

1.0.0

Operating instructions manual

# netFIELD App PROFINET Diagnosis

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# 1 Introduction

## 1.1 Description of the contents

This document describes the netFIELD App PROFINET Diagnosis from Hilscher. The netFIELD App PROFINET Diagnosis application container collects diagnostic data from PROFINET devices and makes the diagnostic information accessible on an MQTT message bus.

The application and related documentation are available on the [netFIELD App PROFINET Diagnosis page](#).

## 1.2 List of revisions

| Index | Date       | Author | Revision         |
|-------|------------|--------|------------------|
| 1     | 2025-07-09 | NAM    | Document created |

Table 1. List of revisions

## 2 References to documents

This document refers to the following documents:

| Reference Index | Author, link, source, language, retrieved  |
|-----------------|--|
| [1]             | INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC), IEC CDV 61158-5-10:2019 INDUSTRIAL COMMUNICATION NETWORKS - FIELDBUS SPECIFICATIONS - Part 5-10 Application layer service definition - Type 10 elements Annex F, Web, English, 01-2024. |

Table 2. References to documents

### 2.1 Conventions in this document

Notes, operation instructions and results of operation steps are marked as follows:

#### Notes

**IMPORTANT** | <important note>

**NOTE** | <simple note>

**TIP** | <note, where to find further information>

#### User instructions

User instructions in documents have the following structure:

Condition

1. Step 1

a. Further step

2. Step 2

→ Intermediate result

3. Step n

⇒ Result

## 3 Overview

### 3.1 Brief description

The netFIELD App PROFINET Diagnosis app allows host devices on the PROFINET network to periodically retrieve PROFINET diagnosis information from the PROFINET devices and publish this information via MQTT.

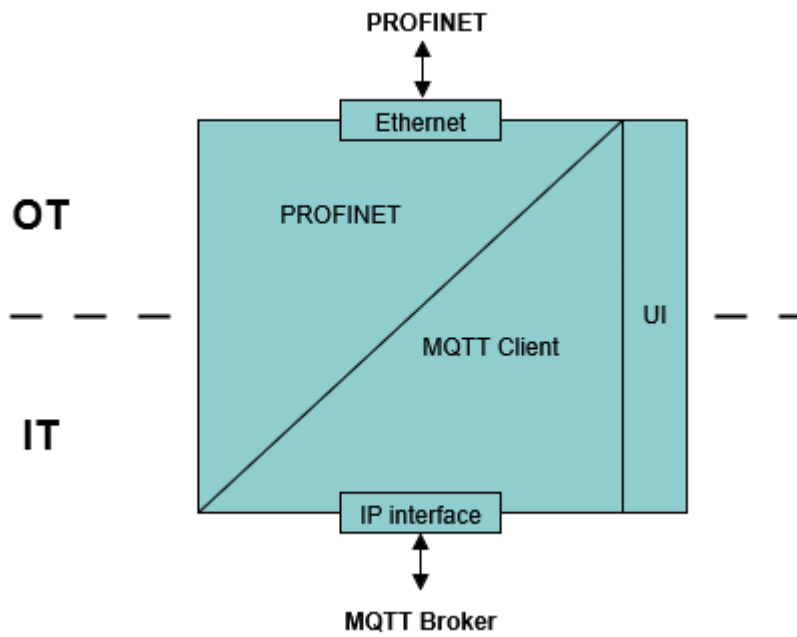


Figure 1. PROFINET network topology

## 3.2 Requirements

### Hardware requirements

The following hardware requirements apply for the netFIELD App PROFINET Diagnosis application container:

- Host system with the following characteristics:
  - AMD64 or ARM64 CPU architecture based Linux OS
  - Container runtime environment (e.g. Docker)
  - Ethernet interface for PROFINET communication and MQTT
  - Approximately 150 MB of memory
  - Approximately 450 MB of storage (container size unpacked)

### Software requirements

The application requires access to PROFINET networks for device discovery and diagnosis.

The application requires a MQTT broker to publish the diagnostic data.

#### 3.2.1 Memory

The application requires approximately 150 MB of memory.

#### 3.2.2 Licensing and limitations

The application can be used without a license for 30 minutes. After this time has elapsed the following limitations are applied:

The last sampled values are retained indefinitely. Publishing and subscribing stops.

##### 3.2.2.1 Licensed operation

A license is required to use the full functionality of the app. Hilscher uses the [CodeMeter](#) licensing technology from Wibu-Systems. If you are not already a user of the CodeMeter ecosystem, you have two options for running a license server:

##### 1. netFIELD App License Server container

You can use the free-of-charge netFIELD App License Server container from Hilscher, which can be pulled from <https://hub.docker.com/r/hilscherautomation/netfield-app-license-server>.

##### 2. CodeMeter license server (CodeMeter User Runtime)

Alternatively, you can download the CodeMeter User Runtime from Wibu-Systems under <https://www.wibu.com/us/support/user/downloads-user-software.html> and install it on a local server/machine/ PC that can be reached by the application via TCP/IP connection.

Note that for you as an end-user, the CodeMeter technology is free-of-charge, you only have to pay for the application license from Hilscher.

For either option you will need to activate a CodeMeter license ticket in the respective license server. For purchasing the license ticket, please contact your Hilscher sales representative.

### Floating license

The provided license is a "floating" license, which means that it is not bound to an individual instance of the app running on a particular device. Whichever instance of the app "grabs" the license from the *CodeMeter* server first, can use it until the instance itself closes the connection to the server again (either by the application container being shut down altogether or by deleting the corresponding license server endpoint on the **License Server Settings** page of the app). Other instances of the container (e.g. a container running on another device) can then "take over" the "freed" license by simply connecting to the corresponding license server.

### Maintenance period

The provided license is a "one-time payment license", meaning that you can use the container license without time restriction, once you have paid the license fee. The maintenance period, in which you are entitled to deploy software



updates of the container, is one year. After this period, you can still use your last deployed container version indefinitely; however, for using higher container versions, you will have to acquire a new or updated license.

## 4 Use case

The app runs on a host device, such as an edge gateway, equipped with Ethernet ports connected to PROFINET networks. The app discovers and monitors PROFINET devices and provides their error codes as MQTT data.

### Key facts

- The app operates on a host device, such as an edge gateway, equipped with at least two Ethernet interfaces
- The app's host is physically connected to an active PROFINET network through one of the Ethernet ports
- The data retrieved from the PROFINET devices is made available through MQTT messages
- Operating as an MQTT client, the app is compatible with any MQTT broker that acts as a central hub for user data
- The MQTT broker can either run locally on the app's host or externally, accessible via an IT network
- One or more MQTT clients can access the PROFINET diagnosis data through the central MQTT broker

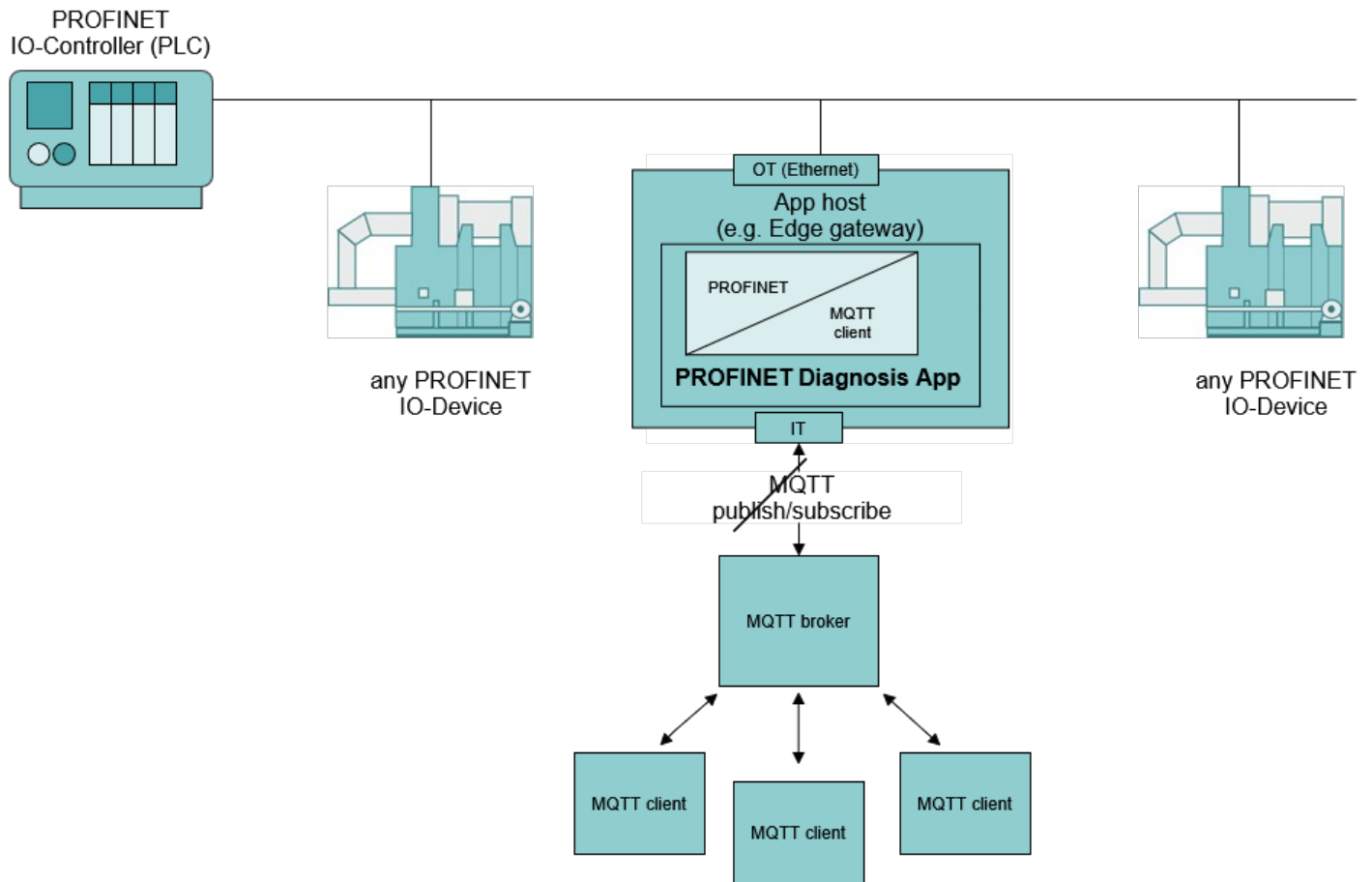


Figure 2. netFIELD App PROFINET Diagnosis Use case

## 5 Start parameters of the container

Start-up parameters, compose files and instructions on how to deploy the container with container runtimes are provided in the Hilscher Knowledge base:

- Go to the [netFIELD App PROFINET Diagnosis page](#)
- On the netFIELD App PROFINET Diagnosis page, click on the link under **Current release**.
- On the current release page, you will find the start-up parameters and links to the compose files for the different uses cases under the **Release Notes**.
- Please use the compose files as a reference to adapt to your respective runtime environment.

## 6 Quickstart

This section provides a step-by-step guide to get the netFIELD App PROFINET Diagnosis (Profinet Diagnosis) up and running.

### 6.1 Activate License

1. Before using the container, ensure your license is activated.
2. See [Licensing and limitations](#) for details on license activation and limitations.
3. If required, configure the license server in the **Settings** tab (see [License server settings](#)).

### 6.2 Deploy the Container

1. Pull the netFIELD App PROFINET Diagnosis container image from the registry or obtain it from your provider.
2. Deploy the container on your edge device or host system using your preferred container runtime (e.g., Docker).
3. You can deploy from the netFIELD Portal (requires subscription) or manually with the [Start parameters of the container](#).
4. Expose port 80 of the container to access the web UI.

### 6.3 Access the Web UI

1. Open a web browser and navigate to <http://<device-ip>:80>.
2. The netFIELD App PROFINET Diagnosis UI will load and display the main dashboard.
3. On a device supporting netFIELD OS, see [Login](#) for details.
4. On other OCI runtimes, see the Hilscher Knowledge Base for secure web UI exposure:

[How do I expose Web UI's of netFIELD App containers in a secure way when running on hosts that are not supporting netFIELD OS \(e.g. using nginx\)?](#)

### 6.4 Configure Network Interfaces

1. Go to the **Network** tab.
2. Select the network interfaces you want to scan for PROFINET devices.
3. Configure scan parameters as needed.
4. Click **Apply** to save your changes.

### 6.5 Discover PROFINET Devices

1. In the **Network** tab, click the **Scan** button to start device discovery.
2. The app will use the DCP protocol to discover PROFINET devices on the selected networks.
3. Discovered devices will be displayed in the device list.
4. Select the devices that you wish to monitor for errors.

### 6.6 Configure MQTT Connection (Optional)

1. Go to the **Settings** tab.
2. Enter the MQTT broker connection details (broker URIs, credentials, SSL/TLS options, etc.).
3. Click **Apply** to save the settings.
4. For advanced options, see [MQTT client settings](#).

### 6.7 Explore MQTT Data

1. Use a third-party MQTT client or application (e.g., MQTT Explorer) to consume the PROFINET data published by the netFIELD App PROFINET Diagnosis.
2. Navigate to the respective MQTT topic (find the topics on the **Publications** tab).
3. Explore the data published.

# 7 Configuration

## 7.1 Login

The netFIELD App PROFINET Diagnosis container provides a configuration web GUI that can be accessed via port 80 of the container. Note that you have to make sure that this port can be accessed from the outside via a web browser. We recommend you to use a reverse proxy or API gateway with HTTPS and authentication support for this. For testing purposes, you can temporarily expose the port, e.g., via Docker port expose.

**NOTE** If the container is deployed on a host with support for the netFIELD Operating System (netFIELD OS), the configuration web GUI is automatically plugged into the Local Device Manager of the netFIELD OS, where it can be accessed via the netFIELD App PROFINET Diagnosis entry (1) in the navigation panel (side bar) of the Local Device Manager.

**NOTE** Note that it might take a few minutes after deployment before the netFIELD App PROFINET Diagnosis entry becomes visible in the navigation panel. You may also have to reload the web page in your browser by pressing F5 on your keyboard.

## 7.2 Start screen

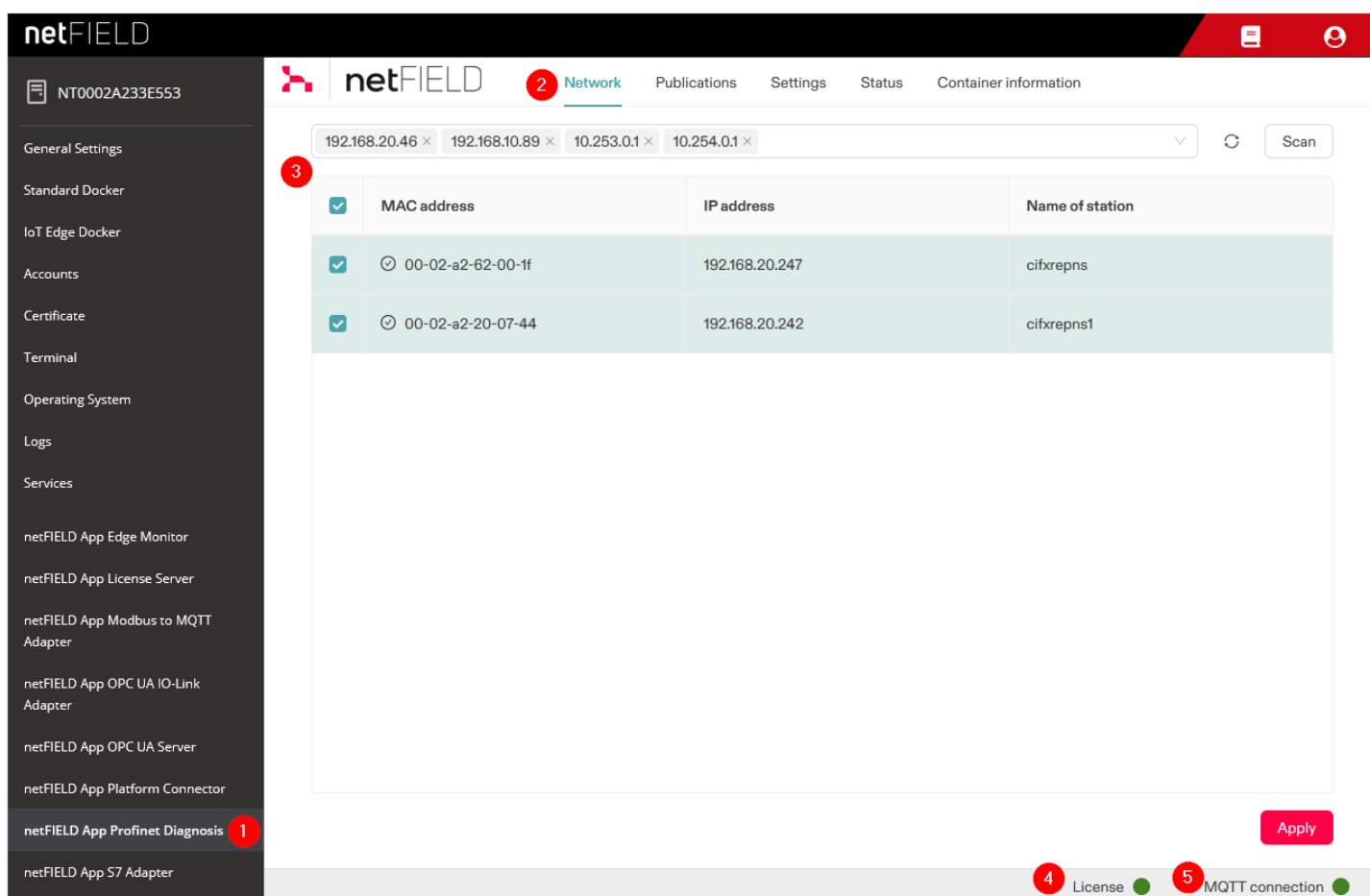


Figure 3. Application overview

You can navigate through the configuration options by selecting an item in the toolbar (2). The main screen shows the configuration options for the selected tab (3).

The status bar at the bottom provides information on the application license (4) and MQTT connection status (5).

Error or confirmation messages are displayed as pop-up notifications in the bottom right corner.

### 7.3 Network

In the **Network** tab, you can scan for devices on one or more PROFINET networks. The discovered devices then can be selected for publishing their error diagnosis data to an MQTT broker.

Selected devices will be published to the configured MQTT topics with the device's IP address. The already published devices are marked with a checkmark in the list.

The list of networks consists of the available network interfaces on the host system. You can select one or more interfaces to scan for PROFINET devices.

| <input type="checkbox"/>            | MAC address         | IP address     | Name of station |
|-------------------------------------|---------------------|----------------|-----------------|
| <input checked="" type="checkbox"/> | 🕒 00-02-a2-6e-11-0a | 192.168.10.121 | test            |
| <input type="checkbox"/>            | 00-02-a2-62-00-1f   | 192.168.20.247 | cifxrepns       |
| <input type="checkbox"/>            | 78-d0-04-27-47-dd   | 192.168.20.103 | qatestpc04      |
| <input type="checkbox"/>            | 30-d0-42-fc-9d-ab   | 192.168.20.49  | desktop-1str38  |
| <input type="checkbox"/>            | ac-64-17-06-75-e8   | 192.168.20.241 | plcxb1d0ed      |
| <input type="checkbox"/>            | ac-64-17-0f-86-f5   | 192.168.20.99  | plcxb1d0ed      |
| <input type="checkbox"/>            | 00-02-a2-20-07-44   | 192.168.20.242 | cifxrepns1      |

| Element       | Description   |
|---------------|---|
| Networks list | Displays the available network interfaces on the host system. You can add and select one or more interfaces to scan for PROFINET devices. |
|               | Refresh the list of discovered devices.   |
|               | Scan for PROFINET devices. Initiates a scan on the selected network interfaces.   |
|               | Apply the current network settings. Saves the selected interfaces and IP configurations.  |
|               | Indicates that the device is already being published to the MQTT broker.  |

Table 3. Controls in the Network tab



## Discovered Devices

The table in the main screen area displays the list of devices found during the scan.

| Column          | Description  |
|-----------------|--|
| MAC Address     | The MAC address of the device.                             |
| IP Address      | The IP address of the device.                              |
| Name of station | The name of the discovered device in the PROFINET network. |

Table 4. Columns of the Discovered Devices list

## 7.4 Publications

The **Publications** tab allows you to observe the live data of configured data publications for PROFINET diagnostics. The application polls the selected devices at an interval of 1 second and updates the topic if new data is received.

You can click the buttons next to the predefined topics to copy them into the clipboard for easy access. Click on the **Copy example message** button to copy an example of the JSON data.

| IP address     | Name of station | Diagnosis   |
|----------------|-----------------|-------------|
| 192.168.10.121 | test            | ✔ No errors |

|                                       |   |  |
|---------------------------------------|---|--|
| Publication data (all) topic:         | Oi4/OTConnector/hilscher.com/netFIELD,20App,20Profinet,20Diagnosis/1917.056/netfield-app-profi... |  |
| Trigger publication data (all) topic: | Oi4/OTConnector/hilscher.com/netFIELD,20App,20Profinet,20Diagnosis/1917.056/netfield-app...       |  |
| Health topic:                         | Oi4/OTConnector/hilscher.com/netFIELD,20App,20Profinet,20Diagnosis/1917.056/netfield-app-profi... |  |

Figure 4. Publications tab

| Element         | Description  |
|-----------------|--|
| IP Address      | Displays the IP address of the PROFINET device for which diagnostics are being observed. |
| Name of station | Show the PROFINET name of station assigned by the devices controller.                    |
| Diagnosis       | Shows the last observed diagnostic message for the device.                               |

Table 5. Publications table

| Element | Description  |
|---------|--|
|         | Copy the topic URL for the current asset.                      |
|         | Copy an example JSON message for the current diagnostic topic. |

Table 6. Controls in the Publications tab

## Example for published error data

| IP address     | Name of station | Diagnosis                 |
|----------------|-----------------|---------------------------|
| 192.168.10.121 | test            | 🟡 0x0005: Overtemperature |

Figure 5. Device with error data

### IMPORTANT | Error message strings in MQTT

The application is designed to resolve standard PROFINET diagnostic error messages and will not resolve all possible error codes. The example below shows a profile specific error message that will be reported with the error code and a generic message. The actual device specific error message must be resolved using device description or the manufacturer documentation. Error messages are decoded according to the [IEC FIELD BUS SPECIFICATIONS](#)

```
{
  "MessageId": "17501610569972-OTConnector/hilscher.com/netFIELD,20App,20Profinet,20Diagnosis/1917.056/netfield-app-profinet-
diagnosis",
  "MessageType": "ua-data",
  "PublisherId": "OTConnector/hilscher.com/netFIELD,20App,20Profinet,20Diagnosis/1917.056/netfield-app-profinet-diagnosis",
  "Messages": [
    {
      "DataSetWriterId": 18,
      "SequenceNumber": 1,
      "Timestamp": "2025-06-17T11:50:56.997Z",
      "Filter": "192.168.10.120",
      "Source": "hilscher.com/profinet/diagnosis/aggregator",
      "Payload": {
        "errorCodes": [
          "0x0005: Overtemperature"
        ]
      }
    }
  ]
}
```

## 7.5 Settings

This section describes how to configure the MQTT broker connection and license server settings in the netFIELD App PROFINET Diagnosis UI.

### 7.5.1 MQTT client settings

On the **MQTT Client Settings** page, you can customize the MQTT client settings of the application. By default, the app may use the standard MQTT client settings of the host system. If you want to use different settings for your app – for example, to connect to a different broker – you can enable **Override current settings** and enter your new values in the configuration fields that are now displayed:

The screenshot shows the 'MQTT' settings tab in the netFIELD App. At the top, there is a navigation bar with 'Settings' selected. Below it, there are two sub-tabs: 'MQTT' (active) and 'License server'. The main settings area includes:

- Override current settings:** A toggle switch that is currently turned off.
- Encrypted communication (TLS/SSL):** A checkbox that is currently unchecked, with a warning icon.
- Broker URIs:** Two entries, each consisting of a protocol dropdown (set to 'tcp'), a broker name text field, and a port number text field (set to '1883'). The first entry has 'mosquitto' as the broker name, and the second has 'localhost'. Each entry has a trash icon to its right.
- Username:** A text input field containing the value 'root'.
- Password:** A password input field with 10 dots and a clear icon.
- Keep alive interval:** A text input field containing '60' and a 'seconds' label.
- Connect timeout:** A text input field containing '300' and a 'seconds' label.
- Apply:** A button located at the bottom right of the settings area.

Figure 6. MQTT client settings tab



| Element                   | Description   |
|---------------------------|---|
| Broker URIs               | List of MQTT broker URIs to connect to. You can add multiple URIs; the client will try each in order.         |
| Username                  | Username for authentication at the broker (if required).  |
| Password                  | Password for authentication at the broker (if required).  |
| Keep alive interval       | Defines the maximum length of time in seconds that the broker and client may not communicate with each other. |
| Connect timeout           | Defines the maximum length of time in seconds that is allowed for completing the connection process.          |
| Use SSL/TLS               | Enable or disable SSL/TLS encryption for the MQTT connection.   |
| Client certificate file   | Upload the PEM encoded client certificate file (required if SSL/TLS is enabled and the broker requires it).   |
| Client key file           | Upload the PEM encoded client key file (required if SSL/TLS is enabled and the broker requires it).           |
| CA certificate file       | Upload the PEM encoded CA certificate file to trust the broker's certificate.                                 |
| Verify server certificate | Enable or disable verification of the MQTT broker's server certificate.                                       |

Table 7. MQTT client settings

After adjusting the settings, click **Apply** to save and activate the new configuration.

## 7.5.2 License server settings

The license server settings define how the netFIELD App PROFINET Diagnosis connects to one or more license servers to validate the application license.

netFIELD | Network | Publications | **Settings** | Status | Container information

MQTT | **License server**

### Endpoints

Enter a server endpoint Add

| Address                     |  |
|-----------------------------|--|
| 255.255.255.255 (broadcast) |  |
| 10.12.4.60                  |  |

| Option                     | Description   |
|----------------------------|---|
| License server address(es) | List of license server addresses to use for license validation. |
| Add/Remove server          | Add a new license server entry or remove an existing one.       |

Table 8. License server configuration options

After adjusting the settings, click **Apply** to save and activate the new configuration.

## 8 Status

In this tab you can find more information regarding the status of the container.

netFIELD

Network Publications Settings **Status** Container information

Container status

Current CPU workload: 3.33 %

Current RAM workload: 82/3830 MB

License status: License is valid

MQTT status

Connected to broker: tcp://localhost:1883

Reconnection trials after connection loss: 1

Figure 7. Status tab

| Field            | Description   |
|------------------|---|
| Container status | Displays CPU and RAM usage on the host and the license status.                    |
| MQTT status      | Displays the status of the MQTT connection and the number of retried connections. |
| OPC UA status    | Shows server endpoint and the last error of the OPC UA server.                    |

Table 9. Container status information

## 9 Container information

This tab displays information about the application container.

netFIELD

Network Publications Settings Status **Container information**

Container information

|             |   |
|-------------|---|
| Name        | netFIELD App Profinet Diagnosis   |
| Version     | 1.0.0   |
| ApiVersion  | 1   |
| Description | netFIELD App Profinet Diagnosis   |
| Vendor      | Hilscher Gesellschaft fuer Systemautomation mbH   |
| Licenses    | HILSCHER netFIELD Source Code/Software LICENSE AGREEMENT<br><a href="https://netfield.io/licenses/Hilscher_netFIELD_Source_Code_Software_License.pdf">https://netfield.io/licenses/Hilscher_netFIELD_Source_Code_Software_License.pdf</a> |
| Disclaimer  | See <a href="https://netfield.io/termsAndConditions">https://netfield.io/termsAndConditions</a>   |

Used components

|                   |        |     |
|-------------------|--------|-----|
| @ant-design/icons | 5.3.7  | MIT |
| @reduxjs/toolkit  | 1.9.7  | MIT |
| antd              | 5.19.2 | MIT |

Figure 8. Container information tab

| Item            | Description   |
|-----------------|---|
| Name            | The name of the app: netFIELD App PROFINET Diagnosis.                 |
| Version         | The current version number of the app.                                |
| ApiVersion      | The current version number of the api used within the app.            |
| Description     | A text describing the function and intended use of the app.           |
| Vendor          | Name of the container vendor.   |
| Licenses        | The license which is applicable for the use of this app.              |
| Disclaimer      | Web address where to find the valid disclaimer and legal information. |
| Used Components | This list specifies the 3rd party components used by the application. |

Table 10. Container information

## 10 Technical data

| Category              | Parameter                        | Value   |
|-----------------------|----------------------------------|---|
| Product               | Product name                     | NFA-PNM-OTP   |
|                       | Part number                      | 1917.056  |
|                       | Description                      | netFIELD App PROFINET Diagnosis   |
|                       | Software type                    | Docker Container Image  |
|                       | Repository                       | <a href="https://hub.docker.com/r/hilscherautomation/netfield-app-profinet-diagnosis">https://hub.docker.com/r/hilscherautomation/netfield-app-profinet-diagnosis</a> |
| Hardware requirements | Processor architecture           | AMD64 or ARM64  |
|                       | Container size                   | Approx. 450 MB, unpacked  |
|                       | Memory requirements              | Approx. 150 MB  |
|                       | Data interface                   | 2 x Ethernet  |
| Software requirements | Operating system                 | Linux   |
|                       | Container runtime environment    | Required, e.g. Docker   |
|                       | Data distribution                | Any MQTT broker, e.g., Mosquitto  |
| Runtime properties    | Inbound protocol                 | PROFINET  |
|                       | Outbound protocol                | MQTT (as a client)  |
|                       | Range                            | Limited to local IP subnet  |
|                       | Minimum polling interval         | 1 s   |
| Licensing             | Container license                | WIBU CodeMeter licensing technology, license server required (Windows or Container)   |
|                       | Accounting model                 | One-time payment for a license  |
|                       | License delivery                 | Via E-mail as a hyperlink   |
|                       | Software maintenance and updates | Included for free within 1 year after license activation  |

Table 11. Technical data NFA-PNM-OTP

# 11 Appendix

## Appendix A: Content listing

### 11.A.1 List of tables

Table 1. List of revisions

Table 2. References to documents

Table 3. Controls in the Network tab

Table 4. Columns of the Discovered Devices list

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Table 6. Controls in the Publications tab

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Table 10. Container information

Table 11. Technical data NFA-PNM-OTP

## 11.A.2 List of figures

Figure 1. PROFINET network topology

Figure 2. netFIELD App PROFINET Diagnosis Use case

Figure 3. Application overview

Figure 4. Publications tab

Figure 5. Device with error data

Figure 6. MQTT client settings tab

Figure 7. Status tab

Figure 8. Container information tab

## Appendix B: Legal Notes

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It is hereby expressly agreed upon in particular that any use or utilization of the hardware and/or software in connection with

- Flight control systems in aviation and aerospace;
- Nuclear fission processes in nuclear power plants;
- Medical devices used for life support and
- Vehicle control systems used in passenger transport

shall be excluded. Use of the hardware and/or software in any of the following areas is strictly prohibited:

- For military purposes or in weaponry;
- For designing, engineering, maintaining or operating nuclear systems;
- In flight safety systems, aviation and flight telecommunications systems;
- In life-support systems;
- In systems in which any malfunction in the hardware and/or software may result in physical injuries or fatalities.

You are hereby made aware that the hardware and/or software was not created for use in hazardous environments, which require fail-safe control mechanisms. Use of the hardware and/or software in this kind of environment shall be at your own risk; any liability for damage or loss due to impermissible use shall be excluded.

## Warranty

Hilscher Gesellschaft für Systemautomation mbH hereby guarantees that the software shall run without errors in accordance with the requirements listed in the specifications and that there were no defects on the date of acceptance. The warranty period shall be 12 months commencing as of the date of acceptance or purchase (with express declaration or implied, by customer's conclusive behavior, e.g. putting into operation permanently).

The warranty obligation for equipment (hardware) we produce is 36 months, calculated as of the date of delivery ex works. The aforementioned provisions shall not apply if longer warranty periods are mandatory by law pursuant to Section 438 (1.2) BGB, Section 479 (1) BGB and Section 634a (1) BGB [Bürgerliches Gesetzbuch; German Civil Code] If, despite of all due care taken, the delivered product should have a defect, which already existed at the time of the transfer of risk, it shall be at our discretion to either repair the product or to deliver a replacement product, subject to timely notification of defect.

The warranty obligation shall not apply if the notification of defect is not asserted promptly, if the purchaser or third party has tampered with the products, if the defect is the result of natural wear, was caused by unfavorable operating conditions or is due to violations against our operating regulations or against rules of good electrical engineering practice, or if our request to return the defective object is not promptly complied with.

### Costs of support, maintenance, customization and product care

Please be advised that any subsequent improvement shall only be free of charge if a defect is found. Any form of technical support, maintenance and customization is not a warranty service, but instead shall be charged extra.

### Additional guarantees

Although the hardware and software was developed and tested in-depth with greatest care, Hilscher Gesellschaft für Systemautomation mbH shall not assume any guarantee for the suitability thereof for any purpose that was not confirmed in writing. No guarantee can be granted whereby the hardware and software satisfies your requirements, or the use of the hardware and/or software is uninterrupted or the hardware and/or software is fault-free.

It cannot be guaranteed that patents and/or ownership privileges have not been infringed upon or violated or that the products are free from third-party influence. No additional guarantees or promises shall be made as to whether the product is market current, free from deficiency in title, or can be integrated or is usable for specific purposes, unless such guarantees or promises are required under existing law and cannot be restricted.

## **Confidentiality**

The customer hereby expressly acknowledges that this document contains trade secrets, information protected by copyright and other patent and ownership privileges as well as any related rights of Hilscher Gesellschaft für Systemautomation mbH. The customer agrees to treat as confidential all of the information made available to customer by Hilscher Gesellschaft für Systemautomation mbH and rights, which were disclosed by Hilscher Gesellschaft für Systemautomation mbH and that were made accessible as well as the terms and conditions of this agreement itself.

The parties hereby agree to one another that the information that each party receives from the other party respectively is and shall remain the intellectual property of said other party, unless provided for otherwise in a contractual agreement.

The customer must not allow any third party to become knowledgeable of this expertise and shall only provide knowledge thereof to authorized users as appropriate and necessary. Companies associated with the customer shall not be deemed third parties. The customer must obligate authorized users to confidentiality. The customer should only use the confidential information in connection with the performances specified in this agreement.

The customer must not use this confidential information to his own advantage or for his own purposes or rather to the advantage or for the purpose of a third party, nor must it be used for commercial purposes and this confidential information must only be used to the extent provided for in this agreement or otherwise to the extent as expressly authorized by the disclosing party in written form. The customer has the right, subject to the obligation to confidentiality, to disclose the terms and conditions of this agreement directly to his legal and financial consultants as would be required for the customer's normal business operation.

## **Export provisions**

The delivered product (including technical data) is subject to the legal export and/or import laws as well as any associated regulations of various countries, especially such laws applicable in Germany and in the United States. The products / hardware / software must not be exported into such countries for which export is prohibited under US American export control laws and its supplementary provisions. You hereby agree to strictly follow the regulations and to yourself be responsible for observing them. You are hereby made aware that you may be required to obtain governmental approval to export, reexport or import the product.

## Appendix C: Contacts

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