



ET2.0: Telecommunications Technical Curriculum (TTC)

Program 4: Data Knowledge

Course 3: Network Layer Concepts

PROGRAM OVERVIEW

The ExperTech 2.0 series is a library of CD-ROM or intranet-based products covering key communications topics. Seminar style presentations provide telecom professionals with easy access to the information they need. Topics are presented by Hill Associates instructors renowned for their technical expertise, industry experience, and outstanding presentation style.

The *Telecommunications Technical Curriculum (TTC)* has a total of five programs, each of which consists of one or more courses. TTC is a modular, yet comprehensive program designed around the needs of those who want the details but cannot attend a more traditional classroom-based, leader-led program.

Program 4: Data Knowledge is a five course series that deals with concepts and terminology related to data services. In this third course of the series, *Network Layer Concepts*, we provide an overview of the third layer of the modern data networking model. We explore the core role of the Network Layer: routing. You will examine the dominant Network Layer protocol in use today: the Internet Protocol (IP). You will also examine the IP address and associated addressing issues. The course concludes with a brief introduction to MPLS and a deeper look at the concepts of class of service (CoS) and quality of service (QoS).

Program 4, Course 3; Network Layer Concepts runs 117 minutes, and includes six lessons of audio, interactive elements, review slides, section knowledge checks and a final exam. The participant can expect to spend about twice this amount of time to complete the course.

This program has three primary objectives:

- Discuss and explain the details of the Network Layer, including its role and relationship in the modern five-layer model
- Explore details underlying IP addressing, routing, and CoS/QoS
- Examine the details and benefits of an MPLS network structure

Specific topics can be developed, or packaged together to create a unique and customizable curriculum. All of our standard titles are available for preview at our store (www.hill.com/store).

About Hill Associates

At Hill Associates, we excel at creating custom talent development programs. Our experts help identify and assess your needs, and create training and educational programs that exactly meet those needs. Though we specialize in information technology, we've strengthened companies and organizations in a wide range of industries for over 25 years. Let us help you create a world-class talent development program that moves your business forward.

PROGRAM OUTLINE

Lesson 1: Network Layer Concepts

- Explore the primary function of the Network Layer: routing
- Define terms such router, packet, routing table, and congestion

Lesson 2: Internet Protocol

- Explore characteristics of IP, looking at packet structure, and the process of routing data through a datagram network

Lesson 3: IP Addressing

- Describe IP address structure and address allocation in the Internet
- Discuss subnetting and IP multicasting concepts

Lesson 4: Routing Tables and Routing Protocols

- Explore the roles and structure of a routing table and how tables are maintained using routing protocols
- Discuss address resolution

Lesson 5: Multiprotocol Label Switching

- Examine the components of an MPLS network
- Differentiate between MPLS control and forwarding planes
- Discuss the benefits of an MPLS network

Lesson 6: CoS and QoS

- Differentiate between Class of Service (CoS) and Quality of Service (QoS)
- Identify core requirements for delivering CoS and QoS in a packet network