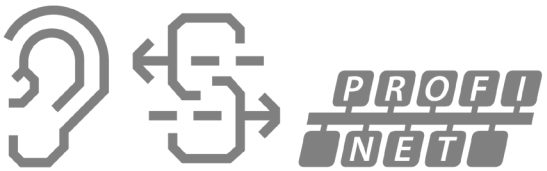
PROFINET Tap App

Enrich IIoT projects quickly and efficiently with PROFINET process data

- → Non-interacting and PLC-neutral PROFINET data tapping
- → IIoT-suitable data provision via MQTT
- → Simplified commissioning due to automatic topology recognition
- → Semantic project upgrade via import of TIA-Portal symbols



Creating IIoT value from PROFINET process data through passive network tapping

The platform-independent container netFIELD App PROFINET Tap captures the data stream of a PROFINET controlled network in real-time and transfers filtered device process data into the IIoT protocol MQTT. For each PROFINET process data packet, it can be specified whether it is tapped continuously or at intervals and, if the latter, which topic and at which interval the data is transmitted to the MQTT broker. A PROFINET data buffer and MQTT payload transmission as a data array prevent data overflows.

A physical data access point is used to tap data on the Ethernet network non-interactively for forwarding it to the container context. It's installed directly after the PROFINET controller and can be run as a managed switch with Gigabit mirror port or with Hilscher's netFIELD Unity in combination with a netX-SoC network controller integrated in the container's host.

Tapping data parallel to the controller and making it available to IoT technologies enables long-term data analysis and the identification of trends and error scenarios. Plant operators benefit from increased asset productivity through predictive maintenance, minimization of downtime, and optimization of workflows through intelligent machine learning algorithms.

The container automatically determines the PROFINET network configuration during a network startup phase and prepares it according to topology in its integrated web interface. Process data to be published to the MQTT broker is configured in the network tree. If SIMATIC® PROFINET controllers are used, symbol information can be added to the topology view by importing TIA project data.

Under its netFIELD brand, Hilscher offers further communication containers, edge device platforms and a cloud-based remote management solution for devices and containers.

→ netFIELD App PROFINET Tap
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empowering communication

Product Information

Technical Data

General

Software type
Container

Repository
https://hub.docker.com/r/hilscherautomation/netfield-app-profinet-tap

Hardware requirments

Processor architecture
x64, ARM64

Container size
400 MB, unpacked

Memory requirements
Minimum 200 MB, plus 100 KB of usable data buffer size per filtered process data

Data feed
1x 1000 Mbit standard Ethernet port (via network switch with port mirroring function)
2x 10/100 Mbit netX-SoC based industrial Ethernet ports (via netMIRROR Ethernet mirror tap)

Software requirments

Operating system
Linux

Container runtime environment
Required, e.g., Docker

Data distribution
Any MQTT broker, e.g., Mosquitto (Access within the container network context)

Runtime properties

Inbound protocol
PROFINET (as listening-only device)

Inbound protocol sampling rate
Continously or in configurable sampling intervals per process data

Outbound protocol
MQTT (as a client)

Outbound protocol send rate
Adjustable from 1 ms, typically 100 ms

Data throughput
Processor performance dependent

Licensing

Container protection
CodeMeter licensing technology

Product activation
License key

Network license server
Required for license storage and retrieval (Windows and Container)

Billing model
One-time payment

Product overview		
NFA-PNT-OTP	1917.057	netFIELD App PROFINET Tap, floating license includes all updates within 1 year of license activation

Optional items

Product overview		
NFA-ECT-OTP	1917.058	netFIELD App EtherCAT Tap, floating license Includes all updates within 1 year of license activation
NFX86-D8-N128-022	1918.022	netFIELD Unity Pro - x64 edge computing platform with Industrial Ethernet expansion