

## User Guide

# Active Dashboard 2

Interactive Performance Insight





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MODDE®	Design of Experiments Solution
SIMCA®	Multivariate Data Analysis Solution
OPLS®	Method for improved regression analysis
O2PLS®	Method for data integration
OPLS-DA®	Method for group separation
PLS-TREE®	Top down clustering
S-PLOT®	Highlighting discriminatory variables
EZinfo®	Embedded Waters solution
VALUE FROM DATA®	We are value providers

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## SARTORIUS

Sartorius Stedim Data Analytics AB  
Östra Strandgatan 24  
SE-903 33 Umeå  
Sweden  
**Phone:** +46 (0)90 18 48 00  
**Email:** [umetrics@sartorius.com](mailto:umetrics@sartorius.com)



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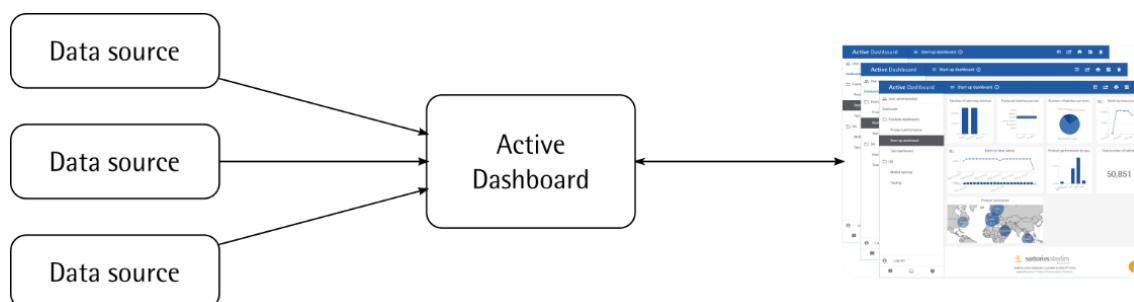
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# 1 Active Dashboard overview

This user guide for Active Dashboard is about how you use the web browser client to work with dashboards. To learn how to install and configure the Active Dashboard server, see the **Installation Guide**.

The following short summary outlines the functionality of Active Dashboard, and how it interacts with data sources (such as SIMCA-online):



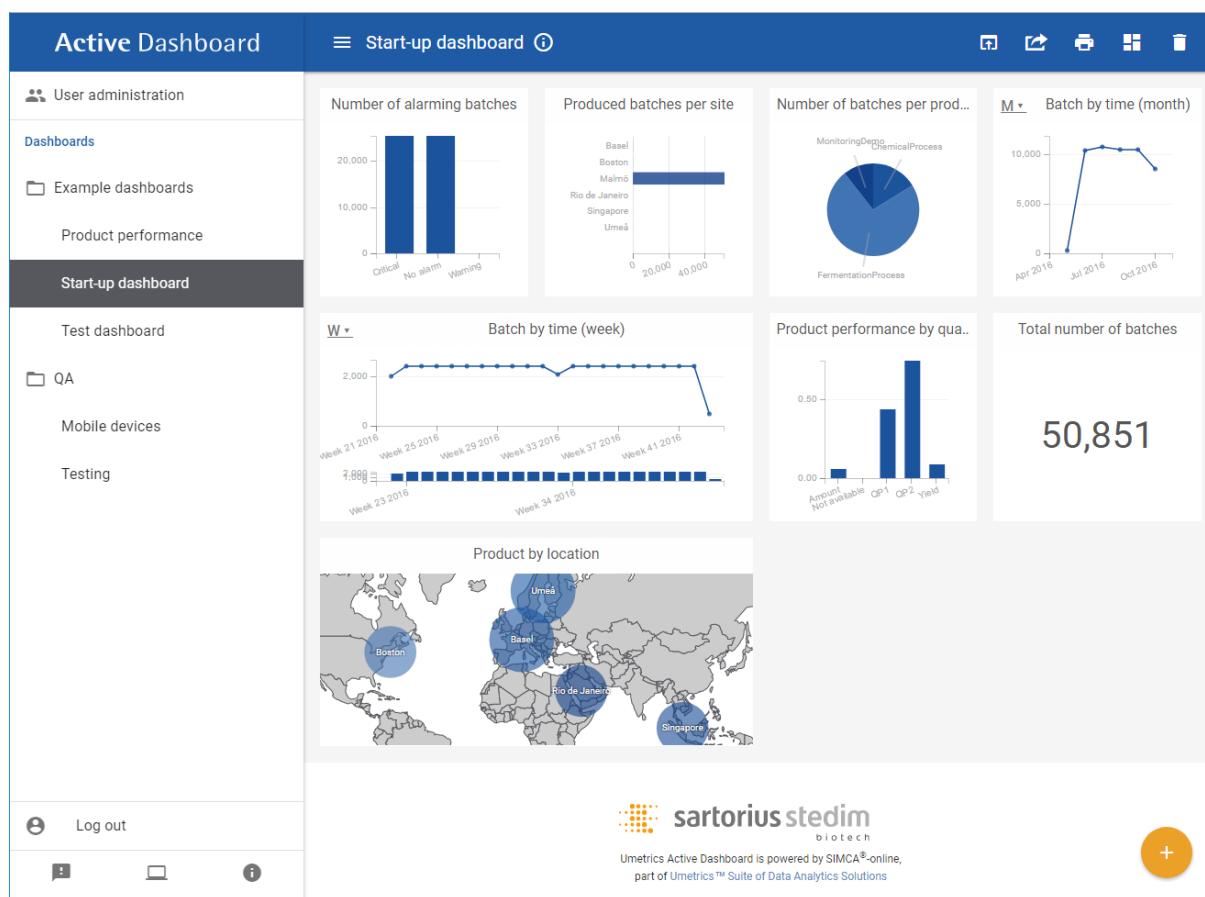
- The Active Dashboard server connects to data sources to obtain and analyze data. This connection is one-way; data is never written back from Active Dashboard to a data source.
- Web browsers on PCs and mobile devices connect to the server to view and interact with dashboards that visualize the data.
- The data in a dashboard is controlled by settings on the dashboard that define the dashboard time span and which products and locations to include.
- A dashboard contains widgets. A widget visualizes one or two data attributes of the batches. The visualization can be a numerical indicator or a bar, pie, or line chart, etc.
- Editors create customized dashboards for the users to enable them to analyze data.
- Users interact with the charts to filter the data in the dashboard to narrow down what they see and gain insights about their production across all monitored data sources.

## 1.1 Active Dashboard in the browser

Users of Active Dashboard use their web browser to interact with dashboards. For a list of supported browsers, see the knowledge base article [umetrics.com/kb/active-dashboard-2](https://umetrics.com/kb/active-dashboard-2).

In the browser, the user navigates to the Active Dashboard server address and is presented with a login screen. Ask your administrator for the server address and credentials. This is what the main dashboard interface looks like:





The left pane shows the available dashboards, highlighting the open dashboard, and has buttons at the bottom for logging out, giving feedback, etc.

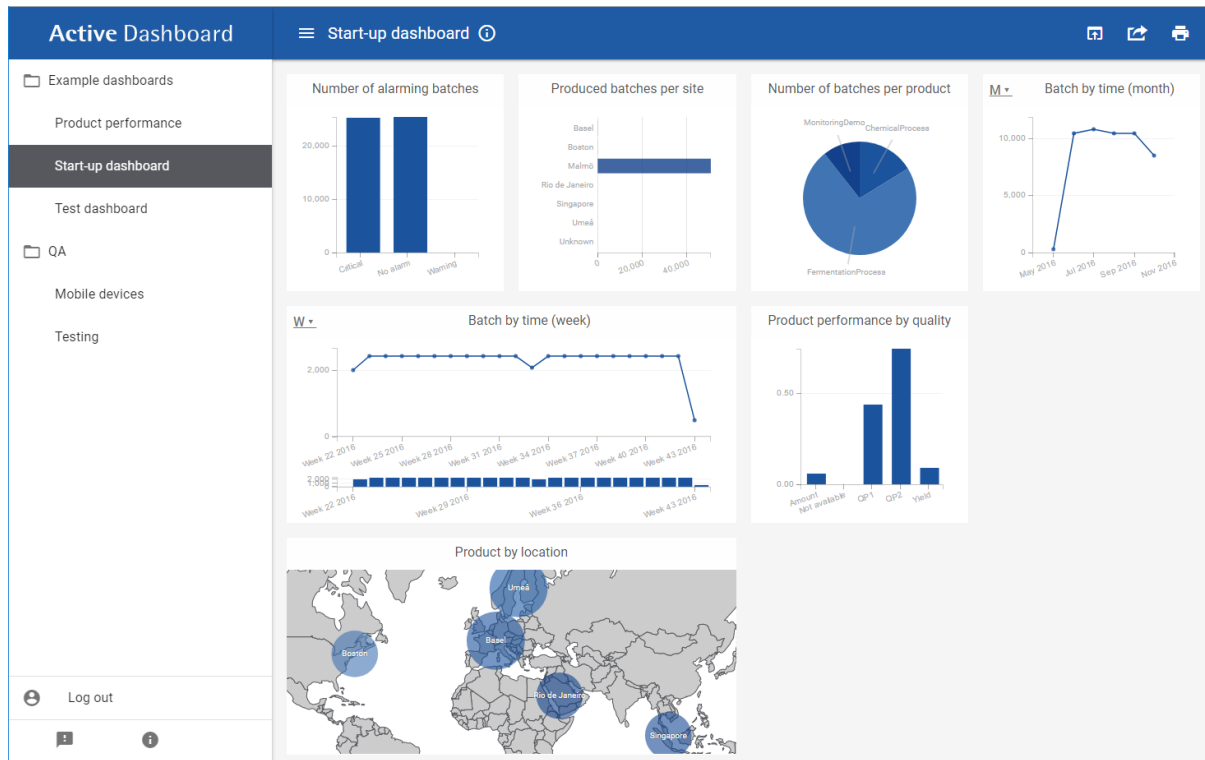
The toolbar at the top contains

- the **Menu** button for hiding or showing the left pane.
- the dashboard title; and
- buttons for interacting with the dashboard, such as resetting widget filters, editing widgets, or deleting the dashboard.

**Note:** the above screenshot is when an administrator is logged in. A regular user cannot access the **User administration** button and only has access to some dashboards folders and only some of the actions in the toolbar. See image below in section 1.2 for how Active Dashboard looks to a normal user.



## 1.2 Using Active Dashboard – a walkthrough



This walkthrough shows how to use Active Dashboard to view a dashboard and to work with it by using the widget filters. This can be tested directly with an internet connection, and a supported browser. The server in this case is [demo.umetrics.com](http://demo.umetrics.com), and the user is **test**, and the password is **test**:

1. In a web browser, navigate to the server address. Log in as the user **Test** with its password (ask your Active Dashboard administrator for this password) or with your Windows username and password if your administrator has configured this.
2. The first dashboard is automatically opened, showing its widgets.

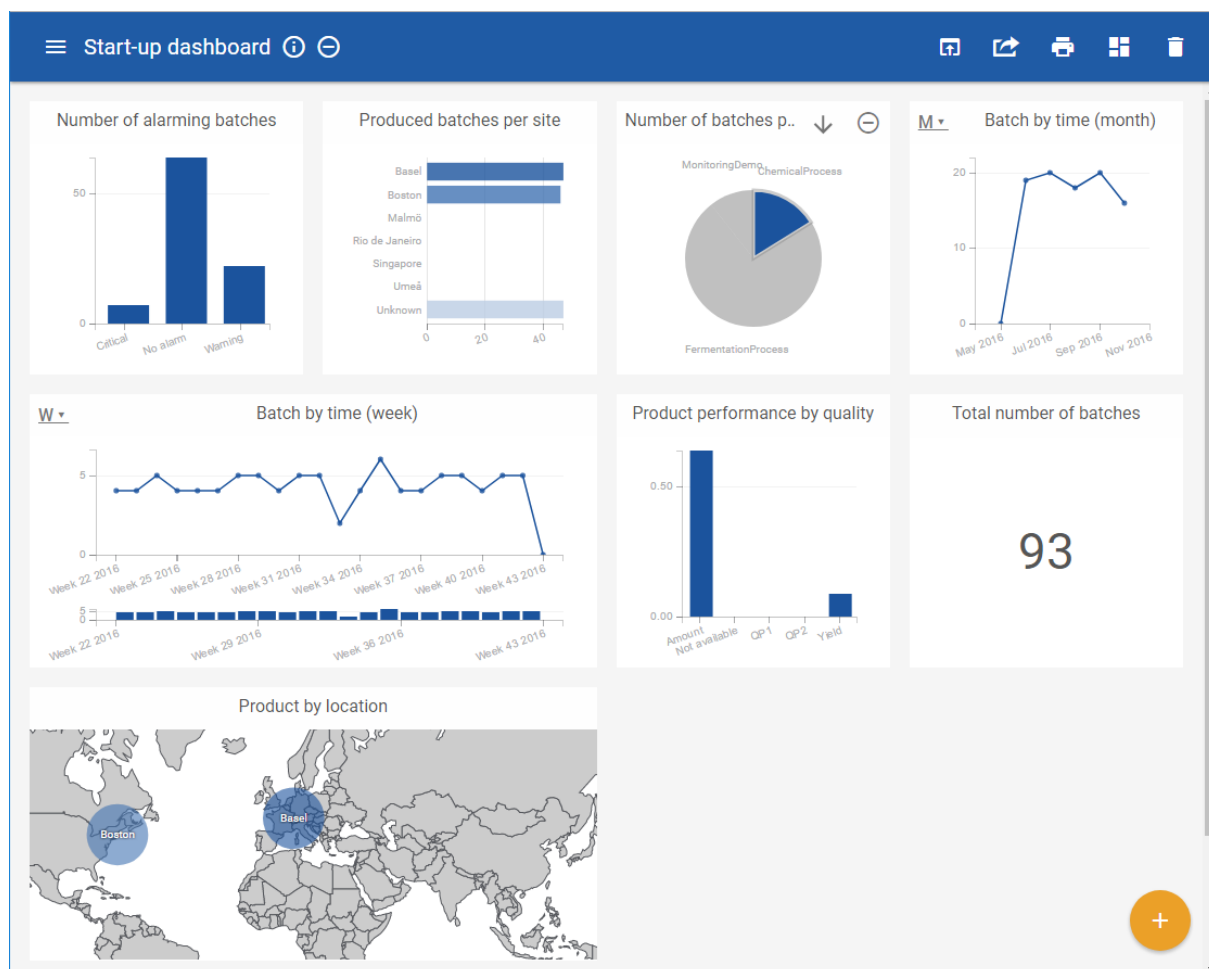
**Tip:** If you want to show or hide the left pane displayed in the above screenshot, click the Menu button in the toolbar.

3. In widgets that show time on the **x**-axis, you can switch which time dimension to use by pressing the icon in the top left corner of the widget. The letter in the icon represents the current time dimension (year, quarter, month, etc.). The changes you make are not saved in the dashboard and will be reset when switching to a different dashboard. For example, in the image above the widget named **Batch by time (week)** has the letter **W** for weeks in the top left corner click it to change time dimension.
4. Try some widget filtering in the dashboard to drill down in the data to focus on subsets of data:

In the top left widget “Number of alarming batches”, click the column “Critical”. Notice that the other columns in the same widget are dimmed and all other widgets are updated to show only data for which the alarm level is “Critical”. This is fast because this filtering occurs in the client without having to contact the server.

In the third widget, “Number of batches per product”, click the “Chemical” slice in the pie chart.

Now notice the **Reset filter** button in the header of the third widget, as well as the **Reset all filters** button in the toolbar. These buttons reset filtering for individual widgets, or if you click in the toolbar, for the entire dashboard.



- In the toolbar, you will also find the **View printable page** button, switching the dashboard into a print-friendly layout. Unnecessary buttons are hidden in this layout, the widgets are put in a long list, and the left pane is hidden when printing. It is still possible to filter and interact with the charts while in this layout. To exit the print friendly layout, click the **Exit printable page** in the toolbar or select another dashboard.


Notice that since you are logged in as a regular user, editor functionality, such as editing or deleting dashboards, is not available. This functionality is described in section 3.

**A note on smaller devices:** If you view Active Dashboard in a smaller device, such as a mobile phone, the dashboards will adapt to the smaller screen size by hiding the left pane and rearranging widgets. Also, administrative features are hidden on small devices where they would be difficult to use.

## 2 Viewing and interacting with dashboards

A dashboard has settings that control the time range of the dashboard, as well as filters for which products and locations to display. This section is about viewing dashboards, if you would like to learn how to edit dashboards, see section 3.

### 2.1 Load more data when it becomes available

A dashboard loads the data matching the dashboard filters when it is first loaded. If the dashboard is kept open and batches finish, the dashboard will learn about it and display the **Update dashboard**  button in the toolbar. Click this button to refresh the dashboard to include the new data.

#### 2.1.1 Data source status dialog

When viewing a dashboard, a warning dialog may be visible in the toolbar. Clicking it will open the **Data source status** dialog, show the status of each configured data source, indicating each one that currently have issues fetching data.

**Note:** A failing data source can be completely failing or be partly failing and thus still providing new data, etc. Data already fetched by Active Dashboard is of course still available in dashboards.



Type: pi  
 Url: <https://servumvm3>  
 Latest status: failed to query datasource

### 2.2 The startup page

When the Active Dashboard server is started for the first time, it can have much data to analyze from the data sources. If a web browser connects to the server during this time it will a progress bar until the server has finished processing data. The time it takes to setup can range from minutes to several hours depending on the size of the data.

### 2.3 Updated dashboards

When an editor has updated the settings for a dashboard this will be indicated for the user with a warning triangle button in the toolbar. Clicking this button will reload the dashboard with the new settings.

### 2.4 Widgets

Widgets can be resized and repositioned by the editor to create a desired layout. Notice that the full layout will be ignored for smaller devices where a single column of widgets will be displayed instead.

Widgets show data for one or two measures. The measures are the core data attributes that come from the data sources. To learn more about measures, see section 3.5.

Measures are visualized using bar, pie, or line charts or a single numeric indicator, etc.; see section 3.4

Since measures and their visualizations can be difficult to understand, it is a good practice to name each widget in a descriptive way. The default name just tells you the measures that are displayed, but the dashboard editor can easily change this.

### 2.5 Widget filtering and how it affects the data in the dashboard

Widget filtering occurs in the web browser. All data is still available in the browser, but data not matching the widget filter is hidden from *all other* widgets in the dashboard. This is a fast and easy way to interactively work with the data to learn new insights.

It is recommended to always create bar or pie chart widgets listing metadata like product types, assets, locations, etc., and then use these to filter so that the dashboard shows a subset of the available data. For example:

- By only clicking the asset “Dryer1” in a widget, you will see only data for that asset in all other widgets in the dashboard making them easy to interpret.
- If the dashboard shows the **Quality** or **Product performance** measures, which are difficult to interpret if there many different CQA variables, you can use one widget to narrow down on a specific product so that the data becomes relevant.

## 2.6 Drill down

All visualization types (widget types) supports drilling down to show more detailed data. For example, when you select a time range in the Range chart, the following things can happen:

- the **Drill down** button is enabled in the widget header, or,
- if you have selected a time range with no data in it, no buttons will be enabled.

Clicking the **Drill down** button will fetch a new dataset for the widget’s current filter and update all widgets with the new data. Each drill-down operation will reset all widget filters in the dashboard.

If you have filtered in multiple widgets in a dashboard, the **Multiple drill down** button in the toolbar will also be available. By clicking it, a new dataset constrained by all widget filters will be fetched and all widgets will be updated. This is a good way to exclude currently unimportant data.

You can drill down multiple times, in the same or in different widgets, and each press on the **Drill up** button will undo the latest drill-down operation for that widget. The **Drill up all the way** button in the dashboard toolbar will undo all drilldowns and reset the dashboard to its original state.

## 2.7 Dataset aggregation

To support large amounts of data, Active Dashboard can be configured to aggregate its incoming data beforehand, so that the dashboard can show and filter precomputed values per hour, day, month, etc. The advantage to the user is that the Active Dashboard client can remain responsive and fast over larger time spans as less data needs to be sent to and processed by the client.

If the system administrator has activated the functionality, everything works as usual with the difference that users may see aggregated values in dashboards. Depending on the number of batches matching the dashboard filter, the server will choose a suitable time resolution (hourly, daily, etc.) when the client fetches the dashboard dataset.

To see data with a higher time resolution (for example hourly summation instead of daily), use the **Drill down** feature described in section 2.6. (The **Drill down** ↓ and **Multiple drill down** buttons will indicate with a “plus” icon ↕ if the current widget filter(s) would yield a higher resolution.)

**Note:** a widget’s selected time measure will also affect how the data is presented; a line chart with **Day** selected on the x-axis will show daily summations even though the dataset is aggregated per hour. See section 3.6 for more details about this.

**Note:** aggregation is not supported with SIMCA-online

## 2.8 Open in SIMCA-online

To use this feature, you need to have SIMCA-online installed.

The **Open in SIMCA-online** feature, if available, makes it possible to analyze the information in a dashboard in more detail, by opening SIMCA-online with the relevant configuration(s).

**Note:** this feature must be enabled in the license and Active Dashboard must be configured with a SIMCA-online data source.

Clicking the **Open in SIMCA-online** button in the toolbar opens a dialog showing the SIMCA-online configurations that are relevant to what you currently see in the dashboard, taking drill-down and widget filters into account. Click on one of the configurations to launch SIMCA-online Client with it open, for detailed analysis.

**Tip:** You can use widget filtering to narrow down the data visible in the dashboard and hence reduce the number of configurations that will be seen in the **Open in SIMCA-online** dialog. For example, you can filter out batches with errors for a certain time span, and then open SIMCA-online to look into exactly what happened in your process.



## 2.9 Download full dataset

The Download full dataset feature, if available, makes it possible to analyze the batches shown in a dashboard in more detail, by exporting all raw data available in the data source and importing it in, for example, SIMCA.

**Note:** this feature must be enabled in the license and Active Dashboard must use the OSIsoft PI data source.

You can download the full dataset for the current dashboard with the **Download full dataset** button in the toolbar. It will also take drill-down and widget filters into account so that the downloaded dataset only includes relevant batches. The data source decides what tags, or columns, are included but at the very least, all data that is available in Active Dashboard will be included.

## 3 Creating dashboards and widgets

As an editor of a folder, you can create and edit dashboards. This section describes the editor user-interface.

Learn how to configure folders and specify who are editors in section 4.

### 3.1 Create a dashboard

This simple outline shows how to create a dashboard:

1. Click the **Create new dashboard** button in the bottom right corner of Active Dashboard.
2. The **Dashboard settings** page for the new dashboard is opened. Here you can specify the time range of the dashboard and optional filters for product type, location, etc. These settings are described in section 3.1.1. When done, click the **Apply** button.
3. The edit page for the dashboard will now be opened, where you can add widgets.

#### 3.1.1 Dashboard settings

Each dashboard has the following filter settings that control which batches are included in its dataset:

The screenshot shows the 'Dashboard settings' page for a dashboard named 'Start-up dashboard'. The page has a blue header with a hamburger menu icon and the text 'Start-up dashboard'. Below the header, the title 'Dashboard settings' is displayed. The settings are organized into sections: 'Name\*' and 'Folder' (set to 'Overview'), 'Filters' (with 'From' and 'To' date pickers set to '2000-01-18' and '2017-05-27' respectively, and a 'Total: 6339 days' indicator), 'Show the latest' (a checkbox and a text input set to '1' days), 'Location' (set to 'Boston'), 'Product Types' (set to 'All'), and 'Regions' (set to 'All'). At the bottom right, there are 'CANCEL' and 'UPDATE' buttons.

- **Time:** either you can select to show the latest N days, with a dynamic start time, or you can select to set a fixed date as start time, but the end time can be left empty to always have the dashboard show data up until "now". (Batches with end time on the **To** day is always included.)
- The **Regions** where the batches are produced.
- The **Locations** where the batches are produced.
- The **Product types** of the produced batches.

To exclude batches without product or location from dashboards, explicitly select the products or locations you want to see (you can select all items manually).

**Note:** In SIMCA-online, if you have not used product and location meta, you can modify your project configuration with these attributes, and then repredict historical batches so that these attributes are used. They will then show up in Active Dashboard too.

## 3.2 Add widgets

This simple outline shows how to add widgets to a dashboard:

1. Select a dashboard to edit (the **Edit dashboard** button in the toolbar).
2. On the edit page, use the **New widget** button in the bottom right corner of the dashboard area to create a widget. The new widget will be selected for editing.
3. Select **y**-measure by clicking on one of the groups in the left pane. Then click another measure group (or the same) to select **x**-measure. A measure can be removed by clicking **Remove measure** button in the left pane or in the measure on the widget.

The screenshot displays the 'Active Dashboard' interface. On the left, a sidebar contains a 'Measures' section with categories like Alarm, Asset, Product, Location, Product quality, and Process performance. The 'Time' measure is selected. Below this is a 'Visualizations' section showing various chart icons. The main dashboard area, titled 'Start-up dashboard', contains several widgets: 'Number of alarming batches', 'Produced batches per site', 'Number of batches per prod...', 'Batch by time', 'Product performance by qua...', and 'Total number of batches'. A 'Batch by time (day)' widget is currently in edit mode, showing a line chart and allowing selection of Y-axis (Batch) and X-axis (Day) measures. At the bottom, the Sartorius Stedim logo and text 'Umetrics Active Dashboard is powered by SIMCA®-online, part of Umetrics™ Suite of Data Analytics Solutions' are visible, along with a 'New widget' button.

4. By default, the **Column bar** visualization is chosen for the widget, but it can be changed via the left pane.
5. Widgets can size and move in the dashboard grid, and removed via the **Delete widget** button in each widget. The widget's default name is based on its measures and can be changed by clicking on the **Edit name** button in the widget.
6. To save your changes click on the **Save dashboard** button or click on the **View dashboard** button and you will be asked if you want to save your changes before viewing the dashboard.

### 3.2.1 Concurrent editing of dashboards

When another editor has updated the settings for the same dashboard that you are currently editing, this will be indicated with a highlighted warning triangle in the toolbar. Click this button to reload the dashboard the new settings, discarding any changes you have made.

## 3.3 Dashboard performance guidance

The time it takes to load a dashboard, and the time it takes to work with widget-filters, depend on the number of batches in the underlying data and the number of widgets in the dashboard.

So if you are affected by poor performance try the following mitigations:

- Use the dashboard settings to limit the amount of data by reducing the time range or apply product or location filters to the dashboard data.
- Keep the number of widgets in the dashboard at eight or lower. When the number of widgets go above this threshold performance will go down.

**Note:** More than 32 widgets in a single dashboard is not supported. This prevents widget filtering from working.

## 3.4 Visualizations

Data can be visualized in widgets in the following ways:

Visualization type	No. dimensions	Description
Number	1	A single value as a number. Filtering is not supported.
Row bar	2	A bar chart with horizontal bars. The <b>x</b> -axis measure determines the categories, i.e. bars, of the chart. The <b>y</b> -measure determines the size of the bars. Filtering is possible by selecting individual bars. Tooltips are available on the bars and row labels (useful if the <b>y</b> -value is small or zero).
Column bar	2	A bar chart with vertical bars. Same as the row bar chart except there are no tooltips on labels.
Line	2	A time-series line chart. The <b>x</b> -axis show time <b>y</b> -measure determines the points' positions on the <b>y</b> -axis. Points relate to lines. Filtering is possible via range selection from one point on the <b>x</b> -axis to another. <b>Note:</b> only <b>Time</b> can be on the <b>x</b> -axis, other measures are not supported.
Range series	2	A time series chart that works like a combined line and column bar chart: filtering is done via range selection in the lower column chart; the upper line chart is then zoomed in to match the selection. Tooltips are available on the points. <b>Note:</b> only <b>Time</b> can be on the <b>x</b> -axis, other measures are not supported.



## World map 2

A geographical map over the world. The **x-measure** determines the locations or regions, i.e. bubbles, of the chart. The **y-measure** determines the radius of the bubbles. Filtering is possible by selecting individual bubbles. It is possible to zoom and pan in the map, and on loading a dashboard, it is automatically zoomed in to cover all visible bubbles; tooltips are available on the bubbles.

**Note:** only **Location** (and **Region**) can be on the **x-axis**, other measures are not supported.

<b>Pie</b>	2	The <b>x-measure</b> determines the categories, i.e. slices, of the chart. The <b>y-measure</b> determines the size of each slice (proportional to the sum over all categories).
<b>List</b>	2	<p>A tabular representation of data. Like a bar chart it requires both <b>x</b> and <b>y-measures</b> and shows the exact same data as those charts but data table format.</p> <p>If there is too much data to fit in the table, <b>Next</b> and <b>Previous</b> buttons can be used to step between data pages.</p>
<b>Bullet</b>	1	A single value as a horizontal bar.

### 3.5 Measures

Measures are data variables from the data sources that you can see in dashboards. The table below describes each measure, and how it behaves depending on if it is used on the **x-axis** (category axis) or **y-axis** (value axis) of a widget.

Measure group	Measure	On the x-axis	On the y-axis
<b>Batch</b>	<b>Batch</b>	—	Number of batches
<b>Alarm</b>	<b>Alarm</b>	—	Number of alarms
	<b>Alarm type</b>	The different types of alarms, i.e. <b>Critical</b> , <b>Warning</b> or <b>No alarm</b>	—
<b>Asset</b>	<b>Asset</b>	Unique names of units	Number of units
	<b>Asset type</b>	Unique names of unit groups	Number of unit groups
<b>Product</b>	<b>Product</b>	Unique names of products	Number of products
	<b>Product type</b>	Unique names of product types	Number of product types
<b>Location</b>	<b>Location</b>	Names of locations, unique per region	Number of locations, unique per region
	<b>Region</b>	Unique names of regions	Number of regions
<b>Product quality</b>	<b>Quality</b>	One category per CQA variable	Weighted average CQA variable value

	<b>Product performance</b>	—	$C_{pk}$ value computed for the current data using the Quality values
<b>Process performance</b>	<b>Process performance</b>	—	PModX+ for the last batch level model.
<b>Time</b>		One category per time unit; see section 3.6 for details about the <b>Time</b> measure.	—

The measure groups **Product quality** and **Process performance** are only available when SIMCA-online is the data source.

**Tip:** The fact that the same measure can have different meanings when on the **x**-axis and **y**-axis means for example that you can create a bar chart with **Alarm** on both **x** and **y**-axis. This shows the number of alarms per alarm type. The same also applies for the **Asset**, **Product**, and **Location** measure groups.

### 3.6 Time measure

The measures in the **Time** measure group can only be used on the **x**-axis (category axis) of charts. The resulting chart shows the **y**-measure data grouped into time spans whose length depends on the selected time measure.

By default, **Automatic time** is used on the **x**-axis when time is selected. This means that the widget will automatically select the best time unit depending on the time span used by the dashboard, so that the widget will display roughly the same number of data points regardless of time span.

If the dashboard editor selects a specific grouping instead of Automatic, the actual chosen grouping when viewing the dashboard may differ: it is never lower (shorter time span) than the selected but may be higher (longer time span), depending on the length of the dashboard time filter time span and whether the dataset is aggregated or not.

**Note:** when viewing a dashboard, all users can change the grouping in all time-based widgets; available groupings are limited based on the length of the dashboard time filter time span and whether the dataset is aggregated or not.

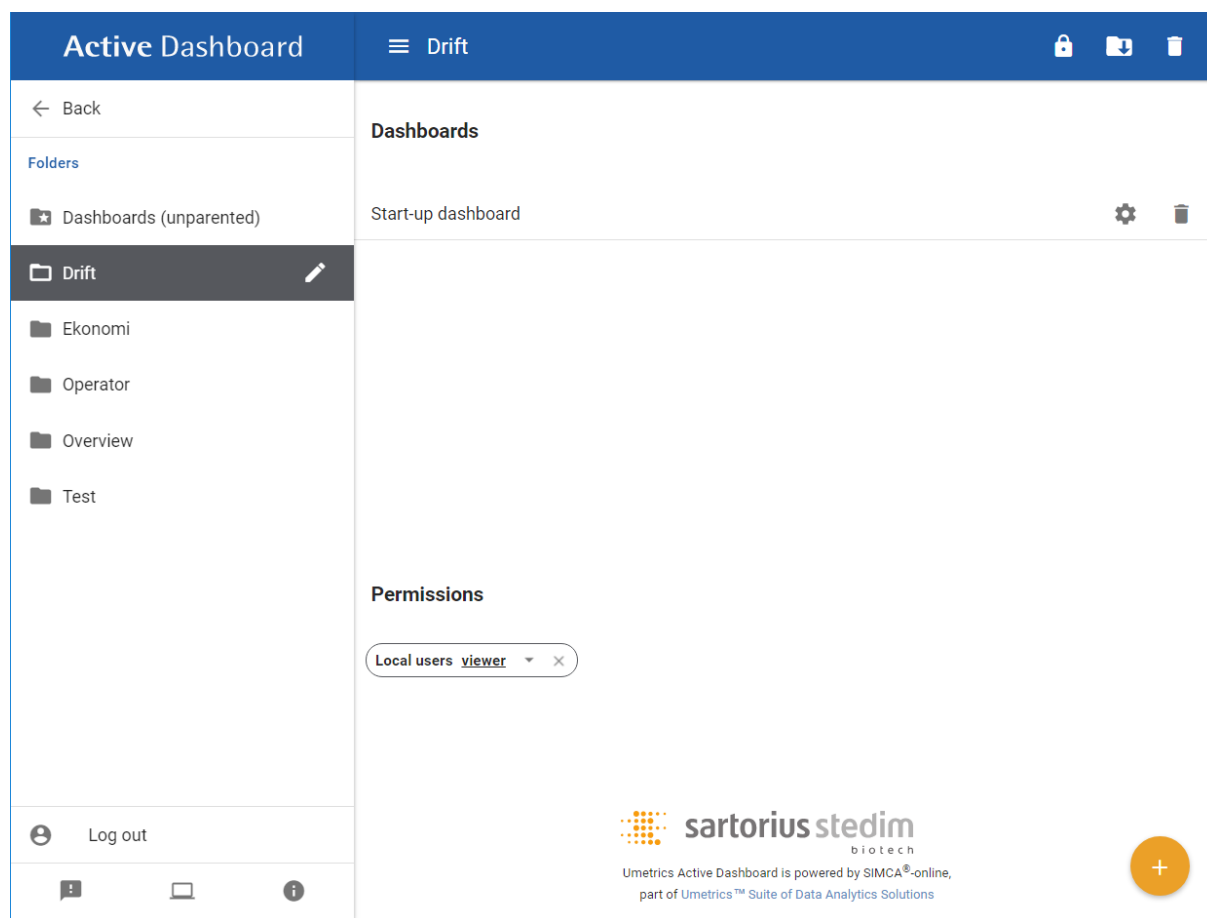
The editor specifies the overall range of the time **x**-axis in the dashboard settings. For example, if the dashboard shows data from January 1, 2016 to May 31, 2016, using the **Month** dimension on the **x**-axis the chart will show five bars, points in a line chart, or pie slices. **Note:** week starts on Monday.

## 4 Administer folders and permissions

This section describes what you can do when you are logged in as Administrator in Active Dashboard. It does not cover the installation or configuration of the Active Dashboard server that IT personnel performs on the server computer. That is described in the separate **Installation Guide** document.

**Note:** to have access to the administrative features, you need to log in from a PC, laptop, or tablet since administrative features are hidden on small devices where they would be difficult to use.

To manage folders and their permissions click **User administration** in the left pane to navigate to the folder page.



### 4.1 User accounts

A user account and password is required to log in to Active Dashboard. Each user holds a single role:

- **User** – can create, view, edit, delete dashboards, and interact with their contents, depending on permission.
- **Administrator** – can manage dashboard folders and user permissions, in addition to everything a **User** can do.

In Active Dashboard there are two built in users, one for each role:

- **Test** – for viewing and interacting with dashboard contents.
- **Administrator** – this is the one and only administrative account.

Active Dashboard can also be configured to allow logging in with Windows Active Directory usernames and passwords. Users logging in this way have the **User** role by default, but the system administrator can configure this.

This is a good way of making it easy for users to access data in Active Dashboard. How this is configured is described in the **Installation Guide**.

## 4.2 License and version information

The **About** page, open from the bottom of the left pane shows the version of Active Dashboard and license information of third-party products.

## 4.3 Manage folders

Folders are used to group dashboards, assigning group permissions to the folders is used to control access to the folder and its contained dashboards. By default, a dashboard belongs to the folder **Dashboards**. It can be moved to a different folder by changing the folder settings.

When a folder is deleted, its contents are moved up to the next level in the hierarchy.

## 4.4 Manage permissions

Permissions are used to control access to and actions on folders and dashboards. Permissions granted to a folder applies to all dashboards inside the folder. Permissions are assigned to folders by user groups and type. User groups are collected from the configured Active Directory server. A user's permissions to a folder and its contained dashboards are resolved based on the highest permission assigned to a group the user belongs to that is assigned to the folder.

### 4.4.1 Permission types

There are two permission types: **Editor** and **Viewer**. The **Editor** permission gives the user viewing and editing privileges, while the **Viewer** permission only allows the user to view the dashboards in the folder and interact with them (such as widget filtering, drill down, etc.).

### 4.4.2 Permission resolution example

Alice belongs to the groups: **Managers** and **Analysts**. We assign **Analysts** the **Viewer** permission to folder **Plant**, and we assign **Managers** the **Editor** permission to folder **Plant**.

The resolved permissions for Alice to the folder **Plant** and any dashboards inside will be the **Editor** permission because it is the highest of Alice's permissions to the folder.

## 4.5 Activity page

The **Activity** page, linked to from the bottom of the left pane shows usage statistics for the Active Dashboards server, grouped by month:

Column	Describes	Usage
Sessions	When someone has been logged in	To see how much the system is utilized.
Devices	Unique client IP-addresses which have accessed the system	This measure can be used to see how widely the system is utilized. Is the system used from a just a few devices, or is the system used from many devices?
Users	Unique user accounts which have accessed the system	This measure can be used to see how many people are using the system. Is the system used by a handful of experts, or is the system used by all the organization?
User Devices	A combination of Devices and Users	Does each user check the system status from a single device, or does each user use multiple devices to check the status of the system throughout the day?

## 5 What data do I see in Active Dashboard?

This section explains what data from the data sources is available in Active Dashboard, and what you can do to ensure that metadata (product types, locations, etc.) and data for measures is available in Active Dashboard.

### 5.1 Data sources

Active Dashboard currently supports two types of data sources: **SIMCA-online** and **OSIsoft PI**. In the following table, they are compared.

Aspect	SIMCA-online	OSIsoft PI	Described in
Measures	Supports all measures	Measures <b>Quality</b> , <b>Product performance</b> , and <b>Process performance</b> not supported	section 3.5
Drill down and filtering	Supported	Supported	sections 2.5, 2.6
Dataset aggregation	Not supported	Supported	section 2.7
Open in SIMCA-online	Supported	Not supported	section 2.8
Download full dataset	Not supported	Supported	section 2.9

### 5.2 Identity and data collection from multiple sources

To be able to show data from multiple data sources, Active Dashboard needs to know when two data items are identical, i.e. refer to the same thing.

Textual matching is used of values for the measures **Batch**, **Asset**, **Asset type**, **Product**, **Product type**, **Location**, and **Region**. For example, this means if two batches have the same name it is assumed to represent the same real-world batch and if two project configurations use the same **Asset type** "Dryers" and the same **Asset** "Dryer1" those are assumed to represent the same physical Dryer1 unit.

On the other hand, if the same batch name has different Assets in two different data sources both these assets will show up in Active Dashboard.

Most measures simply use the "count" reduction function. For example, when computing the value for the measure **Batch** for all batches in a week, the resulting number would be the number of batches as you would expect.

The measures where this does not apply are **Process performance**, **Quality** and **Product performance**, which are described in subsections to section 5.4.

### 5.3 How does Active Dashboard deal with different time zones?

If two users are in different time zones, they will still see the same data in Active Dashboard, because it always groups by and displays UTC time. Tooltips in charts and other places where time is displayed show the corresponding local time so a user can always match the data to the local timezone.

This is changed from Active Dashboard 1, where the user's local time was used for grouping and displaying time. All settings for the dashboards and widgets also use UTC.

### 5.4 Data source: SIMCA-online

SIMCA-online, also part of the Umetrics™ Suite of data analytics solutions, is a client-server solution for multivariate process monitoring. The following subsections contain information about how SIMCA-online and its data relates to what you see in Active Dashboard. In general, the following is true for SIMCA-online data sources:

- The Active Dashboard server connects to one or more SIMCA-online 14.0.1 servers using the SIMCA-online Web API.
- Only data from batch configurations are read. Data from continuous (regular) configurations is not available.
- Still running (active) batches are not analyzed by Active Dashboard, only historical batches (which have an end time) are analyzed.
- When a batch is predicted by SIMCA-online, it uses the then current project configuration settings when saving data about that batch (including the product and location from the metadata page). To make changes for older batches you must update the project configuration and then repredict the batches, and then Active Dashboard will pick up the changes.
- Only **batch evolution** level alarms (multivariate- or target value alarms) are handled in Active Dashboard. Batch level alarms are ignored.

#### 5.4.1 How do I get values for Quality or Product performance in Active Dashboard?

The **Quality** and **Product performance** measures require CQA data from SIMCA-online to work. CQA stands for Critical Quality Attributes and is a new feature in SIMCA-online 14.0.1.

To enable this feature, you need:

- A SIMCA project that includes the CQA variables you want to analyze. These variables must be set to Y in the batch level models (they cannot be X).
- A SimApi that supports discrete data retrieval, see [umetrics.com/simapi](https://umetrics.com/simapi).
- A configuration for the project in SIMCA-online that specifies that the CQA variables use discrete data retrieval.
- For the **Quality** measure to work properly, CQA variables must be defined so that higher values are better (see section 5.4.3).

#### 5.4.2 What is the measure Product performance?

The **Product performance** measure, or  $C_{pk}$ , is the process capability index of the process. It is related to the **Quality** measure and is computed using CQA values from SIMCA-online together with statistics and limits of the CQA variables.

**Product performance** is defined so that high values are good, and low bad. The range depends on the monitored process. A product is within its limits if the value is at least 1.25. For six sigma, the value needs to be larger than 2.0.

When displayed, **Product performance** is recalculated for the current grouping, taking filtering into account. Like for the **Quality** measure, the value is computed per combination of CQA variable and product in the current selection and the minimum value is then chosen.

#### 5.4.3 What is the measure Quality?

The **Quality** measure is defined as the weighted average of a CQA variable for each variable and product combination. This means that if the same CQA variable (for example "Quality 1", or "Yield") is used for two different products they will be computed separately.

**Quality** is defined to be better when its value is higher. The computation in Active Dashboard uses the minimum function when computing **Quality** over multiple variable / product combinations. For example, when reducing five batches from two different products over a week, the result would be the **Quality** value from the product with lowest average.

### 5.4.4 What is the measure Process performance?

The value for **Process performance** measure for a batch is taken from the PModX+ value for the batch level model with the highest model number in each configuration. It is recommended that this model is a PCA model and include the same batches as the evolution level models.

Process performance goes from 0 to 1 (0–100%). 1 (100%) represents that the batch behaves as the batches that were used when creating the model. With a 95% confidence level, observations with a probability of membership less than 5% (i.e. less than 0.05) are considered outliers, not matching the model.

When computing a value for **Process performance** over many batches, the “minimum” reduction function is used. This results in the lower **Process performance** value being used for each grouping.

### 5.4.5 Metadata

The available locations and products come from the metadata tab of each project configuration in SIMCA-online. If you have batches that have no location or product such as batches migrated from SIMCA-online 14.0 those will still show up in dashboards if you leave the default filter “All” for products and locations.

### 5.4.6 Troubleshooting

#### 1.1.1.1 How does Active Dashboard deal with deleted SIMCA-online data?

If a batch is deleted from a SIMCA-online configuration, the old batch data is removed from Active Dashboard. (A batch is automatically deleted as part of a reprediction: first the old batch is deleted, and then predicted again)

If a configuration is deleted from SIMCA-online, data from that configuration remains in Active Dashboard. If you want this data to disappear from Active Dashboard, you must empty its database. This is done on the Active Dashboard server computer by running a script. See the **Installation Guide**.

If you on the server computer reconfigure the Active Dashboard server to connect no longer to a specific SIMCA-online server, the data already collected remains and will be visible in dashboards. You can delete it with using scripts bundled with the installation. See the **Installation Guide** for instructions.

#### 1.1.1.2 How to deal with incorrect unit and unit group names that show up as assets and asset types?

In SIMCA-online you can change the unit names and unit group names of old configurations. Repredict old batches and they will show up correctly in Active Dashboard.

#### 1.1.1.3 What to do with old SIMCA-online project configurations without location and product metadata?

You can edit configurations in SIMCA-online to specify product and location and repredict old batches to ensure they show up correctly in Active Dashboard.

## 5.5 Data source: OSIsoft PI

OSIsoft PI System is a real-time data management system. Active Dashboard can fetch data from it as a data source.

**Note:** OSIsoft PI can also be used as data source for SIMCA-online. In that case, use SIMCA-online as Active Dashboard data source instead.

Active Dashboard fetches batch data from PI Asset Framework elements and their associated PI Points.

For more information about how this is configured to work with Active Dashboard, see the **Installation Guide**. For more information about OSIsoft, see [www.osisoft.com](http://www.osisoft.com).