



RC-SWR1

# Switching and Routing in Industrial Networks Training

Siemens Certified Professional for Industrial Networks (CPIN) certification training

## Description

Ethernet has found its way into the industrial and the industry-related environment. A high degree of reliability and throughput rates are demanded from industrial networks. At the same time, a reliable connection of these networks to an existing network infrastructure as well as the seamless integration into a corporate network is essential.

In this training course - "Switching and Routing in Industrial Networks of the Industrial Networks Education – Certification Program - you will acquire the knowledge required to plan, implement, operate and maintain such networks.

This training course includes ample time for practical exercises, diagnostics, and troubleshooting.

At the end of the course students are equipped with the knowledge to plan, configure, operate and provide support for networks in their specific market.

## Objectives

### Switching

You will learn how to set up so-called switched network solutions as well as redundancy mechanisms for increasing failure tolerance – including many practical exercises which allow you to gain the theoretical and practical knowledge required for the real world implementation of industrial networks.

### Routing

You will learn the fundamentals of routing communication gaining theoretical and practical knowledge of what IP communications, routing protocols, redundancy, LAN/WAN concepts that help facilitate communications between multiple network locations.

## Prerequisites

Requirements for attendance:

- Basic knowledge of the topic "Ethernet"
- Familiarization with network topologies, Media Access Control (MAC), Internet protocol, data transport and associated technical vocabulary.
- Familiar with the principles of switching operations hubs and the OSI reference model.

- Recommended: Participants are encouraged to attend the Industrial Ethernet Fundamentals course or pass a written exam however this is **NOT** mandatory.

- Communication Engineers
- Control Engineers
- Operations or IT Network Engineers
- Project Engineers
- Substation and System Engineers

## Course contents

This course covers the following topics:

### Switching

- Industrial Ethernet Overview
- Layer 2 - Data Link Layer
- Commissioning (ROS Platform)
- Switching in Industrial Ethernet Networks
- Ethernet Port Configuration
- Redundancy in Switched Networks
- Increasing Bandwidth Availability
- Integrating Serial Protocols
- Monitoring (ROS Platform)
- Maintenance/Troubleshooting (ROS Platform)

### Routing

- Layer 3 – Network Layer
- Commissioning (ROXII Platform)
- LAN and IP Interfaces
- Internet Protocol Services
- First Hop Redundancy Protocol
- Moving packets across IP Networks
- Automation Path Determination
- Automatic Path Determination with standard-based protocols
- Monitoring (ROX platform)
- Maintenance/Troubleshooting (ROX platform)

### Course Details

**Duration:** 5 days

**Location:** Siemens Training Offices  
(Australia/ New Zealand)

**Dates:** Refer to training course schedule

**Size:** Min 4 participants

**Language:** English

### Contact:

To enquire or book email:

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For any further information call:

+61 (0) 437 911 594

## Assessment and Certification

This training prepares for the certification “Siemens Certified Professional for Industrial Networks – Switching and Routing”

A voluntary certification examination which consists of two sections will take place at the end of the training.

Please note: This examination is **NOT** compulsory

## Is this course right for you?

This course is for users who are involved with developing or sustaining networks in rugged environments – such as Electric Power, Transportation, Rail and Defence markets, where RUGGEDCOM equipment is required. This includes, but is not limited to the following:

- Application Engineers
- Automation Engineers