

Industrial Communication

Australian Training Catalogue



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Training Timetable

January 2020 - December 2020
Last Updated: 08.01.2020



SIEMENS INDUSTRIAL COMMUNICATION

Course Code	Description	Duration	Location	Dates
RC-FLM1	RUGGEDCOM First-Line Maintenance	1 day	Melbourne	13.02.2020 – 13.02.2020
				14.05.2020 – 14.05.2020
				13.08.2020 – 13.08.2020
				19.11.2020 – 19.11.2020
RC-SLM1	RUGGEDCOM Second-Line Maintenance	1 day	Melbourne	14.02.2020 – 14.02.2020
				15.05.2020 – 15.05.2020
				14.08.2020 – 14.08.2020
				20.11.2020 – 20.11.2020
RC-SWR1	Switching and Routing in Industrial Networks with RUGGEDCOM ¹	5 days	Melbourne	03.02.2020 – 07.02.2020
				04.05.2020 – 08.05.2020
				03.08.2020 – 07.08.2020
				09.11.2020 – 13.11.2020
RC-SEC1	Security in Industrial Networks with RUGGEDCOM ¹	3 days	Melbourne	10.02.2020 – 12.02.2020
				11.05.2020 – 13.05.2020
				10.08.2020 – 12.08.2020
				16.11.2020 – 18.11.2020
SC-SWR1	Switching and Routing in Industrial Networks with SCALANCE ¹	5 days	Melbourne	09.03.2020 – 13.03.2020
				23.03.2020 – 27.03.2020
SC-SEC1	Security in Industrial Networks with SCALANCE ¹	3 days	Melbourne	
SC-DIA1	Diagnostics and Optimization of Industrial Networks with SCALANCE ²	2 days	Melbourne	16.03.2020 -18.03.2020

Notes

1. This course is part of the Siemens Certified Professional for Industrial Networks (CPIN) certification training.
2. This course is part of the Siemens Certified Expert for Industrial Networks (CEIN) certification training.

On-Site Training

In addition to our scheduled courses, we also provide courses at Siemens training centers (Melbourne, Sydney, Brisbane, Adelaide, Perth, Auckland) and at customer premises in Australia and New Zealand.

Registration

To request a quote, register for a course or get more information send an email to ruggedcom.au@siemens.com or call +61 (3) 9721-7559.



RC-FLM1

RUGGEDCOM First-Line Maintenance Training

RUGGEDCOM - Industrial Networks Education

Description

This course comprises of instructor-led training and hands-on lab time. All participants will receive training material which includes a student guide and lab guide to assist them with their training.

Objectives

In this course you will learn about RUGGEDCOM hardware, particularly **ROS Ethernet switches** and **ROX II Multi-Service Platform devices**.

Key Topics:

1. Siemens RUGGEDCOM Portfolio
2. Device Administration [ROS and ROX II]
3. Port Configuration [ROS and ROX II]
4. Device Maintenance [ROS and ROX II]
5. Device Diagnostic and Troubleshooting Tools [ROS and ROX II]

Prerequisites

Basic computer literacy is the only requirement for attendance.

Course contents

This course covers several modules covering the following topics:

- How to access RUGGEDCOM devices directly and remotely, configure basic device settings.
- Configuring Ethernet ports, check port status and view/clear its statistics
- Restoring devices to factory default settings
- Upgrade/downgrade firmware directly and remotely
- Upload/download files directly and remotely using XMODEM and SFTP
- View/clear system logs and check device connectivity
- View Link Layer Discovery Protocol (LLDP) neighbours
- Display device information and understand what device LEDs indicate
- View/clear device alarms and manage ROS devices using RUGGEDCOM EXPLORER

Is this course right for you?

This course is for people who maintain RUGGEDCOM equipment.

Upon completion of this course participants will receive a certificate of completion.

Lunch, snacks and beverages are provided on the day

Course Details

Duration: 1 day (09:00-17:00)

Location: Siemens Training
Offices
(Australia/New Zealand)

Dates: Refer to training course
schedule

Language: English

Contact:

To enquire or book email:

Ruggedcom.au@siemens.com

For any further information call:

+61 (0) 437 911 594



RC-SLM1

RUGGEDCOM Second-Line Maintenance Training

RUGGEDCOM - Industrial Networks Education

Description

This course comprises of instructor-led training and hands-on lab time. All participants will receive training material which includes a student guide and lab guide to assist them with their training.

Objectives

In this course you will learn about RUGGEDCOM hardware, particularly **ROS Ethernet switches and ROXII Multi-Service Platform devices**

Key Topics:

1. Advanced Device Management [ROS and ROX II]
2. Device Management [ROS and ROX II]
3. Advanced Device Diagnostic and Troubleshooting Tools [ROS and ROX II]

Prerequisites

Requirements for attendance:

- Basic familiarity with **RUGGEDCOM ROS and ROX II devices** is the only requirement for this course.

Course contents

This course covers several modules covering the following topics:

- How to reset device passwords and configure port mirroring
- Capture network traffic using Wireshark
- Back up files directly (USB flash drive/ microSD card) and remotely (FTP/HTTP server)
- Create and upload partial device configuration files
- Comparing files using ExamDiff
- Configure and verify Network Time Protocol (NTP), Simple Network Management Protocol (SNMP) v2c and v3 and Syslog
- Check network connectivity and measure network reconvergence time using RUGGEDCOM PING
- Trace events (ROS) and capture packets using tcdump (ROX II)

Is this course right for you?

This course is for people who maintain and manage RUGGEDCOMM equipment.

After the successful completion of the course participants will receive certification.

Lunch, coffee break snacks and beverages are provided on the day.

Course Details

Duration: 1 day (9:00-17:00)

Location: Siemens Training
Offices

(Australia/New Zealand)

Dates: Refer to training course
schedule

Language: English

Contact:

To enquire or book email:

Ruggedcom.au@siemens.com

For any further information
call:

+61 (0)437 911 594



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:

Ruggedcom.au@siemens.com

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



RC-SEC1

Security in Industrial Networks with RUGGEDCOM

Siemens Certified Professional for Industrial Networks (CPIN) certification training

Description

It is difficult to imagine day-to-day industrial operations without Ethernet connections. From large-scale environment to the smallest Industrial Ethernet communication network, nearly everything has come to depend on the overall systems reliability and security. The opportunities on the one hand are countered by risks on the other. Access by outsiders or manipulations in the network always has catastrophic consequences on application or on in-house expertise. Therefore, functioning security systems are an absolute must.

In this training course "Security in Industrial Networks" of the Industrial Networks Education – Certification Program, you will learn the potential dangers in industrial networks and how-to safe guard against them.

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

In this course you will learn course you will have knowledge in protection concepts and be able to apply them in specific, practical exercises and be able to correctly assess threats and initiate countermeasures.

Key Topics:

1. Protecting Industrial Networks
2. Hardening the Switch
3. Control Networks Protection
4. Concealing Internal IP network identity
5. Building Virtual Private Networks
6. Appendix – Commissioning (ROXII Platform)

Prerequisites

Requirements for attendance:

- Basic knowledge of the topic "Ethernet"
- Familiarisation 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 Fundamentals training course or pass a written examination however this is **NOT** mandatory.

Course contents

This course covers the following topics:

- Security in Industrial Ethernet Networks
- Security Defence-in depth approach
- Security measure and guidelines (best practises, industry driven)
- Protecting Control Networks (firewall, address translation (NAT))
- Site to Site and Remote access via VPN (IPSec)
- Hardening the RUGGEDCOM ROX Security
- Practical exercises using the RUGGEDCOM ROX product line

Course Details

Duration: 3 days

Location of course: Siemens Training Offices

(Australia/New Zealand)

Dates: Refer to training course schedule

Size: Min 4 participants

Contact:

To enquire or book email:

Ruggedcom.au@siemens.com

For any further information call:

+61 (0) 437 911 594

Assessment

After the training course you have the opportunity to become certified as "Siemens Certified Professional for Industrial Networks – Security"

A voluntary examination takes place at the end of the training however this is **NOT** compulsory

Participants are required to complete an examination which consists of two sections that will take place at the end of training. Alternatively the examination can be taken at a later time.

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




Switching and Routing in Industrial Networks with SCALANCE

Industrial Networks Education

Description

An industrial or industry-related environment without Ethernet is no longer conceivable. A high degree of reliability and sufficient capacities are demanded from hard-wired industrial networks, because otherwise downtimes would be a constant threat and costs would be incurred. At the same time, Ethernet networks in industrial and industry-related environments must be securely connected via interfaces to a wide variety of machines and the existing network structure. Connecting the industrial network to the corporate network should be a seamless process.

With Industrial Ethernet/PROFINET networks from Siemens, such solutions are not a problem if you are familiar with the basic of such networks.

Objective

Switching

In the Switching part of the course you will learn Switched Network solutions and how they connect to real-time-capable systems in theory and in practice. You not only gain an insight into industrial switching concepts, you also implement them in ample practical exercises. At the end of the course, you are not just familiar with the requirements of such solutions. With the knowledge you will have gained, you can plan, implement, and provide support for plain industrial networks.

Routing

The Routing section will teach you the fundamentals and knowledge required for planning, configuring, and operating network solutions in industrial environments, which are structured by routing, and their connection to company networks. You will become familiar with the special requirements of routing solutions in industry and the required fundamentals of IP communication, static routing, routing protocols, and redundancy mechanisms in order to independently plan, implement and maintain such solutions.

You can deepen your theoretical knowledge with numerous practical exercises on products from the SCALANCE X product line.

Contents

Switching

- Comparison of Ethernet and Industrial Ethernet
- Typical topologies
- Redundancy mechanisms (MRP, HRP, Standby Redundancy Protocol, RSTP, Passive Listening, HSR, PRP)
- Network segmentation with VLANs
- Special industrial functions
- Diagnostics and troubleshooting

Routing

- IPv4 basics (addressing, data exchange, important protocols)
- Static routing
- Router redundancy (VRRP)
- Dynamic routing (RIP, OSPF)
- Diagnostics and troubleshooting

Target Group

Technical sales personnel

Industry: COOs, commissioning engineers, project engineers, maintenance and service technicians

IT: CIOs, network architects, administrators, service personnel

Requirements

Knowledge according to course "Ethernet Fundamentals in Industrial Networks": You should have basic knowledge of the topic „Ethernet“ and should be familiar with topologies, transfer processes, addressing, data transport, and understand the associated technical vocabulary. It is also helpful if you are familiar with the principles of operation of routers, switches, hubs and the OSI reference model.

Certification (Siemens CPIN-LEVEL)

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. As an option, the examination may be taken at a later time.

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Security in Industrial Networks with SCALANCE

Industrial Networks Education

Description

It is difficult to imagine day-to-day industrial operations without Ethernet connections. From large-scale production systems to the smallest Industrial Ethernet communication networks, nearly everything has come to depend on their reliability and security. The opportunities on the one hand are countered by risks on the other hand. Access by outsiders or manipulations in the network always have catastrophic consequences for production or in-house expertise. Therefore, functioning security systems are an absolute must.

With the training module „Security in Industrial Networks“ of the Industrial Networks Education - Certification Program, you will learn the potential dangers and risks in industrial networks and how to assess them.

Objective

You will be shown numerous ways to improve the protection of know-how and process sequences from attacks, espionage, and manipulations. During the course you will become familiar with products that feature Integrated Security and learn how to use them. Because the course does not just cover theoretical security concepts, there is also ample opportunity to implement them in practical exercises. At the end of this course, you will know the requirements and fundamentals needed to plan, implement, and provide support for industrial security measures in network security.

You can deepen your theoretical knowledge with numerous practical exercises on products from the SIMATIC NET product line.

Contents

- Current trends and security risks
- Defense-in-depth with Siemens - a holistic security concept
- Update and replacement of security components
- Potential threats in a network
- Basic security measures (ports, passwords, protocols, etc.)
- Cell protection concept
- Access restriction
- Connection of serial machines to networks
- Remote access via VPN
- Comprehensive exercises using the SIMATIC NET product portfolio

Target Group

Decision makers, sales personnel

Industry: COOs, planners, commissioning engineers, project engineers, maintenance and service personnel

IT: CIOs, network planners and administrators

Requirements

Knowledge according to course "Ethernet Fundamentals in Industrial Networks": Participant shall have basic knowledge of Ethernet and should be familiar with network topologies, transfer processes, addressing, data transport, and associated technical vocabulary. It is also helpful if you are familiar with the principles of operation of switches, hubs and the OSI reference model. Participants are encouraged to attend the "Switching and Routing in Industrial Networks with SCALANCE" training course.

Certification (Siemens CPIN-LEVEL)

After the training course, you have the opportunity to become certified as "Siemens Certified Professional for Industrial Networks - Security". A voluntary certification examination takes place at the end of this training. As an option, the examination may be taken at a later time.

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Diagnostics and Optimization of Industrial Networks with SCALANCE

Industrial Networks Education

Description

A reliable, robust network is the backbone of any modern industrial enterprise. Since the network requirements can change over the life cycle of a plant, the diagnostics and optimization of the network are extremely important tasks. Even during planning stages, various aspects regarding the functionality and diagnostic capability have to be taken into account. For instance, clear network documentation, knowledge of enhanced functionalities of modern switches and routers, as well as up-to-date tools for the operation of networks are imperative for diagnostics and optimization.

Objective

Using practical examples, participants of this course will learn how to diagnose typical error causes in industrial networks, and determine how to prevent them or minimize their impact with the aid of enhanced device functions. You will be trained to secure administrative access to the components, and to restrict access to the network itself.

After attending this course, participants are able to diagnose and optimize industrial networks. Participants will also be familiar with the available tools and functions which can be used to ensure the required performance, availability and security of the network.

Contents

- Introduction to basic tools such as terminal access and network analysis tools, as well as applications for time synchronization and logging of event messages
- Basics of a professional network layout
- Network analysis for troubleshooting
- Detection and prevention of physical errors
- Detection and prevention of Ethernet errors
- Identification and fulfillment of security requirements
- Detection and prevention of overload situations
- Optimization of convergence times
- Comprehensive exercises

Target Group

Plant Engineers, Control Engineers, System Engineers, Commission Engineers, Application Engineers, Operations or IT Network Engineers, Service and Maintenance Personnel, Facility Managers, technical Sales Personnel

Requirements

Knowledge in accordance with the course "Switching and Routing in Industrial Networks": Participants must be very familiar with topologies, transmission methods, addressing and transport of data in industrial networks, and ideally have practical experience in the field of industrial networks.

Certification (Siemens CEIN-LEVEL)

Following the training, there is an option of taking a certification test. This test is part of the certification to become a "Siemens Certified Expert for Industrial Networks", which consists of several individual tests.

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