



Global Knowledge.

MANAGING INDUSTRIAL NETWORKS WITH CISCO NETWORKING TECHNOLOGIES (IMINS2) 1.3

Course Code: 2848

Learn how to install, configure, and troubleshoot networked industrial products and solutions in an industrial environment.

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In this lab-intensive course, you will learn how to implement and troubleshoot the most common industry standard protocols while leveraging best practices needed in Security and Wireless technologies for today's industrial networks. The IMINS2 course, developed in conjunction with Rockwell Automation, helps plant administrators, control system engineers, and traditional network engineers in the manufacturing, process control, and oil and gas industries, who will be involved with the convergence of IT and industrial networks. This course also helps you prepare for the Managing Industrial Networks for Manufacturing with Cisco Technologies Certification exam (exam ID 200-601) and (having completed required prerequisites) qualify for the Cisco Certified Network Associate Industrial (CCNA Industrial) certification.

This course is job-role specific and enables you to achieve competency and skills to configure, maintain, and troubleshoot industry standard network protocols as well as wireless and security technologies to ensure that current infrastructures are maximized while developing a converged platform for flexibility to support future business outcomes. Students will be exposed to multiple industrial network technologies as well as products from Cisco and other industrial suppliers including Rockwell Automation.

What You'll Learn

- Functions of the OSI layers and TCP/IP model
- Difference between enterprise and industrial networks
- Troubleshoot the common issues that are found in Layers 1, 2, and 3 of the OSI model
- Functions and components of EtherNet/IP protocol
- Configure and troubleshoot EtherNet/IP on Cisco and Stratix switches
- PROFINET protocol
- Configure and troubleshoot PROFINET protocol on Cisco Industrial Ethernet devices
- Common network threats and resolutions, and configure basic security components (access lists and AAA features)
- Configure a wireless network within an industrial environment
- Troubleshoot network and control issues

Who Needs to Attend

IT and OT professionals that will be involved with the implementation, operation and support of networked industrial products and solutions for the following industries:

- Manufacturing
- Process control
- Oil and gas industry
- Other industries



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VIRTUAL CLASSROOM LIVE

\$4,195 USD

5 days

Virtual Classroom Live Outline

1. Industrial Networking Concepts and Components

- Contrasting Enterprise and Industrial Environments
- Configuration Tools for Industrial Ethernet Switches
- Exploring Layer 2 Considerations
- Layer 2 Resiliency Using Spanning Tree Protocol
- Layer 2 Resiliency Considerations
- Layer 2 Multicast Control and Quality of Service (QoS)
- Exploring Layer 3 Considerations

2. General Troubleshooting Issues

- Troubleshooting Methodologies
- Troubleshooting Layer 1
- Troubleshooting Layer 2 Issues
- Troubleshooting Layer 3 Issues

3. Ethernet/IP

- Exploring Ethernet/IP Communications
- Exploring Hardware Capabilities
- Exploring CIP Sync, CIP Motion, and CIP Safety
- Exploring Embedded Switch Technology
- Configuring Stratix Switches

4. Troubleshooting Ethernet/IP

- Identifying Common EtherNet/IP Issues
- EtherNet/IP Troubleshooting Methods and Tools

5. PROFINET

- Describe PROFINET Functionality and Connection Method
 - Describing Basic PROFINET Devices
 - Understanding Ring Network Requirements
6. Configuring PROFINET
- Enabling and Prioritizing PROFINET at L2
 - Integrating Cisco Industrial Ethernet Switches
 - Configuring PROFINET Alarms
7. Troubleshooting PROFINET
- Identifying PROFINET Troubleshooting Methods
 - Exploring PROFINET Troubleshooting Tools
8. Exploring Security Concerns
- Overview Of Defense-in-Depth Strategy
 - Controlling Access and Network Traffic
9. 802.11 Industrial Ethernet Wireless Networking
- Understanding 802.11 Networks
 - Industrial WLAN Design Considerations

Virtual Classroom Live Labs

This course is conducted using Cisco's virtual lab environment and includes two types of labs: discovery labs and hardware labs. Discovery labs are instructor-guided labs through which you explore new topics in an interactive way. In the hardware labs, you will configure devices to meet the requirements of a given scenario.

The following discovery labs are included in this course:

- Discovery 1: Plan and Configure VLANs
- Discovery 2: Verify and Configure STP Settings
- Discovery 3: Configuring the STP priority
- Discovery 4: STP Path Manipulation
- Discovery 5: Switch Alarm Configuration
- Discovery 6: Configure Power Supply Alarm to Monitor Dual Power Supplies
- Discovery 7: Configure and Apply Alarm Profile to Port
- Discovery 8: Configure and Verify Static Route
- Discovery 9: Configure Static IP route
- Discovery 10: Configure Static default IP route
- Discovery 11: Configure and Verify Layer 2 NAT
- Discovery 12: Configure and Verify Precision Time Protocol on the Cisco IE 2000 Series Switch
- Discovery 13: Configure and Verify Precision Time Protocol on the Cisco IE 3000 Series Switch
- Discovery 14: Add a Stratix 5700 Switch Add-On Profile (AOP) to a Studio 5000 Logix Designer Application

- Discovery 15: Configure a Stratix 5700 Switch Using an Add-On Profile (AOP) in a Studio 5000 Logix Designer Application
- Discovery 16: Disable and Enable PROFINET
- Discovery 17: Configure L2 Quality of Service
- Discovery 18: Configure an Alarm
- Discovery 19: Verify an Alarm
- Discovery 20: Adjust the Update Time for a Switch
- Discovery 21: CLI/Prompt Commands
- Discovery 22: Analyze ProfiNET Traffic using Wireshark
- Discovery 23: Examine Basic traffic Control using ACL
- Discovery 24: Explore Wireless LAN Controller
- Discovery 25: Configure Wireless Workgroup Bridge on Stratix 5100

The following hardware labs are included in this course:

- Hardware Lab 1: Connecting to the remote LAB environment
- Hardware Lab 2: Configuring 802.1q Trunks
- Hardware Lab 3: Configuring and Applying Smartports Macros
- Hardware Lab 4: Configuring and Applying Custom Smartports Macros
- Hardware Lab 5: Configuring and Applying EtherChannel
- Hardware Lab 6: Configuring Resilient Ethernet Protocol
- Hardware Lab 7: Configuring Resilient Ethernet Protocol Features
- Hardware Lab 8: Configuring and Verifying Storm Control
- Hardware Lab 9: Verify IP IGMP Snooping
- Hardware Lab 10: Configure QoS settings
- Hardware Lab 11: Using IOS Troubleshooting Tools
- Hardware Lab 12: Troubleshooting Layer 2 Endpoint Device Connectivity
- Hardware Lab 13: Troubleshooting Layer 2 Inter-Switch Connectivity
- Hardware Lab 14: Troubleshooting Broken REP Segment
- Hardware Lab 15: Troubleshooting Layer 3
- Hardware Lab 16: Perform a Packet Capture
- Hardware Lab 17: Troubleshoot Network Issues
- Hardware Lab 18: Configure CIP on Industrial Switches
- Hardware Lab 19: Troubleshooting EtherNet/IP Communication Issues
- Hardware Lab 20: Configuring PROFINET Support
- Hardware Lab 21: Troubleshoot PROFINET Communication Issues
- Hardware Lab 22: Configure Port Security Mechanisms
- Hardware Lab 23: Configure AAA Authentication using Cisco ISE and 802.1x

Nov 4 - 8, 2019 | 9:30 AM - 5:30 PM EST

Feb 17 - 21, 2020 | 9:30 AM - 5:30 PM EST



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PRIVATE GROUP TRAINING

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