



ExperTech 2.0: Ethernet Fundamentals

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.

Ethernet has become, without question, the dominant LAN technology adopted by enterprise, small business, and home users alike. What makes this technology so dominant? Is it its simplicity? Is it that even though it has evolved it maintains strong links to its roots, ensuring seamless, non-intrusive evolution? This course provides you with an understanding of the basic concepts related to Ethernet. Beginning with an historical review of the technology, it explains concepts that have remained unchanged throughout the past 30 years. It continues with a look at the evolution of this technology from a simple, wire-based LAN technology to the more complex switch and VLAN-based technologies we find today, concluding with an examination of link aggregation and power over Ethernet.

Ethernet Fundamentals runs 2.6 hours, and includes 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 six primary objectives:

- Describe the relationship among Ethernet and routers, reference models and other IEEE standards
- Differentiate among four generations of Ethernet products, technologies and services
- Identify transmission rates and media options for Ethernet networks
- Define the term VLAN, and discuss its role and importance in Ethernet environments
- Describe power over Ethernet, and identify contexts in which it is used
- Describe link aggregation, and identify contexts in which it is used

Specific topics can be developed, or packaged together to create 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: Origins and Concepts

- In the beginning...
- Defining Ethernet
- Ethernet, layers and the IEEE
- Ethernet addressing / domains
- Where Ethernet lives today

Lesson 2: First and Second Generation Ethernet

- The bus topology
- 10 Mbps Ethernet over TP/fiber
- CSMA/CD
- Fast Ethernet
- Shared Ethernet scenarios

Lesson 3: Third Generation Ethernet – the Switch

- The performance problem
- From bridging to switching
- Half- to full-duplex Ethernet
- 10/100 Mbps switched Ethernet scenarios

Lesson 4: Going to Gigabits

- Bandwidth drivers and Moore's law
- Gigabit and 10 Gb Ethernet
- Application of 10 G variants

Lesson 5: Fourth Generation Ethernet – the VLAN

- Defining VLANs, and why we need them
- Interconnecting VLANs
- VLAN trunking
- Selecting the right switch for your network

Lesson 6: Ethernet Enhancements

- Power over Ethernet
- Link aggregation
- CoS/QoS