

# CIW Internetworking Professional Series – Course 1:

## TCP/IP Internetworking (March 2002)

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*TCP/IP Internetworking* is a 12-hour course designed to teach key Transmission Control Protocol/Internet Protocol (TCP/IP) concepts and protocols so network professionals can effectively plan, deploy and manage a TCP/IP enterprise network. Students will learn to build an enterprise network and analyze TCP/IP application and protocol information.

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### Topics

#### The Internet Infrastructure

Overview of Networking  
TCP/IP and Interoperability  
Internetworking and the Corporate Network  
Evolution of the Internet  
Internet-related Authorities  
OSI Reference Model  
Packets  
OSI/RM Protocol Examples  
Major Networking Protocols  
TCP/IP, IPX/SPX, NetBEUI, and Appletalk  
Data Link Control (DLC)  
Systems Network Architecture (SNA)  
Multiprotocol Networks

#### TCP/IP Architecture

Overview of TCP/IP  
Internet Architecture  
Request for Comments (RFC)  
Internet Protocols  
De-multiplexing  
Specialized Serial Interface Protocols

#### Internet Addressing

Introduction to Internet Addressing  
Internet Addressing  
Internet Address Classes  
IP Addressing Rules  
Reserved IP Addressing  
Subnetworks  
Subnet Masks  
Custom Subnet Masks  
Classless Interdomain Routing (CIDR)

#### Network Access Layer

Network Access Layer Overview  
IEEE Standards and Ethernet  
Ethernet Function  
Determining Ethernet Addresses  
Ethernet Headers  
Address Resolution Protocol  
Reverse Address Resolution Protocol (RARP)

#### Internet Layer

Internet Protocol Overview  
IP and Routing  
IP Header

#### Transport Layer

Transport Layer Overview  
Transport Layer Protocols  
Transmission Control Protocol (TCP)  
TCP Negotiation Process  
User Datagram Protocol (UDP)  
TCP and UDP Ports

#### Domain Name System

Domain Name System Overview  
The Hosts File  
DNS  
DNS Server Types  
DNS Hierarchy Example  
DNS Records  
UNIX and DNS  
Windows 2000 and DNS

#### Address and Parameter

**Allocation for TCP/IP Hosts**  
Address and Parameter Allocation  
Overview  
BOOTstrap Protocol (BOOTP)  
Dynamic Host Configuration Protocol (DHCP)

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### Target Audience

Network engineers, network architects, internetworking engineers, LAN/WAN administrators, systems administrators, systems managers, intranet administrators.

### Job Responsibilities

Define network architecture; identify infrastructure components; monitor and analyze network performance; and design, manage and troubleshoot enterprise TCP/IP networks.

### Prerequisites

Students must have CIW Foundations certification or equivalent experience.

### Duration

12 hours