



ProfiAcademy

Profinet Training by Phoenix Contact

Profinet Engineer and Profinet Installer Training conducted by Phoenix Contact

Certified PROFINET Network Engineer (CPNE) & Certified PROFINET Installer (CPNI)

Master the skills needed to design, install, commission, and troubleshoot PROFINET networks in this comprehensive certification course. Gain hands-on experience with real-world installation challenges, explore PROFINET at the protocol and packet level, and examine critical bus parameters. You will also learn how to minimise electromagnetic interference (EMC) and use advanced diagnostic tools, including Wireshark.

This course meets all requirements for both the Certified PROFINET Network Engineer (CPNE) and Certified PROFINET Installer (CPNI) certifications. The program concludes with a written exam and a practical test. Successful participants will receive official certification from PROFIBUS & PROFINET International (PI).

Course Outcomes

Upon completion, participants will be able to:

- Design a PROFINET network
- Install and configure PROFINET devices
- Decode PROFINET packets and understand protocol operations
- Analyse bus parameters for optimal network performance
- Diagnose and troubleshoot common and complex network issues
- Improve PROFINET network efficiency and reliability

Course Topics

1. Introduction to PROFINET

- Overview of Industrial Ethernet and PROFINET standards
- Differences between PROFINET, PROFIBUS, and other protocols
- Applications in automation and industrial systems

2. PROFINET Basics

- Understanding PROFINET protocols: RT (Real-Time) and IRT (Isochronous Real-Time)
- Network topologies: Star, Line, and Ring
- Device classes: IO-Controllers, IO-Devices, IO-Supervisors

3. System Components

- Network hardware: switches, cables, connectors
- PROFINET-certified devices and their roles
- Understanding GSDML (General Station Description Markup Language) files

4. Network Design & Planning

- Guidelines for high-performance and reliable network design
- Redundancy, segmentation, and bandwidth planning
- Best practices for network layout and installation

5. Configuration & Setup

- Setting up IO-Controllers and IO-Devices using engineering tools
- Assigning IP addresses and device names
- Integrating PROFINET into automation systems

6. Diagnostics & Troubleshooting

- Using PROFINET diagnostic tools for network analysis
- Identifying and resolving common network faults
- Analysing network traffic and performance using specialised tools

Hands-On Practical Exercises

- Connector assembly
- Cable testing for network integrity
- Industrial Ethernet switch configuration
- PROFINET message analysis
- Complete PROFINET installation setup
- Operation and maintenance best practices

Class Details

- Electronic course materials and key PI reference documents provided
- 37.5 verifiable professional development hours included
- Successful participants earn CPNE and CPNI certification upon passing both exams
- Class size limited to 10 students, with two students per training rack for optimal hands-on experience

Course Duration

This course is delivered over five days. Each day includes 7.5 hours of instruction, with two 15-minute breaks and one 30-minute lunch break.

Ongoing communication with customers and partners worldwide

Phoenix Contact is a global, market leader based in Germany.

Our group is known for its future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation.

With a global network reaching across more than 100 countries and 22,000 employees, we can stay in close contact with our customers, something we believe is essential to success.

The wide variety of our innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries.

We especially focus on the fields of energy, infrastructure, process, and factory automation.



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