



## REAL TIME AUTOMATION

# Netburner Profinet IO Royalty Free Device-side Source Code SDK

### FEATURES

- 100% ANSI C based source code
- Specifically Targeted for ALL Netburner Development Platforms
- Fully Compatible with any Profinet IO enabled Programmable Controller
- “No nonsense” Single Product Line licensing with no royalties
- Simple API speeds integration
- Easy to adjust time base for RT and NRT data
- Fully Compatible with Siemens Profinet Communications Modules
- “No nonsense” Single Product Line licensing with no royalties
- Easily configured Alarm, Diagnostic and Status data per channel
- Ready-to-run, sample application that can be immediately compiled, downloaded and executed
- Sample GSDXML Electronic Data File
- Many Popular Operating Systems & Processors Supported

Profinet IO, also known as Profinet RT and Profinet 2.0, is one of three Ethernet-based automation standards from Profibus International. Profinet IO is used to exchange data between I/O Controllers (typically Siemen S7 PLCs) and I/O devices (your field I/O device).

Profinet IO uses a data representation that is nearly identical to Profibus. A Profinet IO device is composed of a series of slots, modules and channels. Slots are simply position in the device where modules can be inserted. Channels are the individual points of that module. In a traditional, rack-based I/O device, slots are the physical positions in the rack and modules are the cards that are inserted in the rack. Channels are the points for that module type. In embedded non-rack devices, slots, modules and channels are the virtual representations of your I/O data. Here are some examples:

Device Type	Slots and Module Representations
Weigh Scale	One slot with one Weigh scale module with one analog output channel. The one channel is the current weight. Note that direction of the data is towards the network so the weight is an output.
Valve Interface Block (Four, 4 Point blocks)	Four slots, one four channel discrete output module in each slot
I/O Multiplexer (16Din, 16 Dout)	Two slots, two modules. One discrete input module with 16 channels. One discrete output module with 16 channels.

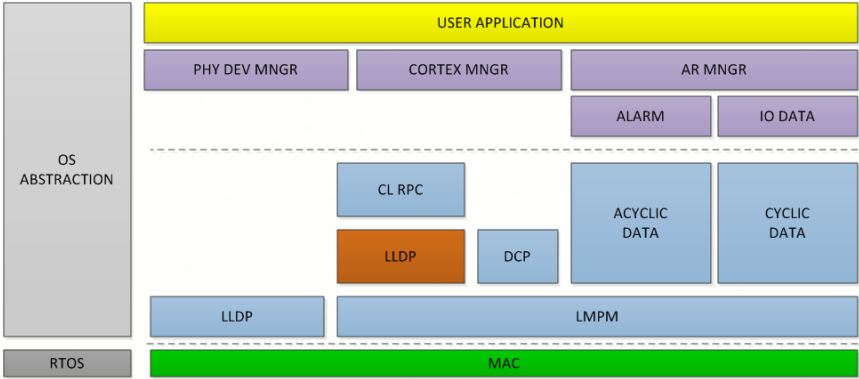
Every module has a type and some number of channels. Channels are simply I/O points. They can be a discrete bit, an analog input or output or any other type of data. Because the modules are virtual, you, as a device manufacturer, can define modules with mixed data; bit, byte, word or string. You as the manufacturer of a Profinet IO device select the number of slots in your device, the types of modules available for those slots (if more than one type is available) and the number and type of channels for each module.

You can add Profinet communications to your product quickly and easily with the Profinet I/O Development kit. Developed specifically for 32-bit Ethernet controllers and easily integrated with most embedded operating systems, you can have Profinet communications in weeks not months or years. The development kit includes everything you need to implement your Profinet solution; “no royalty”, single task source code, sample device configuration, telephone consultations with a certified Profinet Engineer, a ready-to-run sample application, complete documentation and much more.

When you get the Profinet Device-side Development kit you get a product of over 3,000 hours of engineering time. Used in everything from I/O multiplexers, barcode readers, valve controllers and gateways to HMIs, this software package is reliable and thoroughly tested in demanding industrial applications.

# SPECIFICATIONS

## ARCHITECTURE



The Profinet IO Device-side Protocol Stack consists of hardware independent and hardware dependent components. These components communicate via message queues. The hardware dependent part consists of the interface for the Ethernet MAC controller and timer functions.

The application communicates only with the hardware independent part of the Profinet Protocol Stack. This architecture enables fast porting of the stack from platform to platform.

The initialization of Profinet IO services is done with function calls within the application. During the execution of the application the Profinet Protocol Stack executes all necessary communication tasks autonomously and communicates with the application using callback functions.

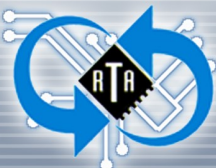
Communication requests from other devices as well as necessary periodical tasks and time out monitoring is handled within the Profinet Protocol Stack. The application is notified after completion of the communication and occurrence of failures, respectively, through service oriented callback functions. In these callback functions appropriate actions can be carried out by the application.

The high degree of scalability of this Profinet Protocol Stack is of particular importance for devices with limited resources. The Stack Code size is limited by limiting the Profinet services implemented.

## SPECIFICATIONS

IEC Specifications	IEC 61158, IEC 611784	Maximum Slots	64 (4K Data per Slot)
Conformance Class	A	Max Data Transfer Size	1,440 Bytes
Real Time Class	1	Resource Requirements	256K Flash, 128K RAM
Profinet Specification	Revision 2.3		
Max Client Connections	32	OS Support (Optional)	Call for Latest List

CATALOG #	DESCRIPTION
496PNS-0	Profinet IO Device-side Source Code for Microsoft Windows XP
496PNS-1	Profinet IO Device-side Source Code for VxWorks (Q3 2012)
496PNS-4	Profinet IO Device-side Source Code for Freescale MQX
496PNS-6	Profinet IO Device-side Source Code for Netburner Development Platform
496PNS-8	Profinet IO Device-side Source Code for Linux
496PNS-xx	Profinet IO Device-side Source Code for Other Embedded Operating Systems – Call for Availability



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