



# CCNA 1—Networking Basics

**During the Cisco® Networking Academy® CCNA 1 course administered by the undersigned instructor, the student was able to proficiently:**

- Define and install the hardware and software required to be able to communicate across a network
- Demonstrate the mathematical skills required to work effortlessly with integer decimal, binary, and hexadecimal numbers and simple binary logic
- Define and describe the structure and technologies of computer networks
- Describe the meaning and application of the term “bandwidth” when used in networking
- Describe, compare, and contrast network communications using two examples of layered models
- Describe the physical, electrical, and mechanical properties and the standards associated with copper and optical media used in networks
- Describe what is required to install a simple WLAN
- Explain the issues associated with the transmission of signals on networking media
- Describe the 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 fundamental concepts associated with the Ethernet media access technique
- Explain how collisions are detected and the concepts associated with autonegotiation on an Ethernet system
- Define and describe the structure and technologies of computer networking systems
- Describe networking topologies and physical issues associated with cabling common LANs
- Describe the principles and practice of switching on an Ethernet network
- Describe how the protocols associated with TCP/IP allow host communication to occur
- Explain and demonstrate the mechanics associated with IP addressing
- Describe how an IP address is associated with a device interface and the association between physical and logical addressing
- Describe the principles and practice of packet switching using the Internet Protocol (IP)
- Describe the concepts associated with routing and the different methods and protocols used to achieve it
- 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

**Newton Rowland**

Student's Name

**June 2, 2004**

Date

**Hoover, Charles**

Instructor

**Nashville State  
 Technical Community  
 College**

Academy Name

**Nashville**

Location

Instructor's Signature



June 2, 2004

Dear Newton Rowland

Congratulations! You have successfully completed CCNA 1 Bridge Course of the Cisco Networking Academy Program.

During the course, you have developed a solid foundation in the basics of networking, demonstrating knowledge of important concepts and skills, including the OSI model, Ethernet networks running TCP/IP, IP addressing, and structured cabling skills.

Information technology skills are in high demand given the explosive growth of the Internet as a practical business tool. Technological literacy is more important today than ever before, and Cisco is proud to provide you with the knowledge and skills to design, build, and maintain computer networks.

Wishing you continued success in CCNA 2!

Sincerely,

A handwritten signature in black ink that reads "John Chambers". The signature is written in a cursive, flowing style.

John Chambers  
President and CEO  
Cisco Systems, Inc.