

Ethernet Bridging

eLearning | Average Duration: 1 hour | Course Number: IPC_116

As the communications industry transitions to wireless and wireline converged networks to support voice, video, data and mobile services over IP networks, a solid understanding of Ethernet and its role in networking is essential. Ethernet is native to IP and has been adopted in various forms by the telecom industry as the Layer 1 and Layer 2 technology of choice. Ethernet bridging and associated capabilities are used extensively in the end-to-end IP network and a solid foundation in IP and Ethernet has become a basic job requirement in the carrier world. Starting with a brief history, the course provides a focused basic level introduction to the fundamentals of Ethernet Bridging as a key capability of Ethernet based nodes. It is a modular introductory course only on Ethernet Bridging basics as part of the overall eLearning IP fundamentals curriculum.

Intended Audience

This course is intended for those seeking a basic level introduction to Ethernet Bridging.

Learning Objectives

After completing this course, the student will be able to:

- Introduce Ethernet bridges and explain how they operate
- Introduce Ethernet switches and explain how they differ from Ethernet bridges
- Discuss Spanning Tree Protocol and its variations
- Introduce the concept of multilayer switching
- Discuss the use of link aggregation group in Ethernet networks

Course Outline

1. Ethernet Bridge

- 1.1. Definition
- 1.2. History
- 1.3. Learning bridge

2. Ethernet Switch

- 2.1. Definition
- 2.2. History
- 2.3. Ethernet switching
- 2.4. Full duplex operation

3. Spanning Tree Protocol (STP)

- 3.1. Function
- 3.2. Operation
- 3.3. Variants

4. Multilayer Switch (MLS)

- 4.1. Definition
- 4.2. Function

5. Link Aggregation Group

- 5.1. Definition
- 5.2. Uses

6. Summary