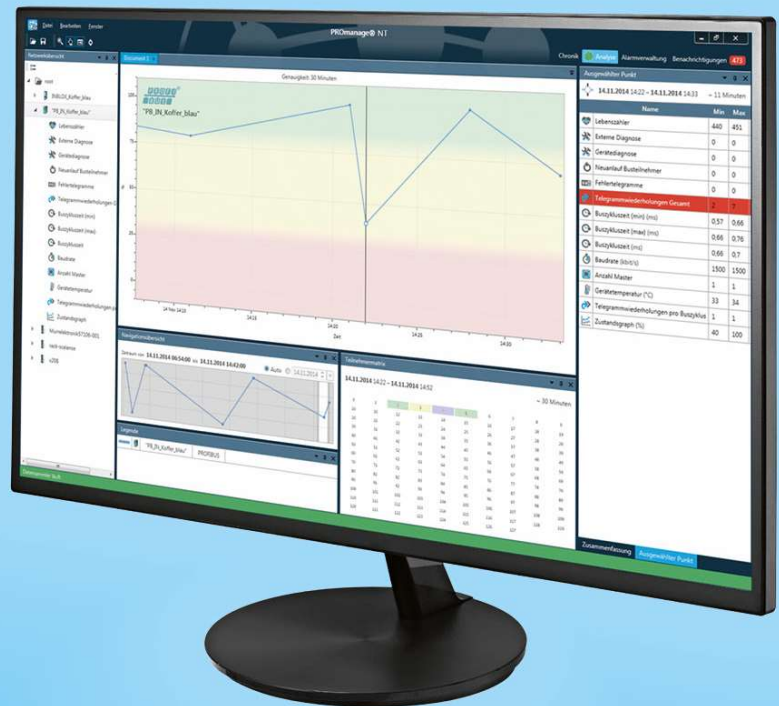


PROmanage[®] NT

Benutzerhandbuch



Permanente Netzwerküberwachung

Revision overview

date	Revision	Change(s)
16.03.2015	0	First version
18.08.2016	1	Update for version 1.6
10.01.2017	2	Update for version 1.7
25.09.2019	3	Update for version 2.0
26.06.2024	4	Update for version 2.4
26.09.2024	5	Updating the images

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1 Introduction

1.1 General

PROmanage® NT is a central software for analyzing, managing and storing data on the communication quality of industrial networks.

Using the standard SNMP and Web-API queries, standardized network parameters can be queried cyclically across networks and protocols (PROFINET, PROFIBUS, Ethernet, CAN and AS-i) and saved with a time stamp.

Threshold and alarm management analyses the incoming network communication data and warns of any anomalies.

The current topology of the network can be displayed. Conspicuous subscribers are marked here. By selecting a subscriber, its relevant quality parameters can be displayed.

Statistical functions allow the data to be displayed to the minute, retrospectively over several months.

This means that historical events, for example for analyzing sporadic failures, can be traced at any time and used for root cause analysis.

1.2 Disclaimer

PROmanage® NT has been carefully developed and tested by Indu-Sol GmbH to the best of its knowledge and belief. Nevertheless, according to the state of the art, it is impossible to create completely error-free software.

Therefore, Indu-Sol GmbH does not guarantee that the hardware or software will work properly in all applications. Therefore, any liability for direct or indirect damage resulting from the operation of the hardware or software and the usability described in the manual is rejected.

Indu-Sol GmbH will rectify any defects that cancel or reduce the suitability of the software for the usual or contractually agreed purpose within a reasonable period of time, usually as part of regular software maintenance.

1.3 System description

The PROmanage® NT system consists of the following components:

- PROmanage® NT (Client)
- PROmanage® NT Data collector (subject to license)
- PROmanage® NT Web
- PostgreSQL database server (optional OPC extension)

1.4 The centerpiece of the system is the PROmanage® NT data collector. This queries decentralized data collectors (e.g. PROFINET INspector® NT, manageable switches, ...) and saves the data in an SQL database. Which devices are to be queried is configured with the PROmanage® NT (client). Data stored in the SQL database can be displayed with PROmanage® NT (Client). By installing the PROmanage® NT Web component, the history (6 Chronicle) can be displayed. Optionally, the database server can be extended by an OPC interface (12.2 MSG: Message service programme for user-defined action

The message service program (msg) can be used to send messages over a network from one user to another user or from computer to computer. This program can be used, for example, as a user-defined action (9.4 Available actions) for an alarm (11.10.1.3 User-defined action).

For a message to be sent successfully, it must be possible to execute the RPC functions on the target computer with a terminal connection. Remote desktop connections must also be authorized. If the current user does not use a password (single-user PC), account use with empty passwords must have been activated on the target system, otherwise access will be denied.

To send messages via the network, the RRS service (remote registration) must be activated and the following registry entry must be adjusted or created:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TerminalServer
Value: AllowRemoteRPC
Required value: 1 (REG_DWORD)
```

Syntax of the msg command:

```
MSG {username | session name | session ID | @filename | *}
[/SERVER:server name] [/TIME:seconds] [/V] [/W] [message]
```

Username	Specifies the username.
Session name	The name of the session.
Session ID	The ID of the session.

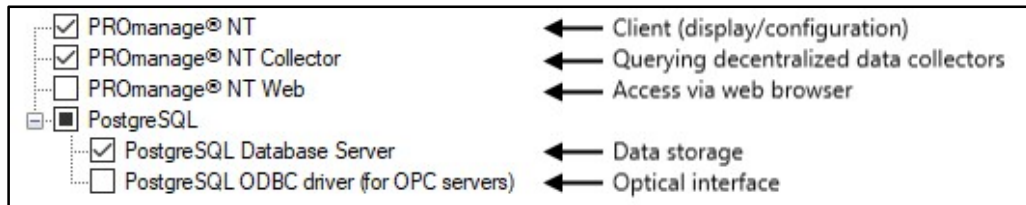


@filename	Specifies a file containing a list of usernames, session names and IDs to which the message is sent. * Sends message to all sessions on the specified server.
/SERVER:Server name	Server to which the connection is established (default is the current server).
*	Sends a message to all sessions on the specified server.
/TIME:seconds	Waiting time until the recipient confirms the message.
/V	Displays information about the functions performed.
/W	Wait for response from user, useful with /V.
Message	Message to be sent. If none is specified, a message is requested or read by "stdin".

Introduction

OPC server) can be added.

Each component can be installed on a separate system if they are connected to each other via a network. The components are selected during the installation (2.4 Installation procedure).



Extract - Selection of components during installation

For performance reasons, PROmanage® NT data collector and SQL database should always be installed on the same system.

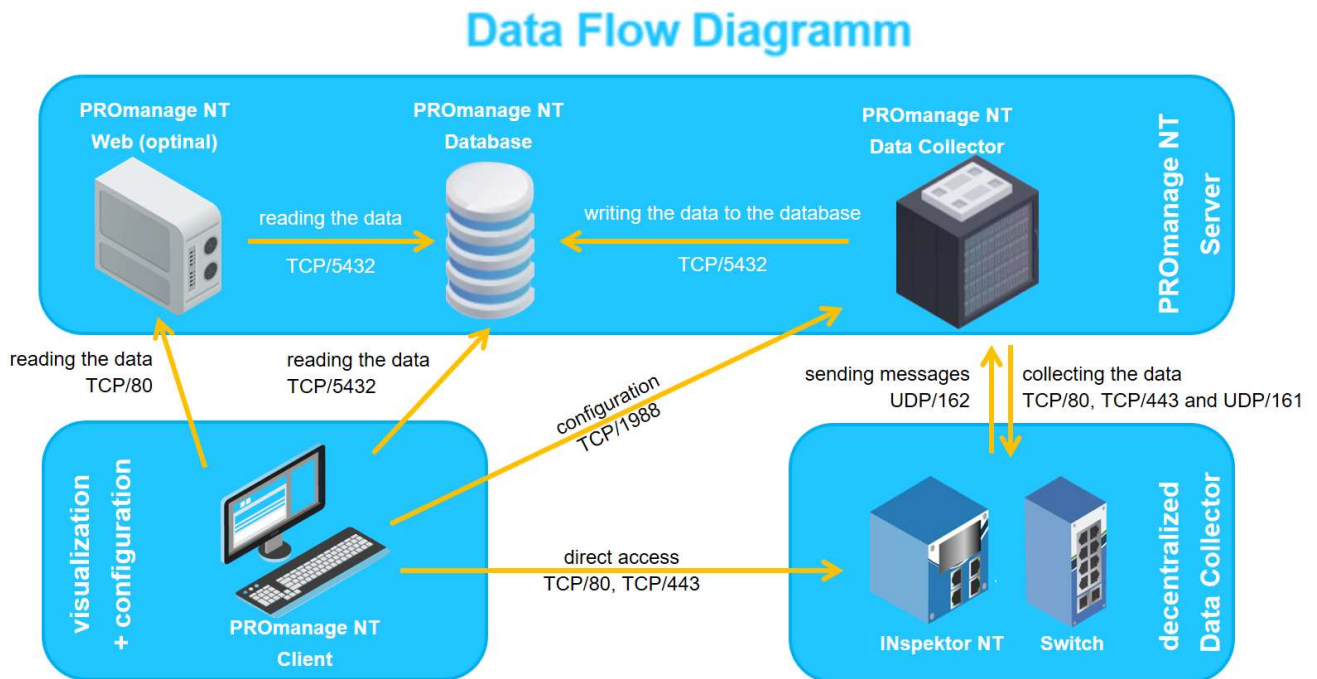


The PROmanage® NT data collector is the component that requires a license to query the devices to be monitored.

The PROmanage® NT (Client) component can be installed license-free on one or more systems.

1.5 Data Flow Diagram

The following diagram illustrates the interaction of the PROmanage® NT components. If individual components are installed on separate systems, the port releases (2.1.2 Port release) must be observed.



2 Installation PROmanage® NT

2.1 System requirements

The following operating systems are supported for all PROmanage® NT components:

- Microsoft® Windows® 7
- Microsoft® Windows® 8, 8.1
- Microsoft® Windows® 10
- Microsoft® Windows® 11
- Microsoft® Windows® Server, 2012, 2016, 2019, 2022

2.1.1 Hardware requirements

Depending on the type and number of devices to be queried, the following hardware requirements apply for the full installation of the PROmanage® NT components client, SQL database and data collector.

Number of ports	CPU cores	Working memory	Required hard disc space ¹
up to 160	4	4 GB	50 GB (SSD, NVMe recommended)
up to 480	8	8 GB	100 GB (24/7 HDD recommended) (SSD, NVMe recommended)
up to 960	16	16 GB	200 GB (SAS raid recommended) (SSD, NVMe recommended)
until 2000	32	32 GB	400 GB SAS (SAS Raid recommended) (SSD, NVMe recommended)

¹⁾ with a data retention period of 3 months.

For continuous operation, we recommend the use of a server hard drive or server SSD memory.

A wired connection of at least 1 Gbit/s should be provided to connect to the network.

If only the PROmanage® NT client is installed on a system for display and configuration, the hardware requirements are lower. The graphics resolution must also be taken into account for the full installation.

CPU cores	Working memory	Graphic resolution
2	2 GB	1440 x 900 Intel® HD Graphics 4000 or better Support for DirectX10



2.1.2 Port release

The data flow diagram (1.5 Data Flow Diagram) shows the ports that are required for a connection between the PROmanage® NT components. These and others for full functionality are listed below.

Description of the	Port number	Description of the
Indu-Sol Data Collector	TCP/1988	Access to PROmanage® NT data collector
PostgreSQL database	TCP/5432	Access to SQL database
SNMP	UDP/161, UDP/162 (Trap)	Query dec. data collector Receiving SNMP traps
INspektor web view	TCP/80, TCP/443	Display of the web interface
PROmanage® NT Scan Indu-Sol ServiceTool	UDP/19010, UDP/19011	Used to scan the network for INspectors and PROFINET devices

2.2 Starting the installation



You need administrative rights to be able to carry out the installation

When you purchase PROmanage® NT, you will receive a download link to the software. PROmanage® NT can also be downloaded from the Indu-Sol GmbH website (<https://www.indu-sol.com/support/downloads/software/>).

The downloaded file must be unpacked on the target system.

The installation starts by executing the "Setup.exe" file.

2.3 Installation procedure

The PROmanage® NT installation checks whether the required Windows components are available, updates them or installs missing ones.

- PROmanage® NT Client
 1. Installation and configuration of PROmanage® NT Client
 2. Allow PROmanage® NT to communicate via the Windows firewall
 3. Install Visual C++ Redistributable
 4. Install WinPcap
- PROmanage® NT Data collector
 1. Allow communication for PROmanage® NT data collectors via the Windows firewall
 2. Install driver for Indu-Sol license stick
 3. Configure database connection
 4. Install as Windows Service
- PostgreSQL database server
 1. Install database server
 2. Create new database
- PROmanage® NT Web
 1. Allowing PROmanage® NT Web to communicate via the Windows firewall
 2. Configure web server
 3. Configure database connection
 4. Install web server service
- PostgreSQL ODBC driver (for OPC Server)
- Uninstaller

2.4 Installation procedure

It is recommended to install the PROmanage® NT components client, data collector and SQL database on one system (2.4.1 Full installation).

To configure the data collector and display the recorded data, the PROmanage® NT client can be installed individually (2.4.2 Client installation).

If the optional PROmanage® NT Web is installed, the history of the PROmanage® NT database can be accessed from any system via a web browser without further installation.

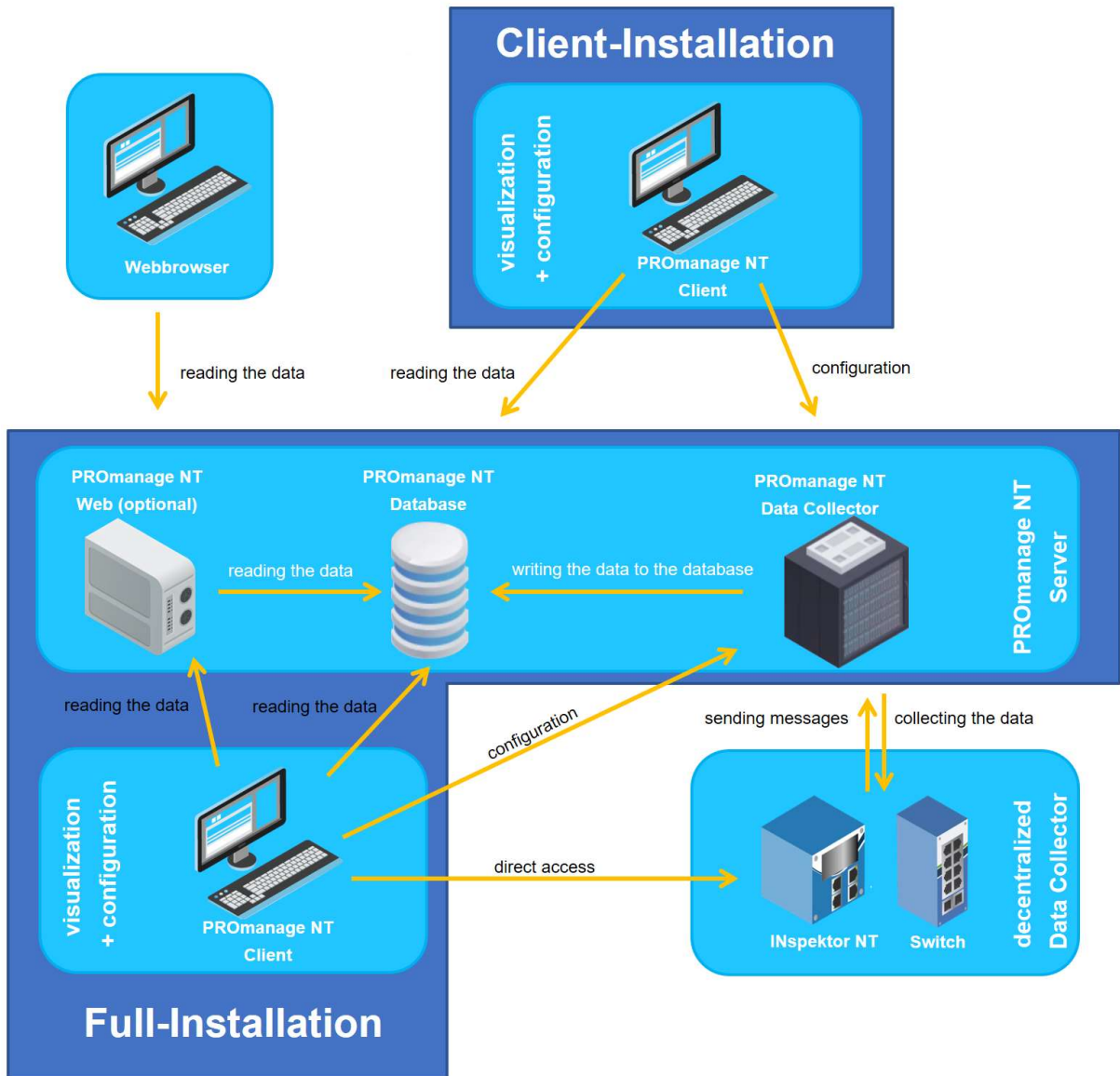
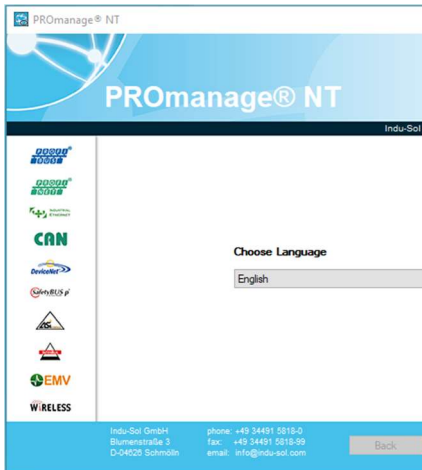


Illustration 1: Installation variants

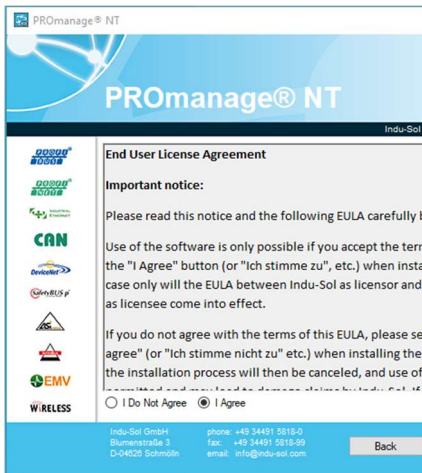
2.4.1 Full installation



Select language:

- Select language
- Next

Illustration 2.4-2 Installation procedure



End User License Agreement:

- Read license agreement
- Selection - "I agree"
- Next

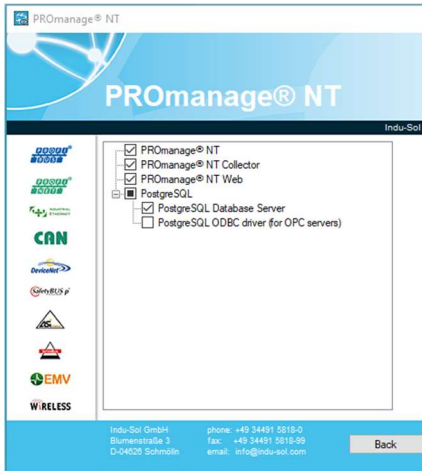


Illustration 2.4-3 Installation procedure

Select PROmanage® NT components:

Selection:

- PROmanage® NT (Client)
- PROmanage® NT Data collector
- PROmanage® NT Web (optional)
- PostgreSQL
 - PostgreSQL database server
 - PostgreSQL ODBC driver (opt.)
- Next

The configuration and installation of the PostgreSQL ODBC driver is described in "12.2 MSG: Message service programme for user-defined action"

The message service program (msg) can be used to



Illustration 2.4-4 Installation procedure

Installation path PROmanage® NT Client:

Selection:

- Destination folder ("Browse" to change installation path)
- Next



Illustration 2.4-5 Installation procedure

Link PROmanage® NT Client:

Selection for the creation of links:

- On the desktop
- In the start menu
- Next

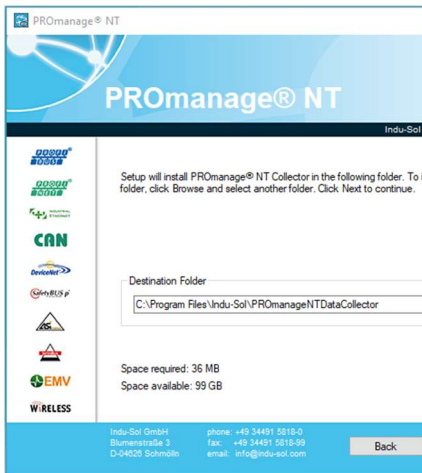


Illustration 2.4-6 Installation procedure

Installation path PROmanage® NT Data collector:

Selection:

- Destination folder ("Browse" to change installation path)
- Next

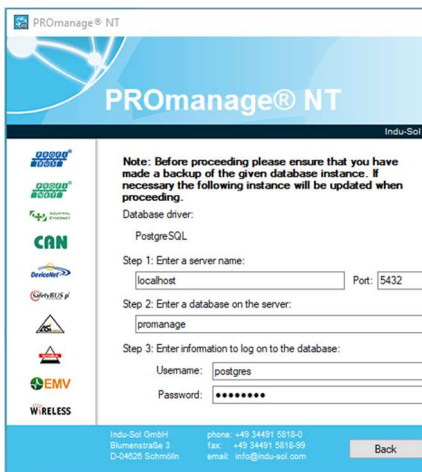


Illustration 2.4-7 Installation procedure

Configuration PROmanage® NT

SQL database server:

Selection:

- Step 1 - Server name (preset)
- Step 2 - The installation creates a database. A name for the database can be specified here, e.g. name of the system¹.
- Step 3 - User/password (preset)
- Next

¹ only upper/lower case letters, numbers, _, no special characters



Illustration 2.4-8 Installation procedure

Installation path PostgreSQL installation directory (program) and data directory (saving the data):

Selection:

- Destination folder ("Browse" to change installation path)
- Next



It is recommended not to install the target folder for the data directory "PostgreSQLData" on the system partition (default: "C:").

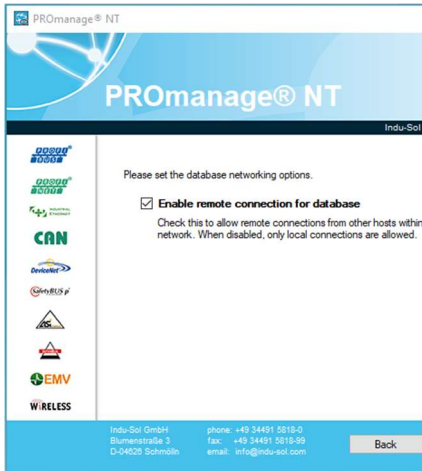


Illustration 2.4-9 Installation procedure

Permission Remote connection:

Selection:

- Allow remote connections to the database (this determines whether another PROmanage® NT client can access the database).

If access is not granted, a subsequent PROmanage® NT Client installation will not work (2.4.2 Client installation).



- Next

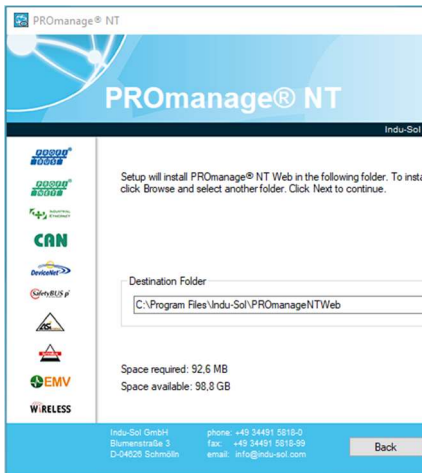


Illustration 2.4-10 Installation procedure

Installation path PROmanage® NT Web: (optional)

Selection:

- Destination folder ("Browse" to change installation path)
- Next

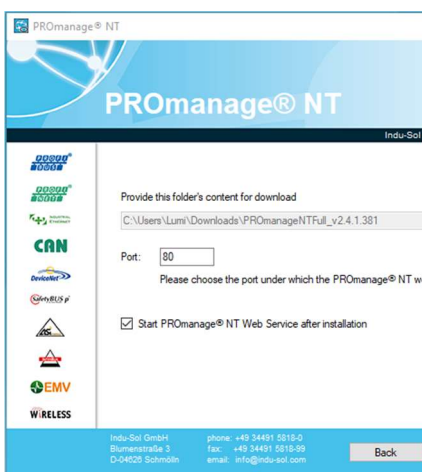


Illustration 2.4-11 Installation procedure

Provision of downloads via PROmanage® NT Web:

Selection:

- Provide content as a download ("Select" to choose source path)
- Port for PROmanage® NT website
- Start Web Service
- Next

Provide download: The entire content of a directory is stored on the system as a ZIP archive.

...\\Indu-Sol\PROmanageNTWeb\DownloadArea

Recommendation: For the later 2.4.2 Client installation it is recommended to release the installation files for PROmanage® NT for download.

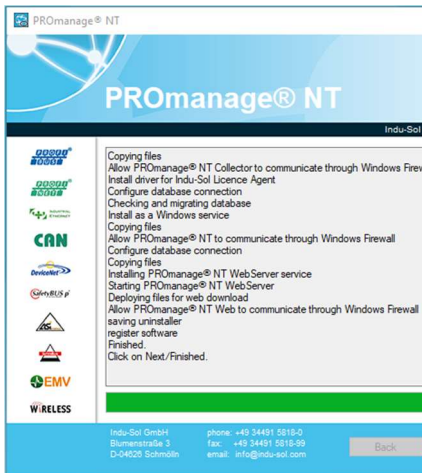


Link PROmanage® NT Web:

Selection for the creation of links:

- On my Desktop
- In Start menu
- Start

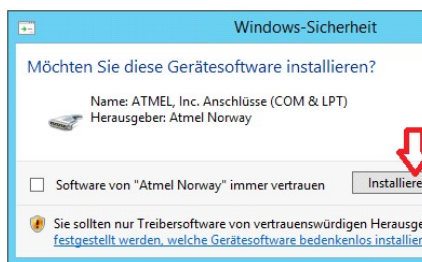
Illustration 2.4-12 Installation procedure



Installation progress PROmanage® NT:

- Next

Illustration 2.4-13 Installation procedure



Driver installation ATMEL

PROmanage® NT was previously licensed by means of a license stick. If a license stick is available, the "ATMEL" driver must be installed.

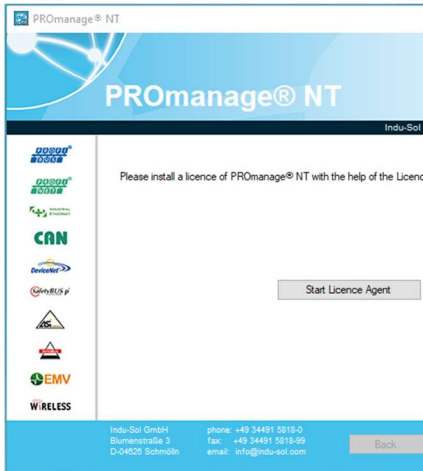


Illustration 2.4-14 Installation procedure

Licensing PROmanage® NT:

PROmanage® NT is licensed using the additional "LicenceAgent" software.

Selection:

- Start license agent
- Next

Note: Licensing can also be carried out at any later point in time (3 Licensing).

Without a license, PROmanage® NT starts in demo mode and the trap monitor is deactivated.



Illustration 2.4-15 Installation procedure

PROmanage® NT Start data collector:

Selection:

- Start service
- Finished

2.4.2 Client installation

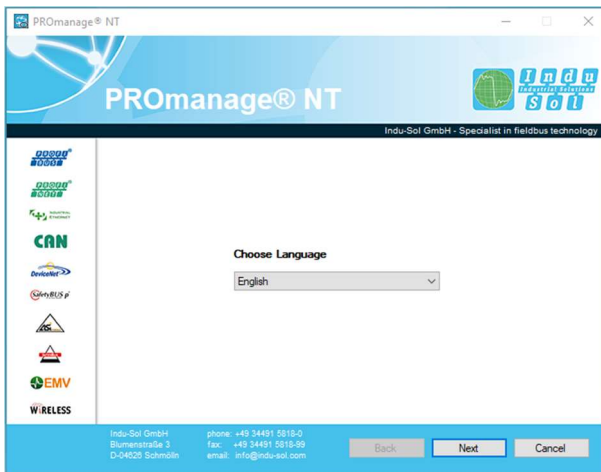


Illustration 2.4-16 Installation procedure

Select language:

- Select language
- Next

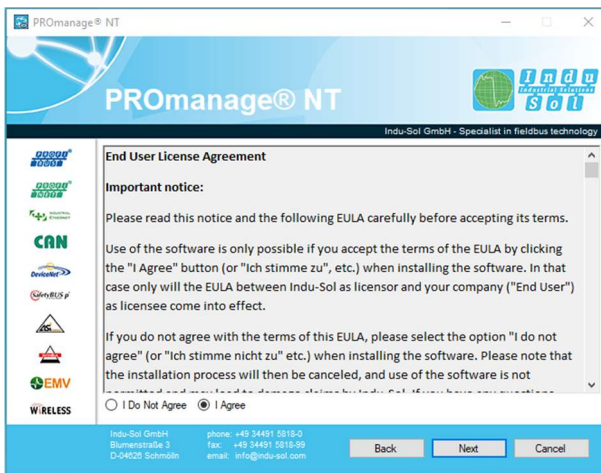


Illustration 2.4-17 Installation procedure

End User License Agreement:

- Read license agreement
- Selection - "I agree"
- Next

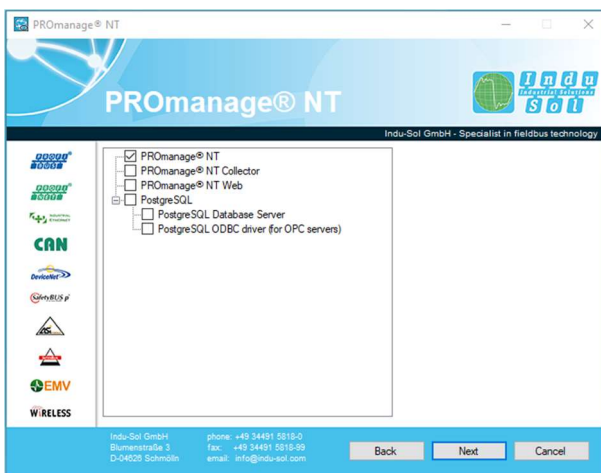


Illustration 2.4-18 Installation procedure

Select PROmanage® NT components:

Selection:

- PROmanage® NT (Client)
- Next

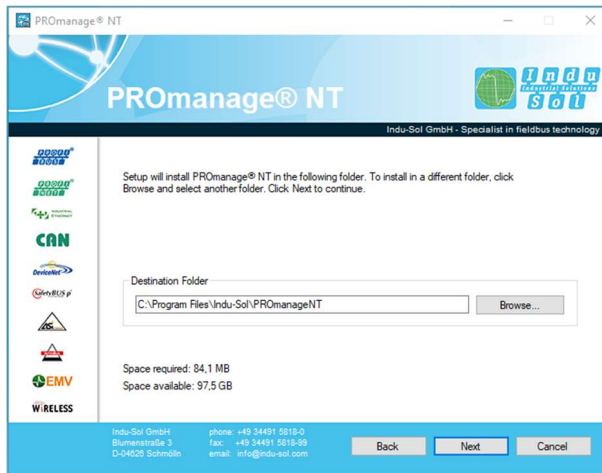


Illustration 2.4-19 Installation procedure

Installation path PROmanage® NT

Client:

Selection:

- Destination folder ("Browse" to change installation path)
- Next

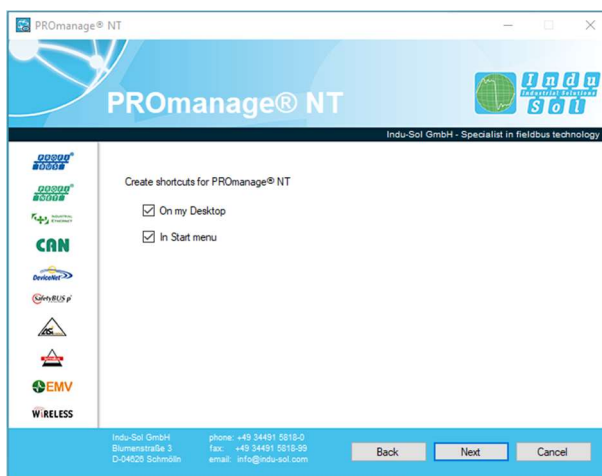


Illustration 2.4-20 Installation procedure

Link PROmanage® NT Client:

Selection for the creation of links:

- On my Desktop
- In Start menu
- Next

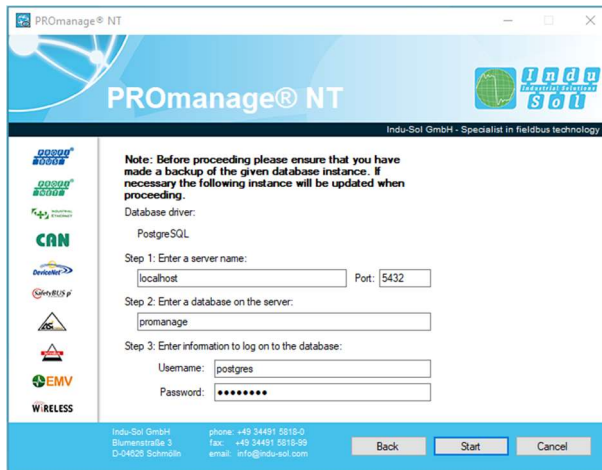


Illustration 2.4-21 Installation procedure

Configuration PROmanage® NT

SQL database server:

Selection:

- Step 1 - Server name
(Name of the system on which the PROmanage® NT SQL database is installed)
- Step 2 - Name of the database to which the PROmanage® NT data collector writes¹.
- Step 3 - User/password
- Start

¹ only upper/lower case letters, numbers, _, no special characters.

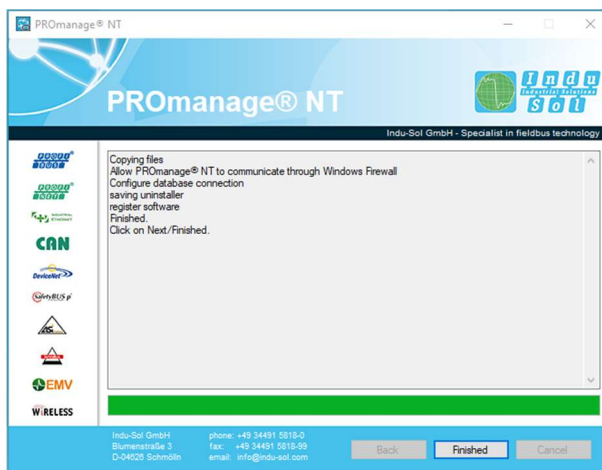


Illustration 2.4-22 Installation procedure

Installation progress PROmanage® NT:

- Finished

3 Licensing

3.1 License dimensioning

The size of the required license is determined by the maximum number of decentralized data collectors to be monitored. A certain number of license ports are required for each device, whereby the following default values apply:

Number of license ports	Component
1	per switch port
8	ASi inspector CB-INspektor EMC-INspector V2 INBLOX DP Diag Rep X1 INBLOX DP Diag Rep X4 INBLOX DP Diag+ Rep PB-INspektor NT PB-INspektor V2 IP device CANobserver
16	INBLOX DP Diag Rep X2 INBLOX PA Diag+ iPNMA PN-INspektor NT PN-INspektor V1 EtherNet/IP-INspector



The license is linked to the hardware and operating system of the system on which the PROmanage® NT data collector is installed. A change to these can lead to the license expiring.

3.2 Licensing PROmanage® NT

The LicenceAgent software is responsible for licensing PROmanage® NT and other Indu-Sol software. The LicenceAgent is stored within the PROmanage® NT installation routine on the system and can be called up within it. If the LicenceAgent is accessible in another way, e.g. via a download (<https://www.indu-sol.com/support/downloads/software/>), the licensing can be carried out at any time (before and after the PROmanage® NT installation).

The PROmanage® NT data collector is always used for licensing. The LicenceAgent manual must be observed in this context.

Once the license has been successfully transferred, PROmanage® NT is activated and can be used without restriction.

3.3 Function without license

Configuration Display SQL database / PROmanage® NT Data collector

If only the PROmanage® NT client is installed (2.4.2 Client installation), a connection to an SQL database can also be established without a license in order to display the recorded data. If the PROmanage® NT client has access to a PROmanage® NT data collector, it can configure this according to its license.

Demonstration

If no license is installed for the PROmanage® NT data collector, a single decentralized data collector can be monitored in this state, regardless of the number of ports. In this way, the simplest monitoring scenarios can be implemented to familiarize yourself with individual functions of PROmanage® NT.

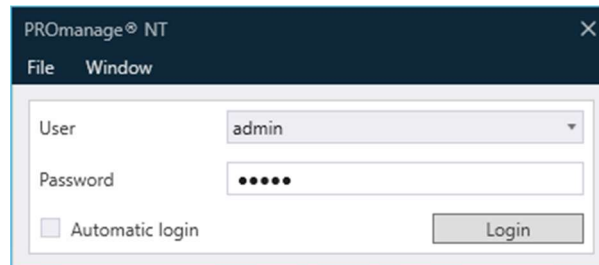
4 First steps

4.1 Log in

When you start the PROmanage® NT client, a login window opens. The default login data is

User: admin

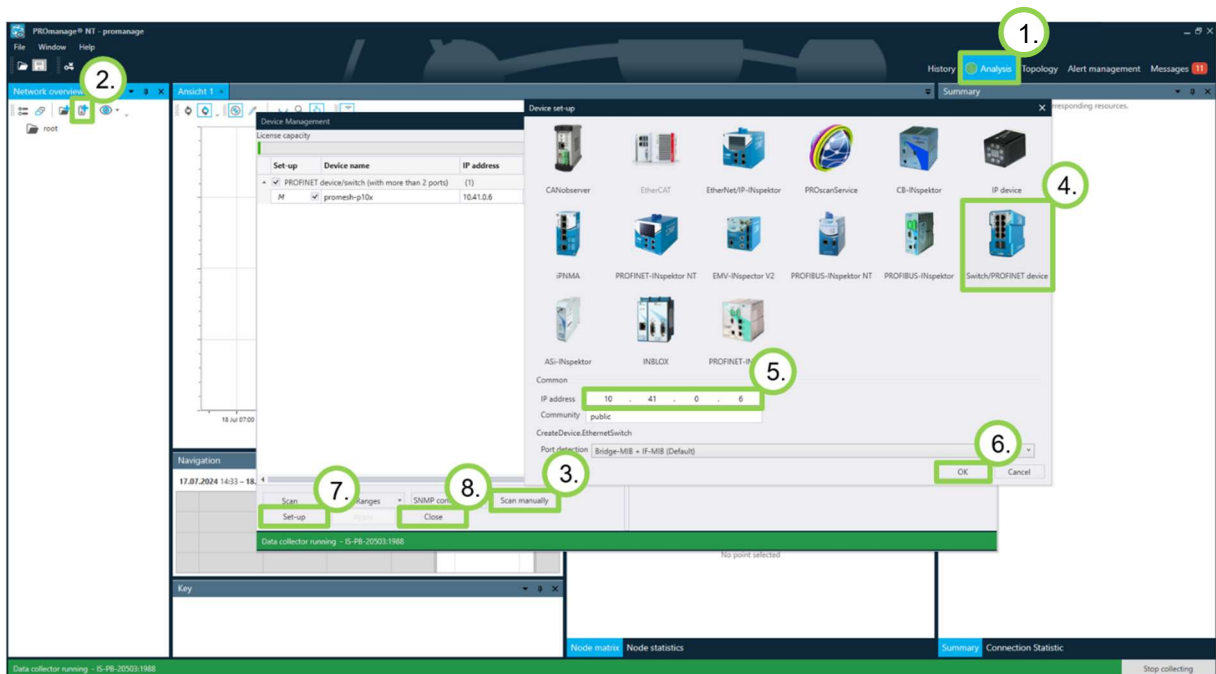
Password: admin



4.2 Add decentralized data collector

A device can be integrated into the monitoring via the device management of PROmanage® NT.

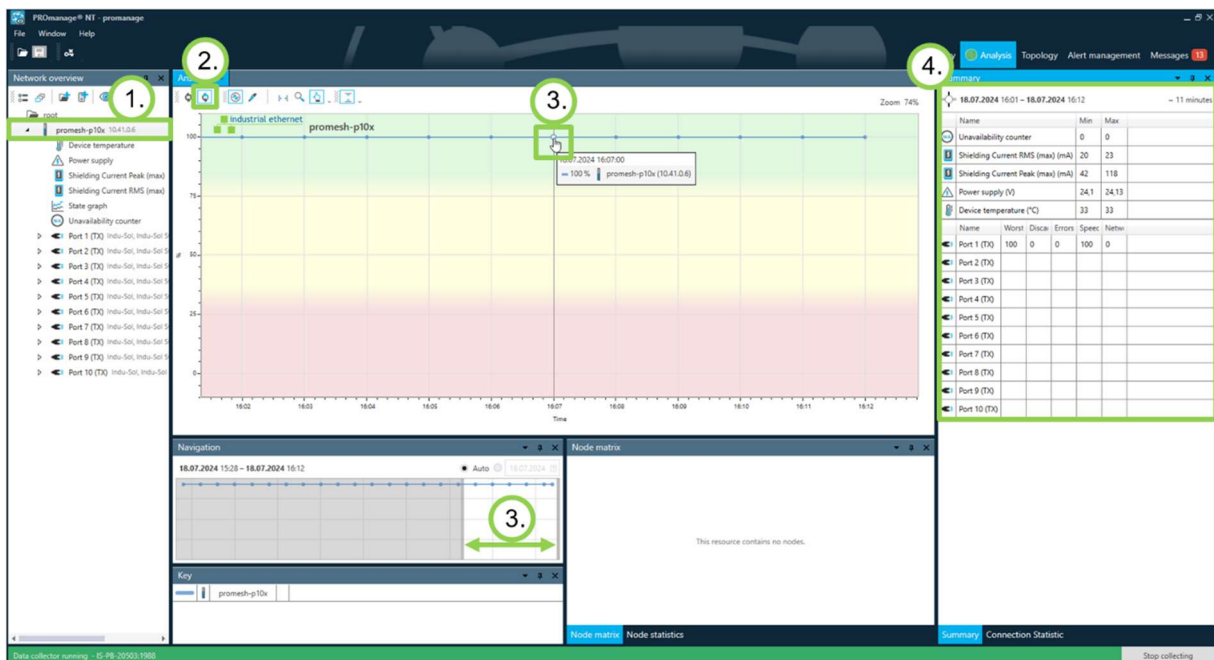
1. Opening the perspective Analysis
2. Opener for device management
3. Scan manually
4. Select device type
5. IP address
6. OK
7. Set up
8. Close



4.3 Check / analyze recording

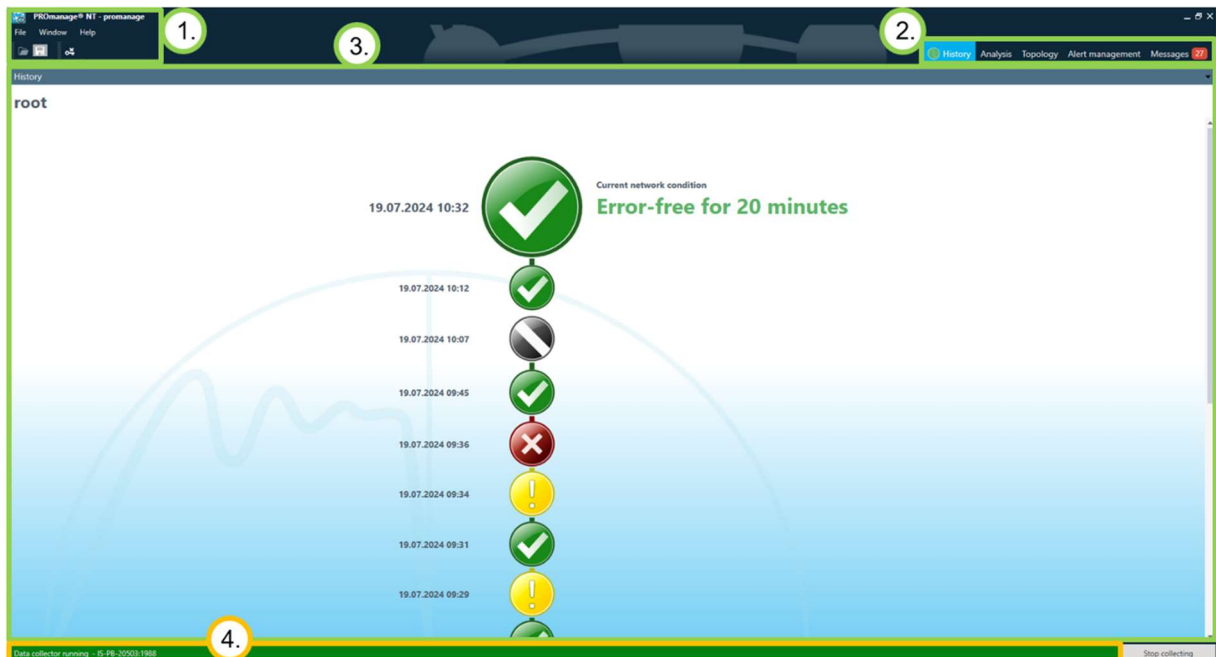
PROmanage® NT displays the quality of the monitored network in the form of a status graph. After setting up a device, the first data point is visible after one minute:

1. Selection of the configured device
2. Automatic update
3. Select data point or time period
4. Check network data



5 Program structure

The PROmanage® NT display is divided into four areas.



1. Menu bar: Configuration of the PROmanage® NT system
2. Perspective bar: Selection of the program section to be operated
3. Perspective: Presentation of the selected program section
4. PROmanage® NT data collector: Status display of the monitoring status

The core element of PROmanage® NT operation is the perspectives:

Chronicle

Simple visualization of the current and historical network status

Analysis

Detailed display of network-relevant parameters for evaluating quality

Topology

Display of the network structure, for validation of the devices and localization of changes or faults in the network.

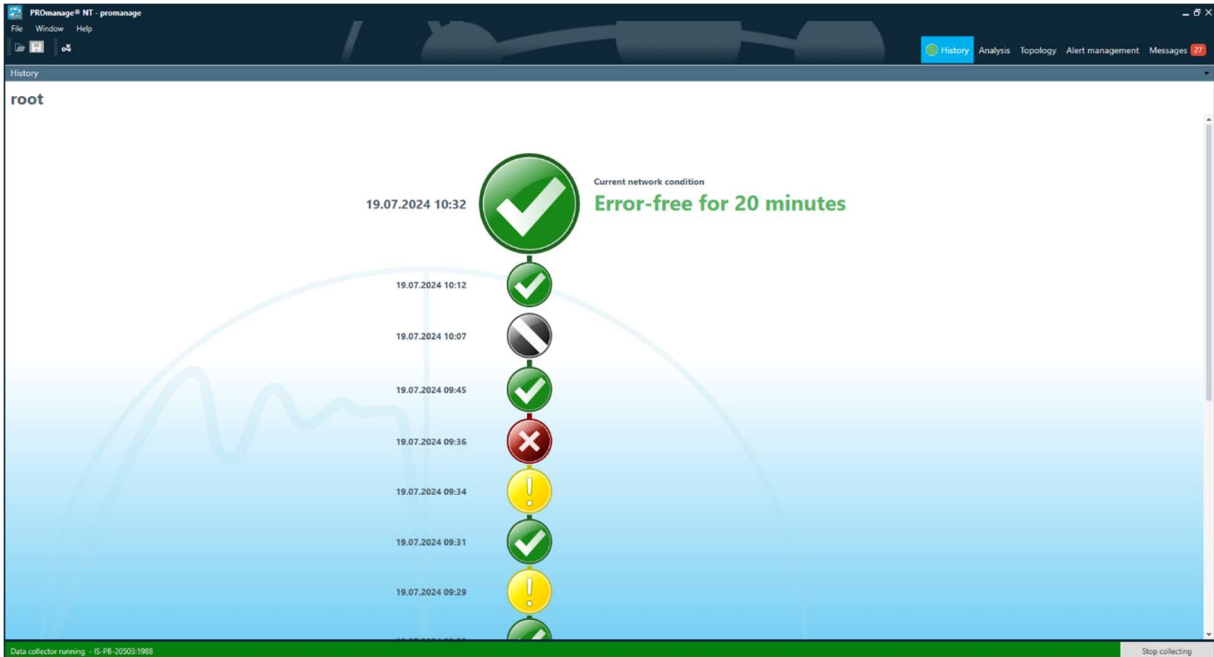
Alarm management

Creation of actions when defined threshold values are exceeded

6 Chronicle

6.1 Representation

The history shows the current and historical network status with the traffic light colors green, yellow and red. The devices to be monitored must first be configured in the device management (11.6 Device management) beforehand.



Each icon describes the network quality up to that point in time.

Valuation the Network quality	> 75%	75% > 35%	< 35%	
Color symbol				
Network status	Good	Questionable (usually without disrupting production)	Bad (usually with disruption to production)	None data

This color is also used as the background color in the status graph in the Analysis perspective. The icons are not displayed in the Analysis perspective.



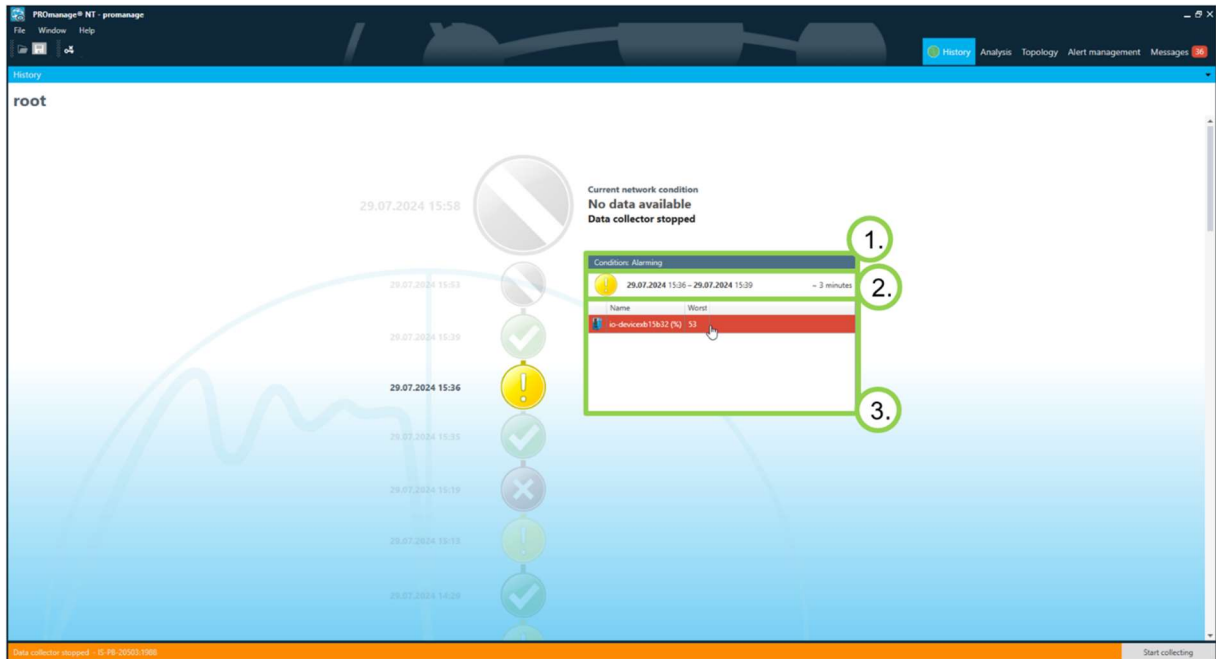
To influence when the status of the network changes to a different range, the device management (11.6 Device management), in the Monitoring window, the status graph calculation can be adjusted. The limits of the color gradient (green: > 75%, yellow: 75% > 35%, red: < 35%) are fixed by default and cannot be configured.

6.2 Operation

Click on one of the icons to open a list view. This contains

1. State of the network
2. Period in which the condition was pending
3. Device concerned (worst first)

Double-click on the device to open the Analysis perspective (7 Analysis).



7 Analysis

7.1 Representation

All records retrieved from the decentralized data collectors and stored in the PROmanage® NT database can be displayed in the Analysis perspective. This perspective is used for analyzing and troubleshooting.



1. Network overview (7.2 Network overview)

- By creating folders, a directory is created that groups and structures the devices to be monitored.
- Selection of the folders or devices whose status is displayed in the view.

2. View (7.3 View)

- Representation of the stored network data as data points, which are summarized in a graph describing the status.

3. Summary (7.4 Summary)

- Indication of the period selected for the summary
- When a folder is selected, shows the devices that have been grouped together in a folder and their worst value or
- When a device is selected, shows the relevant network parameters, their values and the worst value first

4. Navigation overview (7.5 Navigation overview)

- Selection of the time period to be displayed in the view

5. Participant matrix (7.6 Participant matrix)

- Display of the participants belonging to the network (only available if provided by the device - e.g. PROFIBUS-INspector NT, PROFINET-INspector NT, ...)

6. Legend

- Assignment of the color of the graph, with multiple selection (Ctrl + left-click in the network overview on folders or devices)

Arrangement of the viewing window

The typical Windows window options are available and are referred to as *views* in PROmanage® NT. Each *view* can be detached from the display grid, rearranged, moved and scaled. Closed views can be reopened via the *menu bar > Window > Show view* and the display can be reset to the default setting via the *menu bar > Window > Reset perspective*.

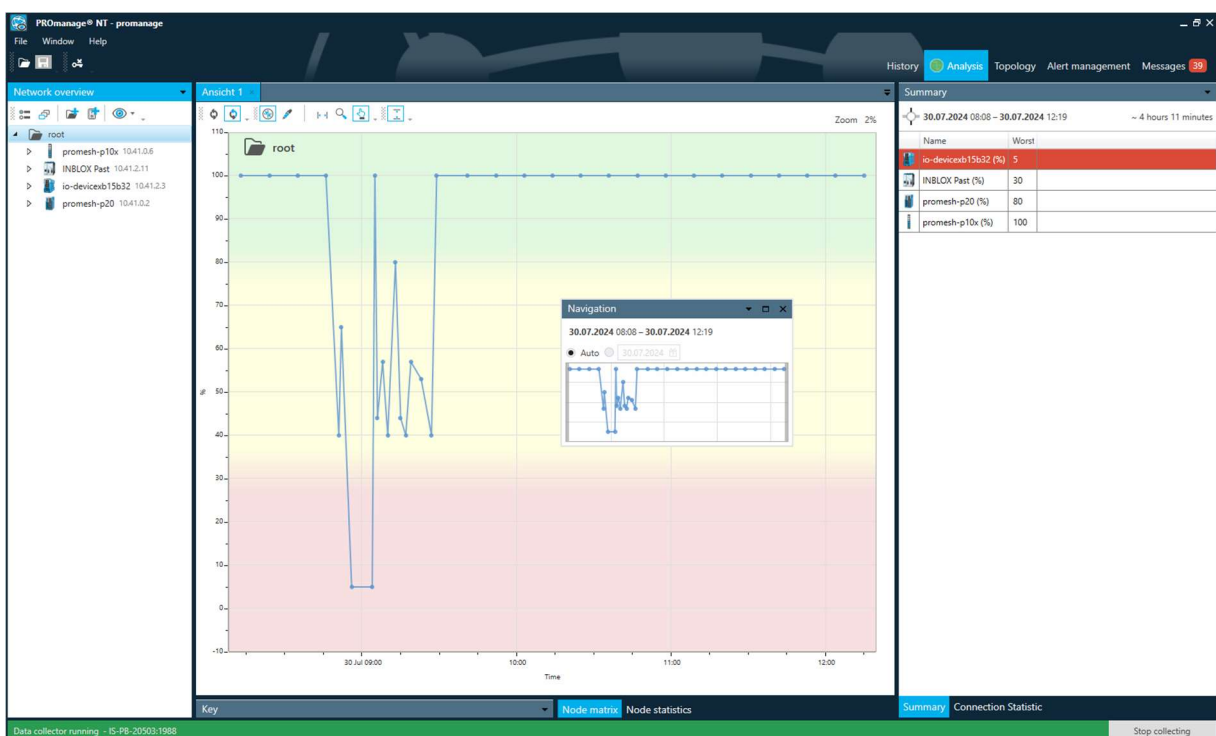
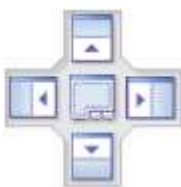


Illustration 23 Window view

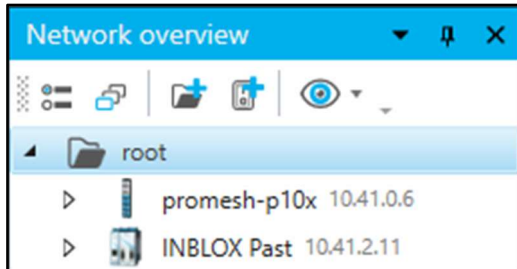


Icon 1: Window positioning

If you drag one window over another, an icon appears to position the window at an edge or to merge the two into a group.





7.2 Network overview

The network overview provides a structured display of the devices to be monitored in the form of a directory tree.

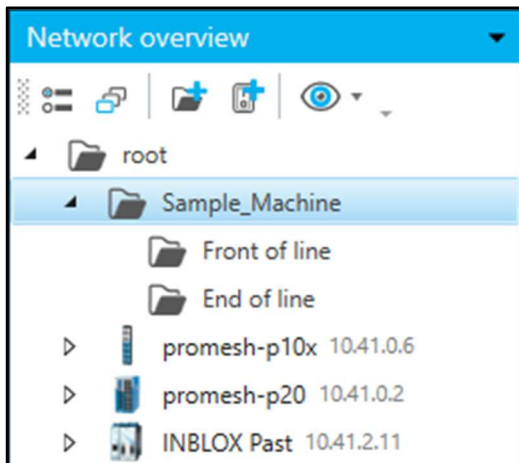


Icons

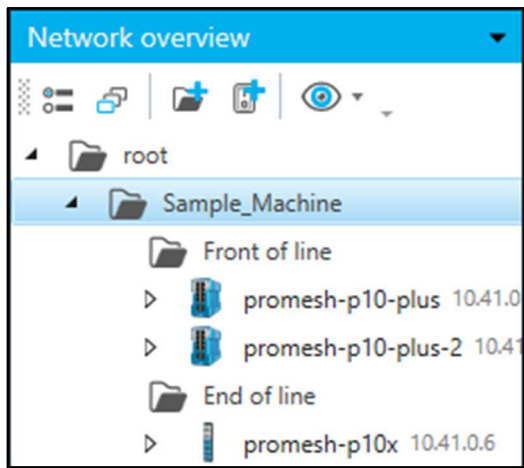


-  Switch between hierarchical view and grouped view (network type)
-  Reduce device tree
-  Opens the device management (11.6 Device management)
-  Creates a "New folder" in the network overview

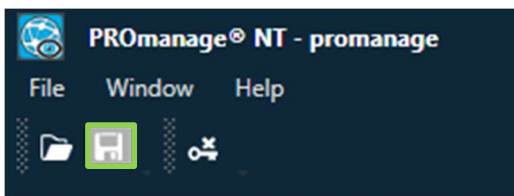
Order



The overview can be structured by creating folders. Right-click on folders or devices to rename them.



Folders and devices can be moved to a different position (sequence) or to a different folder (grouping) using *drag and drop*.



Changes must be finalized and saved

Selection

The *drop-down* menus for folders and devices are used to display down to the lowest parameter. The selection made here is loaded in the *view*. Multiple selection of up to four units is possible with *Ctrl + left-click*.

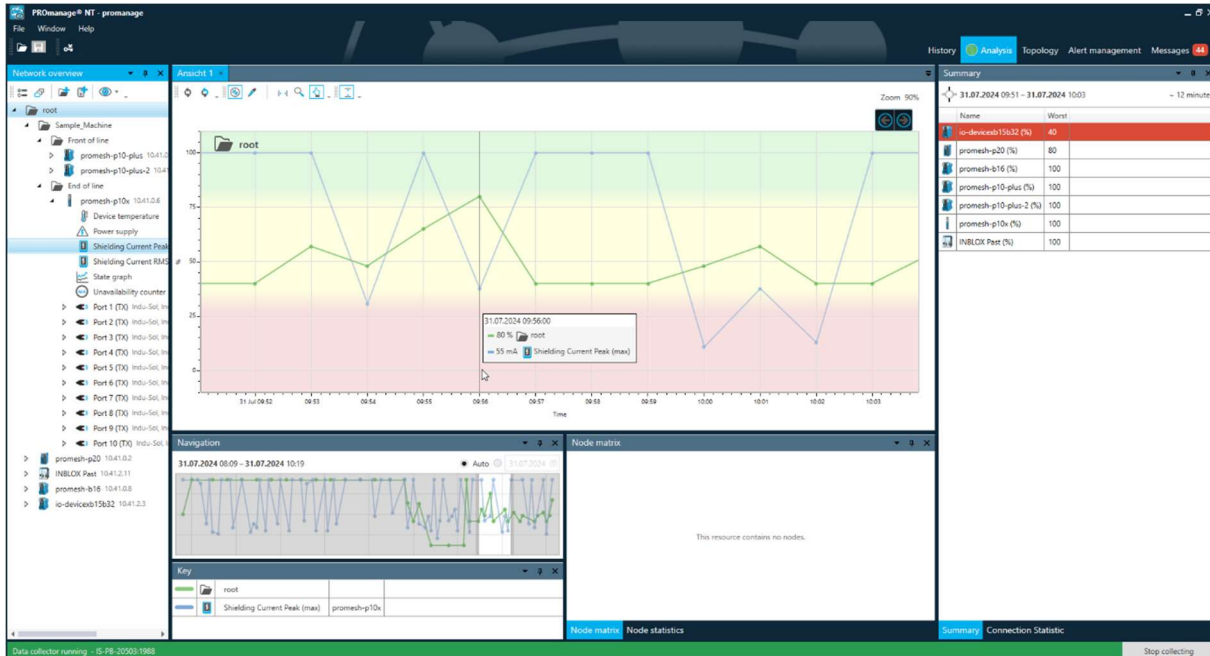


Illustration 24: Selection in network overview

Right-click on a device or folder to open a dialogue box.

To website

Opens a web browser and attempts to call up the IP address of the device

New folder

Creates a new folder to structure the view

Open device management

Opens the device management (11.6 Device management)

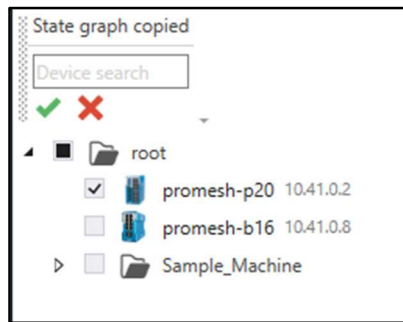
Delete device

Deletes the device completely from the list of devices to be monitored

Rename

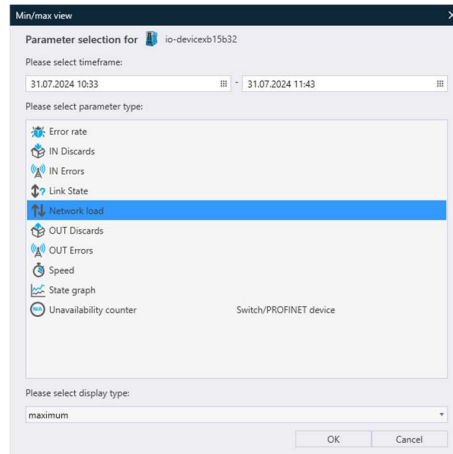
Changes the display name

Copy state graph settings



Copies the calculation basis of the state graph (11.6.4 Monitoring). A view then opens in which you can select which devices should receive the same settings.

Min/max view



Opens a window for selecting a parameter and time period. Press OK to check all underlying parameters and, depending on the selection, the highest values are displayed.

The legend shows which value and port is displayed.

7.3 View








The data points of the selected folder or device are displayed in the *view* and connected to form a graph. In the summary displayed next to it (7.4 Summary), the devices belonging to the folder or parameters belonging to the device are displayed depending on the selection. The time reference of the summary depends on whether a *point selection* is made (Point selection). If no point is selected, the entire graph displayed is used for the evaluation. How strongly the status graph reacts to changes can be determined in the status graph calculation (State graph calculation) can be set.



Illustration 25: View

Icons



-  One-time update of all displayed data
-  Continuous updating of the data as soon as the PROmanage® NT data collector writes new values to the PROmanage® NT database
-  Navigation in the view (Navigation in the view)
-  Marker options (Marker)
-  Reset the zoom to the entire period according to the navigation overview
-  Zoom option
-  Point selection

Analysis

Navigation in the view

Options:

Left-click and hold > Move the graph (horizontal axis)

Scroll mouse wheel > Zoom in / out of the graph

Point selection > Data point selected / not selected > Display in summary

Marker

Markers are used to add further information to the displayed graph. The marker is linked to the time at which it was created.



Activate the marker function (automatic update is deactivated)



Showing and hiding the markers



Removing markers



Selecting the marker type

Example: Marking an event in the status graph.

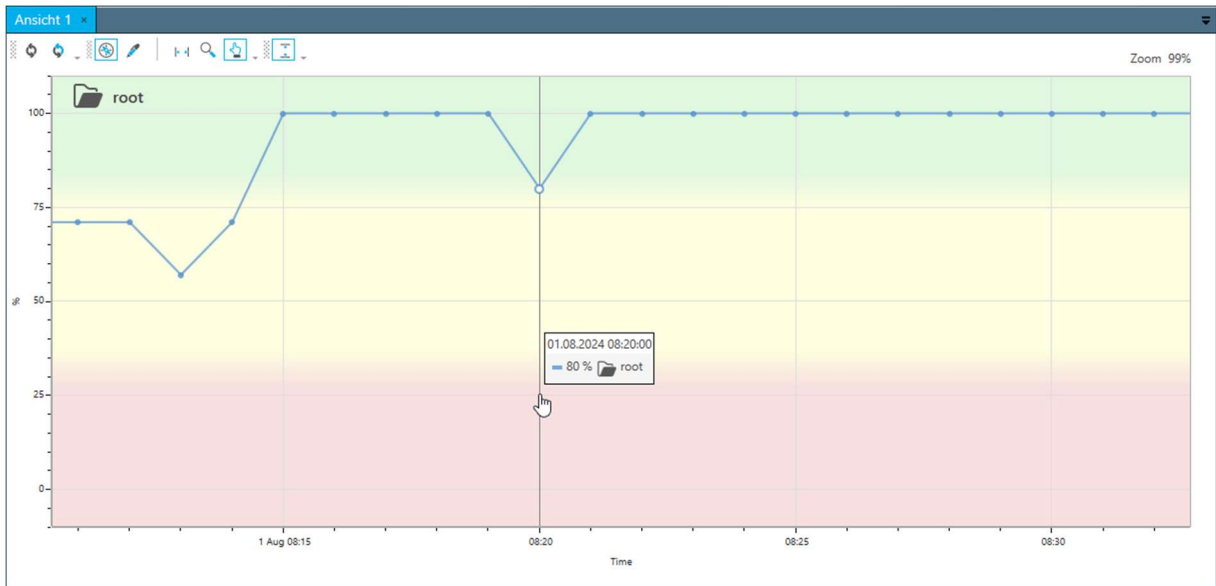


Illustration 26: Example marker

Analysis

Point selection

If a point is selected, the exact values of the vertical scale are displayed next to the cursor. The selection also determines the display in the summary.

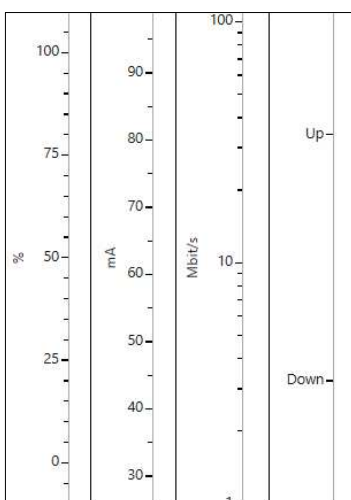


Axes

The horizontal axis always represents the time scale and is given in minutes, hours or days.



Depending on the selection in the *navigation overview*, the vertical axis displays either a quality value in per cent or the specific value of the selected element as a summary of several summarized parameters.

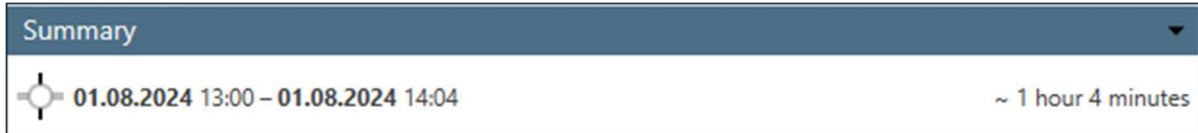


7.4 Summary

The summary shows all parameters that are summarized in the view to form a data point and form the graph. Which values are displayed depends on which element is selected in the *network overview* (7.2 Network overview) is selected and which time range is displayed in the *view*.

Time domain

If no individual data point is selected, the values of all data points are summarized and listed. The top line shows which period is actually shown in the table.



When a data point is selected, the values at this point in time are displayed. In this case, the time period is one minute.



Representation of the values

Which values are displayed in the table depends on the selection in the *network overview*. The worst value is displayed first and in red in the table.

Example:

PROmesh P10X Switch

Summary						
08.08.2024 12:00 – 08.08.2024 13:00 ~ 1 hour						
Name	Min	Max				
Shielding Current Peak (max) (mA)	27	118				
Power supply (V)	23,77	23,79				
Power supply 2 (V)	0	0				
Unavailability counter	0	0				
Shielding Current RMS (max) (mA)	16	21				
Device temperature (°C)	38	38				
Name	Worst	Disca	Errors	Spec	Netw	
Port 1 (TX)	100	0	0	100	0,02	
Port 2 (TX)	100	0	0	100	0,4	
Port 3 (TX)						
Port 4 (TX)						
Port 5 (TX)	100	0	0	100	0,37	
Port 6 (TX)						
Port 7 (TX)						
Port 8 (TX)						
Port 9 (TX)						
Port 10 (TX)						

Example:

PROFINET INSpektor® NT

Summary			
08.08.2024 10:35 – 08.08.2024 11:05 ~ 30 minutes			
Name	Min	Max	
Unavailability counter	0	1	
High priority alert	0	0	
Low priority alert	0	0	
Bus node failure	0	0	
Releases	0	0	
Bus node restart	0	0	
Errors	0	0	
Telegram gaps	0	0	
Load ratio (Profinet / 1 IP)	1	500	
Telegram overtakes	0	0	
Telegram jitter (%)	6	8	
Device temperature (°C)	53	53	
Broad and Multicast telegrams	56	77	
Update rate (max) (ms)	130,51	138,69	
Update rate (min) (ms)	2	2	
Network load (max) (%)	0	0	
Network load (%)	0	0	

Example:

Folder

Summary			
08.08.2024 11:30 – 08.08.2024 11:55 ~ 25 minutes			
Name	Worst		
promesh-p10x (%)	87		
promesh-p10-plus (%)	100		
promesh-p10-plus-2 (%)	100		

Illustration 27: PROmesh

Illustration 28: PROFINET
INSpektor® NT

Illustration 29: Folder

Selection

Double-click on a value to open a new *view* in which this value is displayed as a graph.

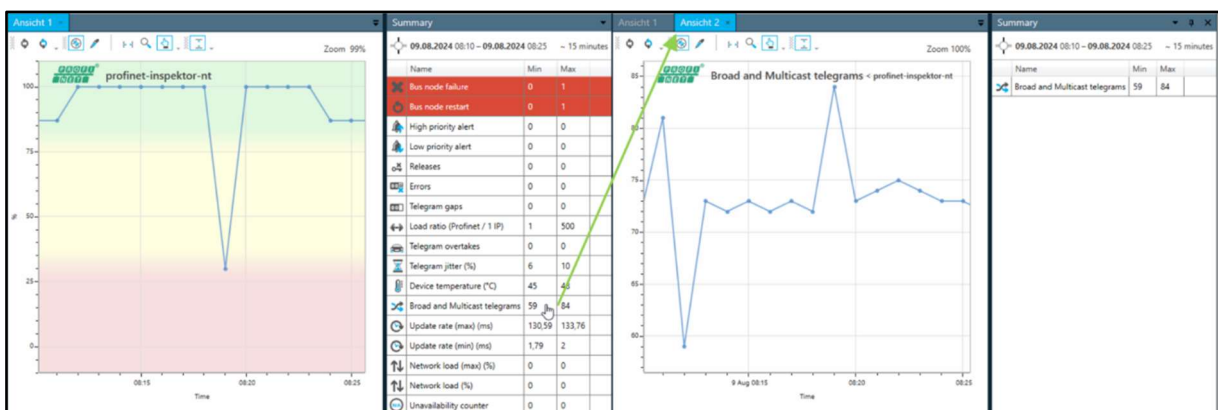


Illustration 30: Selection of a value

7.5 Navigation overview

The navigation overview is used to set the time range to be displayed and evaluated. A maximum time range of 7 days is displayed. The time can be set automatically or manually (selection in the top right window).

The selection "Auto." (Automatic) sets the time range so that the last recorded data point is displayed and up to 7 days before that. If there are fewer data points available, the time range is automatically selected shorter according to the available data points.

When setting manually, a date can be selected using the keyboard or the calendar symbol. This date then represents the center of the time range. Grey horizontal lines are visible on the left and right, which can be moved by dragging and holding the left mouse button. In the *View* view (7.3 View) and *Summary* (7.4 Summary), the time range that is shown in white in the navigation overview is always displayed.

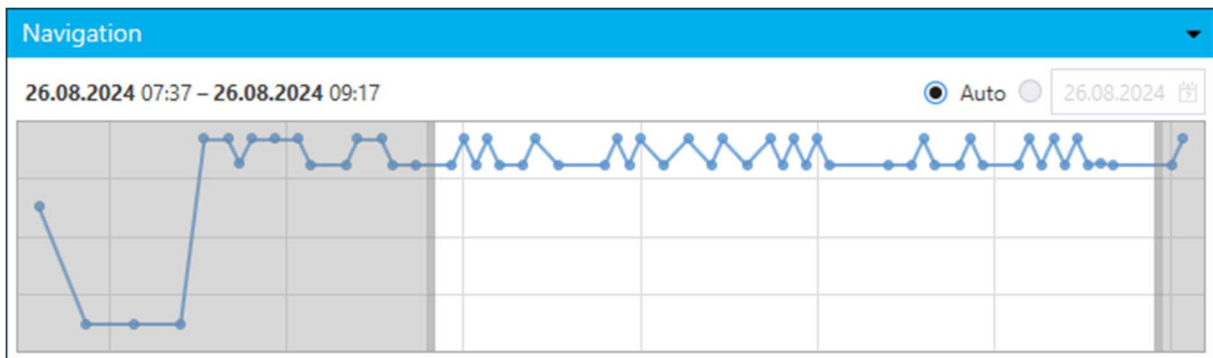


Illustration 31: Navigation overview

7.6 Participant matrix

The *device matrix* is only available for devices that provide additional information on monitored devices (e.g. from PROFIBUS-INspektor NT, PROFINET-INspektor NT, ...).

The overview shows the addresses that are monitored by the device. The device matrix of the PROFINET INspektor® NT is shown as an example:

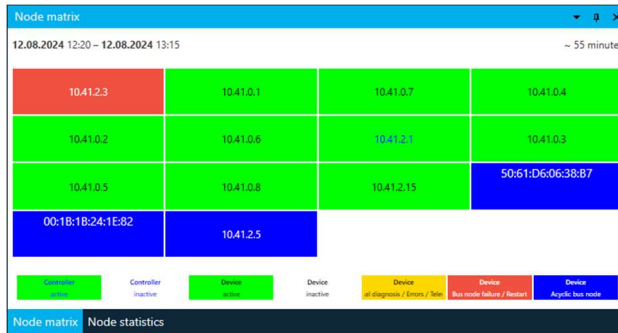


Illustration 32: Participant matrix PROFINET INspektor® NT

The condition of the devices can be read from the coloring of the participants.

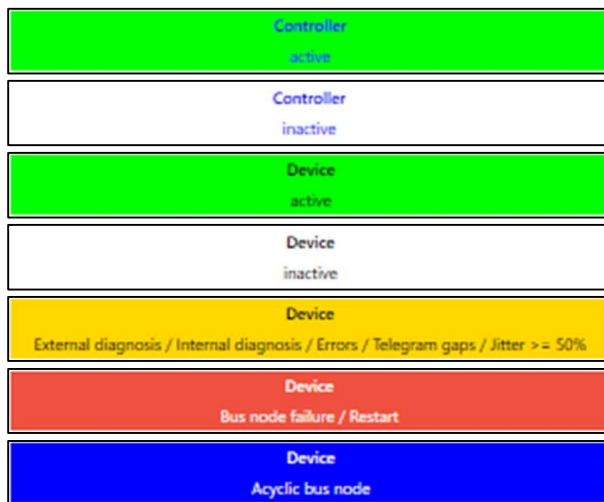


Illustration 33: Colouring PROFINET INspektor® NT

The detailed information is displayed by moving the mouse cursor over the participants.

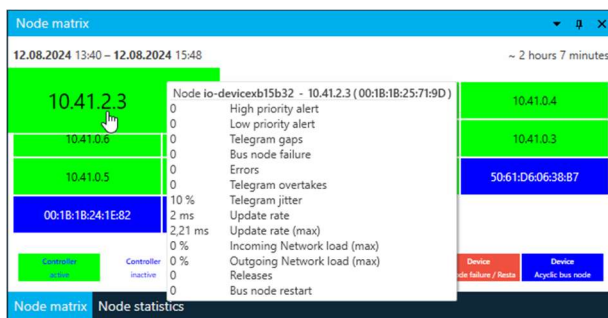


Illustration 34: Details PROFINET INSpektor® NT

Participant statistics

The participant statistics are a *view* (Arrangement of the viewing window), which in the default setting is linked to the *subscriber matrix* (7.6 Participant matrix) in the default setting. This can be displayed by selecting it in the bottom line of the group.

A parameter is selected in the upper section via a *drop-down* menu. Below this, the monitored participants are listed, their values and a bar chart are displayed. This *view* shows which subscriber is most frequently affected or has the greatest deviation.

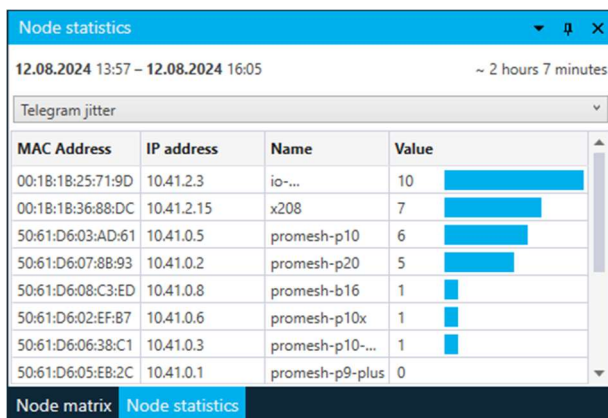


Illustration 35: Participant statistics PROFINET INSpektor® NT

7.7 Legend

By selecting up to four folders, devices or parameters in the *network overview* (7.2 Network overview), their graphs can be displayed in the *view* (7.3 View) can be displayed on top of each other. This makes it possible to recognize connections between graphs.

The legend describes which color is assigned to which selection.

By additionally activating the *point selection* (Point selection) further improves the clarity and comprehensibility of the correlations between the values.

With multiple selection, you can choose between the graphs in the *view* using the arrow buttons at the top right. The selection determines which graph moves to the foreground and is displayed in the summary.

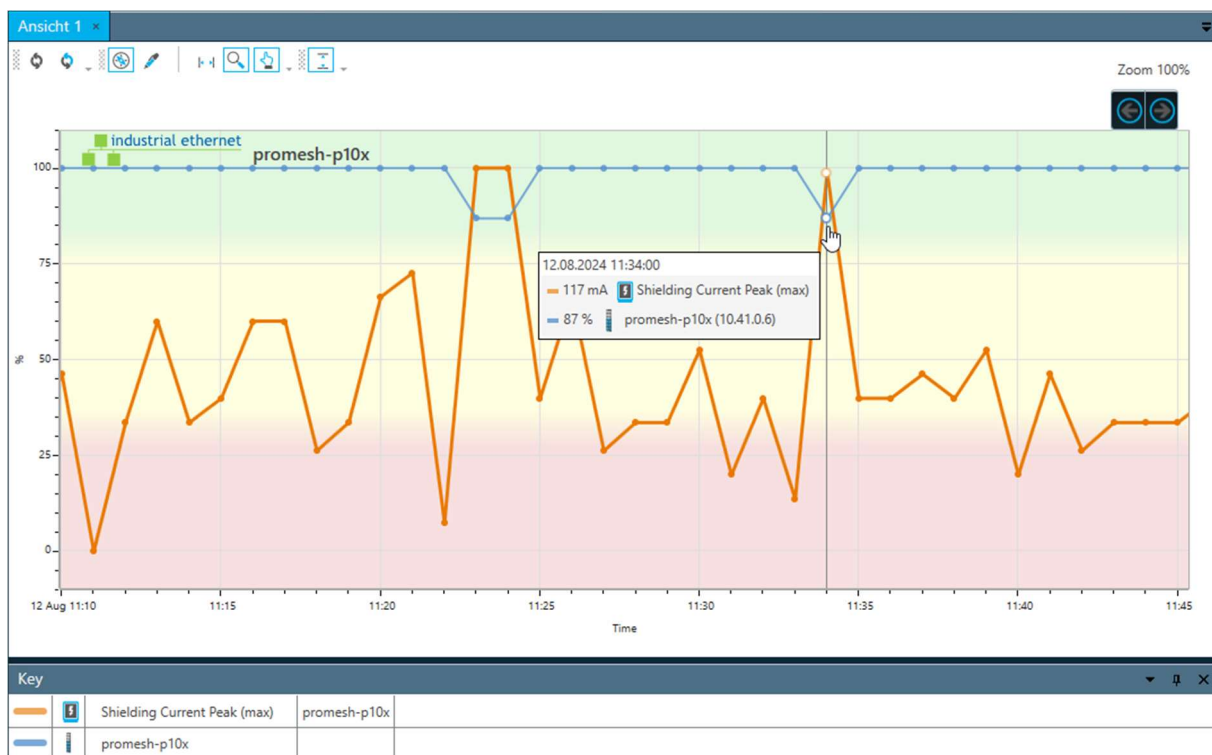


Illustration 36: Legend

8 Topology

8.1 Representation

The *Topology* perspective is used to visualize the current, actual network structure. The topology is supplemented with network-relevant information that helps to localize anomalies quickly. The topology cannot be determined independently by PROmanage® NT. It can either be imported manually (topo file from PROscan® Active V2 or PROFINET INspektor® NT) or continuously queried by a PROFINET INspektor® NT or PROscan® service.

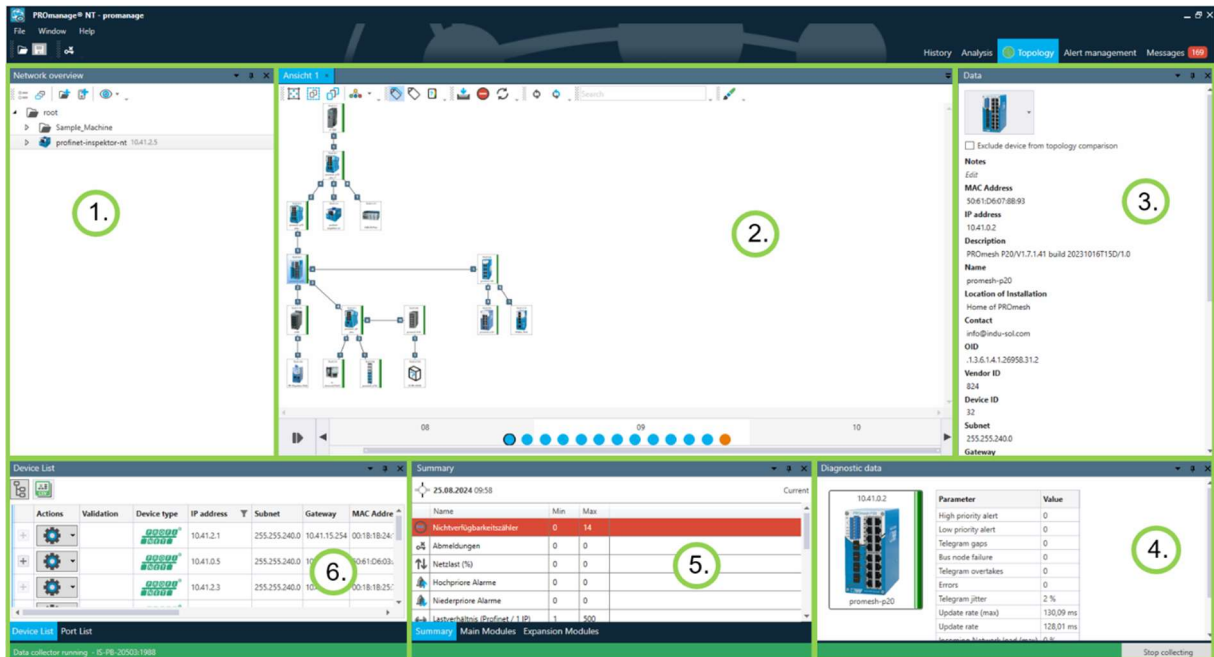


Illustration 37: Topology

1. Network overview (8.2 Network overview)
 - Same presentation as in *analysis* (7.2 Network overview)
 - Topologies are always assigned to an element of the *network overview*
2. View (8.3 View)
 - Displaying and editing the topology
 - Visualization of changes and events in the topology
 - Timeline for displaying the scan times
3. Data (add links for subitems)
 - When selecting a device: Display of the device information
4. Diagnostic data
 - When selecting a device: Display of the information of the PROFINET INspektor® NT that monitors this device

5. Summary
 - Information about the PROFINET INSpektor® NT
6. Device list
 - Tabular listing of detailed device information

Arrangement of the viewing window

Identical, as in *analysis* (Arrangement of the viewing window).

8.2 Network overview

The network overview is identical to the *analysis* (7.2 Network overview). In the *Topology* perspective, the network overview is used to assign the topologies. A manually imported topology can be assigned to any element. Each PROFINET INSpektor® NT or PROscan® service can be assigned a topology via the device management (11.6 Device management) so that an available topology is retrieved at regular intervals.

8.3 View

The topology is displayed and edited in the *view*. If diagnostic data from the PROFINET INSpektor® NT is available for PROFINET IO devices, a color bar indicates the device status.

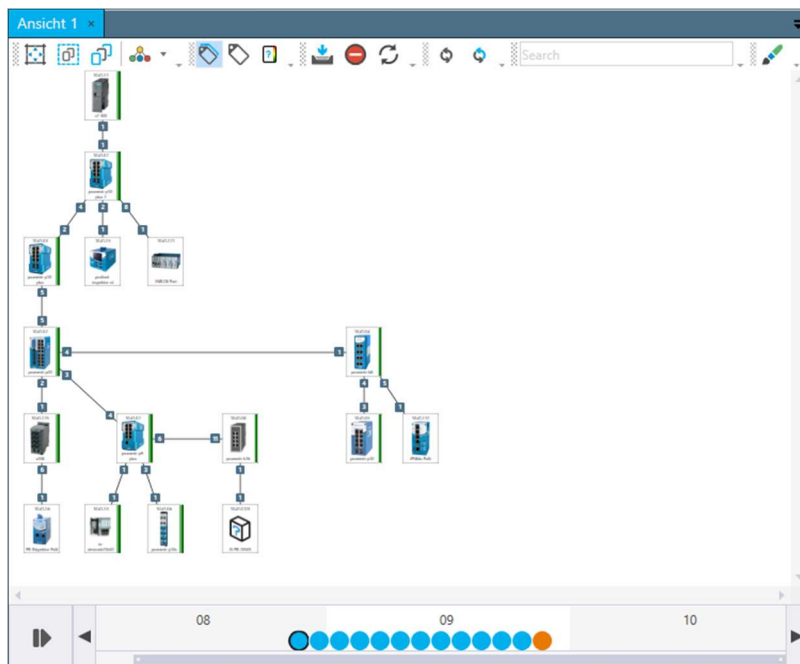
















Illustration 38: Topology view

Icons - Menu



-  Fitting topology into screen
-  Multiple selection with selection frame (hold down the SHIFT key)
-  Multiple selection with mouse click (hold down the CTRL key)
-  Rearrange topology (tree structure, circular tree structure, circle)
-  Show/hide difference to (previous) reference topology
-  Set current topology as reference for comparison
-  Condition assessment from INspektor data (period selection)
-  Import topology
-  Remove topology
-  Rescan topology (immediate topology scan by PROFINET INspektor® NT)
-  Refresh (loads the last saved topology into the *view*)
-  Update automatically (as soon as a new topology is available)
-  Search for all values in the device list
-  Switch editing mode on/off

Icons - Topology

	Active" status, no events (evaluated by PROFINET INspektor® NT)
	Warning" status, critical events (evaluated by PROFINET INspektor® NT)
	Error" status, failures detected (evaluated by PROFINET INspektor® NT)
	Port change recognised
	Connection interrupted
	Connection newly recognised
	Device newly recognised

Icons - Timeline

- Topology data point
- Selected/displayed topology
- Reference topology
- Auto-play topology (every 10 seconds)
- Select next/previous topology data point
- Zoom in timeline

Topology

Order

The devices in the topology can be reorganized using *drag'n drop*. The arrangement of the topology is transferred to all topology data points.

Right-click on a device to select it as the *root node* and then click on the *Rearrange topology* icon to automatically rearrange the topology.

In edit mode, additional *frames*, *texts* and a *background image* can be added to improve clarity.

Right-click on device

Right-click on a device to open a drop-down menu.

Go to	selects the device in the <i>network overview</i>
Go to the analysis	opens this device in the perspective <i>analysis</i>
Go to alarm management	opens this device in the <i>alarm management</i> perspective
Set as root node	shows this device at the top, when selecting <i>Rearrange topology</i>

If the device is not entered in the network overview, only the *Set as root node* selection is available.

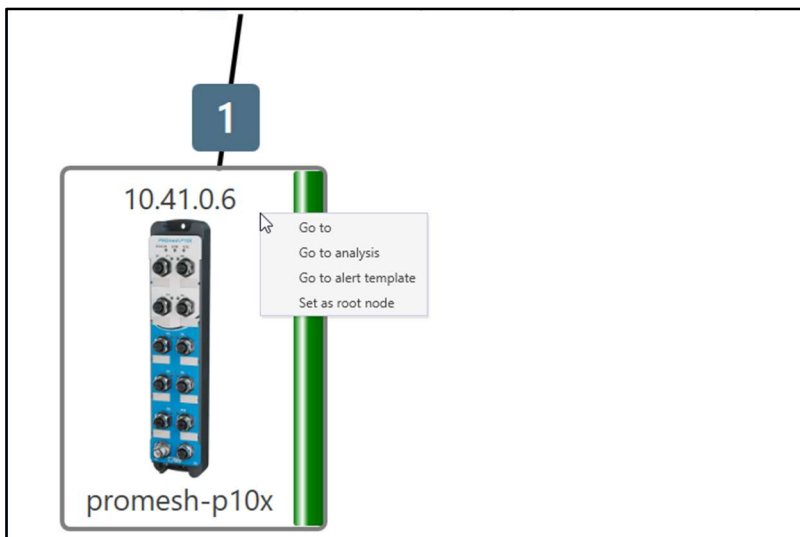


Illustration 39: Right-click on device

8.4 Data

When a device is selected in the *view*, all device-relevant information is displayed in the *Data* view.

A different image for the device can be selected via the *drop-down* menu next to the device image. If there is no suitable device in the image database, a new image can be imported via the menu bar *File* → *Image rule management* (11.7 Image rule management).

By selecting *Exclude device from topology comparison*, this device is no longer displayed in red if it is no longer present in a later topology data point.

If changes in the port assignment are detected when comparing the displayed and reference topology, an additional information field appears.

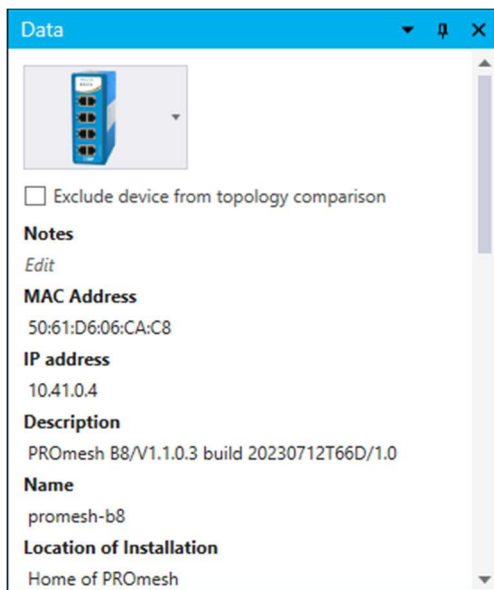


Illustration 40: Topology Devices Data

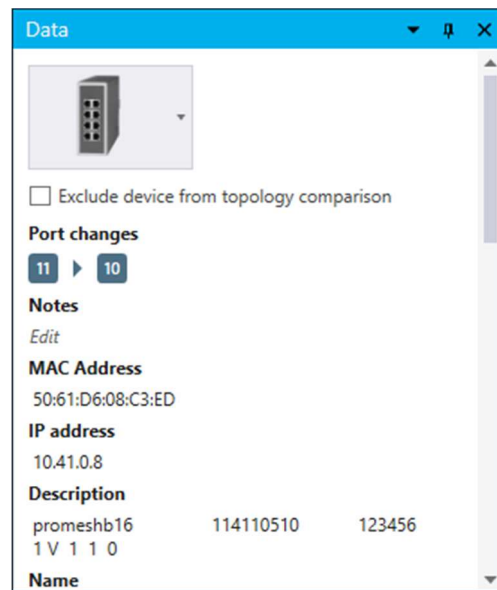
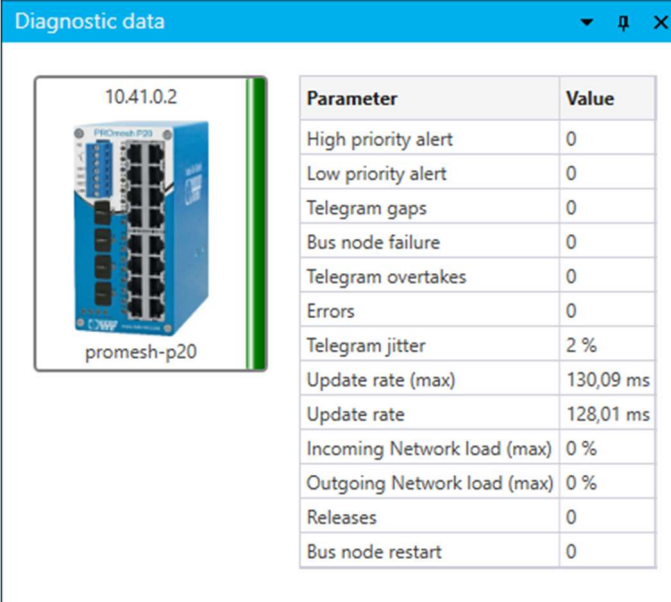


Illustration 41: Topology Devices Data Change

8.5 Diagnostic data

When a device is selected in the *view*, PROFINET-specific parameters are displayed in the *Diagnostic data* view. The data can only be displayed if the topology contains data from the PROFINET INspector® NT.

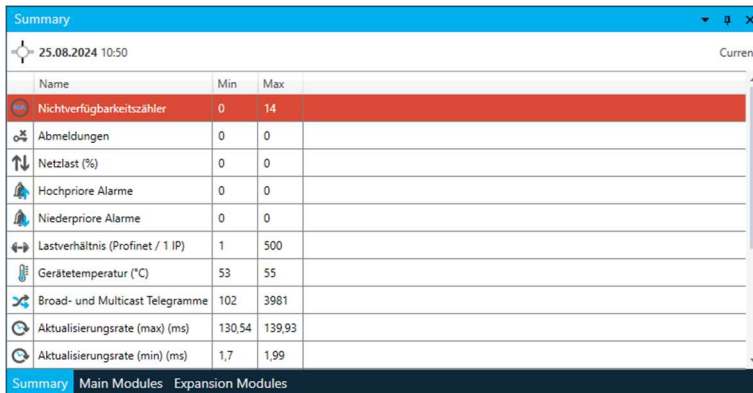
The screenshot shows a window titled "Diagnostic data" with a blue header bar. On the left, there is a device image of a blue PROFINET switch labeled "promesh-p20" with the IP address "10.41.0.2" above it. On the right, there is a table with two columns: "Parameter" and "Value".

Parameter	Value
High priority alert	0
Low priority alert	0
Telegram gaps	0
Bus node failure	0
Telegram overtakes	0
Errors	0
Telegram jitter	2 %
Update rate (max)	130,09 ms
Update rate	128,01 ms
Incoming Network load (max)	0 %
Outgoing Network load (max)	0 %
Releases	0
Bus node restart	0

Illustration 42: Topology diagnostic data

8.6 Summary

The *summary* shows network-relevant parameters. The data is presented in the same way as in the *Analysis* perspective in the *Summary* view (7.4 Summary). Therefore, the selection in the *network overview* (folder, device, ...) determines which data is displayed. The time from the currently displayed topology to the previous one is automatically set as the time period for the display. The evaluated time period can be read in the second line of the *view*.

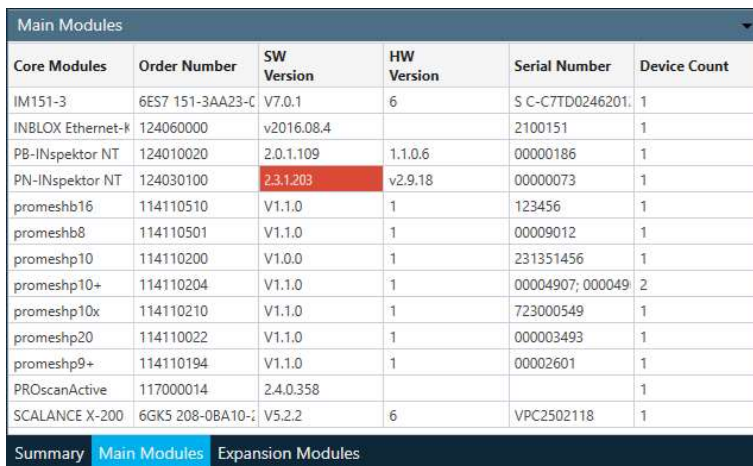


Name	Min	Max
Nichtverfügbarkeitszähler	0	14
Abmeldungen	0	0
Netzlast (%)	0	0
Hochpriorie Alarme	0	0
Niederpriorie Alarme	0	0
Lastverhältnis (Profinet / 1 IP)	1	500
Gerätetemperatur (°C)	53	55
Broad- und Multicast Telegramme	102	3981
Aktualisierungsrate (max) (ms)	130,54	139,93
Aktualisierungsrate (min) (ms)	1,7	1,99

Illustration 43: Summary (topology)

Main modules

The *Main modules* view is *summarized* into a group in the default setting and can be selected in the bottom bar. It is used to display all relevant information required to recognize differences in the versions of identical devices. Devices of the same type but with different software versions are highlighted in red.

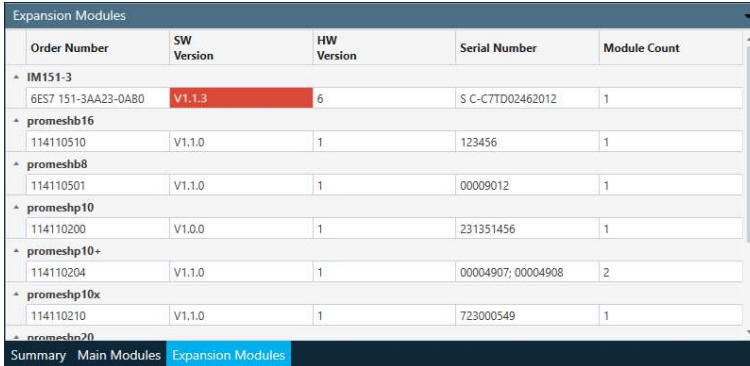


Core Modules	Order Number	SW Version	HW Version	Serial Number	Device Count
IM151-3	6ES7 151-3AA23-C	V7.0.1	6	S C-C7TD0246201	1
INBLOX Ethernet-k	124060000	v2016.08.4	1.1.0.6	2100151	1
PB-INspektor NT	124010020	2.0.1.109	1.1.0.6	00000186	1
PN-INspektor NT	124030100	2.3.1.203	v2.9.18	00000073	1
promeshb16	114110510	V1.1.0	1	123456	1
promeshb8	114110501	V1.1.0	1	00009012	1
promeshp10	114110200	V1.0.0	1	231351456	1
promeshp10+	114110204	V1.1.0	1	00004907; 000049	2
promeshp10x	114110210	V1.1.0	1	723000549	1
promeshp20	114110022	V1.1.0	1	000003493	1
promeshp9+	114110194	V1.1.0	1	00002601	1
PROscanActive	117000014	2.4.0.358	6	VPC2502118	1
SCALANCE X-200	6GKS 208-0BA10-	V5.2.2	6	VPC2502118	1

Illustration 44: Main modules (topology)

Extension modules

The *Extension modules* view is also used to recognize differences in versions of identical devices and refers to modules that are subordinate to the main module.

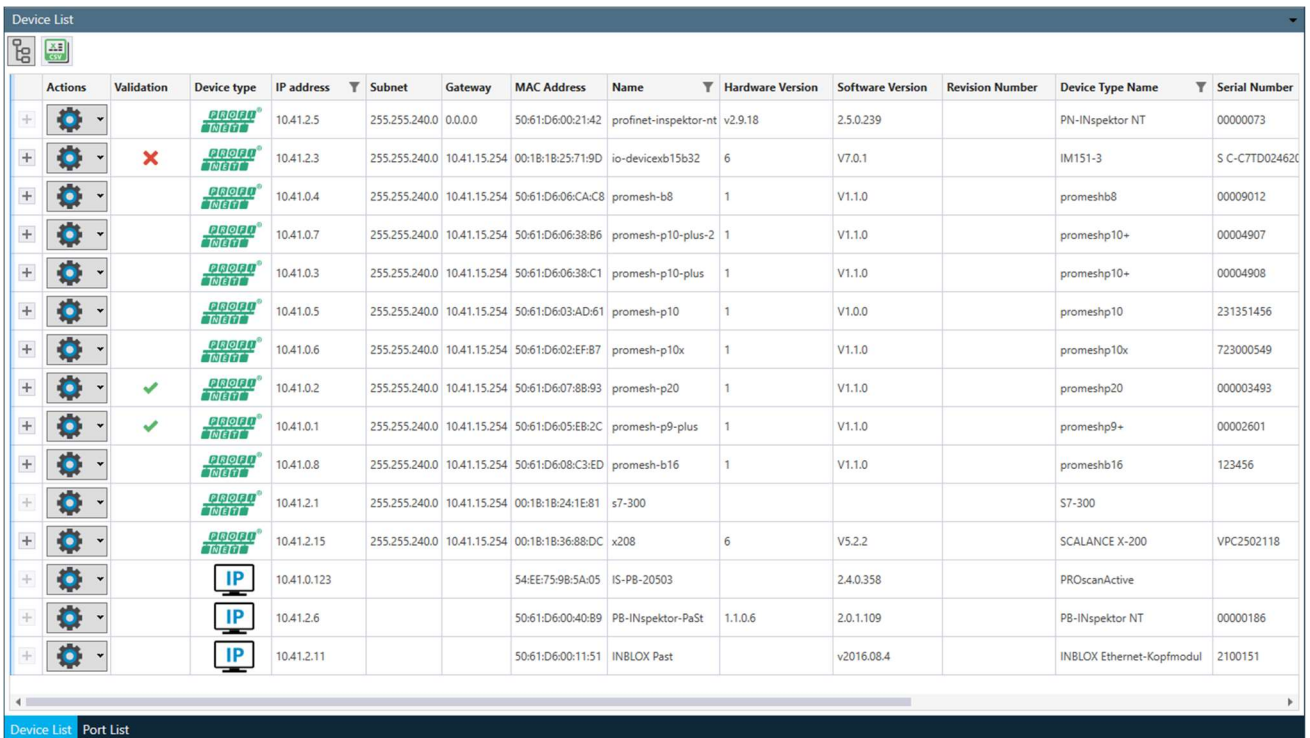


Order Number	SW Version	HW Version	Serial Number	Module Count
+ IM151-3				
6E57 151-3AA23-0A80	V1.1.3	6	S C-C7TD02462012	1
+ promeshb16				
114110510	V1.1.0	1	123456	1
+ promeshb8				
114110501	V1.1.0	1	00009012	1
+ promeshp10				
114110200	V1.0.0	1	231351456	1
+ promeshp10+				
114110204	V1.1.0	1	00004907; 00004908	2
+ promeshp10x				
114110210	V1.1.0	1	723000549	1
+ promeshp20				

Illustration 45: Summary (topology)

8.7 Device list

In the *device list*, all devices contained in the topology are listed in a table and their device-specific information is listed.



Actions	Validation	Device type	IP address	Subnet	Gateway	MAC Address	Name	Hardware Version	Software Version	Revision Number	Device Type Name	Serial Number
+			10.41.2.5	255.255.240.0	0.0.0.0	50:61:D6:00:21:42	profinet-inspektor-nt	v2.9.18	2.5.0.239		PN-INspektor NT	00000073
+	✗		10.41.2.3	255.255.240.0	10.41.15.254	00:18:1B:25:71:9D	io-deviceb15b32	6	V7.0.1		IM151-3	S C-C7TD02462012
+			10.41.0.4	255.255.240.0	10.41.15.254	50:61:D6:06:CA:C8	promesh-b8	1	V1.1.0		promeshb8	00009012
+			10.41.0.7	255.255.240.0	10.41.15.254	50:61:D6:06:38:B6	promesh-p10-plus-2	1	V1.1.0		promeshp10+	00004907
+			10.41.0.3	255.255.240.0	10.41.15.254	50:61:D6:06:38:C1	promesh-p10-plus	1	V1.1.0		promeshp10+	00004908
+			10.41.0.5	255.255.240.0	10.41.15.254	50:61:D6:03:AD:61	promesh-p10	1	V1.0.0		promeshp10	231351456
+			10.41.0.6	255.255.240.0	10.41.15.254	50:61:D6:02:EF:B7	promesh-p10x	1	V1.1.0		promeshp10x	723000549
+	✓		10.41.0.2	255.255.240.0	10.41.15.254	50:61:D6:07:88:93	promesh-p20	1	V1.1.0		promeshp20	000003493
+	✓		10.41.0.1	255.255.240.0	10.41.15.254	50:61:D6:05:EB:2C	promesh-p9-plus	1	V1.1.0		promeshp9+	00002601
+			10.41.0.8	255.255.240.0	10.41.15.254	50:61:D6:08:C3:ED	promesh-b16	1	V1.1.0		promeshb16	123456
+			10.41.2.1	255.255.240.0	10.41.15.254	00:1B:1B:24:1E:81	s7-300				S7-300	
+			10.41.2.15	255.255.240.0	10.41.15.254	00:18:1B:36:88:DC	x208	6	V5.2.2		SCALANCE X-200	VPC2502118
+			10.41.0.123			54:EE:75:9B:5A:05	IS-PB-20503		2.4.0.358		PROscanActive	
+			10.41.2.6			50:61:D6:00:40:89	PB-INspektor-PaSt	1.1.0.6	2.0.1.109		PB-INspektor NT	00000186
+			10.41.2.11			50:61:D6:00:11:51	INBLOX Past		v2016.08.4		INBLOX Ethernet-Kopfmodul	2100151

Illustration 46: Device list

Topology

Icons



Shows devices from the last topologies of all selected devices/folders



Export as CSV file



Display of associated extension modules

Actions



Drop down:

- Display device in topology
- Open the website of the device in the web browser (only if IP address available)

Validation



No validation rule applies



Validation rules fulfilled



Validation rules violated



Filter column

Device validation

Via the *menu bar* → *Topology Device validation* (11.8 Topology device validation), rules can be described as to which devices are permitted in the network.

Operation

Use the key combination *Ctrl + F* to open a search field at the top to search for any values in the table.

The table can be filtered using the filter symbol in the first line, either by selecting existing IP addresses or by describing filter rules.

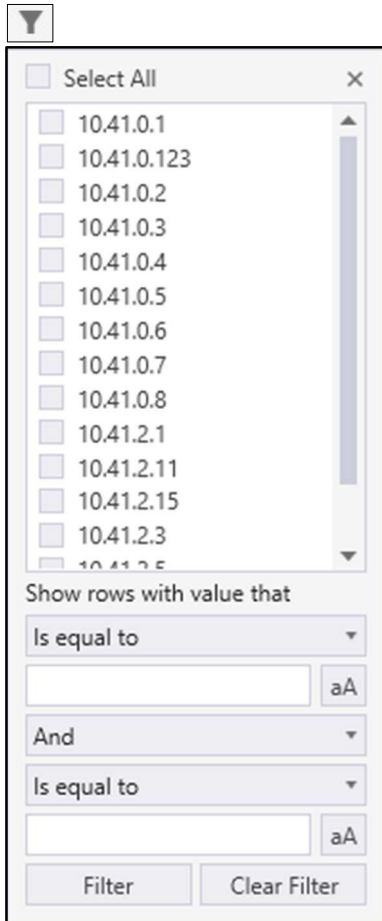


Illustration 47: Filter device list

Right-click on a column in the top row to sort the table in ascending or descending order.

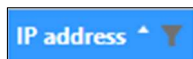
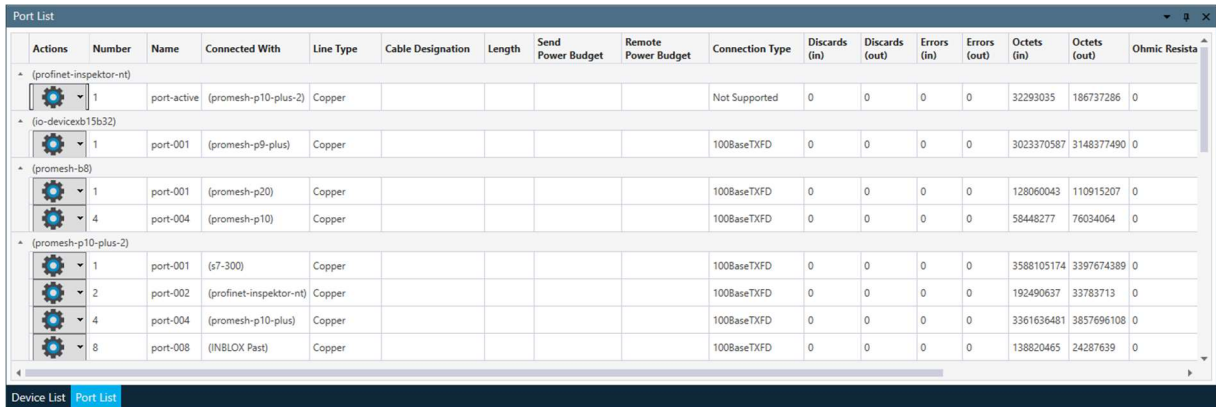


Illustration 48: Column sorting

Port list

The *port list* is a *view* (Arrangement of the viewing window), which is grouped with the *device list* in the default setting. It can be displayed by selecting it in the bottom line of the group.

The table shows all ports that can be queried in the network and their values, with information on connection type, properties and quality.



Actions	Number	Name	Connected With	Line Type	Cable Designation	Length	Send Power Budget	Remote Power Budget	Connection Type	Discards (in)	Discards (out)	Errors (in)	Errors (out)	Octets (in)	Octets (out)	Ohmic Resistance
+ (profinet-inspektor-nt)																
	1	port-active	(promesh-p10-plus-2)	Copper					Not Supported	0	0	0	0	32293035	186737286	0
+ (io-devicexb15b32)																
	1	port-001	(promesh-p9-plus)	Copper					100BaseTXFD	0	0	0	0	3023370587	3148377490	0
+ (promesh-b8)																
	1	port-001	(promesh-p20)	Copper					100BaseTXFD	0	0	0	0	128060043	110915207	0
	4	port-004	(promesh-p10)	Copper					100BaseTXFD	0	0	0	0	58448277	76034064	0
+ (promesh-p10-plus-2)																
	1	port-001	(s7-300)	Copper					100BaseTXFD	0	0	0	0	3588105174	3397674389	0
	2	port-002	(profinet-inspektor-nt)	Copper					100BaseTXFD	0	0	0	0	192490637	33783713	0
	4	port-004	(promesh-p10-plus)	Copper					100BaseTXFD	0	0	0	0	3361636481	3857696108	0
	8	port-008	(INBLOX Past)	Copper					100BaseTXFD	0	0	0	0	138820465	24287639	0

Illustration 49: Port list

Use the key combination *Ctrl + F* to open a search field at the top to search for any values in the table.

9 Alarm management

Alarm management is used for the organized notification of different users. Alarms can relate to different areas (9.2 **Network overview**) or due to different events (9.3 **Available parameters**), notifying different groups of people (9.4 Available actions).

9.1 Presentation

In the *alarm management* perspective, threshold values are defined and scenarios are developed on how to react to events in monitored networks.

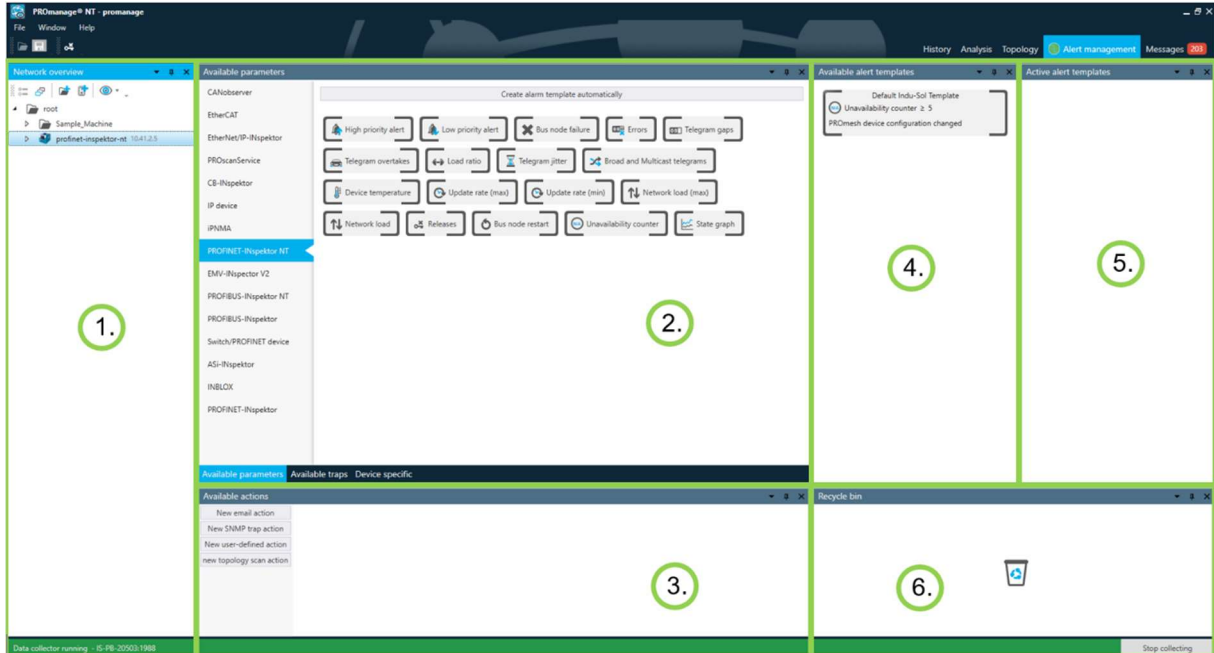


Illustration 50: Alarm management

Configuration of an alarm

1. Selection of a device or folder for which an alarm is to be created
(9.2 Network overview)
2. Selection of a device type, display of the threshold values suitable for the device type
 - Drag'n drop available threshold values into *available alarm templates*
(9.3 Available parameters)
3. Selecting an action
 - Drag'n drop available actions into *available alarm templates*
(9.4 Available actions)
4. Grouping threshold values and actions into an *alarm template*
(9.5 Available alarm templates)
5. Display of active alarm templates
6. Deleting active alarm templates

Arrangement of the viewing window

Identical, as in *analysis* (Arrangement of the viewing window).

9.2 Network overview

Alarm templates always apply to a device or folder. The available alarm *templates* relate to the current selection in the *network overview*. To create an alarm template, an element of the *network overview* must first be selected.

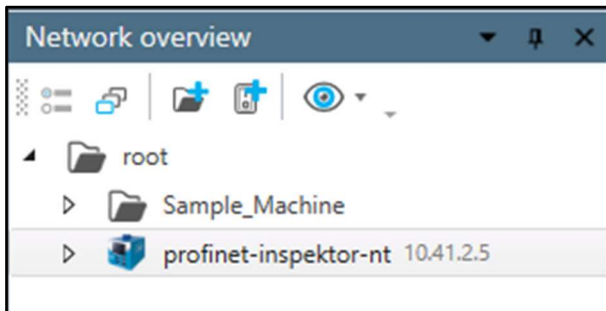


Illustration 51: Alarm management network overview

9.3 Available parameters

Depending on the selection of a device type (left), the available parameters for the selected device are displayed (center). By *left-clicking*, *drag'n drop*, threshold values can be transferred to the *Available alarms* view (right). There they can be summarized into groups or several templates can be created, depending on where the transferred threshold value is stored.

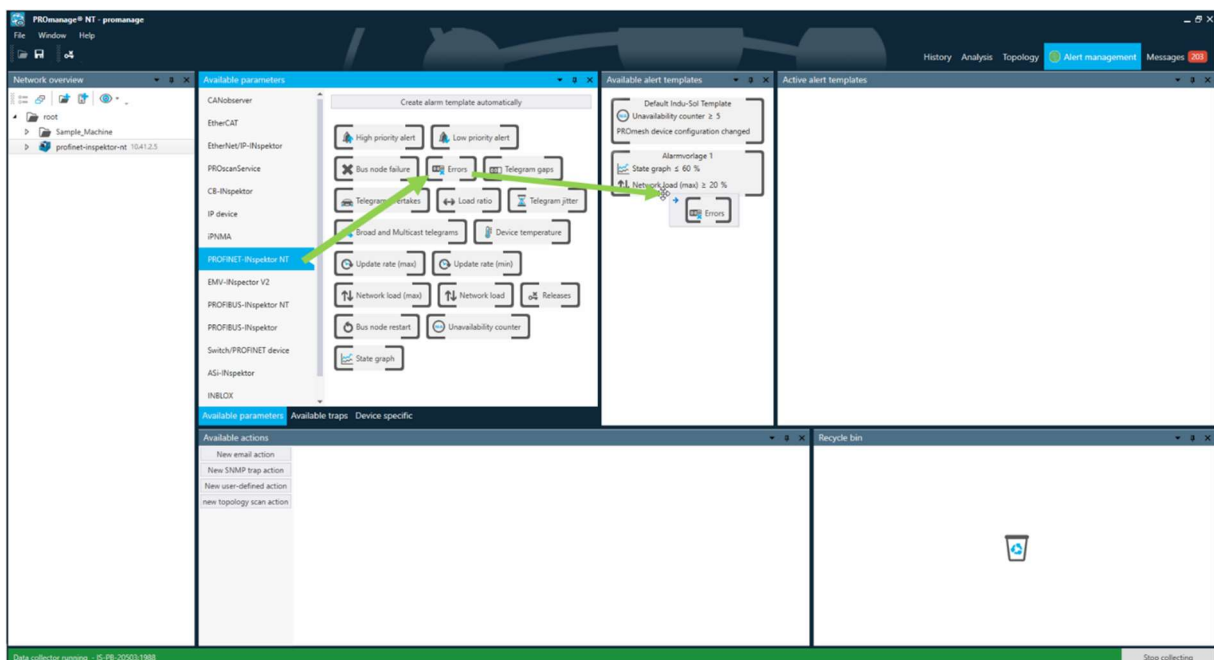


Illustration 52: Creating alarm templates

9.4 Available actions

If no action is selected, alarms are triggered when threshold values are exceeded in the *active alarm templates* (9.6 Active alarm templates) under *Notifications* (10 Notification). If a message is to leave the system, actions can be preconfigured in *Available actions*.

Create a new action

Left-click on a *New ... action* to open a dialogue to assign parameters for the action.



Illustration 53: Preparation of an action

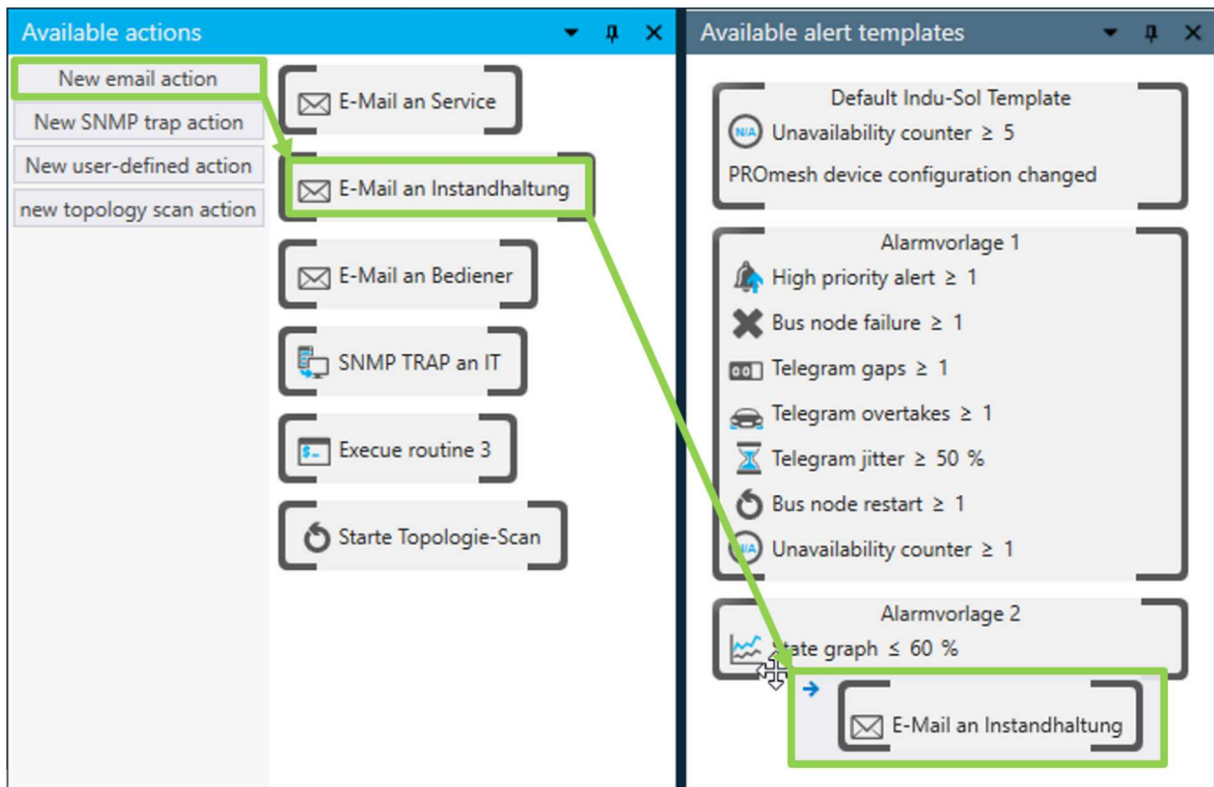
Configuring a new action

Depending on the action, other parameters must be specified or requirements observed.

- | | |
|---|---|
| <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; margin-bottom: 10px; text-align: center;">New email action</div> <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; margin-bottom: 10px; text-align: center;">New SNMP trap action</div> <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; margin-bottom: 10px; text-align: center;">New user-defined action</div> <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; text-align: center;">new topology scan action</div> | <p>Sends an e-mail to one or more recipients. Additional recipients are separated by spaces.
Prerequisite: Setting SMTP (11.10.1.1 E-mail server configuration)
Multiple recipients by separating the addresses with spaces</p> |
| <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; margin-bottom: 10px; text-align: center;">New SNMP trap action</div> | <p>Sends an SNMP trap to a trap receiver.
Test under Settings (11.10.1.2 SNMP trap receiver)</p> |
| <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; margin-bottom: 10px; text-align: center;">New user-defined action</div> | <p>Starts an application on the PC.
Test under Settings (11.10.1.3 User-defined action)</p> |
| <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px; text-align: center;">new topology scan action</div> | <p>Starts a topology scan by a PROFINET INspektor® NT.
Can only be configured for PROFINET INspektor® NT or PROscan Service.</p> |

Apply a new action

Prepared and configured actions are transferred to *available alarm templates* via *drag'n drop*.



9.5 Available alarm templates

The view shows prepared alarm templates that are not yet active.

By adding further threshold values (9.3 **Available parameters**) or actions (9.4 Available actions) in an existing alarm template, these are bundled into groups. Depending on where the parameter is stored in the view, a new template is created or an existing one is extended by that parameter. In this way, templates can be created for different alarm strategies.

The values of the element can be configured by *left-clicking* on the name of the template or a parameter.

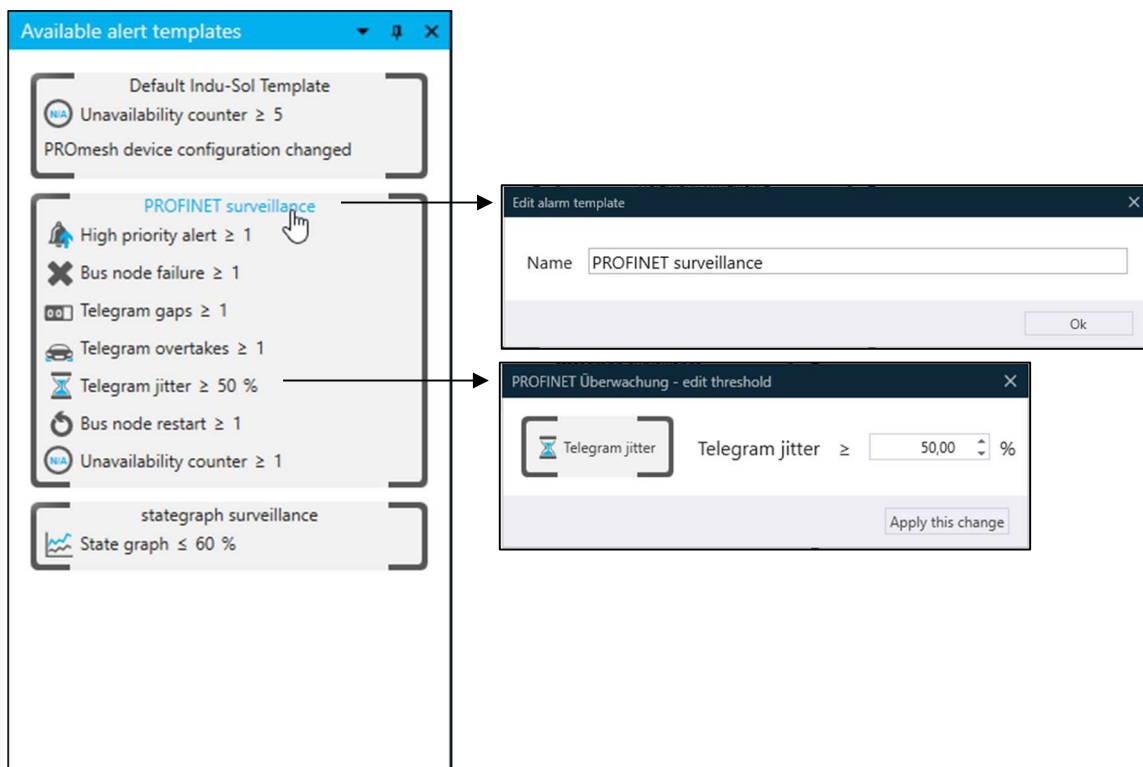


Illustration 54: Edit alarm template

Created templates can be transferred to active alarm templates via drag'n drop.

9.6 Active alarm templates

All templates stored here are active. This means that if one of the threshold values is exceeded, an alarm is triggered via notifications (10 Notification). If the template also contains actions (9.4 Available actions), these are executed.

Pay attention to which element in the network overview (9.2 **Network overview**) is selected because *active alarm templates* only ever apply to this element. For example, a template can be created for a folder and then applies to all devices contained in this folder. If the template is moved to *Active alarm templates* when an individual device is selected, other devices are not affected.

9.7 Wastepaper basket

The elements *dragged* here by *drag'n drop* are deleted.

10 Notification

In the *Notifications* perspective, all system, subscriber, trap and device messages are summarized and listed in an alarm overview.

- System messages: Messages from the PROmanage® NT software, e.g. errors during scan, initialization of the data collector, ...
- Participant messages: Exceeding an active alarm template (9.6 Active alarm templates)
- Trap messages: If the trap receiver is activated, the traps that are received are listed in the notification window (11.10.1.2 SNMP trap receiver).

View

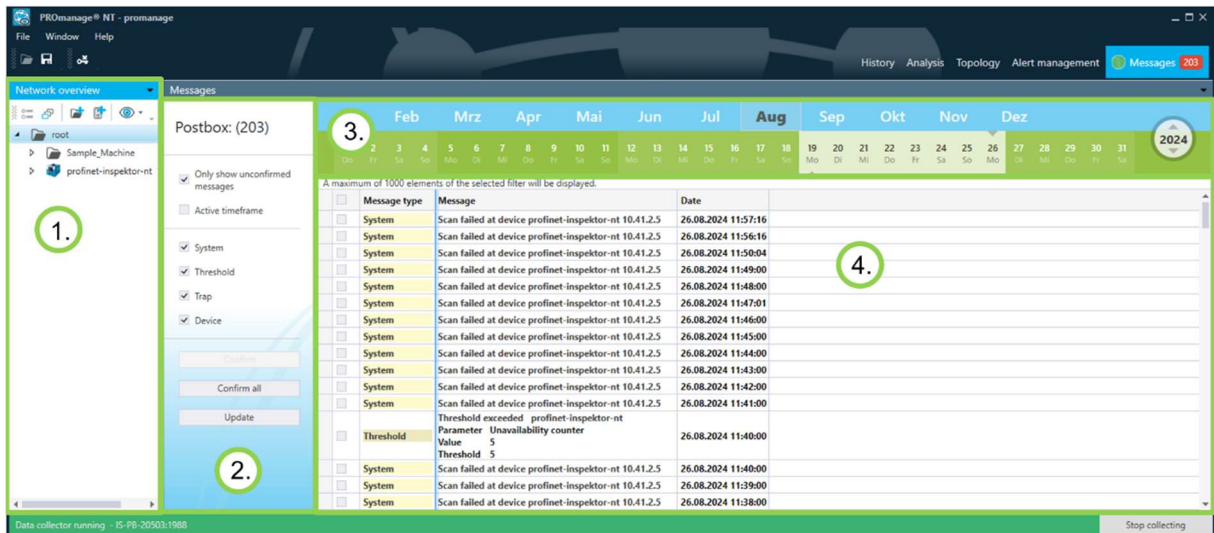


Illustration 55: Notification perspective

1. Network overview

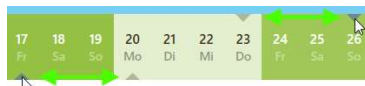
- The selection in the network overview determines which messages are displayed. The *root* folder can be selected to display all messages.

2. Display selection

- The selection of the check boxes determines which messages are listed. Messages can be confirmed using the buttons. Every change in the check boxes or the period selection is applied after *left-clicking* the *Update* button.

3. Period selection

- Daily display in list by selecting year, month and day.
- Set the year and month by selecting
- Set the days by moving the arrow marker

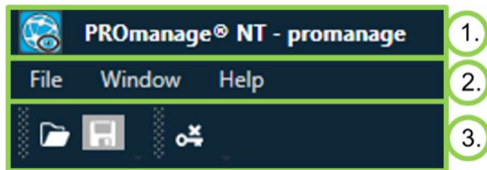


4. Message display

- Detailed list of the type and content of the message
- Bold - Message not yet confirmed (as read)
- For threshold value message - *double left-click* to open the parameter in the *Analysis* perspective

11 Menu bar

11.1 Representation



1. Display database

- The name of the database that is currently displayed is shown next to the software name PROmanage® NT.

2. Menu bar

- File - Used to operate, manage and set all functions related to the recording of PROmanage data.
- Window - For navigation in the individual views and perspectives, as well as setting the language.
- Help - Information on version, license and third-party providers is displayed here and access to log data is provided.

3. Icons:



Opens a new view (7.3 View)



Saves the settings made (lights up when changes have been made)



User change

11.2 Change/create database

In the system description (1.3 System description) describes the role of the database. The data flow diagram (1.5 Data Flow Diagram) shows the necessary settings for a connection from PROmanage® NT Client to PROmanage® NT Database. The database connection parameters must also be considered during installation (2.4 Installation procedure) but can also be changed in this view at any other time.

Representation

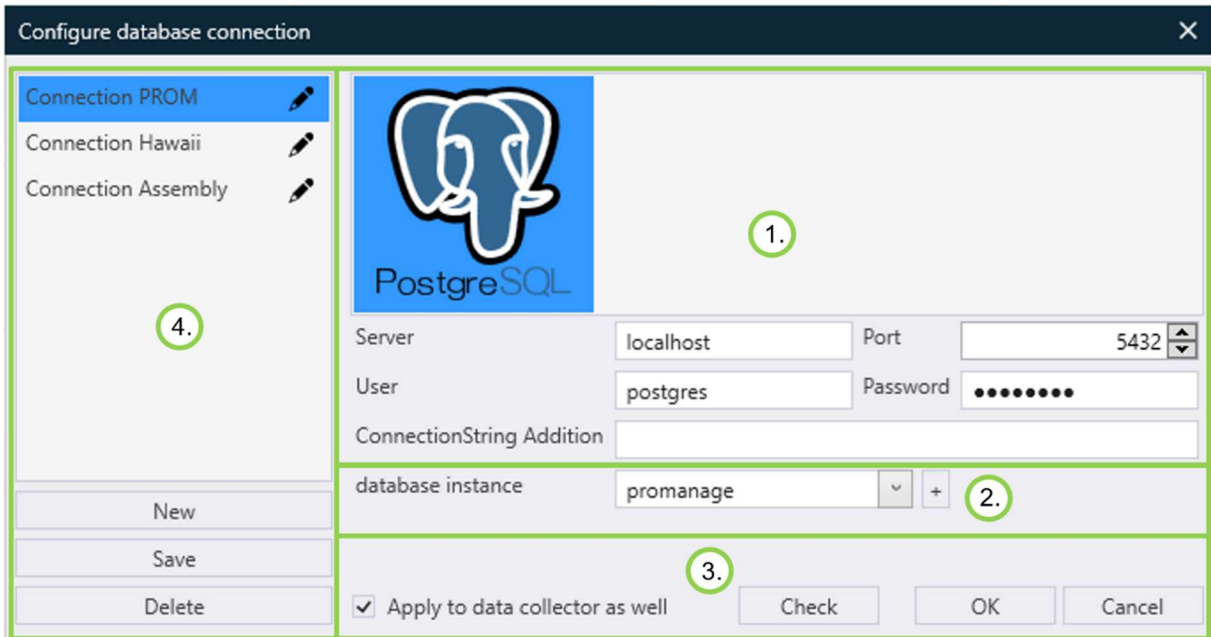


Illustration 56: Configure database connection

1. Configurations of the database connection
2. Selection / creation of a database
3. Selection of available options
4. Templates Database connection

Configuration of the database connection

PROmanage® NT uses the data entered here to establish a connection to a database server. For the full installation (2.4.1 Full installation), a PostgreSQL server is installed. The default configuration is:

Server	localhost
Port	5432
Users	postgres
password	postgres

During the client installation (2.4.2 Client installation), the data of the server on which a PostgreSQL server was installed by the PROmanage® NT installation (or other) must be entered in this field.

Selection / creation of a database

If the server data is entered correctly, PROmanage® NT can manage the database. The databases available on the server are displayed and selected via the *drop-down menu*. Click *OK* to load the displayed database.

A new database is created using the *plus* icon. To do this, enter a name in the *Database name* field and click on *plus*. With this click, PROmanage® NT creates and selects a new database on the PostgreSQL server.

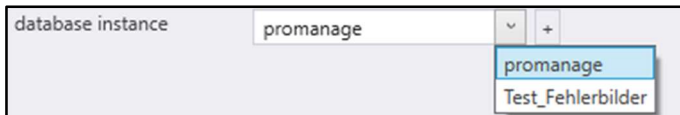


Illustration 57: Selection / creation of a database

Selection of available options

The following options are available.

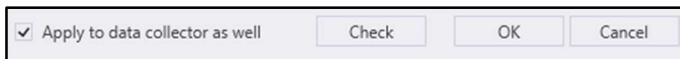
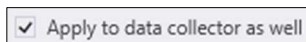



Illustration 58: Option selection

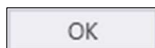


Once this selection has been made, the devices are queried according to the network overview of the selected database after confirming with *OK*. The selection is only possible if the data collector is currently running:

PROmanage® NT Status bar - 



Checks whether a connection to the database is possible with the settings and whether the database structure corresponds to that of PROmanage® NT.



Adopts the settings. Logs out when the database is changed.



Discards the settings

Templates Database connection



If there are repeated changes between configurations, it makes sense to create templates of the settings.

- Click on *New* to transfer the current settings to a template.
- Templates are renamed using the pencil icon.
- Click on a template (highlighted in blue) to load the saved settings.
- If a template is selected, the settings can be changed and then applied to the template by clicking *Save*.
- Selected templates (highlighted in blue) can be removed via *Delete*.

11.3 Save database

By backing up the database, it is possible to restore the previously recorded data later or on another system. The result of the backup is a DBB file that can be transferred at any time.

The *Save database* window is processed from top to bottom and a decision is made on each setting.

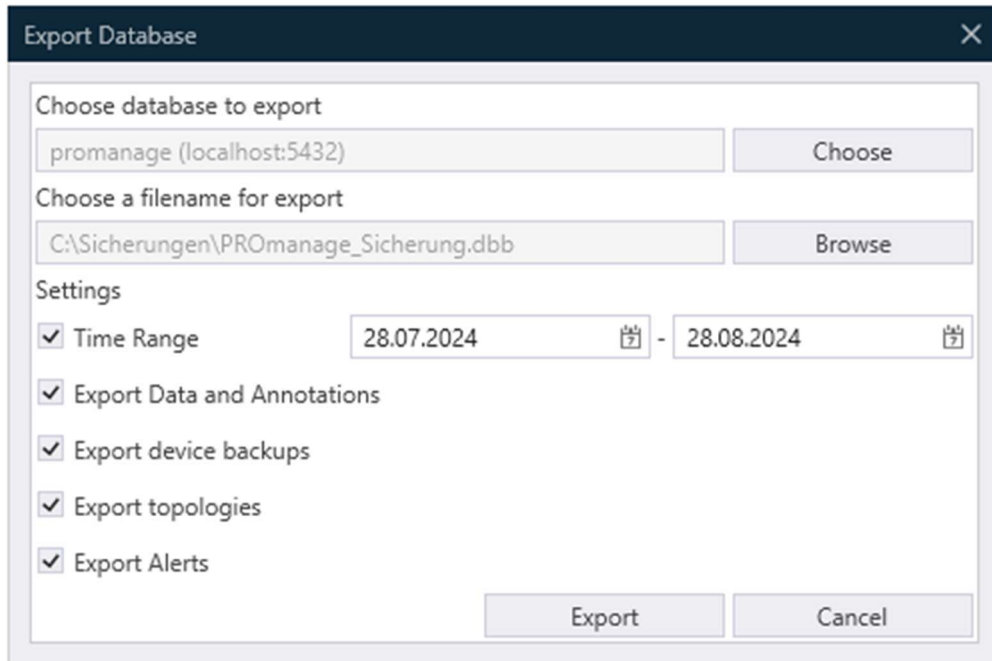


Illustration 59: Save data

Menu bar

<input type="button" value="Choose"/>	<p>Opens the <i>Change/create database</i> window^{*1} to select a database to be backed up.</p>
<input type="button" value="Browse"/>	<p>Opens a <i>Windows storage dialog</i> to select a storage location and name for the backup file.</p>
<input checked="" type="checkbox"/> Time Range	<p>By specifying a start and end date, only the data recorded during this time is saved. If no time range is specified, all available data is saved.</p>
<input checked="" type="checkbox"/> Export Data and Annotations	<p>Saves:</p> <ul style="list-style-type: none"> • the list of devices and folders in the network overview ^{*1} • the <i>device</i> management settings ^{*1} • the state graph of the perspective <i>analysis</i>^{*1} and the marker set there
<input checked="" type="checkbox"/> Export device backups	<p>Saves:</p> <ul style="list-style-type: none"> • the list of devices and folders in the network <i>overview</i> ^{*1} • the <i>device management</i> settings ^{*1}
<input checked="" type="checkbox"/> Export topologies	<p>Saves:</p> <ul style="list-style-type: none"> • the list of devices and folders in the network <i>overview</i> ^{*1} • the <i>device management</i> settings ^{*1} • the topologies of perspective <i>topologies</i> ^{*1}
<input checked="" type="checkbox"/> Export Alerts	<p>Saves:</p> <ul style="list-style-type: none"> • the list of devices and folders in the network <i>overview</i> ^{*1} • the <i>device management</i> settings ^{*1} • the messages of the perspective <i>notifications</i> ^{*1}
<input type="button" value="Export"/>	<p>Starts the creation of the backup</p>
<input type="button" value="Cancel"/>	<p>Cancels the process</p>

^{*1} Useful links:

- 11.2 Change/create database
- 7.2 Network overview
- 7 Analysis
- 11.6 Device management
- Marker
- 8 Topology

11.4 Restore database

A database backup (11.3 Save database) of file type DBB can be restored in PROmanage® NT. The backup file is loaded into a PostgreSQL database by PROmanage® NT. A dialogue window opens via the *Select button* to create a new database or select an existing one. The backup cannot be loaded into the currently displayed database. If the backup has been successfully restored, you can switch to this database in the next step (11.2 Change/create database).

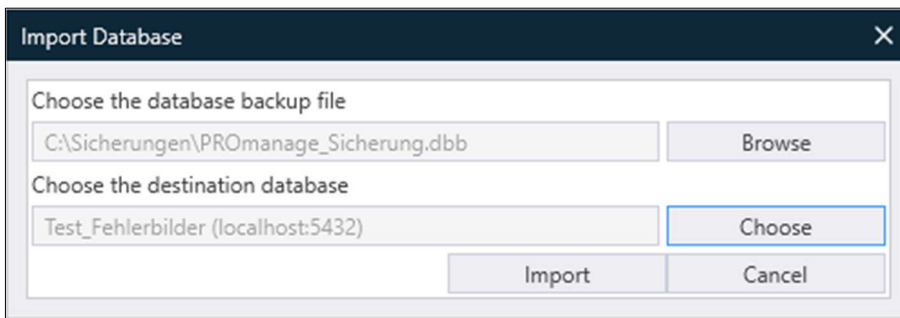
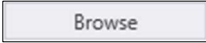
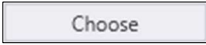







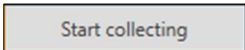
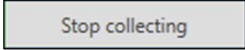
Illustration 60: Restore database

	Opens a <i>Windows Explorer window</i> to select the location of the backup file to be restored.
	Opens the <i>Change/create database</i> window (11.2 Change/create database) to select a database into which the backup file is to be loaded.
	Start the restore process
	Cancels the process

11.5 Manage data collectors

The data collector is the centerpiece of the PROmanage® NT software. It is configured by the PROmanage® NT client and then collects information from decentralized data collectors, such as an INspektor®, managed switch or others. The collected data is then written to the PROmanage® NT database.

The status of the data collector is always displayed in the bottom line of the PROmanage® NT window and can be stopped/started.

	Data collector service has been launched.
	Service collector Service was stopped manually.
	The data collector service has not started.
	Starts a stopped monitoring. The settings made in the <i>device management</i> (11.6 Device management) are queried.
	Stops ongoing monitoring. No further data is queried in the network.

Menu bar

The data collector can be configured and the current settings displayed in the Data collector management window.

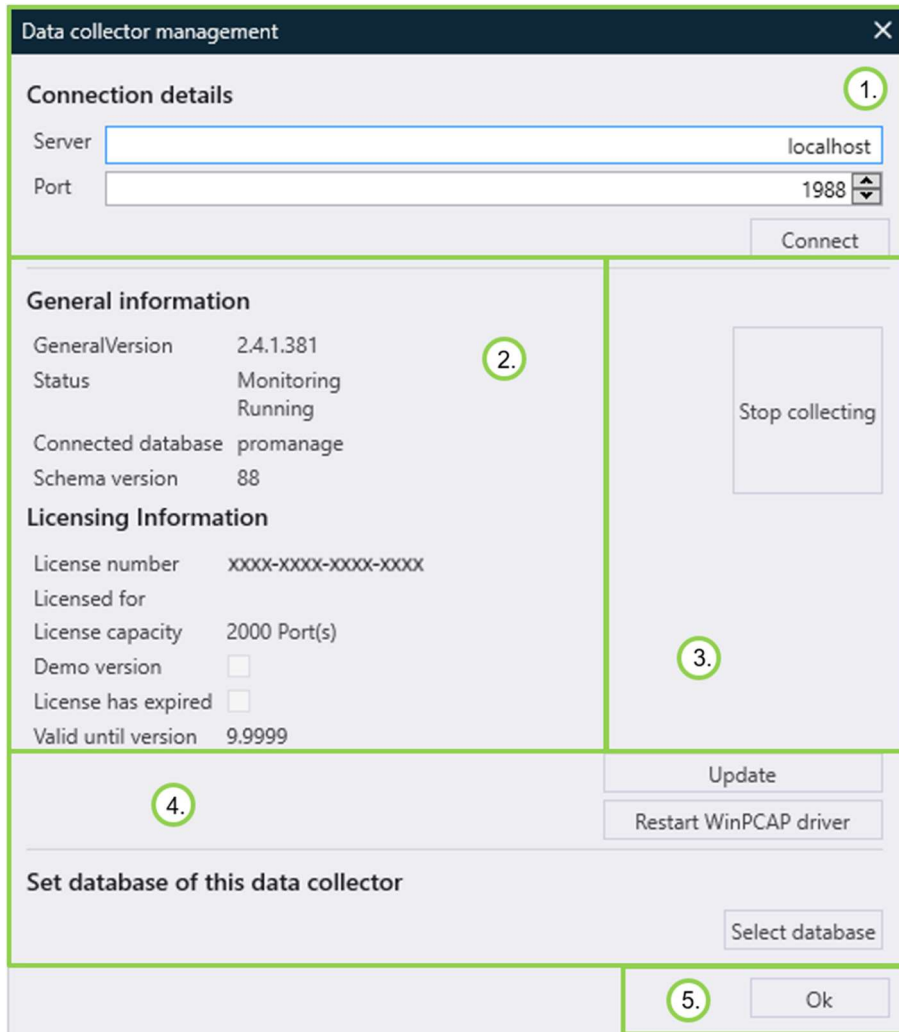


Illustration 61: Data collector management

1. Connection information: Setting the connection to which data collector a connection is to be established.
2. Information overview: Version, status and license information about the connected data collector
3. Applicable action
4. Change to which database the data collector should write its collected data
5. Close window

Connection information

For the full installation (2.4.1 Full installation), the PROmanage® NT client and data collector are installed on the same system. The basic settings are then:

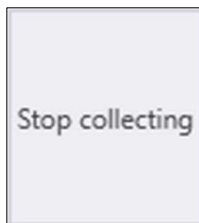
Server: localhost

Port: 1988

If PROmanage® NT client and data collector are installed on separate systems, the server IP address or name must be entered. It must also be ensured that port 1988 is enabled in the connection between the client and data collector.

The data collector can only be accessed via the *Connect button* to display information and perform actions if the connection information is entered correctly.

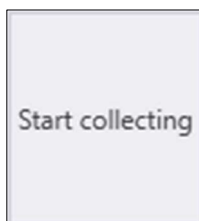
Button



Stop the surveillance

The settings made in the *device management* (11.6 Device management) are no longer queried and subsequently no new *data points* or *topologies* are displayed in a *perspective*.

Does not stop the *Indu-Sol Data Collector Service*



Starts monitoring

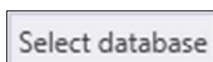
The settings made in the *device management* (11.6 Device management) are queried.



Updates the information requested by the data collector, e.g. if the license has been extended in the background.



Restarts the driver that executes the network queries.



Specify the database in which the collected data is stored.

Select database

Clicking the *Select database* button opens a window with the same display as for *Change/restore database* (Change/create database). The window is not prefilled. A database selected here is now the storage location for collected data. For a *full installation* (2.4.1 Full installation), the default settings can be used as the PROmanage® NT database and data collector are installed on the same system:

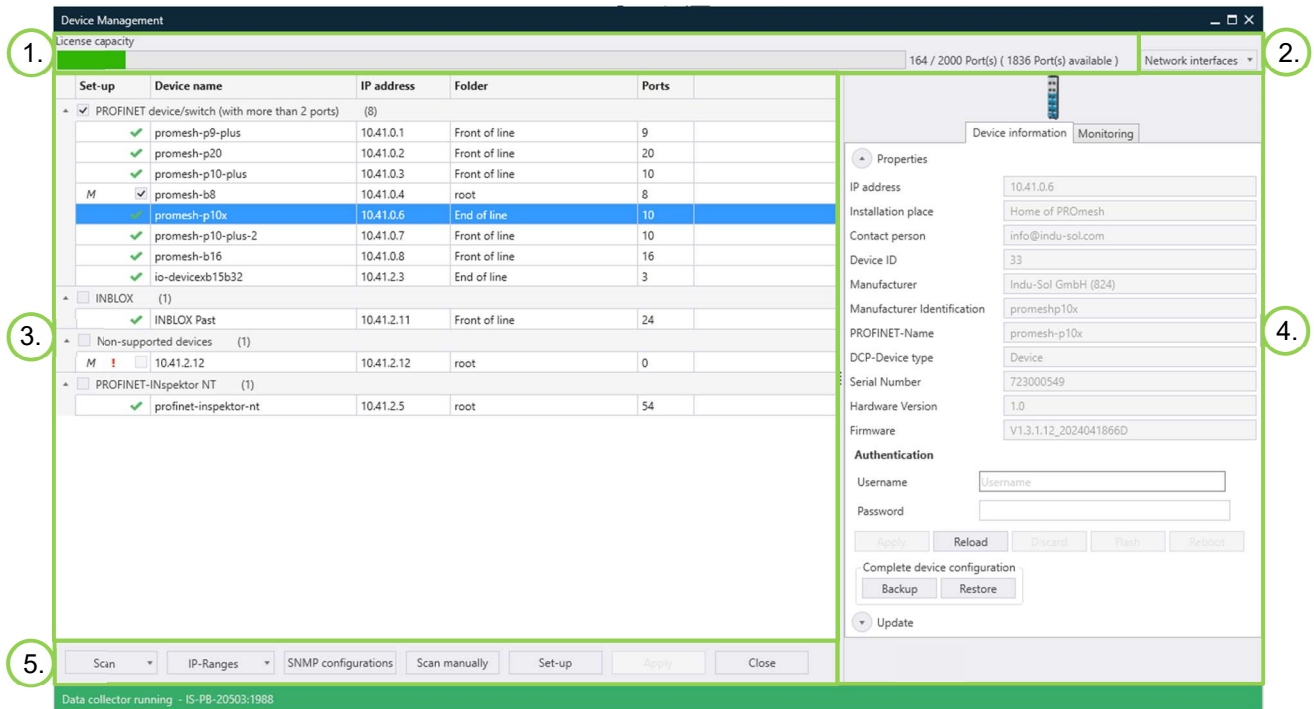
Server	localhost
Port	5432
Users	postgres
password	postgres

During the *client installation* (2.4.2 Client installation), the name or IP address of the server on which the data collector is installed and is to be configured must be specified.

11.6 Device management

Device management is the centrepiece of the PROmanage® NT application. It is used to configure the data collector and thus determines which devices are queried. In addition, extensive settings and actions can be carried out here, which simplify the operation and maintenance of the system.

11.6.1 Presentation



Set-up	Device name	IP address	Folder	Ports
✓	PROFINET device/switch (with more than 2 ports) (8)			
✓	promesh-p9-plus	10.41.0.1	Front of line	9
✓	promesh-p20	10.41.0.2	Front of line	20
✓	promesh-p10-plus	10.41.0.3	Front of line	10
M	✓	promesh-b8	root	8
✓	promesh-p10x	10.41.0.6	End of line	10
✓	promesh-p10-plus-2	10.41.0.7	Front of line	10
✓	promesh-b16	10.41.0.8	Front of line	16
✓	io-devicecb15b32	10.41.2.3	End of line	3
▢	INBLOX (1)			
✓	INBLOX Past	10.41.2.11	Front of line	24
▢	Non-supported devices (1)			
M	!	10.41.2.12	root	0
▢	PROFINET-INspektor NT (1)			
✓	profinet-inspektor-nt	10.41.2.5	root	54

Illustration 62: Device management

1. Licence volume - display how many ports are available, used and free (3 Licensing)
2. Network adapter - *drop-down* selection of which interface is used
3. Device overview - list of devices and their status
4. Device information and monitoring:
 - Device configuration (11.6.2 Set up devices)
 - Backing up the device configuration ([Save device configuration](#))
 - Firmware update ([Firmware update](#))
 - Scan setting ([Scan](#))
 - Memory setting (Data retention time)
 - Setting the evaluation, recorded data ([State graph calculation](#))
5. Scan and set up devices, apply settings

Menu bar

Icons



The device is entered in the data logger and is actively queried.



There is a connection problem. Select the device for detailed information.



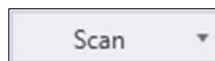
Select whether the device should be included in monitoring. Confirm using the *Set-up button*.



Manual - The device was scanned manually.

Menu bar

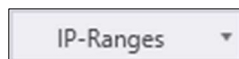
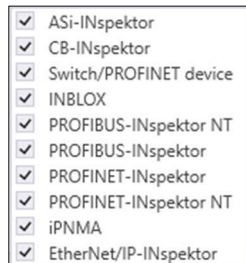
Button



Starts an automatic network scan and checks which accessible devices support a query.

Depending on the network setting and the number of accessible devices, the scan can take from a few seconds to several minutes.

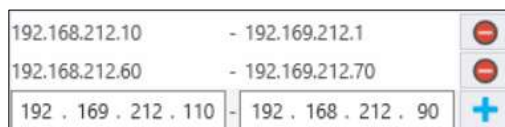
- The search can be restricted to specific device types in the corresponding *drop-down* menu.
- The scanning time can be significantly reduced by narrowing down the search.



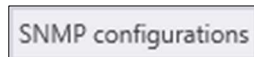
Opens a *drop-down* menu to specify address ranges to be scanned.

The scanning time can be significantly reduced by narrowing down the search.

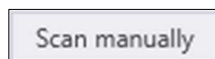
- The scanning time can be significantly reduced by specifying an address range.



- Removing a scan area
- Adding a scan area



Opens a dialogue window to configure SNMP (SNMP configuration).



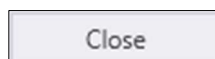
Opens a dialogue window to set up an individual device (11.6.2 Set up devices).



If a new device has been added to the device management list, the cyclical query does not start until the *Set-up* button is pressed.



If settings have been changed, they become active with the *Apply* button.



Changes are not accepted.

SNMP configuration

PROmanage® NT always requires read-only access to query the device information. If access restrictions are configured for devices, SNMP users or communities can be specified in this screen. The configurations can be sorted using the green arrow buttons, depending on which is to be used first when establishing a connection. If a connection to a device does not work, the next configuration is tested. If a configuration has been used successfully, it is saved for future access to the device.

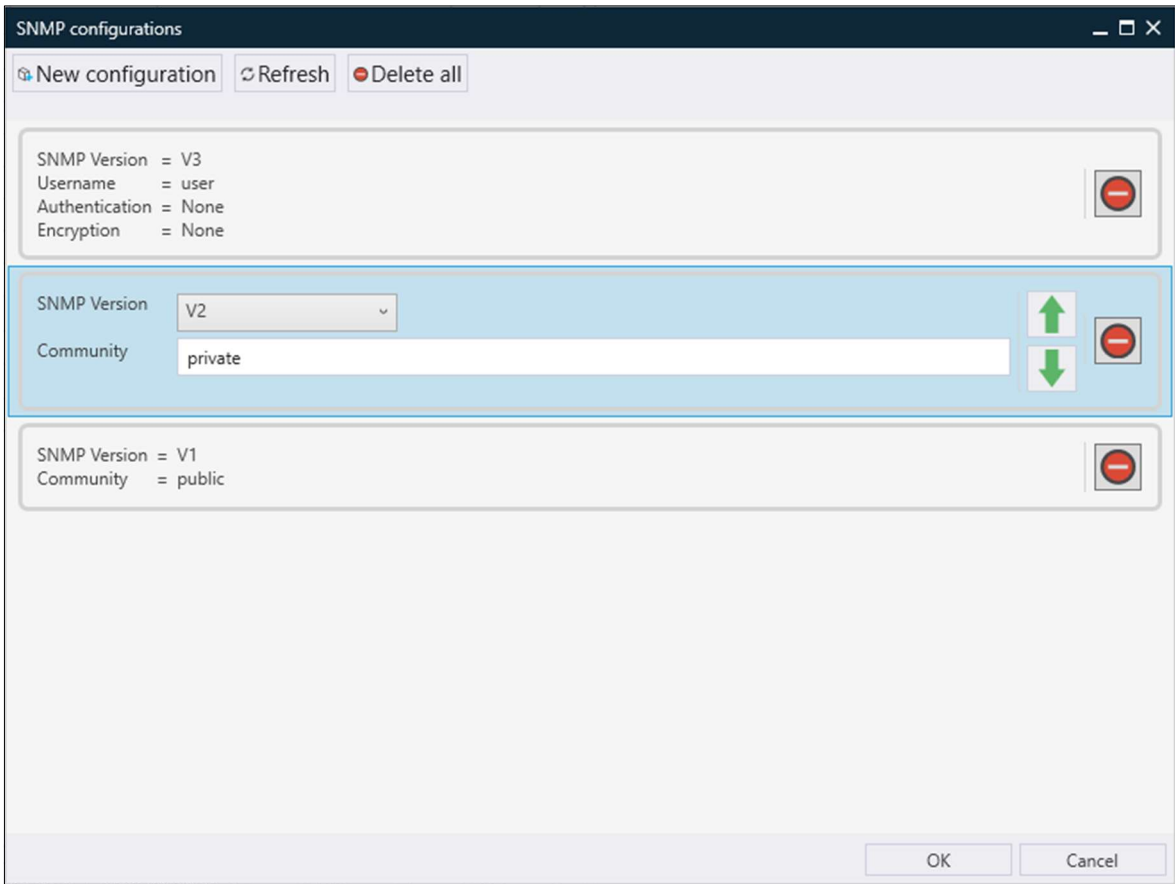


Illustration 63: SNMP configuration

11.6.2 Set up devices

As with the first steps (4 First steps), various devices can be added to the monitoring system step by step and individually (4.2 Add decentralized data collector). This procedure is suitable if only a few devices are to be added.

The same procedure can be used for the automatic scan (network scan) can be used. This procedure is suitable if many devices are to be added in one step.

Special configurations

Some setting options are only available in the *manual scan* dialogue window.

IP devices:

If an IP device is set up, it is checked for availability via a ping query. Values can also be queried via OPC UA, SNMP or individual OIDs.

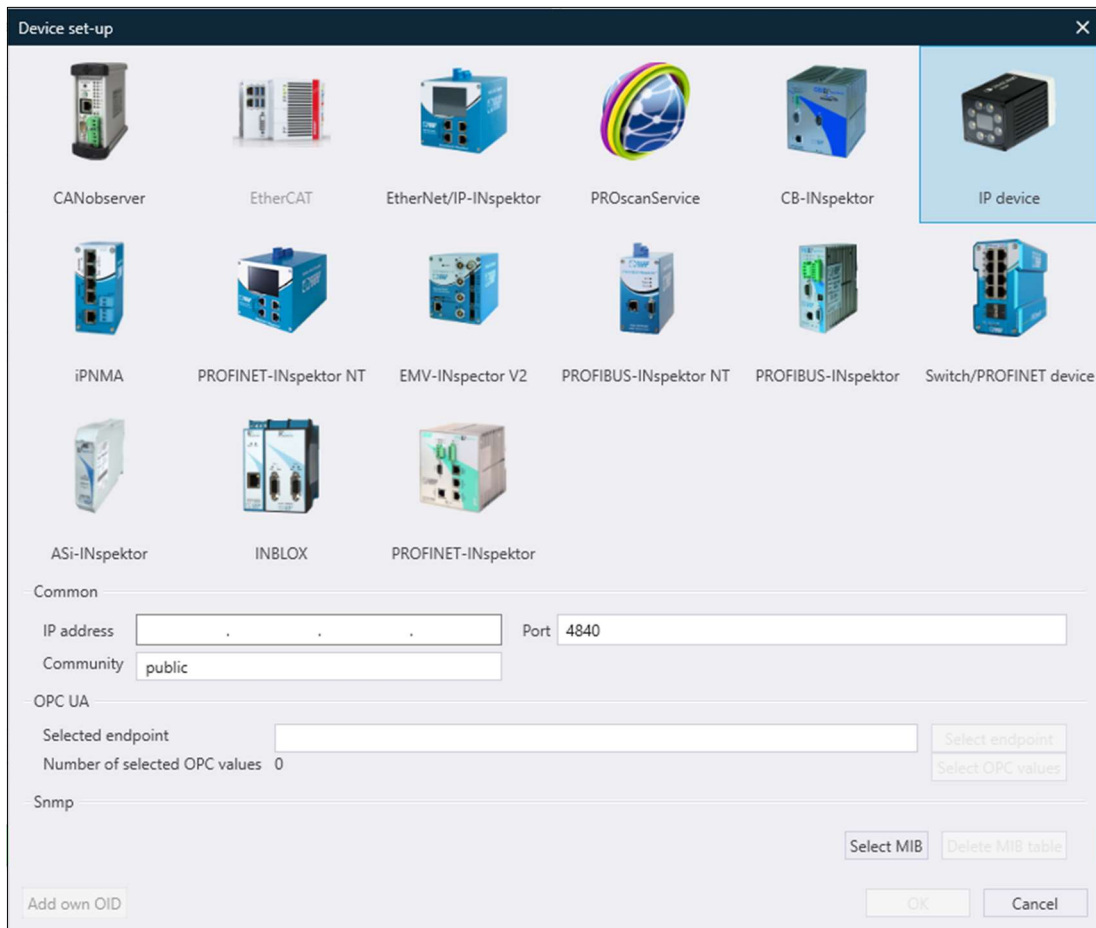


Illustration 64: Configuration IP device

Switch / PROFINET device:

Device query by setting the IP address. If a different community applies to the device, it can be entered here.

Port detection - Different switches output different information with different MIBs (Management Information Bases). It is therefore possible to choose between different MIBs to obtain the appropriate display for your switch. If the display does not correspond to the desired information, try using a different MIB.

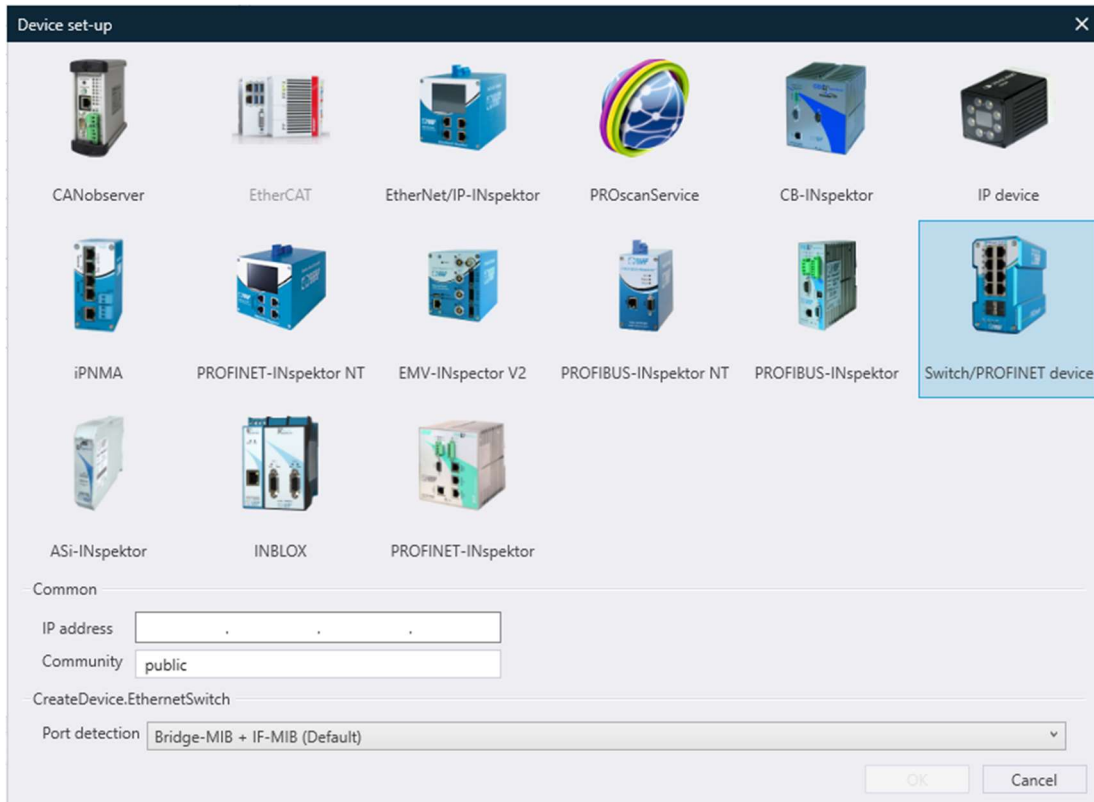


Illustration 65: Configuration switch / PROFINET device

INspektor®: Device query by setting the IP address. Enables a connection to be established exclusively via SSL. It is also possible to use your own certificate; for this, INspektor® and PROmanage® NT must have the same certificate loaded.

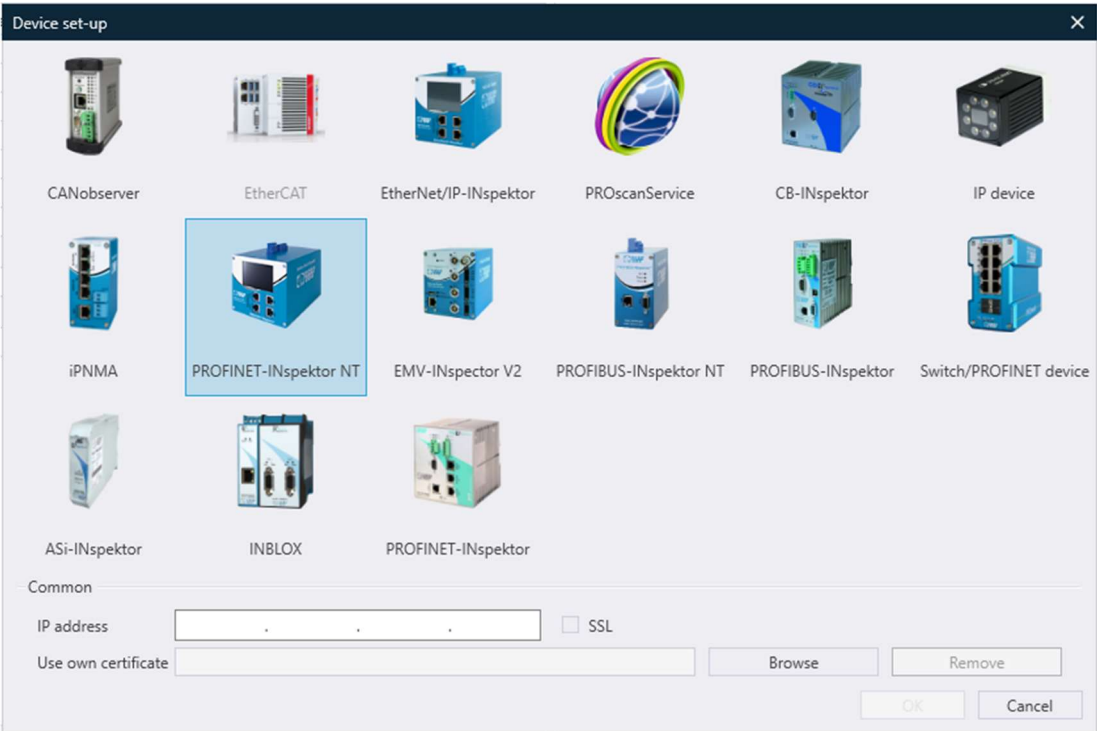


Illustration 66: Configuration INspektor®

11.6.3 Device information

If a device is selected in the *device overview*, the device-specific information is displayed in the *Device information* tab. By pressing *Ctrl + left mouse button*, several devices can be selected at the same time and common properties can be displayed.

Device configuration

Various configurations can be made via the *Device information* tab in the *Properties drop-down menu*, depending on the device type. Adjustable values are highlighted in white, non-adjustable values in grey. Changes must be saved using the *Apply* button.

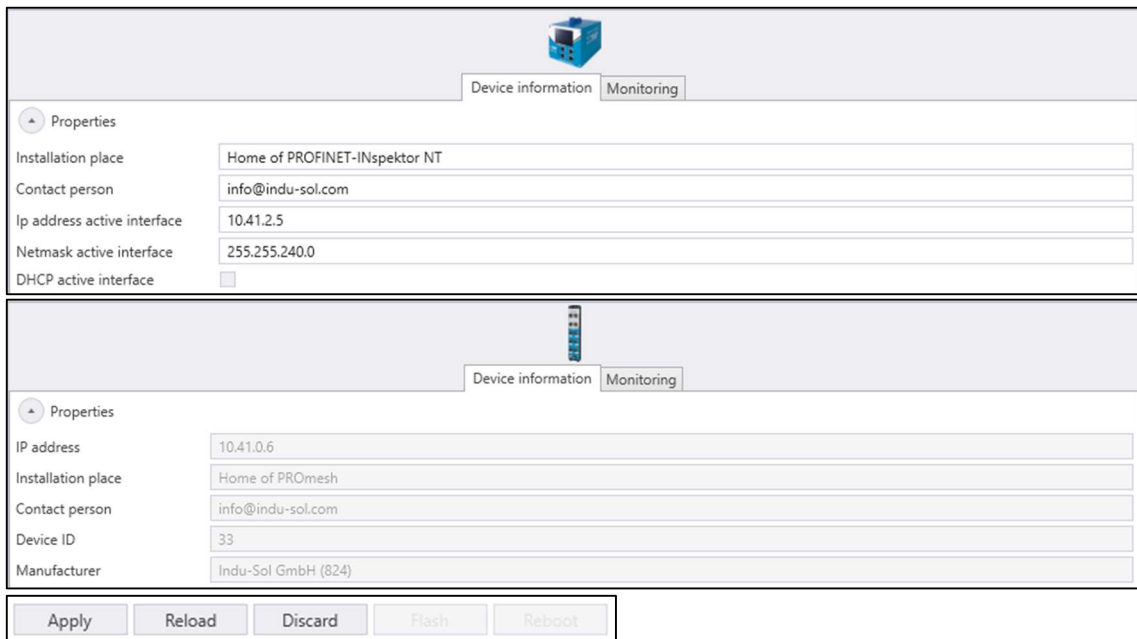
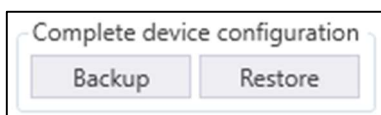


Illustration 67: Device information

Save device configuration

At the end of the *Properties drop-down menu*, there is an option for some devices to save the configuration of the device to restore it at a later date. *Clicking on Save* opens a *Windows save dialogue* to save the configuration on the system. The progress of the device backup is displayed in a window that opens. This file can then be selected via the *Restore button* to load a saved configuration into the device.



Menu bar

Firmware update

At the end of the *Device information* tab, an update can be carried out in the *Update drop-down menu* depending on the device type. This function is used to update several devices by selecting the same device type several times with *Ctrl + left mouse button*.

Clicking on the *Browse* button opens a Windows dialogue to select an update file. Clicking the *Start update* button opens a separate window that displays the progress of the update.



Illustration 68: Devices update

11.6.4 Monitoring

If a device is selected in the *device overview*, the device-specific information is displayed in the *Monitoring* tab. Changes in this tab must be saved using the *Apply* button (bottom right).

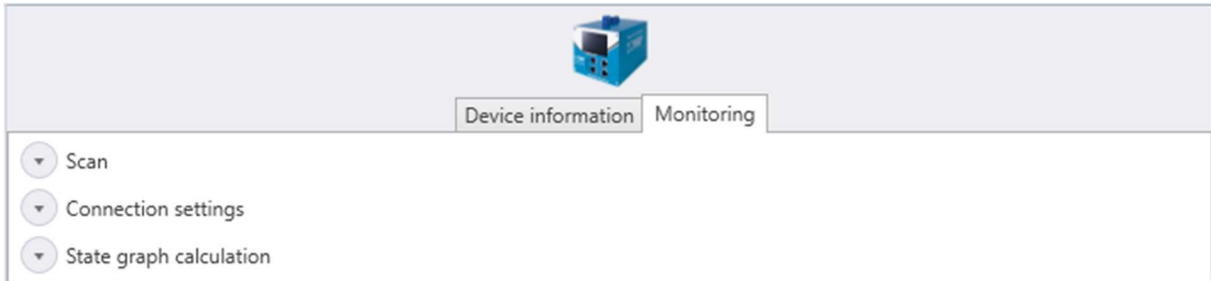


Illustration 69: Monitoring

Scan

Various options are available in the *Scan drop-down menu*, depending on the device type.

Scan active	Selection of whether data should be requested from the device or not
Activate device backup	Selection of whether the configuration of the device should be saved or not
Query interval	Setting how often data should be requested from the device
Data retention time	Setting how long data from the device should be saved
Ports / Modules / Subordinate devices	Selection of whether ports or devices subordinate to the main device are to be queried

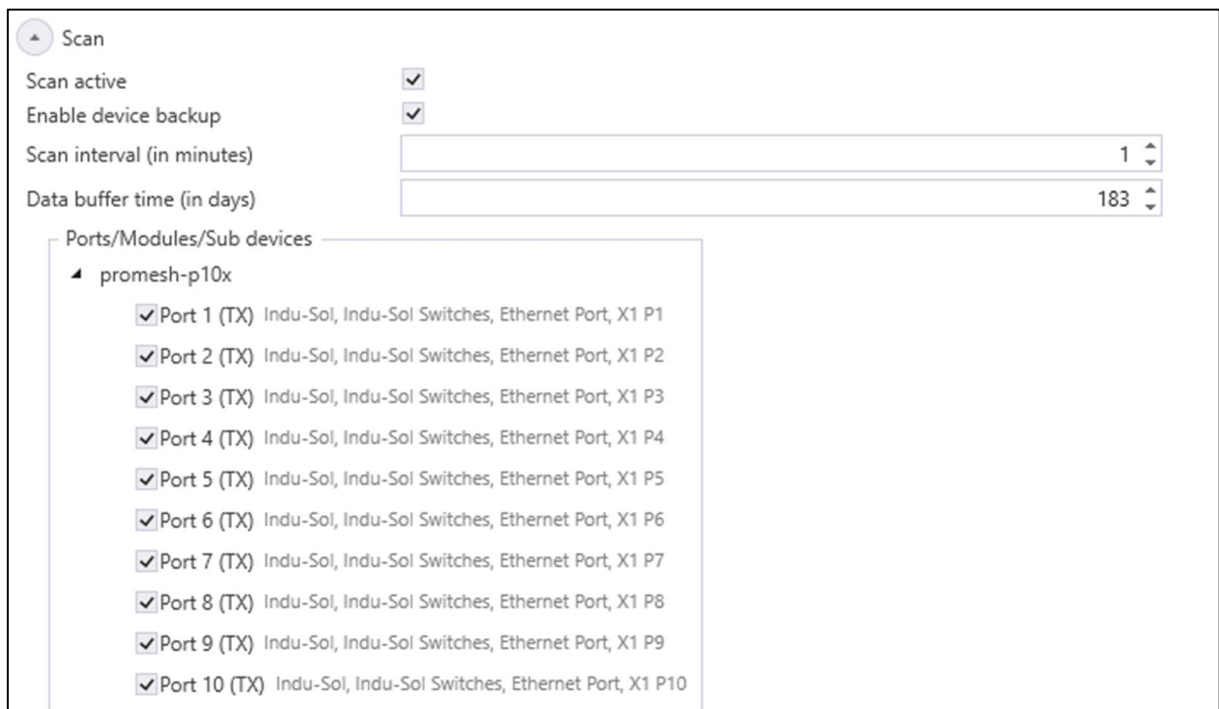


Illustration 70: Scan settings

Connection settings

Depending on the device type, the second *drop-down menu* refers to the connection settings to the device. This setting is queried during a manual scan. Default values are assumed for an automatic scan (11.6.2 Set up devices).

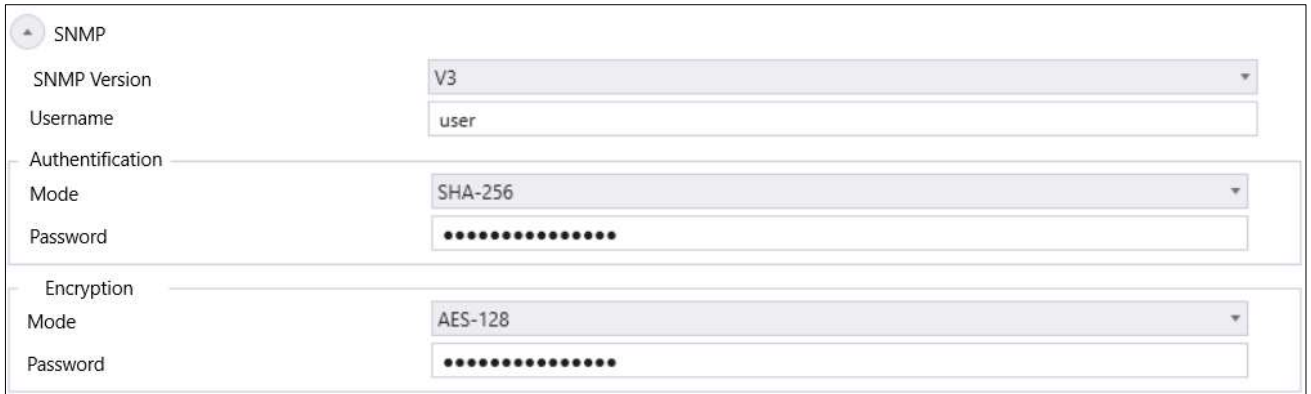
A screenshot of a web-based configuration interface for SNMP settings. The interface is titled 'SNMP' with a collapse icon. It contains several fields: 'SNMP Version' is a dropdown menu set to 'V3'; 'Username' is a text input field containing 'user'; 'Authentication' is a section header; 'Mode' is a dropdown menu set to 'SHA-256'; 'Password' is a masked text input field with 12 dots; 'Encryption' is another section header; 'Mode' is a dropdown menu set to 'AES-128'; and another 'Password' is a masked text input field with 12 dots.

Illustration 71: Connection settings

State graph calculation

The data collected by the devices is evaluated by PROmanage® NT in order to display it as a status graph (7.3 View). Poor values lead to a collapse of the status graph. The extent to which the state graph collapses is defined by the state graph calculation. The default settings can be customized to adapt them to the conditions of the network. The aim is to make the settings so that the status graph displays 100% during normal operation of the network. The status graph should only collapse if there is a deviation from normal values.

Depending on the device type, the status graph is configured globally for a device or for a port, module or subordinate device. The selection (highlighted in blue) determines the parameters that can be set. Settings only take effect once they have been *accepted*. It is not possible to change the status graph retroactively.

Ports/Modules/Sub devices

- promesh-p9-plus
 - Port 1 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P1
 - Port 2 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P2
 - Port 3 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P3
 - Port 4 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P4
 - Port 5 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P5
 - Port 6 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P6
 - Port 7 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P7
 - Port 8 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P8
 - Port 9 (TX) Indu-Sol, Indu-Sol Switches, Ethernet Port, X1 P9

SNMP
 State graph calculation

Changes to the state graph calculation parameters will become active only after saving.

Inverse	Active	Parameter	Initial dynamics	Minimum decrease	Final dynamics	Maximum decrease
	<input checked="" type="checkbox"/>	Error rate	0,01 %	20 %	0,1 %	60 %
	<input checked="" type="checkbox"/>	IN Discards	1	20 %	10	60 %
	<input checked="" type="checkbox"/>	IN Errors	1	20 %	10	60 %
	<input checked="" type="checkbox"/>	Network load	15 %	0 %	50 %	100 %
	<input type="checkbox"/>	Network load per ms (max)	50 %	0 %	100 %	100 %
	<input checked="" type="checkbox"/>	OUT Discards	1	20 %	10	60 %
	<input checked="" type="checkbox"/>	OUT Errors	1	20 %	10	60 %
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Quality Value (line diagnosis)	30 %	10 %	10 %	60 %
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Speed	0 Mbit/s	0 %	0 Mbit/s	0 %

The response of the state graph is influenced by setting the dynamic start/end and the min./max. reduction. Note whether this is a normal or inverse parameter.

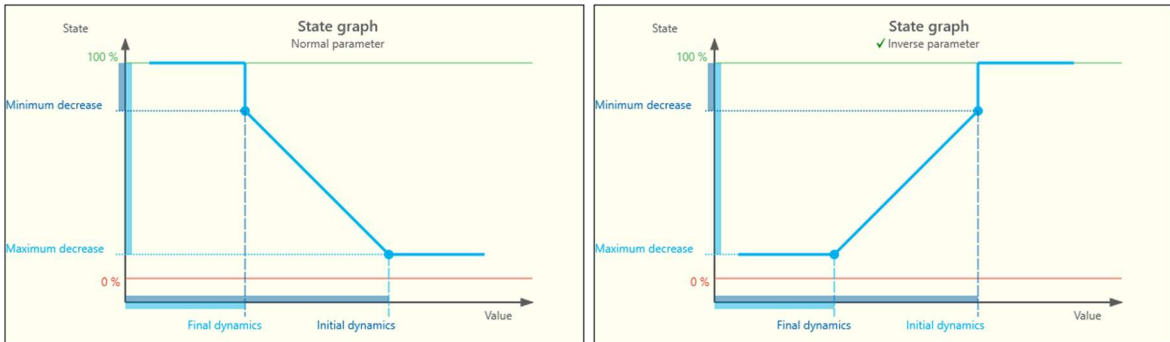


Illustration 72: State graph calculation Illustration

Example: Value IN Errors of a switch port


Inverse	Active	Parameter	Initial dynamics	Minimum decrease	Final dynamics	Maximum decrease
	<input checked="" type="checkbox"/>	 IN Errors	1	20 %	10	60 %

Illustration 73: Example parameters

If an IN error is detected at a switch port, the status graph is reduced by 20 % to 80 %. If more (1 < 10) IN errors are detected during a query, the status graph collapses more sharply. If ten IN errors are detected, the status graph is reduced by 60% to 40%. If more than 10 IN errors are detected, the status graph will not collapse any further.

11.7 Image rule management

The *screen rule management* refers to the *topology* defined in the *Topology perspective* (8 Topology) of device icons displayed in the Topology perspective. PROmanage® NT has a database of images to display topologies clearly. If a device has no image stored, it is displayed as a question mark.

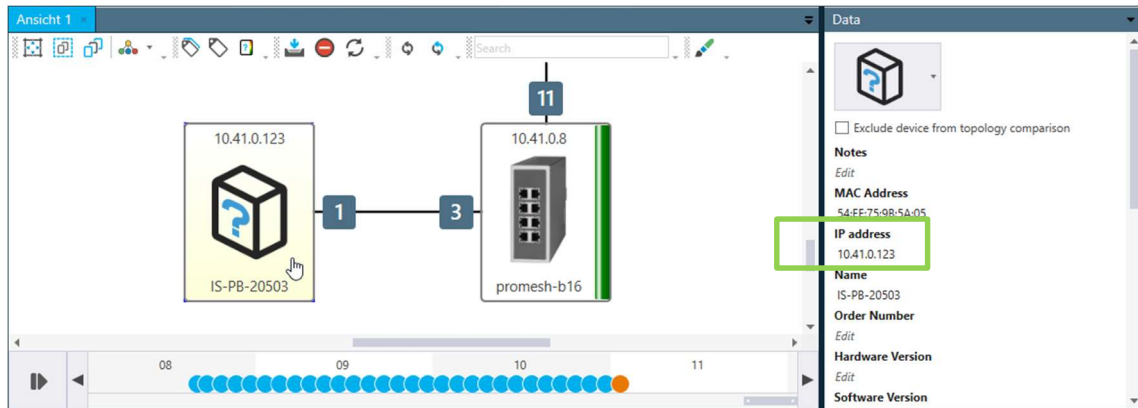


Illustration 74: Topology perspective - missing device icon

To assign an image to one or more devices, an element must be created in which an image can be selected or imported. The assignment is made by defining rules.

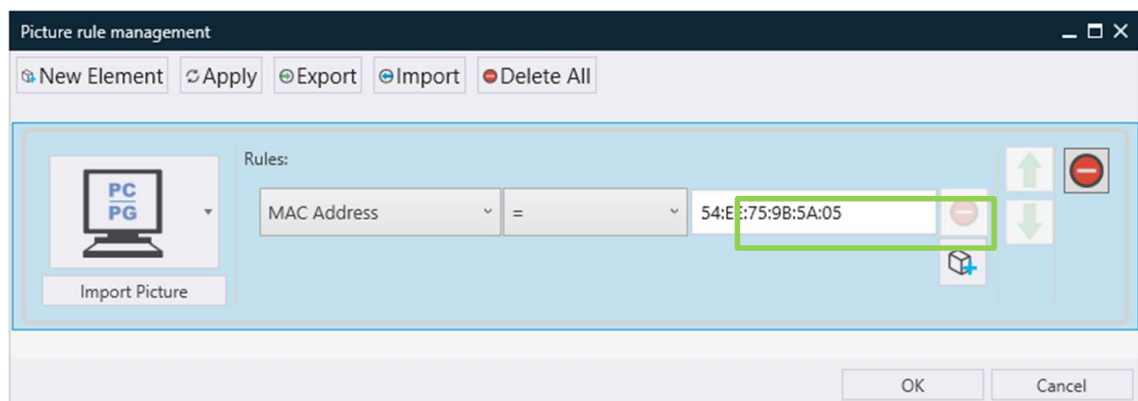


Illustration 75: Element of the image rule management

By *applying* the rule, the new image is assigned to the device in the *Topology perspective*.

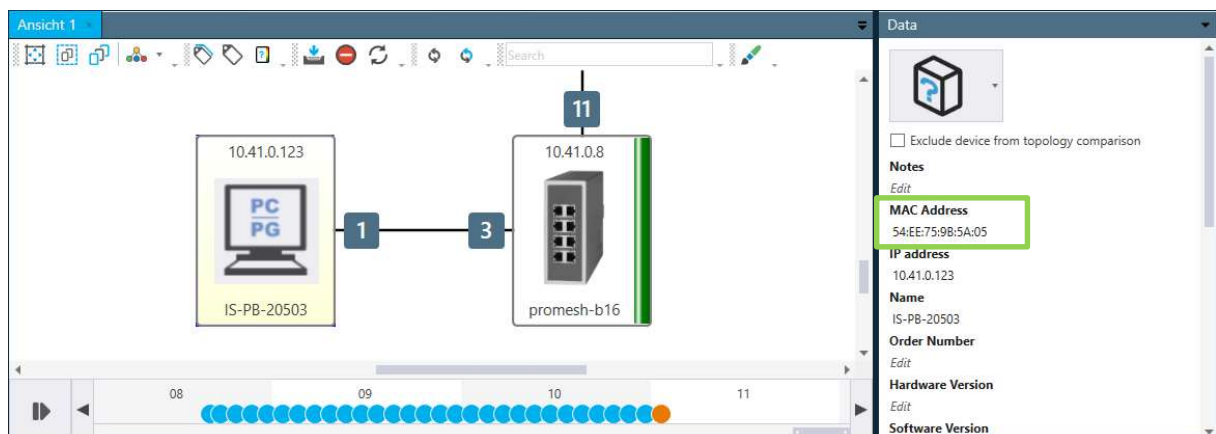




Illustration 76: Topology perspective - Applied device icon

Menu bar

Icons


 New Element

Creates a new *element* in which rules can be defined


 Apply

Applies the created *elements*:


- Active topology
- All open topologies
- All topologies

 Export

Opens a *Windows dialogue* to export all created elements

 Import

Opens a *Windows dialogue* to import previously created elements

 Delete All

Deletes all created *elements*



Opens a *drop-down menu* to select existing or imported images

Import Picture

Opens a *Windows dialogue* to import a saved image into PROmanage® NT (.png, .jpg, .jpeg, .gif, .bmp .only)

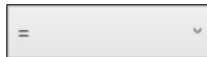
MAC Address

Opens a *drop-down menu* for selecting an argument:

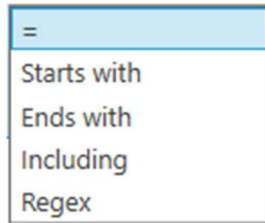
MAC Address
Description
Name
Location of Installation
Contact
OID
Vendor ID
Device ID
Order Number
Hardware Version
Software Version
Device Type Name
PROFINET roles
Serial Number
Revision Number
TopologyDataView.PortCount

Menu bar

Icons



Opens a *drop-down menu* for selecting a condition:



Deletes a rule



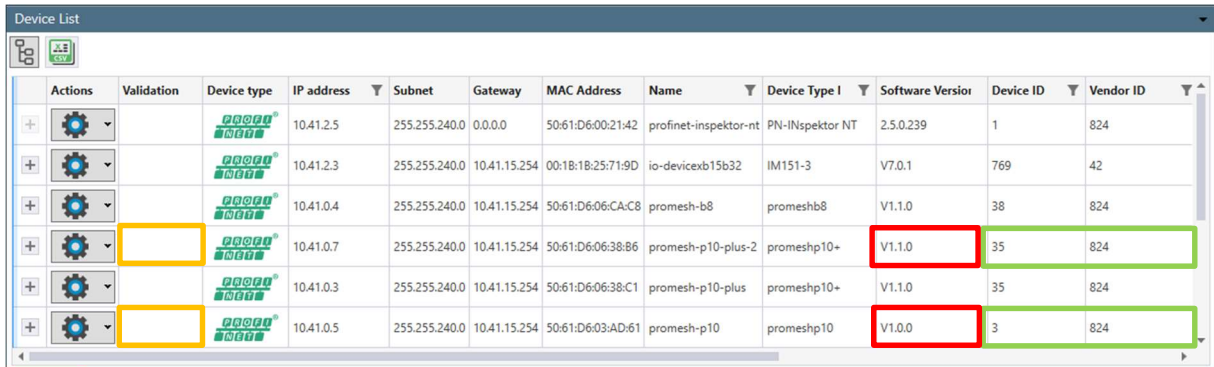
Creates a new rule



Organizes the elements in a sequence (organize the elements in such a way that conflicts between their rules are avoided. Rules of elements at the top take precedence over those of elements at the bottom).

11.8 Topology device validation

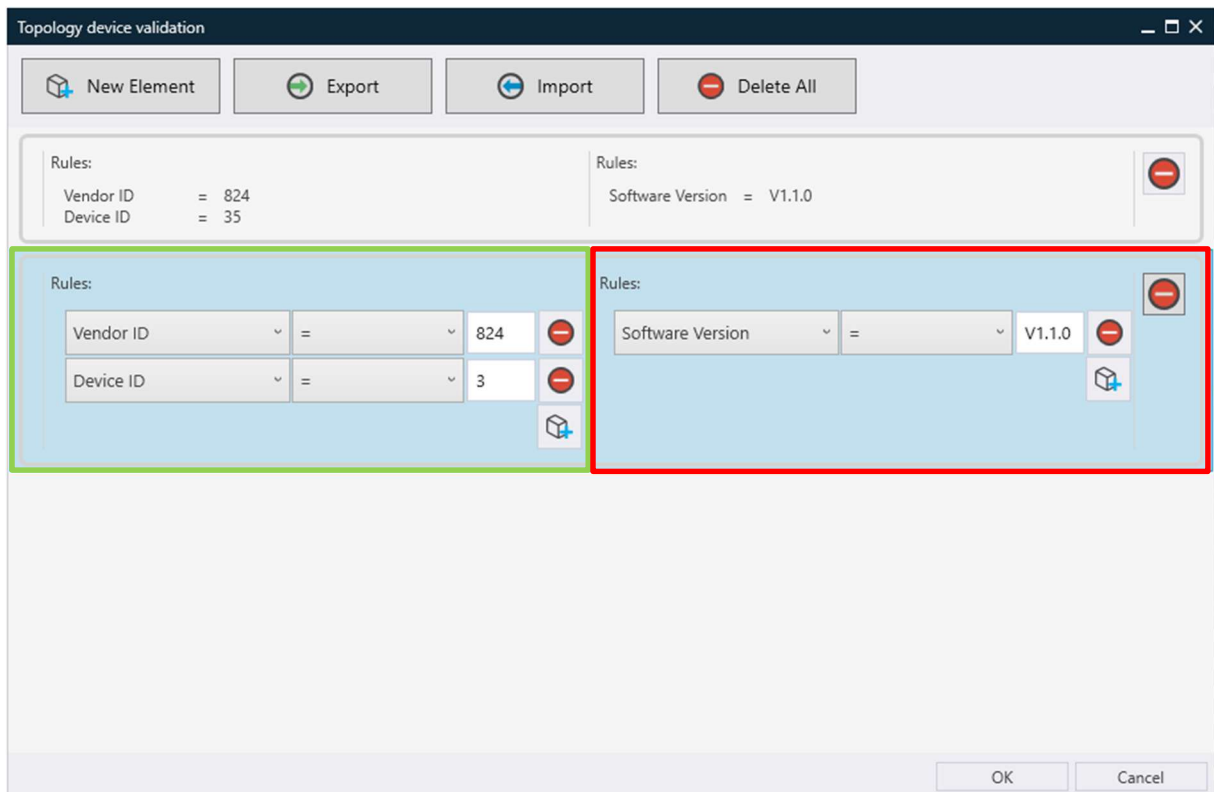
The *topology device validation* refers to the *device list* (8.7 Device list) in the *Topology perspective*. The devices in a topology are displayed in tabular form in the *device list*. One column of the *device list* shows the validation of the device. The validation of a device is primarily used to check the installed software version, but can also be used to validate names, IP addresses and others.



Actions	Validation	Device type	IP address	Subnet	Gateway	MAC Address	Name	Device Type I	Software Versior	Device ID	Vendor ID
+			10.41.2.5	255.255.240.0	0.0.0.0	50:61:D6:00:21:42	profinet-inspektor-nt	PN-INspektor NT	2.5.0.239	1	824
+			10.41.2.3	255.255.240.0	10.41.15.254	00:18:1B:25:71:9D	io-devicexb15b32	IM151-3	V7.0.1	769	42
+			10.41.0.4	255.255.240.0	10.41.15.254	50:61:D6:06:CA:C8	promesh-b8	promeshb8	V1.1.0	38	824
+			10.41.0.7	255.255.240.0	10.41.15.254	50:61:D6:06:38:86	promesh-p10-plus-2	promeshp10+	V1.1.0	35	824
+			10.41.0.3	255.255.240.0	10.41.15.254	50:61:D6:06:38:C1	promesh-p10-plus	promeshp10+	V1.1.0	35	824
+			10.41.0.5	255.255.240.0	10.41.15.254	50:61:D6:03:AD:61	promesh-p10	promeshp10	V1.0.0	3	824

Illustration 77: Topology perspective - Device list without validation

To validate devices, a rule describing the device type must be linked to a rule describing the device property in an *element*.



Topology device validation

New Element Export Import Delete All

Rules: Vendor ID = 824 Device ID = 3

Rules: Software Version = V1.1.0

Rules: Vendor ID = 824 Device ID = 3

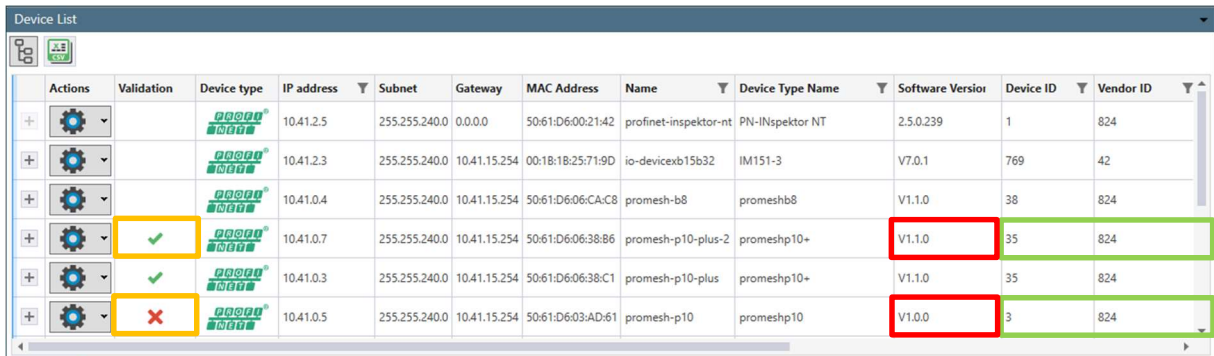
Rules: Software Version = V1.1.0

OK Cancel

Illustration 78: Topology device validation - New element

Menu bar

The next time you refresh the view (8.3 View) of the topology, the *elements* of the validation are applied to the device list and symbols are used to indicate whether an *element* has been violated. Devices to which no rule could be applied remain unevaluated.

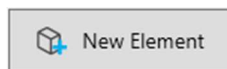


Actions	Validation	Device type	IP address	Subnet	Gateway	MAC Address	Name	Device Type Name	Software Versior	Device ID	Vendor ID
+	⚙️		10.41.2.5	255.255.240.0	0.0.0.0	50:61:D6:00:21:42	profinet-inspektor-nt	PN-INspektor NT	2.5.0.239	1	824
+	⚙️		10.41.2.3	255.255.240.0	10.41.15.254	00:18:18:25:71:9D	io-devicexb15b32	IM151-3	V7.0.1	769	42
+	⚙️		10.41.0.4	255.255.240.0	10.41.15.254	50:61:D6:06:CA:C8	promesh-b8	promeshb8	V1.1.0	38	824
+	⚙️		10.41.0.7	255.255.240.0	10.41.15.254	50:61:D6:06:38:86	promesh-p10-plus-2	promeshp10+	V1.1.0	35	824
+	⚙️		10.41.0.3	255.255.240.0	10.41.15.254	50:61:D6:06:38:C1	promesh-p10-plus	promeshp10+	V1.1.0	35	824
+	⚙️		10.41.0.5	255.255.240.0	10.41.15.254	50:61:D6:03:AD:61	promesh-p10	promeshp10	V1.0.0	3	824

Illustration 79: Topology perspective - device list without validation

Several *elements* can be created, which are all checked in parallel. If several *elements* apply to a device, all rules must still be fulfilled to be valid. If a *rule* for a device is violated, it is not validated, regardless of whether other rules have been fulfilled.

Icons



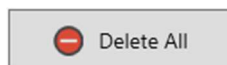
Creates a new *element* in which rules can be defined



Opens a *Windows dialogue* to export all created elements



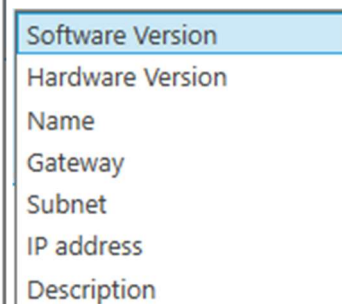
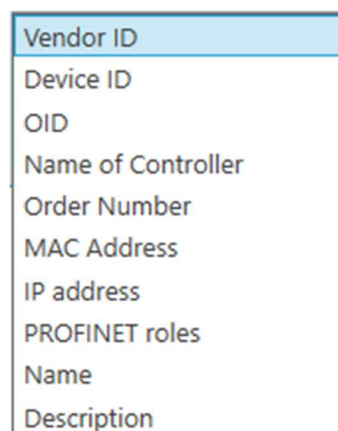
Opens a *Windows dialogue* to import previously created elements



Deletes all created *elements*



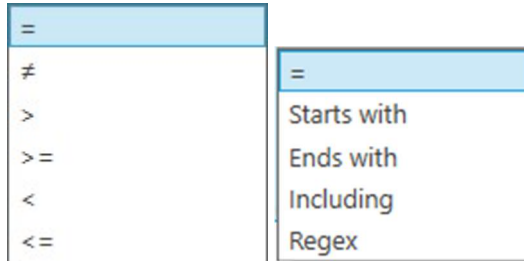
Opens a *drop-down menu* for selecting an argument:



Icons



Opens a *drop-down menu* for selecting a condition:



Deletes a rule or an element



Creates a new rule



No validation rule applies



Validation rules fulfilled



Validation rules violated

11.9 Management of the device description

This function is only required for setting up EtherCAT monitoring. To set up EtherCAT monitoring, please contact Indu-Sol Support.

Contact us

Phone: +49 (0)34491 / 580-321

e-mail: support@indu-sol.com

11.10 Setting

General configurations for the system function are edited in the settings.

11.10.1 Data collector

11.10.1.1 E-mail server configuration

In the *Alarm management perspective, actions* (9.4 Available actions) e-mails can be sent. For emails to be sent, a mail server must be accessible in the network and its configuration must be specified in PROmanage® NT. The configuration data of the mail server must be assigned by the responsible IT department. The correctness of the configuration can be checked by sending a test e-mail.

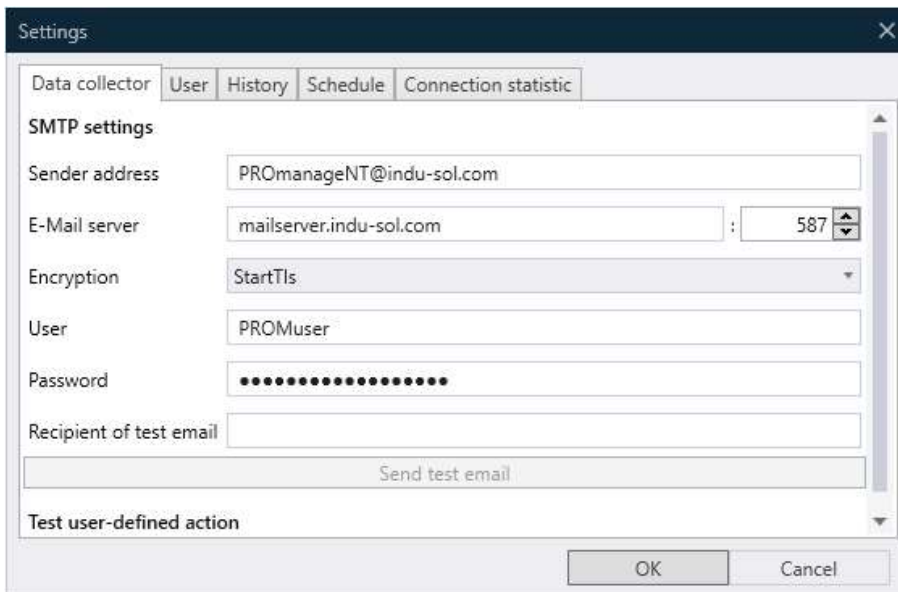



Illustration 80: Example configuration e-mail server

Ports required for SMTP transmission:

 Port	function
25	SMTP server connection
465	SMTP over SSL
587	SMTP over SartTLS
993	Internet Message Access Protocol over SSL (IMAPS)
995	Post Office Protocol 3 over TLS/SSL (POP3S)

11.10.1.2 SNMP trap receiver

In the *Alarm management perspective*, *actions* (9.4 Available actions) traps can be sent. For traps to be sent, a trap receiver must be accessible in the network and its IP address must be specified in PROmanage® NT.

The "SNMP trap receiver active" option enables the option to receive SNMP traps and traps can now be used for an alarm in the alarm management.

If the "Receive all traps" option is activated, traps from other devices (e.g. switch) that send to this server are also received in addition to the configured devices and displayed in the "Corrections" perspective.

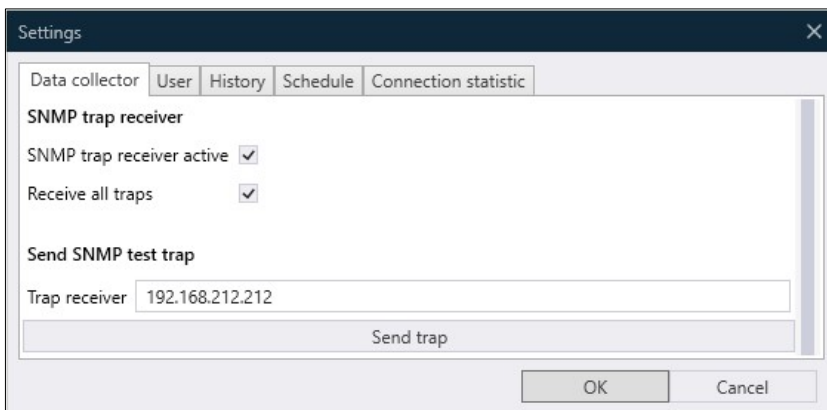


Illustration 81: Example configuration e-mail server

11.10.1.3 User-defined action

In the *Alarm management perspective*, *actions* (9.4 Available actions) can start programs. A path must be specified in the configuration of PROmanage® NT so that programs can be started. The programme can also be started with arguments.

A network message can be sent to your own PC for testing purposes.

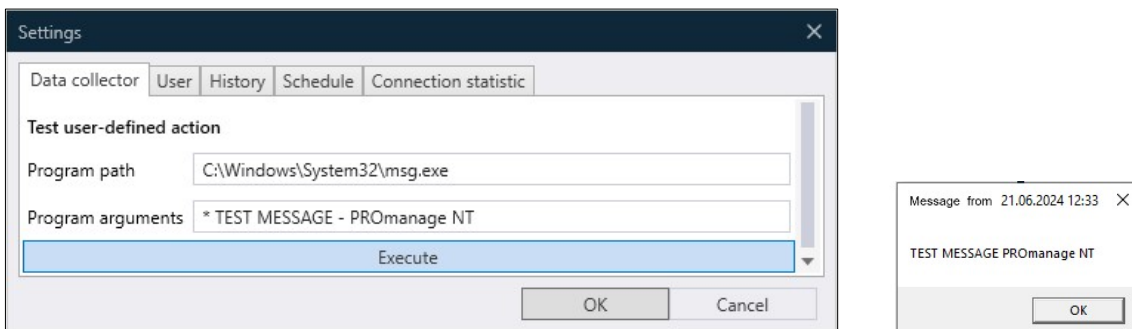


Illustration 82: Example Configuration User-defined action

Further help on network messages can be found on the Microsoft support website or in Appendix ().

11.10.1.4 Users

There are two different users who can log in to PROmanage® NT. The *admin* user can configure the entire system. The *user* can only display data and cannot change any settings.

The default settings are:

User: admin

Password: admin

user: user

Password: user

Only the respective user can change their own password by entering the current password and assigning a new password. On the other hand, the admin user can reset the passwords for admin and user to the default settings.

By setting a timeout, the user (user) or the admin (admin) is automatically logged out after the set time of inactivity.

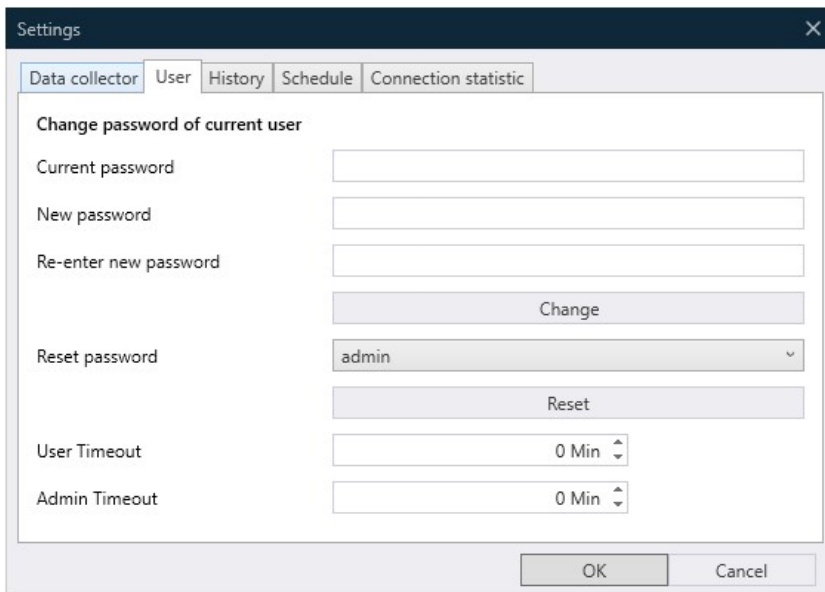


Illustration 83: User settings

11.10.1.5 Chronicle

By activating *Advanced options*, it is possible to display past events in a selected date in the *Chronicle perspective* (6.1 Representation) perspective.

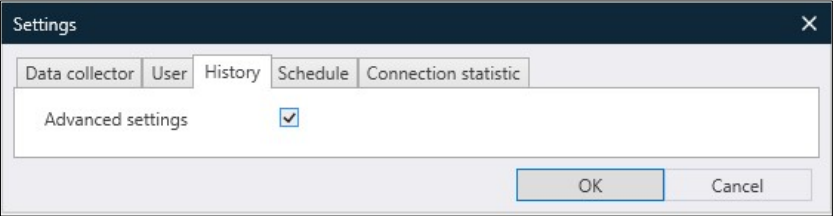


Illustration 84: Chronicle settings

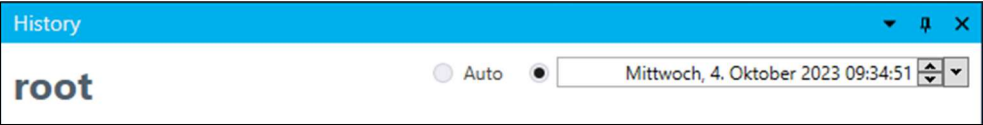


Illustration 85: Chronicle perspective with advanced options

11.10.1.6 Timetable

By creating a schedule, the monitoring of the network can be specifically switched off.

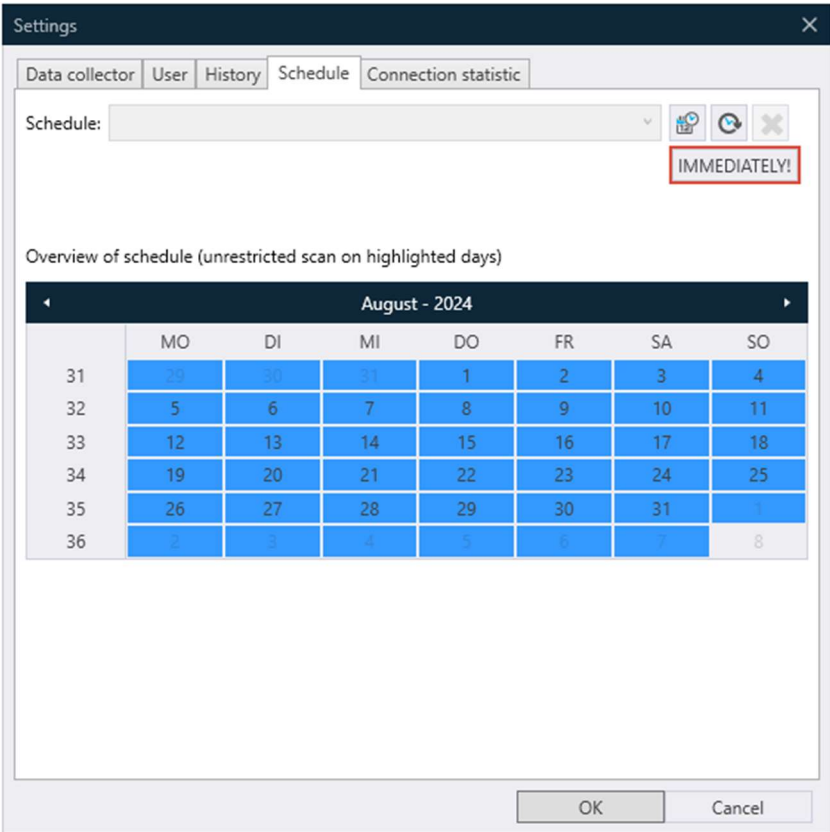
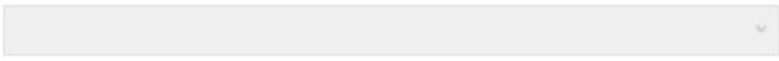
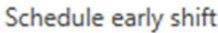


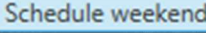








Illustration 86: Schedule setting

Icons

Schedule:	
	    <p>Opens a drop-down menu for selecting a created schedule.</p>
Name:	<input type="text"/>
	Naming of the current schedule
	Creates a new schedule in which the start and end times are specified
	Creates a new schedule in which repetitions are set on a daily basis
	Sets the date and time to the current time
	Deletes the currently displayed schedule
<input checked="" type="checkbox"/> Scan off	Stop the data collector (11.5 Manage data collectors)
<input checked="" type="checkbox"/> Alert off	Deactivates alarm settings (9 Alarm management)
	On this day, the data collector will <u>not be</u> switched off according to the schedule
	On this day, the data collector will be switched off according to the schedule

Create schedule

- Selection of a single, repeat or immediate appointment
- Assignment of a name
- Selection of whether data collectors and / or alarm management should be stopped
- Setting a time period
 - If no end date is specified, the schedule runs permanently until it is cancelled
- Confirm with OK
- Save (11 Menu bar)

Illustration 11.10-87 Schedule

Menu bar

11.11 Log out user

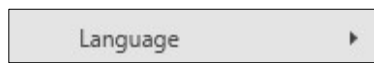
Logs out the current user and redirects to the login window.

11.12 Exit

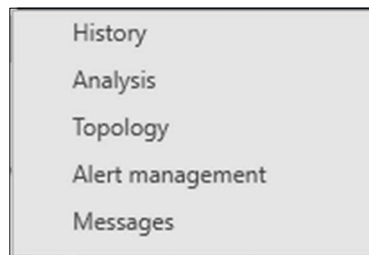
Closes the software.

11.13 Windows

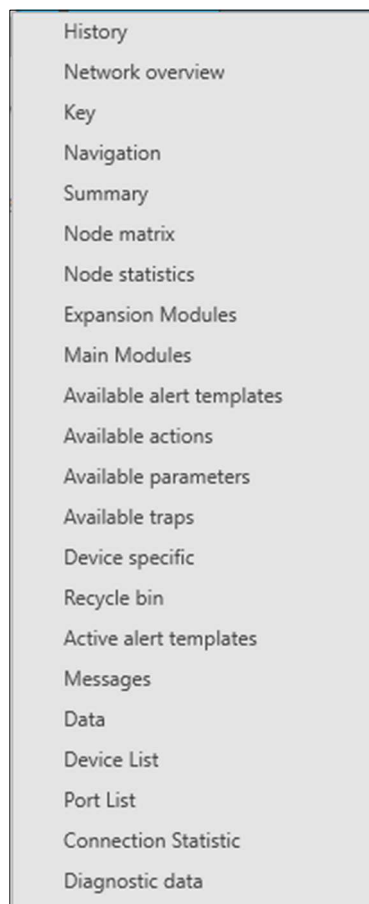
Allows you to select a language, perspective or view (7.1 Representation) or resets all changes.



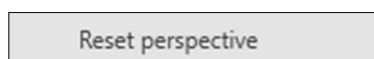
Changes the language



Opens up a perspective



Opens a view



Resets the view to the default settings

11.14 Help

Shows information on the version, license, third-party provider and end user license agreements.

If required, the event reports and configuration files of the software can be accessed via the selection buttons of the log folders.

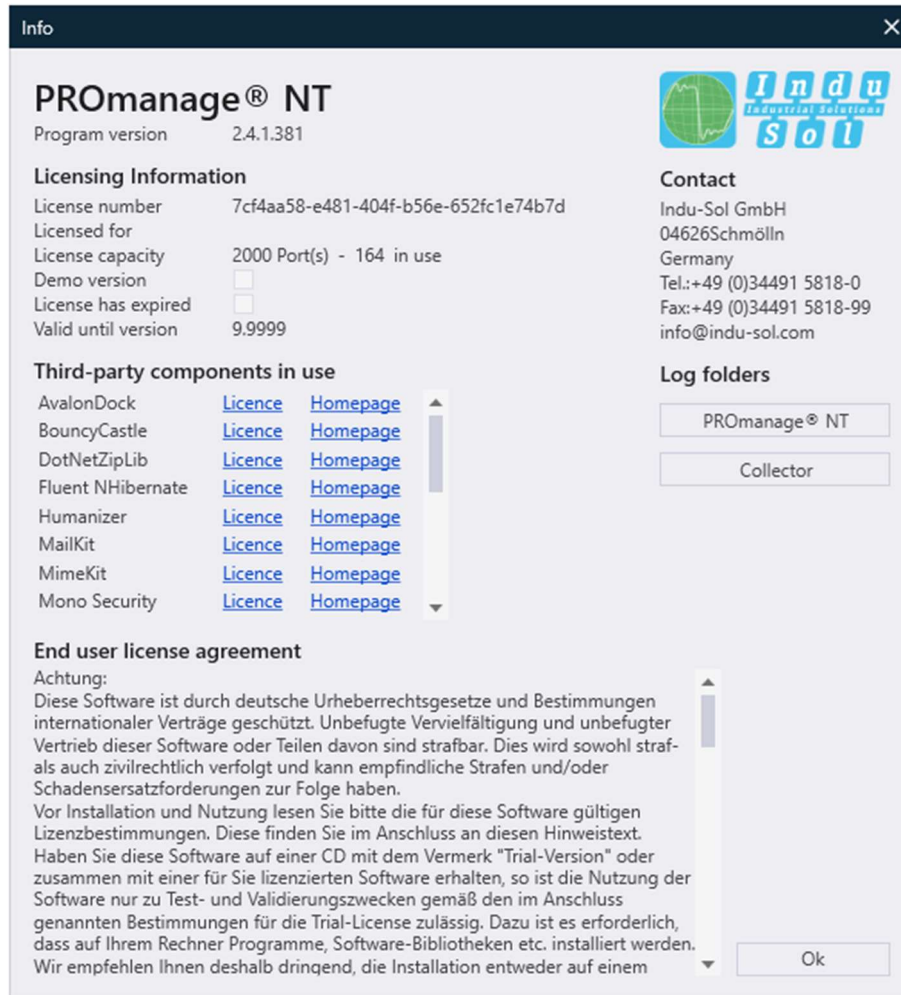


Illustration 88: Help, Info

12 Appendix

12.1 PGAdminIII

12.1.1 Backup database (PostgreSQL)

The "*pgAdmin III*" program is used to generate a database backup. This is part of PostgreSQL and is started via the program selection in the corresponding program folder.

The corresponding server is selected in the program and a connection to it is established after entering the password (default: "postgres").

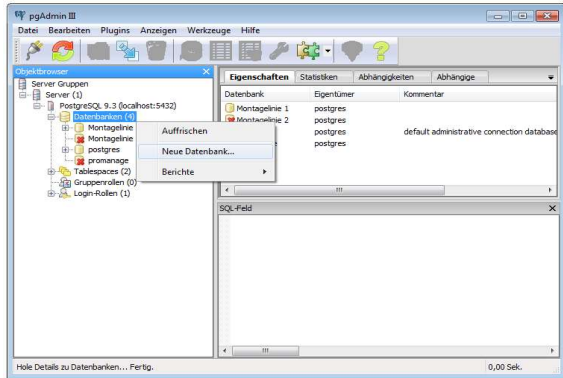


Illustration 12.1-5 Restore database

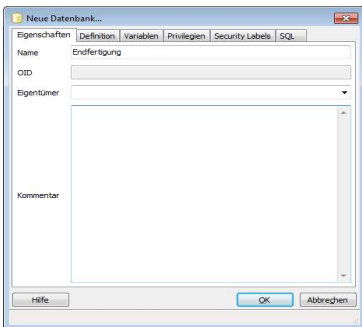


Illustration 12.1-6 Restore database

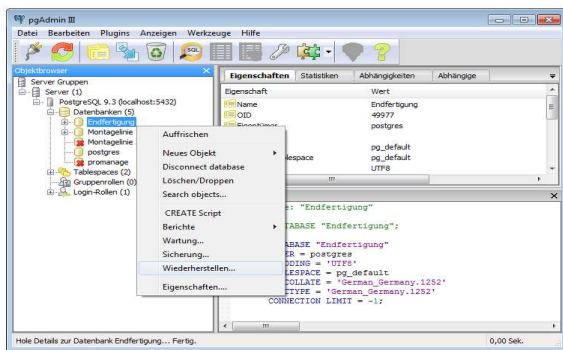


Illustration 12.1-7 Restore database

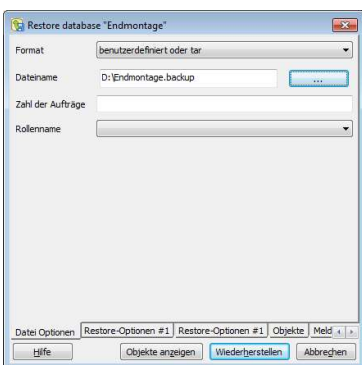


Illustration 12.1-8 Restore database

The "pgAdmin III" program is also used to restore a database.

To do this, go to "Databases→ New database...".

Enter a database name (without special characters) and then confirm with "OK".

To fill the new, still empty database with the desired data, select the new folder and start the restore.

In the next step, locate the storage folder of your backup file and perform the restore.

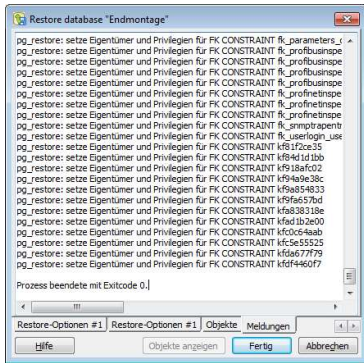


Illustration 12.1-9 Restore database

After successful completion, this is confirmed with "Exit code 0".

12.1.3 Delete database

If you want to remove a database completely, this is also carried out using the "pgAdmin III" program.

The corresponding database is selected and deleted after the security prompt.

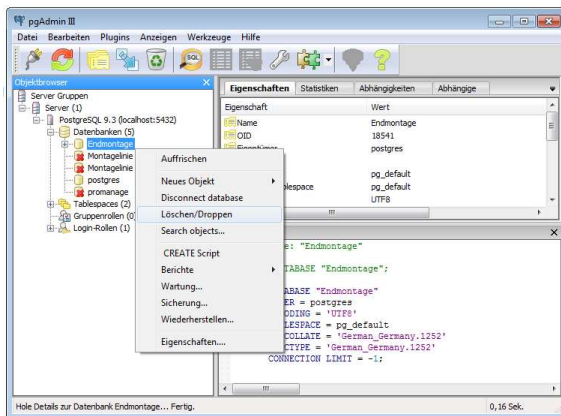


Illustration 12.1-10 Delete database

12.2 MSG: Message service programme for user-defined action

The message service program (msg) can be used to send messages over a network from one user to another user or from computer to computer. This program can be used, for example, as a user-defined action (9.4 Available actions) for an alarm (11.10.1.3 User-defined action).

For a message to be sent successfully, it must be possible to execute the RPC functions on the target computer with a terminal connection. Remote desktop connections must also be authorized. If the current user does not use a password (single-user PC), account use with empty passwords must have been activated on the target system, otherwise access will be denied.

To send messages via the network, the RRS service (remote registration) must be activated and the following registry entry must be adjusted or created:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\TerminalServer
Value: AllowRemoteRPC
Required value: 1 (REG_DWORD)
```

Syntax of the msg command:

```
MSG {username | session name | session ID | @filename | *}
[/SERVER:server name] [/TIME:seconds] [/V] [/W] [message]
```

Username	Specifies the username.
Session name	The name of the session.
Session ID	The ID of the session.
@filename	Specifies a file containing a list of usernames, session names and IDs to which the message is sent. * Sends message to all sessions on the specified server.
/SERVER:Server name	Server to which the connection is established (default is the current server).
*	Sends a message to all sessions on the specified server.
/TIME:seconds	Waiting time until the recipient confirms the message.
/V	Displays information about the functions performed.
/W	Wait for response from user, useful with /V.
Message	Message to be sent. If none is specified, a message is requested or read by "stdin".

12.3 OPC server

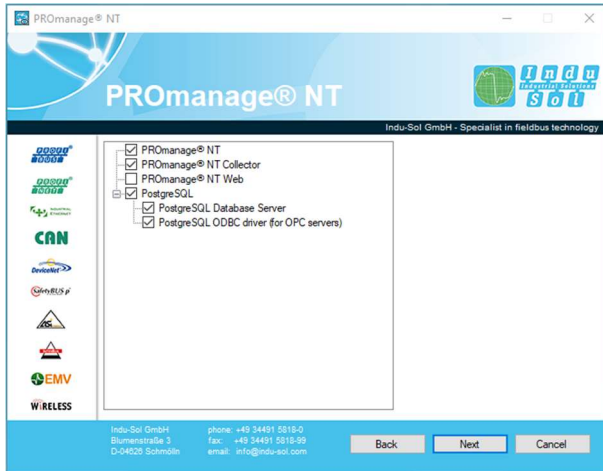


Illustration 12.3 -12.3-1 Driver OPC Server

12.3.1 Establish OPC connection

An optional OPC connection to other computers can be established to forward the messages recorded by PROmanage® NT to a higher-level system. To do this, the item "PostgreSQL ODBC driver (for OPC server)" must be activated and executed during installation.

The next step is to install and configure the "KepServerEX" program. The procedure for this is explained below.

12.3.2 Install KepServerEx and configuration

Install ODBC Client (Full Installation → Communication Server → Communication Driver → ODBC Client)

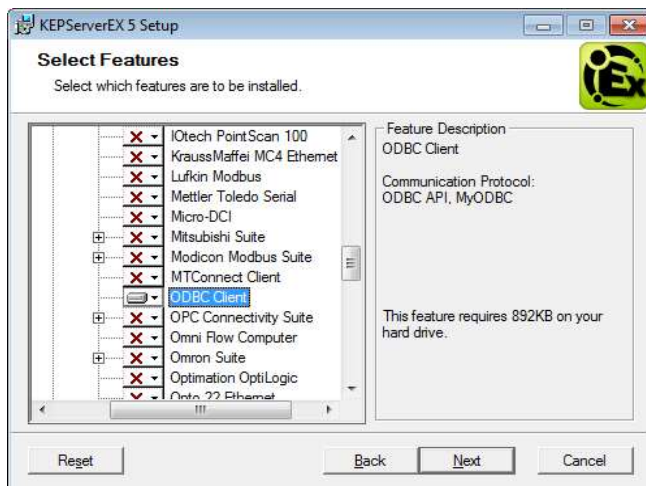


Illustration 12.3-2 CEP OPC server

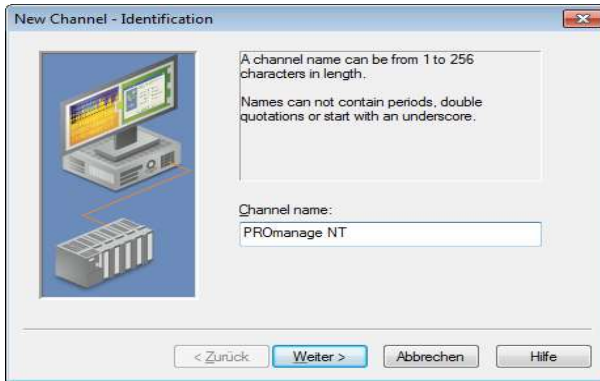


Illustration 12.3-3 CEP OPC server



Illustration 12.3-4 CEP OPC server

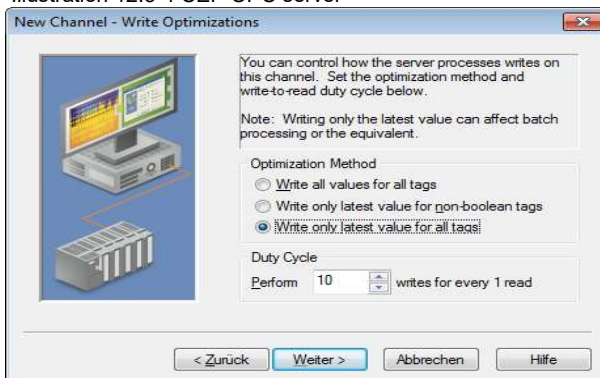


Illustration 12.3-5 CEP OPC server

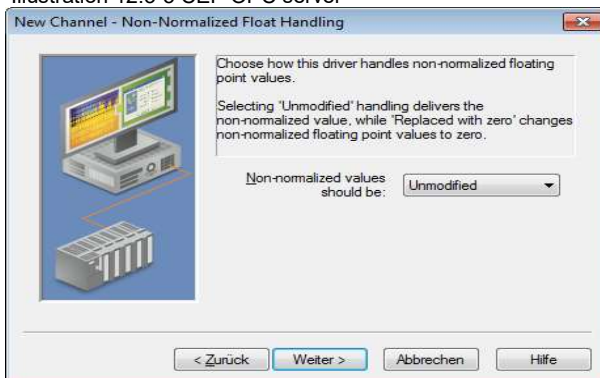


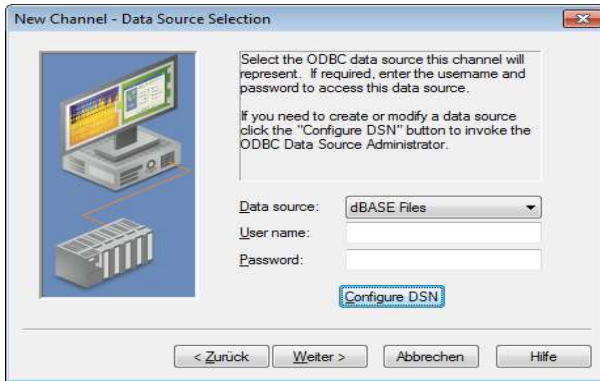
Illustration 12.3-6 CEP OPC server

Start KepServerEx Configuration as administrator
Add channel (Edit→ Channels/Devices→ New Channel)

Device Driver: ODBC Client
Activate "Enable diagnostics"

Optimization Method: Write only latest value for all tags
Duty Cycle: Perform 10 writes for every 1 read

Non-normalized values should be: Unmodified



Data source: dBASE Files

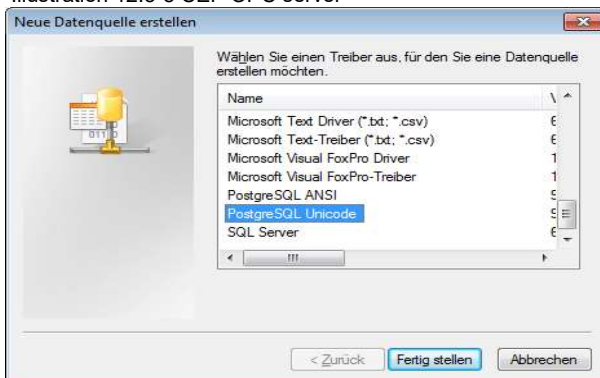
"Activate "Configure DSN"

Illustration 12.3-7 CEP OPC server



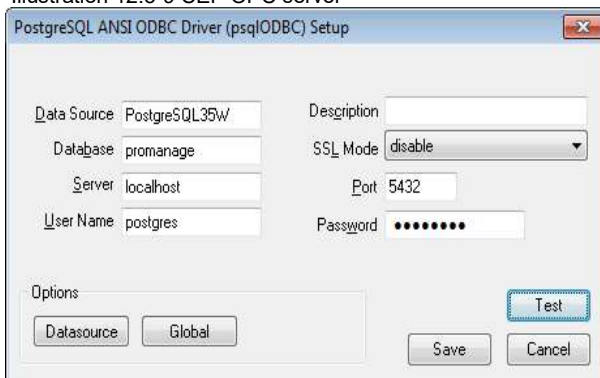
Select "System DSN" and press "Add"

Illustration 12.3-8 CEP OPC server



Select "PostgreSQL" and then confirm with "Finish"

Illustration 12.3-9 CEP OPC server



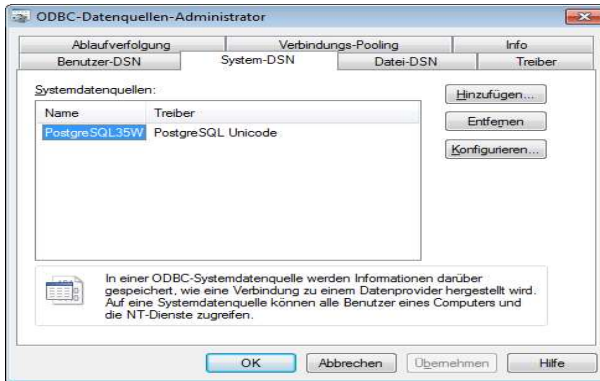
Configure PostgreSQL ANSI ODBC Driver (psqlODBC) Setup

(Example: Settings for standard installation of PROmanage® NT)

- Database: promanage
- Server: localhost
- User Name: postgres
- Password: postgres

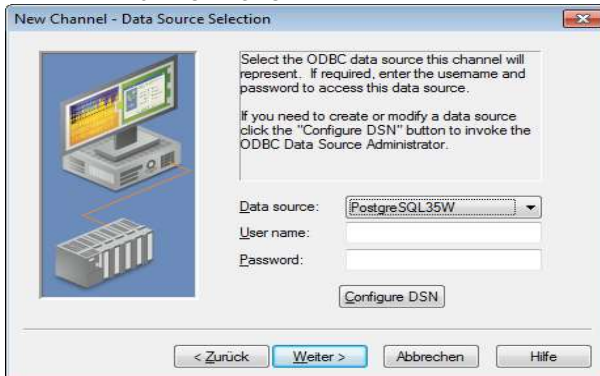
Illustration 12.3-10 CEP OPC server

After correct entry: Test button → Connection successful



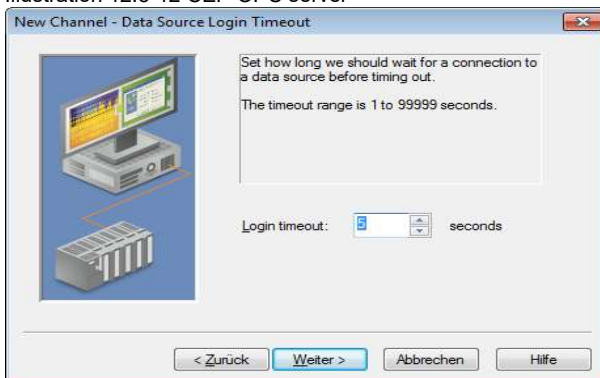
Close the ODBC data source administrator with "OK"

Illustration 12.3-11 CEP OPC server



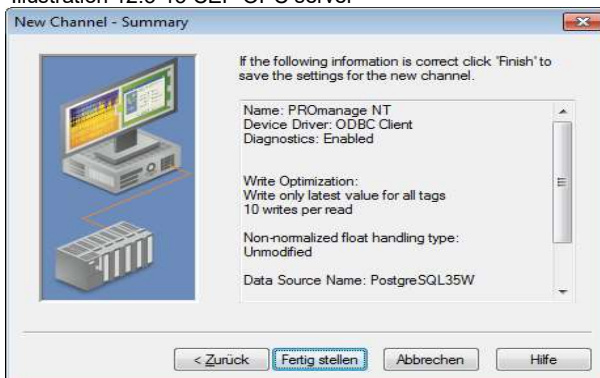
Data Source Selection: select created data source

Illustration 12.3-12 CEP OPC server



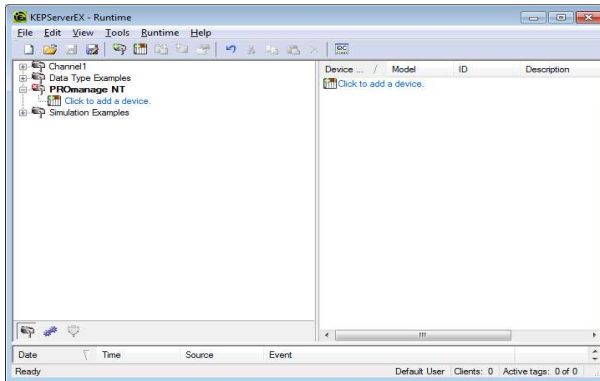
Data Source Login Timeout: 5 seconds

Illustration 12.3-13 CEP OPC server



Check and confirm settings

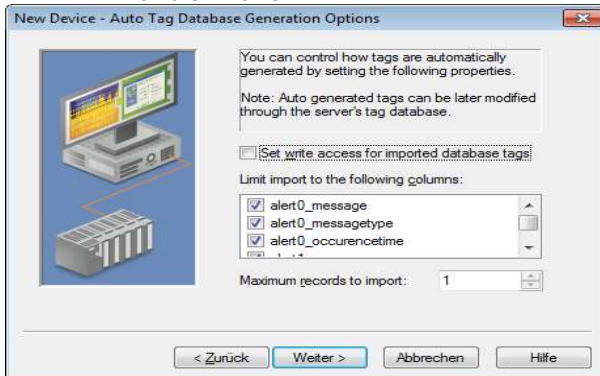
Illustration 12.3-14 CEP OPC server



In KEPServerEX via "Click to add a device." Add a new device

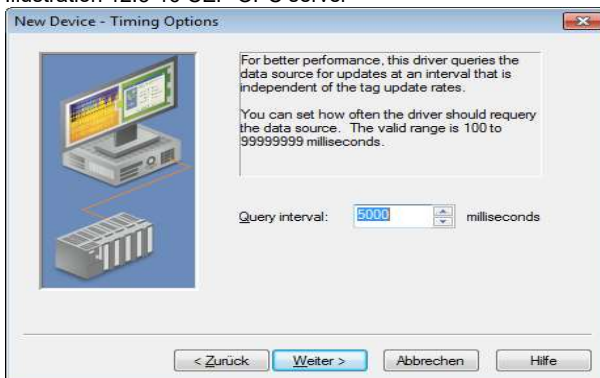
- Device name: Alarms
- Device model: MySQL
- Scan Mode: Respect client specified scan rate
- Access method selection: Fixed Table
- Table selection: opcalerts

Illustration 12.3-15 CEP OPC server



Retain settings under "New Device - Auto Tag Database Generations Options"

Illustration 12.3-16 CEP OPC server



Set query interval: 5000 milliseconds

Illustration 12.3-17 CEP OPC server



Check and confirm settings

Illustration 12.3-18 CEP OPC server

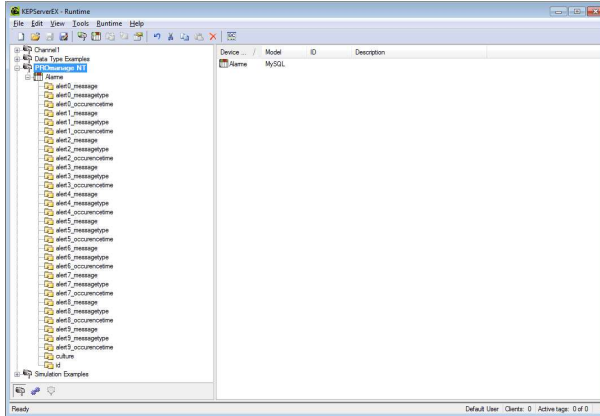


Illustration 12.3-19 CEP OPC server

As a result, the tags are automatically generated by the system

12.3.3 Explanation of the individual alarms (alerts)

Alarm	Meaning
Id	Automatically generated primary key
Culture	Language
alert0_message	Message generated by PROmanage [®] NT
alert0_messageType	Message type (system, trap, ...)
alert0_occurrenceTime	Date of the generated message
...	...
...	...
...	...
alert9_message	Message generated by PROmanage [®] NT
alert9_messageType	Message type (system, trap, ...)
alert9_occurrenceTime	Date of the generated message

Alarm 0 is the last alarm generated (latest message)

13 Notes

Indu-Sol GmbH

Blumenstraße 3
04626 Schmölln

Telefon: +49 (0) 34491 580-0

Telefax: +49 (0) 34491 580-499

info@indu-sol.com

www.indu-sol.com

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