



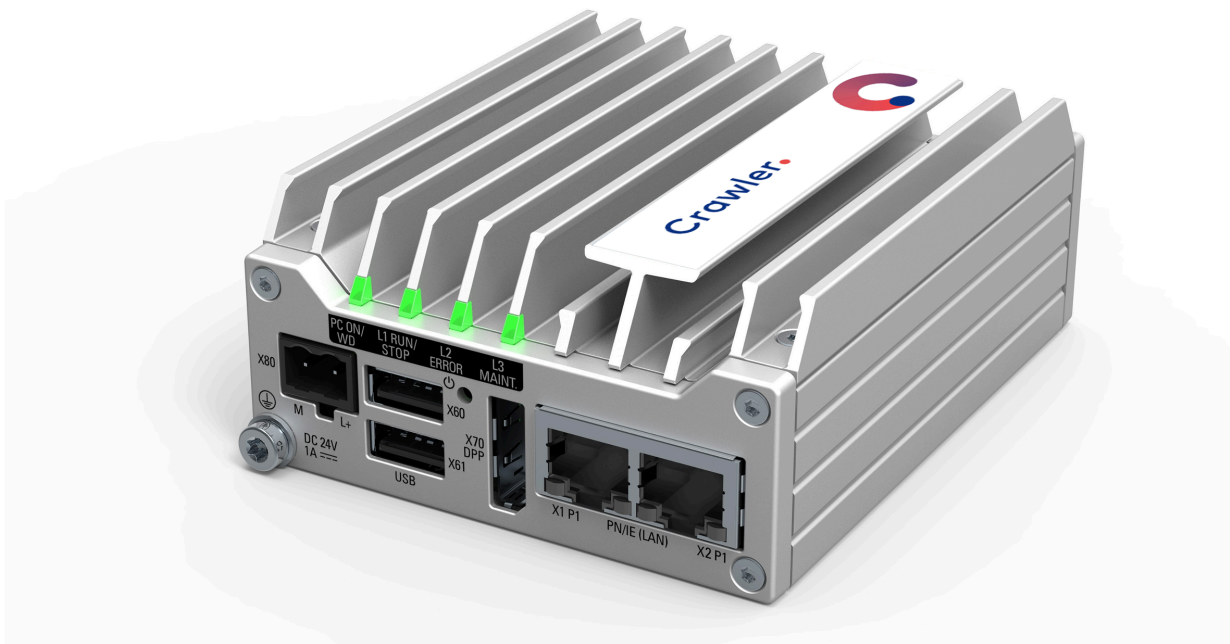
Documentation





Work in Progress

This section is currently being revised. Content may be incomplete or subject to change.



Edge (Crawler) is a compact industrial edge computing device that captures, evaluates, visualizes, and forwards machine data in real time — directly at the source, without relying on a central server.

It combines control technology, gateway functionality, and a browser-based interface in a single unit, and works in both connected and air-gapped environments.

Edge (Crawler) comes with pre-installed connectivity for SIEMENS controllers and Modbus devices, and can be extended with additional functions such as condition monitoring or cloud connectivity.

Configuration and management is handled via the built-in web interface — accessible directly in the local network without additional software.



Caution

This section is currently being worked on. Content will be added here shortly.



Danger

i This feature is available with the optional AWS Gateway Module. Please get in touch with us.

At-a-glance


[Section titled “At-a-glance”](#)

To enable an Edge to connect to AWS IoT Core, the device must be registered in AWS and configured with a certificate. The certificate can be used by the gateway endpoint to authenticate itself.

The following guide describes the steps required to set up an Edge as an IoT device.

Creating a device (Thing) in IoT Core

[Section titled “Creating a device \(Thing\) in IoT Core”](#)

1. Log in to the AWS Console Portal and switch to AWS IoT Core
2. Under “Manage” → “Things”, create a new device
 -  The Thing name must match the “Hostname” of the Edge
 - Select a “Thing Type”
3. Create a “Device certificate”
 - Keep the certificate files safe!!!!
 - **Important:** Assign policies

Setting up and converting the certificate

[Section titled “Setting up and converting the certificate”](#)

Both the certificate and the associated policy can be changed afterwards. Note that the certificate cannot be downloaded again, but a new one can be created.

The certificate files downloaded from AWS are not in the required format for the endpoint. A “.pfx” file is required. This is created from the private key (`...-private.pem.key`), the certificate (`...-`

certificate.pem.crt), and the AWS root certificate (AmazonRootCA1.pem).

Linux

[Section titled "Linux"](#)

1. Open the WSL environment
2. Navigate to the directory containing the downloaded certificate files
3. Use the following command:

```
openssl pkcs12 -export -in certificate.pem.crt -inkey private.pem.key -out  
THINGNAME\_certificate.pfx -certfile AmazonRootCA1.pem
```



4. You will be prompted for an "export" password. This must currently be a specific predefined password, as the endpoint has been configured with it to open the certificate
 - The password can be requested from AK or RM
 - Alternatively, there may be entries in the Edge Keepass where the password is specified.

Windows

[Section titled "Windows"](#)

On Windows, the "CertUtil" tool can be used in PowerShell.

1. The certificate and private key file must have the same name with the respective file extensions "crt" and "key"
2. In the shell:

```
certutil -mergepfx \<certificate-name>.crt \<result-name>.pfx
```



3. You will be prompted for a password. This must currently be a predefined one expected by the Edge endpoint. (Password must be requested from customer support.)



Note

i It is recommended to store all files, the password used during conversion, and the hostname in a safe location.

Setting up the Gateway Endpoint

[Section titled "Setting up the Gateway Endpoint"](#)

1. Navigate in the Edge UI to: "System > Settings" → Gateway → desired endpoint
2. Under "Login credentials": upload the certificate file and save

Adding measured variables

[Section titled "Adding measured variables"](#)

Manual

[Section titled "Manual"](#)

1. Navigate to the desired dispatcher: "Forwarding" → "Endpoint" → "desired dispatcher" (e.g. Dispatcher NuP)
2. Click the "+" button at the bottom
3. Select the desired measured variable(s).
4. Enter the initial settings, such as the aggregation interval (this setting can be changed at any time)
5. Save

Additional measured variables can be added.

Automated retrieval available from version 2.14

[Section titled "Automated retrieval available from version 2.14"](#)

1. Marking measured variables

[Section titled "1. Marking measured variables"](#)

To automatically retrieve measured variables, the measured variable intended for transmission must be given a parameter. To do this, go to the list of measured variables for a device and open the editing dialog for the respective measured variable. Here you add an additional parameter with the identifier `gateway_aggregation`.

Aggregation interval

The aggregation interval is specified as a string literal and follows this schema:

- s = seconds
- m = minutes
- h = hours

A value could therefore look like this, for example:

- 15s
- 1m
- 2h

Transmitting raw values

If the measurement point is to be transmitted raw (not aggregated), the value “0” (“null”, without time literals) must be specified for the parameter.



Caution

Due to a bug, parameters can no longer be completely deleted from a measured variable. To prevent the measured variable from being selected for the gateway, the value for the entry can be left **EMPTY**.

2. Retrieving in the gateway

[Section titled "2. Retrieving in the gateway"](#)

To trigger automated retrieval, click the "Retrieve measured variables" button in the respective dispatcher.

After a brief moment, the previously marked measured variables will be configured in the dispatcher with the respective aggregation.



Note

Automated import is only possible as long as no measured variables are currently added to the gateway. Manual changes will therefore not be overwritten. If measured variables have already been added, they must be removed from the gateway. With the new bulk editing functions, this can be done in just a few clicks.

Preparation

[Section titled "Preparation"](#)

- Determine the IP address of the field device
 - Determine the device type of the field device (e.g. Modbus, Simatic S7 → see "Supported Device Types" [TODO])
 - Connect the field device to the Edge's network
-

General workflow

[Section titled "General workflow"](#)

1. Make the field device available in the Edge's network
 2. Determine the IP address and type of the field device
 3. Add a new device
 4. Import variables or *configure them manually*
 5. Visualize data
-

Adding a device

[Section titled "Adding a device"](#)

- Go to "+ Add devices" in the main menu
- Select the appropriate device type

- Enter the required information (may vary depending on device type)

1. Network address of the field device

2. Identifier (required later when setting up the visualization; **can only be changed from version 2.7 onwards**)

3. Additional device-specific entries

4. Optional: select a template

- You can provide additional information in the form of “tags” (key-value pairs)

- This information is only used to store additional metadata

- The information is displayed later on the device page, but has no further use within the Edge system.

Setting up measured variables

[Section titled “Setting up measured variables”](#)

Import (only for “S7 symbolic addressing”)

[Section titled “Import \(only for “S7 symbolic addressing”\)](#)



Note

i Importing measured variables and their structure from the field device is currently only supported for S7 controllers with symbolic addressing.



Caution

⚠ For large PLC structures, the import may fail. We are currently working on an optimization. As an alternative, use the CSV import or manual configuration.

- Prerequisite: a connection to the field device has been established
 - This is shown on the device page, or displayed as a notification when it changes

- Pressing “From device” retrieves the structure and measured variables from the field device

- Navigate to “Edit” under “Measured variables” on the device page
- In the “Variable Browser” you can create new groups and measured variables

New group:

New measurement point:

Creating groups

[🔗 Section titled “Creating groups”](#)

- Identifier for the group (has no effect on the later address of the measured variable and serves for organization purposes)

- Should subordinate measured variables be recorded (**recommended = Yes**; this setting cannot be changed)
- Optional: metadata (currently not in use)

Creating a measured variable

[🔗 Section titled "Creating a measured variable"](#)

- Name = identifier of the measured variable, used for later selection in Grafana (can be changed later)
- Logging = should recording be started immediately after creating this measured variable

- Interval = sampling rate
- Address = address on the PLC (follow the schema: Specification: Protocols and Field Devices | Manual address entry (!!!LINK))
- Data type = select from supported data types
- Optional: metadata (currently not in use in the system)

Modifying configured measured variables

[Section titled "Modifying configured measured variables"](#)



Note

Planned content:

- What can be edited and how.
- Editing individually and in bulk
- Deleting (individually, in bulk, and groups)
- Expert mode (via JSON)

Which settings can be changed for a measured variable?

[🔗 Section titled "Which settings can be changed for a measured variable?"](#)

- Name
 - NOTE: Changes to the name require adjustments in already configured dashboards
 - The name should be unique within a group level; otherwise incorrect values may be displayed in the visualization
- Sampling rate
 - Data range: 10ms to 500 h
 - Specified in milliseconds
- Start and stop recording
- Enable/disable timestamp alignment
- Enable/disable recording metrics
- Add/remove tags

Editing or deleting a single measured variable

[🔗 Section titled “Editing or deleting a single measured variable”](#)

- Identify / search for measured variables
 - TODO: Explain filter area
- Edit in place
 - Name and sampling rate (ms)

Dialog via icon:

1. Sampling rate
2. Start and stop recording
3. Enable/disable timestamp alignment
4. Enable/disable recording metrics
5. Add/remove tags
6. Delete (confirmation required)
 - NOTE: Measured variables can no longer be retrieved in the visualization. Already configured panels may display incorrect or no data.
 - Currently, recorded data is not deleted and used disk space is therefore not freed.

Editing or deleting multiple measured variables in bulk

[🔗 Section titled "Editing or deleting multiple measured variables in bulk"](#)

- Select the desired measured variables in the Variable Browser (add to the "Shopping Cart")
 - Selection is **highlighted in color**
 - The number of selected measured variables is shown on the Shopping Cart
 - top right:

- Open the Shopping Cart

- Adjust the selection if needed (“x” only removes the measured variable from the Shopping Cart; it is not deleted)
- “Edit all”

- Overwrite individual settings for all measured variables
 - If the current settings differ across the current selection, this is indicated
-
- By checking the checkbox, an individual setting can be overwritten
 - The setting can be applied to all selected measured variables using “Apply”
 - After applying, you are returned to the Shopping Cart. It can now be closed or further edits can be made.

This guide contains information for the initial setup of the Edge. A wizard will guide you through several steps. The Edge is not ready for operation until the wizard has been completed.



Caution



Please note that after completing the wizard, the Edge must be restarted. This may take a few minutes.

Connecting to the Edge

[Section titled "Connecting to the Edge"](#)



Tip



The Edge is accessed via a **browser**.

- It is recommended to use Chrome, Edge, or Firefox.*



To connect to the Edge, you must be connected via the network. Upon delivery or after resetting to factory settings, the IP addresses are set to default values:

- X1: 192.168.0.5
- X2: 192.168.1.5

If the Edge is on a different subnet, the *Discovery Tool* can help. This allows you to configure the X1 adapter so that you can subsequently access the web interface directly.

Setup Wizard

[Section titled "Setup Wizard"](#)

The wizard is used to perform the initial configuration of the Edge system. This process will be required again after resetting the Edge.

Language

[Section titled "Language"](#)

- Select the language
 - Current options: German and English
 - Note: This setting is local to the browser only, not shared across users
 - Can be changed later: yes
-

Name and Location Identifier

[Section titled "Name and Location Identifier"](#)

- Required entries:
 - Name = identifier in the network, in the display, and in the gateway
 - \triangle Cannot be changed later (factory reset required)
 - Length limit: max. 20 characters (*it is recommended not to use special characters or spaces*)
 - Location ID / Functional designation = free-form entries, used for assignment
 - Can be changed later
 - May be used by data forwarding functions in some cases
-

Security

[🔗 Section titled "Security"](#)

In the next step, the password for the settings area of the Edge must be set. This password can be changed later.

Note

- The password must be at least 6 characters long.
- The username “admin” and the password set here during setup are required to log in.

Time and Date

[🔗 Section titled “Time and Date”](#)

General

[🔗 Section titled “General”](#)

- Both manual and automatic (NTP server) modes are supported

Mode can be switched

- Specify the time zone (select from list)

Automatic (via NTP server)

[🔗 Section titled “Automatic \(via NTP server\)”](#)

- Automatic synchronization (interval???)
- Uses the specified server, which can be changed

- Prerequisite: the server must be reachable from the Edge (regardless of which LAN adapter is used)

Manual

[Section titled "Manual"](#)

- Switch to "manual"
- Time and date can be entered manually
- Time refers to the selected time zone

Network Settings

[Section titled "Network Settings"](#)

- Depending on the device, there are multiple network adapters
- Each adapter has a preset IP address upon delivery or after a factory reset
- Depending on the hardware variant (e.g. WAGO or Siemens), the network adapters on the device are labeled X1 (=eth0) and X2 (=eth1)

Siemens:

WAGO:

When used as a VM, the number of network adapters may differ.

Adapter

[🔗 Section titled “Adapter”](#)

- For each port/adapter, the following can be configured:
 - IP address
 - Subnet mask
 - Default gateway

- Enable/disable DHCP

DNS + Domain

[Section titled "DNS + Domain"](#)

- In addition, domain and DNS can be specified across all adapters
- All entries are optional
- Up to 5 DNS servers can be specified
- Individual DNS entries can be deleted

Finish

[Section titled "Finish"](#)

The initial setup is complete. Pressing the “Finish” button will restart the Edge. You can then proceed with setting up data recording.

The Edge system is continuously developed. Improvements or new features are provided via update bundles. These are delivered digitally by your contact person.

The following explains how to install them.

Update Bundle

[Section titled "Update Bundle"](#)

An update bundle can cover several functions and areas of an Edge. Each package builds on the previous one. It is therefore important to install update packages one after another and in the correct order.

An update bundle has the file extension .zip and does **NOT** need to be unpacked before installation.

Instructions

[Section titled "Instructions"](#)

```
import { Steps } from '@astrojs/starlight/components';
```

1. Download the desired update package (e.g. crawlerUpdate_2.12.2.zip).
2. Open the Edge AdvancedUI (accessible under "Advanced Settings").
3. Navigate to "System" > "Settings" > "System Control".
4. Under "Update", click the button. A new tab opens with the update area.
5. Make sure the current version of the Edge is the direct predecessor of the update bundle.
 - e.g. 2.12.2 requires 2.12.1
6. Click "Upload package" and then click "Add file" in the dialog.
7. Select the update bundle in the file selection dialog.
8. Then click "Upload". Depending on the connection speed, this process may take a moment.
9. After the bundle has been uploaded, updated functions/services are highlighted in a list. You can discard or start the update here.
10. Click "Start update" to begin.
11. The update may take several minutes. The steps of the update are listed during the update process.
12. When the update is complete, this is shown in a dialog (in the current version an incorrect version number is displayed. Only after confirming the dialog and possibly reloading the page will the correct

version be shown).

13. Depending on the update, it is recommended to restart the system once.

14.



Note



Repeat the steps for each update bundle.



Note

This feature is available with the optional **NuP Gateway Module**. Please get in touch with us.

In addition to local recording on the Edge system, data can also be forwarded to other systems such as the N+P platform. The following describes how the configuration on the Edge must be carried out to establish communication with the platform and transmit selected measured values.

Prerequisites

[Section titled "Prerequisites"](#)

For the Edge to communicate with the N+P platform, the gateway functions must first have been installed. This may have already been done at delivery, or must be done retroactively with an update package.

In the advanced UI for configurations, the version of the Edge is displayed in the lower left corner. If the name contains "-nup1.x" (x may vary depending on version), then the required functions and services have already been installed. Otherwise, the appropriate update package, e.g. "update-2.12.2-nup1.1", must be installed.

Setting up communication (one-time)

[Section titled "Setting up communication \(one-time\)"](#)

1. Set BMK:

- In the "System" → "Settings" area, click the "General" section
- Enter the name defined for the cloud as the BMK of the Edge
- Click save

2. In the "System" → "Gateway" area, select the NuP Endpoint (crawler-app-gateway-endpoint.nup).

The following settings must be made here:

- **Set address:**
 - In the "Connection" area, click the pencil icon in the top right.

i. In the dialog that opens, adjust the protocol, address, and port (e.g. mqtt, *plattform.nupis-rz.de*, 8883).

ii. Click “Save”.

- **Enter username and password**

- In the “Login credentials” area, click the pencil icon in the top right.

- Select the “Password” method here.

- Enter the username and password provided to you.
- Save your entries.

After these steps, the connection to the platform will be established and the connection status will be displayed. Depending on circumstances, this may take a few seconds.



Note

i If the BMK was changed after setting up the address or the user credentials, you must currently click “Save” again in the address dialog. Otherwise, the changed BMK will not be adopted by the system.

Setting up measured variables

[Section titled "Setting up measured variables"](#)

Once communication with the platform has been successfully configured, you can set up measured variables for transmission as needed. The measured variables for data recording in the Edge should, however, be configured first. For more information, see: How-To: Setting up data recording.

Configuring measured variables for transmission requires both selection in the gateway area and the addition of parameters/tags. The order is arbitrary. Note that measured variables without the required parameters will be ignored during transmission.

Selecting in the gateway

[Section titled "Selecting in the gateway"](#)

1. Navigate via "System" → "Gateway" → "NuP Endpoint". In the right area you will see a list of extensions. Select 'NuP Dispatcher'.
2. On the following page, you can add individual or multiple measured variables for transmission using the "+" **button**. This selection is made from the measured variables previously configured in the Edge. Navigate through the structure and select the desired measured variables.
3. Confirm your selection using the **shopping cart** (top right). You then need to decide whether you want to transmit the measured values at their **original resolution** or **aggregated**. This setting can be adjusted later for each measured variable.

The selected measured variables for transmission are listed in the NuP Dispatcher overview. Here you have the option to remove measured variables or adjust aggregation settings.

Setting required parameters

[Section titled "Setting required parameters"](#)

The N+P platform requires the specification of various settings for each measured variable to be transmitted to the cloud. This information includes:

- Name of the measured variable in the cloud
- Unit of the measured values
- Assignment to the plant

This information must be added separately for each measured variable. To do this, switch to the “**All measured variables**” area. Navigate to the corresponding measured variables and open the settings dialog by clicking the **pencil icon** to the right of the respective measured variable.

In the dialog, click the “**+ Add information**” button under “Parameters”. Repeat this step until exactly **3 rows** have been added. Fill in the fields as follows:

Identifier	Value
nupName	Name of the measured variable in the cloud platform
nupUnit	Unit of the measured values
nupIdentification	Assigned plant (in the cloud)

If you made a typo in an identifier, you can simply delete the relevant row and add a new one.

Don't forget to save your changes at the end. They will be taken into account in the **next transmission cycle**.



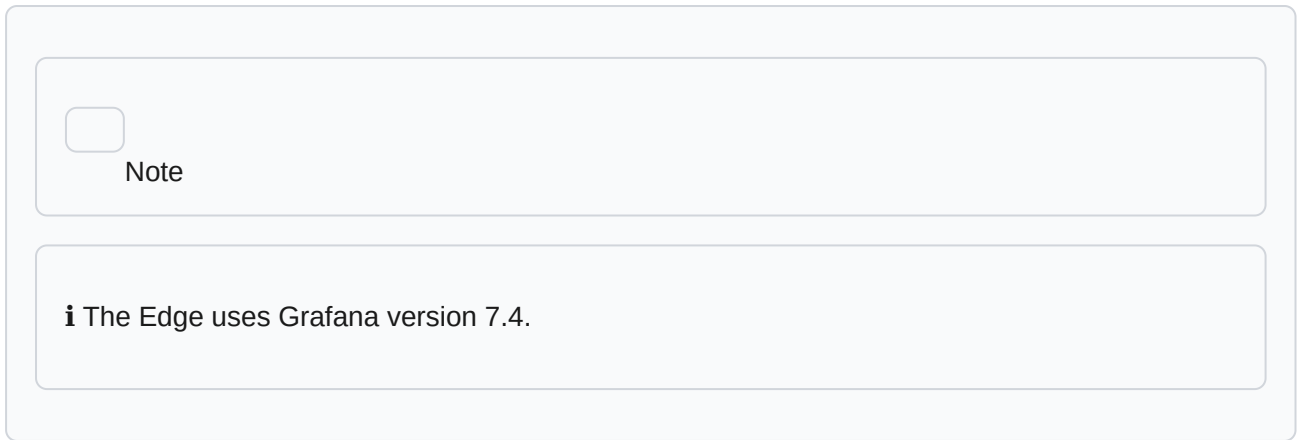
Tip

Valid from Edge version = **2.7.1**

General information about visualization (Grafana)

[Section titled “General information about visualization \(Grafana\)”](#)

- The visualization platform “Grafana” is used for visualizing measured values and other data.
- It offers a wide range of options for displaying data
- Depending on the data points and use case, various display options are available
- Multiple panels can be configured in a dashboard
- Each panel can include several measured variables and be configured individually.
- Tutorials and general tips & tricks for Grafana
 - [Grafana documentation | Grafana documentation](#)
 - [Tutorials | Grafana Labs](#)
 - [Tips for Designing Grafana Dashboards](#)
 - ...



Viewer vs. Editor

[Section titled "Viewer vs. Editor"](#)

No login is required to view previously configured dashboards. If you want to create new dashboards or panels, or edit existing ones, you must log in with an "Editor" account.

To log in, click the icon in the lower left area. You will then be prompted for a `username` and `password`.

Creating dashboards


[Section titled "Creating dashboards"](#)

To create a new dashboard, click the "+" symbol in the left menu bar and select "Dashboard". A page with a blank panel will open.

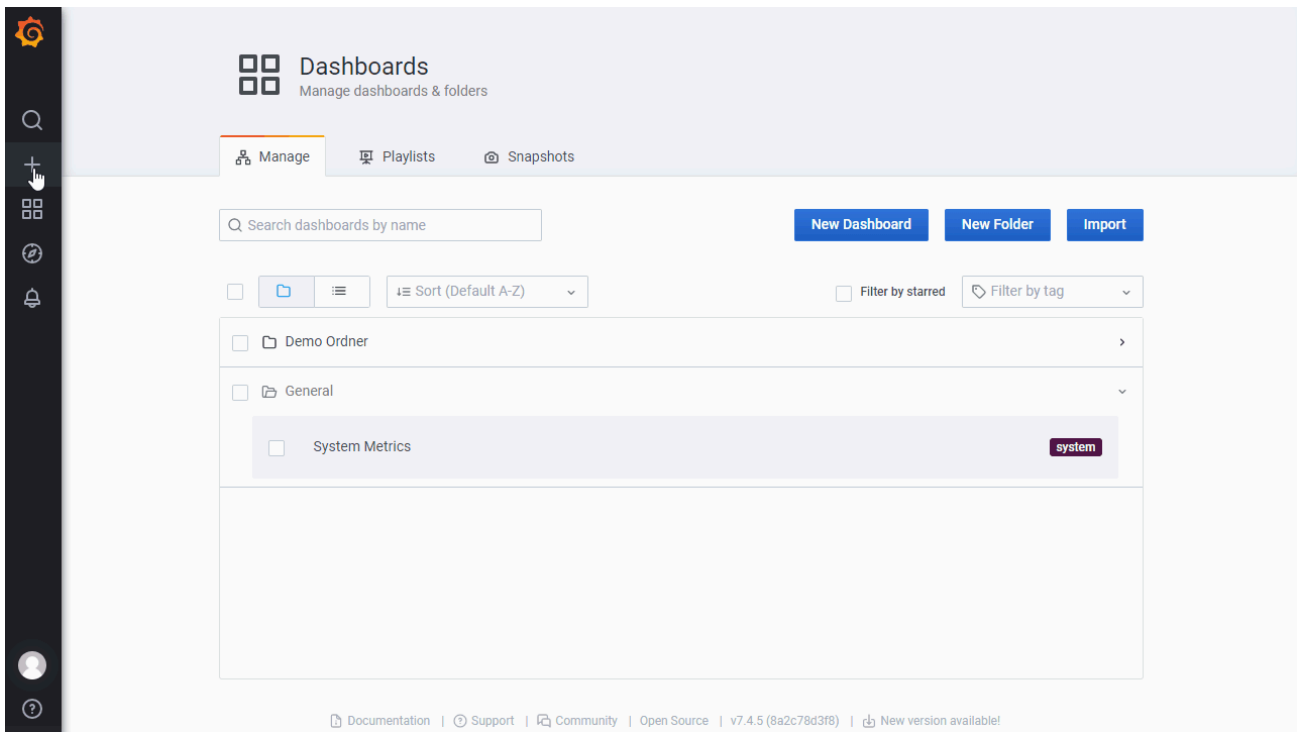
You can now add content to the dashboard and configure advanced settings.



Caution

For the dashboard to persist, it must first be **saved**. To do so, click the  symbol in the upper right area.

In the dialog that opens, you can give the dashboard a name (can be changed later) and sort it into a folder. Then click “Save”.



Creating folders

[Section titled "Creating folders"](#)

Folders are used to organize dashboards. You can create as many folders as you like and assign dashboards to them.

To create a folder, click the "+" symbol in the left menu and select "Folder" from the submenu.

Enter the desired name for the folder and confirm with "Create".

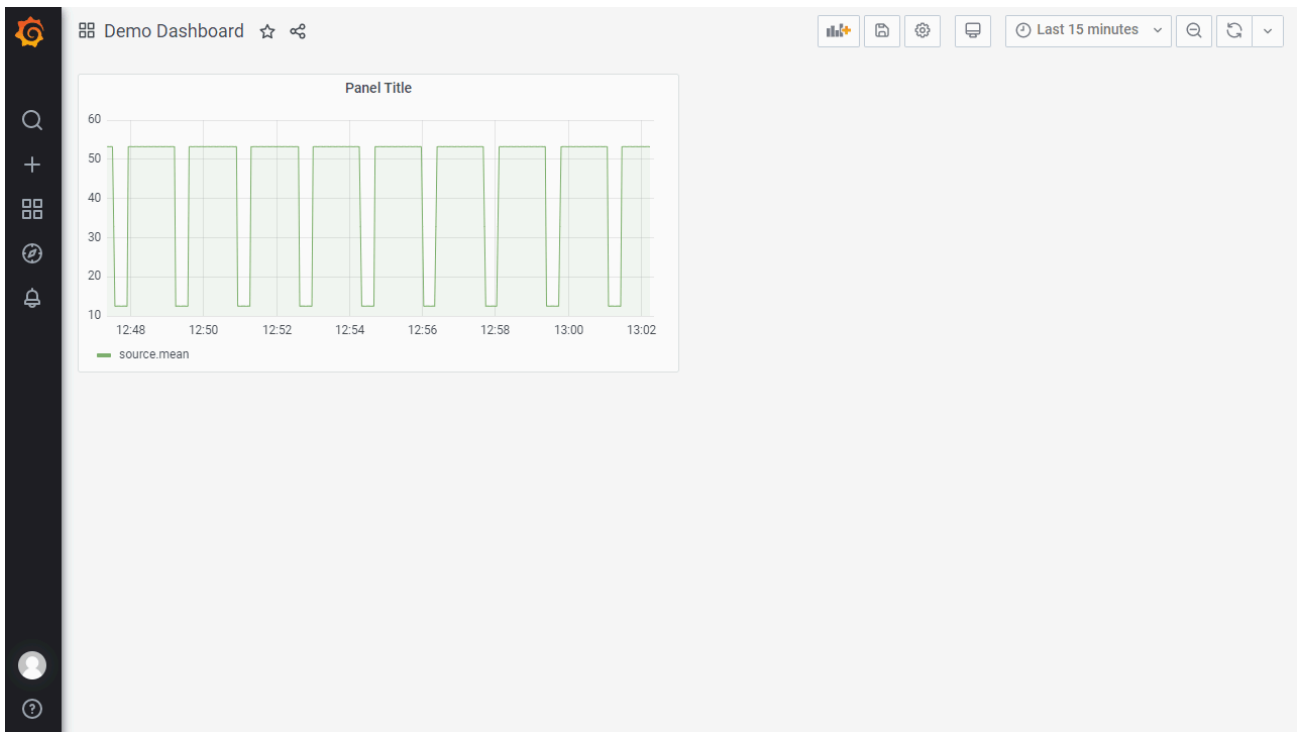
Export/Import of dashboards

[🔗 Section titled “Export/Import of dashboards”](#)

You can export dashboards and import them on another device or for restoration.

Open a dashboard that you want to **export**. Click the “Share” symbol in the upper left area (next to the title) and select the “Export” option. Use “Save to file” to download the dashboard (settings and panels) as a file.

To **import** an exported dashboard, first click the “+” symbol in the left menu and select “Import”. In the following dialog you can select the dashboard file (file extension = .json). You can then change the name, folder, and UID of the dashboard. If a dashboard with the same name or UID already exists, the corresponding information must be adjusted. You can also overwrite the existing dashboard.



Adding content to a dashboard

[Section titled "Adding content to a dashboard"](#)

A dashboard consists mainly of so-called panels. These can be created and configured individually.

To create a new panel, click the "+" symbol in the upper right area (to the left of the save symbol).

A new panel is always inserted at the top and can then be placed individually within the dashboard. Select "+ Add new panel" in the added box. You will be directed to the editor page for a panel. This area allows configuration of the data source and the display.

Selecting a measured variable

[🔗 Section titled "Selecting a measured variable"](#)

For data to be displayed in a panel, at least one measured variable must be selected. This is done in the lower area, below the display preview.

1. **Select Measurement***:* Select source here. If this is not available for selection, no values have been recorded yet for configured measured variables. If you still want to set up the visualization, you can also enter source manually (note lowercase spelling).

2. **Select field device:** Click the "+" symbol to the right of "WHERE" and select "device_name". Then click "select tag value" and choose the desired device.
3. **Select folder:** To select a measured variable, you must first select the folder in which the measured variable was created (see How-To: Adding measured variables, How-To: Editing configured measured variables). To do this, click the "+" symbol again and select "group_*". Then click "select tag value" and choose the desired folder. Repeat these steps until you have reached the target folder.
4. **Select measured variable:** Click the "+" symbol again and select "variable". Select the desired measured variable from the list. You can filter the selection by entering text.

Provided that values have already been recorded for the selected measured variable in the current time range, they should be shown in the preview area.



Caution

If the selection of the measured variable has not yet been completed (e.g. only the device has been selected), values will already be displayed in the preview. These are not correct and represent a combination of multiple measured variables. It is therefore crucial to have selected a measured variable ("variable") at the end.

Measured variables of type “String”

[🔗 Section titled “Measured variables of type “String””](#)

Measured variables that are stored in the Edge as a string (e.g. `S7_DWORD`, see *Specification: Protocols and Field Devices*) require a change to the “field” value. To do this, click on “value” in the “Select” area. Enter the text `"stringValue"` (⚠ note case sensitivity).

Changing and adjusting the display type (“Visualization”)

[🔗 Section titled “Changing and adjusting the display type \(“Visualization”\)”](#)

Grafana offers a variety of display options. These include charts (line, bar), individual values, gauges, or tables. Depending on the display type, different settings (axes, legend, colors, labels) can be configured. The official *documentation* and *tutorials* from Grafana are referenced here.

All settings can be made in the right-hand area.



Caution

This section is currently being worked on. Pages will be added here shortly.

2.21.0

[Section titled “2.21.0”](#)

2026-04-16

◆ Highlights

[Section titled “Highlights”](#)

Version 2.21.0 brings a complete run data export: measurement data can be downloaded as CSV via configurable runs. A new Gateway reconnect mechanism additionally enables manual restoration of connections directly from the user interface.

↑ New Features

[Section titled “New Features”](#)

- Run Export
Runs can be downloaded as a CSV file. The interface shows all completed runs and provides direct download access to the exported data.
- Run Configuration
Runs can be created and configured via the interface. Supported trigger types: alarm trigger (with pre and post time), external trigger (start & stop), time trigger (start & stop), and interval trigger. Existing configurations can be activated and deactivated.
- Variable Path in Run Configuration
Run variables now support an additional parameter for the full group path to the variable (e.g. Device3/Group2/Variable12).
- Gateway Endpoint Reconnect
When connection problems occur, the connection of a Gateway endpoint can be manually forced via the interface. The broker configuration is updated before the reconnect. Connection status and endpoint details are directly viewable.
- Gateway Insights: Extended System Data
The system now transmits additional device information to the Hub: device ID, software version, MAC addresses, manufacturer, serial number, and the available storage space of the database partition.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- **Run without Variables**
A run without defined process variables caused an error during CSV export. The run is now no longer activated if no variables are stored.
- **Email Notifications for Alarms**
Email notifications for Grafana alarms could no longer be sent after version 2.18, as the underlying system service was no longer available. The device name is now correctly retrieved via the new OS service.
- **Run Interval Initialisation**
Interval-type runs were not correctly initialised when created: the start time was not set and the first data record was skipped.

◆ Technical Appendix

[Section titled "Technical Appendix"](#)

Component Versions

[Section titled "Component Versions"](#)

Group	Component	Version	Notes
Web UI	Advanced	4.10.13	
App	Batching	1.0.0	New
Core	Notification Hub	1.1.0	
Gateway	Endpoint AWS	1.5.2	
Gateway	Dispatcher Insights	1.11.7	
System	Proxy	1.20-2.21	
Host	Docker Config	1.0.2	

Breaking Changes

[Section titled "Breaking Changes"](#)

- **Restart required**
This update automatically triggers a device restart. When updating from version 2.20, the system also validates that the required DEB Crawler Packs are installed.

2.20.0

[Section titled "2.20.0"](#)

2026-03-03

Note: System restart required This update requires a system restart. The restart can be performed at any time, but must occur before a further update is applied.

The update includes a pre-installation validation of the installed packages (prerequisite: version 2.19). If the validation fails, the update process is aborted — no changes are made.

◆ Highlights

[🔗 Section titled “Highlights”](#)

Version 2.20.0 introduces the OPC UA connector: connection to OPC-UA-capable devices with secured connection, variable explorer, and status display. Several bug fixes in the OPC and Gateway areas improve stability.

↑ New Features

[🔗 Section titled “New Features”](#)

- **OPC UA Connector**
Connection to OPC-UA-capable devices is now possible. The connector supports gradual exploration of the device variable tree (no pre-loading of the full structure), secured connections with password authentication, and all common data and access types (Bool, String, DateTime, Array, etc.).
- **OPC Quick Insights**
Connection status, error messages, and warnings from the OPC connector are displayed in the Quick Insights view, analogous to the Simatic connector.
- **OPC Performance Test**
The performance test button for the OPC connector is now active and delivers valid test results.
- **Device ID (Crawler ID)**
Each device receives a unique UUID, which is provided via the system info route. This ID enables reliable assignment of the device in Hub and Companion.
- **Updater: Subversions**
Update bundles can now set a subversion without incrementing the main version. This enables individual components or special features to be retrofitted.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- **OPC: Password Change on Device**
A password change on the OPC device was ignored after the first time and only took effect after a container restart. The cause was a faulty deduplication of configuration messages.
- **OPC: Reconfiguration of Variables**
Changes to variables (e.g. interval, activation) were not applied by the connector. Configuration events are now processed correctly.
- **OPC: Incorrect Performance Test Result**
The performance test did not return a valid result when the sampling rate could not be achieved. The result is now correctly reported as failed.
- **OPC Quick Insights: Unclear Messages**
Status messages for connection and password issues were partially unclear. The messages have been revised and aligned with the format of the Simatic connector.
- **Gateway: Send Switch Required Restart**
The switch in the MX Dispatcher area for controlling the send process only took effect after a device restart. The change is now applied immediately.

◆ Technical Appendix

[Section titled “Technical Appendix”](#)

Component Versions

[Section titled “Component Versions”](#)

Component	Version	Notes
OS Image		
Web UI Advanced	4.9.20	
Web UI API	1.24.1	
Source Control (SourceConfig)	1.3.1	
Gateway Manager	1.10.0	
Host Updater	2.4.0	
Host Proxy	1.20-20260217	
Source OPC	1.7.2	

Breaking Changes

[Section titled “Breaking Changes”](#)

- v2.19 only supported. Ensure v2.19 is fully installed before applying this update.
-

2.19.0

[Section titled "2.19.0"](#)

2026-01-30

Note: Automatic restart This update automatically restarts the device immediately, as the new updater is required for the second installation step.

The update includes a pre-installation validation of the installed packages (prerequisite: version 2.18). If the validation fails, the update process is aborted — no changes are made.

◆ Highlights

[Section titled "Highlights"](#)

Version 2.19.0 brings extensive improvements to the Simatic connector: faster connection establishment, gradual exploration without pre-loading the full structure, and optimised RAM usage. The user interface has been extended with status-dependent controls and a clearer variable structure.

↑ New Features

[Section titled "New Features"](#)

- Simatic: Gradual Exploration
The variable structure of a Simatic device is now loaded incrementally, without downloading the full structure upfront. This prevents crashes with large program structures and significantly reduces RAM usage.
- Simatic: Direct Data Block Addressing
Data blocks are now directly accessible without overlaid group levels.
- UI: Variable Structure
Arrays are explicitly labelled as arrays in the variable explorer (displaying the array size). Data blocks and group structures are sorted alphanumerically.
- UI: Status-dependent Control Lock

The performance test and import-from-device functions are locked while no connection to the device is established.

- **Configuration Migration**

A separate update package is available for devices with an existing variable configuration, which migrates the configuration to the new Simatic format. Note: after the migration, Grafana dashboards must be reconfigured.

- **Updater: Script Execution**

The update system now supports pre- and post-installation scripts that are executed as part of an update bundle.

✓ Bug Fixes

[Section titled "Bug Fixes"](#)

- **Simatic: Slow Connection Establishment**

Connection establishment to the PLC could take up to 5 minutes on some devices. Connection handling and status display have been completely redesigned.

- **Simatic: Performance Test Returned Invalid Results**

The performance test did not return valid results when the sampling rate could not be achieved. Results and code structure have been revised.

- **Simatic: Password Protection Always Active on Creation**

When creating a new Simatic device, password protection was always pre-selected, even when no password was entered.

- **Simatic: Disabled Exclude List Ignored Variables**

A disabled exclude list caused temporarily unavailable variables to be permanently ignored. The exclude list is now always active and configurable via parameters.

- **Simatic: Health Status with Wrong Password**

After a password change with an incorrect password, the health status was not correctly set to "Unhealthy". Only a restart of the connector restored the correct state.

- **NTP: Service Inactive after Restart**

The NTP service switched off after a system restart.

◆ Technical Appendix

[Section titled "Technical Appendix"](#)

Component Versions

[Section titled "Component Versions"](#)

Component	Version	Notes
OS Image		

Component	Version	Notes
Web UI Advanced	4.9.17	
Source Control (SourceConfig)	1.3.0	
Host DateTime	1.3.2	
Host Updater	2.2.1	
Host Dockerenvironment	1.0.1	
Source Simatic	4.4.2	
APP Redprocessor	0.1.0	newly registered
APP Redprocessor Browser	1.0	newly registered
Source Modbus	3.5.1	newly registered
Core Gateway Manager	1.9.7	newly registered
Core Auth	1.1.1	newly registered
Core Database Management	1.2.6	newly registered
Core Grafana Connector	1.3.2	newly registered
Core Notification Hub	1.0.21	newly registered
Core Source Info	1.0.0	newly registered
Core Struct Import CSV	1.2.2	newly registered
Core Struct Registry	1.11.0	newly registered
Core Struct Templates	1.0.5	newly registered

Breaking Changes

[Section titled "Breaking Changes"](#)

- v2.18 only supported.
- After applying the optional config migration package, Grafana dashboards must be reconfigured.

2.18.2

[Section titled "2.18.2"](#)

2025-12-05

Critical Patch — Updater Depending on the hardware in use, larger update packages could not be fully uploaded. The upload was aborted with a timeout.

◆ Highlights

[Section titled “Highlights”](#)

Version 2.18.2 fixes an issue where the upload of larger update packages timed out depending on the hardware. A full fix of the underlying issue in the API service will follow in version 2.19.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- Updater: Upload of larger packages failed
Depending on the hardware configuration, the high system load during the upload caused the process to abort with a timeout, and the update package was not fully transferred. The upload is now forwarded directly to the updater service.

◆ Technical Appendix

[Section titled “Technical Appendix”](#)

Component Versions

[Section titled “Component Versions”](#)

Component	Version	Notes
System Proxy	new nginx config	

Breaking Changes

[Section titled “Breaking Changes”](#)

None.

2.18.1

[Section titled “2.18.1”](#)

2025-11-08

Critical Patch — Gateway Without this patch, the Gateway service could not retrieve the device’s hostname, which is required to authenticate with the cloud. The Gateway function was therefore completely out of service.

◆ Highlights

[Section titled “Highlights”](#)

Version 2.18.1 is a critical patch that restores the Gateway connection to the cloud.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- Gateway: Connection to cloud interrupted
After the infrastructure overhaul in version 2.18, the Gateway service could no longer retrieve the device’s hostname. The Gateway connection to the cloud was therefore completely interrupted.

◆ Technical Appendix

[Section titled “Technical Appendix”](#)

Component Versions

[Section titled “Component Versions”](#)

Component	Version	Notes
System Proxy	new nginx config	

Breaking Changes

[Section titled “Breaking Changes”](#)

None.

2.18.0

[Section titled “2.18.0”](#)

2025-10-09

Note: Two restarts required This update requires two consecutive restarts, as OS components and the Linux kernel are also being updated.

The update includes a pre-installation validation of the installed packages (prerequisite: version 2.17) as well as a check of the available storage space. If either check fails, the update process is aborted — no changes are made.

◆ Highlights

[Section titled “Highlights”](#)

Version 2.18.0 brings a completely redesigned update interface and a new Docker infrastructure that enables direct updates of individual components. Network configuration and discovery have been extended for the Companion app. Several stability issues in the Simatic connector have been resolved.

↑ New Features

[Section titled “New Features”](#)

- **Updater: New Interface**
The updater features a completely redesigned user interface with an update history and a dedicated process page. Available storage space is checked before the update.
- **Setup Wizard: Input Validation**
Invalid inputs are caught and reported immediately during the setup process.
- **Network Configuration (Initial Setup)**
Network interfaces can be configured via the initial setup.
- **Discovery: Extended Device Information**
The Discovery service displays additional fields for discovered devices.
- **Firmware Update via Companion**
The foundation for firmware update functionality via the Companion app has been implemented.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- **Simatic: High Memory Load**
The Simatic connector caused uncontrolled memory consumption under certain conditions. The fix from patch 2.17.1 has been incorporated into this version.
- **Simatic: Exclude List Ignored Variables**
A faulty exclude list implementation caused variables to be incorrectly ignored.
- **Simatic: NaN Error in Quick Insights**
When querying the device ID, a NaN error occurred that caused incorrect displays in Quick Insights.
- **IO Load Problem**
A problem with elevated IO load that had existed since version 2.16 was resolved by adjusting the Influx configuration.
- **CSV Config Import: Invalid Characters**
Invalid characters in the address field are now caught during CSV import.

◆ Technical Appendix[Section titled “Technical Appendix”](#)**Component Versions**[Section titled “Component Versions”](#)

Component	Version	Notes
OS Image		
Web UI Advanced	4.9.8	
Web UI API	1.20.0	
Web UI Basic	2.2.1	
Web UI Configuration	1.0.3	
Core CSV-Config-Import	1.2.2	
Core Kapacitor	1.5.3-udf	
Core Watchdog	0.1.3	
Host Docker Environment	1.0.0	
Host Discovery	2.0.6	
Host Network API	2.6.5	
Host OS Info	1.0.4	

Component	Version	Notes
Host Secure Pack	2025.1	
Host Updater	2.1.2	
Source Simatic	4.3.2	
System Grafana	7.4.5	
System Influx	1.8	
System Postgres	11.4	
System Proxy	1.20	
System Worker Insights	1.20.4	
System Worker Measurements	1.20.4	
APP Docu	1.0.0	new Compose config only
System Broker	3.8.0	new Compose config only

Breaking Changes

[Section titled “Breaking Changes”](#)

- v2.17 only supported.
- Docker infrastructure overhaul: all services migrated to new Docker Compose structure. Direct per-container updates are now possible.

2.17.1

[Section titled “2.17.1”](#)

2025-08-28

[!CAUTION] **Critical Patch — Simatic Connector** This patch should be applied to all crawlers promptly. The bug can lead to a **complete failure of the crawler**, as the Simatic service consumes the memory available to other applications.

Background

[Section titled “Background”](#)

During the connection establishment to the PLC, the Simatic service was consuming an excessive amount of memory. As a result, other services no longer had sufficient memory available, which could lead to a total failure of the crawler.

Changes

[Section titled “Changes”](#)

Area	Change
Source Simatic	Fixed memory leak during connection establishment to PLC

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Source	Simatic	4.3.2

2.17.0

[Section titled “2.17.0”](#)

2025-03-17

Note: System restart required This update requires a system restart because duplicates in the core Compose configuration are cleaned up. During the restart, all affected containers will be recreated.

◆ Highlights

[Section titled “Highlights”](#)

Version 2.17.0 brings extensive enhancements to the Simatic connector: live view, quick preview, password protection, and Quick Insights. The Modbus connector has been extended with IP address change and endianness configuration. The user interface has been updated with a revised navigation menu and improved connection status display.

↑ New Features

[Section titled “New Features”](#)

- **Simatic: Live View**
The most recent measured value of a variable is displayed directly in the variable browser.
- **Simatic: Quick Preview**
Fast time-series preview of a variable’s value as a chart, accessible directly from the browser.
- **Simatic: Password-protected Devices**
Connections to password-protected Simatic devices are supported.
- **Simatic: Quick Insights**
Dynamic connection status and log messages are displayed directly from the Simatic service.
- **Simatic: Improved Timeout Behaviour**
The connection timeout behaviour on connection drops has been revised.
- **Modbus: Change IP Address**
The IP address of a Modbus device can be changed afterwards without having to recreate the device.
- **Modbus: Configurable Endianness**
Big-endian and little-endian are configurable at the device and variable level.
- **UI: Restart Source Extensions from UI**
Simatic and Modbus containers can be restarted directly from the interface.
- **UI: Navigation Menu**
The navigation menu has been revised and improved.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- **WebUI does not start after device restart**
The user interface did not start correctly after a restart of the crawler.
- **Error during Initial Setup**
An error occurred when setting up the device for the first time.
- **Gateway Manager: Configuration Delivery**
The configuration was not correctly delivered to the Gateway Dispatcher (affects only installations with the Gateway function enabled).

◆ Technical Appendix

[Section titled “Technical Appendix”](#)

Component Versions

[Section titled “Component Versions”](#)

Component	Version	Notes
OS Image		
Web UI Advanced	4.8.18	
Web UI Basic	2.2.0	
Web UI API	1.17.6	
Core Source Control (SourceConfig)	1.2.1	
Core Source Info	1.0.0	new
Source Simatic	4.2.3	
Source Modbus	3.5.1	
Gateway Manager	1.9.7	

Breaking Changes

[Section titled "Breaking Changes"](#)

None.

2.16.1

[Section titled "2.16.1"](#)

2025-02-26

Critical Patch — Gateway After a system restart, no measurement data was being sent toward the cloud. The Gateway function was therefore completely out of service.

◆ Highlights

[Section titled "Highlights"](#)

Version 2.16.1 is a critical patch that restores Gateway data transmission after a device restart.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- **Gateway: Data not sent after restart**
After a system restart, continuous measurement values were no longer transmitted to the cloud. Structural data and insights were sent correctly; only the measurement data was missing. The issue could only be worked around by manually changing a variable on the Gateway.
-

◆ Technical Appendix[Section titled “Technical Appendix”](#)**Component Versions**[Section titled “Component Versions”](#)

Component	Version	Notes
Gateway Manager	1.9.6	

Breaking Changes[Section titled “Breaking Changes”](#)

None.

2.16.0[Section titled “2.16.0”](#)

2025-02-06

Note: Database restarts — brief data loss possible This update restarts the databases. A brief period of data loss will occur as a result. This is technically necessary due to the included database migrations.

Note: This update includes the changes from patch 2.15.1 and can be applied directly on top of version 2.15.0.

◆ Highlights

[Section titled “Highlights”](#)

Version 2.16.0 introduces controlled transmission of measurement data via the Gateway trigger. IO load problems from earlier versions have been permanently resolved.

↑ New Features

[Section titled “New Features”](#)

- Gateway: Controlled Dispatching (Conditional Dispatching)
When the Gateway is enabled, variables can be selectively sent to the cloud via a source trigger instead of transmitting continuously.
- Variables: Cascading Deletion
When a device or group is deleted, the associated variables are automatically deleted along with it.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

- IO Load Problem
An excessive IO load that had been known since earlier versions was permanently resolved by adjusting the InfluxDB configuration and introducing resource limits.

◆ Technical Appendix

[Section titled “Technical Appendix”](#)

Component Versions

[Section titled “Component Versions”](#)

Component	Version	Notes
OS Image		
Web UI Advanced	4.7.2	
Web UI API	1.16.8	
Gateway Manager	1.9.4	

Breaking Changes

[Section titled “Breaking Changes”](#)

- v2.15 or later supported (2.15.1 changes included).
- Database migrations are applied during update — brief data loss possible.

2.15.1

[Section titled “2.15.1”](#)

26 November 2024

[!NOTE] This patch is bundled with Version 2.16.0 and can therefore be applied directly on top of Version 2.15.0.

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

Area	Description
Device Management	Error when reaching the maximum number of devices resolved
PLC Creation	Creating PLCs with the same IP address corrected
Variable Browser	Individual variables can again be correctly deleted

CSV Importer

[Section titled “CSV Importer”](#)

Area	Description
Character Encoding	UTF-8 support for files exported from Excel
Special Characters	Error with special character “...” (ellipsis) resolved

Simatic Connector

[Section titled “Simatic Connector”](#)

Area	Description
Stability	General stability improvements
Reconnect	Reconnection to the PLC corrected
ExcludeList	When using absolute addressing, disabling the ExcludeList was not possible — resolved

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced	4.5.17
Core	CSV Parser	1.2.1

2.15.0

[Section titled “2.15.0”](#)

9 October 2024

↑ New Features

[Section titled “New Features”](#)

Performance Analysis

[Section titled “Performance Analysis”](#)

- Target/actual comparison of sampling rate: the measured sampling rate of the PLC is compared against the configured rate to ensure no data is missed or distorted

Partial Exploration

[Section titled “Partial Exploration”](#)

- When importing measured variables, groups and variables are now loaded partially — improved performance with large data structures

Documentation (Offline Manual)

[Section titled “Documentation \(Offline Manual\)”](#)

- Crawler documentation in PDF format available directly in the Web UI (Advanced and Basic UI)

Basic UI — Device Page

[Section titled “Basic UI — Device Page”](#)

- New page showing all devices with their current connection status

Improvements

[Section titled “Improvements”](#)

CSV Import (Advanced UI)

[Section titled “CSV Import \(Advanced UI\)”](#)

Improvement	Description
Excel Compatibility	CSV files from Excel are supported (automatic conversion to UTF-8)
Group Structures	Importing group structures via path specification (any hierarchy depth)
Duplicate Detection	Duplicate addresses within a group are detected and reported
Optional Columns	Column “Crawler Data Type” is optional; column “isActive” can be empty (default: <code>true</code>)
Error Messages	Improved error messages for invalid CSV files (e.g. empty file)

General (Advanced UI)

[Section titled “General \(Advanced UI\)”](#)

Area	Change
Notifications	Reduced number of duplicate notifications

Simatic Connector

[Section titled “Simatic Connector”](#)

- General functional improvements

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced	4.5.13

Group	Component	Version
Web UI	Basic	2.1.6
Web UI	API	1.16.7
Core	CSV Parser	1.1.8
Source	Simatic	4.0.2

The update bundle supports migration from **Version 2.14 to 2.15**. Ensure that Version 2.14 is fully installed before applying the update.

2.14.4

[Section titled "2.14.4"](#)

28 August 2024

[!WARNING] **Restart Required** After the update, the Crawler must be restarted; otherwise the changes will not take effect.

[!NOTE] This patch includes all changes from Version 2.14.3 and fully supersedes it.

Background

[Section titled "Background"](#)

This patch consolidates the stability measures from 2.14.3 and supplements them with a new Simatic version that combines all features from Version 2.13 and 2.14.0, as well as the capability for partial exploration.

Changes

[Section titled "Changes"](#)

Area	Change
Core Dumps	Disabled in system services and connectors
Log Files	Size limited to max. 10 MB, max. 3 files per service

Area	Change
Host Service	Existing log data is cleaned up during the update
Source Simatic	Update to Version 4.0.1 — revised service with partial exploration and Arcon abstraction

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Core	Source Control (SourceConfig)	1.1.2
Source	Simatic	4.0.1

2.14.3

[Section titled “2.14.3”](#)

1 August 2024

[!WARNING] **Restart Required** After the update, the Crawler must be restarted; otherwise the changes will not take effect.

Background

[Section titled “Background”](#)

This patch improves overall system stability by disabling core dumps and limiting log file sizes. Both measures reduce uncontrolled memory consumption during operation.

Changes

[Section titled “Changes”](#)

Area	Change
Core Dumps	Disabled in system services and connectors
Log Files	Size limited to max. 10 MB, max. 3 files per service
Host Service	Existing log data is cleaned up during the update

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Core	Source Control (SourceConfig)	1.1.2

2.14.2

[Section titled “2.14.2”](#)

7 July 2024

Background

[Section titled “Background”](#)

This patch restores support for newer Simatic controllers configured with TIA Portal V18 or later. The connection initialisation has been corrected.

Changes

[Section titled “Changes”](#)

Area	Change
Source Simatic	Update to Version 3.5.6
TIA V18+	Support for controllers from TIA Portal V18 onwards restored
Init String	Minimum length of the init string is handled correctly when it has not been set
Accon Lib	Library for controller communication updated

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Source	Simatic	3.5.6

2.14.1

[Section titled “2.14.1”](#)

23 June 2024

[!WARNING] **Limited Simatic Compatibility** This version does **not** support Simatic controllers configured with TIA Portal V18 or later. For TIA V18+, please update to Version 2.14.2.

Background

[Section titled "Background"](#)

The Simatic service from Version 2.14.0 exhibited stability issues. This version includes a downgrade to the last known stable Simatic version (3.5.4). As a result of the downgrade, certain features are temporarily unavailable.

Changes

[Section titled "Changes"](#)

Area	Change
Source Simatic	Downgrade to Version 3.5.4 (last stable version)
IP Address	Changing the device IP is not possible (temporarily disabled)
ExcludeList	Disabling the ExcludeList is not possible (temporarily disabled)

Updated Components

[Section titled "Updated Components"](#)

Group	Component	Version
Source	Simatic	3.5.4

2.14.0

[Section titled "2.14.0"](#)

13 March 2024

[!CAUTION] **Not Recommended — Known Stability Issues** This version contains known stability issues with the Simatic Connector. It is recommended to update **directly to Version 2.14.4**.

[!WARNING] **Restart Required** This update requires a system restart, as configuration changes

only take effect after a restart.

↑ New Features

[Section titled “New Features”](#)

Gateway

[Section titled “Gateway”](#)

Feature	Description
Bulk Editing	Measured variables in the Gateway can be edited and deleted in bulk
Meta-Info Import	Measured variables can be imported via meta-information from device measured variables
Multiple Dispatchers	Support for multiple dispatchers per endpoint (e.g. periodic + ad-hoc dispatch)
Structure Dispatcher	New dispatcher: transfers Crawler device and measured variable structures (<i>bookable</i>)
Ad-Hoc Dispatcher	New dispatcher: high-resolution data points for individual measured variables within a limited time range (<i>bookable</i>)
Aggregation Intervals	Intervals 1s and 5s have been removed (excessive system load)

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

Area	Change
Navigation	Navigation to the NuP Dispatcher directly via the Advanced UI
Layout	General layout improvements
Setup Wizard	Bugfix: display error for network adapter resolved

Improvements

[Section titled “Improvements”](#)

Gateway — Technical Infrastructure

[Section titled “Gateway — Technical Infrastructure”](#)

Area	Change
AWS Endpoint	Adjusted endpoint for improved stability of connection establishment
Origin ID	Introduced to support multiple simultaneous dispatchers
MXS / MXH	Separate update packages for MXS and MXH (in addition to the standard update)

Updated Components

[Section titled "Updated Components"](#)

Group	Component	Version
Web UI	Advanced	4.0.26
Web UI	API	1.16.3
Gateway	Manager	1.8.8
Gateway (MXS, MXH)	Dispatcher MX	2.6.0
Gateway (MXS, MXH)	Structure Dispatcher	1.2.0 (<i>new</i>)
Gateway (MXH)	Ad-Hoc Dispatcher	1.1.1 (<i>new</i>)
Gateway (MXS, MXH)	AWS Endpoint	1.3.0

The update bundle supports migration from **Version 2.13 to 2.14**. Ensure that Version 2.13 is fully installed before applying the update.

2.13.0

[Section titled "2.13.0"](#)

15 January 2024

[!CAUTION] **Not Recommended — Known Stability Issues** This version contains known stability issues with the Simatic Connector. It is recommended to update **directly to Version 2.14.4**.

↑ New Features

[Section titled "New Features"](#)

CSV Import

[Section titled “CSV Import”](#)

- Measured variables can be imported via CSV file for all device types

Notification Hub[Section titled “Notification Hub”](#)

- Email dispatch for Grafana alarms (new service)

Improvements[Section titled “Improvements”](#)**User Interface (Web UI)**[Section titled “User Interface \(Web UI\)”](#)

Area	Change
Device Favourites	Notice displayed when the maximum number of favourites is reached
Appearance	Revised design of the Web UI

Simatic Connector[Section titled “Simatic Connector”](#)

Area	Change
ExcludeList	Complete overhaul (previously: BlackList) — improved functionality
ExcludeList	Can be disabled in the UI
IP Address	IP address of a device can be changed (connection is rebuilt automatically)

✓ Bug Fixes[Section titled “Bug Fixes”](#)

Component	Description
StructService	During a factory reset, variables in the StructDB were not completely deleted

Technical Improvements[Section titled “Technical Improvements”](#)

RabbitMQ — Queue Limits

[Section titled “RabbitMQ — Queue Limits”](#)

To prevent cascading issues with a large number of measuring devices, queue lengths have been limited for all workers:

Worker	prefetch_count
system.worker.insights.log	1000
system.worker.insights.endpoint	100
system.worker.insights.source	50
system.worker.measurement	100
system.worker.measurement.metric	100

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced	4.0.19
Web UI	Basic	2.0.0
Web UI	API	1.15.2
Core	Notification Hub	1.0.21 (<i>new</i>)
Core	CSV Parser	1.0.7 (<i>new</i>)
Source	Simatic	3.9.5

The update bundle supports migration from **Version 2.12.2 to 2.13**. Ensure that Version 2.12.2 is fully installed before applying the update.

2.12.2

[Section titled “2.12.2”](#)

24 October 2023

Background

[Section titled “Background”](#)

When unknown symbolic data types were present on the PLC, log messages were generated at a high frequency, which could cause significant performance degradation depending on the system. Affected data types: `S7_HW_SUBMODULE` , `S7_HW_ANY` , `S7_CONN_OUC` , `S7_Pointer` , `S7_Variant` . These log entries have been disabled.

✓ Bug Fixes[Section titled “Bug Fixes”](#)

Area	Description
Source Simatic	High-frequency log messages for unknown PLC data types disabled

Updated Components[Section titled “Updated Components”](#)

Group	Component	Version
Source	Simatic	3.5.4

No separate VM package required. The update bundle supports migration from **Version 2.12.1 to 2.12.2**.

2.12.1[Section titled “2.12.1”](#)

18 September 2023

[!NOTE] Version 2.12.0 contained bugs when changing the IP address and during the Simatic Discovery timeout. It is recommended to **skip Version 2.12.0** and update directly to 2.12.1. The update package supports installation based on either 2.11 or 2.12.

↑ New Features[Section titled “New Features”](#)**Simatic Connector**

[Section titled “Simatic Connector”](#)

Feature	Description
Array Data Type	Simatic now supports the Array data type

Modbus Connector

[Section titled “Modbus Connector”](#)

Feature	Description
String Data Type	Modbus now supports the String data type

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

Area	Change
Favourites	Max. 3 device favourites in the Advanced UI
Device Limit	Max. 5 devices in the Advanced UI
Login Duration	Login validity extended to 1 hour
Firefox	Login in Firefox browser is now possible

Improvements

[Section titled “Improvements”](#)

Gateway

[Section titled “Gateway”](#)

Area	Change
Insights Dispatcher	Send interval extended to 5 minutes (if configured)
Cloud Data Load	Reduction of data load towards the cloud — measurement values prioritised over service information

Technical Aspects

[Section titled “Technical Aspects”](#)

Area	Change
Connectors	Limitation of simultaneous connectors to guarantee performance
Auth Service	During a reset, the configured password from the app settings is always used
Simatic Discovery	Timeout increased to 60 seconds

Updated Components

[Section titled "Updated Components"](#)

Group	Component	Version
Web UI	Advanced	3.20.10
Web UI	API	1.14.6
Web UI	Auth	1.1.1
Source	Simatic	3.5.3
Source	Modbus	3.3.3

The update bundle supports migration from **Version 2.11 or 2.12.0 to 2.12.1**. No separate VM package required.

2.12.0

[Section titled "2.12.0"](#)

September 2023

[!CAUTION] **Not Recommended — Known Bugs** This version contains bugs when changing the IP address of devices and when the Simatic Discovery times out. It is recommended to **update directly to Version 2.12.1**. The update package for 2.12.1 supports installation based on either 2.11 or 2.12.0.

2.11.0

[Section titled "2.11.0"](#)

30 May 2023

↑ New Features

[Section titled “New Features”](#)

Gateway — Aggregation Intervals

[Section titled “Gateway — Aggregation Intervals”](#)

Feature	Description
Interval Selection	When adding a measured variable, the desired aggregation interval is set directly
Interval Change	The interval can be changed after the fact
Available Intervals	1s, 15s, 30s, 1m, 10m, 30m, 1h
Existing Data	Entries already present retain their previous default value of 1 minute after the update

Variables with a 10-second interval are automatically changed to 60 seconds during the update.

Gateway — Transparency & Display

[Section titled “Gateway — Transparency & Display”](#)

Feature	Description
Send Backlog	Current mode, timestamp of the most recent and backlogged measurement point, and the last send time are displayed in the web frontend
Variable Address	Address of the measured variables configured in the Gateway is displayed

Improvements

[Section titled “Improvements”](#)

Gateway — Technical Infrastructure

[Section titled “Gateway — Technical Infrastructure”](#)

- Health checks available for Manager, Dispatcher, and Endpoint
- All Gateway projects migrated to .NET 6.0
- Improved logging levels and queue names
- Manager: unnecessary Kapacitor tasks are deleted automatically
- Manager: variable configuration changes propagate the full data set

- API error messages use RFC7807 format

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
UI	Advanced UI	3.18.4
UI	Web API	1.14.3
Gateway	Manager	1.7.8
Gateway	Dispatcher MX	2.5.0
Gateway	Endpoint AWS	1.1.4

No separate VM package required. The update bundle supports migration from **Version 2.10 to 2.11**.

2.10.0

[Section titled “2.10.0”](#)

20 February 2023

↑ New Features

[Section titled “New Features”](#)

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

Feature	Description
Login for Settings	The settings page requires a login (user: <code>admin</code>)
Password Management	Password is set during initial setup and can be changed at any time in the settings
Factory Reset	Password is also reset when performing a factory reset

Network

[Section titled “Network”](#)

Feature	Description
Primary Adapter	A primary network adapter must be defined for internet requests (routing)
Default Adapter	On delivery and after a factory reset, the X1 adapter is configured as the primary adapter
Discovery Tool	Network settings via the DiscoveryTool always refer to the first adapter, regardless of the configured primary adapter

Improvements

[Section titled "Improvements"](#)

Docker Infrastructure

[Section titled "Docker Infrastructure"](#)

- Docker infrastructure updated
- Containerd configuration adjusted (fixes errors in Suspend Mode on VMs)
- I/O load reduced through configuration adjustments
- `compose-up.sh` is now included in the update package (previously, the local file was modified directly)
- Health checks added for Web UI Advanced and Auth Service

Updated Components

[Section titled "Updated Components"](#)

Group	Component	Version
Web UI	Advanced UI	3.17.4
Web UI	Web API	1.14.2
Core	Auth Service	1.0.0 (<i>new</i>)

The update bundle supports migration from **Version 2.9 to 2.10**.

2.9.0

[Section titled "2.9.0"](#)

1 December 2022

↑ New Features

[Section titled “New Features”](#)

Gateway — Catch-Up Mechanism

[Section titled “Gateway — Catch-Up Mechanism”](#)

Feature	Description
Current Data Packets	After a connection drop, current data packets are sent regularly alongside historical data

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

Feature	Description
Start Page	When accessing the Crawler address, the user UI (Basic UI) opens first; the settings pages can be reached via a button
Connection Status	The connection status of configured field devices is displayed on the device pages and device list; connection changes are shown as notifications
Notifications	Improved notifications and alerts

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

Area	Description
Basic UI	Node Red can be called embedded in the Basic UI

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced UI	3.16.1
Web UI	Basic UI	1.2.3
Gateway	Dispatcher MX	2.1.6

The update bundle supports migration from **Version 2.8 to 2.9**.

2.8.0

[Section titled “2.8.0”](#)

6 September 2022

↑ New Features

[Section titled “New Features”](#)

Database Management

[Section titled “Database Management”](#)

Feature	Description
Overview	Display of all Influx databases
Clear Database	Individual databases can be cleared
Retention Policies	Retention policies can be configured
Disk Forecast	Display of current disk usage and rough forecast for when the disk will be full

Watchdog

[Section titled “Watchdog”](#)

Feature	Description
Individual Filtering	Watchdog with configurable filters for individual monitoring
UI Integration	Device connection status displayed directly in the Web UI
Gateway Integration	Watchdog data is integrated into the Insights Dispatcher (Gateway)

Improvements

[Section titled “Improvements”](#)

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

- Revised device pages and settings pages
- New alerts and notifications on device pages
- Measured Variables throughout the UI
- Network settings are only applied after confirming “Complete”
- VariableBrowser: Navigation structure is preserved when changes are made to measured variables

Simatic Connector

[Section titled “Simatic Connector”](#)

- Bugfix: Asynchronicity issue in the publisher library resolved
- Bugfix: Measured variables that could not be retrieved from the PLC are now retried multiple times before being discarded

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Core	Database Manager	2.6.1
Source	Simatic	3.4.7
Web UI	Advanced UI	3.13.9
Web UI	Basic UI	1.1.0
Web UI	Web API	1.0.13.7
Core	Watchdog	0.1.3
Gateway	Dispatcher Insights	1.10.0

The update bundle supports migration from **Version 2.7.1 to 2.8**.

2.7.1

[Section titled “2.7.1”](#)

2022-07-28

↑ New Features

[Section titled “New Features”](#)

Source Connectors

[Section titled “Source Connectors”](#)

Area	Change
Remote-Controlled Connectors	Connectors can be marked as “remote-controlled” and will then not be created, started, stopped, or deleted by the SourceConfig service

Grafana Connector

[Section titled “Grafana Connector”](#)

Area	Change
Group Selection	In addition to “Device + Measurement Variable”, the group structure can now also be used for dashboard selection; existing dashboards remain compatible

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

Area	Description
StructService	IPCC events when deleting a measurement variable were not sent correctly in all cases

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Core	StructService	1.11.0
Core	SourceConfig	1.0.2
Core	Grafana Connector	1.3.1
Core	Device Config Management	1.0.5

The update bundle supports a migration from **version 2.7 to 2.7.1**.

2.7.0

[Section titled “2.7.0”](#)

2022-07-11

↑ New Features

[Section titled “New Features”](#)

Crawler Insights

[Section titled “Crawler Insights”](#)

Feature	Description
Field Device Monitoring	Collection of critical information from configured field devices (Simatic and Modbus)
Connection Status	Retrieval of connection status and additional device data
Local Storage	Storage in InfluxDB for local visualization and analysis
Pre-installed Dashboards	Insights: System, Insights: Field Devices (<i>new</i>), Insights: Logs (<i>new</i>)
Cloud Transmission	Transmission to the cloud (AWS Endpoint): system metrics, field device states, crawler service data

Improvements

[Section titled “Improvements”](#)

Grafana

[Section titled “Grafana”](#)

- System Metric Dashboard extended with information from additional partitions

Simatic Connector

[Section titled “Simatic Connector”](#)

- Bug fix: occasional crash of data recording during connection interruptions (0 measurement points) resolved

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Source	Simatic	3.4.3
Source	Modbus	3.2.3
Core	SourceConfig	1.0.0
Gateway	Endpoint AWS	1.1.0
Gateway	Dispatcher Insights	1.9.0

The update bundle supports a migration from **version 2.6.1 to 2.7**.

2.6.1

[Section titled "2.6.1"](#)

2022-05-31

✓ Bug Fixes

[Section titled "Bug Fixes"](#)

Area	Description
Simatic Connector	Configured measurement variables that no longer exist on the PLC no longer cause a crash
Simatic Connector	Fetching the structure (symbolic) no longer affects data recording; frequent errors during structure discovery should also no longer occur
Grafana Connector	Structures are fetched initially and on IPCC events and cached in RAM; requests are therefore always served from the cache (performance optimization)
System Metrics	System metrics function for Docker containers restored

The update bundle supports a migration from **version 2.6 to 2.6.1**.

2.6.0

[Section titled "2.6.0"](#)

2022-04-26

↑ New Features

[Section titled “New Features”](#)

Gateway — New Architecture

[Section titled “Gateway — New Architecture”](#)

With version 2.6, the Gateway is split into three independent services: **Manager**, **Dispatcher**, and **Endpoint**.

Feature	Description
Transmission Control	Stopping data transmission keeps the connection active; transmission can be stopped per Dispatcher
Connection Configuration	Connection data and credentials can be configured via the Web UI
Connection Status	The connection status to the Endpoint is displayed in the Web UI
Measurement Variable Management	Already configured measurement variables can be selected, adjusted, or removed for transmission via the Gateway (selection via Variable Browser)

DataProcessor

[Section titled “DataProcessor”](#)

Feature	Description
Event Detection	Event detection now works correctly (buffer adjustment in Telegraf)

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced UI	3.10.18
Web UI	Web API	1.0.12.5
Gateway	Manager	1.0.0 (<i>new</i>)
Gateway	Dispatcher MX	1.0.0 (<i>new</i>)
Gateway	Endpoint AWS	1.0.0 (<i>new</i>)

Group	Component	Version
Core	Telegraf	1.20.4

The update bundle supports a migration from **version 2.5 to 2.6**.

2.5.0

[Section titled "2.5.0"](#)

2022-03-11

↑ New Features

[Section titled "New Features"](#)

System Status

[Section titled "System Status"](#)

Feature	Description
Health Overview	An overview of the health status of system and core services is displayed under "Settings"
Usage Lock	The UI blocks operation as long as not all system and core services are available (e.g. after a restart)

DataProcessor

[Section titled "DataProcessor"](#)

Feature	Description
Revised UI	Wizard-guided setup of calculations; variable selection is done via the Variable Browser

Variable Browser (manual)

[Section titled "Variable Browser \(manual\)"](#)

Feature	Description
Create Measurement Variables	Measurement variables can be created manually by entering all required parameters

Feature	Description
Delete Measurement Variables	Individual or multiple measurement variables can be deleted

Simatic S7 — Selective Import

[Section titled “Simatic S7 — Selective Import”](#)

Feature	Description
Selective Import	Individual variables from a Simatic S7 (symbolic addressing) can be selectively added to existing measurement variables
Highlighting	Already imported variables and variables that no longer exist are visually highlighted
Structure Preservation	Existing structures are not deleted during import

Improvements

[Section titled “Improvements”](#)

User Interface (Web UI)

[Section titled “User Interface \(Web UI\)”](#)

- Angular framework updated to version 13
- Various bug fixes: network settings, loading animations, Firefox layout, translation errors

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced UI	3.9.33

No separate download paths are stored for this version.

2.4.2

[Section titled “2.4.2”](#)

2022-02-21

[!WARNING] **Host Updater must be updated before installation** The update package from version 2.4.1 overwrote the manually updated Host Updater. Before installing this package, the Host Updater must therefore be manually updated again.

✓ Bug Fixes

[Section titled "Bug Fixes"](#)

Area	Description
Modbus & Simatic	Fixed an error when advancing the crawler's system clock
Simatic	Measurement variables with the same address are now only fetched once from the PLC; the value is written to all corresponding measurement variables

Updated Components

[Section titled "Updated Components"](#)

Group	Component	Version
Source	Modbus	3.0.11.1
Source	Simatic	3.2.0

2.4.1

[Section titled "2.4.1"](#)

2022-01-21

[!WARNING] **Host Updater is overwritten by this update** The update package overwrites the manually updated Host Updater. Before installing the next update package (version 2.4.2), the Host Updater must therefore be manually updated again.

↑ New Features

[Section titled "New Features"](#)

Network

[Section titled “Network”](#)

Feature	Description
DNS Configuration	Up to 5 DNS entries can be configured
Multiple Adapters	All available network adapters (all eth adapters) can be configured
Hot-Apply	Network changes can be applied without a restart

Date and Time[Section titled “Date and Time”](#)

Feature	Description
Time Setting	Date, time, and time zone can be changed without resetting to factory defaults
NTP Configuration	NTP address and activation state are configurable

Updated Components[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced UI	3.7.83

2.4.0[Section titled “2.4.0”](#)

2021-09-20

↑ New Features[Section titled “New Features”](#)**Source Extension — New Architecture**[Section titled “Source Extension — New Architecture”](#)

Feature	Description
Automated Orchestration	Connectors are managed automatically — no manual creation of containers required
Connection Status	Connection status is determined via Docker container health checks

Feature	Description
Metric & Alignment	Configuration of measurement method and time alignment directly in the UI (per device and per measurement variable)

New Updater Service

[Section titled “New Updater Service”](#)

Feature	Description
Updater (Beta)	New Updater service for more convenient software updates

Basic UI

[Section titled “Basic UI”](#)

Feature	Description
New Basic UI	Supplementary end-user UI alongside the Advanced UI
Included Features	DigiDoc, Dashboards, RedProcessor

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Advanced UI	3.7.17
Web UI	Basic UI	1.0.7 (<i>new</i>)
Web UI	Web API	1.0.9.6
Source	Simatic	3.0.7
Source	Modbus	3.0.10
Core	Source-Config	0.1.10
Core	StructService	1.10.9
Core	DeviceConfigMgr	1.0.4
Core	DBMgr	1.0.2
APP	DigiDoc	0.1.4

2.3.4

[Section titled “2.3.4”](#)

2021-05-11

↑ New Features

[Section titled “New Features”](#)

RedProcessor (Alpha)

[Section titled “RedProcessor \(Alpha\)”](#)

Feature	Description
Menu Navigation	RedProcessor is available as a menu item in the main menu; opens in a new tab

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

Area	Description
DigiDoc	Uploading new structures can now also be done directly in the UI (previously only possible via Swagger)
DigiDoc	The DigiDoc database now starts automatically on system startup

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Web UI	Web Frontend	3.6.31
APP	RedProcessor	0.1.0.0 (<i>new</i>)

2.3.3

[Section titled “2.3.3”](#)

↑ New Features

[Section titled “New Features”](#)

DigiDoc (Beta)

[Section titled “DigiDoc \(Beta\)”](#)

Feature	Description
Documentation	New “Documentation” menu item in the main menu
File Explorer	Files can be browsed and downloaded

[!NOTE] **Known Issue:** In this version, uploading new structures is only possible via Swagger (<http://<IP-CRAWLER>:8028/swagger>). A fix will be included in version 2.3.4.

2.3.2

[Section titled “2.3.2”](#)

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

Area	Description
Measurement Processing	Invalid measurement values (NaN , INF) no longer cause data loss for other measurement values

Updated Components

[Section titled “Updated Components”](#)

Group	Component	Version
Source	Modbus	1.0.12.0
Source	Simatic	2.5.7.0
Source	OPC UA	1.0.5.0

2.3.1

[Section titled “2.3.1”](#)

↑ New Features

[Section titled “New Features”](#)

DataProcessor

[Section titled “DataProcessor”](#)

Feature	Description
Integration	DataProcessor is integrated into the system and accessible from the main menu

✓ Bug Fixes

[Section titled “Bug Fixes”](#)

Area	Description
Kapacitor	Fixed incorrect addressing of the Kapacitor (introduced after the migration to Docker-Compose)

2.3.0

[Section titled “2.3.0”](#)

[!CAUTION] **Not recommended — Known Issues** This version contains a bug. It is recommended to update **directly to version 2.3.1**.

2.2.0

[Section titled “2.2.0”](#)

↑ New Features

[Section titled “New Features”](#)

Infrastructure

[Section titled “Infrastructure”](#)

Feature	Description
Docker-Compose	Entire service infrastructure migrated to Docker-Compose

Feature	Description
MQTT-Logger	MQTT-Logger introduced as a replacement for the MessageCenter; integrated into all container services

No separate download paths are stored for this version.

2.1.0

[Section titled "2.1.0"](#)

↑ New Features

[Section titled "New Features"](#)

Gateway

[Section titled "Gateway"](#)

Feature	Description
SSL Support	Gateway now supports SSL-secured connections to the cloud
Connection Recovery	Improved behavior when the connection to the cloud is lost

No separate download paths are stored for this version.

2.0.0

[Section titled "2.0.0"](#)

↑ New Features

[Section titled "New Features"](#)

Core Architecture

[Section titled "Core Architecture"](#)

Feature	Description
Metadata Separation	Separation of measurement metadata storage: UUIDs as tags in InfluxDB, metadata in relational database
IPCC	Internal event and command system for propagating changes to device and measurement structures

User Interface (Web UI)

[Section titled "User Interface \(Web UI\)"](#)

Feature	Description
Modernized UI	Revised and extended user interface
Variable Browser	New Variable Browser for an overview and management of measurement variables

Gateway

[Section titled "Gateway"](#)

Feature	Description
New Gateway	New Gateway with support for various customers

No separate download paths are stored for this version.

The complete Edge documentation is available as a PDF for offline reading or printing.

[Download Edge Documentation \(PDF\)](#)

Platform Variants

[Section titled "Platform Variants"](#)

Hardware

[Section titled "Hardware"](#)

Siemens SIMATIC IPC127E

[Section titled "Siemens SIMATIC IPC127E"](#)

- Intel® Atom E3940 Quadcore 1.80 GHz
- 4GB RAM
- 64GB FLASH
- 2 x ETHERNET
- 2x USB 3.0
- Display Port

Form factor

Width	40 mm / 1.575 inches
Height	150 mm / 5.906 inches
Depth	105 mm / 4.134 inches

Mounting

[↗ Section titled "Mounting"](#)

DIN rail: DIN bracket:

DIN rail: Book mounting:

WAGO Edge Computer 752-9400

[🔗 Section titled "WAGO Edge Computer 752-9400"](#)

- Intel® Atom E3845 Quadcore 1.91 GHz
- 4GB RAM
- 64GB FLASH
- 2 x ETHERNET
- 4 x USB (including 1x USB 3.0)
- HDMI and Display Port

Form factor

Width	40 mm / 1.575 inches
Height	150 mm / 5.906 inches

Width	40 mm / 1.575 inches
Depth	105 mm / 4.134 inches



Note

i Mounting is a fixed part of the hardware; book mounting.

Virtual Machine

[Section titled "Virtual Machine"](#)



Note



Currently only **VMWare** is supported.

System requirements

[Section titled "System requirements"](#)

- CPU: 4 cores, 1.8 GHz
- 4GB RAM
- 64GB disk space

Siemens S7

[Section titled “Siemens S7”](#)

- Absolute addressing
- TIA, symbolic addressing
- S7 300/400 and 1200 & 1500

Supported Data Types

[Section titled “Supported Data Types”](#)

The supported data types depend on the addressing mode (absolute or symbolic). You can find them in the following table.

Data type	In Edge (read only)	Supported by PLC					
Edge VarType	Edge InfluxType	Bits	Symbolic	Absolute	S7-300/400	S7-1200	S7-1500
Binary numbers							
S7_Bool	FLOAT	1	✓	✓	✓	✓	✓
S7_Byte	FLOAT	8	✓	✓	✓	✓	✓
S7_Word	FLOAT	16	✓	✓	✓	✓	✓
S7_DWord	FLOAT	32	✓	✓	✓	✓	✓
S7_LWord	FLOAT	64	✓	✓			✓
Integers							
S7_SInt	FLOAT	8	✓	✓		✓	✓
S7_Int	FLOAT	16	✓	✓	✓	✓	✓
S7_DInt	FLOAT	32	✓	✓	✓	✓	✓
S7_USInt	FLOAT	8	✓	✓		✓	✓
S7_UInt	FLOAT	16	✓	✓		✓	✓
S7_UDInt	FLOAT	32	✓	✓		✓	✓
S7_LInt	FLOAT	64	✓	✓			✓
S7_ULInt	FLOAT	64	✓	✓			✓

Data type	In Edge (read only)	Supported by PLC					
Floating-point numbers							
S7_Real	FLOAT	32	✓	✓	✓	✓	✓
S7_LReal	FLOAT	64	✓	✓		✓	✓
Times							
S7_S5Time	STRING	16	✓	✓	✓		✓
S7_Time	STRING	32	✓	✓	✓	✓	✓
FLOAT							
(millisec.)	✗	✗					
S7_LTime	STRING	64	✓	✓			✓
FLOAT							
(nanosec.)	✗	✗					
Date and time							
S7_Date	STRING	16	✓	✓	✓	✓	✓
FLOAT							
(days)	✗	✗					
S7_Time_Of_Day	STRING	32	✓	✓	✓	✓	✓
FLOAT							
(millisec.)	✗	✗					
S7_LTOD	STRING	64	✓	✓			✓
FLOAT							
(ticks)	✗	✗					
S7_Date_And_Time	STRING	64	✓	✓	✓		✓
S7_LDT	STRING	64	✓	✓			✓
S7_DTL	STRING	96	✓	✓		✓	✓
Characters							
S7_Char	STRING	8	✓	✓	✓	✓	✓

Data type	In Edge (read only)	Supported by PLC					
S7_WChar	STRING	16	✓	✓		✓	✓
S7_String	STRING	n+2 Bytes	✓	✓	✓	✓	✓
S7_WString	STRING	n+2 Words	✓	✓		✓	✓
Array							
S7_Array			✓	✓ Individual access to each element via its specific address	✓ Max. dimensions: 6		
Max. number of bytes: 32,767	✓ Max. dimensions: 6						
Max. number of bytes: 65,535	✓ Max. dimensions: 6						
Max. number of bytes: 16,777,216							
Pointers							
Pointer		48	✗	✗	✓		✓
Any		80	✗	✗	✓		✓
Variant		0	✗	✗		✓	✓

Manual address entry

[Section titled "Manual address entry"](#)

If measured variables are entered manually via the UI or imported via a CSV file, the following points must be observed when specifying addresses.

Absolute addressing

[Section titled "Absolute addressing"](#)

For absolute-addressed data access, the address schema must follow the common, fully qualified schema consisting of data block number, operand, and byte/bit offset.

Structure: `DB<Nr>.DB<B|W|D|X><ByteOffset>.<BitOffset>` ; noting:

- The operand type described by DBB, DBD, DBX, or DBW can *currently* be used arbitrarily; it could be set to DBB for all data types as well (it merely serves the familiar readability for the PLC programmer)
- The bit offset is optional and may be omitted (including the separating period) as needed
- Spaces must be removed

Examples:

- `DB9.DBX200.2` Addresses the second bit of byte 200 in data block no. 9
- `DB30.DBW558` Addresses byte 558 of data block no. 30

Symbolic addressing

For symbolic-addressed data access, the address is composed hierarchically from the program structure and groups, separated by a period. It always begins with the two group elements PLC (not the device name such as `PLC_1` !) and `Blocks`. Note the following:

- If group elements or variables contain a period, that address part must be enclosed in double quotation marks (ASCII code 0x22)
- If group elements or variables contain a double quotation mark, that address part must be enclosed in double quotation marks and the contained quotation mark must additionally be doubled
- Case sensitivity must be observed
- Certain special characters also require escaping with double quotation marks (e.g.: `<>[] . { }`)

Examples:

- `PLC.Blocks.TestDB.MyFunkyVariable` Addresses a variable named `MyFunkyVariable` in the data block named `TestDB` (directly subordinate to the main structure)
- `PLC.Blocks.TestDB."My.Funky.Struktur".MyFunkyVariable` Addresses a variable named `MyFunkyVariable` in a UDT instance `My.Funky.Struktur` in the data block named `TestDB` (directly subordinate to the main structure)
- `PLC.Blocks.TestDB."My""Funky""Struktur"."My""Funky""Variable"` Addresses a variable named `My"Funky"Variable` in a UDT instance `My"Funky"Struktur` in the data block named `TestDB` (directly subordinate to the main structure)
- `PLC.Blocks.TestDB.TestArray.MyFunkyElement[28]` Addresses the 28th element of the one-dimensional array `TestArray` in the data block named `TestDB` (directly subordinate to the main structure)

- `PLC.Blocks.TestDB.TestArray.MyFunkyElement[2,1,28]` Addresses element no. [2,1,28] of the multi-dimensional array `TestArray` in the data block named `TestDB` (directly subordinate to the main structure)



Caution

⚠ Invalid address entries, which frequently occur with manual input, prevent proper data access! By using the import function, this source of error is eliminated — variables are correctly formatted and escaped when transferred into the Edge structure.

Modbus TCP

[Section titled “Modbus TCP”](#)

Function	Comment
Supported access methods	READ_COIL, READ_DISCRETE_INPUT, READ_INPUT_REGISTER, READ_HOLDING_REGISTER
Supported data types	BOOLEAN*, INT16, UINT16, INT32, UINT32, INT64, UINT64, FLOAT, DOUBLE, STRING** *Boolean is only supported for bit-level access methods (read coils, read discrete input). ** The STRING data type is set to 8 characters by default. If a different number of characters is required, please contact support.
Slave ID	
(Modbus RTU)	For Modbus RTU, the “Slave ID” can be specified. Default = 1
Byte order	
(endianness)	Big-endian*, little-endian* (default) * For data types larger than 16 bits (INT32, UINT32, INT64, UINT64, FLOAT, DOUBLE, STRING). Defines which REGISTER (not bytes) contains the most significant bit. Byte order is an optional configuration parameter that cannot currently be configured in the UI. If a deviation from the default is required, please contact support.

Content coming soon.