COURSE NAME NT-e100v6 Network Fundamentals Course

FORMAT   Online eLearning

DURATION   24 to 48 hours of self-paced learning – depending on experience level

SCHEDULE   Self-Paced

ASSESSMENT Online topic quizzes followed by a comprehensive online examination. The quiz scores and final exam score are combined into a final score. A final score of at least 80% is required for successful completion.

AUDIENCE

This course is targeted to building automation and control system field technicians, application/filed engineers, and programmers who work with Alerton's BACtalk control system.

COURSE OVERVIEW

The Network Fundamentals course, NT-e100, is an online self-paced course designed to give dealers enough understanding of networking technologies to implement the Alerton BACtalk product line on a customer's network; whether it's a basic local area network (Ethernet) or a larger wide area network (IP).

This course uses the *CompTIA Network+ All-In-One Exam Guide*, sixth edition by Mike Meyers (2015) as a reference text. This text is provided to each student.

The purpose of this course is to give students a common platform to understand how the various aspects of networking operate, how the components relate to one another, and how to speak and interpret the terminology they will encounter in reading and talking about networks with IT professionals.

OBJECTIVES

After completion of this course, students should be able to:

- Define the OSI seven-layer model
- Explain the major functions of network hardware
- Describe the functions of network software
- Explain the different types of network topologies
- Describe the different types of network cabling
- Describe the IEEE networking standards
- Define and describe Ethernet
- Explain early Ethernet implementations
- Describe ways to extend and enhance Ethernet networks
- Describe the varieties of 100-megabit Ethernet

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- Discuss copper-based and fiber-based Gigabit Ethernet

- Describe a backbone network

- Recognize and describe the functions of basic components in a structured cabling system

- Explain the process of installing structured cable

- Perform basic troubleshooting on a structured cable network

- Describe how the Internet Protocol works

- Explain CIDR and subnetting

- Describe the functions of static and dynamic IP addresses

- Explain how routers work

- Describe dynamic routing technologies

- Describe common Transport layer protocols

- Explain the power of port numbers

- Describe common TCP/IP applications such as HTTP, HTTPS, email (SMTP, POP3, IMAP4), and FTP

- Describe the functions and capabilities of DNS

- Use common TCP/IP utilities to diagnose problems with DNS

- Discuss the standard methods for securing TCP/IP networks

- Compare TCP/IP security standards

- Implement Secure TCP/IP applications

- Discuss the four logical topologies as defined by CompTIA

- Configure and deploy VLANs

- Implement advanced switch features

- Describe appropriate troubleshooting tools and their functions

- Analyze and discuss the troubleshooting process

- Tackle a variety of troubleshooting scenarios

- Discuss the common security threats in network computing

- Describe methods for securing user accounts

- Explain how firewalls, NAT, port filtering, and packet filtering protect network from threats

PREREQUISITES

- A working knowledge of computers and current Microsoft operating systems

RESOURCES

- The primary text for this course is the *CompTIA Network+ All-In-One Exam Guide*, sixth edition by Mike Meyers (2015). This text is provided to each student.

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