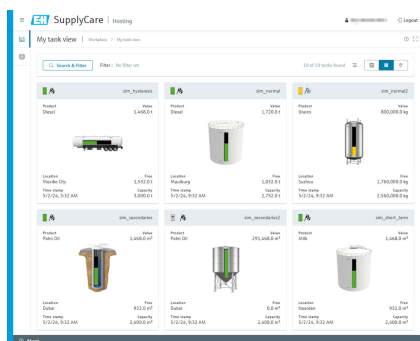


Technical Information

SupplyCare Hosting SCH30

System products



Cloud-based software for inventory management and transparent information flow along the supply chain

Applications

SupplyCare Hosting is a web-based software for coordinating the flow of material and information along the supply chain. It is hosted by Endress+Hauser on a redundant server infrastructure.

SupplyCare Hosting gives you complete transparency over inventory levels in tanks, silos and containers, at all times and location-independent.

Your benefits

- Visualization of inventories, with high level of availability anywhere in the company and even on mobile devices, saving you additional costs and investments (e.g. servers, IT administration, technical support, software licenses etc.)
- Based on web server technology, end users can monitor the inventory in tanks, silos and containers either from the workplace or while out and about, independently of the operating system or terminal
- Multilingual user interface with 10 languages supported allowing worldwide collaboration using the same platform
- Improves demand planning and optimizes your inventories
- Enables business processes such as Vendor Managed Inventory and Supplier Managed Inventory (VMI, SMI)
- Enables integration and synchronization with other applications within your IT infrastructure
- IT infrastructure within the Endress+Hauser network with full support and redundant servers with state-of-the-art IT security

Table of contents

Description	3
Applications	3
Application packages	4
Monitoring	4
Logistics	4
User interface and functions	4
User interface	4
Tank overview in tabular form	4
Tank details	5
'My tank view' in graphical form	5
Handling events - Event workplace	6
Managing deliveries and disposals – Scheduling workplace	6
Performing totalizations – Totaling workplace	7
Displaying analysis data – Analysis workplace	7
Displaying tank locations in the map – Map workplace	8
User management	8
User roles	8
Configuration	9
Configuring master data	9
Configuring reports	9
Technical system overview	9
Installation and scope of delivery	9
Redundancy and availability	9
Security	9
System overview	10
"Data interface" interface options	11
"Hosting API" interface options	11
Transmission from gateways	11
System requirements	11
Recommended specifications	11
Information required from customers	11
Information about application	11
Registered trademarks	12
Trademarks	12
Legal notice concerning trademarks	12
Documentation	12

Description

Applications

SupplyCare Hosting is a web-based software for coordinating the flow of material and information along the supply chain. SupplyCare provides a comprehensive overview of levels and material inventories at any time and from any location, either locally at the user's site or in tanks and silos distributed worldwide.

Based on locally installed measuring and transmission technology, current inventory levels are recorded and transmitted to SupplyCare. Critical inventory levels are clearly identified, and users can actively receive alerts about them if desired. Calculated forecasts provide additional reliability for replenishment planning.

SupplyCare Hosting runs safely on a server hosted and maintained in the cloud by Endress+Hauser. Users and administrators access the application via a web browser from their desk or while out and about.

Display of inventory data

In SupplyCare, the inventory levels in tanks and silos are recorded at regular intervals. Users can view both the current and historical inventory data at any time.

Visualizing data

SupplyCare offers centralized visualization of tank and silo inventories throughout the whole company. The combination of measurement and master data gives the user knowledge to manage the supply chain. Historical and current inventories are displayed in 3 different views (tabular, graphical or geographical) that are adjustable per user.

Forecasts

The software makes predictions based on historical inventory consumption and thus supports the user in planning deliveries and disposals.

Report generation

With SupplyCare, the user can create flexibly configurable reports in formats such as Excel, PDF, CSV, and XML, containing measured values and other information that can then be reused by other systems.

Alarm and event management

SupplyCare shows events in the process of the customer such as a drop to below safety stocks or plan points. The system also highlights a technical problem, e.g. connection problems. Additionally, notifications can be sent to the relevant persons per e-mail.

Logistics and analysis

Furthermore, there are additional features to analyze the supply chain and to improve delivery and disposal planning.

Data exchange with other systems

SupplyCare provides interfaces, such as a REST API, for example, to connect with other systems. Both the exchange of measured values and the synchronization of important master data are available for optimal use of the data.

The "User interface and functions" section contains further details on the functionality and the look-and-feel of SupplyCare.

Application packages

SupplyCare is modular in design and can be ordered depending on requirements. The software modules are assembled to the **Monitoring** and **Logistics** application packages.

Monitoring

The **Monitoring** application package is the standard package. It contains the necessary software modules to cover standard use cases such as inventory monitoring, event management and reporting.

Logistics

The **Logistics** application package contains all the software modules and functions that are contained in the **Monitoring** application package, plus a number of additional modules for Supply Chain Management.

The additional software modules are **Scheduling, Totaling, Analysis and Geographical visualization**. Software modules that are only contained in **Logistics** are marked with a corresponding note.

User interface and functions

User interface

The user interface supports the following 10 languages:

- German (DE)
- English (EN)
- French (FR)
- Italian (IT)
- Japanese (JA)
- Portuguese (PT)
- Russian (RU)
- Spanish (ES)
- Turkish (TR)
- Chinese (ZH)

The user interface language and other settings are detected automatically based on the browser settings.

Displays are loaded within a very short time and can be scaled, minimized, maximized, and moved so that the user can arrange the desktop according to individual requirements.

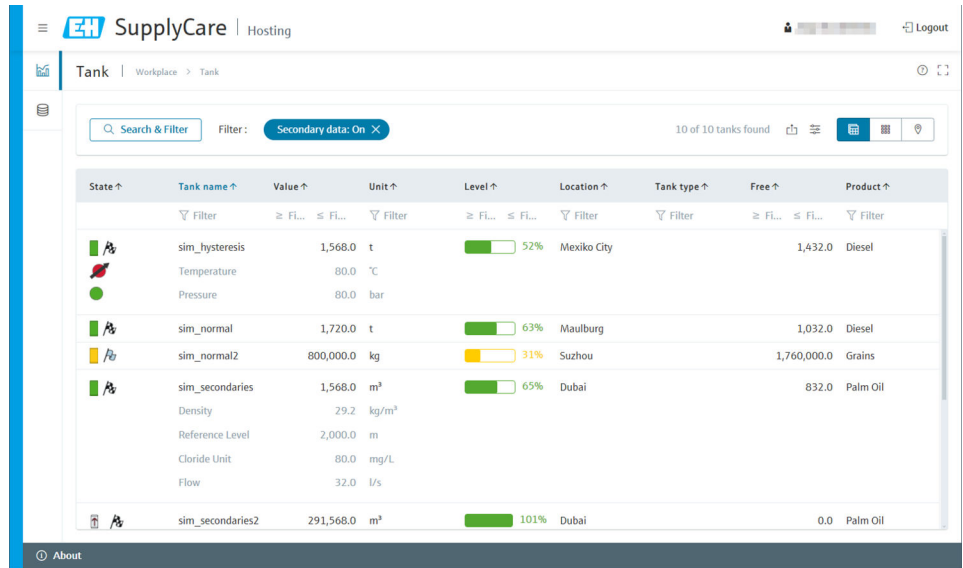
The SupplyCare user interface can be used via a web browser on various terminals, from smartphones or tablets to laptops and desktops to large screens.

Navigation within the software is easy thanks to the logical and user-dependent menu structure, guided configuration and extensive menus and wizards tailored to your use cases.

Tank overview in tabular form

This screen provides an overview in tabular form of the tanks and relevant data such as status, name, location, current value of the product etc. This overview table can be customized to the user's requirements by selecting different data for display and filtering from a wide selection of data.

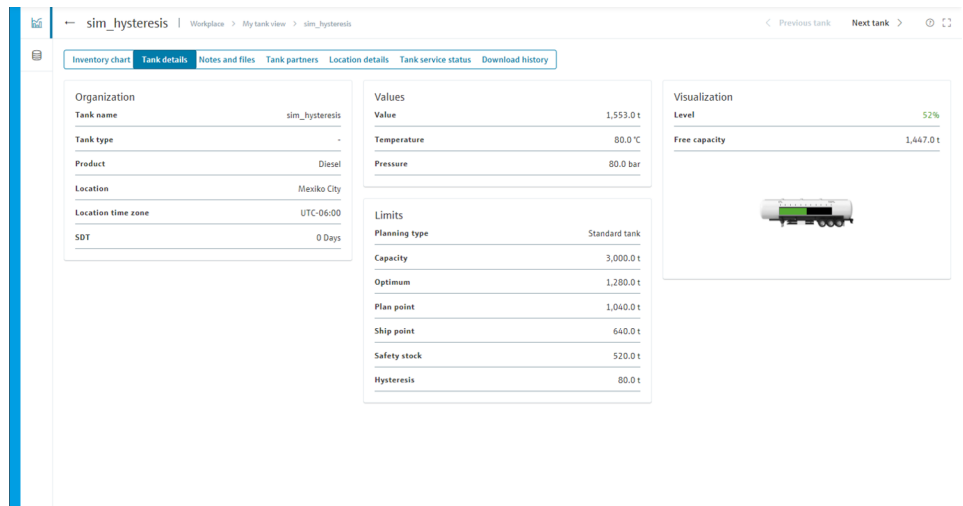
- **Overview:** The tanks, objects and silos assigned to the user are displayed in this overview table, together with a relevant and highly customizable data set. Customizable filters and additional display options in the table allow quick access to the tank currently in focus.
- **Detailed view:** Once a tank is selected, more detailed information on the tank such as an inventory chart, the tank's capacity and set limits, or details on tank location and service status are accessible and are sorted into a number of tabs.
- **Secondary values:** Various measuring instruments allow additional measured variables (secondary values) to be recorded alongside the primary variable (primary value). A tank can be assigned one primary value and up to 8 secondary values.



Tank details

The detailed views in **Workplace Tank**, **My tank view** and **Map** provide further information such as:

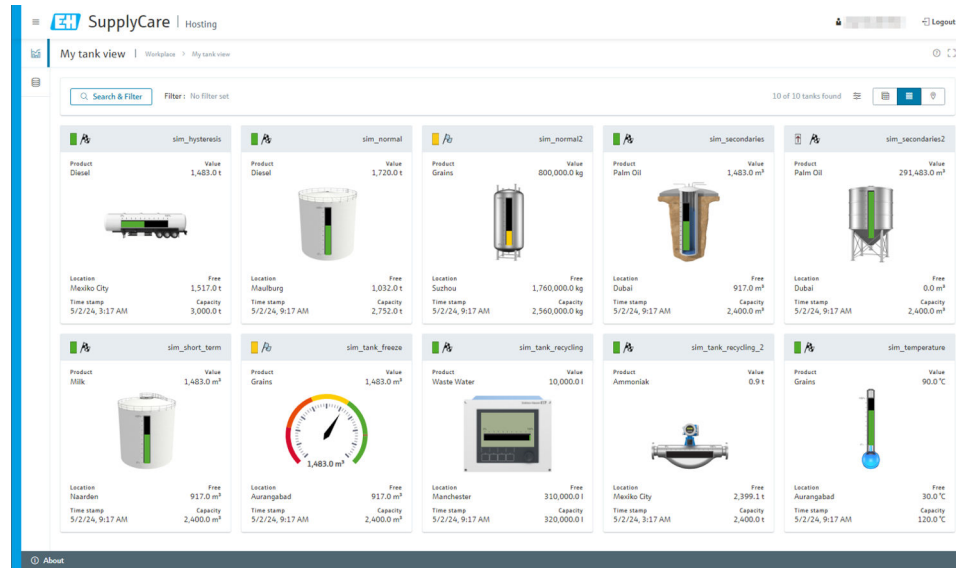
- **Tank details:** Additional information such as tank name, tank type, tank state, capacity, optimum, location, time zone, timestamp, level, unit, data sources, product, supplier, buyer, plan point, ship point and safety stock.
- **Inventory chart:** Displays the historical stock trend and the resulting forecast for inventory management. In addition, historical measured data can be displayed for the 8 secondary values.
- **Event details:** Shows details of the current event, e.g. "Safety stock reached".
- **Location details:** Displays information on the location such as company, street, city, zip code, state, country and name, as well as details on the manager such as surname, first name, e-mail, fax, mobile number and phone number.



'My tank view' in graphical form

The **My tank view** workplace provides a graphical overview showing the tanks or silos assigned to the user, with up to 10 selectable items of additional information or other measured values. Various filter functions allow users to display only tanks for a particular tank group, product or location.

Clicking on the tank icon brings you directly to the tank details. See "Tank details" section.



Handling events - Event workplace

An event is triggered if a limit value (plan point, ship point, safety stock) is undershot, or if unexpected level changes occur. The severity is defined by the limit value, i.e., reaching the plan point is classified as non-critical (low), while reaching the safety stock is classified as very critical (high). Once an event has been generated, the user can change the status to **Acknowledged** or **In process**. To ensure later traceability, the change is saved along with the timestamp and user name. If a critical limit value is reached and confirmed by a subsequent measurement, the event is assigned the status **Open**. If standard tanks have an inventory level above the plan point, or recycling tanks have an inventory level below the plan point, the event switches to the status **Completed**, and no further activities are required.

Severity ↑	Status ↑	Tank ↑	Location ↑	Supplier ↑	Resubmiss... ↑	Time zone	Comment ↑	Time stamp ↑
▲	/o	sim_secondaries	Dubai			UTC+00:00	Kiu	3/25/24, 9:12 AM
●	/o	sim_normal	Maulburg			UTC+00:00		4/22/24, 12:02 AM
●	/o	sim_temperature	Aurangabad			UTC+00:00		4/24/24, 7:02 AM
●	/o	sim_normal2	Suzhou			UTC+00:00		3/26/24, 11:00 PM
●	/o	sim_tank_freeze	Aurangabad			UTC+00:00		4/24/24, 12:02 AM

Managing deliveries and disposals – Scheduling workplace

SupplyCare Hosting enables detailed planning of delivery and disposal of material, as well as the monitoring of these tasks. When a new delivery/disposal is created, the system checks whether it is scheduled for too early or too late a time. The forecast values determined by SupplyCare are used for this test. The user can reschedule an early or late delivery/disposal or confirm it as an early or late delivery/disposal. Deliveries and disposals are monitored daily by SupplyCare. If an early or late delivery/disposal is detected, it can be confirmed. If a missing delivery/disposal is detected, it can be marked as "fulfilled".



This software module is contained in the **Logistics** application package only.

State ↑	ID ↑	Message ↑	Location ↑	Tank name ↑	PD ↓	Time zone	PD Amount ↑	Unit ↑	State changed ...
	e25b1...	Early disposa...	Manchester	sim_tank_recy...	5/21/24, 10:0...	UTC+00:00	10,000.0	l	5/7/24, 3:19 A
	39a4f...	New planned...	Maulburg	sim_normal	5/17/24, 1:00...	UTC+00:00	1,200.0	t	5/15/24, 6:48 A
	939ec...	Deleted deliv...	Suzhou	sim_normal2	4/30/24, 11:1...	UTC+00:00	1,600,000.0	kg	4/30/24, 7:17 A
	b07a5...	Missed deliv...	Suzhou	sim_normal2	4/30/24, 11:1...	UTC+00:00	1,600,000.0	kg	5/1/24, 3:20 A
	c7046...	Missed deliv...	Suzhou	sim_normal2	4/30/24, 10:1...	UTC+00:00	1,600,000.0	kg	5/1/24, 3:20 A
	59e02...	Missed deliv...	Suzhou	sim_normal2	4/30/24, 8:15...	UTC+00:00	1,600,000.0	kg	5/1/24, 3:20 A
	7c826...	Delivery fulfil...	Mexiko City	sim_hysteresis	4/18/24, 12:0...	UTC-06:00	2.0	t	4/19/24, 9:18 F
	404d4...	Delivery fulfil...	Aurangabad	sim_tank_freeze	4/18/24, 12:2...	UTC+00:00	2,000.0	m³	4/19/24, 7:54 A

Performing totalizations – Totaling workplace

The **Totaling** workplace enables values to be added, for example, to determine the available capacity at a location. The totalized **Level** is then represented graphically. Tanks, recycling tanks and aggregated tanks can be included in the calculation.

Set filters such as location, tank groups or personal favorites can be used to add up certain tanks according to criteria.

This software module is contained in the **Logistics** application package only.

State ↑	Tank name ↑	Value ↑
<input type="checkbox"/>	sim_hysteresis	1,483
<input type="checkbox"/>	sim_normal	1,720
<input type="checkbox"/>	sim_normal2	800,000
<input checked="" type="checkbox"/>	sim_secondaries	1,483
<input checked="" type="checkbox"/>	sim_secondarie...	241,483
<input type="checkbox"/>	sim_short_term	1,483
<input type="checkbox"/>	sim_tank_freeze	1,483
<input type="checkbox"/>	sim_tank_recy...	10,000.0
<input type="checkbox"/>	sim_tank_recy...	0.9 t
<input type="checkbox"/>	sim_temperature	90.0 °C

Total

Level 101%

Value 242,906.0 m³

Capacity 4,800.0 m³

Free 947.0 m³

Planned delivery amount 150.0 m³

Planned disposal amount 0.0 m³

Monetary value 85,017,100.00 EUR

Done

Displaying analysis data – Analysis workplace

In the **Analysis** workplace, the user can view key figures for the inflows and outflows of individual tanks in the form of data and charts. Using this data and these charts, past trends can be analyzed and used as a basis for future planning. All information can be exported to Excel. The user can also print the charts.

This software module is contained in the **Logistics** application package only.



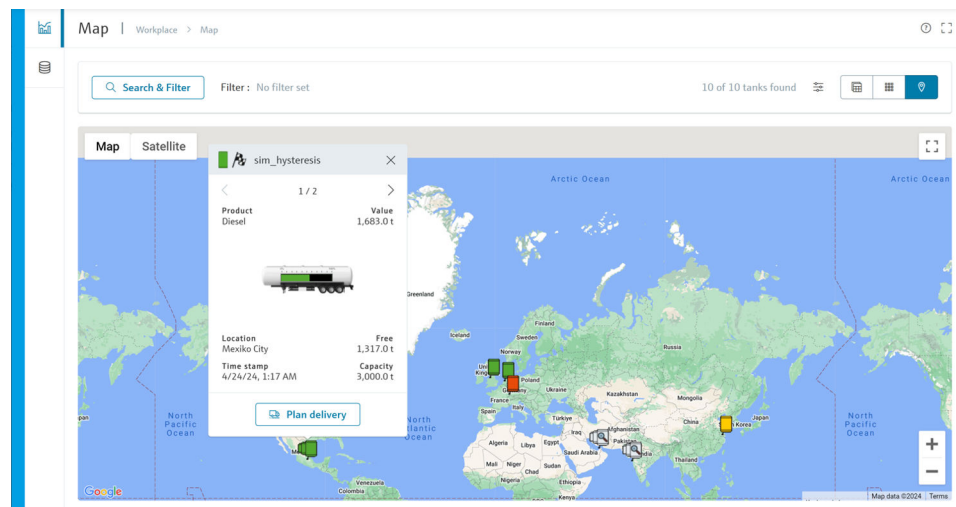
Displaying tank locations in the map – Map workplace

In the **Map** workplace, the user can view the locations of individual tanks on an overview map (Google Maps). The tanks can be filtered by tank name, tank group, product, supplier, and location. The tanks can be filtered by tank name, tank group, product, location and other master data. If you call up a tank, the widget opens from the graphical tank view. The widget shows the level in the tank and additional information such as product, capacity and timestamp of the last measured value.

Clicking on the tank icon brings you directly to the tank details. See "Tank details" section.



This software module is contained in the **Logistics** application package only.



User management

User roles

The system allows access only with a user name and password.

Users and their relevant permissions are defined in the **User Role** menu item. Each user role comprises a range of functions and permissions. The different permissions can be assigned to each user by specifying a user role. Individual users' access to specific groups of tanks, silos and containers can be managed via the master data.

SupplyCare Hosting offers the following user roles: authorization to create and edit master data, operator, read only privileges, scheduler and product tank configurator.

Configuration

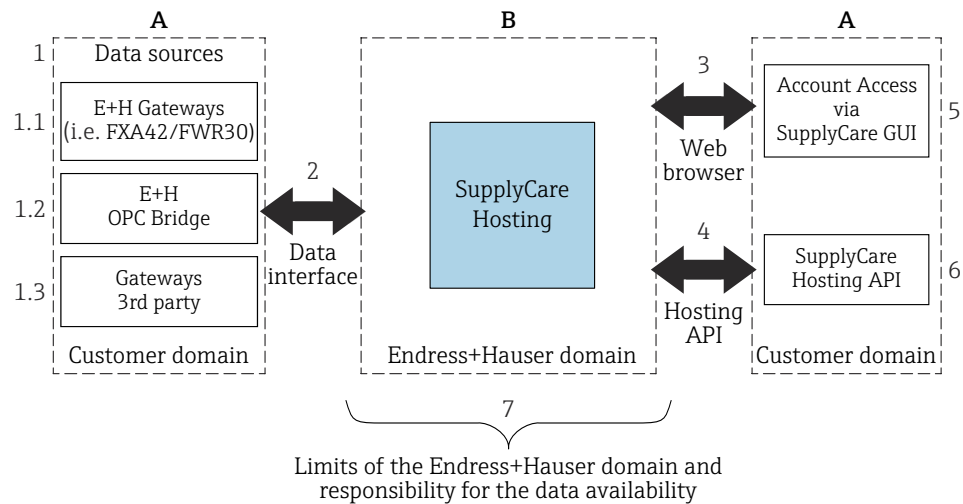
Configuring master data	<p>Master data is the basis of any inventory management system. The Configuration menu can be used to manage, among others, the following master data:</p> <ul style="list-style-type: none">■ Users■ Tanks■ Aggregated tanks■ Tank types■ Tank groups■ Locations■ Companies■ Products■ Linearizations■ Units■ Reports <p>Many settings are critical, which is why access should generally be restricted to specific staff.</p>
Configuring reports	<p>Reports can be created in various formats with the report wizard: Excel files (XLS), text files (TXT), PDF files, CSV files, or XML files.</p> <p>Reports can be distributed by directory, by HTTP, by FTP or by email.</p>

Technical system overview

Installation and scope of delivery	<p>No installation is needed as the software runs as a cloud service within the Endress+Hauser infrastructure. Only an Internet connection with a standard web browser is required to operate the software. See the "System requirements" section.</p>
Redundancy and availability	<p>SupplyCare Hosting offers reliable and safe hosting of customer data. By operating redundant servers in different locations, Endress+Hauser secures the application against unwanted downtime.</p> <p>Redundant critical application components make the system resilient and fault-tolerant. The continuity of customer business is thus effectively protected as the system will continue to operate even if, however unlikely, single components should nevertheless fail.</p> <p>If not explicitly agreed otherwise, the conditions for availability specified in the associated Service Level Agreement apply.</p>
Security	<p>State-of-the-art security mechanisms protect the integrity of data communicated between SupplyCare Hosting, the interfaces and data sources.</p> <p>Communication on the Endress+Hauser web server and Hosting API interfaces is carried out via HTTPS. For the data interface, the security level depends on the communication interface selected and on gateway-embedded technologies.</p> <p>All access to data inside SupplyCare Hosting, as well as the execution of operations, requires authorization.</p> <p>To perform operations inside SupplyCare Hosting, a user must have the following:</p> <ul style="list-style-type: none">■ The required authorization via privilege to perform an operation (role)■ The required authorization via privilege to access the relevant object (authorized contract)

System overview

Responsibility transfer point



A0057506

- A Customer domain
- B Endress+Hauser domain
- 1 Data source
- 1.1 Endress+Hauser gateways (e.g. FXA42 or FWR30)
- 1.2 Endress+Hauser OPC Bridge
- 1.3 Third-party gateways
- 2 Data interface
- 3 Web browser
- 4 Hosting API
- 5 Account access via SupplyCare GUI
- 6 SupplyCare Hosting API
- 7 Limits of the Endress+Hauser domain and responsibility for the availability of data

Customers use the Internet to connect to the Endress+Hauser hosting system. The responsibility transfer point for data communication between the customer's IT infrastructure and the hosting system operated by Endress+Hauser is described in the diagram above.

Endress+Hauser is responsible for the following deliverables and services:

- Operation of the SupplyCare Hosting application
- Process flow at the interfaces between the Endress+Hauser domain and the customer domain according to relevant protocols and definitions, as far as this is within the sphere of influence of Endress+Hauser. Such processes are, for instance, storage, processing and delivery of data.

Endress+Hauser is not responsible for malfunction occurring outside the Endress+Hauser domain (e.g. Internet connection problems, IT infrastructure malfunction on the customer's side etc.).

Interfaces which connect the Endress+Hauser domain with the customer domain can include:

- Data interface
- Endress+Hauser web server (accessed via a web browser)
- Hosting API

The interfaces have the following features and functions:

- The **Data interface** represents the boundary of the domain for incoming data. Data interface acts as a collective noun here for different kinds of interfaces which can have the following form:
 - M2M interface for machine-to-machine communication
 - Endress+Hauser mail server for e-mail
 - RawData Queue for FTP and HTTP
- The **Endress+Hauser web server** provides the computer environment for the graphical user interface of SupplyCare (Hosting), which is used by customer users to access their inventory data and individual configurations. The Endress+Hauser web server is located inside the Endress+Hauser domain and is accessed by means of a web browser.
- The **Hosting API** enables data exchange between SupplyCare Hosting and a customer system (e.g. ERP system). This primarily focuses on the use cases of measured data exchange and master data synchronization (tanks, locations, products etc.). For more information, see the Special Documentation for SupplyCare Hosting API (SD03269S).

"Data interface" interface options**M2M**

Option 1 and **preferred method**: Gateways push their measured data directly to the Endress+Hauser hosting solution via a machine-to-machine (M2M) interface. This method is preferred as it does not require any additional infrastructure or accessories for stationary gateways on the customer's side except for an Internet connection with the usual permissions for outgoing traffic on HTTP/HTTPS ports.

Email

Option 2: The gateways transfer measured data to SupplyCare via email to the Endress+Hauser mail server, using the SMTP protocol.

SupplyCare Hosting collects the emails and extracts the measured data that are embedded inside the emails.

The SMTP server is not a part of the standard scope of delivery.

HTTP polling

Option 3: The gateways are polled directly by SupplyCare in order to retrieve the delivered measured data. As a prerequisite, the gateways must be available via Internet with a static IP v4 address.

Configuration of a static IP address is not a part of the standard scope of delivery.

"Hosting API" interface options**Hosting API**

Option 4 and **preferred method**: The SupplyCare API services are based on HTTP REST and therefore the standard methods such as GET, POST, PUT, PATCH and DELETE are used. The data serialization format used for any request to the API or responses from the API is JSON.

Transmission from gateways

In typical inventory management applications, data are transmitted several times per day. A higher data transmission rate (= shorter intervals) can lead to high data volumes and suitability for higher transmission rates must be checked for each gateway. For this reason, Endress+Hauser reserves the right to reset transmission and measuring intervals shorter than 15 minutes back to 15 minutes if the setting has been made without consultation with Endress+Hauser.



If higher data transmission rates are required, please contact Endress+Hauser.
www.addresses.endress.com

System requirements

Recommended specifications**Browser for desktop:**

- Microsoft® Edge 128 (or higher)
- Mozilla Firefox 130 (or higher)
- Google Chrome™ 128 (or higher)

Browser for mobile devices:

- Google Chrome™ 128 (or higher)
- Safari® on iOS 18 (or higher)

These are the officially supported browsers recommended by Endress+Hauser for the SupplyCare Hosting application. The use of any other browser version or technology may result in limited functionality and visualization.

The minimum supported resolution is 375×667 pixels. The display characteristics of the SupplyCare user interface are ultimately determined by the selected resolution for the browser, not the maximum possible resolution for the terminal.

Information required from customers

Information about application

To create an account for a customer, Endress+Hauser needs information about the customer's application. Endress+Hauser uses checklists to query the information required about tanks,

gateways, users and other topics. Depending on the agreement, either the customer or Endress+Hauser can create the tanks and set up the gateways.

By concluding a license agreement for SupplyCare Hosting, the customer agrees to completing the checklists accurately and truthfully and to provide the required information to Endress+Hauser.

Registered trademarks

Trademarks

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All company and/or product names and/or all company logos may be trade names, trademarks and/or registered trademarks of Endress+Hauser, its affiliates or of their respective owners with which they are associated.

Documentation

The following document types are available in the Downloads area of the Endress+Hauser website (www.endress.com/downloads), depending on the device version:

Document type	Purpose and content of the document
Technical Information (TI)	Planning aid for your device The document contains all the technical data on the device and provides an overview of the accessories and other products that can be ordered for the device.
Brief Operating Instructions (KA)	Guide that takes you quickly to the 1st measured value The Brief Operating Instructions contain all the essential information from incoming acceptance to initial commissioning.
Operating Instructions (BA)	Your reference document The Operating Instructions contain all the information that is required in various phases of the life cycle of the device: from product identification, incoming acceptance and storage, to mounting, connection, operation and commissioning through to troubleshooting, maintenance and disposal.
Description of Device Parameters (GP)	Reference for your parameters The document provides a detailed explanation of each individual parameter. The description is aimed at those who work with the device over the entire life cycle and perform specific configurations.
Safety instructions (XA)	Depending on the approval, safety instructions for electrical equipment in hazardous areas are also supplied with the device. These are an integral part of the Operating Instructions.  The nameplate indicates which Safety Instructions (XA) apply to the device.
Supplementary device-dependent documentation (SD/FY)	Always comply strictly with the instructions in the relevant supplementary documentation. The supplementary documentation is a constituent part of the device documentation.





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