an initial configuration on a router
- Configure additional administrative functionality on a router
- Use embedded data link layer functionality to perform network neighbor discovery and analysis from the router console
- Use IOS embedded Layer 3 through Layer 7 protocols to establish, test, suspend or disconnect connectivity to remote devices from the router console
- Identify the stages of the router boot-up sequence, and demonstrate how the configuration register and boot system commands can modify that sequence
- Manage system image and device configuration files
- Describe the operation of the Internet Control Message Protocol (ICMP) and identify the reasons, types, and format of associated error and control messages
- Identify, configure, and verify the use of static and default routes
- Evaluate the major characteristics of routing protocols
- Identify, analyze, and demonstrate how to rectify inherent problems associated with distance vector routing protocols
- Configure, verify, analyze, and troubleshoot simple distance vector routing protocols
- Use IOS commands to analyze and rectify network problems
- Describe the operation of the major transport layer protocols and the interaction and carriage of application layer data
- Identify how router packet throughput can be controlled using access control lists
- Analyze, configure, implement, verify, and rectify access control lists within a router configuration

CERTIFICATE OF COURSE COMPLETION

CCNA 3 SWITCHING BASICS AND INTER- MEDIATE ROUTING



Christian Wilkin

Date : January 9, 2006

Instructor : Wuillemet, Fabian

Location : Saarbrücken

Academy Name : Techn. gewerbliches
BBZ 1 des
Stadtverbandes
Saarbrücken

Instructor's Signature

During the CCNA 3 Course administered by the undersigned instructor, the student was able to proficiently:

- Compute and use Variable Length Subnet Masking (VLSM) techniques to design and implement effective and efficient IP addressing
- Configure and use the RIP v2 distance vector routing protocol
- Describe the concepts and techniques of link-state routing, and compare and contrast with distance vector routing
- Configure and use the Open Shortest Path First (OSPF) link-state routing protocol in a single area mode of operation
- Configure and use the Extended IGRP (EIGRP) routing protocol
- Demonstrate an ability to troubleshoot routing protocol problems, specifically using and interpreting the show and debug commands
- Describe the operation and technology of the IEEE 802.3 "Ethernet" variants
- Describe and compare the concepts and techniques used within Ethernet switched LANs
- Describe and compare the concepts and techniques used by Ethernet LAN switches
- Design a simple LAN using tiered techniques
- Describe the three tier process as used by Cisco for internetwork design purposes
- Configure and administer a Cisco Catalyst LAN switch
- Compare and contrast various forms of redundancy built into networks, and explain the associated advantages and disadvantages
- Describe the operation of the spanning tree algorithm, and describe the methods by which it is implemented and used in a switched network
- Describe and compare the concepts, advantages and disadvantages of virtual LANs
- Configure and administer inter-switch VLANs on Cisco switches
- Solve a simple VLAN problem
- Configure and administer VTP on Cisco switches
- Configure and administer routing between VLANs on Cisco switches

CERTIFICATE OF COURSE COMPLETION

CCNA 4 WAN TECHNOLOGIES



Christian Wilkin

Date : March 15, 2006
Instructor : Wuillemet, Fabian
Location : Saarbrücken
Academy Name : Techn. gewerbliches
BBZ 1 des
Stadtverbandes
Saarbrücken

Instructor's Signature

During the CCNA 4 Course administered by the undersigned instructor, the student was able to proficiently:

- Describe the concepts and characteristics of Network Address Translation, and explain its configuration, use, and administration on a network
- Describe the concepts and characteristics of the Dynamic Host Configuration Protocol (DHCP), and explain its configuration, use, and administration on a network
- Describe, compare, and contrast the essential features of WAN technology
- Classify WAN link options and explain the differences between circuit switched and packet switched technologies
- Make recommendations about the provision of WAN services based on needs
- Design a simple WAN system using a hierarchical tiered approach to the design
- Describe the operation, configuration, and functionality of serial point—point links
- Configure and administer serial point—point links
- Describe the concepts, characteristics, and functionality of the Point to Point Protocol (PPP)
- Configure and administer PPP on a serial link
- Describe the concepts, characteristics, and functionality of ISDN
- Configure and administer a router ISDN interface
- Describe the concepts, characteristics, and functionality of Dial on Demand Routing (DDR)
- Configure and administer DDR in a network
- Describe the concepts, characteristics, and functionality of Frame Relay
- Configure and administer permanent virtual circuit (PVC) Frame Relay WAN operations
- Describe, compare and contrast workstation and server operating systems and the associated hardware
- Describe the concepts of network management, and explain how network management tools are utilized on a modern network
- Describe the concepts and technologies associated with optical data transmission