Learning Services

Managing Industrial Networks with Cisco Networking Technologies

Managing Industrial Networks with Cisco® Networking Technologies (IMINS) Version 1.1 is a lab-based course which helps students with the foundational skills needed for the management and administration of networked industrial control systems. The IMINS course, developed in conjunction with Rockwell Automation, helps plant administrators, control system engineers and traditional network engineers understand networking technologies that are needed in today's connected plants and enterprises. This course also helps you prepare for the Cisco Industrial Networking Specialist Certification exam (exam ID 200-401) and qualify for the Cisco Industrial Networking Specialist certification.

This course is job-role specific and enables you to achieve competency and skills to configure, maintain, and troubleshoot industrial network systems while helping to ensure network availability, reliability, and Internet security throughout your company. Students will be exposed to multiple industrial network technologies as well as products from Cisco and other industrial suppliers including Rockwell Automation.

Duration
Five days

Target Audience
This course is designed for IT and operations technology (OT) professionals and control engineers who will be involved with the configuration, operation, and support of networked industrial products and solutions for the following industries:

- Manufacturing
- Process control
- Oil and gas
- Other industries as applicable

Course Objectives
After you complete this course, you should be able to:

- Describe Cisco Industrial Ethernet (IE) Switches, Cisco Connected Grid™ Switches and Routers, and Rockwell Automation® Stratix™ Switches
- Interpret designs and drawings, recognize industrial topologies, and access reference materials
- Identify industrial network component installation requirements
- Configure industrial network components

"The Internet of Things (IoT) has quickly emerged as one of the most transformative technology trends today. For IoT to deliver it's full value in the manufacturing space, both manufacturers and IT need well trained and competent staff to support Industrial IT—a blend of expertise from typical manufacturing and business IT networks. Training and certification are excellent ways to ensure staff are prepared for these challenges."

Dan Miklovic, Principal Analyst,
LNS Research

- Perform basic maintenance tasks

- Troubleshoot common network and control issues

You will meet these objectives through hands-on practice using remotely-located equipment. You will interact with the equipment using four networking tools:

- Command line interface

- Device Manager

- Cisco Network Assistant

- Cisco Configuration Professional

Course Prerequisites

The knowledge and skills that you must have before attending this course include a college degree or non-degreed qualified technician with 2-3 years experience in industrial networks. Because of the hands-on nature of the course, you should be familiar with command line and web-based interfaces. Also, you should have a solid understanding of networking and industrial protocols which you can achieve through any of the following courses:

Cisco Electronic Learning & Training (ELT) located on the Cisco Learning Network website:

- Networking Fundamentals for Industrial Control Systems (INICS)

- Industrial Control Systems Fundamentals for Network Engineers (ICINS)

Rockwell Automation located on the Training Services website:

- Essentials of Industrial Networks for an OT Professional (CCP182)

- Essentials of Industrial Automation for an IT Professional (CCP810)

Course Outline

- **Module 1**: Industrial Networking Solutions and Products

- **Module 2**: Industrial Network Documentation and Deployment Considerations

- **Module 3**: Installing Industrial Network Switches, Routers, and Cabling

- **Module 4**: Deploying Industrial Ethernet Devices

- **Module 5**: Maintaining Industrial Ethernet Networks

- **Module 6**: Troubleshooting Industrial Ethernet Networks

Lab Outline

- **Lab 1**: Platform Discovery of Industrial Network Switches and Routers

- **Lab 2**: Interpreting Network and Control Designs and Drawings

- **Lab 3**: Configuring Initial Switch Parameters

- **Lab 4**: Configuring Layer 2 Switch Parameters

- **Lab 5**: Configuring IP and DHCP

- **Lab 6**: Configuring PTP

- **Lab 7**: Configuring CIP
- **Lab 8**: Configuring MODBUS TCP
- **Lab 9**: Configuring Switch Security
- **Lab 10**: Configuring SSH and HTPPS
- **Lab 11**: Maintaining Industrial Ethernet Switches
- **Lab 12**: Troubleshooting Layer 2 Network Issues
- **Lab 13**: Troubleshooting Layer 3 Network Issues
- **Lab 14**: Troubleshooting Control Issues

Figure 1 outlines the lab topology for this course.

Figure 1. Lab Topology
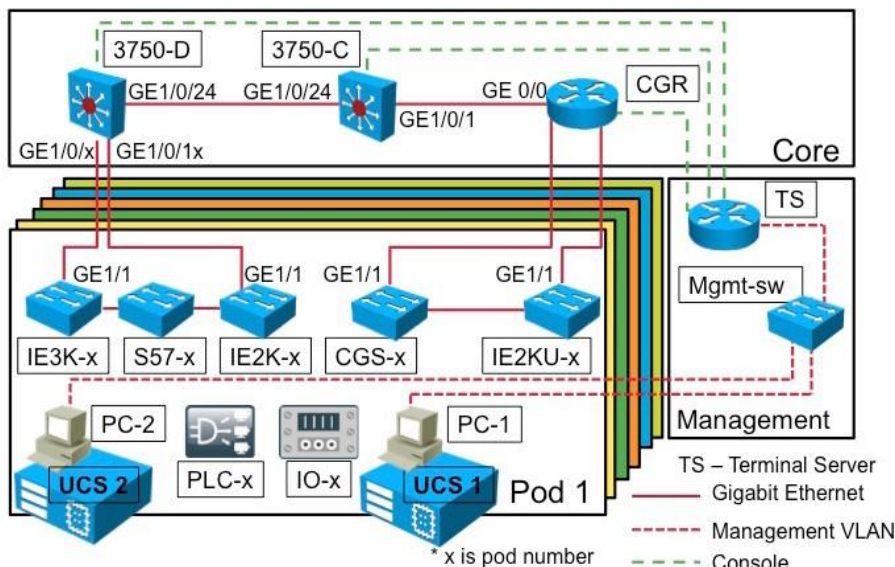
Cisco and Rockwell Automation

Cisco and Rockwell Automation have been working together to bridge the gap between enterprise IT and plant floor OT professionals through network and security products, Converged Plantwide Ethernet (CPwE) reference architectures, services, and solutions. The collaboration foundation uses standard IP-based network technology so that end users and equipment builders can design, implement, and maintain a secure network architecture. The Cisco Industrial Networking Specialist certification further enhances the enterprise-wide business outcomes manufacturers can experience through the collaboration between Cisco and Rockwell Automation.

Registration

To Register Online
For more information about schedules and registration for this course, visit
http://tools.cisco.com/GlobalLearningLocator/courseDetails.do?actionType=executeCourseDetail&courseID=6030.

To Register by Phone
For more information about schedules and registration for this course, call 1-440-646-3434 and press option 7 to speak with an enrollment specialist or contact your local Rockwell Automation distributor by visiting the Find a Local Distributor web page.

To Register by Email
For more information about schedules and registration for this course, send request to trainingservices@ra.rockwell.com.

More Information

For more information about how Cisco and Rockwell Automation are working together, visit
http://www.cisco.com/web/strategy/manufacturing/cisco-rockwell_automation.html.

For more information about schedules and registration for this course, visit
http://www.rockwellautomation.com/rockwellautomation/services/training/certificate.page?.

For more information about Cisco Learning Services for Cisco classic products and technologies, visit
http://www.cisco.com/go/ase.

For more information about Rockwell Automation training courses, visit
http://www.rockwellautomation.com/rockwellautomation/services/training/certificate.page?.