



Learning Services

Managing Industrial Networks with Cisco Networking Technologies

Managing Industrial Networks with Cisco Networking Technologies (IMINS)

Version 1.0 is a hands-on 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 Computer Learning Centre (CLC Africa), 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 600-601) and qualify for the Cisco Industrial Networking Specialist certification.

The goal of this course is to enable you to achieve competency and skills to install, maintain, and troubleshoot industrial network systems while helping to ensure network availability, reliability, and Internet security throughout your company.

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 implementation, 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 Computer Learning Centre (CLC Africa) Stratix™ Switches
- Interpret designs and drawings, recognize industrial topologies, and access reference materials
- Install industrial network components
- Deploy industrial network components
- Perform basic maintenance tasks
- Troubleshoot network and control issues

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. Also, it is recommended you take the following Cisco Electronic Learning and Training (ELT) courses to achieve a basic understanding of networking and industrial protocols:

- Networking Fundamentals for Industrial Control Systems (INICS)
- Industrial Control Systems Fundamentals for Network Engineers (ICINS)

Course Outline

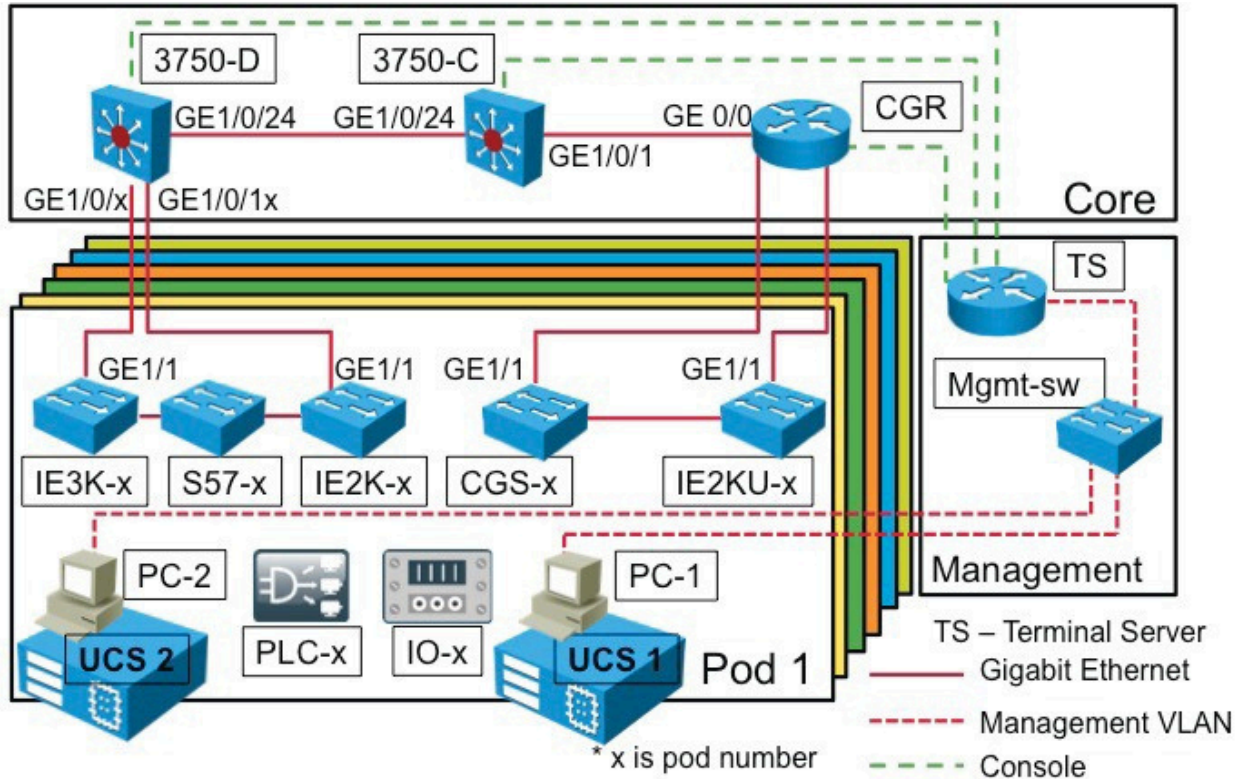
- Module 1: Industrial Networking Solutions and Products
- Module 2: Industrial Network Documentation and Deployment Considerations
- Module 3: Installing Industrial Network Switches, Routers, and Cabling
- Module 4: Deploying Industrial Ethernet Devices
- Module 5: Maintaining Industrial Ethernet Networks
- 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 HTTPS
- 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 Computer Learning Centre (CLC Africa)

Cisco and Computer Learning Centre (CLC Africa) 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 collaboration between Cisco and Computer Learning Centre (CLC Africa).