



Cockpit

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INTRODUCTION

The Cockpit application provides you with options to manage and monitor IoT assets and data from a business perspective, including visualizing data in dashboards and managing reports.

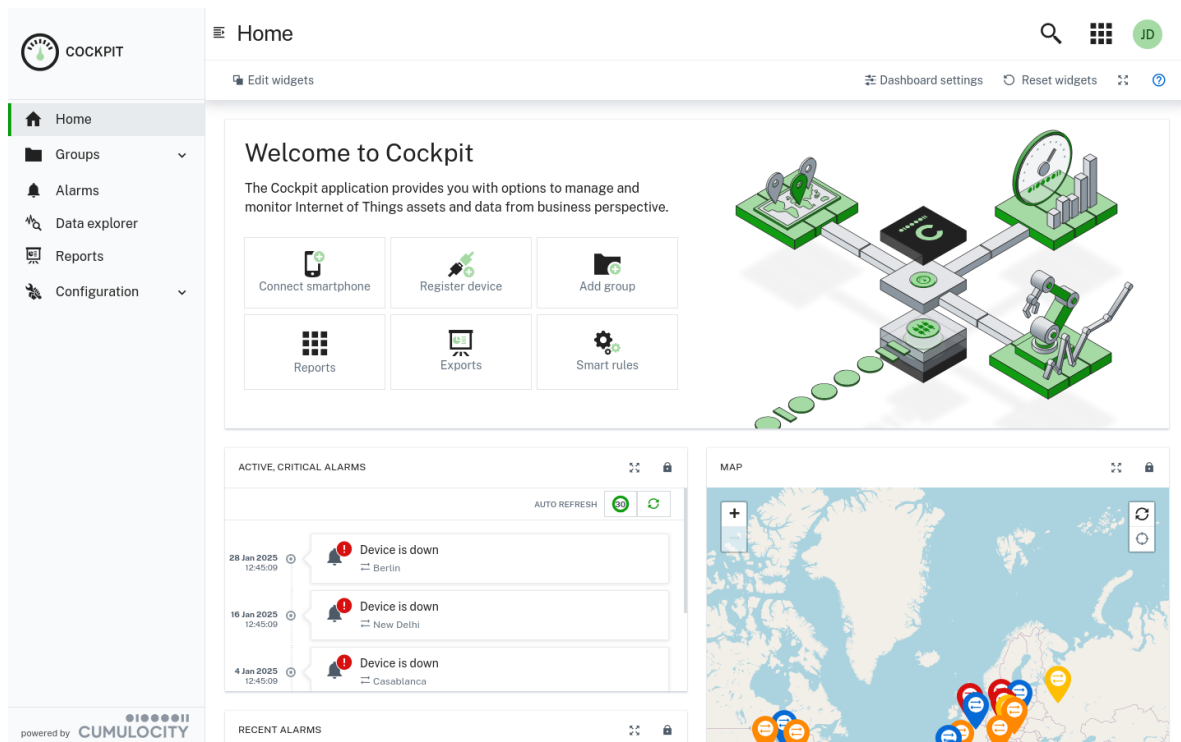
The following sections walk you through all functionalities of the Cockpit application in detail.

RELATED TOPICS

- [Getting started > Getting familiar with the UI](#) for general aspects of the Cumulocity UI and its applications.
- [Application enablement & solutions > Web SDK](#) for details on developing own web applications which can be deployed on top of Cumulocity.

HOME DASHBOARD

The Home screen of the Cockpit application is a dashboard which shows data for the general tenant.



The data shown on the Home dashboard is shared by all users of the tenant. By default, the Home dashboard includes a welcome message, the active critical alarms, recent alarms and a map of all objects.

i INFO

For performance reasons, the map on the Home dashboard displays icons for a maximum of 100 devices. If there are more devices they are not be shown in the map. To see them, you must go to the dashboard on group level, and add the “Map” widget there to only see devices from this particular group, see [Widgets collection](#).

The Home dashboard can be edited and designed individually according to your needs. You can add, remove or change widgets being displayed here.

For details on editing a dashboard, refer to [Working with dashboards](#).

To reset the Home dashboard to its original content, click **More...** at the right of the top menu bar and then click **Restore dashboard**.

MANAGING ASSETS

ASSET HIERARCHY

Assets represent business objects in general like buildings, machines, production units or cars.

Assets are organized in hierarchies. For example, an energy monitoring application might have the following asset hierarchy:



The asset hierarchy is composed of two types of objects:

- **Groups:** Objects which group single devices or other groups. Groups can either be created in the Cockpit application or in the Device Management application.
- **Custom assets:** Objects defined by an asset model and created in the [Digital Twin Manager](#) application.
- **Devices:** Devices which are linked into the asset hierarchy. Before you can use devices in the Cockpit application, they must be connected to Cumulocity. This is done in the Device Management application. For details on connecting devices refer to [Registering devices](#).

In this example, the group objects represent a building asset. The device objects represent the room asset. The group names and hierarchy can be defined individually by the user. The hierarchy can have multiple levels, like region level, city level, street level, building level, floor level and room level. Any device can be part of multiple and different hierarchies, like part of regional hierarchy and part of customer hierarchy.

To position a device in the asset hierarchy, you must “assign” the device to the respective group (see below).

i INFO

Single devices are not managed in the Cockpit application. They are managed in the Device Management application.

i RELATED TOPICS

- [Getting started > Technical concepts > Cumulocity's domain model](#) for details on Cumulocity's domain model.
- [Device management & connectivity > Device management application](#) for details on working with devices in Cumulocity.
- Refer to the [Cumulocity Developer Codex](#) for more information on developing applications in the

Cumulocity environment. Moreover find various related tutorials in the [Cumulocity Tech Community](#).

ASSET HIERARCHY VERSUS DEVICE HIERARCHY

Cumulocity supports two types of hierarchies: a device hierarchy and an asset hierarchy.

The device hierarchy tracks how devices are linked to Cumulocity from a communications point of view. The asset hierarchy structures the assets that are being remotely supervised and controlled through the IoT devices. For details, refer to [Cumulocity's domain model](#).

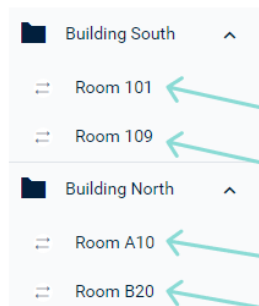
In the Cockpit application, you construct your asset hierarchy by creating group objects and by linking devices into the hierarchy. The asset hierarchy depends on the IoT devices used. There are many types of IoT devices, but these two types are very common:

- **Smart devices** are self-contained devices that include sensors, actuators and a communication module. They are typically connected to a single asset. Smart devices are trackers, weather stations or general “smart” sensors with a built-in communication module.
- **Gateway devices** establish the communication from other devices to Cumulocity but do not include sensors or actuators. Typical gateway devices include Zigbee, Modbus, M-Bus or KNX gateways.

The following section explains how to work with smart devices and gateway devices in the Cockpit application.

The first example shows how smart devices are linked into the asset hierarchy:

Asset hierarchy (as shown in Cockpit App)



Device hierarchy (as shown in Device Management App)

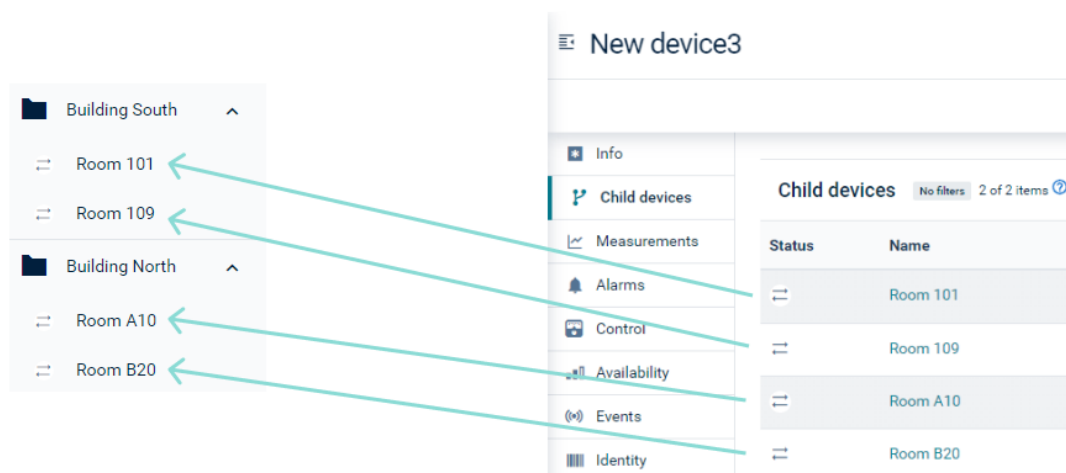
All devices	
Devices > All devices	
Devices No filters 35 of 35 items ?	
Name	Status
Room 101	⇄
Room 109	⇄
Room A10	⇄
Room B20	⇄

Smart devices are represented as top-level devices in the Device Management application. In the Cockpit application, you can organize smart devices into groups, as the arrows indicate in the above diagram.

The second example shows how gateway devices can be used in the Cockpit application.

Asset hierarchy (as shown in Cockpit App)

Device hierarchy (as shown in Device Management App)



Gateway devices are as well represented as top level devices in the Device Management application. Their attached devices (like for example Modbus or KNX devices) are shown as child devices. These child devices can be organized in the asset hierarchy in the Cockpit application as shown above.

As you can see from the example, devices can have completely different hierarchies in the Device Management application and in the Cockpit application: While inside the Device Management application all child devices are below the gateway device, the same child devices are organized in two different buildings in the Cockpit.

COCKPIT ASSETS VERSUS BUSINESS ASSETS

The mapping of objects in the Cockpit asset hierarchy is a virtual hierarchy.

If you manage trucks within the Cumulocity platform, then each truck is represented via its individual tracking device communicating with Cumulocity.

For building management, it is most common that a group of sensors inside a building represents the building as a group communicating with the Cumulocity platform.

If you need more properties and better visualization of business assets, we recommend you to use the [Digital Twin Manager](#) application. A custom asset created via the Digital Twin Manager application is also shown in the Cockpit application. It uses the chosen icon and additionally shows all properties in a list next to the subassets. These properties can be edited if the user has WRITE permission for the permission type "Inventory".

WORKING WITH ASSETS

TO NAVIGATE ASSETS

In the asset hierarchy, Cumulocity distinguishes between top-level groups and subassets. Subassets can either be other groups or devices.

In the navigator, top-level groups are shown in the **Groups** menu at top-level. Subassets are shown under its higher-level group.

Moreover, subassets are shown in the **Subassets** tab of the particular group which is initially displayed when you click on the group in the navigator.

The screenshot shows the Cockpit interface with the 'Groups' tab selected. The left sidebar contains navigation links: Home, Groups (selected), Turbines (europe), Turbines (asia), Turbines (africa), Turbines (australia), Turbines (america), Alarms, Data explorer, Reports, and Configuration. The main content area displays a table of subassets. The table has columns for Type, Name, and Model. There are 5 items in the table, all of which are 'Turbines' from different regions. The table is titled 'Subassets' and shows '5 of 5 items' with 'No filters' applied. At the bottom of the table, it says '1 - 5 of 5'.

Type	Name	Model
Turbines	Turbines (europe)	
Turbines	Turbines (asia)	
Turbines	Turbines (africa)	
Turbines	Turbines (australia)	
Turbines	Turbines (america)	

INFO

The count displayed on top of the table on the **Subassets** tab shows the total number of child assets assigned to the current group. Any type of managed object can be a child asset. For more details on the counting of objects refer to the operation [Retrieve all child assets of a specific managed object](#) in the Cumulocity OpenAPI Specification.

If you add a gateway device, the child devices are not shown. To show child devices, you must add them to the related asset. Details related to the child hierarchy are visible and editable in the Device Management application.

Use the navigator, to navigate through the asset hierarchy.

ASSET DETAILS

Depending on the asset type (group or device), various tabs are available with detailed information.

Groups show the following tabs:

- **Subassets** - Shows group details and all subassets of a group, see also [Viewing all devices](#).
- **Smart rules** - Shows smart rules specified for the group, see also [Smart rules](#).
- **Smart rules (NEW)** - Shows smart rules (NEW) specified for the group, see also [Smart rules plugin](#).
- **Data explorer** - Shows all data points of the children. For details refer to [Changing visualization](#).

REQUIREMENTS

ROLES & PERMISSIONS in groups context:

- To view all groups: READ permission for permission type "Inventory"
- To add new groups: CREATE permission for permission type "Inventory"
- To delete any group: ADMIN permission for permission type "Inventory"
- To rename a group or change group description: ADMIN permission for permission type "Inventory"
- To view specific groups: READ permissions for "Inventory" in the inventory roles

- To manage or delete specific groups: READ and CHANGE permissions for “Inventory” in the inventory roles

Note that global inventory permissions override inventory role permissions.

Devices show the following tabs:

- **Smart rules** - Shows smart rules specified for the device, see also [Smart rules](#).
- **Smart rules (NEW)** - Shows smart rules (NEW) specified for the device, see also [Smart rules \(NEW\) plugin](#).
- **Alarms** - Displays alarms for the device, see also [Working with alarms](#).
- **Data explorer** - Shows all data points of the children. For details refer to [Changing visualization](#).
- **Location** - Shows the current location of a device (only available with `c8y_Position`).

✓ REQUIREMENTS

ROLES & PERMISSIONS in devices context:

- To view all devices within a group: READ permission for permission type “Inventory”
- To assign or unassign devices within a group: ADMIN permission for permission type “Inventory”
- To delete any device within a group: ADMIN permission for permission type “Inventory”

If dashboards have been created for a group or device, they will also be added as a tab. See [Working with dashboards](#) for details.

Moreover, additional tabs may be displayed here in case the application has been extended with a custom Web SDK extension. Refer to the [Cumulocity Tech Community](#) for a tutorial on adding custom tabs.

TO ADD A GROUP

1. Click **Add group** at the right of the top menu bar.
2. In the resulting dialog box, enter a unique group name and an optional description and click **Next**.
3. In the list, select the devices you want to add. You may apply filters to reduce the number of displayed devices.
4. Click **Create** to create the new group.

The new group will be added to the groups list.

i INFO


A group can be created with “0” devices in it.

To add a new group as a child of an existing asset, navigate to its **Subassets** tab and click **Add Group** in the top menu bar.

TO EDIT A GROUP

1. In the navigator, click a group to open it.
2. In the **Subassets** tab, you can edit the name and description of the group.

TO DELETE A GROUP

To delete a group either on top-level from the **Groups** page or from the **Subassets** tab of another group, hover over the respective entry you want to delete and click the delete icon  at the right.

In the resulting dialog box, you can select to also delete all devices inside the selected asset and all its subassets.

TO ASSIGN DEVICES TO A GROUP


Before adding a device to the asset hierarchy, it must be connected to Cumulocity. Connecting devices to the platform is done in the Device Management application. For details on connecting devices refer to [Device Management application](#).

To assign devices to a group, follow these steps:

1. In the navigator, select a group from the **Group** menu and then open the **Subassets** page.
2. Click **Assign devices** at the right of the top menu bar.
3. In the list, select the devices you want to add. You may apply filters to reduce the number of displayed devices.
4. Click **Assign** to assign the selected devices.

The devices will be assigned to the selected group and shown as subassets in the **Subassets** page.

TO REMOVE A DEVICE FROM A GROUP

1. Navigate to the **Subassets** tab of the group.
2. Hover over the respective device you want to remove and click the delete icon  at the right.

Removing a device does not delete the device, subdevices or any associated data. The device is only removed from its location in the asset hierarchy. It can be assigned to this group or other groups later.

ALARMS

The **Alarms** page provides information about the alarms raised on the devices. See [Working with alarms](#) for detailed information on alarms.

The screenshot displays the Cockpit interface for the Alarms page. On the left is a sidebar with navigation links: Home, Groups, Alarms (selected), Data explorer, Reports, and Configuration. The main area is titled 'Alarms' and includes filter controls for 'All severities', 'No date filter', and 'All alarm types'. A search icon, a grid icon, and a user profile 'JD' are in the top right. Below the filters is an 'Alarms list' table with columns for date, time, and alarm details. The table contains 10 entries, each with a date, time, and a description of the alarm (e.g., 'Device is down', 'Replacement battery required', 'Battery is low'). To the right of the list is a panel titled 'No alarm selected' with a subtext 'Select an alarm from the list to view its details.'

Date	Time	Alarm
28 Jan 2025	12:43:39	Device is down Berlin
27 Jan 2025	12:43:39	Replacement battery required Madrid
25 Jan 2025	12:43:39	Battery is low Paris
24 Jan 2025	12:43:39	Signal strength is low London
22 Jan 2025	12:43:39	Device is overheating Vienna
21 Jan 2025	12:43:39	Device is overloaded Warsaw
19 Jan 2025	12:43:39	Device is overvoltage Budapest
18 Jan 2025	12:43:39	Device is underpressured Tokyo
16 Jan 2025	12:43:39	Device is down New Delhi
15 Jan 2025	12:43:39	Replacement battery required Jakarta

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DATA EXPLORER

WORKING WITH THE DATA EXPLORER

OVERVIEW

In the data explorer, data points (measurements or sensor data) can be visualized.

✔ REQUIREMENTS

ROLES & PERMISSIONS:

- To view and select all available data points: READ permission for permission type "Inventory" or READ permission for "Inventory" in the inventory roles
- To visualize already selected data points: READ permission for permission type "Measurements" or READ permission for "Measurements" in the inventory roles
- To send as widget to report/dashboard: ADMIN permission for permission type "Inventory"

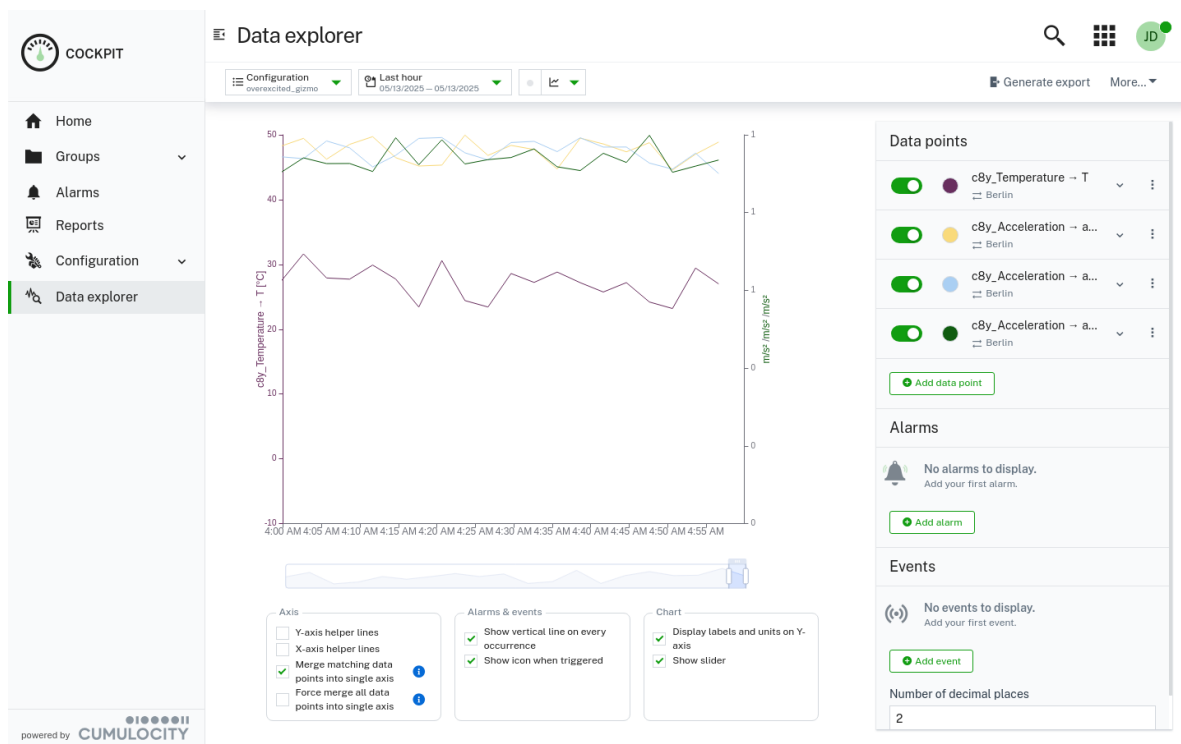
Note that datapoints existing in the data point library are visible by anyone without the need of any permission.

The data explorer is available for all assets at once or just for a particular asset. To access the data explorer:

- Click **Data explorer** in the navigator to visualize all data points of all assets.
- Navigate to a particular asset and switch to the **Data explorer** tab to visualize all data points of this particular asset and its subassets.

In the data explorer, you see a list of available data points at the right. The first five data points of the selected device or group are shown by default. For details on how to add data points see [To add a data point](#).

On the left, in the main card, you see its visualization.



The visualization is generated based on data point properties.

The data points properties are pre-filled as follows:

- If these properties have been customized previously, these values are used, see [To customize data point properties](#).
- If the data points have a matching definition in the data point library, the values from the data point library are used.

There can be more than one matching data point entry in the data point library. In this case, the first one is selected automatically by the system.

For details on modifying the visualization in general, see [Changing data explorer visualization](#). For details on customizing the properties of a particular data point, see [To customize data point properties](#).

Example:

Let's assume you have a temperature data point defined in the library and a device which sends temperature measurements (matching by fragment and series with the data point in the library). If you create an "On measurement threshold create alarm" smart rule and select the data point from the library, then it will use the settings from the library to decide whether to create an alarm.

INFO

Data points are visible to all authenticated users of the tenant, regardless of their inventory role permission.

RELATED TOPICS

- [Measurements](#) in the *Cumulocity OpenAPI Specification* for further details on uploading data to Cumulocity.

TO ADD A DATA POINT

To add a data point to the data explorer, click **Add data point** at the bottom of the **Data points** card.

Data point selector

Asset selection

Search for groups or assets...

SELECTED ✕ Berlin

Groups > Turbines (europe)

⏮ **Turbines (europe)**

Filter this column...

- ☐ Offshore
- ☒ Berlin
- ☐ Madrid
- ☐ Moskau
- ☐ Paris
- ☐ London
- ☐ Rome
- ☐ Vienna
- ☐ Warsaw
- ☐ Prague
- ☐ Budapest

Available data points

Search...

- c8y_Acceleration → accelerationX + ⌵
Berlin
- c8y_Acceleration → accelerationY + ⌵
Berlin
- c8y_Acceleration → accelerationZ + ⌵
Berlin
- c8y_Temperature → T - ⌵
Berlin

Selected data points

- ✕ c8y_Temperature → T
Berlin

Cancel Add data points

On the left hand side of the dialog, select a device from the asset hierarchy. Only the asset hierarchy below the objects selected in the navigator is visible. If **Data explorer** in the navigator was selected, the complete asset hierarchy is visible.

The center of the dialog shows all data points of the selected object. Select the data points you want to show in the data explorer. Click **Add** to add all selected data points to the list of data points.

The right hand side shows all of the selected data points.

For further information on the data point library refer to [Data point library](#).

To remove a data point from the data point list, click the menu icon ⋮ and select **Remove from list**.

TO CUSTOMIZE DATA POINT PROPERTIES

You can customize the visualization of a particular data point to your preferences. To do so, expand the data point entry in the data point list.

The following fields may be modified:

Field	Description
Label	Name of the data point, displayed on the y-axis to identify the data point. Below the label, the target is displayed, showing the name of the asset and the internal name of the data point (measurement fragment and series). This information is not editable.
Unit	Unit used on the y-axis.
Min/Max	Range shown on the y-axis. If not specified, the y-axis is scaled based on measurement values retrieved per specified time range.
Target	The target value is currently not shown in the diagram. The value is used in the "Data point list" widget.

Field	Description
Yellow range min/max	Defines the range when MINOR alarms should be raised by threshold rule.
Red range min/max	Defines the range when CRITICAL alarms should be raised by threshold rule.
Display	Value displayed when data is aggregated. May be "Minimum", "Maximum", "Minimum and maximum".
Chart type	The type of chart used for the visualization. May be one of "Line", "Points", "Line and points", "Bars", "Step before" (alternating between vertical and horizontal segments, as in a step function) or "Step after" (alternating between horizontal and vertical segments). Default value is "line".
Y axis	Defines where the y-axis is shown. May be one of "Auto", "Left", "Right". Default value is "Auto".

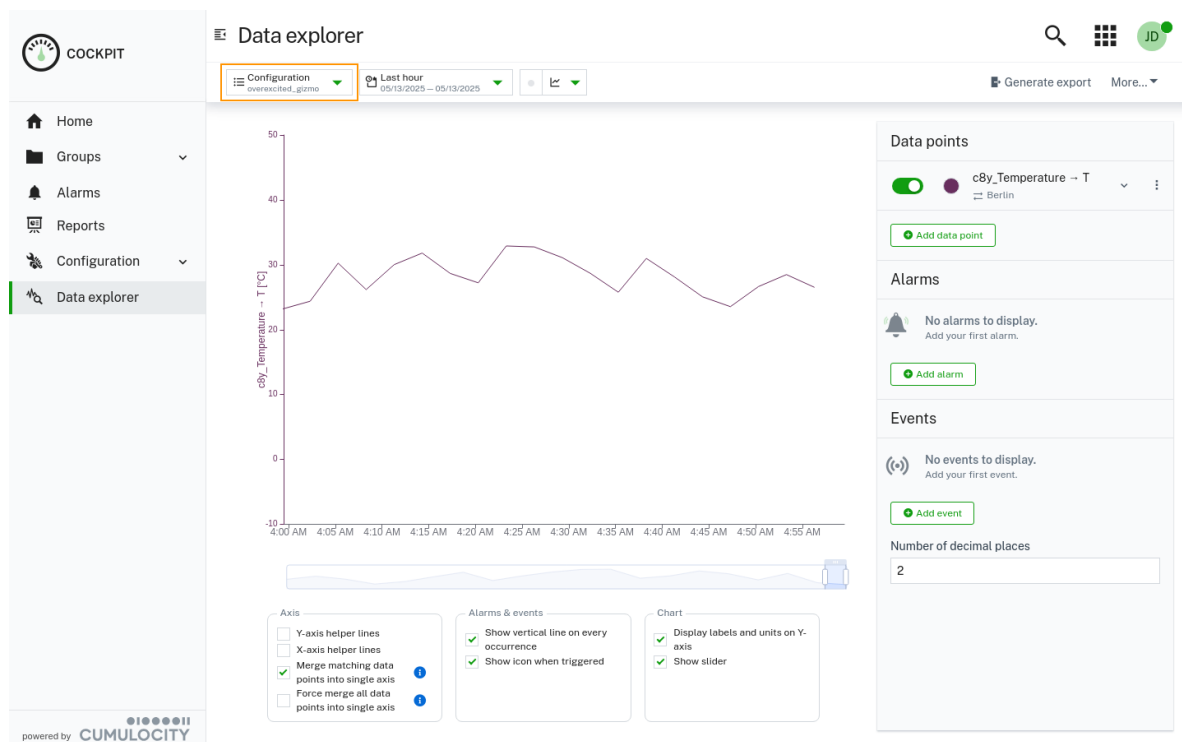
TO ADD OR CLONE A CONFIGURATION

Configurations in the data explorer let you create, save, and manage different configurations tailored to your specific needs - whether for individual devices, projects, or use cases. Each configuration stores your selected data points, chart layout, time range, and all visual customizations. Configurations are saved automatically in your browser's local storage, so any updates (like adding or removing data points or changing the visualization) are preserved instantly.

You can switch between multiple configurations using the configuration menu, located at the top left of the **Data explorer** page. This menu provides the following actions:

- Create new configuration – Start from a blank configuration with no data points or settings applied.
- Clone a configuration – Duplicate the current configurations to use it as a starting point for a new setup.
- Delete all configurations (except the active one) – Clean up your saved configurations by removing all others, keeping only the currently active configuration.

Each configuration has a unique URL that can be shared with other users. To use the shared configuration URL, those users must have access to the referenced devices and data points.



INFO

Since configurations are stored locally, they are tied to your browser and device. Clearing browser data will remove them.

Y-AXIS BEHAVIOUR

Per default, the first data point is positioned to the left y-axis and the remaining data points to the right. This behavior can be changed by modifying the respective value “Y-axis” for a particular data point (to “Left” or “Right”, see above).

Each data point is shown on its own y-axis, unless the following condition is met:

- Two data points having the same minimum and the same maximum value.

In this case, both data points share the same y-axis. This y-axis only shows the unit (or multiple units, in case they are different). The label is not shown.


TO ADD ALARMS OR EVENTS

In addition to data points you can also add alarms or events to the data explorer.

In the **Alarms/Events** card, click **Add alarm/event** to add an alarm or event.

In the upcoming dialog, you can select an alarm or event from the list of recent alarms and events. Click **Add** to add your selection.

Expand an event, to modify its properties.

Click the menu icon  and in the context menu select **Remove**, to remove the entry from the list.

As with data points, you can turn the visibility of an alarm/ event in the data explorer on and off by using the toggle.

TO EXPORT MEASUREMENT DATA

You may download measurement data as CSV or Excel files. The exported data shows the following information, divided into columns:

- Time when the specific measurement was taken
- Source of the measurement
- Name of the device being used
- Fragment series (for example `c8y_SpeedMeasurement`)
- Value of the measurement
- Unit used for a particular measurement (for example “C”, “km/h”, “sec”)

To export measurement data, click the **Generate export** button in the top menu bar and select your desired time range, data scope and file type.

Click **Download** to generate and save the file to your computer.

CHANGING THE VISUALIZATION

To change the visualization in the data explorer, you can modify several properties.

TIME RANGE

You can change the time range being shown. By default, you see the values for the last hour.

To change the time range on the x-axis, use one of the following options:

- Select a different time range from the dropdown list in the top menu bar.
- Enter a custom time range into the **From** and **To** fields in the data explorer.
- Drag the chart and move left or right to move the time period.
- Use the mouse wheel to zoom in or out.
- Align the zoom slider beneath the graph to select a different time range. You can drag the edges to zoom in or out or drag the whole slider to move the x-axis.

INFO

Real-time updates will be switched off if you set a time range in the past.

AGGREGATION

You may aggregate the data being displayed to get an efficient overview over larger time periods.

By default, aggregation is set to “None”. This value may be changed in the **Aggregation** field in the top menu bar. Available values are “Minutely”, “Hourly” or “Daily”, depending on the selected time range.

When aggregation is activated, the timestamp which is displayed in data graphs or data point tables changes slightly as follows to improve transparency:

- If no aggregation is selected the date, hour, minute and second are shown:
27 Jan 2020 17:26:55
- If minutely aggregation is selected, the second indication will not be shown:
27 Jan 2020 17:27-17:28
- If hourly aggregation is selected, the minute and second indication will not be shown:
27 Jan 2020 05:00-06:00
- If daily aggregation is selected, only the day will be shown:
27 Jan 2020-28 Jan 2020.

REALTIME UPDATING

By default, realtime updating is enabled which means that the data being shown is updated as new data flows into the system from the connected devices.

To turn realtime updating on or off, click **Realtime** in the top menu bar. A green light indicates, that realtime updating is enabled.

DATA POINT VISIBILITY

For each data point, its visibility can be switched on or off by using the toggle left from the data point name.

INTERACTIVE LEGEND (AVAILABLE ONLY FOR THE DATA GRAPH WIDGET)

The legend, located above the chart, provides quick control over what's visible in your chart. You can toggle visibility of individual data points or alarms/events by clicking their name.

CHANGING THE CHART OPTIONS

You can customize the chart options to control how your data is visualized, including settings like line type, aggregation, and display preferences. These options can be adjusted directly in the data explorer (below the chart) or in the configuration of the “Data graph” widget.

Category	Option	Description
Axis	Y-axis helper lines	Displays horizontal guide lines along the Y-axis for easier value alignment.
	X-axis helper lines	Displays vertical guide lines along the X-axis for easier time alignment.

Category	Option	Description
	Merge matching data points into single axis	Groups data points with the same min/max values onto one Y-axis for clarity. The min and max values must be set.
Alarms & events	Show vertical line on every occurrence	Displays a vertical line on the chart at each alarm or event timestamp.
	Show icon when triggered	Shows an icon on the chart where alarms or events have occurred.
Chart	Display labels and units on Y-axis	Displays axis labels and measurement units for each data point on the Y-axis.
	Show slider	Toggles the visibility of the data slider below the chart. See section below for more info.

WORKING WITH THE DATA SLIDER

The data slider, located at the bottom of the chart, provides an overview of a longer time range than the currently selected one - offering a summarized view to help navigate large datasets. For example, if "Last hour" is selected, the slider might display data from the past 24 hours. You can zoom into any portion of the slider and pan across the range to adjust the visible data in the main chart, making it easier to explore and focus on specific periods of interest.

CREATING WIDGETS

If you want to keep your current configuration in the data explorer for later usage, save it as a widget.

TO SEND AS WIDGET TO DASHBOARD

To create a widget from the data explorer of a particular asset, click **More...** in the top menu bar and select **Send as widget to dashboard** from the context menu.

In the upcoming dialog, select one of the dashboards available for the current object and click **Select** to add the data explorer as widget to the selected dashboard.

INFO

To use this function, first a dashboard must be created. For details on dashboards, refer to [Working with dashboards](#).

TO SEND AS WIDGET TO REPORT

To create a widget from the data explorer of in the navigator, click **More...** in the top menu bar and select **Send as a widget to report** from the context menu.

In the upcoming dialog, select one of the reports available and click **Select** to add the data explorer as widget to the selected report.

INFO

To use this function, first a report must be created. For details on reports, refer to [Working with reports](#).

🏠 > Cockpit > Data
explorer

WORKING WITH DASHBOARDS

Cumulocity allows you to create individualized dashboards for all your groups and devices. Dashboards provide you with a customized visualization of your data, for example, alarms and events, and allow you to trigger remote actions, by using a set of widgets. Widgets can display maps, images, graphs, tables, and other graphic representations of data.

Cumulocity comes with a number of preset widgets, see [Widgets collection](#) for details.

✓ REQUIREMENTS

ROLES & PERMISSIONS:

- To view dashboards: READ permission for permission type "Inventory" or READ permission for "Inventory" in inventory roles
- To edit widgets within a dashboard: ADMIN permission for permission type "Inventory" or CHANGE permission for "Inventory" in inventory roles
- To create a dashboard: CREATE or ADMIN permission for permission type "Inventory" or CHANGE permission for "Inventory" in inventory roles
- To delete a dashboard: ADMIN permission for permission type "Inventory" or CHANGE permission for "Inventory" in inventory roles
- To share/copy a dashboard: CREATE permission for permission type "Inventory" or CHANGE permission for "Inventory" in inventory roles

i RELATED TOPICS

- Refer to the [Cumulocity Tech Community](#) to learn how to develop your own widgets and add them to your Cumulocity account.
- [Web SDK > Application configuration](#) for further information on how to customize the Cumulocity environment.

TO CREATE A DASHBOARD

To create your individualized dashboard, execute the following steps:

1. In the **Groups** menu select the group or the device in the navigator for which to create a dashboard.
2. Click the **Add dashboard** button right from the tabs to open the dashboard editor.
3. In the **General** tab of the dashboard editor, provide the following information:
 - An icon which is shown next to the dashboard name in the navigator.
 - A menu label to be used as the name of the dashboard.
 - A description of the dashboard.
 - The location of the dashboard in the navigator, with "5000" being ordered first and "-5000" last.
4. In the **Availability** section, specify which users have access to the dashboard based on global roles. By default, all available global roles are selected, which means that a user with at least one such role has access to the dashboard.

i INFO

- Dashboards are always visible to their owner and to users with ADMIN permission for the permission types "Inventory" or "Managed object".
- This functionality is entirely based on client-side solutions. If users have an accurate link to the

dashboard, they will still be able to access it.

5. Enable the option **Dashboard template** to share the dashboard with all devices of this type. This option is only available for devices dashboards. See [To share a dashboard](#)
6. In the **Appearance** tab you can select a theme for the dashboard (one of "Match UI", "Light", "Dark" or "Branded") and a default header style for the widgets (one of "Regular", "Border", "Overlay", or "Hidden"). Moreover, you can change the default widget margin (default value is 12 px).
7. Under the **Translate if possible** option, you can select to have the dashboard and/or widget titles translated. For this option to work, the titles must be written in English and the corresponding translations must be available in the loaded translation resources, for example in the standard application translations, or in the custom ones provided via the [localization feature](#) or in the [application options](#).
8. All changes are immediately displayed to visualize your selections in the dashboard below the dashboard settings.
9. Click **Save** to create and open the dashboard.

Next, widgets can be added to the dashboard. They allow you to display more detailed data in your dashboard.

Refer to [Using widgets in dashboards and reports](#) for details on how to add, modify or remove widgets.

DASHBOARD TEMPLATE

You can create a dashboard for a specific device and share it with all devices of the same type. This is only possible though, if the type property is set for the device.

To do so, enable the **Dashboard template** option. A corresponding message will be displayed in the editor. After enabling the dashboard, you can see how many devices will share this dashboard. You also have the option to duplicate type dashboard as regular one (assigned to current device only).

Dashboard template

Enabled

The layout and configuration of this dashboard is used by all devices based on device type **wind-turbine**.

Disabling this option removes it from all devices based on the same type and makes it available only for the current instance.

Target asset model	wind-turbine
Dashboard instances	54
Created	Jan 8, 2025, 4:52:46 PM by john.doe@example.com
Last modified	Jan 10, 2025, 4:52:46 PM by john.doe@example.com

Duplicate as regular dashboard

The dashboard with the dashboard template option enabled can be accessed and modified from all devices of this type. This means that changes made to this dashboard are automatically applied to all dashboard instances, no matter from which device they have been added.

INFO

You can only add widgets and data to the dashboard for the device itself. It is not possible to add data from child devices because the structure of these devices might be different from device to device.

GLOBAL TIME CONTEXT

Dashboards support a global time context that allows you to control the time range, auto-refresh, and data aggregation for all connected widgets at once. Instead of configuring each widget individually, you can set these options in a central toolbar and all compatible widgets update together.

For details, see [Global time context](#).

TO EDIT A DASHBOARD

To edit a dashboard, the edit mode must be enabled. There are two primary ways to enter the edit mode:

- Clicking **Dashboard settings**: This modifies the overall properties of the dashboard, such as its name, description, position, availability, or appearance.
- Clicking **Edit widgets**: This manages the content of the dashboard, including adding, removing, or changing the position of widgets.

Once in edit mode, the redo and undo functionality is automatically enabled. This allows you to easily revert any unwanted changes you make to the dashboard. Any changes made to the dashboard in the edit mode will only be reflected on saving.

INFO

The widgets and content on the dashboard are locked in order to prevent accidental modifications. Clicking **Edit widgets** unlocks this functionality and allows you to modify the dashboard's content.

TO RESTORE A DASHBOARD STATE

It is possible to restore your dashboard to a previous state using the version history. Navigate to the dashboard settings and open the **Version history** tab. This section will display a list of previous versions of your dashboard, including timestamps for each version. Hovering over a desired version from the list will reveal the **Restore** button.

When a new version is created in the version history, it includes a brief description of the changes made. A new version is added each time when saving the dashboard in edit mode or when editing the general settings of the dashboard.

Dashboard settings

Store up to 10 dashboard versions. Any additional versions will replace/delete older ones

Timestamp	Changes	Status
10 Jan 2025 16:52	Removed widgets: "Data points graph". john.doe@example.com	Current
9 Jan 2025 16:52	Updated widgets: "Data points graph". john.doe@example.com	
8 Jan 2025 17:52	Added widgets: "Data points graph". john.doe@example.com	
8 Jan 2025 16:52	Dashboard created. john.doe@example.com	

Cancel Save

TO COPY A DASHBOARD FROM ONE OBJECT TO ANOTHER

1. Click **More...** in the top menu bar and from the context menu select **Copy dashboard**.
2. Next, navigate to the object you want to copy the dashboard to and from the context menu select **Paste dashboard [NAME]** to insert the dashboard.

An alternative way to copy a dashboard is to use the "dashboard per type" approach. With the "dashboard per type" approach you share the dashboard from one object with **all** objects of the same type, see [To share a dashboard](#).

TO EXPORT A DASHBOARD TO A JSON FILE AND IMPORT IT

For more advanced users there is a feature that allows more complex operations on dashboards. To access it, navigate to the dashboard settings and open the **Import/export** tab.

The advanced feature allows to edit dashboards as JSON with the incorporated code editor. Be aware that this requires knowledge of `ContextDashboard` and widgets configuration interfaces. It also allows to export a dashboard to a JSON file (with some additional data that supports particular widgets in the importing process, for example, that helps to suggest a suitable widget device or takes care of images uploaded for the widget) and then to import the dashboard from the JSON file. This is a much more flexible approach than the one described in [To copy a dashboard from one object to another](#) as it allows to share dashboards not only between the same type of assets in scope of the same tenant, but also to share dashboards between different asset types and different tenants. However, if you share dashboards between different types like groups and devices, for example, a review might be required after the import.

Dashboard settings

General
Appearance
Version history
Import / Export

Dashboard configuration ⓘ

```
1 {  
2   "deviceType": true,  
3   "deviceTypeValue": "wind-turbine",  
4   "columns": 24,  
5   "author": "john.doe@example.com",  
6   "widgetMargin": 12,  
7   "classes": {  
8     "dashboard-theme-light": true  
9   },  
10  "icon": "th",  
11  "description": null,  
12  "widgetClasses": {  
13    "panel-title-regular": true  
14  },  
15  "priority": 5000,  
16  "globalRolesIds": null,  
17  "translateWidgetTitle": false,  
18  "children": {  
19    "34809899080427964": {  
20      "_x": 0,  
21      "_y": 0,  
22      "_w": 24,  
23      "_h": 12,  
24      "type": "wind-turbine",  
25      "deviceType": true,  
26      "deviceTypeValue": "wind-turbine",  
27      "columns": 24,  
28      "author": "john.doe@example.com",  
29      "widgetMargin": 12,  
30      "classes": {  
31        "dashboard-theme-light": true  
32      },  
33      "icon": "th",  
34      "description": null,  
35      "widgetClasses": {  
36        "panel-title-regular": true  
37      },  
38      "priority": 5000,  
39      "globalRolesIds": null,  
40      "translateWidgetTitle": false,  
41      "children": {}  
42    }  
43  }  
44 }
```

Validation
✔ No errors found

Import JS... Export JSON

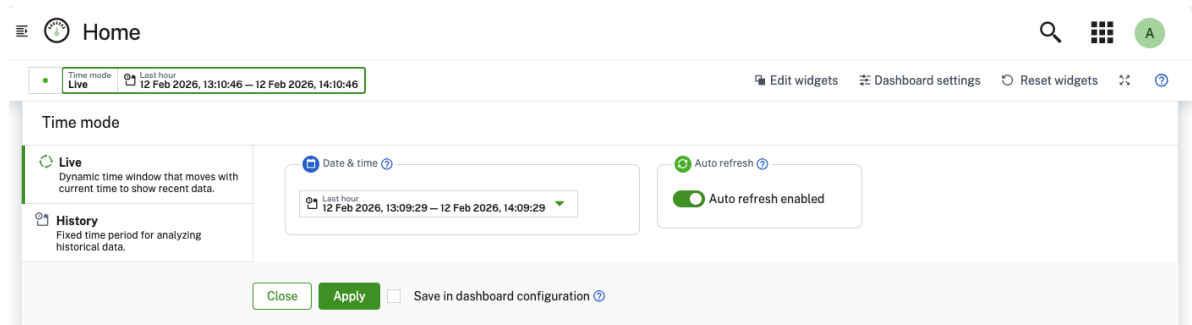
Cancel Save

TO DELETE A DASHBOARD

To delete a dashboard from an object, click **More...** in the top menu bar and from the context menu select **Delete dashboard**.

GLOBAL TIME CONTEXT

The global time context is the toolbar at the top of dashboards that lets you control the time range, auto-refresh, and data aggregation for all widgets at once. Instead of setting these options in each widget individually, you configure them once, and all compatible widgets update together.



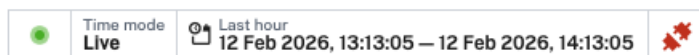
RELATED TOPICS

- [Application enablement & solutions > Cockpit > Working with dashboards](#) for details on creating and managing dashboards.
- [Application enablement & solutions > Cockpit > Widgets collection](#) for details on available widget types.

The toolbar contains the following controls:

Control	Description
Mode toggle	Switch between live and history mode
Time range	Select the time period to display
Auto-refresh	Toggle automatic data refresh
Aggregation	Choose how data points are grouped

The toolbar only appears if at least one widget on the dashboard is connected to the global time context. If all widgets are unlinked, a red icon appears in the toolbar indicating that no widgets are synchronized.



SUPPORTED WIDGETS

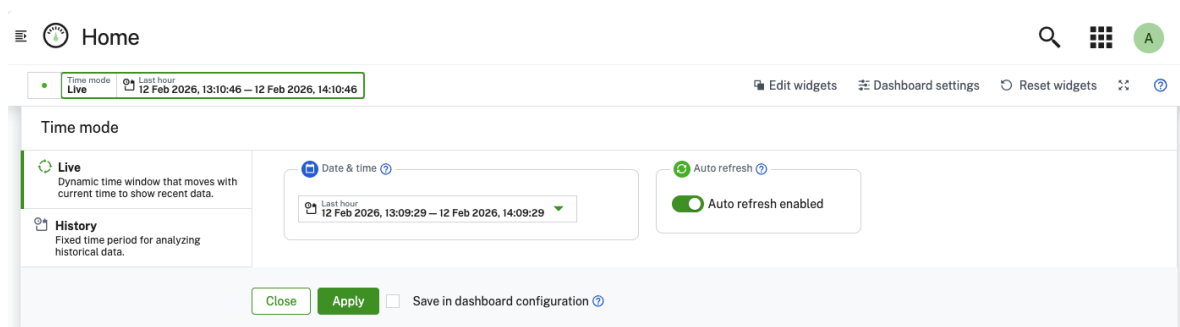
Not all widgets currently support the global time context. Support is being progressively extended to more widgets. Additionally, each widget may support a different set of time context capabilities:

- **Time range** - The widget respects the selected time period
- **Auto-refresh** - The widget refreshes when auto-refresh is enabled
- **Aggregation** - The widget groups data according to the selected aggregation level

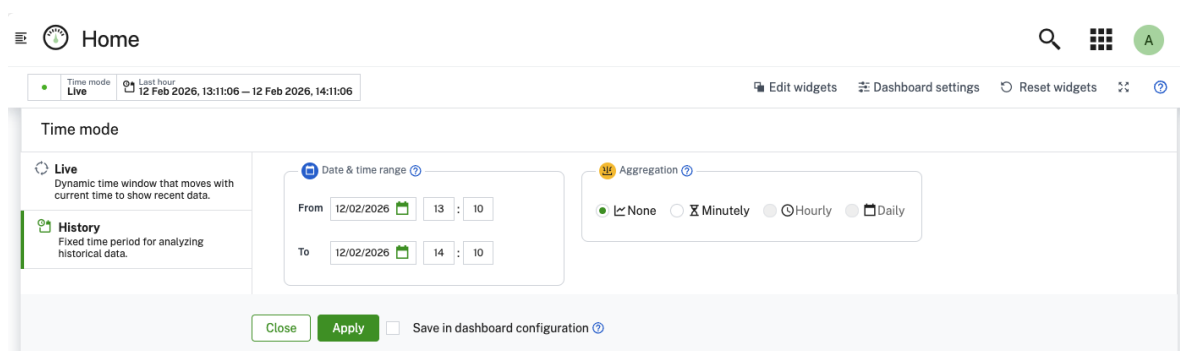
LIVE MODE AND HISTORY MODE

The global time context operates in two modes:

Live mode shows a rolling time window that moves forward automatically. For example, “Last hour” at 3:00 PM shows 2:00 PM - 3:00 PM. At 3:05 PM, it automatically shows 2:05 PM - 3:05 PM. This mode is suitable for monitoring current status.



History mode shows a fixed time period. When you select specific dates, the widgets always show that exact period regardless of when you view them. This mode is suitable for analyzing past events.



TO SELECT A TIME RANGE

The time range determines which data is displayed in the widgets.

Available preset options:

Option	Description
Last minute	60 seconds ago to now
Last hour	1 hour ago to now
Last day	24 hours ago to now
Last week	7 days ago to now
Last month	Approximately 30 days ago to now
Custom	Selected start date to now

In history mode, you can also select a custom time range where you can specify exact start and end dates.

TO ENABLE OR DISABLE AUTO-REFRESH

Auto-refresh periodically reloads data in all widgets. When enabled, most widgets refresh every 5 seconds, while some (such as the “Data point graph” widget) update via realtime connections.

Click the **Auto-refresh** toggle in the toolbar to enable or disable automatic data refresh.

INFO

In some widgets (such as the “Alarm list” widget), scrolling down unlinks the widget from the global time context. To relink it, scroll back up or click the link button in the widget header.

TO CHANGE DATA AGGREGATION

Aggregation groups multiple data points into summarized values. This improves performance and readability for large time ranges.

In the **Aggregation** section of the toolbar, select one of the available options:

Type	Description
None	No grouping, shows raw data points
Minutely	Groups data into 1-minute intervals
Hourly	Groups data into 1-hour intervals
Daily	Groups data into 1-day intervals

INFO

Some aggregation options may be disabled if they don't apply to your selected time range. For example, **Daily** aggregation is disabled for ranges less than 1 day.

TO LINK OR UNLINK A WIDGET

Widgets can be linked or unlinked from the global time context. When linked, a widget is synchronized and updates automatically when you change the time range, aggregation, or refresh settings. Unlinked widgets operate independently with their own time controls.

Using the link icon

Look for the link icon in the widget header. Click the icon to toggle between states.



Linked - The widget is synchronized with the global

time context.

Unlinked - The widget has independent time controls.

INFO

Unlinking widgets is useful for comparing different time periods side-by-side.

Using the widget configuration

You can also configure the time context in the widget settings. By default, new widgets are connected to the global time context.

In the widget configuration, expand the **Time context** section. Select one of the following options:

Dashboard - The widget uses the global time context.

Widget - The widget uses its own time settings. When **Widget** is selected, additional options appear allowing you to configure the widget's own time range, mode, and auto-refresh settings.

The screenshot shows the 'Time context' configuration panel. At the top, there is a 'Configuration' button. Below it, the 'Time context' section is expanded, showing two radio buttons: 'Dashboard' (unselected) and 'Widget' (selected). There is also a checkbox for 'Show in widget' which is unchecked. Below this, the 'Widget time context' section is visible, containing two tabs: 'Live' (selected) and 'History'. Under the 'Live' tab, there is a 'Date & time' section with a calendar icon and a dropdown menu showing 'Custom' with a date range of '1 Jan 1970, 01:00:00 — 16 Jan 2026, 11:22:45'. At the bottom, there is an 'Auto refresh' section with a refresh icon and a toggle switch labeled 'Auto refresh enabled' which is turned on.

INFO

Not all widgets support global time context. Some widgets are configured to operate independently and have their own time picker within the widget. These widgets do not show a link icon.

URL PERSISTENCE

Your global time context settings are automatically saved in the URL. This allows you to bookmark dashboards with specific time configurations or share links that preserve your selected time range, mode, and aggregation settings.

WORKING WITH REPORTS

Reports enable you to track applications, alarms, assets, and other data in a dashboard layout. Reports are global dashboard pages, regardless of the asset hierarchy.

✔ REQUIREMENTS

ROLES & PERMISSIONS:

- To view reports: READ permission for permission type "Inventory"
- To edit a report: ADMIN permission for permission type "Inventory"
- To add a new report: CREATE permission for permission type "Inventory"
- To delete a report: ADMIN permission for permission type "Inventory"

TO SHOW ALL REPORTS

To show all reports, click **Reports** in the navigator.

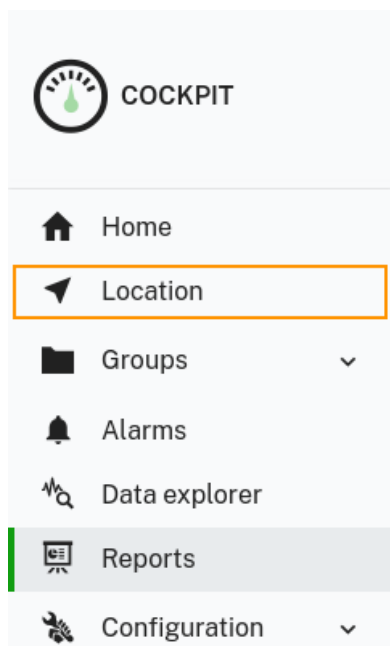
In the **Reports** page you will find a list displaying all reports with their names, an optional description and a navigator toggle.

The screenshot shows the Cockpit interface. On the left is a sidebar with a 'COCKPIT' header and a navigation menu containing: Home, Location, Groups (with a dropdown arrow), Alarms, Data explorer, Reports (highlighted with a green bar), and Configuration (with a dropdown arrow). At the bottom of the sidebar, it says 'powered by CUMULOCITY'. The main area is titled 'Reports' and features a search bar with the placeholder 'Filter...'. To the right of the search bar are three icons: a magnifying glass, a grid, and a user profile icon labeled 'JD'. Below these icons are three buttons: 'Add report', 'Reload', and a help icon. The main content is a table with three columns: 'Report', 'Description', and 'Show in navigator'. The table contains three rows of data:

Report	Description	Show in navigator
Template report	OPCUA	<input type="checkbox"/>
Location	Track location	<input checked="" type="checkbox"/>
Report	No description available	<input type="checkbox"/>

To open a report, click on its name in the report list. The report details will be displayed.

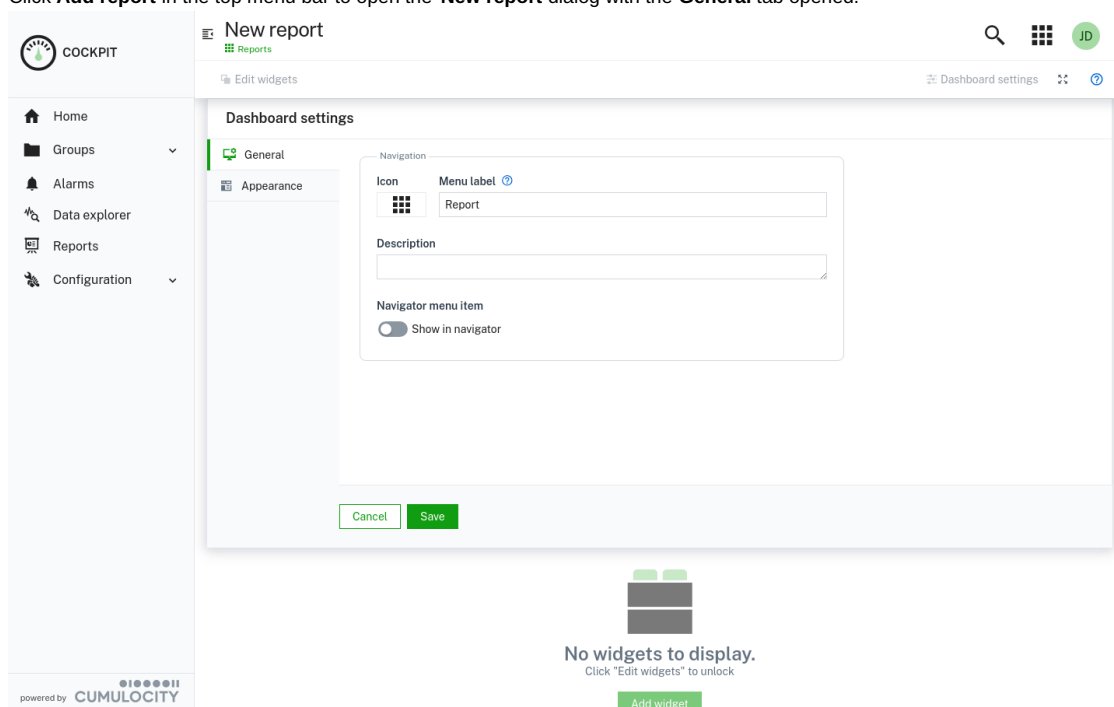
Use the toggle in the **Show in navigator** column, if you want to show the report more prominently on the first level in the navigator. If the toggle is turned on, the report will immediately appear in the navigator.



See [To create a report](#) below for details on how to configure the position in the navigator.

TO CREATE A REPORT

1. Click **Add report** in the top menu bar to open the **New report** dialog with the **General** tab opened.



2. In the **Menu label** field, enter a name for the report and optionally provide a description below.
3. Select **Show in navigator** if you want the report to be displayed in the navigator. Select the position of the report in the navigator. Depending on the value it will be positioned relative to the existing items. If for example “Home” has the value “10000” it will be positioned above “Home”, if the value is “10001” or higher.
4. In the **Appearance** tab you can select a theme for the report (one of “Match UI”, “Light”, “Dark” or “Branded”) and a default header style for the widgets (one of “Regular”, “Border”, “Overlay”, or “Hidden”). Moreover, you can change the default widget margin (default value is 12 px). Under the **Translate if possible** option, you can select to have the dashboard and/or widget titles translated. For this option to work, the titles must be written in English and the corresponding translations must be available in the loaded translation resources, for example in the standard application translations, or in the custom ones provided via the [localization feature](#) or in the [application options](#). Click **Save** to create the report and add it to the report list.

INFO

A preview of the selected layout settings is immediately displayed to visualize your selections on the dashboard below the settings drawer.

Next, widgets can be added to the report.


Refer to [Using widgets in dashboards and reports](#) for details on how to add, modify or remove widgets.

TO EDIT A REPORT

Click on a report name in the report list to open its dashboard.

For details on how to edit the report dashboard, refer to [To edit a dashboard](#).

TO DELETE A REPORT

1. In the **Reports** page, hover over the report item you want to delete and click the remove icon  showing up at the right.
2. Confirm to delete the report.

USING WIDGETS IN DASHBOARDS AND REPORTS

WIDGETS IN DASHBOARDS AND REPORTS

Widgets can display maps, images, graphs, tables and other graphic representations of data. Widgets are useful to track information, for example on alarms, assets or applications, or provide maps, quick links and more in dashboards or reports.

✓ REQUIREMENTS

ROLES & PERMISSIONS:

- To view widgets within dashboards: READ permission for permission type “Inventory” or READ permission for “Inventory” in the inventory roles
- To edit a widget: ADMIN permission for permission type “Inventory” or CHANGE permission for “Inventory” in the inventory roles
- To create a widget: ADMIN permission for permission type “Inventory” or CHANGE permission for “Inventory” in the inventory roles
- To delete a widget: ADMIN permission for permission type “Inventory” or CHANGE permission for “Inventory” in the inventory roles

Some of the widget require additional permissions in order to visualize the data which they display. For example, the alarms widget requires READ permission for permission type “Alarms” in order to view all alarms.

Cumulocity provides preset widget types, for details see the [Widgets collection](#).

TO ADD A WIDGET TO A DASHBOARD OR A REPORT

1. Widgets can only be added if the dashboard/report is in edit mode. Click **Edit widgets** in the top menu bar to enter edit mode.
2. Click **Add widget** in the top menu bar or click the **Add widget** button on the main page (only available in case of an empty dashboard/report).
3. In the **Add widget** dialog, select a widget type.
4. Next, configure the widget. According to the selected widget type, different parameters may be specified under **Configuration**. For details on each widget type refer to [Widgets collection](#).
5. In the **Appearance** tab, you can customize the content and header style for the widget individually, in the same way as specifying the layout of a [dashboard](#).

ⓘ INFO

The header styles “Regular” and “Border” can be used for all widgets while the header styles “Overlay” and “Hidden” remove the header and should only be used for widgets which benefit from a full-screen experience, for example “Image” or “Map”. For other widgets, like “Alarms list” or “Data point table”, these header styles should not be used.

6. Click **Save** to add the widget to the dashboard or report.

MODIFYING WIDGETS

TO MODIFY A WIDGET

Widgets can only be modified if the dashboard/report is in edit mode. To enter the edit mode click either **Edit widgets** or **General settings** in the top menu bar.

By dragging the arrows on the bottom right corner of a widget, you can resize a widget.


INFO

On touch devices like smartphones or tablets some functions may not be supported.


TO REARRANGE WIDGETS

Widgets may be rearranged on the dashboard/report. By dragging and dropping you can move the widget to another position.

TO EDIT THE WIDGET PROPERTIES

To edit the properties of a widget first enter the edit mode by clicking **Edit widgets** in the top menu bar. Then click the settings icon  at the top right corner of the widget and from the context menu select **Edit**.


TO REMOVE A WIDGET

To remove a widget from a dashboard or report first enter the edit mode by clicking **Edit widgets** in the top menu bar. Then click the settings icon  at the top right corner of the widget and from the context menu select **Remove**.

SELECTING ASSETS IN WIDGETS

The following section describes how [to select one top-level asset](#), how [to select child devices as asset](#) and how [to search or filter for assets](#) in the widgets configuration.




TO ADD AN ASSET TO A NEW OR EXISTING WIDGET

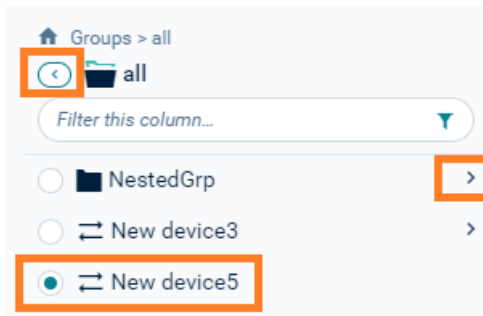
On the **Configuration** tab of the widget editor, select the check boxes of the desired asset under **Asset selection**. Click **Save** to add the asset to the widget. You can select a single device or a whole group of devices, indicated by a folder icon . For details on selecting child devices, see [To select child devices within groups as asset](#).

If you want to edit an asset of a widget, open the widget editor and click **Clear**. This clears the previous asset collection. Select the new desired asset and click **Save**.

For general instructions on how to add or modify widgets, see [To add a widget to a dashboard or a report](#) or [Modifying widgets](#).

TO SELECT CHILD DEVICES AS ASSET

If the asset is a group or a device with children, you see a folder icon  next to their name as well as an arrow icon pointing right . Click the desired group or device with children in the list to open a new level displaying all assigned assets to that group or device. Select the desired asset. To return to the previous level, click on the arrow icon pointing left .



If you want to select an unassigned device as an asset, you can find the unassigned devices in the **Unassigned Devices** folder, located on the first level of the selected group.

i INFO

You cannot select the **Unassigned devices** folder itself. However, each device inside this folder can be selected on the next level. Click **Unassigned devices** to open the next level with all unassigned devices. Click the desired device to select it.

TO SEARCH AND FILTER FOR ASSETS

There are two methods which can be used to quickly find assets:

1. Name search
2. Filtering

Name search

On the **Configuration** tab of the widget editor you can use the search field under **Asset selection**.

With the search, you can find assets anywhere within the hierarchy if the asset's name contains the search term.

After selecting the asset, you see all children of this asset. To return to the level above, click the "X" in the search field.

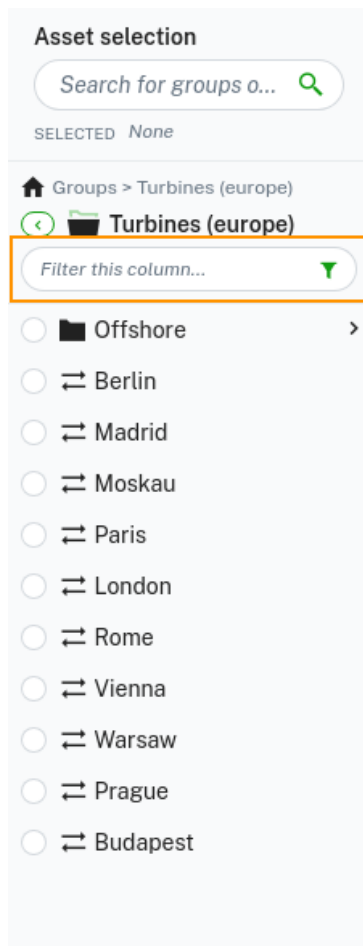
i INFO

The name search is only available in the Home dashboard and the Report dashboards.

For details on the search functionality, see [Search and filter functionality](#).

Filtering

Filtering is another way to find assets. However, it only filters assets on the current level under **Asset selection**.



For details on the filter functionality, see [Search and filter functionality](#).

WIDGETS COLLECTION

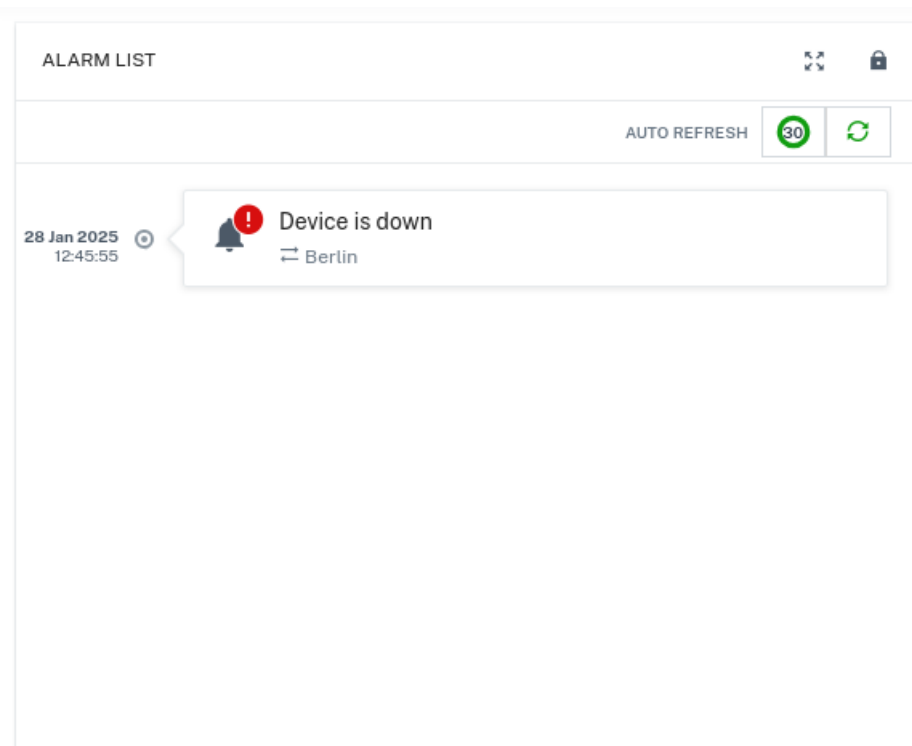
The Cockpit application includes pre-set widget types. Each widget type provides different parameters to configure and different data to be displayed.

RELATED TOPICS

- [Application enablement & solutions > Cockpit > Data explorer](#) for details on visualizing your data when working with widgets.
- [Platform administration > Standard tenant administration > Managing the ecosystem > Managing applications](#) for details on managing applications.
- Refer to the [Cumulocity Tech Community](#) for a tutorial on customized widgets in the Cumulocity environment.

ALARM LIST

The "Alarm list" widget shows a list of alarms, filtered by objects, alarm severity and alarm status. For details on the information provided for each alarm, refer to [Working with alarms](#).



Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is used as title.
Target assets or devices	Select groups or devices, optional HTML expressions which should be evaluated.

Field	Description
Status	Only show devices with alarms of of the selected alarm status.
Type	Only show alarms of the specified type(s). Details can be seen when clicking once on an alarm.
Severities	Only show alarms of the selected alarm severity.
Order	Alarms may be ordered by the active status (followed by severity and time, the default), by date (followed by time, either in descending or ascending order), or by severity (followed by time).
Auto refresh	Enables you to automatically refresh the alarm list at the frequency you select.
Show alarms from child devices	Show or hide the alarms of child devices.

ASSET NOTES

The "Asset notes" widget displays messages provided by the administrative user to all owners of the current widget.

The screenshot shows the Cockpit dashboard interface. On the left is a sidebar with navigation links: Home, Devices, Registration, All devices, Map, Simulators, Availability, Overviews, Groups, and EMEA. The main content area is titled 'dm-example-device-4de823994381' and includes a search bar, a 'Dashboard settings' button, and a 'Reset widgets' button. The 'ASSET NOTES' widget is highlighted with an orange border and contains the following text: 'This is the asset notes widget. You can note down anything you want. It supports **html tags**. Edit' followed by a timestamp '19 Mar 2025, 16:18:27 by Joe Doe'. Below this is a 'GROUP ASSIGNMENT' section with a message 'Device not assigned. Assign the device to a group below.' and an 'Assign' button. To the right of the 'ASSET NOTES' widget is a 'DEVICE AND COMMUNICATION' section with a 'Select data points' dropdown and a timeline graph. Below that is an 'ACTIVE, CRITICAL ALARMS' section with an 'AUTO REFRESH' button and a message 'No alarms to display. Find out more in the user documentation.'.

Only users with the permission to edit the home dashboard will be able to provide this message.

ASSET PROPERTIES

The "Asset properties" widget displays a user-defined list of attributes of the current object. The current object can be a device or a group.

ASSET PROPERTIES

ID


11001

Name

Berlin

Type

wind-turbine

 Edit

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is used as title.
Target assets or devices	Select groups or devices.
Properties	List of properties, see Asset table .

INFO

In the view mode, this widget only displays the properties which are not empty.

ASSET TABLE

The "Asset table" widget shows details of a selected asset and all its child devices in a table. This is a very powerful widget, allowing to arrange selected properties of objects in a table.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.
Target assets or devices	Select for which object all child devices should be shown. This is typically a group object.
Properties	Select properties or actions of an object to visualize them as columns in the table.

Example

In the following screenshot, five columns are configured. Three property columns “Name”, “Owner”, and “Type”, which refer to the properties “name”, “owner” and “type” respectively. Additionally, there are two actions, one for toggling the maintenance mode, and one for rebooting the device.

Asset table

[Change widget](#)

List of child devices of an asset with configurable columns.

Widget title
Asset table

> Asset selection

Settings

Properties

SHOW LABEL	PROPERTY	RENDER TYPE
<input checked="" type="checkbox"/>	Name	name
<input checked="" type="checkbox"/>	Owner	owner
<input checked="" type="checkbox"/>	Type	type
<input checked="" type="checkbox"/>	Toggle maintenanc	toggleMaintenanc...
<input checked="" type="checkbox"/>	Create operation	createOperation

Add property

Add action

Preview

ASSET TABLE

No preview available.
This widget does not provide any preview.

Theme

Branded

Match dashboard

Widget header style

Regular

Dashboard default

Cancel

Save

The resulting table is visualized as follows:

ASSET TABLE				
NAME	OWNER	TYPE	TOGGLE MAINTENANCE MODE	CREATE OPERATION
Berlin	wind-turbine	-		Reboot

To add properties

Click **+Add Properties** and select one or more properties to be added.

INFO

The property “Active alarm status” shows active alarms as icons in the table. If you select this property, you also must configure the renderer “Active Alarm Status” in the list of columns.

To add actions



1. Click **+Add Action**.
2. Select **Toggle maintenance mode** to add the predefined action to toggle the maintenance mode.
3. Select **Create operation** to create a button that will execute a shell command. In the resulting dialog box you can then enter the label for the button and the shell command to be executed.

Button configuration

Button label

Reboot

Operation

Select or search operation  

Command editor

```
{
  "description": "Restart device",
  "c8y_Restart": {}
}
```

Cancel

Save


INFO

The dialog shows the predefined shell commands of the first device that supports shell commands. The list is empty if there is no such device. For more details, refer to [Shell](#).

You can also enter the JSON format for the operation that will be sent to the device. For details, contact the device vendor for supported operations.

To modify the table

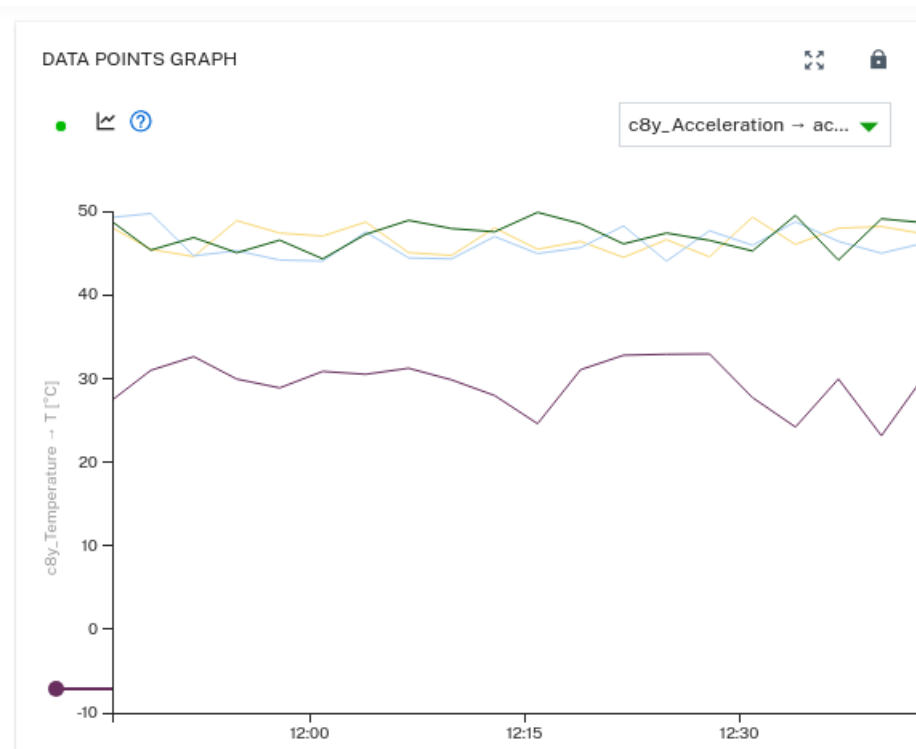
To edit the header of a column, click on its value in the **Label** column and edit the label.

You can rearrange the columns by clicking the icon  at the very left of a row and dragging and dropping the entry.

To remove a property or an action, hover over the respective row and click **Delete** at the right.

DATA GRAPH

The "Data graph" widget shows a data point (measurement) in a graph. The visualization is the same as in the [data explorer](#).



The easiest way to create a "Data graph" widget is to navigate to the data explorer, click the **More...** button in the top menu bar and select **Send as widget to dashboard**.

Refer to [Changing visualization](#) for further details on the parameters to be configured.

DATA POINT LIST

The "Data point list" widget shows data points (measurements), one in each row, with current values and data point properties.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.
Data point	Shows a list of available data points. You must enable at least one data point. Click Add data point to add a data point to the list. For details on how to add data points see To add a data point .
Column visibility	Select which columns should be visible: Label: Label of the data point. See Changing visualization for details. Target: Target value. Can be configured in the data explorer or the data point library . Current: Current value. Diff: Absolute difference between current value and target value. Diff %: Percentage of difference between current value and target value. Asset: Name of the device or group of the data point.

DATA POINT TABLE

The "Data point table" widget configuration is similar to the "Data graph" widget, but instead of visualizing the data as a line-chart, data is visualized as a table.

The "Data point table" widget displays data based on selected data points, time interval and aggregation.

Out of range values, based on configured yellow and red ranges, are highlighted in the table.

DATA POINTS TABLE					
	Device	c8y_Te...	c8y_A...	c8y_A...	c8y_A...
29 Jan 2025 12:42:55	Berlin	24.62	0.97	1.00	0.95
29 Jan 2025 12:39:55	Berlin	28.71	0.98	0.96	0.94
29 Jan 2025 12:36:55	Berlin	24.24	0.98	0.96	0.98
29 Jan 2025 12:33:55	Berlin	23.86	0.97	0.97	0.97
29 Jan 2025 12:30:55	Berlin	29.58	1.00	0.98	0.91
29 Jan 2025 12:27:55	Berlin	31.45	0.99	0.91	0.94
29 Jan 2025 12:24:55	Berlin	24.68	0.91	0.92	0.97

EVENT LIST

The "Event list" widget lets you monitor events for a selected device.

EVENT LIST			
From	To		
Sep 4, 2025, 4:59:38 AM	Location updated ⇒ Berlin		
Sep 4, 2025, 4:56:38 AM	Location updated ⇒ Berlin		
Sep 4, 2025, 4:53:38 AM	Location updated ⇒ Berlin		
Sep 4, 2025, 4:50:38 AM	Location updated ⇒ Berlin		
Sep 4, 2025, 4:47:38 AM	Location updated ⇒ Berlin		

Additionally, a specific date range can be set and the events can be monitored in realtime.

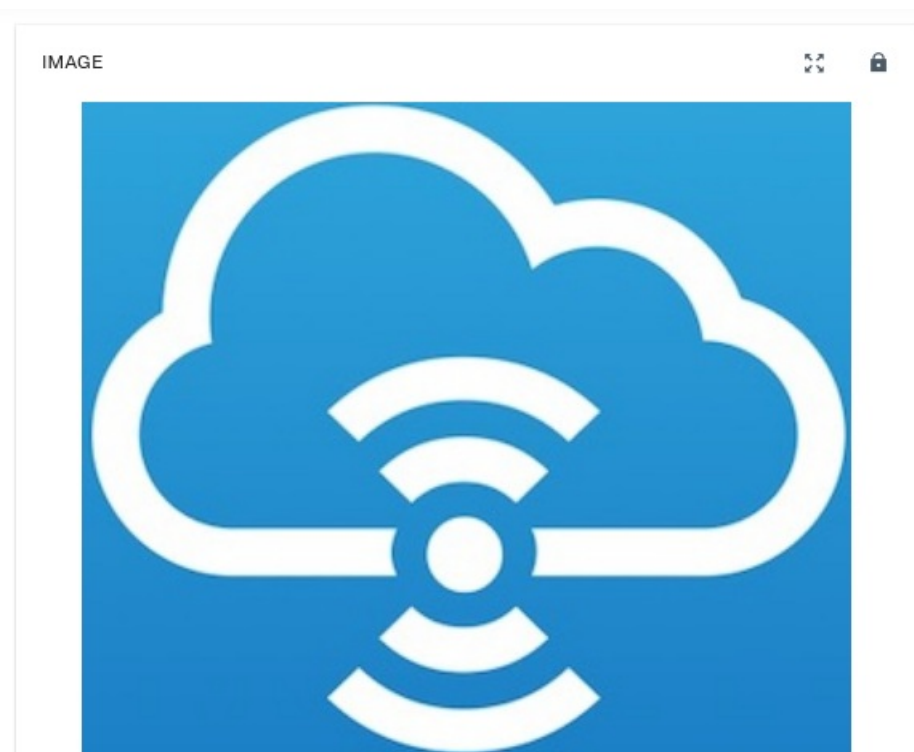
FIELDBUS DEVICE

The “Fieldbus device” widget lets you see the status of a modbus device and operate it.

For details on the “Fieldbus device” widget, refer to [Monitoring the device status using the Fieldbus device widget](#).

IMAGE

The “Image” widget lets you display a single image to be selected from your file system by browsing.



When the image is uploaded, it is possible to change the image size and alignment.

Image [Change widget](#)

Display a single image selected from the user's file system.

Widget title

Image

Settings

Image

cloud.jpeg

Size and alignment

Image display

☒ **Contain**
The image is entirely displayed within the widget while preserving the aspect ratio.

☐ **Cover**
The image is resized to fill the widget while preserving the aspect ratio. Overflowing areas are clipped.

☐ **Fill**
The image is stretched to fill the widget, overriding the aspect-ratio.

☐ **Full width**
The image is resized to fit the widget's width while preserving the aspect ratio. Overflowing area is scrollable.

Horizontal alignment


center

Vertical alignment

center

Preview

IMAGE



Theme

☐ Branded

☒ Match dashboard

Widget header style

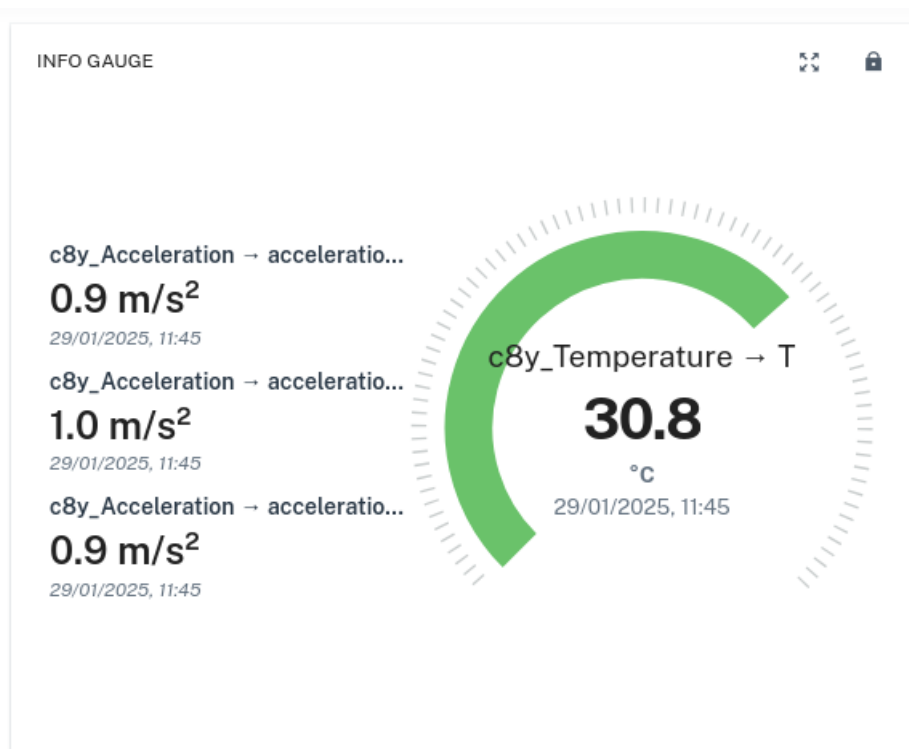
☒ Regular
Dashboard default

Cancel

Save

INFO GAUGE

The "Info gauge" widget visualizes one data point in form of a radial gauge and multiple data points as labels.



You can select one data point for the gauge, and multiple data points shown with labels at the left side.

You must enable at least one data point in each section to create the "Info gauge" widget.

HTML

The "HTML" widget displays user-defined content that can be formatted using HTML and dynamically populated with data from the selected asset or device. Additionally, you can switch the widget into advanced mode, which allows you to build complex web components with JavaScript code.

Parameters to configure

- **Target assets or devices:** Select the objects for which optional HTML expressions are evaluated.
- **Asset properties:** In the **Asset properties** section, you can copy the properties of the selected asset and paste them into the code editor under the **Settings** section.

The widget offers two distinct modes:

1. **Normal mode:** You can apply HTML and CSS while adding properties as template literals. You can use simple expressions such as: `${this.c8yContext ? this.c8yContext.name : 'No device selected'}`. The `${this.c8yContext}` variable always refers to the selected target asset.
2. **Advanced mode:** When enabled, you can build complex web components using the Lit framework. You can import supported ECMAScript modules. By default, leaflet, echarts, fetch, and lit are provided. Whatever is rendered in the web component will be displayed to the end user. Additional requests can be performed by importing the fetch library. The following shows the available imports:

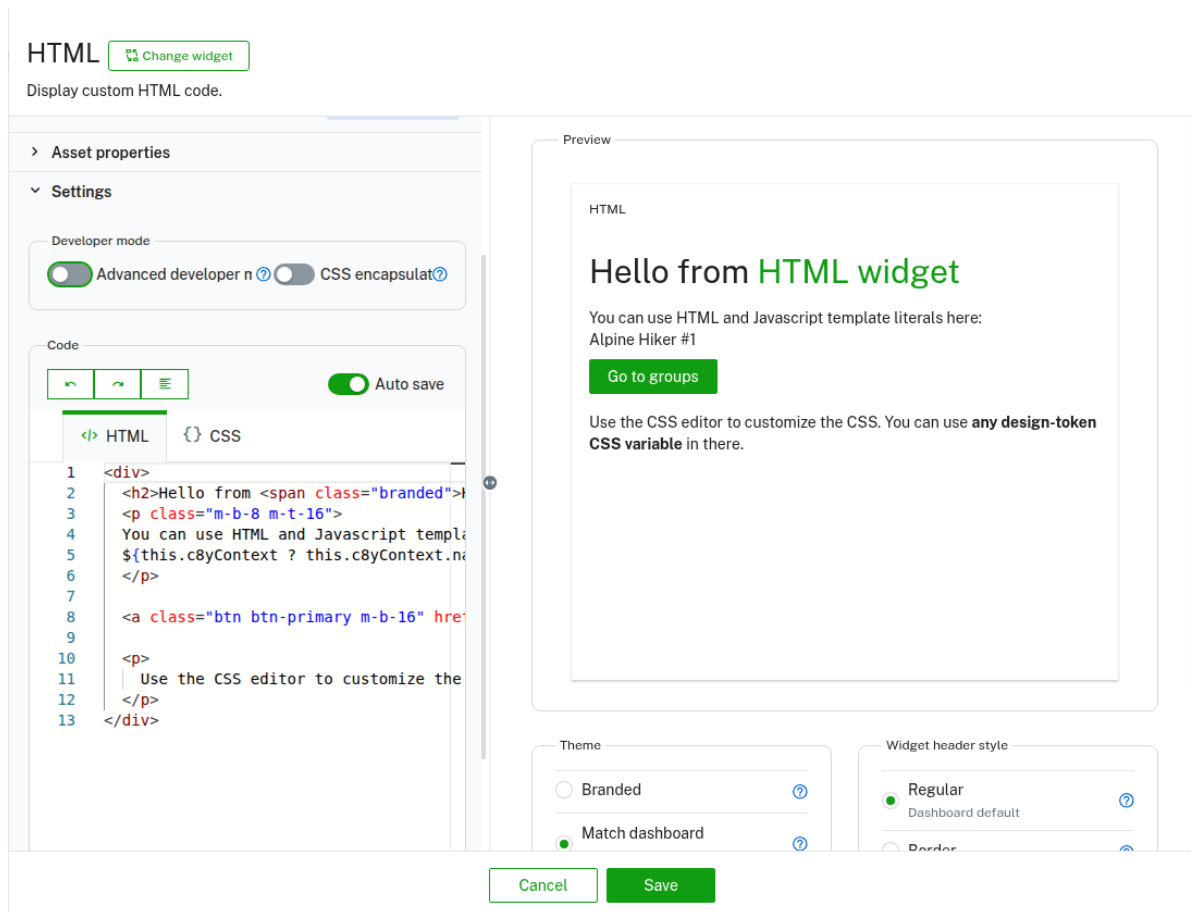
```
import { LitElement, html, css } from 'lit';
import { styleImports } from 'styles';
import { L } from 'leaflet';
import * as echarts from 'echarts';
import { fetch } from 'fetch'; // Use this instead of default fetch to avoid potential issues
```

Styling and security considerations

When using styles, global styles can be applied if encapsulation is not enabled. Styles should always use CSS variables and tokens to ensure compatibility with dark mode and custom brandings.

By default, the normal HTML widget is sanitized for security, while in advanced mode the developer is responsible for proper sanitization. You can modify the default sanitization behavior in the [Cockpit application configuration](#).

A simple example looks like this:



Legacy widget compatibility

! IMPORTANT

Existing widgets based on AngularJS will automatically fall back to legacy mode, which maintains backward compatibility and allows these widgets to continue functioning. This fallback displays JavaScript code that enables legacy widget execution. However, it is strongly recommended to migrate these widgets to the new Lit-based framework as soon as possible, since AngularJS support is deprecated.

To migrate a legacy widget

Migrating a legacy widget to the new format requires familiarity with JavaScript and HTML. The migration process involves replacing all AngularJS-specific code.

Depending on the complexity of your original widget, there are two migration approaches:

- **Simple mode:** Replace placeholders and template syntax. Use this mode if your widget does not contain custom JavaScript logic in a `<script>` tag.
- **Advanced mode:** Build complex web components with custom JavaScript. Use this mode if your widget contains custom JavaScript logic or event handlers.

Step 1: Assess your widget

Check your current widget code. If it contains specific JavaScript logic in a `<script>` tag, you need to use advanced mode. If not, use simple mode.

Step 2: Migrate placeholders in simple mode

The following example shows legacy widget code:

```
<p ng-if="device.name === 'Alpine Hiker #1'">
  Hello {{device.name}}.
</p>
```

Migrated to the template syntax, this is:

```
${ this.c8yContext.name === 'Alpine Hiker #1' ? html`<p>Hello ${this.c8yContext.name}</p>` : "" }
```

Step 3: View the generated code

Create a new widget with your migrated code. HTML widgets that are migrated use an AngularJS legacy mode which you can view by opening the “advanced mode” to inspect the generated code:

```
import { angular } from 'angular';

// NOTE: This is a legacy template for the HTML widget.
// It is used to compile the HTML content in the context of the AngularJS application.
// The template is injected into the AngularJS application and compiled using the AngularJS compiler.
// The template should only be used for backward compatibility purposes.
// It is recommended to use a web component instead.

if (!angular) {
  throw new Error('AngularJS is not available. Please make sure to include AngularJS in your project.');
```

```
}

const $injector = angular.element(document.querySelector('c8y-ui-root')).injector();
if (!$injector) {
  throw new Error('AngularJS injector is not available. Maybe not an hybrid application?');
}

// defining a new scope
const $rootScope = $injector.get('$rootScope');
const $scope = $rootScope.$new(true);

// faking the old angularjs config
$scope.child = {
  config: {
    device: { id: "2698590822", name: "Alpine Hiker #1" },
    html: `<div ng-controller="HtmlWidgetCtrl"><p ng-if="device.name === 'Alpine Hiker #1'">
      Hello {{device.name}}.
    </p>
  </div>`
  }
};

// load the needed services
const $compile = $injector.get('$compile');
const $controller = $injector.get('$controller');
```

```
// create the element
const htmlElement = angular.element($scope.child.config.html);

// The default controller providing the context
$controller('HtmlWidgetCtrl', { $scope });

// Compile the element
$compile(htmlElement)($scope);

// Apply the scope changes
$rootScope.$apply();

export default htmlElement[0];
```

The generated legacy mode code enables backward compatibility.

Step 4: Use advanced mode for web components

To use the new web component-based approach, copy your code to a new widget and enable the advanced mode. The following shows how the Lit-based HTML layout works:

```
import { LitElement, html, css } from 'lit';
import { styleImports } from 'styles';

export default class DefaultWebComponent extends LitElement {
  static styles = css`

:host > div {
  padding: var(--c8y-root-component-padding-default);
}
span.branded {
  color: var(--brand-primary, var(--c8y-brand-primary));
}
`;

  static properties = {
    // The managed object this widget is assigned to. Can be null.
    c8yContext: { type: Object },
  };

  constructor() {
    super();
  }

  render() {
    return html`
      <style>
        ${styleImports}
      </style>
      ${this.c8yContext.name === 'Alpine Hiker #1' ? html`<p>Hello ${this.c8yContext.device}</p>` : ""}
    `;
  }
}
```

This example demonstrates the basic structure of a Lit web component.

Step 5: Add interactivity in advanced mode

In advanced mode, you add elements like event handlers. This allows you to migrate more complex legacy widgets with custom `<script>` tags. The following example is shortened to show only the important parts:

```
//[...]  
  
static properties = {  
  c8yContext: { type: Object },  
  helloText: { type: String } // add this to ensure "rerendering" on changes  
};  
  
//[...]  
  
sayHello() {  
  this.helloText = 'Hello world';  
}  
  
render() {  
  return html`  
    <style>  
      ${styleImports}  
    </style>  
    ${this.c8yContext.name === 'Alpine Hiker #1' ? html`<p @click=${this.sayHello}>  
      Hello ${this.c8yContext.device}</p>  
    ` : ""}  
  
    ${this.helloText}  
  `;  
}  
//[...]
```

This example shows how to handle click events and update the component state.

Step 6: Verify the migration

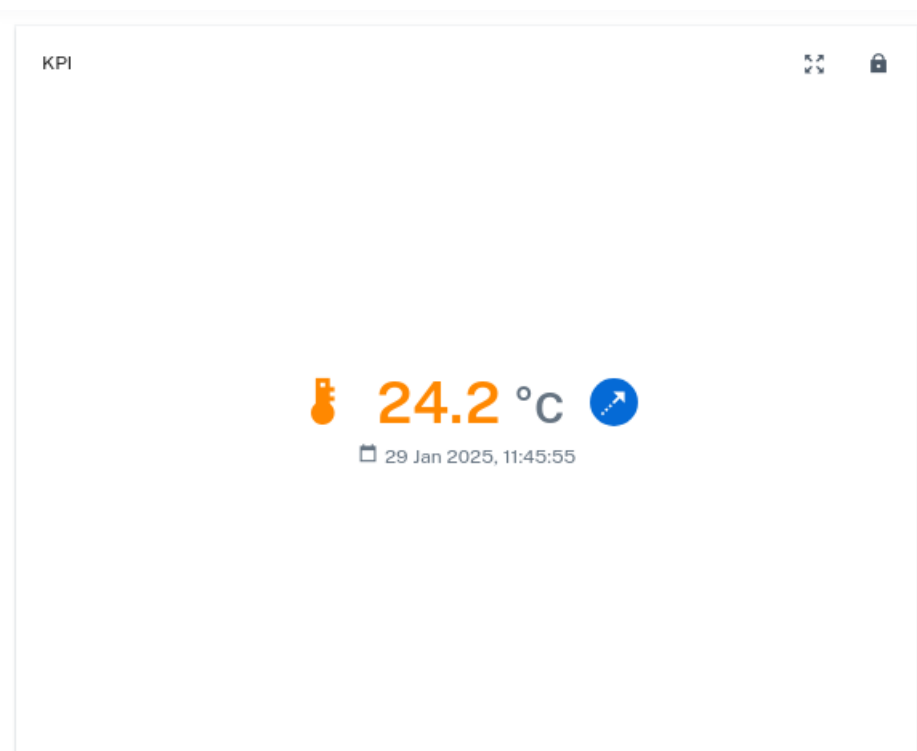
After migration, test the widget to ensure:

- All data displays correctly.
- Interactive elements work as expected.
- The widget responds to the device or asset selection.

By leveraging the [Lit web components](#) framework, you migrate nearly every custom AngularJS or JavaScript implementation in a legacy widget. To request additional data, import the `fetch` library to directly request data from the platform.

KPI

The "KPI" (Key Performance Indicators) widget visualizes a data point as a label, for example, a data point for the temperature of a device.



Parameters to configure

On the left side, select the data point you want to display. You must select only one active datapoint to create the "KPI" widget. If you select multiple data points at once, you cannot save the configuration.

On the right side, you can adjust how the data point is going to be displayed. This includes:

- Icon: The icon to be displayed next to the data point
- Number of decimal places
- Display: Allows to toggle whether the timestamp, icon and trend indicator should be displayed
- Font size of measurement value

LINEAR GAUGE

The "Linear gauge" widget visualizes data points in form of a linear gauge. Min and max target values are shown on the gauge as well.



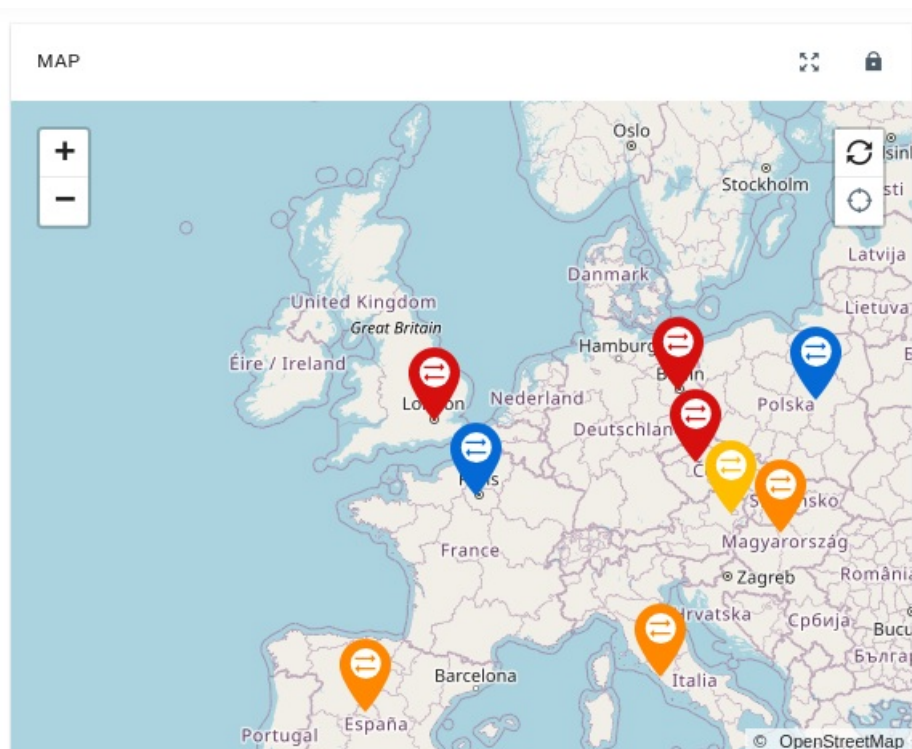
i INFO

If a label is not properly readable, you can help yourself by increasing the min and max value of the data point to move the label into the readable range.

You must enable at least one data point to create the “Linear gauge” widget.

MAP

The “Map” widget shows the location of a device or all devices of a group.



You can drag the map and move its content, and you can zoom in and out by using the **Plus** and **Minus** buttons.

The icons representing the devices are color-coded. The color used follows these rules:

- Red = At least one CRITICAL alarm
- Orange = At least one MAJOR alarm
- Yellow = At least one MINOR alarm
- Blue = At least one WARNING
- Grey = No alarm

Click a device icon, to open a popup with the following information:

- The device name. When clicked, the application navigates to the device.
- The date at which the device last reported its location, if available.

Parameters to configure

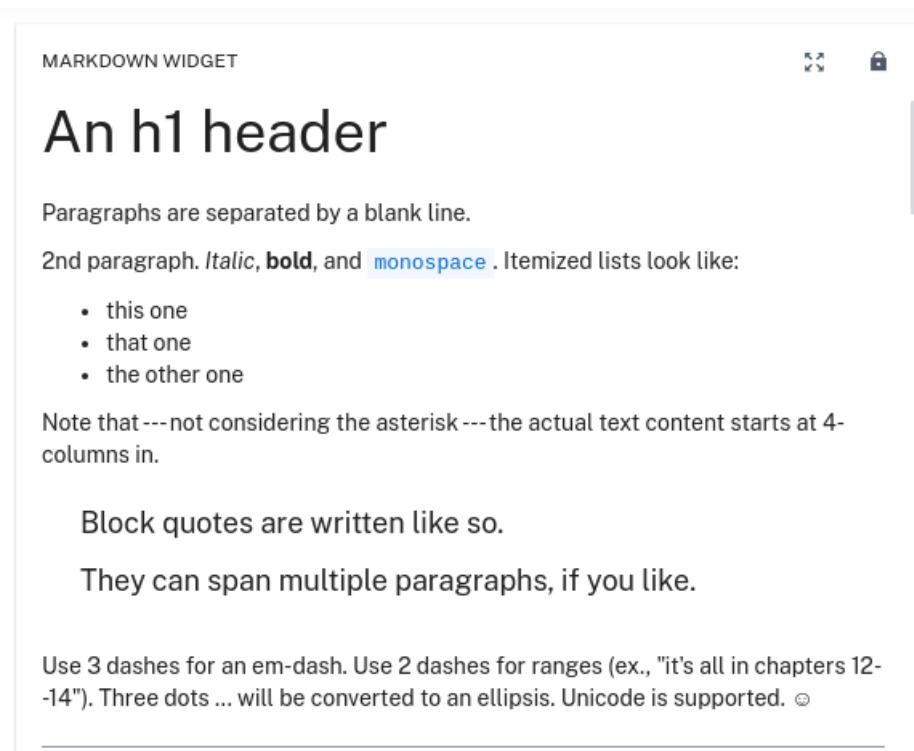
- Target assets or devices: Select which devices are shown on the map. If a group is selected, all devices in that group, including those in subgroups, are visible.
- Marker icon: Icon of the marker on the map.
- Zoom level: Default zoom level of the map.
- Center bound: The default map coordinates.
- Refresh interval: The refresh interval for the selected device or asset. If only one device is selected, instead of refresh interval, realtime option can be selected together with "follow selected" device toggle which would follow the device after location update.

i INFO

If none of the target device(s) has a known location, then the widget shows a world map without icons.

MARKDOWN

The "Markdown" widget can be used to display markdown content. Using the "Markdown" widget you can inform users, for example, on new features.



There are several ways to provide markdown content:

- Upload a markdown file.
- Provide a URL to an external source.
- Add `"/README.md"` as a relative file path in order to provide the README file of the current application as source.

MESSAGE SENDING

The "Message sending" widget sends a message to a device. The behavior of the device itself is device-dependent. Only available for devices that support the operation `c8y_Message`.

PIE CHART

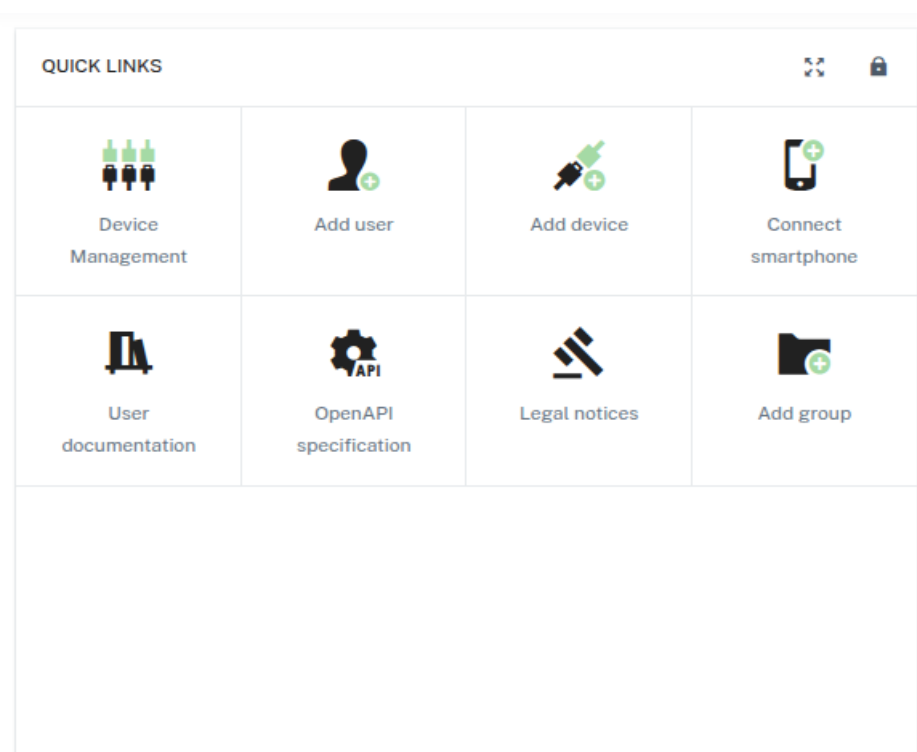
The "Pie chart" widget displays data points (measurements) with current values in a pie chart presentation.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.
Pie chart options	Select from the options to show tooltips, percentages, legends in the pie chart.
Data point	Shows a list of available data points. You must enable at least one data point. Click Add data point to add a data point to the list. For details on how to add data points see To add a data point .

QUICK LINKS

The "Quick links" widget displays links in either a grid or list format.



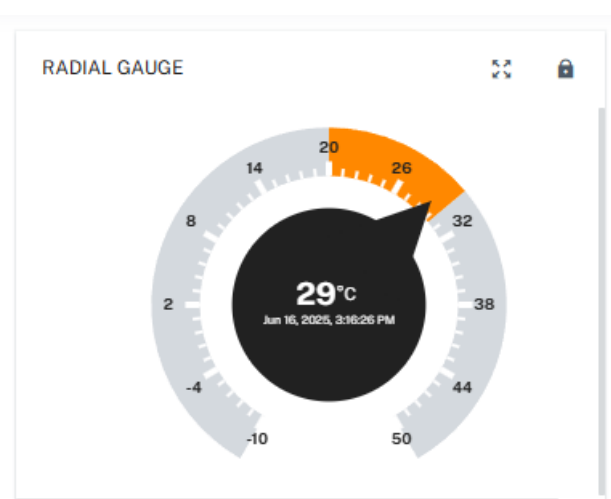
You can add, edit, or remove links to customize the widget according to your needs.

RADIAL GAUGE

The "Radial gauge" widget visualizes data points in the form of a radial gauge, making it ideal for monitoring values like temperature, pressure, or performance metrics at a glance.

Presets and customization

You can choose from various preset styles such as "Default", "Pointer", "Progress bar", "Progress indicator", and "Grade rating". Each preset provides a distinct visual design.



You must enable at least one data point to create the "Radial gauge" widget.

For full control, click **Show advanced options** to customize the gauge's appearance and behavior.

Advanced options reference

Category	Property	Description
General	<code>name</code>	Name of the gauge preset
	<code>radius</code>	Radius of the gauge (for example, "90%")
	<code>center</code>	Center position of the gauge (for example, ["50%", "50%"])
	<code>startAngle</code> , <code>endAngle</code>	Start and end angles of the gauge arc
Split lines	<code>splitNumber</code>	Number of segments in the gauge
	<code>splitLineLength</code> , <code>splitLineLengthRatio</code>	Length of split lines (absolute or ratio)
	<code>splitLineDistance</code> , <code>splitLineDistanceRatio</code>	Distance of split lines from axis (absolute or ratio)
	<code>splitLineColor</code> , <code>splitLineWidth</code>	Color and width of split lines
Ticks	<code>tickShow</code>	Whether to show ticks
	<code>tickWidth</code> , <code>tickColor</code>	Width and color of ticks
	<code>tickDistance</code> , <code>tickDistanceRatio</code>	Distance of ticks from center (absolute or ratio)
	<code>tickLength</code> , <code>tickLengthRatio</code>	Length of ticks (absolute or ratio)
Axis	<code>axisLabelDistance</code> , <code>axisLabelDistanceRatio</code>	Distance of axis labels from center
	<code>axisLabelColor</code>	Color of axis labels
	<code>axisLabelFontSize</code> , <code>axisLabelFontSizeRatio</code>	Font size of labels (absolute or ratio)
	<code>axisLabelFontSizeMin</code> , <code>axisLabelFontSizeMax</code>	Minimum and maximum font size for labels
	<code>axisLineWidth</code> , <code>axisLineWidthRatio</code>	Width of the axis line (absolute or ratio)
Pointer	<code>showPointer</code>	Whether to show the pointer
	<code>pointerStyle</code> , <code>pointerColor</code>	Style and color of the pointer
	<code>pointerWidth</code> , <code>pointerWidthRatio</code>	Width of pointer (absolute or ratio)
	<code>pointerLength</code> , <code>pointerLenghtRatio</code>	Length of pointer (absolute or ratio)
	<code>pointerOffset</code>	Offset of pointer from center
Progress bar	<code>progressBar</code>	Enable progress bar
	<code>progressBarWidth</code>	Width of the progress bar
	<code>progressBarRoundCap</code>	Rounded caps on progress bar ends
	<code>progressBarColor</code>	Color of the progress bar

Category	Property	Description
Typography	<code>additionalGaugeColors</code>	Extra colors for segmented gauge bars
	<code>measurementValueFontRatio</code>	Font size ratio of the measurement value
	<code>measurementValueFontMin</code> , <code>measurementValueFontMax</code>	Min and max font size for measurement value
	<code>measurementValueColor</code>	Color of the measurement value text
	<code>unitFontSize</code> , <code>unitFontRatio</code>	Font size or ratio of the unit label
	<code>unitFontMin</code> , <code>unitFontMax</code>	Min and max font size for the unit label
	<code>unitColor</code>	Color of the unit label
	<code>dateFontSize</code> , <code>dateFontRatio</code>	Font size or ratio of the timestamp
	<code>dateFontMin</code> , <code>dateFontMax</code>	Min and max font size for the timestamp
	<code>dateColor</code>	Color of the timestamp
Details	<code>showDetail</code>	Show detailed information like value or markers
	<code>valueFontSize</code>	Font size for the displayed value
	<code>detailOffsetCenter</code>	Offset of detail from center
	<code>showMarkPoint</code>	Show mark points on the gauge

RELAY ARRAY CONTROL

The "Relay array control" widget lets you switch relays on or off independently in an array of relays. Only available for devices that support this type of operation.

RELAY CONTROL

The "Relay control" widget allows you to switch a device relay on or off. Only available for devices that support this type of operation.

ROTATION

The "Rotation" widget lets you render an object model of a device.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.
Target assets or devices	Select group or device to be displayed.
Object model for rendering	Select an object model type for rendering. May be one of "Box model" or "Phone model".

Field	Description
Wireframe	Turn "Wireframe" on or off (default = on). The "wireframe" mode displays the object in a skeletal representation.
Camera type	Select the type of camera to be used. May be one of "Orthographic camera" or "Perspective camera".

In the "Rotation" widget you can rotate the object by dragging and moving it around. Zoom in and out by using the mouse.

SCADA

The "SCADA" widget provides a graphic representation of the status of a device.

For details on the "SCADA" widget, refer to [Monitoring the device status using the SCADA widget](#).

The following code sanitization options can be selected:

- strict - Does not allow any JS or angularjs directives.
- lax (default) - Allows partly JS (events) and all angularjs directives.
- none - Allows everything.

SCADA

[Change widget](#)

Display a configurable SVG.

Widget title

SCADA

> Asset selection

×

Berlin

▼ Settings

SVG ?

No file selected

...

Select code sanitization option

strict

▼

Preview

SVG content will be sanitized.

Mappings

Preview

SCADA

No preview available.

This widget does not provide any preview.

Theme

Branded

Match dashboard

Widget header style

Regular

Dashboard default

Cancel

Save

SILO

The "Silo" widget displays data points (measurements) with current values in a silo presentation.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.

Data point Shows a list of available data points. You must enable at least one data point. Click **Add data point** to add a data point to the list. For details on how to add data points see [To add a data point](#).

TRAFFIC LIGHT

The "Traffic light" widget visualizes the states of a device as traffic light.

Parameters to configure

Field	Description
Title	Widget title. By default, the widget type is simply used as title.
Target assets or devices	Select group or device to be displayed.
States mapping	Select a property for each light. The value of the property must be one of the following to have the respective light on: true, 1, any non-empty string, any non-null number.

EXPORTS

This section explains the difference between configuring exports at regular intervals for all or selected data of your platform as well as the export functionality integrated in to widgets, such as the “data point table” widget, where the export functionality allows you to export the data from selected data points at the current moment.

MANAGING EXPORTS

The export functionality lets you export specific data to either CSV or Excel files.

✔ REQUIREMENTS

ROLES & PERMISSIONS:

- To view exports: READ permission for permission type “Inventory”
- To edit an export: ADMIN permission for permission type “Inventory”
- To add a new export: CREATE or ADMIN permission for permission type “Inventory”
- To schedule an export: ADMIN permission for permission type “Schedule export”
- To duplicate an export: ADMIN permission for permission type “Inventory”
- To delete an export: ADMIN permission for permission type “Inventory”

With this feature, you can request data for the whole tenant. Additionally, you can choose to filter for specific devices, time ranges or fields. The export data contains information about all specified filters and enabled fields.

TO SHOW ALL EXPORTS

To show all exports, click **Export** in the **Configuration** menu in the navigator.

In the **Export** page you will find a list displaying all exports with their names, file type and time range.

Exports

Configuration > Exports

Add export

Exports No filters

Configure columns Reload Search...

Name	File type	Time range
<input type="checkbox"/> Weekly temperature export	CSV	Last 7 days
<input type="checkbox"/> Monthly power usage	XLS	Last 30 days

1 - 2 of {{ itemsTotal }}


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TO ADD AN EXPORT

1. Click **Add export** in the top menu bar.
2. Enter a name for the export and select the file type (CSV or XLSX) for the report output.

Filters

In the **Filter** section, you can select filters to request object- or time-specific data.

To filter for a particular object, enter a name or property value into the search field and click the search icon . All matching devices or groups will be displayed below the **Value** field. Click an object to select it (highlighted in green).

INFO

If you select a group, the data of direct child devices will be included. However the export will not contain the data of devices in subgroups (indirect children).

The **Time range** filter can filter data for a specific time range. Select a time range from the dropdown field. All times assume platform system time (UTC).

- Last 24 hours:
 - From: exactly 24 hours before the time of export
 - To: the time of export
 - Example: from 2020-12-31 12:34:56 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Last 7 days:
 - From: exactly 7 days before the time of export
 - To: the time of export
 - Example: from 2020-12-25 12:34:56 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Last 30 days:
 - From: exactly 30 days before the time of export
 - To: the time of export
 - Example: from 2020-12-02 12:34:56 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Last week:

- From: same day as the time of export, but last week at midnight
- To: the time of export
- Example: from 2020-12-25 00:00:00 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Last month:
 - From: same day as the time of export, but last month at midnight
 - To: the time of export
 - Example: from 2020-12-01 00:00:00 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Last year:
 - From: same day as the time of export, but last year at midnight
 - To: the time of export
 - Example: from 2020-01-01 00:00:00 to 2021-01-01 12:34:56 (when the export is done at 2021-01-01 12:34:56)
- Custom:
 - From: date and time specified by the user
 - To: date and time specified by the user

Select the **Object to export** and **Time range** checkboxes to enable the respective filters.

INFO

The maximum number of documents matching the defined filters that can be returned is 1 million. If the number of documents for the defined filters exceeds this limit, only the first 1 million documents will be exported. Additionally, when the result is truncated due to this limitation, an additional line with an indicator is added at the end of the file. The indicator row contains the statements "limit exceeded!" and "result truncated!" alternating every other column.

Fields

Apart from object- and time-specific filtering you may filter data for specific fields:

- Alarms
- Events
- Managed objects
- Measurements

Use the toggle to enable/disable a field.

INFO

The time range filter only applies to alarms, events and measurements but not to managed objects. If selected, managed objects will appear in the export, regardless of any specified time range.

When a field is enabled, predefined or empty properties can be added.

INFO

Documents that have no value defined for any of the selected fields are removed from the resulting export file. This is done only after the result of filters defined above was already calculated. This is commonly the reason why resulting files rarely reach the hard limit of 1 million rows.

To add a property

Click **Add** to add empty properties. To enter a label or path, click **Column** or **Path** and edit the field. For example, if you enable the **Alarms** field you could enter "Severity" in column and path to receive data for alarm severities.

Click **Add predefined**, to add predefined properties. Simply select the desired properties from the list and click **Select**. Use the search field at the top to search for a specific property.

If you have at least one field that is not originating from the “Add predefined” list but defined as a custom property, then you must set up at least one property for the custom values to appear in the export.

Example: An export has 4 fields defined: time range, device name, type and `c8y_SpeedMeasurement.speed.value`. The first 3 are predefined properties, while the last one is a custom property. If any measurement for export does not have a custom property `c8y_SpeedMeasurement.speed.value`, then it will not appear in the export file.

If your field is a valid.key.with.dot then refer to it as `[‘fragment.key.with.dot’]` in the path, for example: `[‘fragment.key.with.dot’].series.value`

In case of measurements enabled, you can also select **Add from data point**. For details on how to add data points see [To add a data point](#).

JsonPath expressions added from data points will be stored in bracket notation in order to increase the flexibility in fragment and series naming (for example whitespaces will be supported):

☒ Measurements

Column	Path
Time	time
Device name	DEVICE_NAME
temperature => temperature	[‘temperature’],[‘temperature’].[‘val...’]

+ Add
+ Add predefined
+ Add from data point

Predefined fields

Predefined fields are standard properties that always exist in a given type of document. The list of properties that you can select for export in the UI is wider and contains a lot of frequently used fragments with business meaning, but these fragments are treated as **custom properties** by the export engine logic. Here is the list of predefined fields for particular types of documents:

- Alarms: count, creationTime, firstOccurrenceTime, id, lastUpdated, severity, source, status, text, time, type
- Events: creationTime, id, lastUpdated, source, text, time, type
- Measurements: id, source, time, type
- Managed objects: additionParents, assetParents, childAdditions, childAssets, childDevices, creationTime, deviceParents, id, latestMeasurements, lastUpdated, name, owner, previousMeasurements, supportedMeasurements, type

TO SCHEDULE AN EXPORT

To schedule an export to a CSV or XLSX file to any point in time, open the respective export and click **Add schedule** at the bottom.

In the resulting dialog box provide the following information to receive the scheduled export via email.



On schedule send export via email

1

Frequency

Interval

Day

Time

08

:

00

2

Send email

Enter one or more valid email addresses, separated with a comma.

Send to

john.doe@example.com

CC

e.g. joe.doe@example.com,john.smith@example.com

BCC

Cancel

Create

1 - Frequency

Select the frequency for sending the export from the dropdown list, that is, every hour, day, week, month or year. Depending on the frequency selected, provide additional timing information. For example, if you have selected "every month", provide the day of month, hour and minute.

INFO

Schedule intervals must be provided in Coordinated Universal Time (UTC).

2 - Send email:

Complete the email information.

In the **Send to** field, provide the email address of the recipient. This field is mandatory. Optionally, you can provide email addresses for recipients of copies (CC) or blind copies (BCC). Use comma as separator to enter multiple recipients.

Optionally, add the email address of the sender for reply.

Specify the subject of the email. This field is pre-filled, but may be modified.

Enter the actual email message. Available placeholders are {host}, {binaryId}. The default value is "File with exported data can be downloaded from {host}/inventory/binaries/{binaryId}". Note that to create a clickable link in the email, you must add "https://" to the link. For example: "A file with exported data can be downloaded from https://{tenant-domain}/inventory/binaries/{binaryId}."

INFO

Note that the corresponding emails are sent with "text/html" as the **Content-Type** header.

Click **Create** to create the new export schedule.

The export schedule will be added to the export details.

Migration of scheduled exports

With version 10.6.2, a new report agent has been implemented to allow scheduled exports. The export schedules functionality based on smart rules has been deprecated.

On opening a report, all scheduled exports based on smart rules are automatically migrated to the new report agent, while displaying a message informing the user about the process.

IMPORTANT

You must open each report manually, to migrate the export schedules included in the report.

INFO

To use the new export schedule feature and for the migration to work, the report-agent microservice must be subscribed. New tenants will be subscribed to it automatically. Existing tenants should make sure that they are subscribed to it.

TO EXPORT DATA

To export data to a CSV or XLSX file, select the checkbox in front of the respective row in the list and at the left of the top menu bar click **Export**.

You will receive an email containing links to each export file.


Standard time properties (like time or creationTime in alarms) are exported to the XLSX and CSV files following the date and time format representation defined in [ISO-8601](#).

When the export documents limit is reached and the result is truncated due to its limitations, an additional line with an indicator is added at the end of document.

Sample CSV export with indicator:


```
Time,Device name,Creation time,Device name,ID,Source,Text,Time,Type 2021-11-25T10:37:06.485Z,Position #1,2021-11-25T10:37:06.485Z,Position #1,1266,1195,Location updated,2021-11-25T10:37:06.485Z,c8y_LocationUpdate 2021-11-25T10:37:01.484Z,Position #1,2021-11-25T10:37:01.484Z,Position #1,1265,1195,Location updated,2021-11-25T10:37:01.484Z,c8y_LocationUpdate [...] limit exceeded!,result truncated!,limit exceeded!,result truncated!,limit exceeded!,result truncated!,limit exceeded!,result truncated!,limit exceeded!
```

TO EDIT AN EXPORT


Just click the respective row or click the menu icon  at the end of the row and then click **Edit**.

For details on the fields see [To add an export](#).

TO DUPLICATE AN EXPORT

1. Click the menu icon  at the end of the row and then click **Duplicate**.
2. Modify at least the name.
3. Click **Save & close** to save the export and return to the export list.

TO DELETE AN EXPORT

Click the menu icon  at the end of the row and then click **Delete**.

EXPORTS INTEGRATION WITH DATA POINTS BASED FEATURES

While the export functionality itself is a standalone feature, you can combine it with other features that allow you to select data points. To use the export functionality in this way, you must integrate it in the respective feature, for example, the [Data points table](#) widget.


REQUIREMENTS

ROLES & PERMISSIONS:

- To generate exports in a widget: READ permission permission type “Measurement”

TO CREATE AN EXPORT IN A WIDGET

The following example shows you how the export functionality is integrated with the [Data point table](#) widget.

1. Click the export icon  at the top right of your data point table:
2. You see the **Generate export** dialog window, which allows you to configure the export further in the following categories:
 - **Time range:** Select the time range for your export. By default, it uses the same time range as configured in the widget's settings.
 - **Data scope:**
 - **Export mode:**
 - Compact (selected by default) - all data will be exported to one file and downloaded directly by your browser.
 - Full - depending on the number of records to be processed, the data will either be available in a single ZIP file (containing one file per data point), sent by email or not exportable at all. Refer to [Export modes](#) for further details.
 - **Aggregation:** Only available when you select the **Compact** mode. The default value is the same as in the widget's configuration. The following four options are available:
 - None
 - Minutely
 - Hourly
 - Daily
 - **File types:** Select the file format for exporting data. **Microsoft Excel** is selected by default, with **CSV** as another option. You can select both types simultaneously.
3. Click the **Download** button. The download results depend on your chosen export mode.

EXPORT MODES

The export functionality integrated in a widget offers you a number of export modes:

- **Compact:**
 - Processes up to 5,000 records per data point, or up to the data retention limit
 - Creates a single merged file containing all the data
 - Provides minimum and maximum values
 - Preview is not available
 - Supports optional data aggregation
- **Full:**
 - Processes up to 1,000,000 records per data point, or up to the data retention limit
 - For exports exceeding 50,000 records, data will be sent via email
 - Creates a compressed ZIP file containing separate data files for each selected data point
 - Preview is available
 - Does not support data aggregation

Export for data points with over one million records

When you have selected the **Full** export mode for a data point that contains more than one million records (our processing limit), the download option is disabled. To proceed with the export, you'll need to reduce the number of records by narrowing the time range. Until the number is reduced, you will see a warning message.

If you select multiple data points for export in the **Full** mode and one or more individual data points exceed the one million record limit (per data point), narrow the time range to reduce the number. Data points within the limit are not affected.

In this case, you will see a detailed informational message describing how many data points are affected and why. The message is dynamic and may include the following details:

- **Downloadable item count:** data points that can be exported directly and downloaded in a single file from the browser.
- **Email deliverable item count:** data points that require further processing. These files will be sent to you in separate emails once ready, which may take some time.
- **Non-retrievable item count:** data points exceeding 1,000,000 records, which is the processing limit. To export this data, narrow down the date range, as these files cannot be downloaded or sent via email if the limit is exceeded.

DASHBOARD MANAGER

The dashboard manager shows a list of device type dashboards by aggregating all dashboards that have a device type assigned. It also provides information about the number of devices that have access to a particular dashboard, date of creation and last modification date.

To open the dashboard manager, click **Dashboard manager** in the **Configuration** menu of the navigator.

Dashboard manager

Type dashboards 1 of 1 items No filters ⓘ

Configure columns ⚙️ Reload ↻ Search...

Icon	Name	Description	Target asset model	Last update
✓	Dashboard		wind-turbine	10 Jan 2025, 16:52:46

Target asset model wind-turbine

Dashboard instances 54

Created 8 Jan 2025, 16:52:46 by john.doe@example.com


Last modified 10 Jan 2025, 16:52:46 by john.doe@example.com

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TO ADD A TYPE DASHBOARD

To add a new dashboard for a device type select the device from the device list in the **Groups** menu. Refer to [To create a dashboard](#) and [Dashboard template](#) for more information.



TO DELETE TYPE DASHBOARD

To delete a device type dashboard, navigate to the device list in the **Groups** menu or to the **Dashboard manager** in the **Configuration** menu. In the row of the selected dashboard, click the delete icon  on the right.

INFO

If you delete a device type dashboard, it gets deleted from all devices that have access to it. It is not possible to delete a device type dashboard from a single device.

TO EDIT TYPE DASHBOARD

Click the edit icon  on the corresponding row to open list with all devices that has access to the dashboard. In the **Select dashboard instance to edit** dialog window, select the desired device and click the open instance icon  on the right to navigate to dashboard assigned to this device. Now you can edit the dashboard settings or widgets. See [To edit a dashboard](#) for more detailed information.

DATA POINT LIBRARY

The data point library provides a collection of data points with default values for data point properties.

✓ REQUIREMENTS

ROLES & PERMISSIONS:

- To add a data point: CREATE or ADMIN permission for permission type "Inventory"
- To delete a data point: ADMIN permission for permission type "Inventory"
- To edit a data point: ADMIN permission for permission type "Inventory"

Data point properties are similar to paragraph formats in word processing applications. You do not want to format each paragraph individually. Instead you want to define a set of default formats and apply them to your paragraphs in your document. The data point library provides the same functionality for data points. It provides a number of default data point templates that can be easily applied to your data points from different devices.

How does the Cockpit application use the data point library? To find the default visualization for a data point like color or label, the Cumulocity platform searches the data point library and tries to find a matching entry. An entry is considered as "matching", if the values for fragment and series in the data point library match those of the measurement. If there is a match, the corresponding data point properties are used for a default visualization.

Additionally, the properties of the data point library are used by threshold business rules: The red and yellow values configured in the data point library are used by the threshold rules to raise alarms.

To open the data point library, click **Data point library** in the **Configuration** menu of the navigator.

The screenshot displays the 'Data point library' interface within the Cockpit application. The sidebar on the left contains navigation links, with 'Data point library' highlighted. The main panel shows a grid of data point entries. Each entry consists of a colored circle, a title, a visualization (a horizontal bar or scale), and a table of properties. The data points shown are:

- CPU usage**: Purple circle, percentage bar chart. Fragment: cpu, Series: percent-active.
- Temperature**: Purple circle, temperature scale (°C). Fragment: c8y_Temperature, Series: T.
- Acceleration (X)**: Yellow circle, acceleration scale (m/s²). Fragment: c8y_Acceleration, Series: accelerationX.
- Acceleration (Y)**: Blue circle, acceleration scale (m/s²). Fragment: c8y_Acceleration, Series: accelerationY.
- Acceleration (Z)**: Green circle, acceleration scale (m/s²). Fragment: c8y_Acceleration, Series: accelerationZ.

At the bottom of the sidebar, it says 'powered by CUMULOCITY'.

A list of available data points will be opened. For each data point, the following information is provided in the list:

- Color and label for the data point
- Fragment name and series

- Measurement unit
- Values (minimum, maximum, red/yellow ranges)

TO ADD A DATA POINT TO THE LIBRARY

1. Click **Add data point** in the top menu bar.
2. Provide the following information:


Field	Description
Color	Color for the data point visualization
Label	Label to identify the data point
Fragment	Name of the fragment
Series	Name of the series
Unit	Unit used for the measurement
Target	Target value
Minimum	Minimum value shown on the y-axis
Maximum	Minimum value shown on the y-axis
Yellow range	Min/max values for the yellow range (MINOR alarms)
Red range	Min/max values for the red range (CRITICAL alarms)

INFO


With the button next to the fragment and series fields you can pick the values for fragment and series from an existing data point using the data point selector.

3. Click **Save** to add the data point to the library.

TO EDIT A DATA POINT

Simply click the respective entry in the list or click the menu icon  at the right of an entry and then click **Edit**.

TO DELETE A DATA POINT

Click the menu icon  at the right of an entry and then click **Delete**.

SMART RULES

Cumulocity includes the Streaming Analytics application which can analyze data in realtime and perform actions based on data.

To easily create rules, the Cockpit application includes a smart rules builder which allows you to create rules from templates (so-called smart rule templates).

The smart rules functionality is only available if the tenant is subscribed to the Smartrule microservice and the Apama-ctrl microservice.

✔ REQUIREMENTS

- To use the smart rules functionality, you must be subscribed to the Smartrule and Apama-ctrl microservice.

Smart rules are parameterized. There are two sources for parameters:

- **Rule parameters** are provided by the user when creating a smart rule from a template. Examples are email addresses and alarm texts.
- **Object parameters** are stored in the group or device. These parameters can be edited after the smart rule has been created. An example includes min and max values for thresholds.

There are two different types of smart rules:

- Global smart rules
- Local smart rules

Global smart rules

Global smart rules are created in a global context (**Smart rules** page, alarms, data explorer, and so on). Rules created as global monitor the whole inventory (any asset type such as groups, devices, configurations, applications).

✔ REQUIREMENTS

ROLES & PERMISSIONS for global smart rules:

- To view a global smart rules: READ permission for permission type "Global smart rules" or "CEP management" and READ permission for permission type "Inventory"
- To edit global smart rules: ADMIN permission for permission type "Global smart rules" or "CEP management" and ADMIN permission for permission type "Inventory"
- To create a global smart rule: ADMIN permission for permission type "Global smart rules" or "CEP management" and CREATE or ADMIN permission for permission type "Inventory"
- To duplicate a global smart rule: ADMIN permission for permission type "Global smart rules" or "CEP management" and CREATE or ADMIN permission for permission type "Inventory"
- To delete a global smart rule: ADMIN permission for permission type "Global smart rules" or "CEP management" and ADMIN permission for permission type "Inventory"

Depending on the initial configuration of a global smart rule, there are two types possible:

- Global smart rules enabled for all assets by default: When no asset is selected in the initial configuration. Such a smart rule is automatically applied to each asset available in the system, including assets added later in time.
- Global smart rules disabled for all assets by default: When at least one asset is selected in the initial configuration. Such a smart rule is automatically disabled for any other assets except the ones selected during creation. You can manually enable it for other existing or newly added assets.

Local smart rules

Local smart rules are created from a group or a device. A local rule only affects the asset in which it was created and may affect all child assets depending on the configuration.

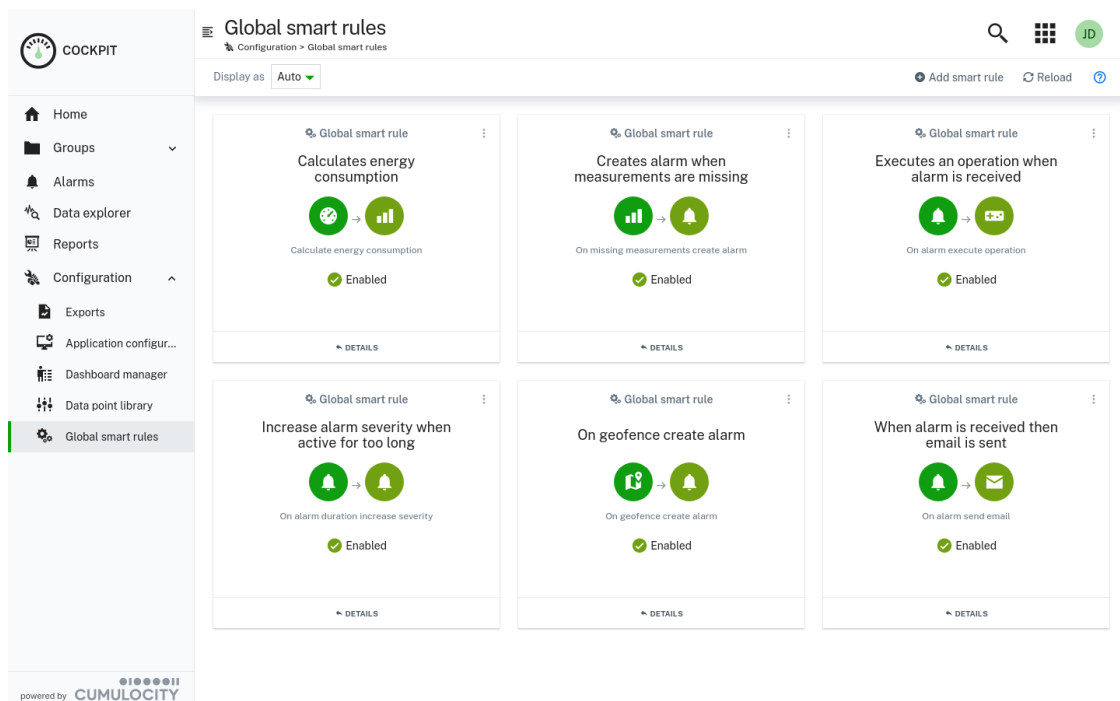
✓ REQUIREMENTS

ROLES & PERMISSIONS for local smart rules:

- To view local smart rules: READ permission for permission type "Inventory" or READ permission for "Inventory" in the inventory roles
- To edit local smart rules: ADMIN permission for permission type "Inventory" or CHANGE permission for "Inventory" in the inventory roles
- To create a new local smart rule: CREATE permission for permission type "Inventory" or CHANGE permission for "Inventory" in the inventory roles
- To delete a local smart rule: ADMIN permission for permission type "Inventory" or CHANGE permission for "Inventory" in the inventory roles

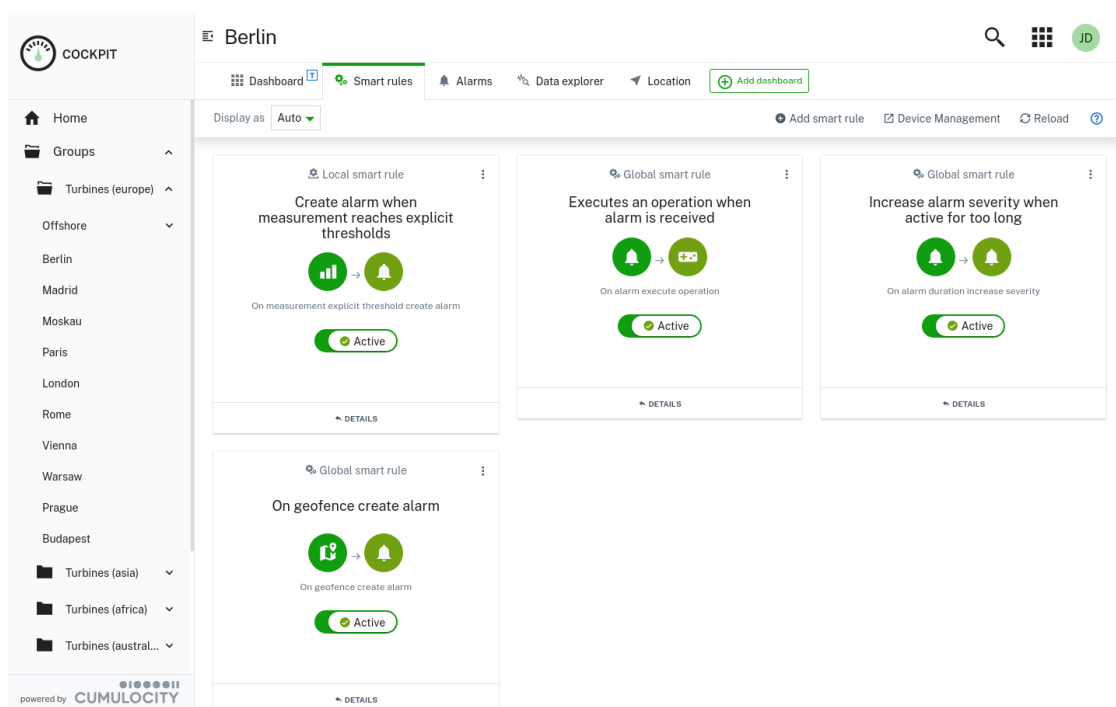
Smart rules can be seen in three places:

- In the **Global smart rules** page accessible from the **Configuration** menu.



In the **Global smart rules** page, only the global smart rules are shown.

- In the **Smart rules** tab of a device or group.



In a local context (group or device) the local smart rules are shown. For users with the relevant permissions, both local and global smart rules are shown.

- In the **Status** tab of the owned microservice.

The microservice details show the global and local smart rules (considering the permissions of the user). Here it is possible to configure a limited number of types of smart rules. Rules selection here is mainly focused on alarms that might be created by the microservice while transitioning through different deployment states.

INFO

From the context of a group or device, or in the **Status** tab of the owned microservice, you can only modify local smart rules. Editing global smart rules is only possible on the **Global smart rules** page.

RELATED TOPICS

- [Platform administration > Standard tenant administration > Alarm mapping](#) for details on managing smart rules for your devices.

TO CREATE A SMART RULE

Smart rules can both be created in the **Global smart rules** page (global smart rules), accessible from the **Configuration** menu in the navigator, or in the **Smart rules** tab of any group or a device (local smart rules).


1. Click **Add smart rule** in the top menu bar.
2. Select a smart rule template from the list. Note that this list might differ based on your installation.
3. In the resulting dialog box, use the toggle to select if the rule will be enabled or disabled, see [To enable/disable a smart rule](#) for details.
4. Next, configure the rule parameters. The parameters differ from rule to rule, for details see the individual rule descriptions in [Smart rules collection](#).
5. Click **Create** to create the smart rule.

INFO

When you create a smart rule in the **Global smart rules** page, it will be active for all assets by default, unless you select target asset(s) in step 4 of the dialog box, see also [To enable/disable a smart rule](#).


Smart rules can be instantiated multiple times.

TO EDIT A SMART RULE


Click the menu icon  at the right of an entry and then click **Edit**.

For details on the fields see [To create a smart rule](#).

TO DUPLICATE A SMART RULE

1. Click the menu icon  at the right of an entry and then click **Duplicate**.
2. Modify at least the name.
3. Click **Save & close** to save the smart rule and return to the smart rule list.

TO DELETE A SMART RULE

Click the menu icon  at the right of an entry and then click **Delete**.

TO ENABLE/DISABLE A SMART RULE

If a smart rule is set to **Enabled** in the edit dialog (accessible from the **Global smart rules** page and the **Smart rules** tab of a particular device/group), it is globally “turned on” (that means, its underlying module gets deployed) so that the rule is available for devices and groups.

If it is set to **Disabled** it is “turned off” (that means, its underlying module is not deployed).

In addition to globally enabling/disabling a smart rule, a smart rule can be in **active** or **inactive** state for particular objects (groups or devices). If **active**, the rule will process events for these groups and devices.

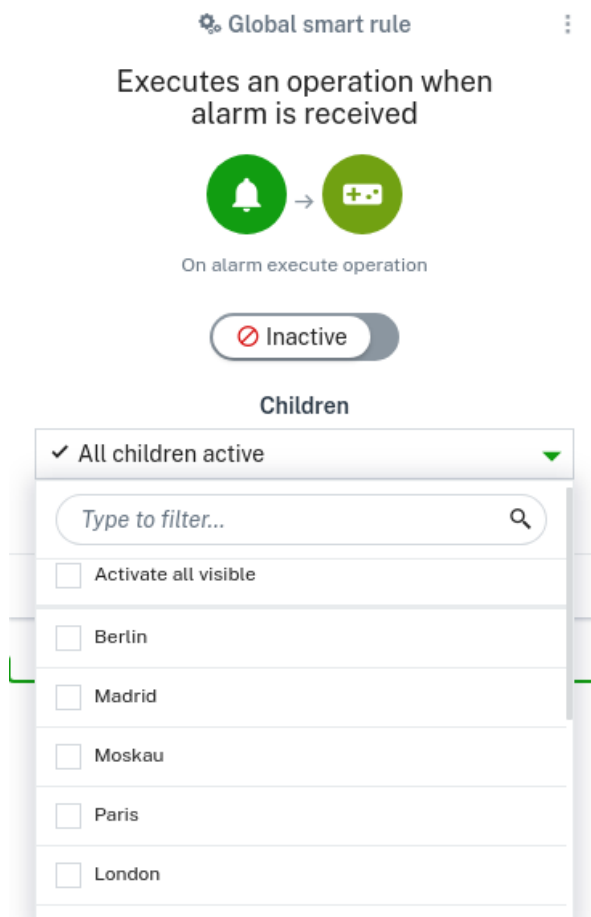
INFO

On creating a smart rule in the **Global smart rules** page, it will be active by default for all assets, unless you explicitly select target asset(s). If specific target assets are selected, it will be deactivated for all other assets. A local smart rule created in the **Smart rules** tab of a particular group or device is automatically activated for the respective target asset (and its direct children).

To explicitly activate or deactivate a rule, navigate to the **Smart rules** tab of the particular group or device and set the **Active/Inactive** toggle to **Active** or **Inactive** respectively.

An example use case for deactivating a smart rule for a single object could be that a particular device is generating too many threshold alarms. The rule can be deactivated for this device only, but still be active for all other objects.

In case of a group, you activate/deactivate the smart rule with the toggle for the group alone. You can then separately activate/deactivate the rule for the group's children via the dropdown box below the toggle.




! IMPORTANT

A rule which is activated for a particular object only works if the rule is also globally enabled.

EXAMPLE: DEFINING EXPLICIT THRESHOLDS

To define a threshold rule follow these steps:

1. In the navigator, select the desired group or device to apply a threshold to.
2. Switch to the **Data explorer** tab.
3. If the data point that should raise the threshold is not visible by default, select **Add data point** and [add a data point](#).
4. Click the menu icon  at the end of the row of the respective data point and select **Create smart rule**.
5. Select the smart rule "On measurement explicit threshold create alarm".
6. Fill in the red range minimum and red range maximum value. When the measurement value enters or leaves the RED range, an alarm is created or respectively cleared. For details, see the description of the rule "On measurement explicit threshold create alarm" in the [Smart rules collection](#).
7. Under **Create Alarm** you can optionally edit the alarm type and the alarm text.
8. Under **Target assets or devices** you can select the object this rule will be applied to.
9. Click **Create** to create the smart rule.

The rule will automatically be set to active and alarms appear if they arise.

CHAIN RULE EXECUTION

Smart rules can create a new data item on the platform. For example, the threshold rule creates new alarms. This new data can be handled further by selected smart rules, for example, by an "On alarm send e-mail" rule.

Using this mechanism, it is possible to create a chain of smart rules.

INFO

If you create a rule chain keep in mind how much data will be created and avoid overload or excessive amount of data.

 > Cockpit > Smart rules

SMART RULES COLLECTION

Cumulocity includes preset global smart rule types. Each global smart rule type provides different parameters to configure.

INFO

In certain rule parameters, various trigger fields can be used as variables, see [Smart rule variables](#).

RELATED TOPICS

- [Device management & connectivity > Monitoring and controlling devices > Working with alarms](#) for details on alarms in Cumulocity.
- [Analytics > Streaming analytics > Troubleshooting and diagnostics > Alarms generated by the Apama-ctrl microservice](#) for more information on alarms for smart rules generated by the Apama-ctrl microservice.
- [Alarms](#) in the Cumulocity OpenAPI Specification for details on managing alarms via REST.

ON ALARM SEND SMS

Functionality

If an alarm is created, an SMS is sent.

REQUIREMENTS

This smart rule is only available if:

- Your tenant has configured an SMS provider.
- Your user has a READ permission for the permission type "Option management".

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On alarm matching	The types of alarms triggering the rule. For each newly created alarm with one of these types in the list the rule is triggered.

- | | | |
|---|-------------------------|---|
| 3 | Send SMS | <p>Phone number: Target phone number. It is recommended to include mobile country code for all numbers, for example, "+49" or "0049" for Germany. Multiple numbers can be separated by a comma (",", do not use a space!).</p> <p>Message: Text of SMS with max. 160 characters. You can use variables of the form #{name}, see Smart rule variables.</p> |
| 4 | Target asset or devices | <p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p> |

You can select a single group or a single device (just one, not multiple). To enable it in other assets or devices you must navigate to each context and enable it there. Afterwards you're able to see all target assets or devices in a list with the title "Active for target asset or devices" in the smart rule detail

Troubleshooting

- Ensure that a new alarm was created. Notifications are only sent for newly created alarms, not for updates to existing active alarms of the same type. If an alarm of the same type is already active for the device, no additional notification will be triggered.
- Check if the device is in [maintenance mode](#). In this case no new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.

! IMPORTANT

There is a limit of 160 characters as a total count. If you use variables and after applying the variables the text counts more than 160 characters the SMS will not be sent.

ON ALARM SEND EMAIL

Functionality

If an alarm is created, an email is sent.

i INFO

Note that the corresponding emails are send with "text/html" as content type.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On alarm matching	The types of alarms triggering the rule. For each newly created alarm with one of these types in the list the rule is triggered.

- | | | |
|---|-------------------------|---|
| 3 | Send email | <p>Send to:/Send CC to:/Send BCC to: Email addresses for sending the email to. Multiple addresses can be separated by a comma (",", do not use a space!).</p> <p>Reply to: Address to be used to reply to the message.</p> <p>Subject: Subject of email. You can use a variable of the form #{name}, see Smart rule variables.</p> <p>Message: Text of the email. You can use a variable of the form #{name}, see Smart rule variables.</p> |
| 4 | Target asset or devices | <p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p> |

- Ensure that a new alarm was created. Notifications are only sent for newly created alarms, not for updates to existing active alarms of the same type. If an alarm of the same type is already active for the device, no additional notification will be triggered.
- Check if the device is in [maintenance mode](#). In this case no new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.
- Check your spam folder.

ON ALARM ESCALATE IT

Functionality

If an alarm is created, sends email or SMS.

✔ REQUIREMENTS

This smart rule is only available if:

- Your tenant has configured an SMS provider.
- Your user has a READ permission for the permission type "Option management".

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On alarm matching	The types of alarms triggering the rule. For each newly created alarm with one of these types in the list the rule is triggered.

- 3 Escalate as follows Escalation steps processed in a chain.
Click **Add step** to define at least one step:
Type: Type of action executed in the step. Possible values are:
- Email (see "On alarm send email" rule for parameter descriptions).
- SMS (see "On alarm send SMS" rule for parameter descriptions).
Condition: The condition applied when the rule will be executed. Possible values are:
- Always: Action will always be executed.
- Always: If step N failed. Only phone steps may fail. The step is marked as failed once all retries have been made without a successful call. This option only appears if there already is a phone step configured that can be referred to.
- 4 Target asset or devices Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".
If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".
For details on enabling/disabling a smart rule, see [To enable/disable a smart rule](#) for a group or device.

Troubleshooting

- Ensure that a new alarm was created. Notifications are only sent for newly created alarms, not for updates to existing active alarms of the same type. If an alarm of the same type is already active for the device, no additional notification will be triggered.
- Check if the device is in [maintenance mode](#). In this case no new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.

ON ALARM DURATION INCREASE SEVERITY

Functionality

If an alarm is active for a certain time, the severity is increased.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On alarm matching	The types of alarms triggering the rule. For each newly created alarm with one of these types in the list the rule is triggered.
3	Increase alarm severity	Duration, an alarm must be active, before increasing the severity.
4	Target asset or devices	Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices". If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices". For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.

Description

When a configured type of alarm is raised, it starts monitoring how long the alarm stays active.

If the alarm is still active after the specified duration, the severity will be increased one level, for example, from MINOR to MAJOR.

If the alarm has reached CRITICAL, it will stop monitoring because there is no further action possible.

INFO

The rule checks once a minute if the configured duration has been exceeded. Therefore it might happen that the alarm severity won't change in the second it exceeds the duration but only after the following check.

ON GEOFENCE CREATE ALARM

Functionality

If a geofence border is crossed, an alarm is created.

The rule can be configured for entering or leaving the geofence, or both. Existing alarms are cleared when the opposite condition is true again, for example, if a tracked car which has left the geofence area is re-entering the geofence area.

Parameters

The rule uses the following parameters:

|

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On geofence violation	Polygon that defines the borders of an area. Click Edit geofence and set the area. Double-click to add points and click and drag them to adjust.
3	Create alarm	<p>Trigger: Reason for triggering the alarm: "On entering", "On leaving" (the default), "On entering and leaving".</p> <p>Type: Type of alarm being raised. It is strongly recommended to use different types of alarms for each smart rule. If the same alarm type is used across multiple smart rules, smart rules may interfere when trying to update the same alarm type, which might lead to unexpected behavior.</p> <p>Severity: Severity of alarm being raised.</p> <p>Text: Alarm message.</p>
4	Target asset or devices	<p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p>

INFO

In order to raise an alarm the device had to be inside the geofence at least once after creating the rule.

Troubleshooting

- Make sure the device was inside the geofence at least once after creating/activating the rule.

- Check if the device is in [maintenance mode](#). No new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.

ON GEOFENCE SEND EMAIL

Functionality

If a geofence border is crossed by leaving the geofence area, an email is sent.

INFO

Note that the corresponding emails are send with "text/html" as content type.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On geofence violation	Polygon that defines the borders of an area. Click Edit geofence and set the area. Double-click to add points and click and drag them to adjust.
3	Send email	<p>Send to:/Send CC to:/Send BCC to: Email addresses for sending the email to. Multiple addresses can be separated by a comma (" , ", do not use a space!).</p> <p>Reply to: Address to be used to reply to the message.</p> <p>Subject: Subject of email. You can use a variable of the form #{name}, see Smart rule variables.</p> <p>Message: Text of the email. You can use a variable of the form #{name}, see Smart rule variables.</p>
4	Target asset or devices	<p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p>

INFO

In order to perform the rule the device had to be inside the geofence at least once after creating the rule. An email is triggered on leaving the geofence area.

Troubleshooting

- Make sure the device was inside the geofence at least once after creating/activating the rule.
- Check your spam folder.

CALCULATE ENERGY CONSUMPTION

Functionality

Creates consumption data point based on data from an electric, gas, or water meter.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	Monitored measurement	<p>Fragment/Series: Name of the measurement fragment and series. The incoming measurement must have exactly the same fragment/series name as configured. When creating a rule from the data explorer, these fields are already filled in.</p> <p>Time interval: Interval in which consumption values shall be calculated. Specifies how often per hour the consumption is calculated.</p>
3	Energy consumption measurement	Name of the measurement fragment and series that shall be generated.
4	Target asset or devices	<p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p>

The unit of the consumption measurement is always per hour (that means, if the measurements are in "kg" the consumption will be in "kg/h").

The rule takes the last two measurements for a specified time, calculates the difference in value and time and then calculates the consumption per hour.

Example

The rule is configured to calculate every 20 minutes. The following measurements are coming in: 100 kg at 11:59 and 200 kg at 12:14. At 12:20 the rule is triggered, taking the last two measurements. It calculates value and time difference. The consumption measurement created at 12:20 will therefore be 400 kg/h. If no new measurement was created in the last period a measurement with consumption 0 will be created.

ON MISSING MEASUREMENTS CREATE ALARM**Functionality**

If no new measurement data has been received for a specified time, an alarm is created.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	Monitored measurement	<p>Type: Type of measurement. The incoming measurement must have the same type as configured. When creating a rule from the data explorer, the type is already filled in.</p> <p>Time interval: Interval for calculating consumption values.</p>

- | | | |
|---|-------------------------|---|
| 3 | Create alarm | <p>Type: Type of alarm being raised. It is strongly recommended to use different types of alarms for each smart rule. If the same alarm type is used across multiple smart rules, smart rules may interfere when trying to update the same alarm type, which might lead to unexpected behavior.</p> <p>Severity: Severity of alarm being raised.</p> <p>Text: Alarm message.</p> |
| 4 | Target asset or devices | <p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p> |

INFO

The rule checks once a minute if the configured time interval was exceeded. Therefore it can take up to one minute to create the alarm after the time interval was exceeded. To check if the time interval was exceeded there must be at least one incoming measurement after the activation of the rule.

ON ALARM EXECUTE OPERATION

Functionality

If a certain alarm occurs, the specified operation is sent back to the device that raised the alarm.

INFO

Any alternative target device specified in the operation is ignored.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On alarm matching	The types of alarms triggering the rule. For each newly created alarm with one of these types in the list the rule is triggered.
3	Execute operation	The operation that will be sent. The operation is provided as JSON description. Some standard operations can be selected below the Operation field. To use a standard operation, select one, and press the arrow button at the right. This will insert the JSON of the selected operation.
4	Target asset or devices	<p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p>

ON MEASUREMENT THRESHOLD CREATE ALARM

Functionality

If the measurement value enters or leaves the red/yellow range, an alarm is created or respectively cleared.

The severity of alarm is determined as follows:

- If the measurement value moves into the red range, then an alarm of CRITICAL severity is created. If it moves out of the red range, the CRITICAL alarm is cleared.
- If the measurement value moves into the yellow range, then an alarm of MINOR severity is created. If it moves out of the yellow range, the MINOR alarm is cleared.

The rule uses the following parameters from the device object or data point library:

- Data point library red/yellow range: Red range when the system should create CRITICAL alarms and yellow range when the system should create MINOR alarms. Note that the data point should have at least one of red or yellow range configured.
- Object red range: Range when the system should create CRITICAL alarms. These values can be edited in the data explorer for each data point. Note that these are close intervals ([red min: red max]) that contain the lowest accepted value and the highest accepted value, see also examples below.
- Object yellow range: Range when the system should create MINOR alarms. These values can be edited in the data explorer for each data point. Note that these are half-open intervals ([yellow min : yellow max)) that contain the lowest accepted value but not the highest accepted value, see also examples below.

Examples

Example 1 - Red range:

If we set the red range to "[60;90]"

- red min: 60
- red max: 90

and the measured value is between 60 - 90 (including the values 60 and 90) as a result a CRITICAL alarm (red) will be created.

Example 2 - Yellow range:

If we set the yellow range to "[30;50)"

- yellow min: 30
- yellow max: 50

and the measured value is between 30 - 49 as a result a MINOR alarm (yellow) will be created. The value 50 is out of the yellow range.

Example 3 - Red and yellow range:

As a result of the above behavior, we can set configurations like the following:

- red min: 60
- red max: 90
- yellow min: 30
- yellow max: 60

If the measured value is 60, then as a result a CRITICAL alarm (red) will be created because red includes the value 60.

Example 4 - Overlap:

The red range and the yellow range can overlap. A value in this overlap range is treated as being in the yellow range.

If we set the yellow range to "[30;60)" and the red range to "[50;90]":

- red min: 50
- red max: 90
- yellow min: 30
- yellow max: 60

and the measured value is 55, a MINOR alarm (yellow) will be created.

Using these mechanisms, you can configure global threshold ranges in the data point library. These global values can then be overridden

for specific objects on a case-by-case basis.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On threshold	<p>Fragment/Series: Name of the measurement fragment and series. The incoming measurement must have exactly the same fragment name as configured. When creating a rule from the data explorer, these fields are already filled in.</p> <p>Data point library entry: Name of the entry in the data point library. This is used to find the default values for red and yellow ranges in case they are not configured for an individual object. Note that the unit which is set in the data point is not taken into account here.</p>
3	Create alarm	<p>Type: Type of alarm being raised. It is strongly recommended to use different types of alarms for each smart rule. If the same alarm type is used across multiple smart rules, smart rules may interfere when trying to update the same alarm type, which might lead to unexpected behavior.</p> <p>Text: Alarm message.</p>
4	Target asset or devices	<p>Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".</p> <p>If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".</p> <p>For details on enabling/disabling a smart rule, see To enable/disable a smart rule for a group or device.</p>

Description

For each incoming measurement value, the rule performs the following steps:

- Check if the smart rule has a valid data point. If not, an alarm with MAJOR severity is sent from the rule engine (CEP) informing that the rule has an invalid configuration.
- Check if the rule is activated for the source object.
- Check if the measurement includes data for the fragment and series (configured data point's parameter).
- The data of the red and yellow range is collected from either:
 - The data point library (control parameter).
 - The source object (the measurement). If found, ranges from the source object's data point override are merged.

If no red/yellow ranges are defined in the merged parameters, no alarms are generated.

INFO

Range values defined in the source object have a higher priority than those defined in the data point library. You can also just overwrite a single value (for example yellow range max) by setting it in the source object. The other values will then be taken from the Data Point Library.

- Incoming value inside the red range: If there is no active alarm of CRITICAL severity of given type for the object, create a CRITICAL alarm, else do nothing.
- Incoming value inside the yellow range: If there is no active alarm of MINOR severity of given type for the object, create a MINOR alarm, else do nothing.
- Measurement outside of yellow and red range: If there is an active alarm of given type for the object, clear the CRITICAL and/or MINOR alarm.

Troubleshooting

- Ensure that a new alarm was created. Notifications are only sent for newly created alarms, not for updates to existing active alarms of the same type. If an alarm of the same type is already active for the device, no additional notification will be triggered.
- Check if the device is in [maintenance mode](#). In this case no new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.
- Check if an alarm was already cleared by the next scheduled measurements with resulting value in a green range.

INFO

- If you clear an alarm, you state that the alarm is resolved. A new alarm is not raised unless the device changes its state and exceeds the thresholds again.
- Under certain circumstances, that means, if the time gap between measurements is quite large, this smart rule may raise a wrong alarm severity. If, for example, the CEP/Apama pod is restarted, the internal state is lost and therefore an alarm is raised again when it should not, resulting in a different alarm severity.

ON MEASUREMENT EXPLICIT THRESHOLD CREATE ALARM

Functionality

If the measurement value enters or leaves the red range, a CRITICAL alarm is generated or cleared.

The severity of alarm is determined as follows:

- If the measurement value moves into red range, then the severity is CRITICAL.
- If the measurement value moves into GREEN range, no alarm is created.

INFO

This rule is similar to the rule “On measurement threshold create alarm”. However, in this rule here the red threshold value is provided explicitly. The threshold rule “On measurement threshold create alarm” extracts the thresholds values from the device or data point library.

Parameters

The rule uses the following parameters:

Step	Field	Description
1	Rule name	Pre-filled with the name of the rule template. Can be modified according to your needs.
2	On thresh old	<p>Fragment/Series: Name of the measurement fragment and series. The incoming measurement must have exactly the same fragment name as configured. When creating a rule from the data explorer, these fields are already filled in.</p> <p>Minimum, Maximum: When a value is in the specified range [minimum; maximum], the configured alarm is raised.</p>
3	Create alarm	<p>Type: Type of alarm being raised. It is strongly recommended to use different types of alarms for each smart rule. If the same alarm type is used across multiple smart rules, smart rules may interfere when trying to update the same alarm type, which might lead to unexpected behavior.</p> <p>Text: Alarm message.</p>

- 4 Target Select a group or device the rule shall be applied to. To activate the smart rule in other assets or devices, navigate to the respective objects and enable the smart rule. The smart rules details will show a list "Active for target asset or devices".
- asset If you leave this field empty, the smart rule will be applied to every group and device. You can then deactivate the smart rule for specific assets or devices. In this case the smart rules details will show a list "Inactive for target asset or devices".
- or For details on enabling/disabling a smart rule, see [To enable/disable a smart rule](#) for a group or device.
- device
- s

Troubleshooting

- Ensure that a new alarm was created. Notifications are only sent for newly created alarms, not for updates to existing active alarms of the same type. If an alarm of the same type is already active for the device, no additional notification will be triggered.
- Check if the device is in [maintenance mode](#). In this case no new alarm will be created because of suppression policy.
- If you have configured an alarm mapping rule (see [Alarm mapping](#)) which changes the alarm severity, the alarm may have different severity than expected.
- Check if an alarm was already cleared by the next scheduled measurements with resulting value in a green range.

INFO

- If you clear an alarm, you state that the alarm is resolved. A new alarm is not raised unless the device changes its state and exceeds the thresholds again.
- Under certain circumstances, that means, if the time gap between measurements is quite large, this smart rule may raise a wrong alarm severity. If, for example, the CEP/Apama pod is restarted, the internal state is lost and therefore an alarm is raised again when it should not, resulting in a different alarm severity.

SMART RULE VARIABLES

In certain rule parameters, various trigger fields can be used as variables. When a rule is triggered, the variables are replaced by the actual values of these trigger fields.

You can use this mechanism for example to insert device names or alarm text into various outputs (email, SMS).

Common fields to be used from all triggers (alarms, measurements, operations, events)

Variable	Content
<code>#{id}</code>	Identifier of the trigger.
<code>#{type}</code>	Type of the trigger.
<code>#{source}</code>	Identifier of the source of the trigger.
<code>#{time}</code>	Timestamp of the trigger.
<code>#{text}</code>	Text or message of the trigger.

INFO

If using Apama for smart rules (shown by a subscription to Apama-ctrl in **Applications > Subscribed Applications** in the Administration application), variables for times can include a time zone and time format to display the time in. The variable `#{time:TZ=America/New_York,FORMAT="HH:mm:ssZ"}` for example displays the time using the time zone for New York in the format HH:mm:ssZ. See also [Supported time zones](#) and [Format specification for the TimeFormat functions](#) in the Apama documentation.

Fields specific for alarms

Variable	Content
<code>#{status}</code>	Status of the alarm: ACTIVE, ACKNOWLEDGED or CLEARED.
<code>#{severity}</code>	Severity of the alarm: CRITICAL, MAJOR, MINOR or WARNING.
<code>#{count}</code>	Number of times the alarm has been sent. Repeating alarms for the same device and same alarm type are de-duplicated into one alarm.

Fields specific for operations

Variable	Content
<code>#{status}</code>	Status of the operation: SUCCESSFUL, FAILED, EXECUTING or PENDING.

Fields specific for measurements

Variable	Content
<code>#{valueFragment}</code>	Measurement value fragment name.
<code>#{valueSeries}</code>	Measurement series fragment name.
<code>#{value}</code>	Value from the sensor.
<code>#{unit}</code>	Unit being used, for example "mm", "lux".

Moreover, the following pattern is supported:

Variable	Content
<code>#{X.Y}</code> or <code>#{X.Y.Z}</code>	The property field information available in extra params or nested structure params of the trigger.

Example**Cumulocity trigger**

```
{
  "source":{
    "id":"10200"
  },
  "type":"TestEvent",
  "text":"sensor was triggered",
  "time":"2014-03-03T12:03:27.845Z",
  "c8y_Position":{
    "lat":2,
    "lng":2
  },
  "c8y_evtdata":{
    "data1":111,
    "date2":222,
    "evtInnerData":{
      "indate1":333,
      "indate2":444
    }
  }
}
```

Here we can for example define the following variables:

Variable	Content
<code>#{ c8y_Position.lat}</code>	Gets latitude value.
<code>#{ c8y_evtdata.data1}</code>	Gets data1 value.
<code>{ c8y_evtdata. evtInnerData . indate1}</code>	Gets nested structure value.
<code>#{source.X.Y}</code>	The property field information from the source device (ManagedObject) of the trigger. For example: <code>#{source.c8y_Hardware.serialNumber}</code> > Serial number of the device. <code>#{source.c8y_Notes}</code> > Note field of the device.

❗ IMPORTANT

In case the variable does not exist or is misspelled, no substitution will occur.

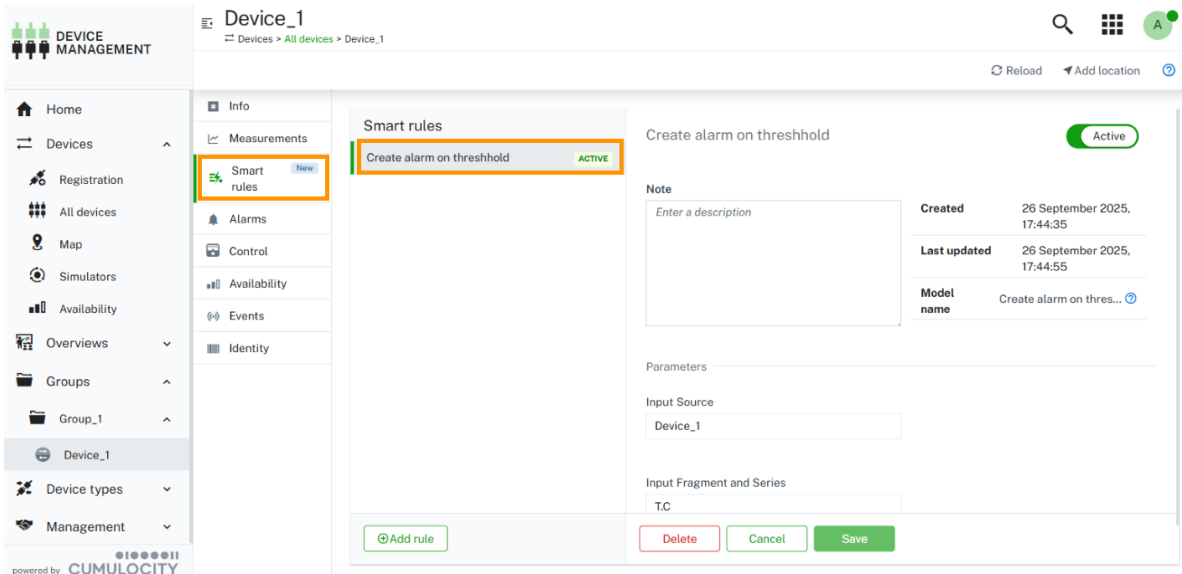
SMART RULES (NEW) PLUGIN

FEATURE PREVIEW

This feature is in Public Preview and may be subject to change in the future.

While traditional smart rules provide a fixed set of predefined templates for common scenarios, the new generation of smart rules removes these limitations by enabling you to create fully customized rules tailored to your specific requirements using the capabilities of Analytics Builder in Streaming Analytics. This allows you to create and manage rule instances directly from asset, group, and device contexts within applications such as Cockpit, Device Management, and Digital Twin Manager.

The **Smart rules (NEW)** tab allows to create and manage the Analytics Builder model instances directly from the context of a device or group.



The screenshot shows the Cockpit interface for Device Management. The left sidebar contains a navigation menu with options: Home, Devices, Registration, All devices, Map, Simulators, Availability, Overviews, Groups, Group_1, Device_1, Device types, and Management. The main content area is titled 'Device_1' and shows a 'Smart rules' section. A 'Create alarm on threshold' button is highlighted with an orange border. Below it, a 'New' link is visible. The right panel displays the configuration for the 'Create alarm on threshold' rule. It includes a 'Note' field with the placeholder 'Enter a description'. Below the note, there is a table with two rows: 'Created' (26 September 2025, 17:44:35) and 'Last updated' (26 September 2025, 17:44:55). The 'Model name' is 'Create alarm on thres...'. At the bottom, there are four buttons: 'Add rule', 'Delete', 'Cancel', and 'Save'.

To create your first rule, refer to [Create your first rule](#).

For more details about smart rules (NEW), refer to [Smart rules plugin](#).

CONFIGURING COCKPIT APPLICATIONS

Cumulocity offers you to configure custom Cockpit applications according to your individual needs.

✓ REQUIREMENTS

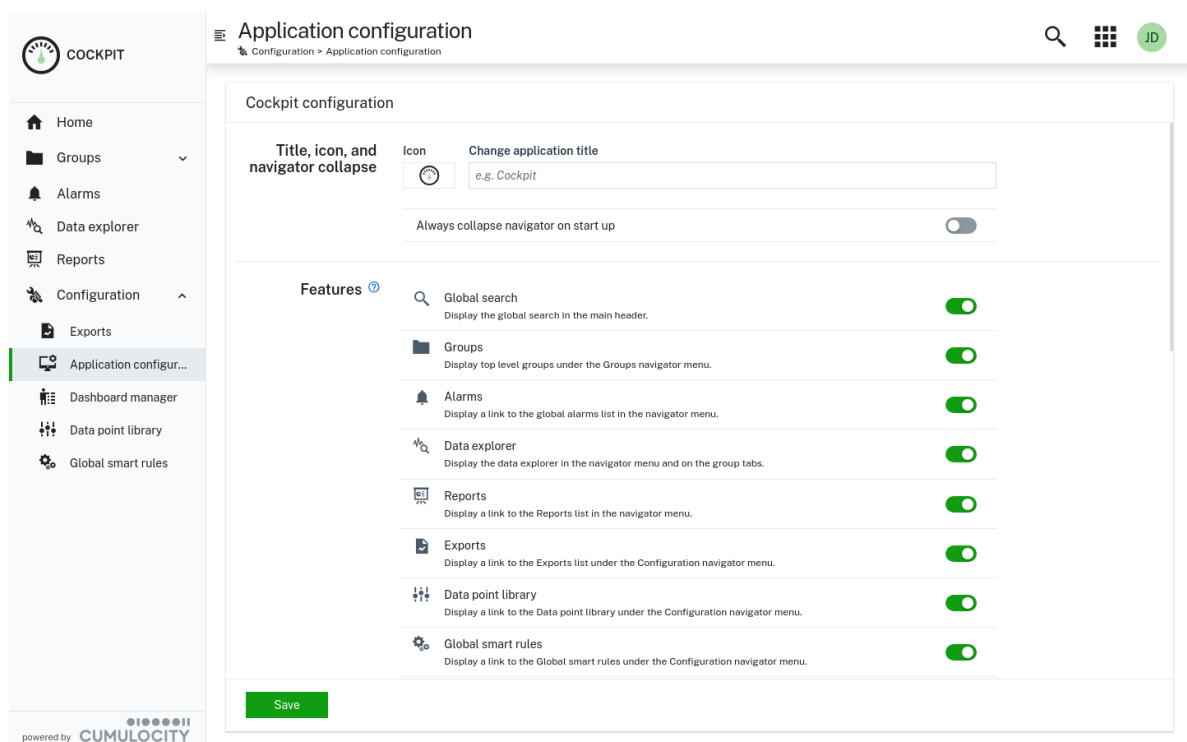
To use the Cockpit configuration functionality, the following requirements must be met:

- You must have ADMIN permission for the permission type "Application management".
- The Cockpit application can only be configured if it is owned by the tenant. That means that you first must create an own Cockpit application by duplicating the existing Cockpit application. For details, how to duplicate an application see [To duplicate an application](#).

If these requirements are met, an **Application configuration** entry is visible in the **Configuration** menu in the navigator of the custom Cockpit application.

TO CONFIGURE A CUSTOM COCKPIT APPLICATION

In the navigator, click **Application configuration** in the **Configuration** menu.



In the **Application configuration** page, you can customize your Cockpit application in various aspects.

Features

Under **Features** you can disable certain features like for example, the global search, alarms, or the data explorer.

By default, all features are enabled. Use the toggle next to a feature to disable it. The respective menu item in the navigator (or the respective button as in case of the global search button) will immediately be removed and the functionality will no longer be available, until enabled again.

Top level nodes

Under **Top level nodes** you can select which groups to display on top level in the navigator. By default, only the **Groups** entry is shown (if not disabled in the **Features** section).

Application configuration

Configuration > Application configuration



Cockpit configuration

Top level nodes ?

Current top level nodes

Turbines (europe)

☐ Hide devi...



Select top level nodes

Asset selection

SELECTED Turbines (europe)

☒ Turbines (europe)

☐ Offshore

☐ Turbines (asia)

☐ Turbines (africa)

☐ Turbines (australia)

☐ Turbines (america)

Home dashboard ?



Default home dashboard

Changes done in the home dashboard are reflected across the platform.

On the right, select the root groups or subgroups to be displayed as top level nodes in the navigator. Once selected, the group will be added to the custom top level nodes list. Moreover, you can further configure the nodes by enabling/disabling the display of devices for a certain group. If disabled, all devices for this group will be hidden, that is, not shown in the navigator.

Home dashboard

In the **Home dashboard** section, you can select how the home dashboard, that is, the landing page for this application, is treated.

You can select one of the following options for the customization of the home dashboard:

- It is reflected throughout the entire tenant (the default).
- It is only reflected in the current custom application.
- It is only reflected in the current user. Note that this user then needs CREATE permission for the permission type "Inventory".

INFO

The initial home dashboard shows a number of pre-installed widgets. These widgets can be changed according to your needs.

Click **Reset dashboard** to undo any changes to your home dashboard. This reverts all changes to the dashboard and returns it to the initial state.

Title, icon and navigator collapse

Under the **Title, icon and navigator collapse** section you can modify the application title and icon, and you can specify if the navigator should be hidden on start up. By default, the navigator is displayed on start up.

