

# EtherNet/IP™ Networks

## EtherNet/IP™ Design and Troubleshooting Course Description

### COURSE AGENDA

#### Day 1

- Designing an EtherNet/IP Cable System
- Optimizing an EtherNet/IP Network
- Pinging a Module's EtherNet/IP Address
- Configuring and Modifying EtherNet/IP Addresses Using RSLinx® Software

#### Day 2

- Configuring and Modifying EtherNet/IP Addresses Using RSLogix™ 5000 Software
- Configuring and Modifying EtherNet/IP Addresses Using BOOTP-DHCP Server® Software
- Establishing EtherNet/IP Connections to Remote Devices
- Producing and Consuming Data over an Ethernet/IP Network

#### Day 3

- Communicating between Multiple Controllers on an Ethernet/IP Network Using a Message Instruction
- Configuring the Stratix 6000 Ethernet Switch
- Troubleshooting an EtherNet/IP Network's Media Components
- Monitoring an EtherNet/IP Network Using Web-Enabled Technologies



### COURSE NUMBER: CCP178

#### Course Purpose

This course prepares you to successfully design and configure an efficient EtherNet/IP (Industrial Protocol) network by managing both the bandwidth requirements for a project and the number of connections on the network. You will configure a Stratix 6000 switch for viewing and controlling network traffic, restricting traffic overload, and protecting against unauthorized device access.

This course also prepares you to effectively resolve the breakdown in communications between a controller and the devices it is controlling. You will troubleshoot an EtherNet/IP network's media components and use web-based technologies imbedded within multiple EtherNet/IP devices to monitor the health and status of the EtherNet/IP network.

#### Who Should Attend

Individuals responsible for designing and configuring a new EtherNet/IP network or modifying and troubleshooting an existing EtherNet/IP network should attend this course.

#### Prerequisites

To successfully complete this course, students must be able to perform basic Microsoft® Windows tasks such as using a mouse, opening and saving files, and moving windows.

### ***Prerequisites (continued)***

Students should also have successfully completed one or more of the following courses (or demonstrate equivalent experience):

- *RSLogix™ 5000 Level 2: Basic Ladder Logic Programming* (CCP151)
- *RSLogix 5000 Level 3: Project Development* (CCP143)

### ***Technology Requirements***

All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

### ***Student Materials***

To enhance and facilitate your learning experience, the following materials are provided as part of the course package:

- *Student Manual*, which contains the key concepts, definitions, and examples presented in the course and includes several hands-on exercises.
- *EtherNet/IP Procedures Guide*, which provides all of the steps required to complete task common to designing and configuring devices to communicate over an EtherNet/IP network. By following the procedures in this job aid, students can immediately apply what is learned in the course to their own job.
- *EtherNet/IP Documentation Reference Guide*, which contains several relevant technical publications. This searchable, electronic resource contains the most frequently referenced information and is a quick and efficient on-the-job resource.

### ***Hands-On Practice***

Hands-on practice is a necessary part of learning and this course offers hands-on opportunities to configure a project that will optimize network communications. Students will design a cable system in accordance with established EtherNet/IP requirements that support fictional application requirements. Students will assign IP and gateway addresses and subnet masks, configure a

### ***Hands-On Practice (continued)***

controller and local and remote I/O devices for messaging and control, and optimize network performance.

Students will have the opportunity to practice the skills presented in class using the following Rockwell Automation products:

- 1756 ControlLogix® controller, EtherNet/IP and digital I/O modules
- 1769 CompactLogix™ controller, EtherNet/IP and digital I/O modules
- 1794 FlexLogix™ EtherNet/IP adapter and analog module
- Stratix 6000 Ethernet Switch
- PanelView™ Plus 600 terminal

### ***Next Learning Level***

Once students have mastered the skills covered in this course, they will have the knowledge and skills necessary to attend the next level of Networks training. In particular, this course will benefit those students enrolling in the *Data Highway/Ethernet Peer-to-Peer Communications* course (Course No. CCP310-LD).

### ***Course Length***

This is a three-day course.

### ***Course Number***

The course number is CCP178.



### ***IACET CEUs***

CEUs Awarded: 2.1

### ***To Register***

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

**[www.rockwellautomation.com](http://www.rockwellautomation.com)**

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