

# PROFINET® endpoint (single port) for Linux

PROFIBUS has long served as a foundational industrial communication protocol used across factory automation systems worldwide. PROFIBUS is a serial communication protocol.

As industrial systems evolved toward ethernet-based communication and connected factory architectures, PROFIBUS and PROFINET international (PI) developed PROFINET to enable real-time industrial Ethernet connectivity while maintaining interoperability with existing systems. PROFINET evolved from PROFIBUS to support ethernet-based industrial communication.

PROFINET supports real-time communication, leverages IT standards such as TCP/IP and enables the integration of fieldbus systems. It is standardized under IEC specifications IEC 61158 and IEC 61784.

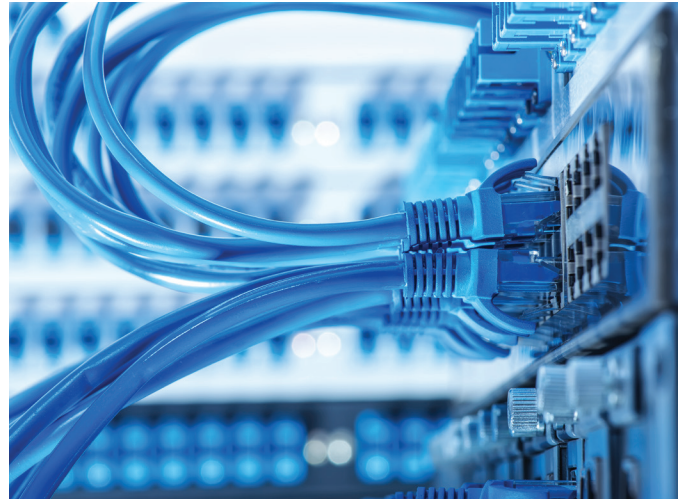
NXP provides a [PROFINET IO device protocol stack](#) as part of its robust, certifiable portfolio of industrial ethernet solutions, all built on a common software architecture.

The PROFINET endpoint for Linux (single-port configuration) is delivered as a pre-compiled user-space object library, with platform-specific drivers provided in source code for supported NXP devices.

For a list of supported devices, visit [nxp.com/port](http://nxp.com/port) or contact [ProSupport@nxp.com](mailto:ProSupport@nxp.com) for information on availability.

## Benefits

- Complete PROFINET IO device reference implementation designed for faster industrial application development
- Optimized resource utilization to support efficient memory and power consumption

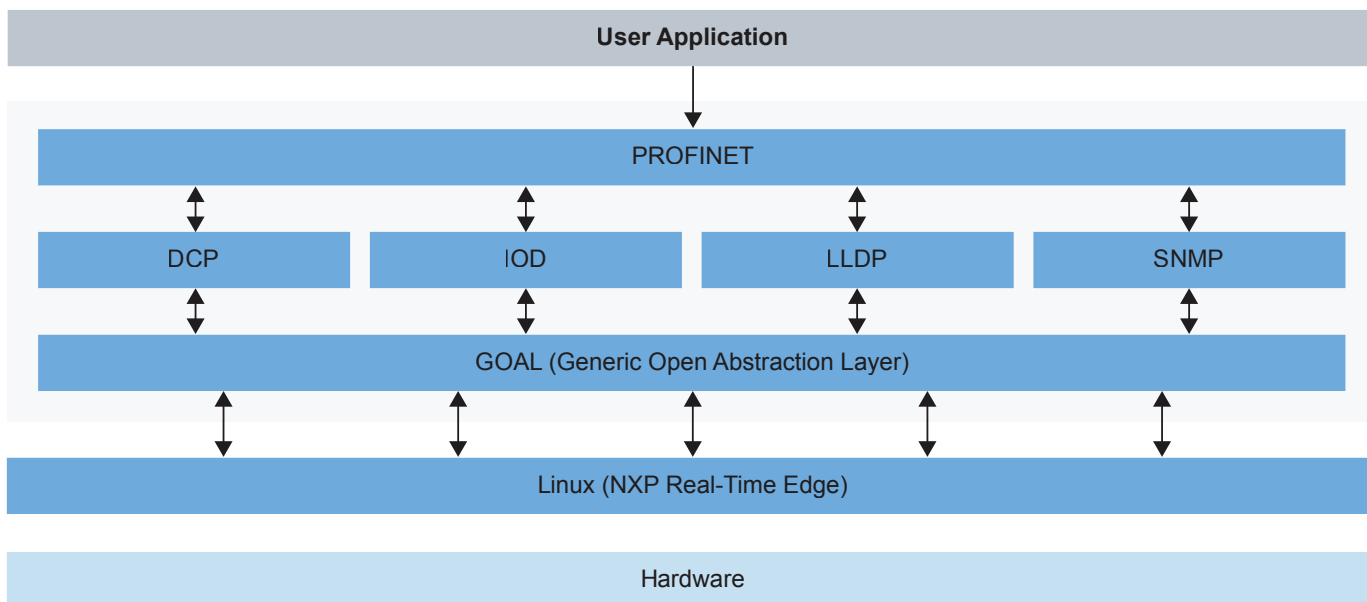


- Designed to help simplify PROFINET conformance testing and certification efforts
- Integrates with NXP [industrial communications creator \(ICC\)](#) tool to streamline protocol configuration
- Built on the GOAL framework to support easier migration across industrial protocols and NXP devices

## Features

- PROFINET specification V2.4
- Conformance class (CC) A and B
- Real-time class 1
- Security class 1
- DCP, LLDP, SNMP
- Topology recognition
- Physical device record objects
- Diagnostic entries
- I&M 1-4
- Multiple alarm types
- Linux implementation

## PROFINET® endpoint (single port) for Linux block diagram



### NXP enhancements

- Hardware-independent and hardware-dependent components communicate through standardized message queues
- The application interfaces only with the hardware-independent layer, simplifying migration across protocols and NXP devices
- Incoming network communication is validated by the protocol stack before reaching the user application
- Modular PROFINET service groups enable memory footprint optimization based on application requirements

### Getting started with PROFINET® endpoint (single port) for Linux

Visit [nxp.com/PROFINET](https://nxp.com/PROFINET) or contact [NXP pro support](#) for licensing options and documentation

### Additional resources

1. [NXP port industrial networking suite](#)
2. [NXP support](#) and [technical community](#)

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