COPA-DATA
do it your way

zenon Analyzer manual

First steps

v.3.00

Contents

1. Welcome to zenon Analyzer help

PROJECT SUPPORT

You can receive support for any real project you may have from our Support Team, who you can contact via email at support@copadata.com (mailto:support@copadata.com).

LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email sales@copadata.com (mailto:sales@copadata.com).

2. First steps

This manual displays the configuration of zenon Analyzer reports for the analysis of alarms and production data. You find out how you configure data, in order for it to be displayed in certain cycles.

Note: This document is limited to the display of fundamental first steps. zenon Analyzer provides far more functionality than is shown here. Some functions can be have a different appearance in different product versions. This documentation is based on the use of zenon Analyzer 3.00 and zenon 7.50.
Recommendation: For further information, we recommend a corresponding training course. You can get details of this from your COPA-DATA contact partner.

PROCEDURE

This tutorial guides you through the configuration of fundamental reports:

- In the first stage, you import the required data into zenon Analyzer.
- In the second stage, you configure the report templates in ZAMS.

3. Export Wizard

With the Export Wizard, you extract the necessary data from zenon in order to provide it to zenon Analyzer.

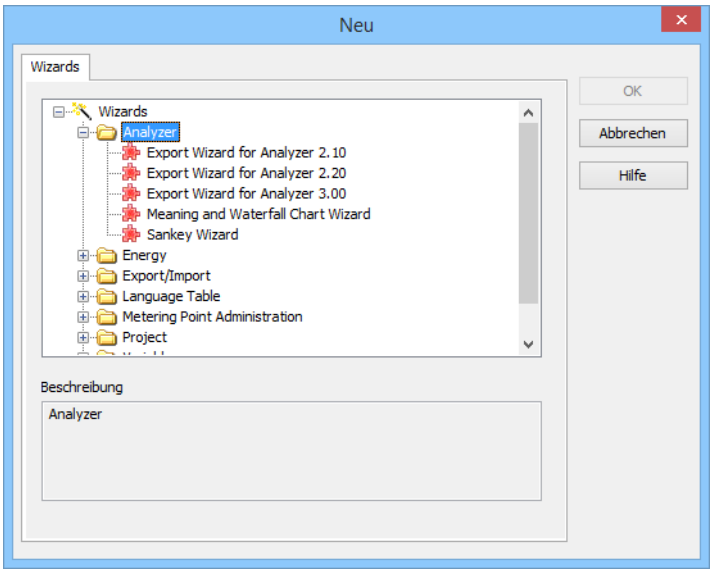
The **Export Wizard for Analyzer** is automatically installed with the zenon Supervisor. For each version of the zenon Analyzer, there is a respective version of the Wizard. The versions can have different functionality and a different user interface.

Note: The **Efficency classes** tab is not used in this project. It is for the selection and configuration of the efficiency classes to be exported. You can also find further information on this and the wizard in the wizard documentation.

STARTING THE WIZARD

To start the wizard:

1. In zenon open menu **File**
   or press the shortcut `Alt+F12`
2. Select the **Wizards** entry**.**
3. The selection dialog is opened



4. Navigate to node **Analyzer.**
5. Select the desired version of the **Export Wizard for Analyzer**.
   Select **Export Wizard for Analyzer 3.00** for this tutorial.

   Note: Wizards only offer an English-language user interface.
   The configuration can vary for different versions of zenon Analyzer.

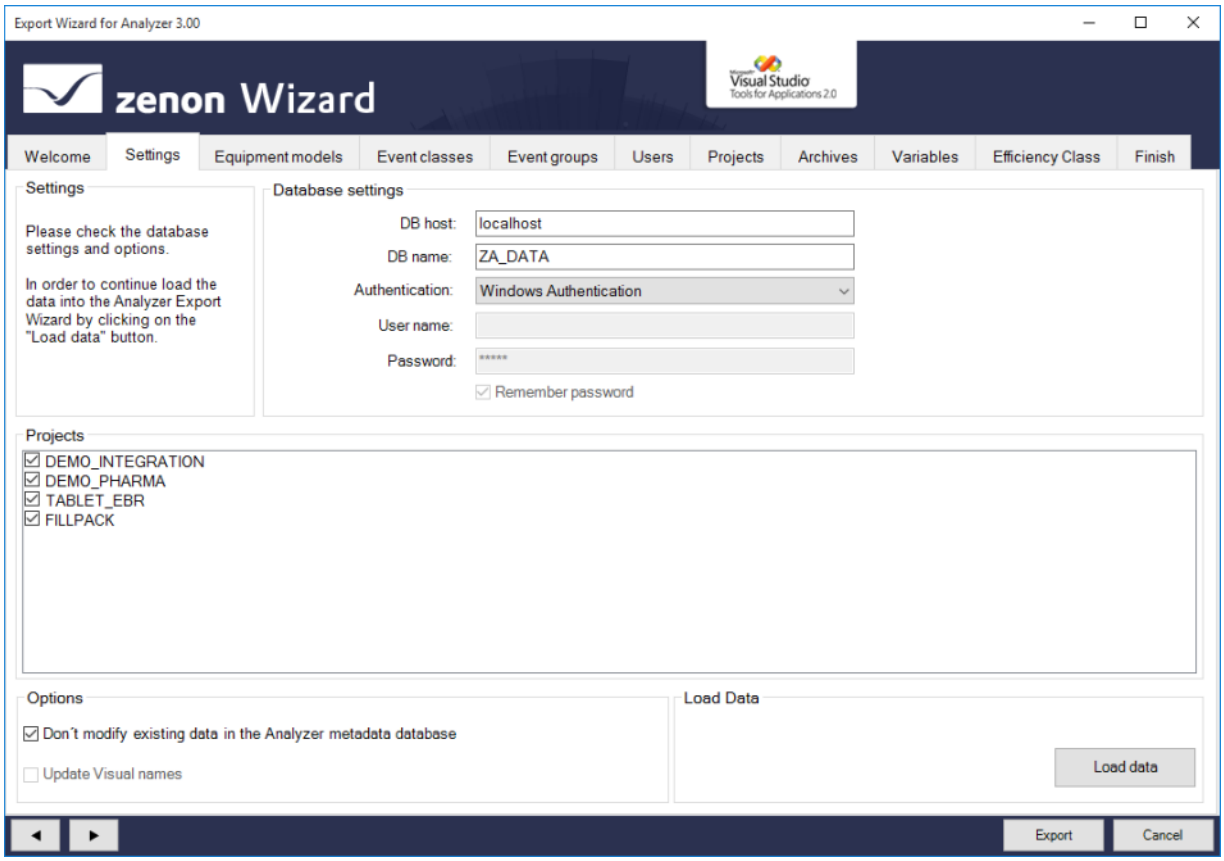
CONFIGURING THE WIZARD

You determine which data is loaded from the zenon projects and prepared for zenon Analyzer in the individual tabs of the wizard. The data is fed into the desired database by the wizard at the end.

3.1 Settings: Connection and basic settings

In the **Settings** tab, you configure:

- Database for which the data is prepared (the data in the screenshot is an example).
- Access data for the database: You can use Windows authentication or SQL access data.
- zenon projects whose data is to be loaded.
- Selection of whether existing data in the database is to be changed.
- Selection of whether existing variable names are also to be amended in zenon after being amended in the database.



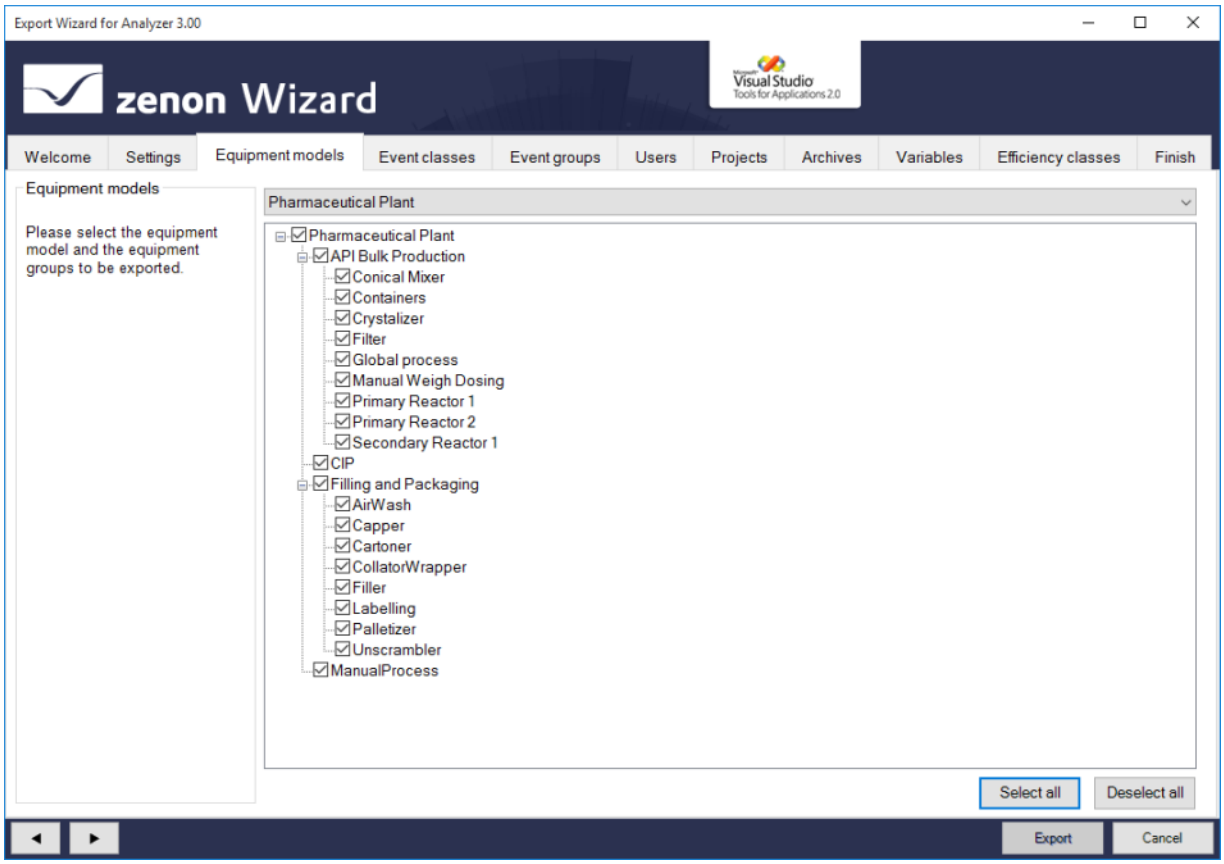
As soon as there is a connection, you can load the data from all selected projects using the **Load Data** button.

Note: Entries that already exist in the database are pre-selected in the following steps. Up to and

including version 2.20, the **Preselect existing Analyzer database content** option must be selected for this. From version 3.00, this option is activated automatically and can no longer be configured in the user interface. The corresponding entry has been removed.

3.2 Equipment Models

You select the desired equipment models and equipment groups in the **Equipment models** tab. These are required in order to determine the content of the reports and the aggregation of data. For example, with alarms, you can select a wider perspective on data from a complete equipment group instead of just individual alarms.

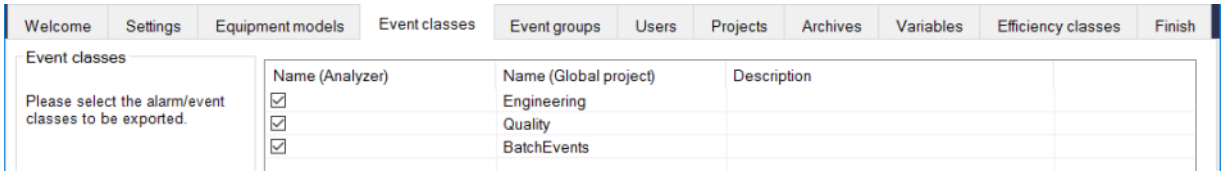


Note:

- Only equipment models from the global project are used during export.
- Select only the equipment models and equipment groups that you also want to use in reports.

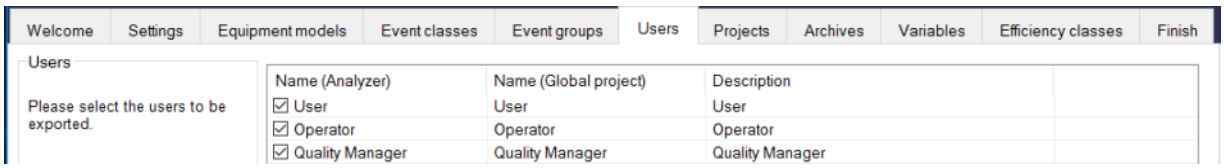
3.3 Event classes and event groups

Event classes and event groups are to pre-filter information. For example, with alarm classes you can very easily distinguish between alarms for Engineering, lots and quality, and thus design targeted reports for error messages.



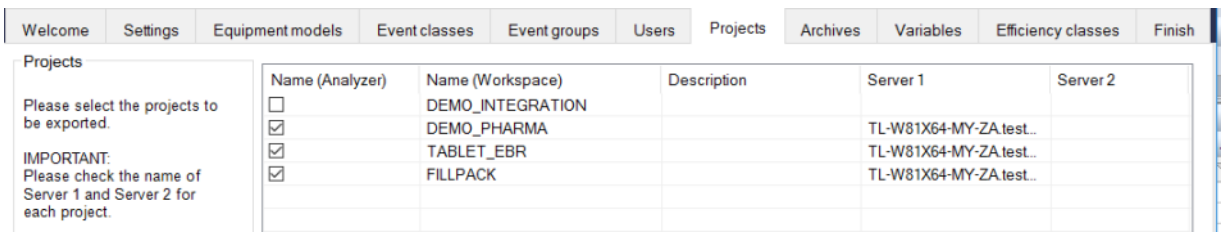
3.4 Users

In the **Users** tab, you select the users who are to be exported in zenon Analyzer.



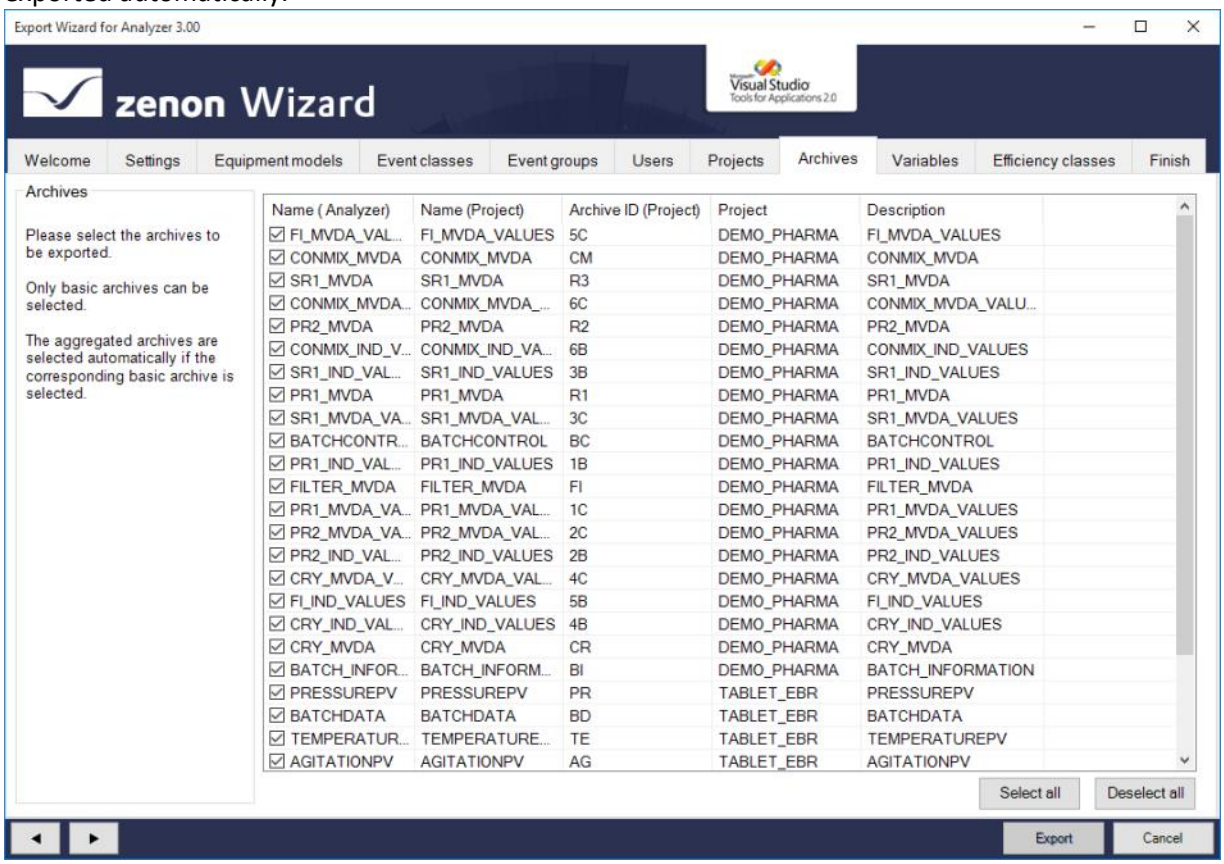
3.5 Projects

In the **Projects** tab, you select projects that are to be exported to zenon Analyzer and which project data you want to use for archives and variables. In the following tabs, you only get data that comes from the projects selected here.



3.6 Archives

You select the desired archive in the **Archives** tab. Only archives that are in the previously-selected projects are available. You can only select basic archives. The attendant aggregated archives are exported automatically.

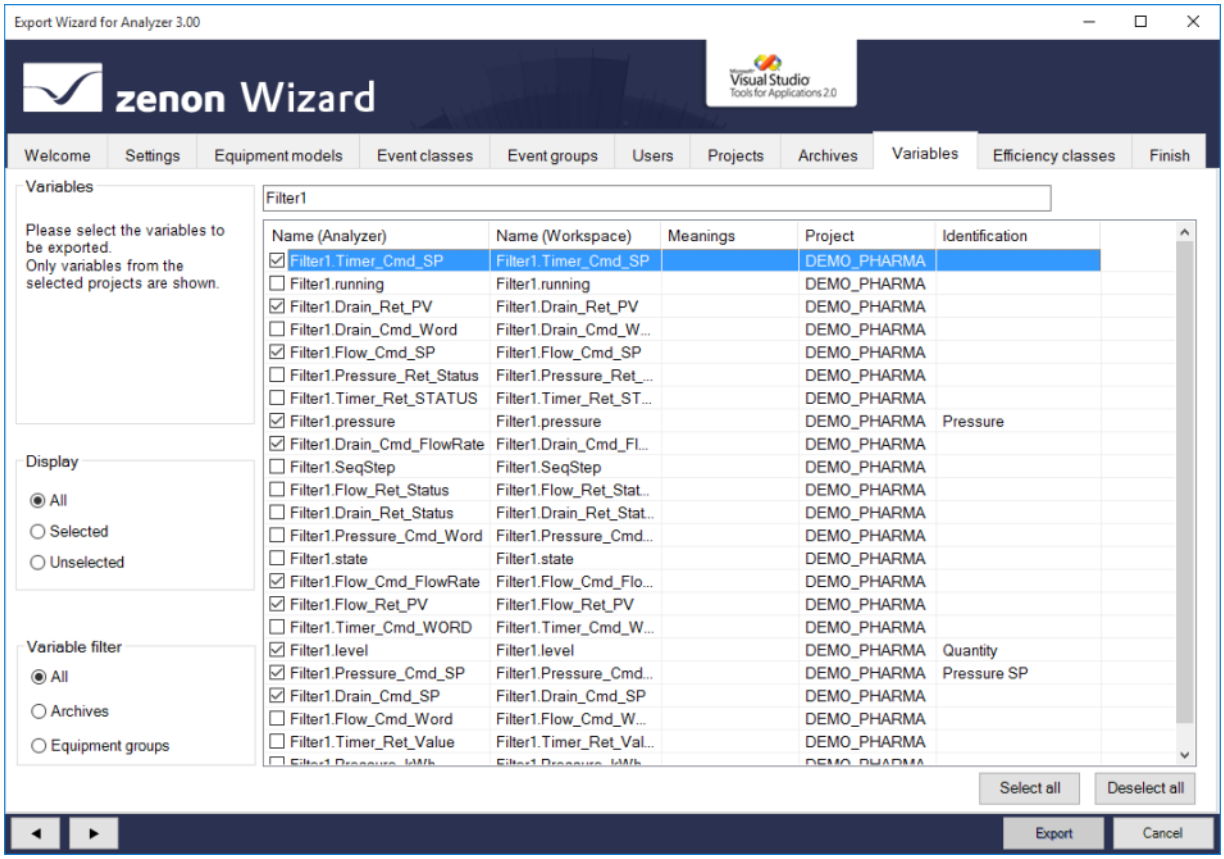


In the Report Launcher, archives can be selected in the reports, depending on the configuration.

We have selected all archives for our example. The decision of which ones are actually used is then made when configuring the report in the Report Launcher.

3.7 Variables

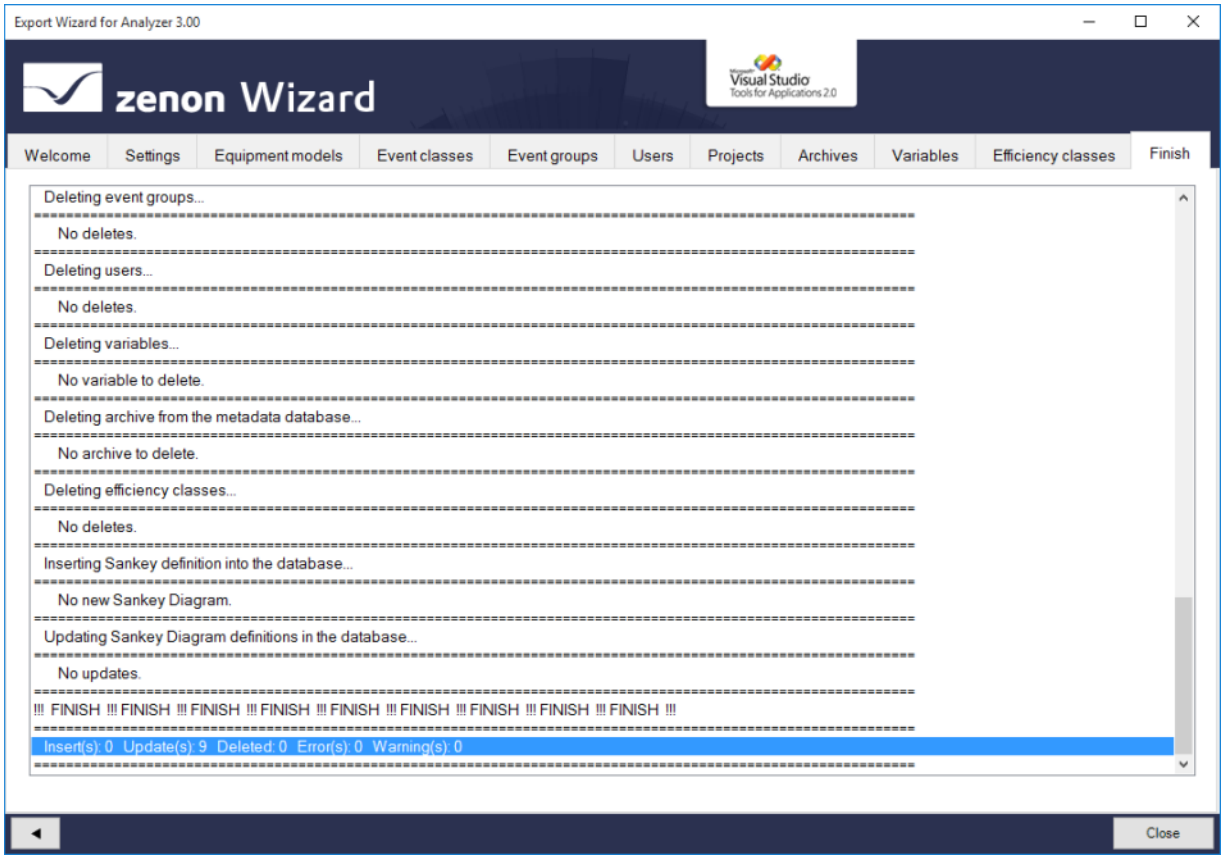
You select the variables required for your reports in the **Variables** tab. Only variables that are included in one of the selected projects are available.



There are usually many variables present in a project. However the number of variables that are needed in the report is generally very small. It is recommended that you pre-select carefully. You thus ensure that the number of variables in the Report Launcher does not become overwhelming.

3.8 Finish

All data in accordance with its configuration is exported by clicking on the **Export** button in the **Finish** tab. It is now available for provision in reports in **ZAMS** and for display in Report Launcher.



If the requirements for reports change or data in zenon has been changed, the data can be exported again with the wizard.

Further configuration is carried out in ZAMS.

4. ZAMS: Preparing and providing reports

Reports are pre-configured in ZAMS and provided for use in Report Launcher. The configuration is described in detail in the **alarm aggregation** (on page 13) chapter. All other report configurations expand on this description.

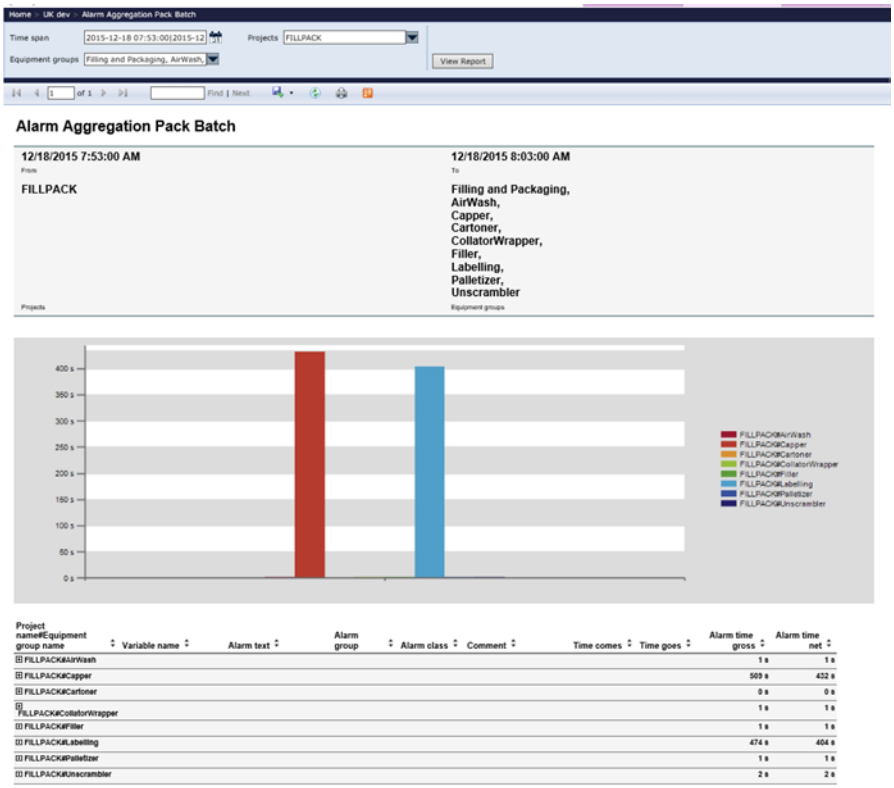
Note shifts: In our examples, shifts are configured with fixed times. It is, of course, possible to log shifts flexibly with the zenon module **PFS** and evaluate this in zenon Analyzer.

4.1 Alarm Aggregation

This report template displays aggregated alarm data in graphics and tables. The alarm filtering can contain projects, equipment groups, alarm classes, alarm groups and alarm comments.

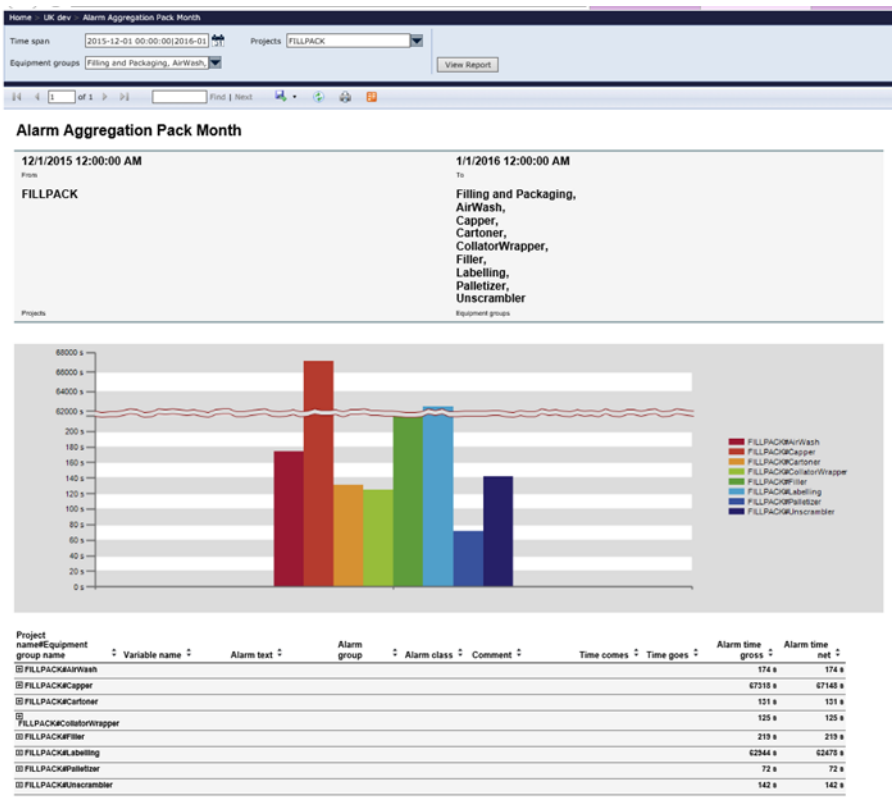
Two examples of reports:

- Alarms, grouped according to equipment model.
  Time range: a certain lot



Project name#Equipment group name	Variable name	Alarm text	Alarm group	Alarm class	Comment	Time comes	Time goes	Alarm time gross	Alarm time net
⊞ FILLPACK#AirWash								1 s	1 s
⊞ FILLPACK#Capper								509 s	432 s
⊞ FILLPACK#Cartoner								0 s	0 s
⊞ FILLPACK#CollatorWrapper								1 s	1 s
⊞ FILLPACK#Filler								1 s	1 s
⊞ FILLPACK#Labelling								474 s	404 s
⊞ FILLPACK#Palletizer								1 s	1 s
⊞ FILLPACK#Unscrambler								2 s	2 s

- Alarms, grouped according to equipment model.
  Time period: one month



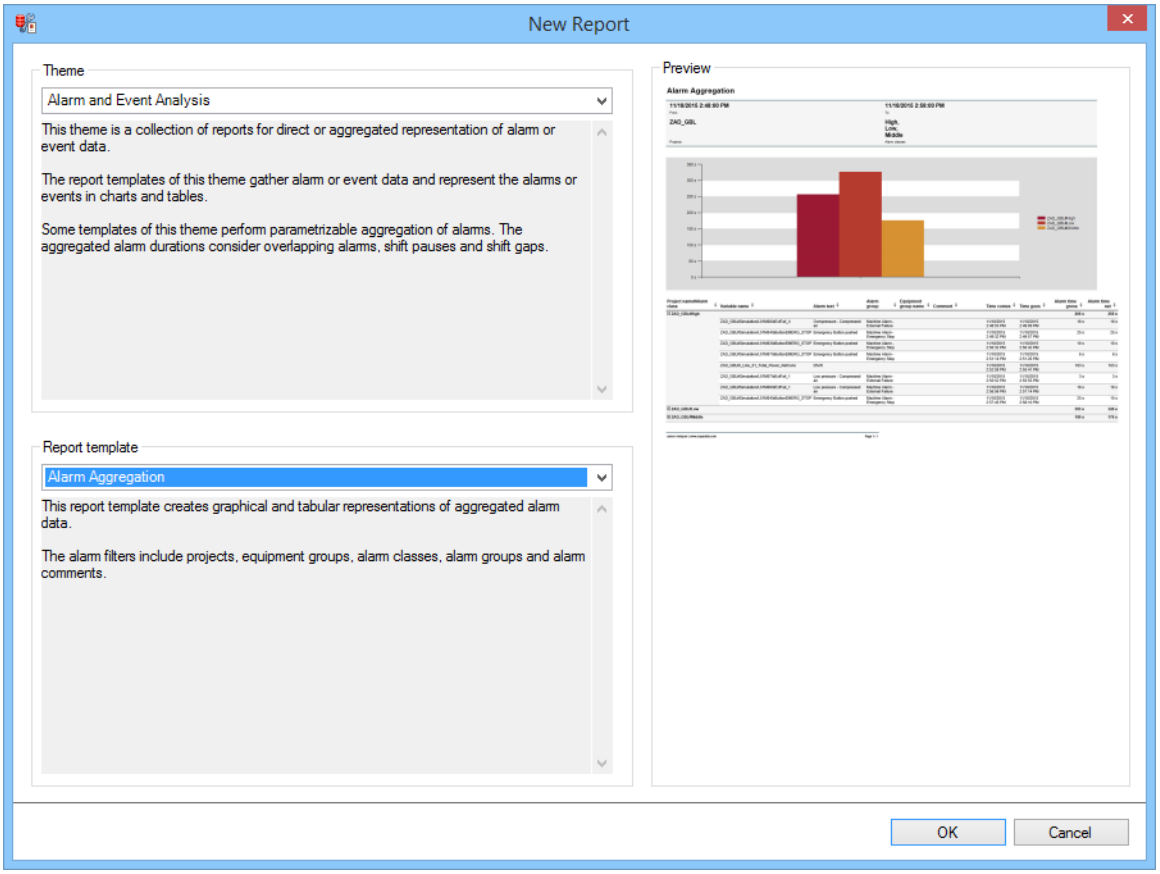
In this document, you become familiar with examples for the following filters:

- Course of a lot
- one week
- one month
- Relative to the current day
- One month from the first day of the month
- Morning shift A
- Afternoon shift B
- Night shift C

4.1.1 Configuration

To configure a report for the aggregated display of alarms:

1. Start the selection dialog by clicking on **New report**:

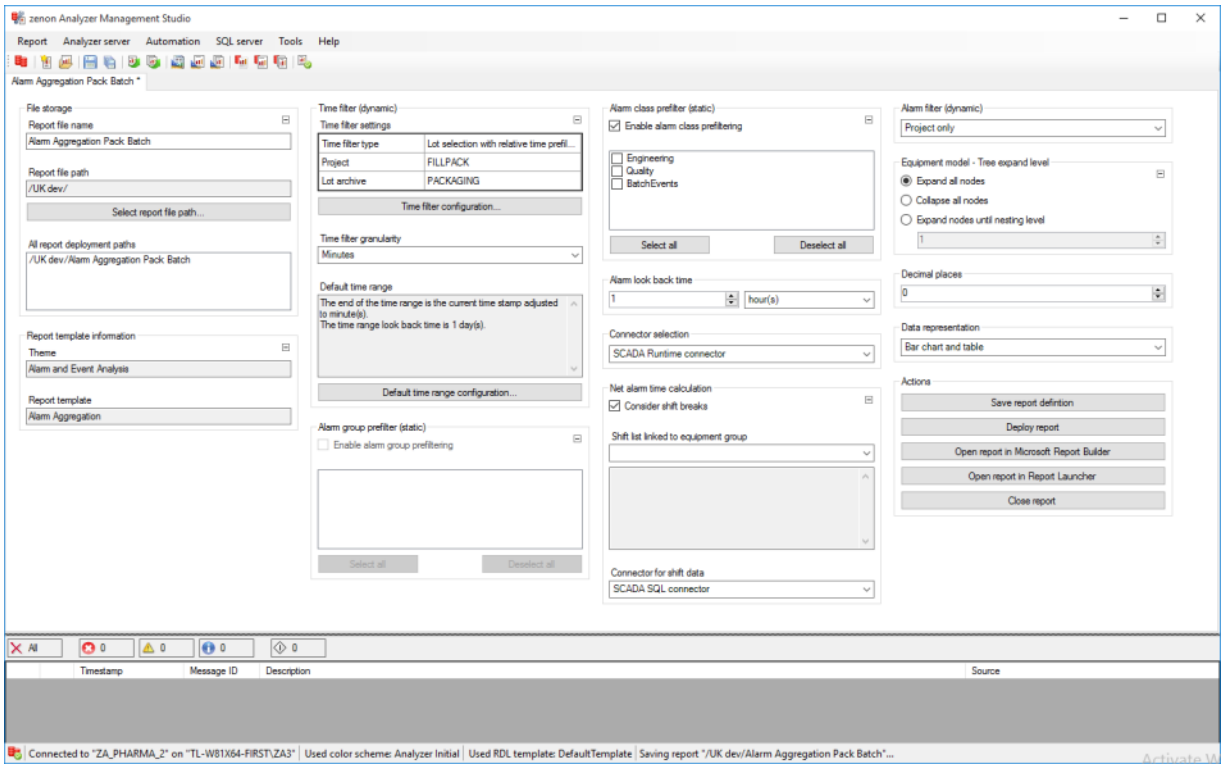


2. Select the theme of **Alarm and Event Analysis**.
3. Select the **Alarm Aggregation** report template.
4. Select the name and save location for the report definition file (***.zams_rep**).

   The report template is displayed in ZAMS.

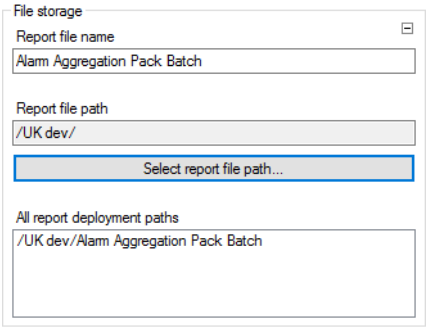
4.1.2 Report for a lot

The following configuration creates a report for a lot:



FILE PATH

1. The file path for the save location of the report is preconfigured. You can amend it in this dialog if required:



2. To do this, click on the **Select report file path** button.

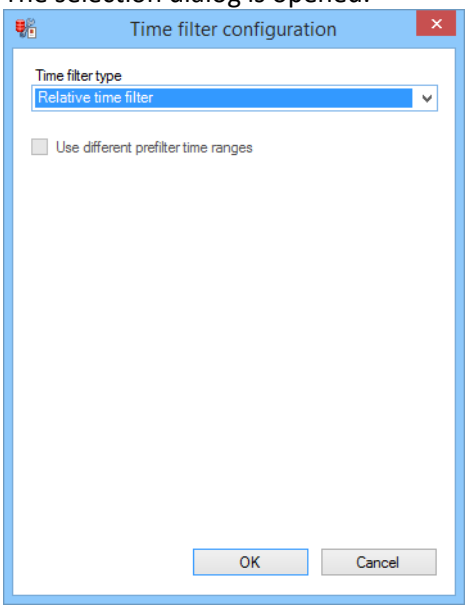
TIME FILTER

Select the desired time filter.

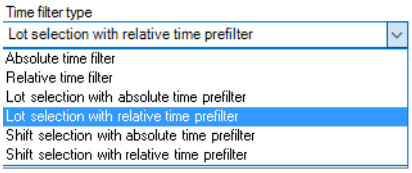
To do this:

1. Click on the time filter configuration button.

   The selection dialog is opened.



2. Select the desired type from the drop-down list. In our examples, `relative time filter` or `lot selection with relative time pre-filtering`:



In these instructions, you can find examples for:

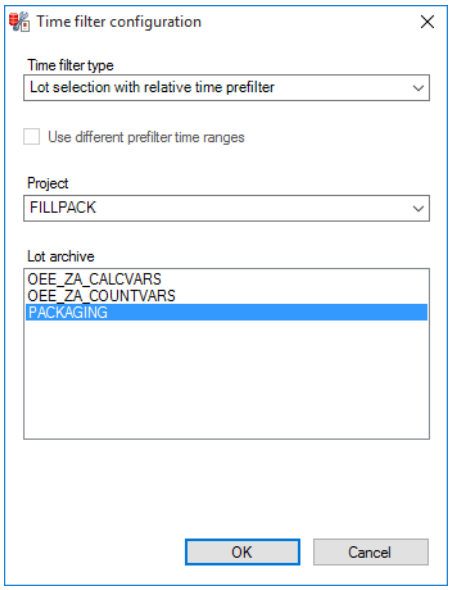
- Lot selection with relative time prefilter:
  Selection of data that that relates to the lots executed.
- Relative time filter:
  Selection of data that takes into account time ranges such as week, month (form the start to end), month (month to date) and daily shift reports.

LOT SELECTION WITH RELATIVE TIME PREFILTER

In our example, the relative time filter defines the time range in which executed lots are selected. The actual time range comes from the start and end time of the lot archive. The report looks back over a day, in order to find all lots that have been executed.

Attention: The lot that is currently being executed is also listed. It is thus possible to create Dashboard reports on the basis of the data that is currently active.

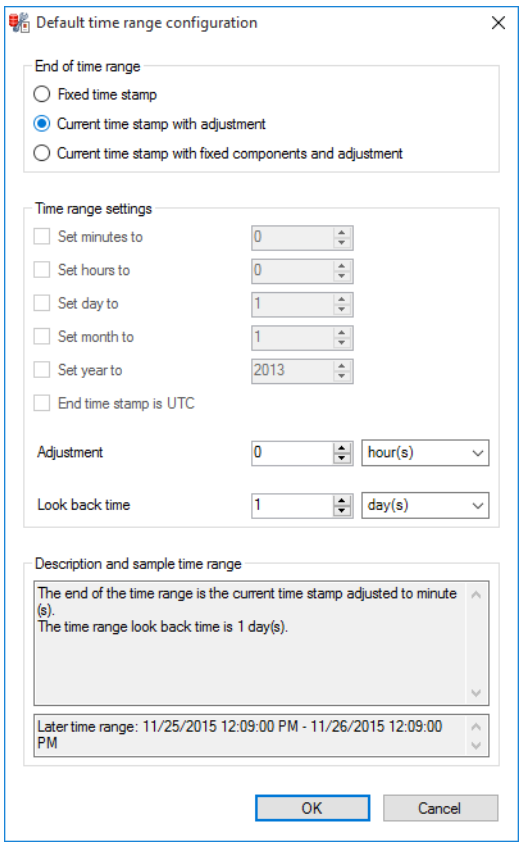
SELECTION OF TIME FILTER TYPE



- **Time filter type**: Select `Lot selection with relative time pre-filtering`.
- **Project**: Select the project that executed the lot.
- **Lot archive**: Select the archive for the lot.

DEFAULT TIME RANGE CONFIGURATION

With the standard time range configuration, you select the actual time period within the time filter type that relates to the report.
The following sections show the different configurations that are used by all reports that are based on the preset time.

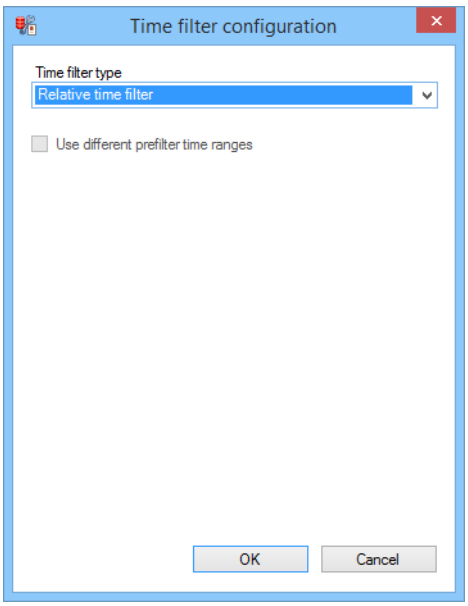


- **End of time range**: Select **Current time stamp with amendment**.
- **Look back time**: Select `1 day`.

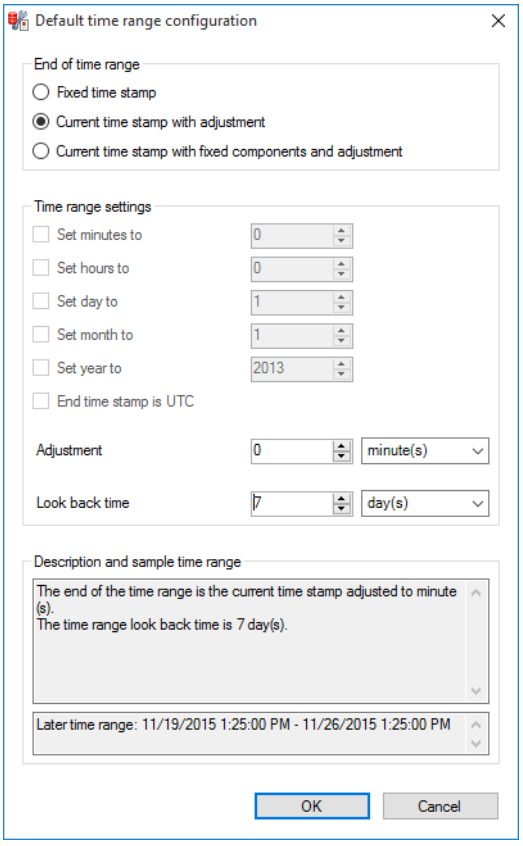
4.1.3 Report for a week

Configuration for one week, starting from today's date:

1. Select the `relative time filter` as a **time filter type**.



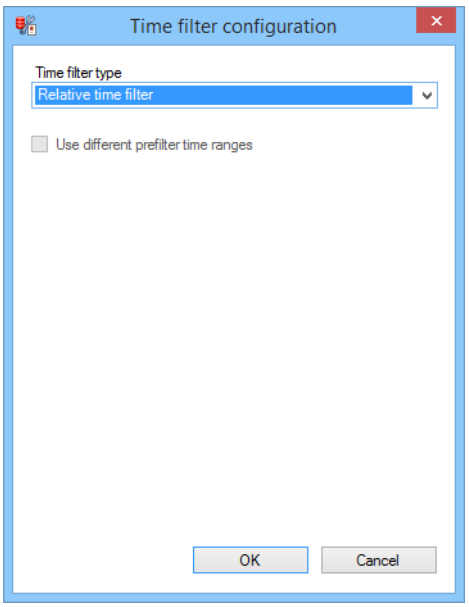
2. For **End of the time range**, select the **Current time stamp with adjustment** option.
3. Select `7 days` as a **look-back time**.



4.1.4 Report for a month up to today

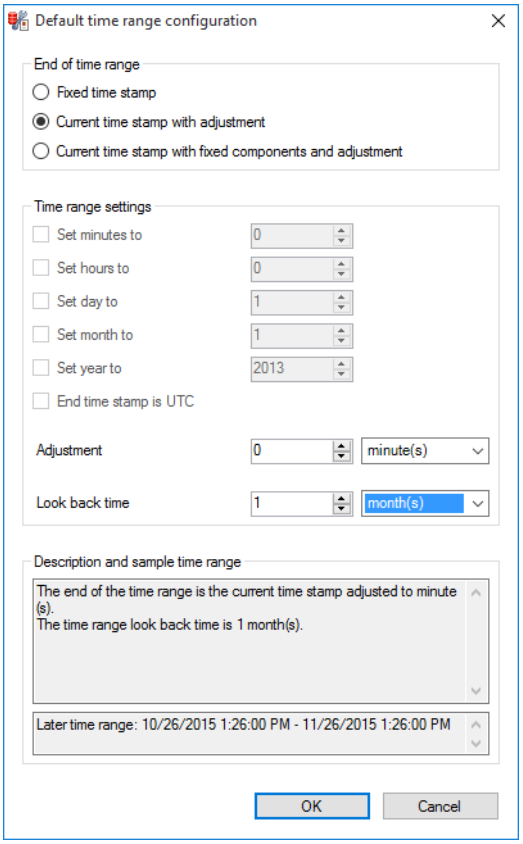
The configuration corresponds to that of a lookback over a week. However the **lookback time** must of course be amended accordingly.

1. Select the `relative time filter` as a **time filter type**.



2. For **End of the time range**, select the **Current time stamp with adjustment** option.

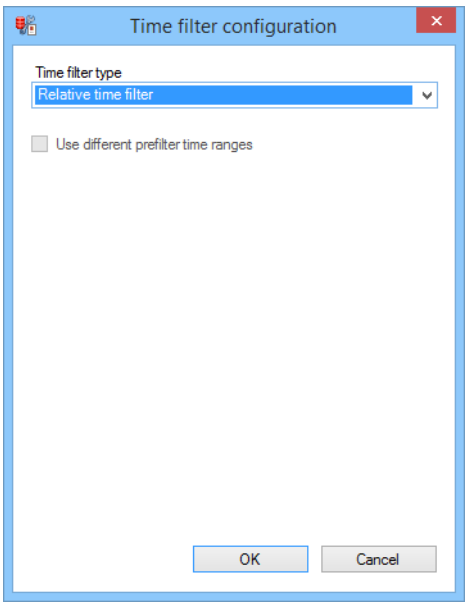
3. Select `1 month` as a **look-back time**.



4.1.5 Report for a calendar month

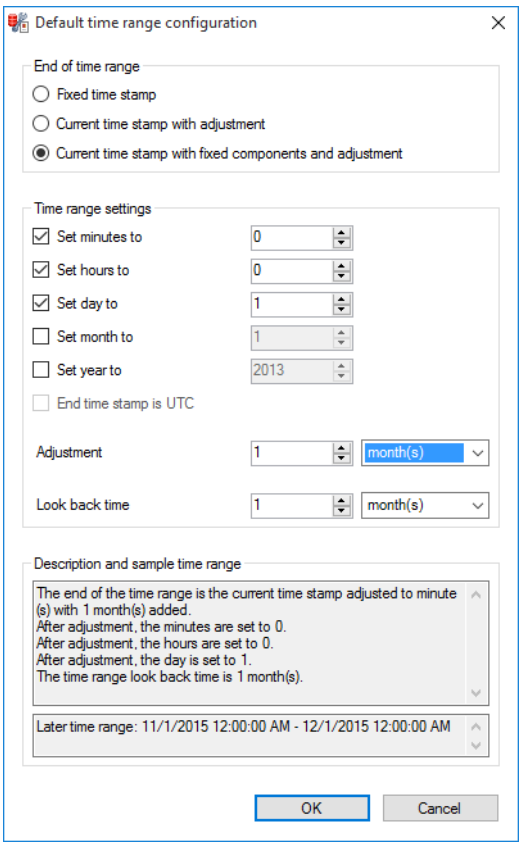
The report time can be amended so that the complete current month up to today is displayed:

1. Select the `relative time filter` as a **time filter type**.



2. For **End of time range**, select **Current time stamp with fixed components and adjustment**.
3. For **time range settings**, set both **Minutes** and **Hours** each to `0` and **Day** and **Month** each to `1`.
4. Select `1 month` as a value for the **Adjustment** option.

5. Select `1 month` as a value for the **look-back time**.



A report for the complete month is shown with these settings.

4.1.6 Report for a shift

You can also configure reports for individual shifts. In this example, we assume:

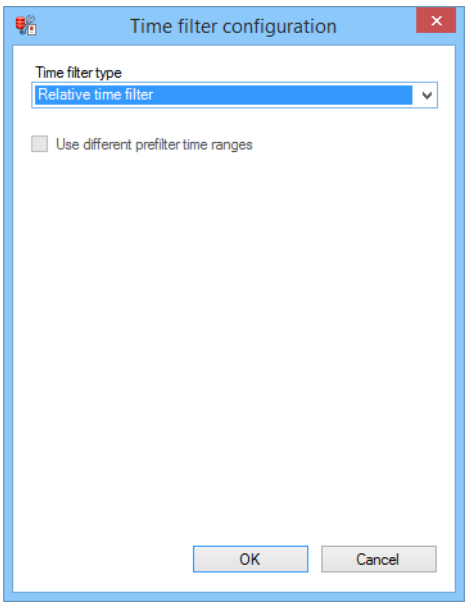
- Shift A: Morning shift
- Shift B: Afternoon shift
- Shift C: Night shift

SHIFT A

For the display of shifts, we use simple time filters, in order to select the appropriate start time and duration.

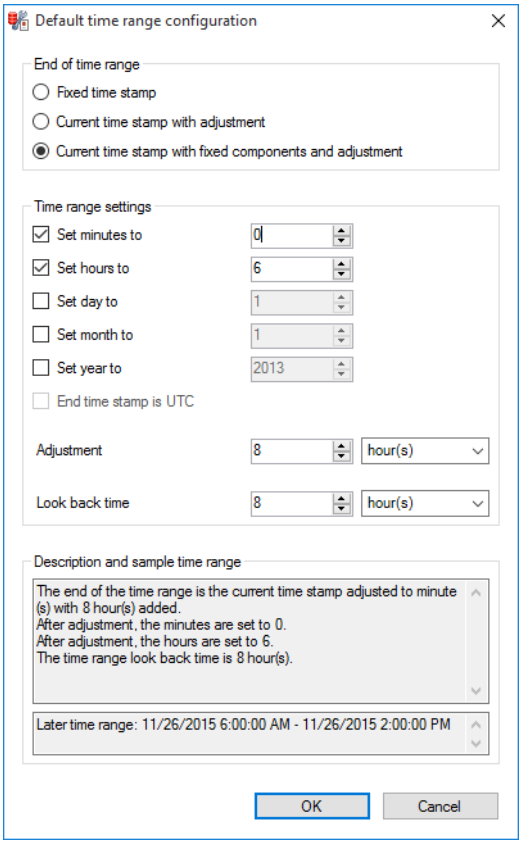
Shift A is the morning shift from 06.00 to 14.00.

1. Select the `relative time filter` as a **time filter type**.



2. For **End of time range**, select **Current time stamp with fixed components and adjustment**.
3. Set the following as **time range settings**:
   a) **Minutes** to `0`
   b) **Hours** to `6`
4. Select `8 hours` as a value for the **Adjustment** option.

5. Select `8 hours` as a value for the **look-back time** option.



The morning shift in the report thus goes every day from `06.00` to `14.00`.

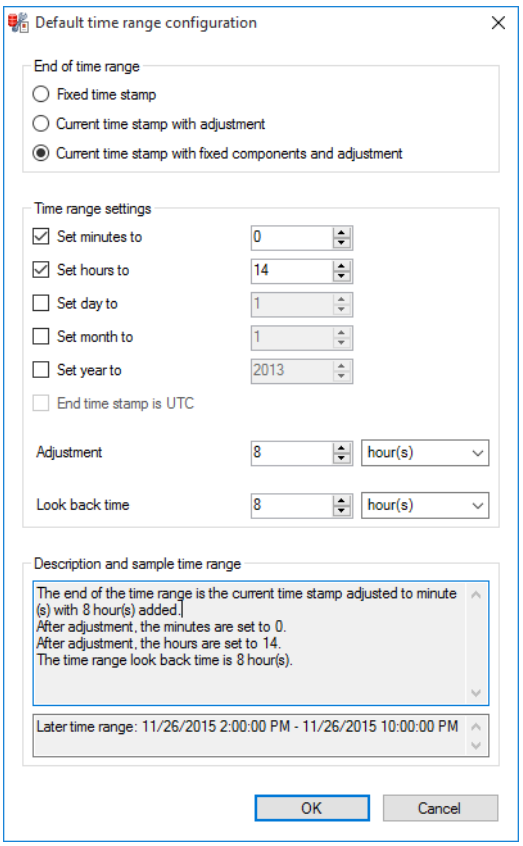
SHIFT B

Shift B is the afternoon shift from 14.00 to 22.00.

The time filters are amended accordingly.

1. Select the `relative time filter` as a **time filter type**.
2. For **End of time range**, select **Current time stamp with fixed components and adjustment**.
3. Set the following as **time range settings**:
   a) **Minutes** to `0`
   b) **Hours** to `14`
4. Select `8 hours` as a value for the **Adjustment** option.

5. Select `8 hours` as a value for the **look-back time** option.



The afternoon shift in the report thus goes from 14.00 to 22.00 every day.

SHIFT C

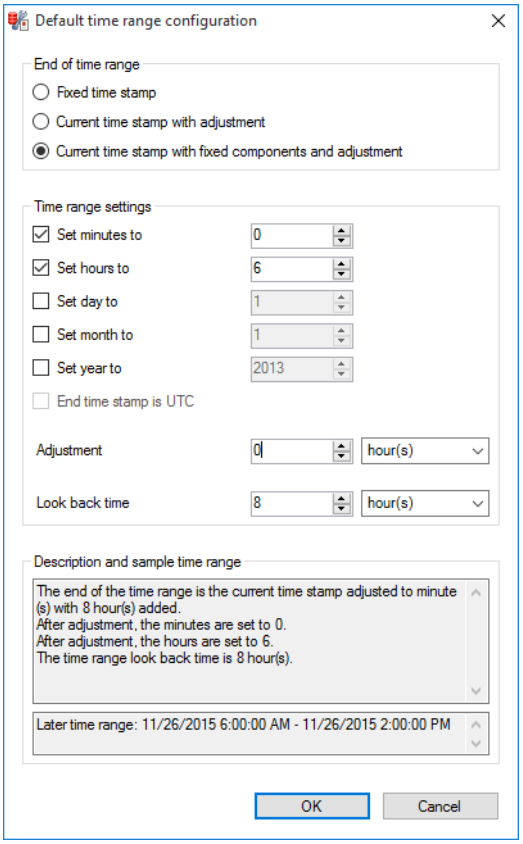
Shift C is the night shift from 22.00 to 06.00.

The configuration of the time filter is somewhat different from Shift A and B:

A relative time filter is still set. However, we must take into account that a new day starts within the shift. We therefore only set the end time and a corresponding lookback time.

1. Select the `relative time filter` as a **time filter type**.
2. For **End of time range**, select **Current time stamp with fixed components and adjustment**.
3. Set the following as **time range settings**:
   a) **Minutes** to `0`
   b) **Hours** to `6`
4. Select `0 hours` as a value for the **Adjustment** option.

5. Select `8 hours` as a value for the **look-back time** option.

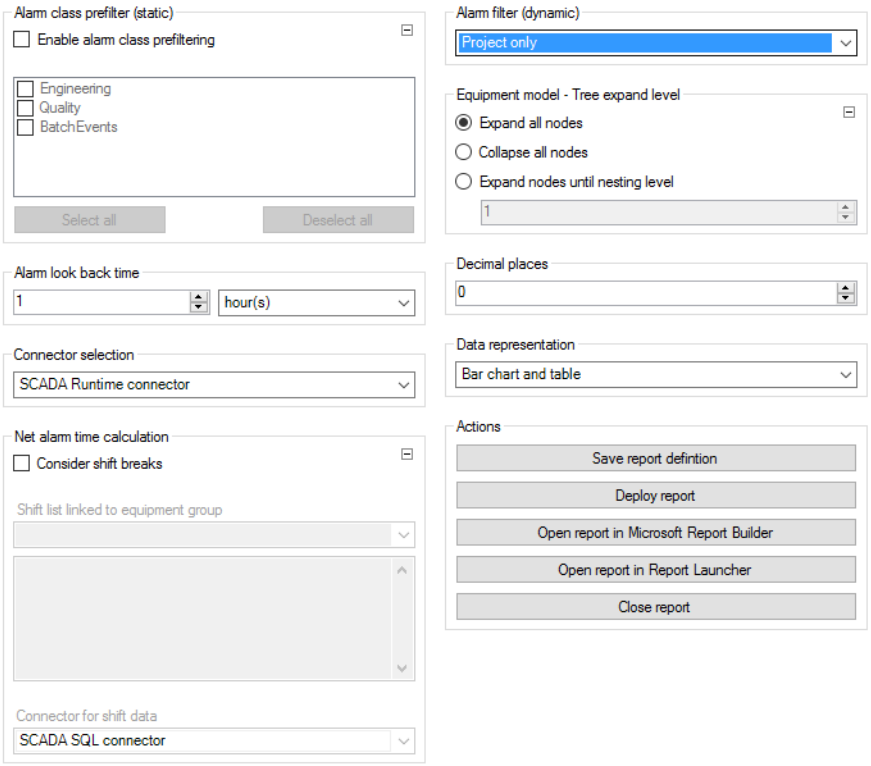


The night shift in the report thus goes from 22.00 of the day before to 06.00.

4.1.7 Special features for alarm aggregation

To keep our example as simple as possible, we use the standard configuration of the report template.

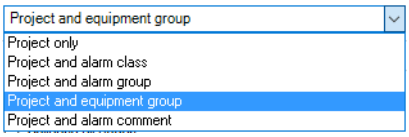
We only need to make a selection for the **alarm filter (dynamic)**.



The standard settings in the screenshot show:

There are static filters for alarm groups and alarm classes. You can, for example, distinguish between process alarms and quality assurance alarms by means of alarm classes that are defined in the zenon variables. The former inform you about the performance and you use the latter for the creation of **Reports By Exception - RBE**.

The dynamic alarm filter makes it possible to only make the actual selection during configuration in the Report Launcher.



For our example, we select `project and equipment group`.

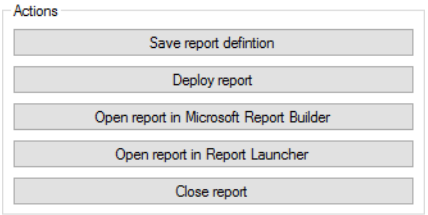
Hint: Combine static alarm filters with dynamic alarm filters. You can thus create very different reports with the same data basis.

4.1.8 Deploy report

Now we have:

- Exported data from zenon into the zenon Analyzer database
- Configured different alarm aggregation reports that:
  - Are based on all data of a project
  - Portray individual areas using equipment models
  - Relate to different time configurations:
    Lots
    Weeks
    Month
    Calendar month
    Shifts A, B and C

The reports can now be prepared.
To do this, click on the **Prepare report** button in the configuration of the report template in ZAMS.



There are queries via dialogs for the saving and overwriting of files. Always select **All** and confirm this by clicking on **OK**.

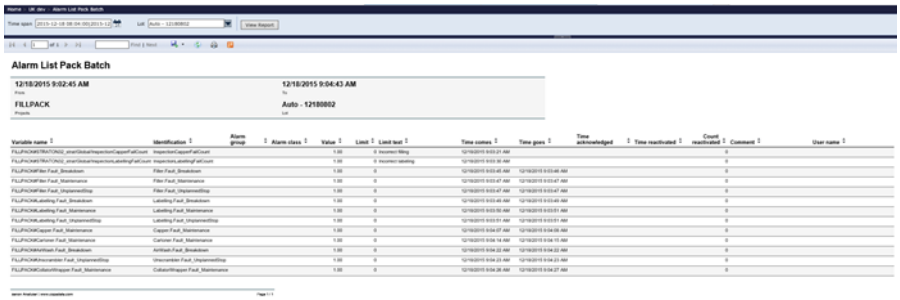
Hint: You can prepare several reports at the same time. To do this, click on the symbol for **Prepare all reports** in the toolbar.

All data is thus saved for the reports open in ZAMS and the reports are prepared. This is the quickest method for the preparation of many reports.

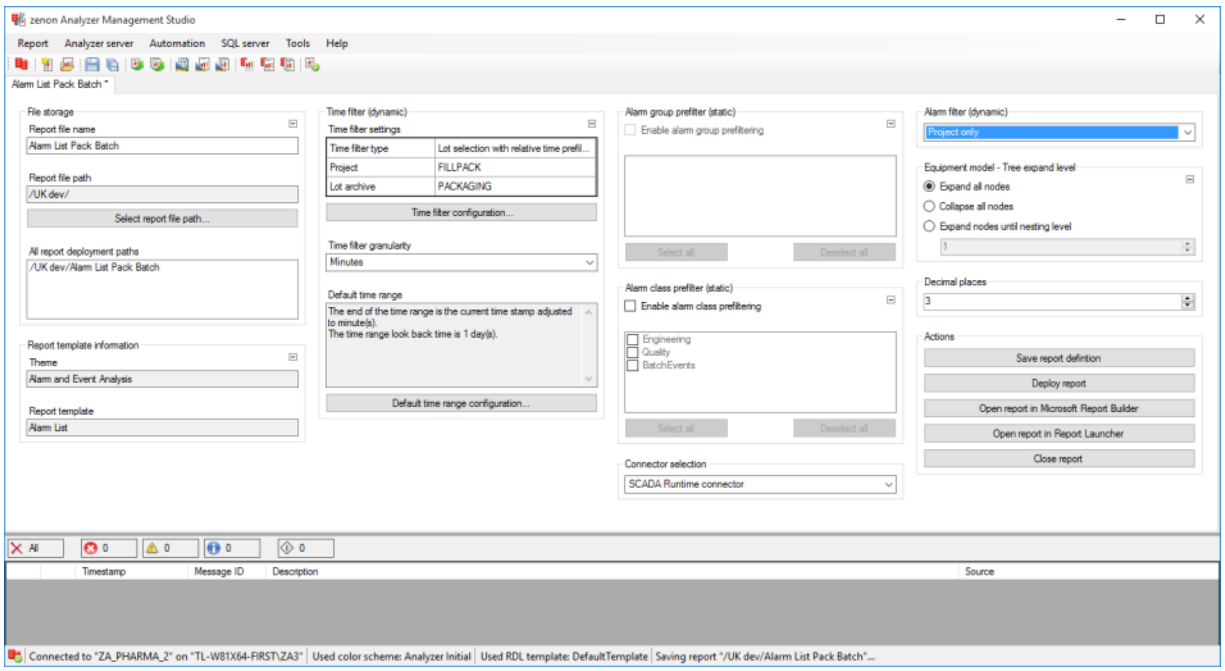
4.2 Alarm List

This report template lists all current individual alarms, which corresponds to the conventional alarm list in zenon.

The illustration shows all alarms without pre-filtering for a certain lot:



The same settings for time and selection as for alarm aggregation also work for these reports. Identical settings were thus also used for this report - with one exception: For the **Alarm filter (dynamic)** option, `Project only` was selected.

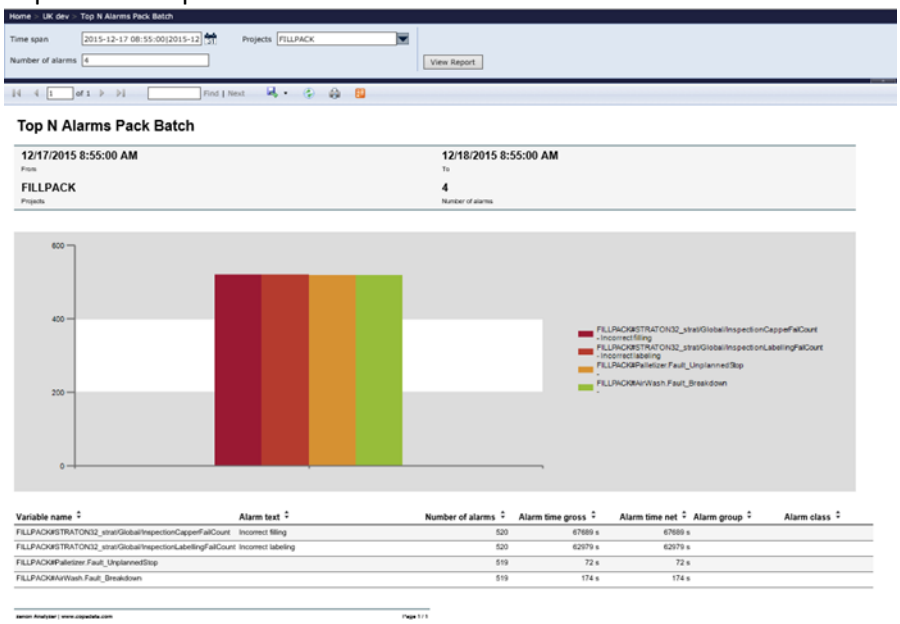


We thus get a complete alarm list for the whole project.

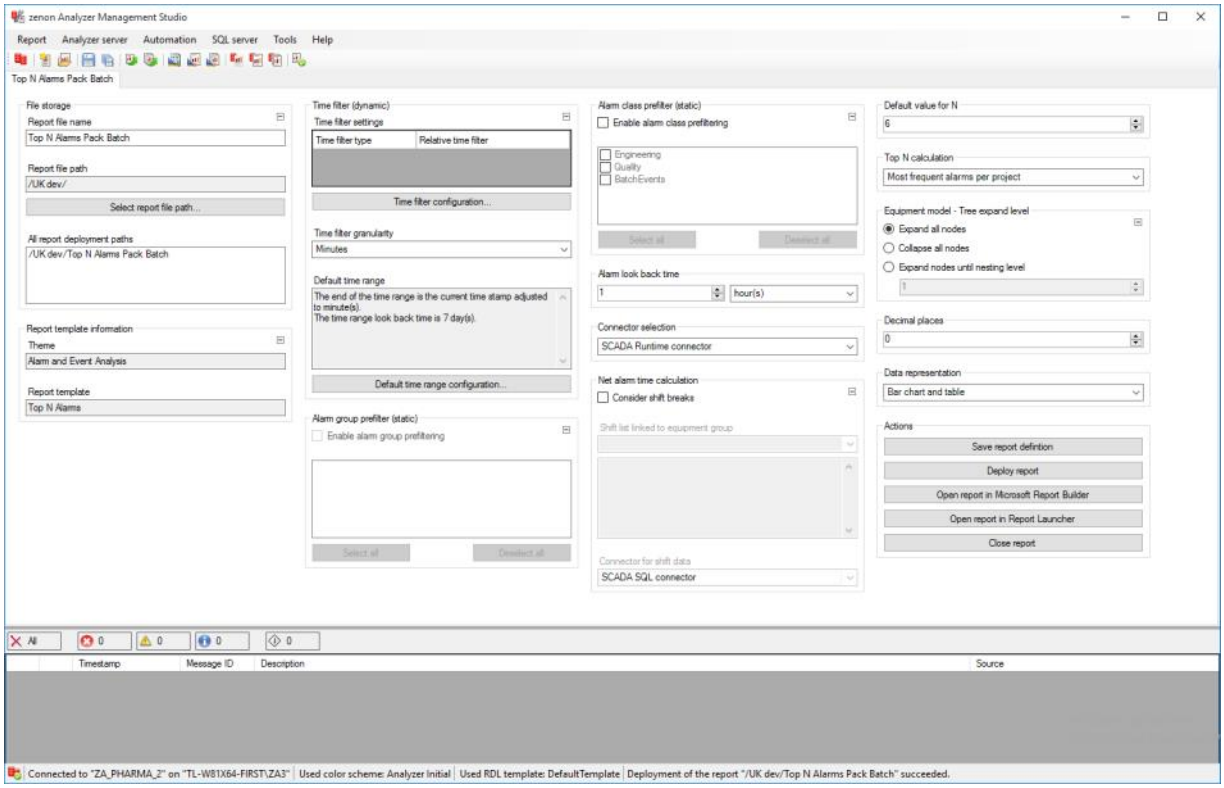
Use the dynamic filter if you need the equipment model, for example, in order to offer a certain perspective on equipment areas in the report.

4.3 Top N Alarms

Top N alarm reports show a selection of alarms that have occurred most frequently.



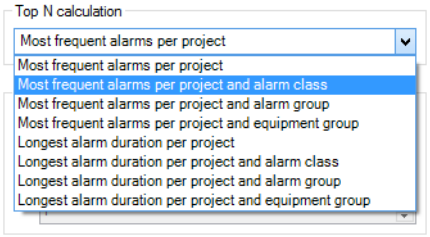
This report for Top N alarms is aimed at problem areas.



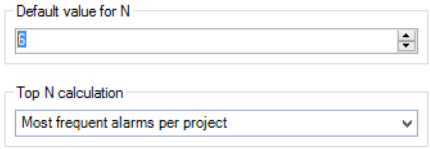
Here, the focus is on individual report setting for the **Top N calculation** and **standard value for N** options, as well as the time period.

We select for:

- **Top N calculation**: Most frequent alarms per project



- **Default value for N**: 6



4.4 Trend reports

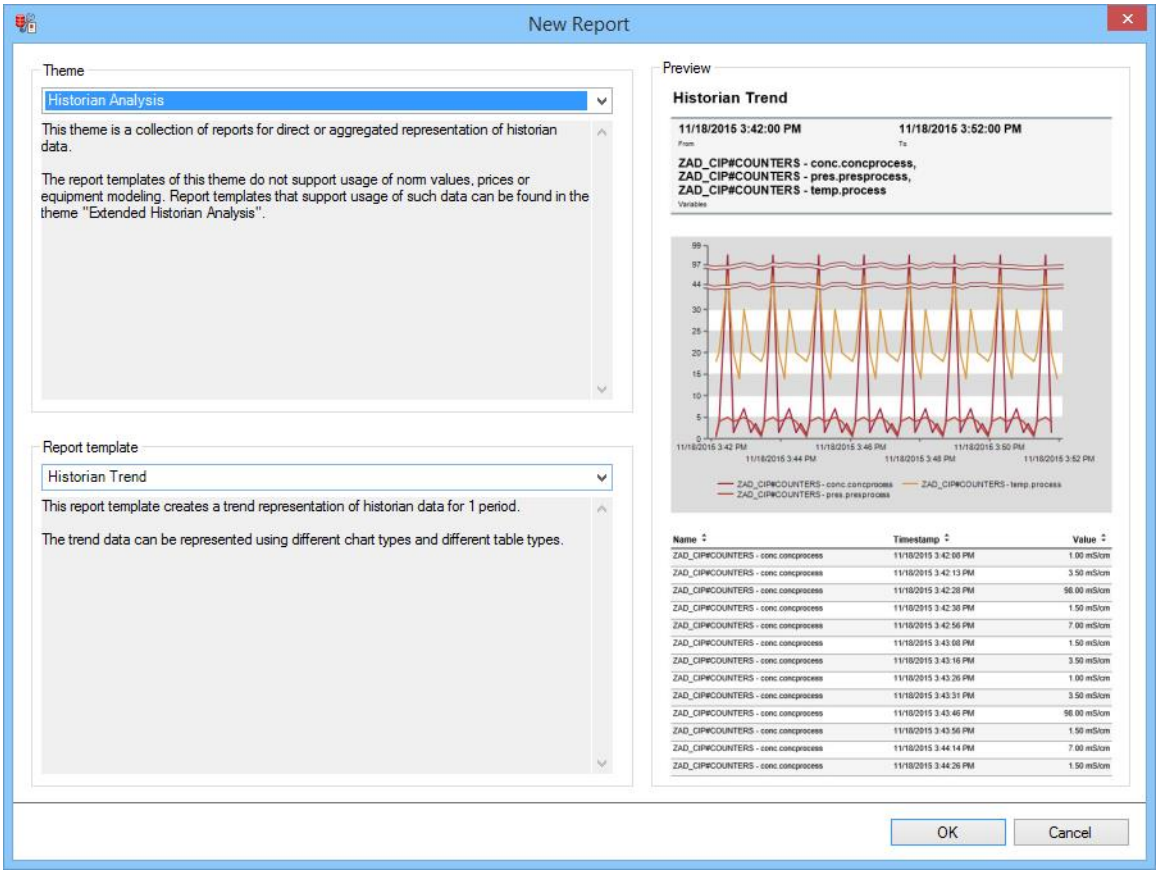
For a trend report for individual process variables in the course of a lot or a certain time section, we use the **Historian trend** in our example.

By using the same time filter as for **alarm aggregation** to filter data from the progression of a lot, a week, a month or a shift, diagrams for individual and grouped variables can be displayed.

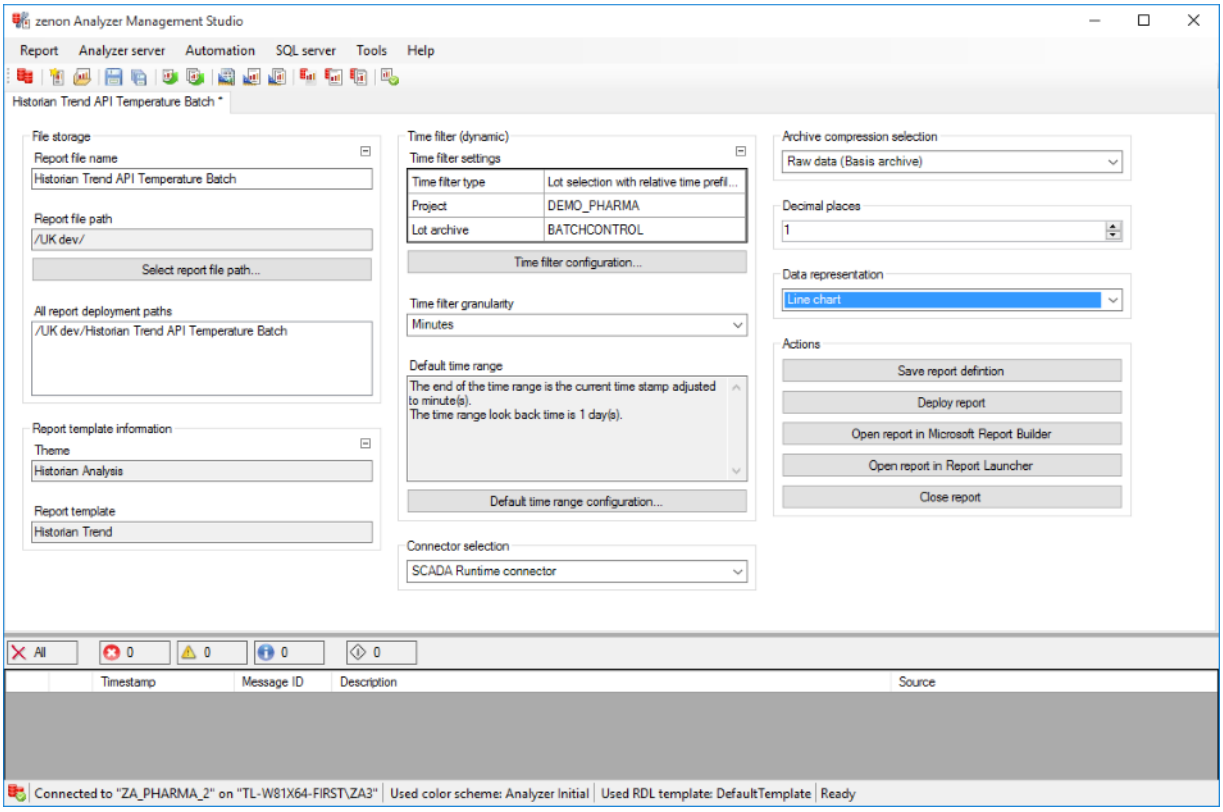
CONFIGURE REPORT IN ZAMS

To configure the report:

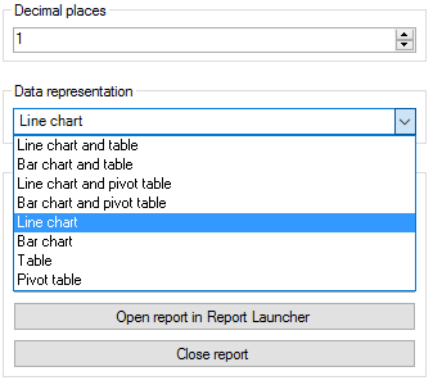
1. Select the Historian trend template in the Historian analysis theme.



The template is opened:



2. Configure the default settings.
3. Configure the curve type and the data display:



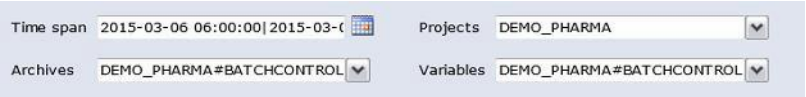
4. Save the report and provide it.

OPEN REPORT IN THE REPORT LAUNCHER

The following information must be provided when opening the report in the Report Launcher:

- Archive in which data is saved.

- Variables that are required for the diagram



This information can be selected each time a report is called up or as a standard parameter (on page 58).

4.5 Loss times and productivity - meanings and waterfall

In the next section, we will look at examples of reports for machine-based production analysis:

- Productivity Indicators Analysis
- Loss analysis
- Comprehensive productivity analysis as a combination of both other reports

These reports need special variables in zenon Supervisor in order to focus on certain information. To link these variables, **Meanings** are defined in both the Analyzer as well as in zenon Supervisor. zenon Analyzer looks for these meanings in certain reports.

In zenon Supervisor, the **Meaning** for each variable, depending on the zenon version are given in the following property:

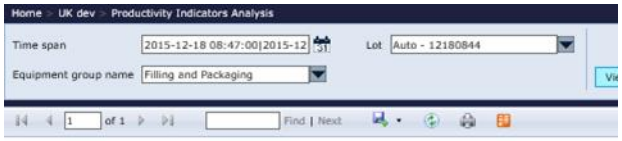
- **Meaning** in the **Analyzer** group (from version 7.20)
  Or
- **Resources label** in the **General** group (up to and including version 7.11)

> **Information**
>
> For details, see also the **Meaning and Waterfall Chart Wizard** chapter in the manual.

Analyses for loss times and productivity can also provide an overview of lot productions over a longer period of time. To do this, lots of the same equipment models are compared.

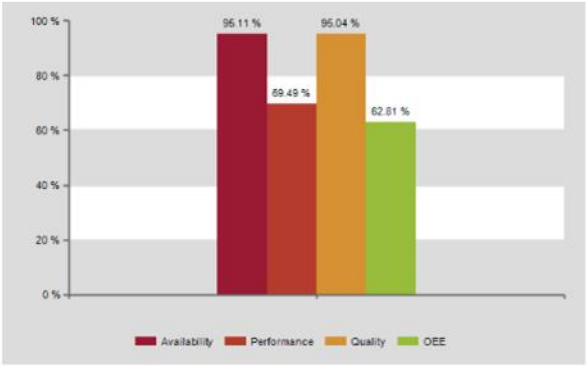
4.5.1 Productivity indicators

Reports that are based on this template analyze archive data and calculate aggregated productivity indicators for a time period, based on an equipment group. The four central OEE indicators can be displayed as a bar chart or in four measurement devices. The additional optional indicators are displayed in a table.



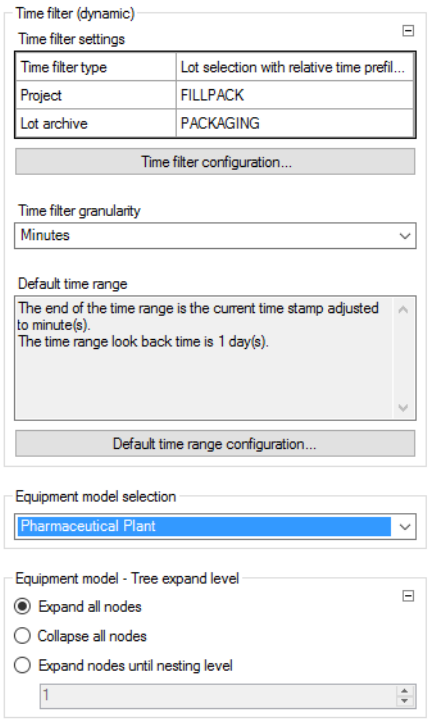
Productivity Indicators Analysis

12/18/2015 9:44:53 AM From	12/18/2015 9:47:13 AM To
Auto - 12180844 Lot	Filling and Packaging Equipment group name
<<Filter deactivated>> Pallet type	<<Filter deactivated>> Crate type
<<Filter deactivated>> Bottle type	<<Filter deactivated>> Bottling tank number



Indicator name	Value
Availability	95.11 %
Performance	69.49 %
Quality	95.04 %
OEE	62.81 %
Mean time between stoppages (MTBS)	
Mean time between failures (MTBF)	
Mean time to repair (MTTR)	
Mean time between touches (MTBT)	
Total units	30726.000
Good units	30532.000
Machine efficiency	
Effective output	
Delivery efficiency	
Utilisation factor	

In order to be able to filter our the required data for this report in the required time range, time filters and equipment models are configured accordingly.

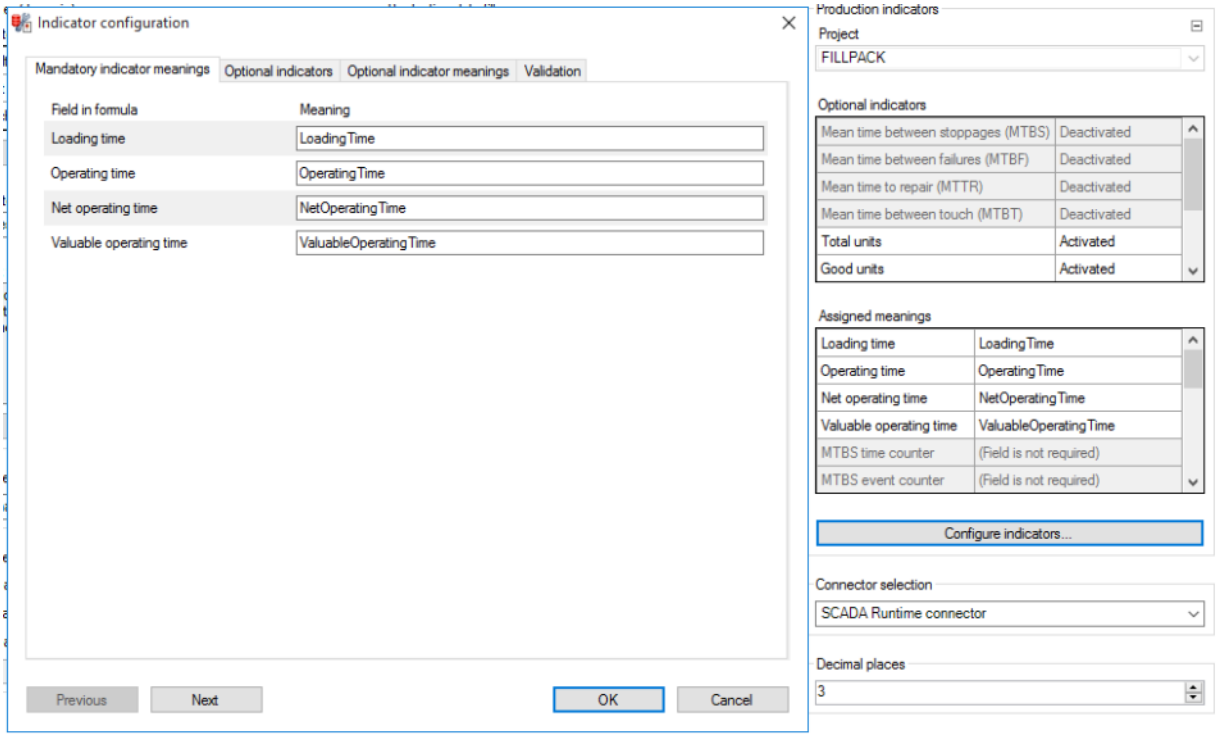


The following is applicable in our example:

- The data filter is left empty.
- Production indicators are mandatory. They lead directly to the zenon project that contains the key values.

MEANINGS

In the **Configure indicators** dialog, you can set individual meanings for each required variable.



Indicator	Description
Loading time	Complete planned duration including planned downtime such as cleaning, switching, handover. Default: `Loading Time`
Operating time	Actual running time. Sum of effective running time and downtimes. Default: `Operating Time`
Net operating time	Net duration without interruptions. Default: `NetOperating Time`
Valuable operating time	Valuable running time. Result of the **net operating time** minus losses due to a lack of quality or damage. Default: `ValuableOperating Time`

The Meanings for each variable must be added in zenon Supervisor.
You can query these directly in the **Analyzer/Meaning** variable properties. The variables for use in zenon Analyzer are thus linked.

Use the Meaning and Waterfall Chart Wizard to add the meanings in the correct format.

Information

You must do the following in order to be able to link variables:

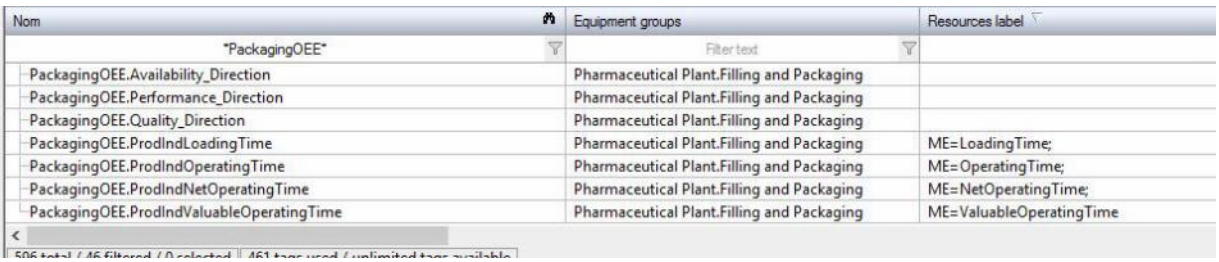
- Have an equipment model
- Contained in the corresponding archive

The following is also applicable:

- The archive must be linked to the same equipment group as the variable.
- The variable must only be included in one archive.

Note: Up to and including zenon 7.11, the Meaning is defined in the **Resources label** property. Use the following syntax there: **ME=**, e.g. **ME=LoadingTime**.

Example for zenon 7.11:



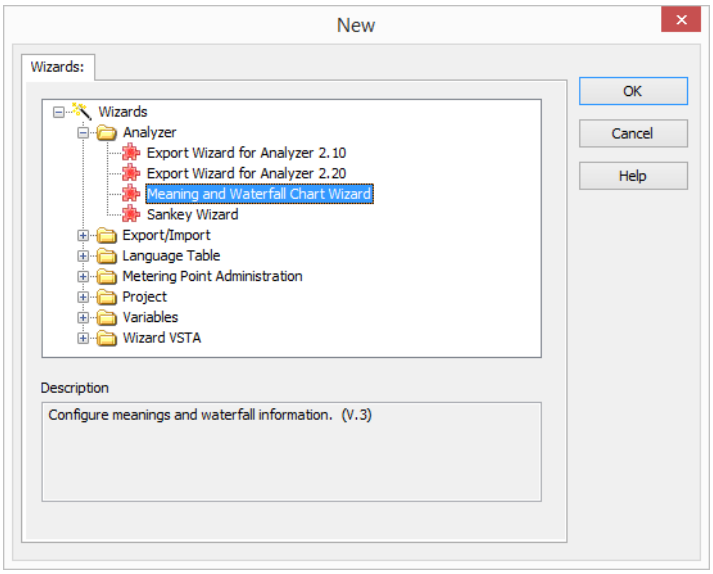
Nom	Equipment groups	Resources label
"PackagingOEE"	Filter text	
PackagingOEE.Availability_Direction	Pharmaceutical Plant.Filling and Packaging	
PackagingOEE.Performance_Direction	Pharmaceutical Plant.Filling and Packaging	
PackagingOEE.Quality_Direction	Pharmaceutical Plant.Filling and Packaging	
PackagingOEE.ProdIndLoadingTime	Pharmaceutical Plant.Filling and Packaging	ME=LoadingTime;
PackagingOEE.ProdIndOperatingTime	Pharmaceutical Plant.Filling and Packaging	ME=OperatingTime;
PackagingOEE.ProdIndNetOperatingTime	Pharmaceutical Plant.Filling and Packaging	ME=NetOperatingTime;
PackagingOEE.ProdIndValuableOperatingTime	Pharmaceutical Plant.Filling and Packaging	ME=ValuableOperatingTime

MEANING AND WATERFALL CHART WIZARD

To start the wizard:

1. In zenon open menu **File**
   or press the shortcut `Alt+F12`
2. Select the entry **Wizards**
3. The selection dialog is opened.
4. Navigate to node **Analyzer**.

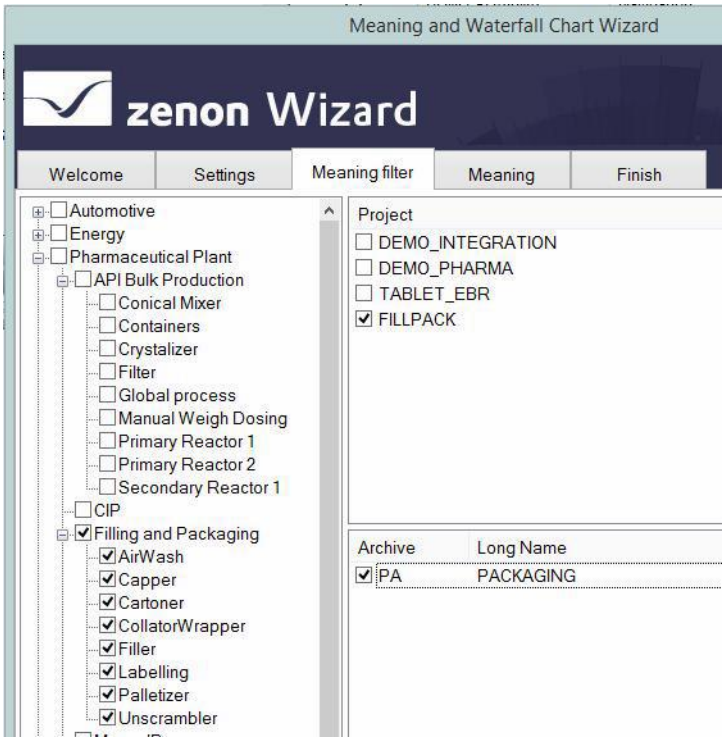
5. Select the **Meaning and Waterfall Chart Wizard**.



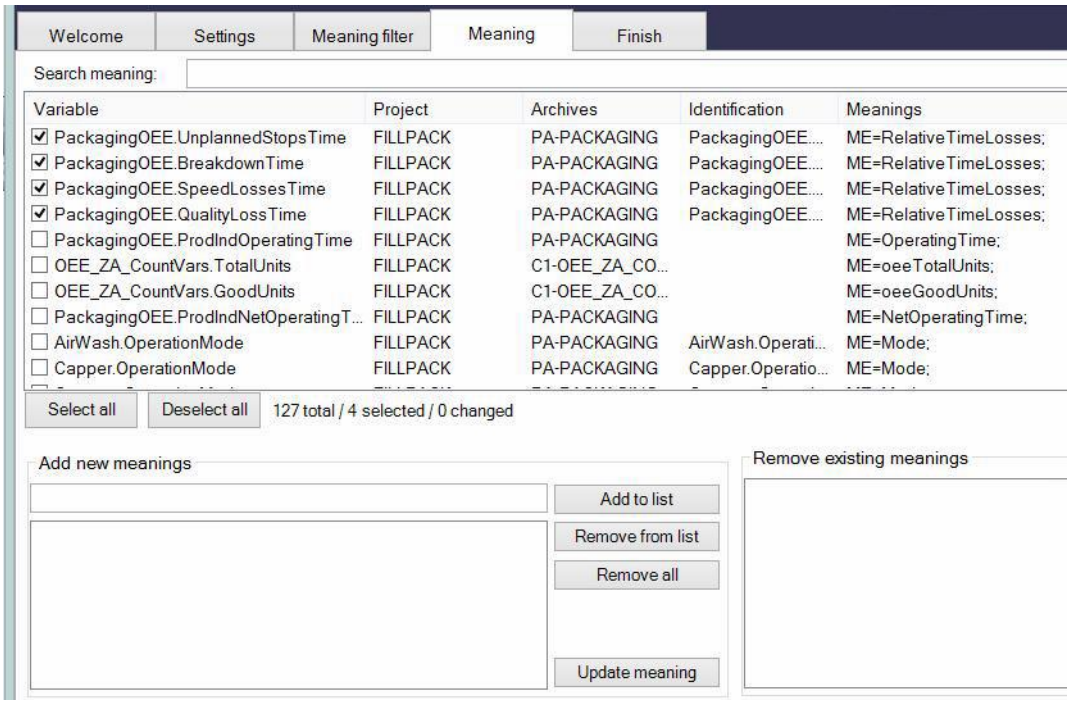
6. Start the wizard by clicking on **OK** .

7. If the wizard has been started, select **Define Meannings** in the **Settings** tab first and load the project data. Only active projects are loaded. If you want to load data from all projects, deactivate the **Load every project of this workspace into the memory** option.

8. Then switch to the **Meaning filter** tab and configure the required equipment models, projects and archives.



9. Switch to tab **Meaning**.
   All configurable variables are displayed here.
10. Select the variables that you want to use for a Meaning.



11. Add the desired text and click on **Update meaning**.

    If the variables have been configured correctly, the **Finish** button is available in the **Finish** tab.

Clicking on **Finish** sets the **Meaning**-text in the zenon projects. The project must then be exported with the appropriate Analyzer Export Wizard for zenon Analyzer.

IMPORTANT STEPS

When configuring, ensure that all required data is available:

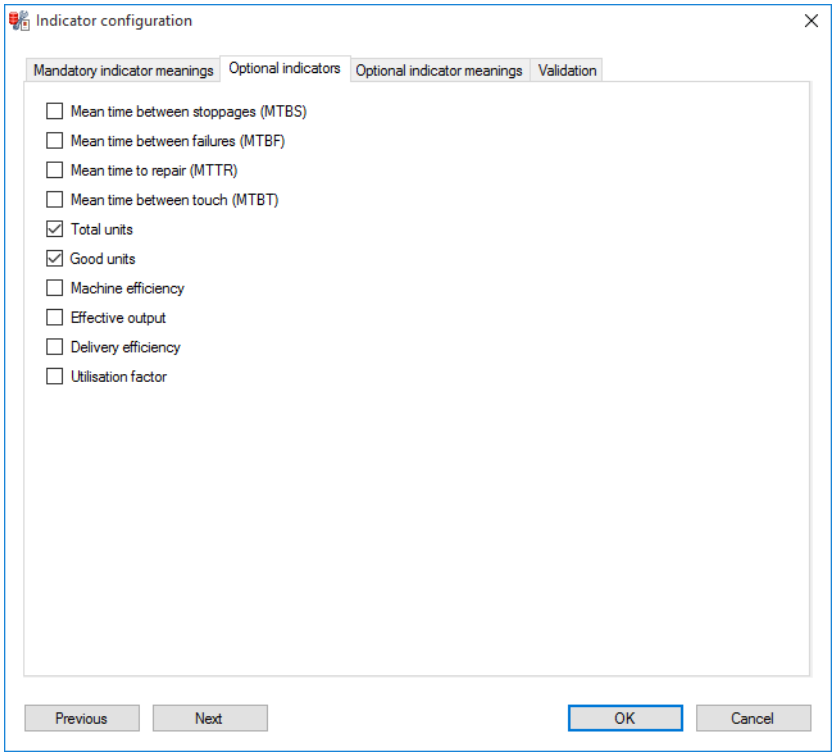
- These reports require variables from the zenon project.
- The variables from the zenon project are linked to zenon Analyzer using **Meanings**.
- **Meanings** are issued, depending on the zenon version, in different zenon properties.
- In order to assign **Meanings** correctly, use the **Meaning and Waterfall Chart Wizard**.
- Each linked variable requires an equipment model and must be contained in an archive that is linked to the same equipment model.
- The variable must only be included in one archive.

OPTIONAL CONFIGURATION

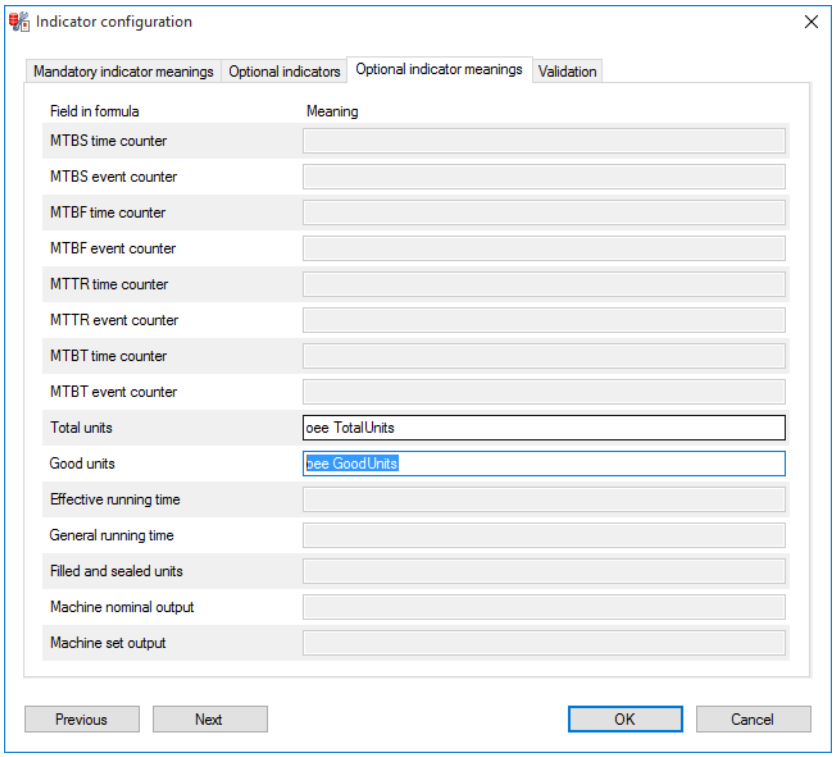
There are also optional configurable indicators available.

In our example, we also select **total units** and **Good units** as a quality indicator for the goods produced.

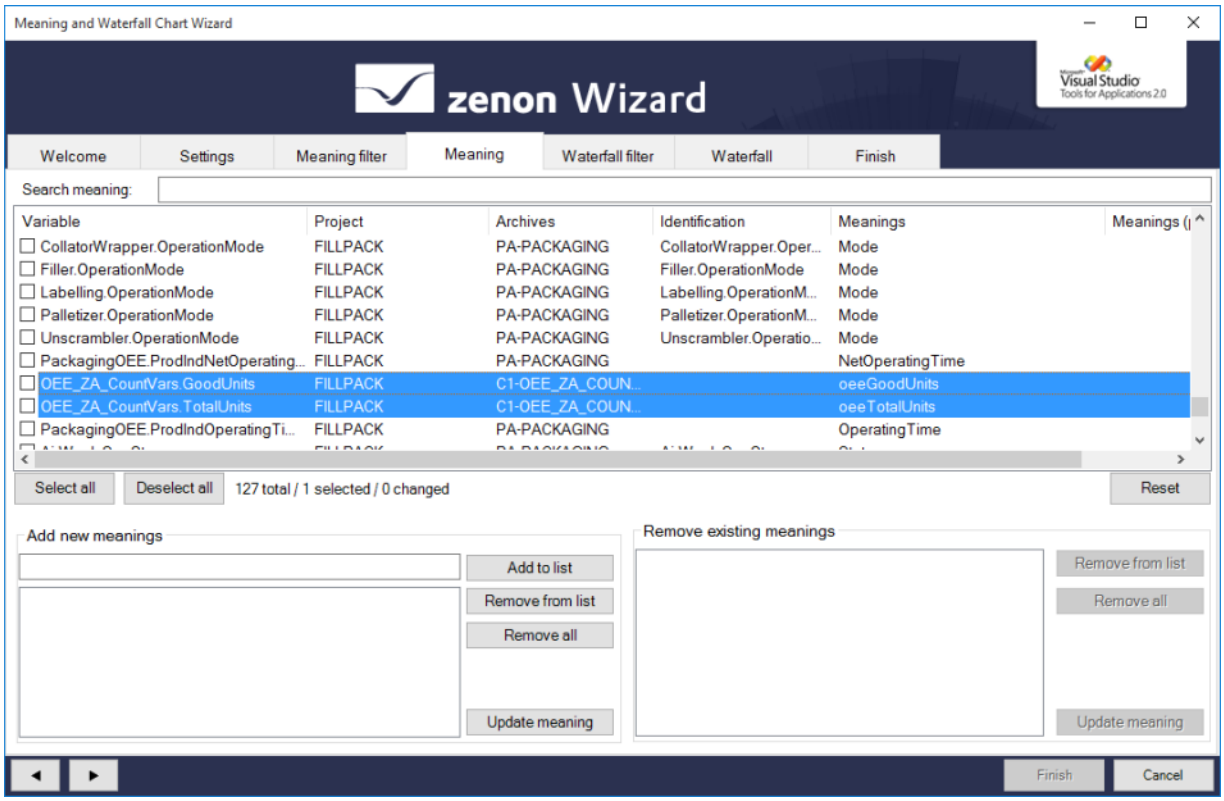
In the **Configure indicators** dialog, open the **Optional indicators** tab and activate **Total units** and **Good units**.

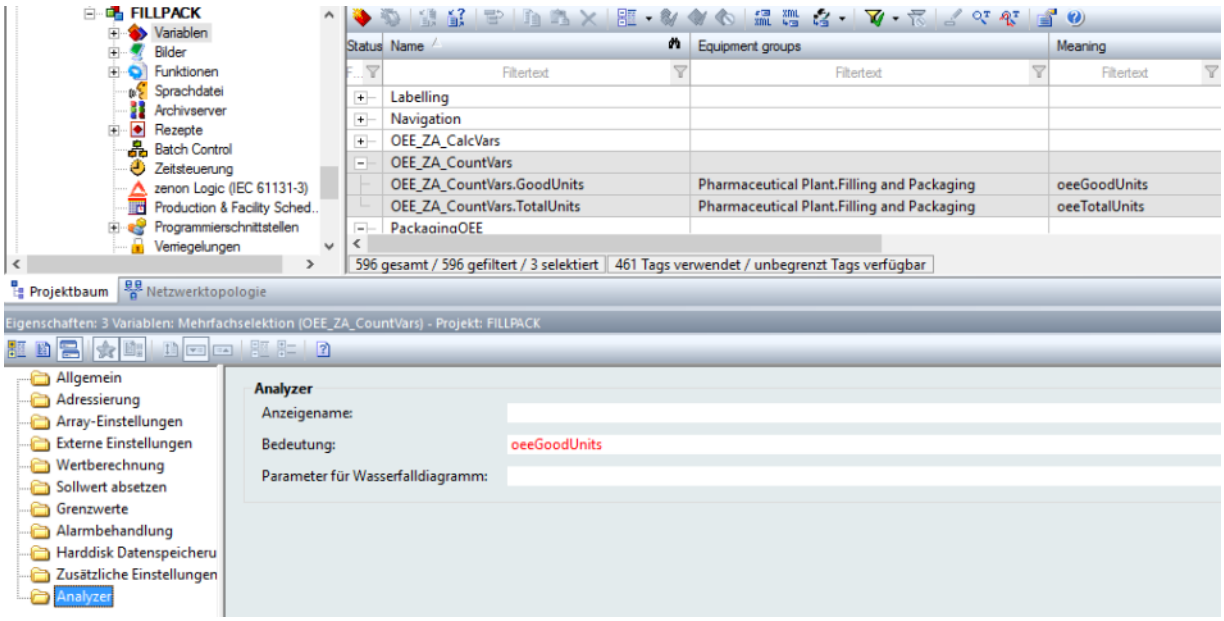


These indicators have an assigned **Meaning** text. All **Meaning** texts can be amended in the **Meanings for optional indicators** tab so that they follow a specific convention.



These meanings must be created with the **Meaning and Waterfall Chart Wizard** in the zenon project again.

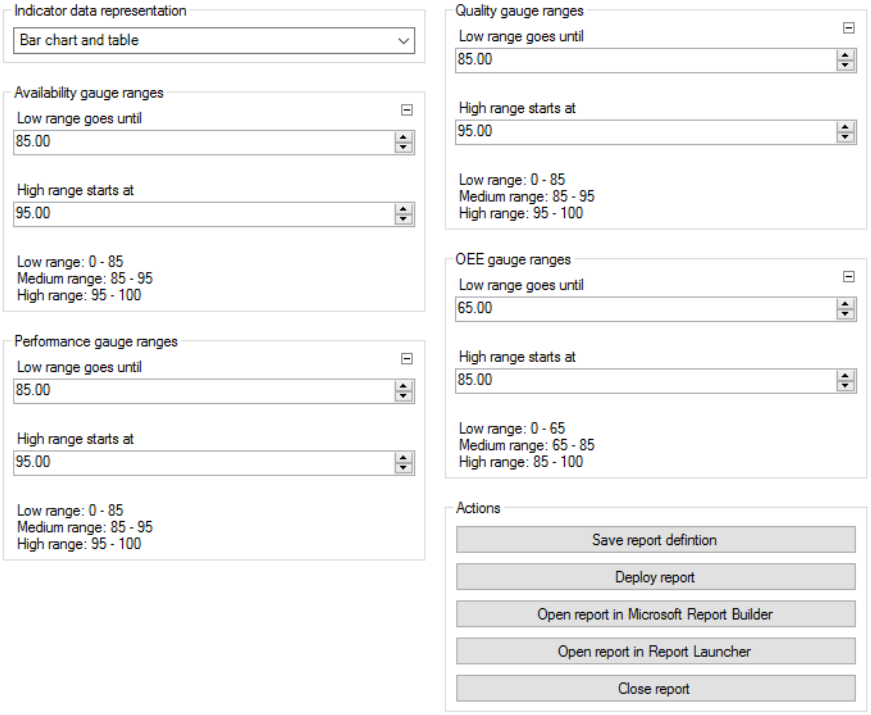




Afterwards, the project must be exported into zenon Analyzer again with the appropriate Analyzer Export Wizard.

COMPLETE REPORT

The report is now linked to the required variables. To complete the configuration, areas can be established for visibility:



The report can then be prepared.

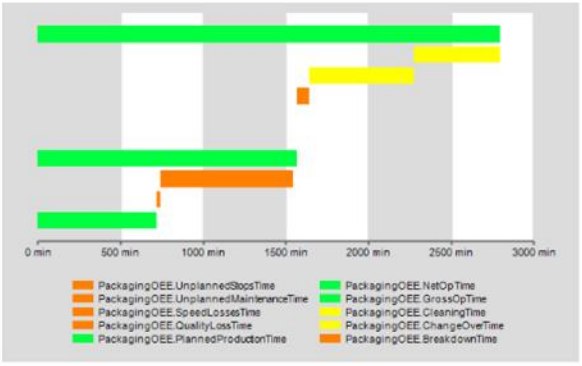
4.5.2 Loss times

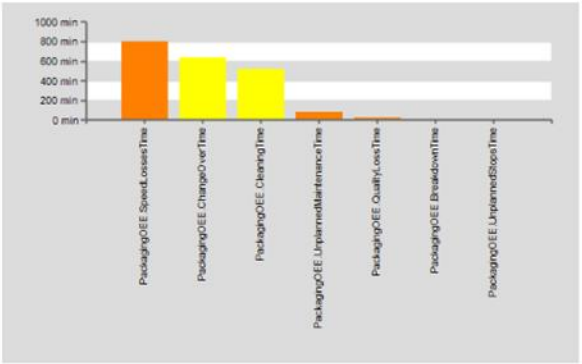
Reports that are based on this template analyze archive data and calculate aggregated loss times for a time period, based on an equipment group and a waterfall model. The results can be displayed as a Waterfall diagram, Pareto diagram or as a table.

Display in detail:

Losses Analysis absolute detailed

12/18/2015 9:58:58 AM From	12/18/2015 9:59:41 AM To
Auto - 12180858 Lot	
Filling and Packaging Equipment group name	WF1 Waterfall model
<<Filter deactivated>> Pallet type	<<Filter deactivated>> Crate type
<<Filter deactivated>> Bottle type	<<Filter deactivated>> Bottling tank number



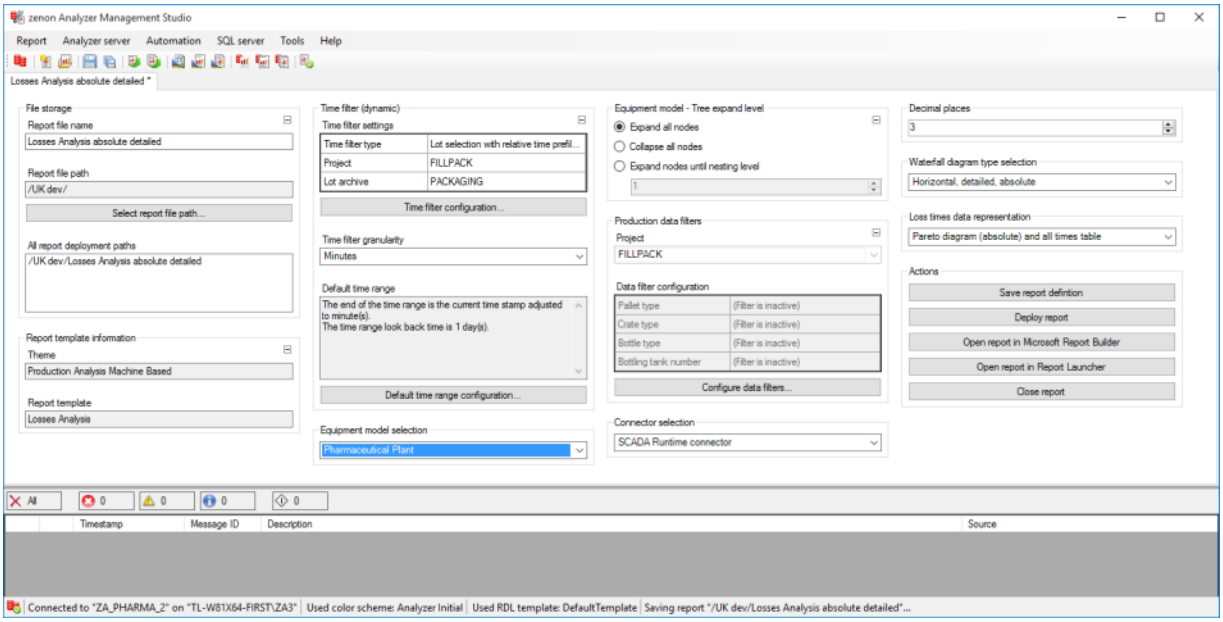


Variable name	Absolute time	Relative time
PackagingOEE.PlannedProductionTime	2796.181 min	100.00 %

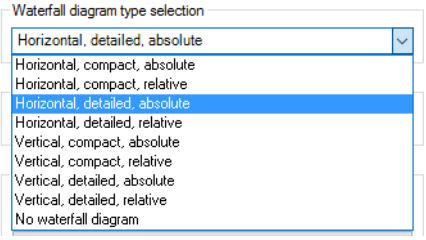
Compact display:

Configuration in ZAMS is as usual:

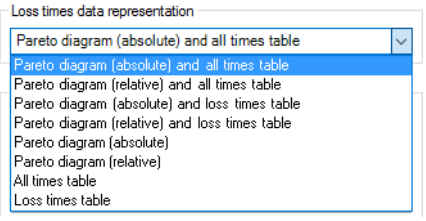
1. Configure the required time filters, depending on the time filter type.



2. Define the equipment model or lot archive.
3. Select the project for the required data.
   The data filter is not required in our example.
4. Select the desired type of waterfall diagram.



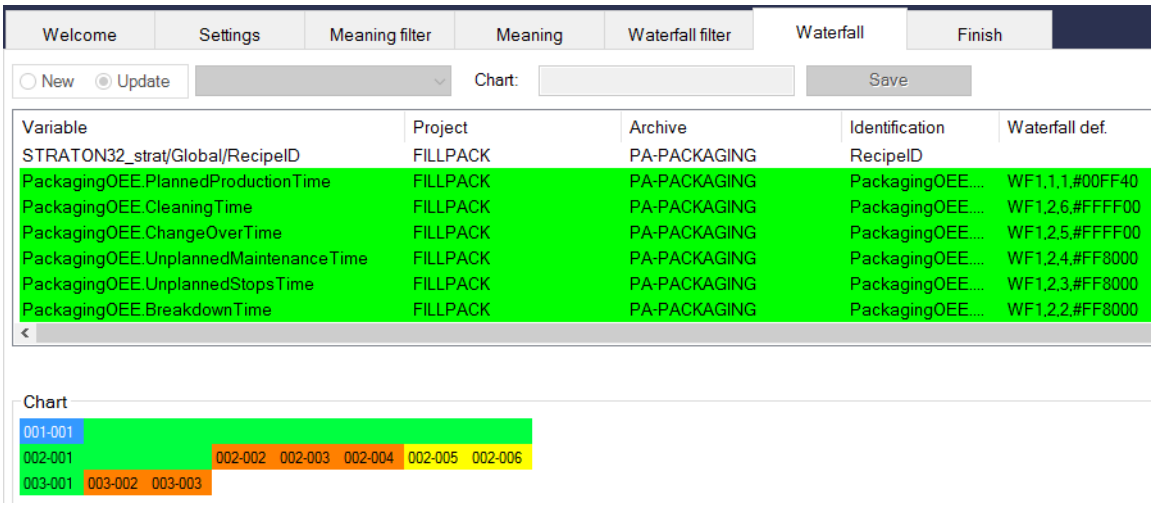
5. Select the desired type of loss display (Pareto chart).



VARIABLES SELECTION

The selection of the variables that are used in the report is configured in zenon Supervisor with the **Meaning and Waterfall Chart Wizard**:

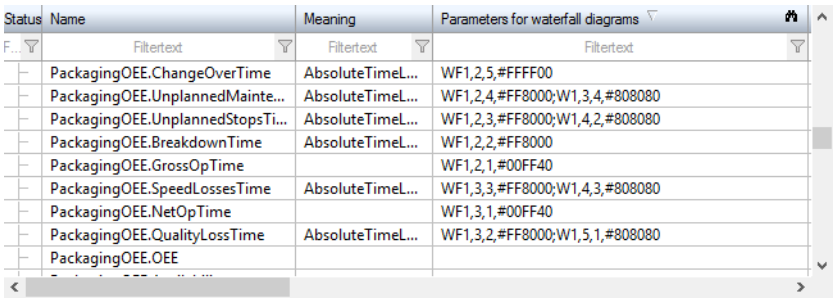
1. Like the configuration of the Meanings, you activate, in the **Settings** tab, the **Define Waterfall** checkbox and load the data.
2. Then open the **Waterfall filter** tab and select the desired variables.
3. Open the **Waterfall** tab.



4. Drag variables to the diagram area by means of drag&drop.
5. Give the waterfall chart a name.
6. Save the configuration.

   Note: You can configure more than one waterfall chart. You select the respective diagram that is needed in the report.
7. Click on the **Finish** button in the **Finish** tab. The configuration is thus saved.
8. Export the project to the zenon Analyzer again with the appropriate Analyzer Export Wizard.

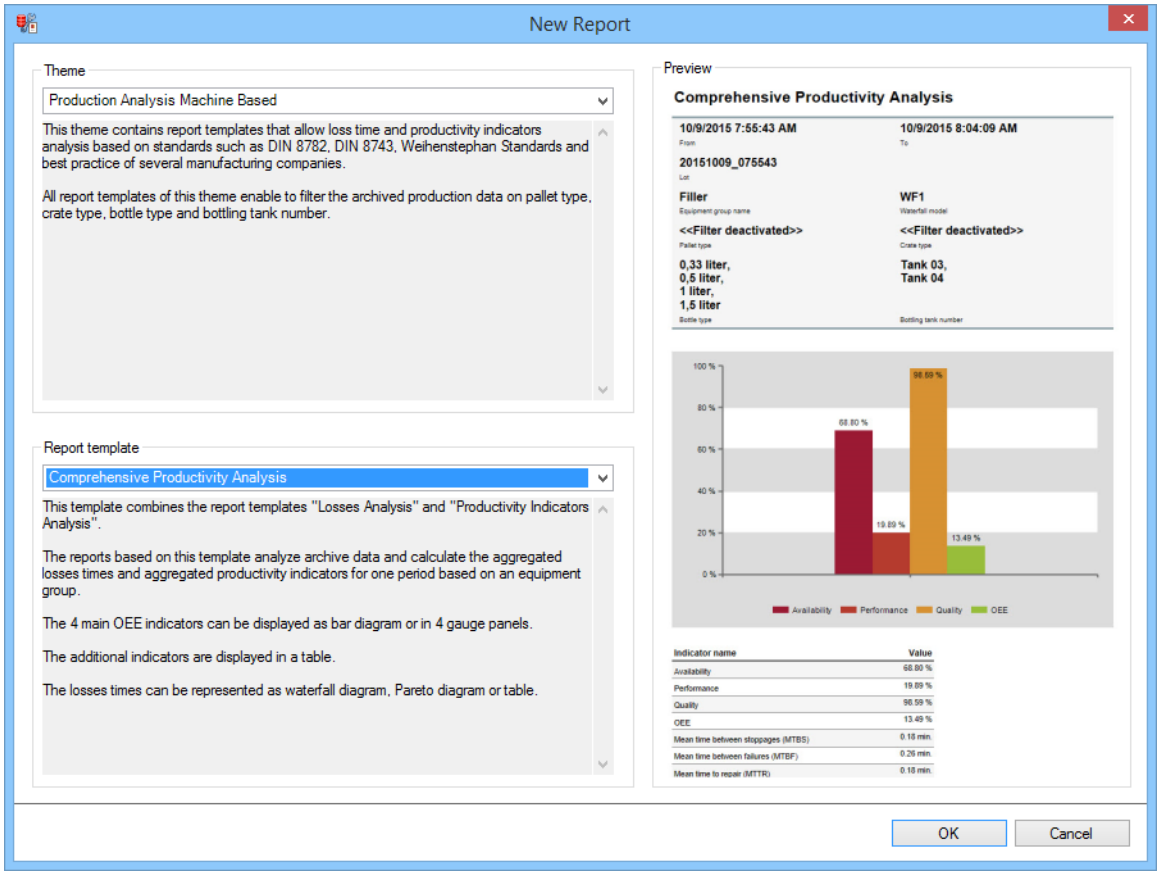
Illustration: A variable can contain several Meanings and waterfall displays.



4.5.3 Comprehensive Productivity Analysis

This template combines the **Losses Analysis** and **Productivity Indicators Analysis** report templates.

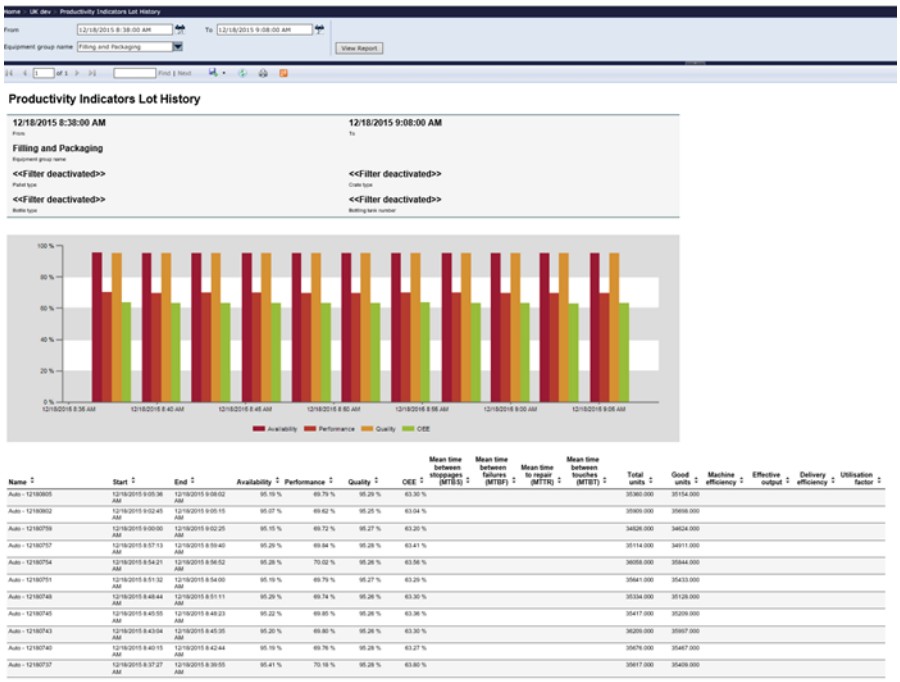
Reports that are based on this template analyze archive data and calculate aggregated loss times and aggregated productivity indicators for a time period, based on an equipment group and a waterfall model. The four central OEE indicators can be displayed as a bar chart or in four measurement devices. The additional optional indicators are displayed in a table. The loss times can be displayed as a Waterfall diagram, Pareto diagram or as a table.



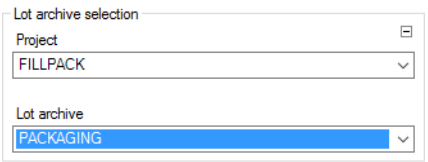
The configuration uses the same input elements as the individual reports.

4.5.4 Productivity Indicators Lot History

The reports that are based on this template analyze archive data and calculate aggregated loss times and productivity indicators for each lot in a time period, based on an equipment group. The results can be displayed as a bar chart or as a line chart. The additional optional indicators are displayed in a table.



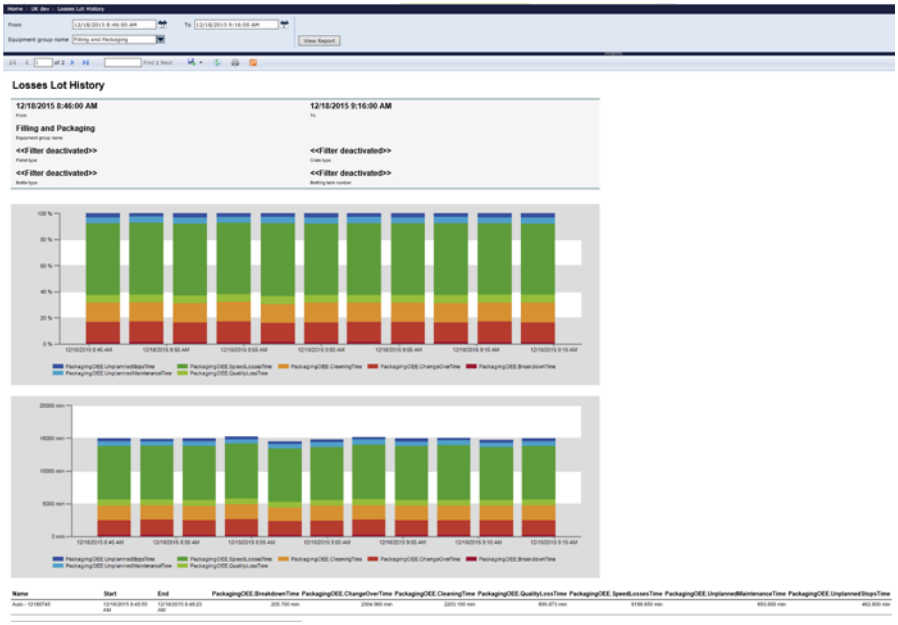
In addition to changing the perspective of the **productivity indicators** report template, the configuration contains a section with the settings for the archive and the project to which the report relates.



Because the report serves to provide an overview of many lots. it makes sense to define a filter that lasts longer than a lot and is not determined by a lot duration.

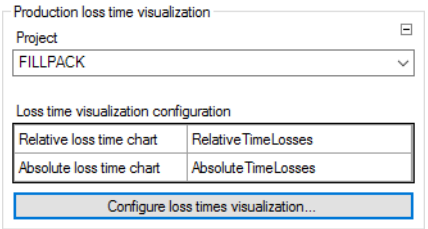
4.5.5 Losses Lot History

The reports that are based on this template analyze archive data and calculate aggregated loss times and productivity indicators for each lot in a time period, based on an equipment group. The results can be displayed as a bar chart or as a table.



As in the **productivity lot history** report template, the project and lot archive can be defined.

In contrast to the **loss times** report template, there is in this template the possibility to apply two tables with different variables to the criteria:
One for relative loss times, the other for absolute loss times.

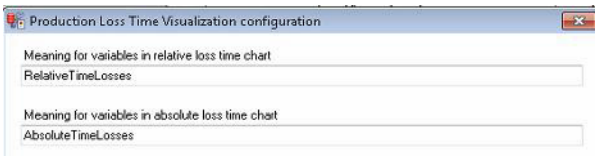


The variables for this are:

- Defined in zenon Supervisor with the **Meaning and Waterfall Chart Wizard**

Status	Name	Equipment groups	Meaning	Parameters for waterfall diagrams
	Filtertext	Filtertext	Filtertext	Filtertext
	PackagingOEE.CleaningTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,2,6,#FFFF00
	PackagingOEE.ChangeOverTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,2,5,#FFFF00
	PackagingOEE.UnplannedMaintenanceTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,2,4,#FF8000;W1,3,4,#808080
	PackagingOEE.UnplannedStopsTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,2,3,#FF8000;W1,4,2,#808080
	PackagingOEE.BreakdownTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,2,2,#FF8000
	PackagingOEE.GrossOpTime	Pharmaceutical Plant.Filling and Packaging		WF1,2,1,#00FF40
	PackagingOEE.SpeedLossesTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,3,3,#FF8000;W1,4,3,#808080
	PackagingOEE.NetOpTime	Pharmaceutical Plant.Filling and Packaging		WF1,3,1,#00FF40
	PackagingOEE.QualityLossTime	Pharmaceutical Plant.Filling and Packaging	AbsoluteTimeLosses	WF1,3,2,#FF8000;W1,5,1,#808080

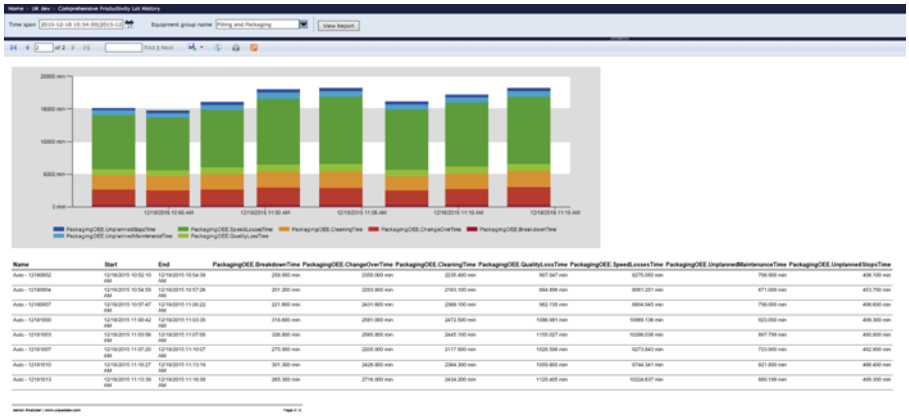
- and assigned in ZAMS using the **Configure display of loss times** option:



4.5.6 Comprehensive Productivity Lot History

The report template combines the templates **Losses Lot history** and **Productivity Indicators Lot History**.

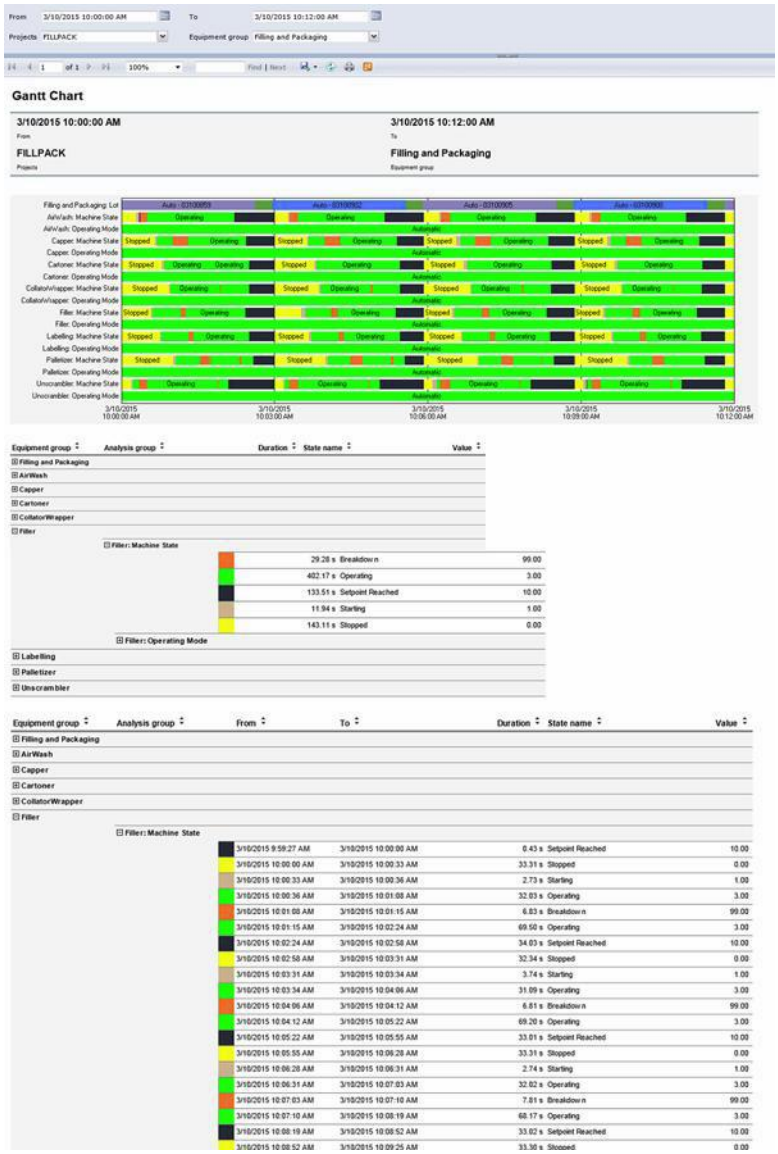
The reports that are based on this template analyze archive data and calculate compressed loss times and productivity indicators for each lot in a time period, based on an equipment group. The four central OEE indicators can be displayed as a bar chart or as a line chart. The additional optional indicators are displayed in a table. The losses can be displayed as a bar chart or as a table.



The configuration uses the same input elements as the individual reports.

4.6 Production analysis Line Based - Gantt chart

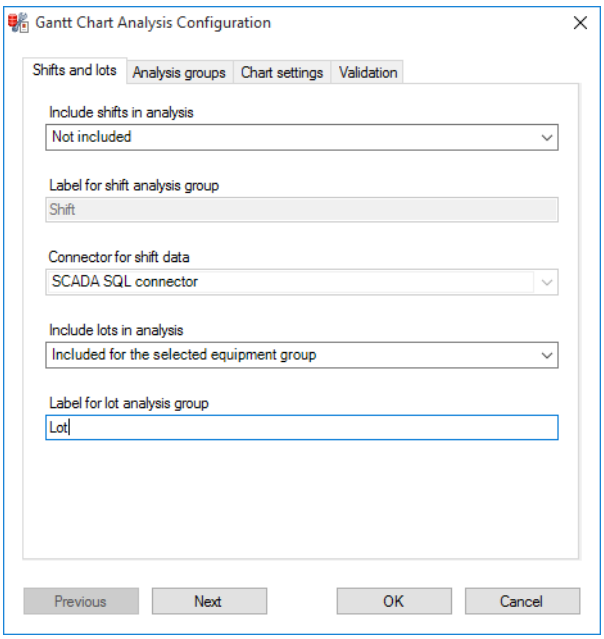
Reports that are based on this template analyze lots, shifts and variables - specified through meanings, from AML, CEL or archive - and display the results as a Gantt chart and as a table.



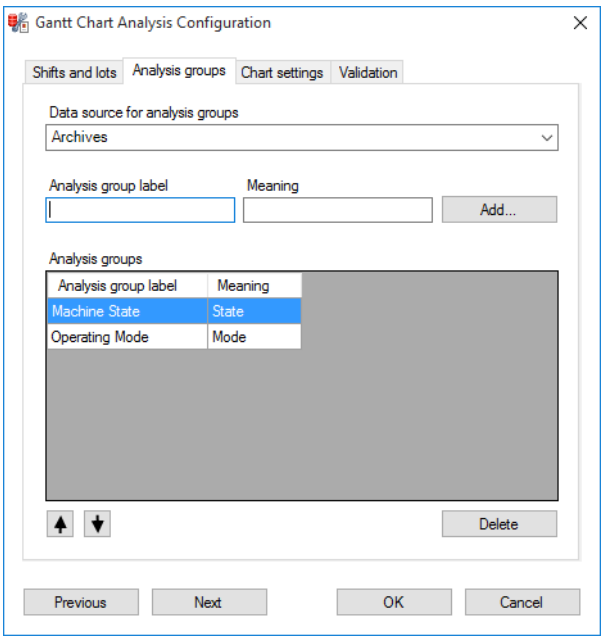
With the same filter as before and Meanings that are linked to special variables, the diagram is configured quickly. For a better overview of the status of the production line, shifts and lots can be displayed.

Configuration of the Meanings and diagram specifics:

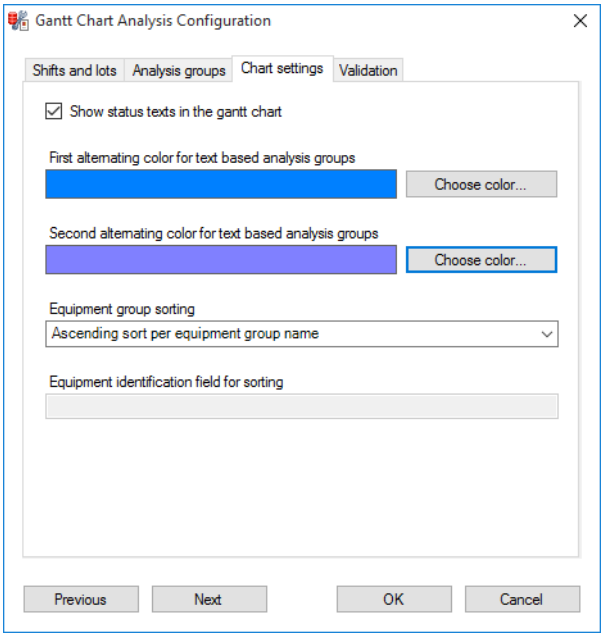
1. In the **Configure Gantt chart analysis** configuration dialog in the **Shifts and lots** tab, select what you want:



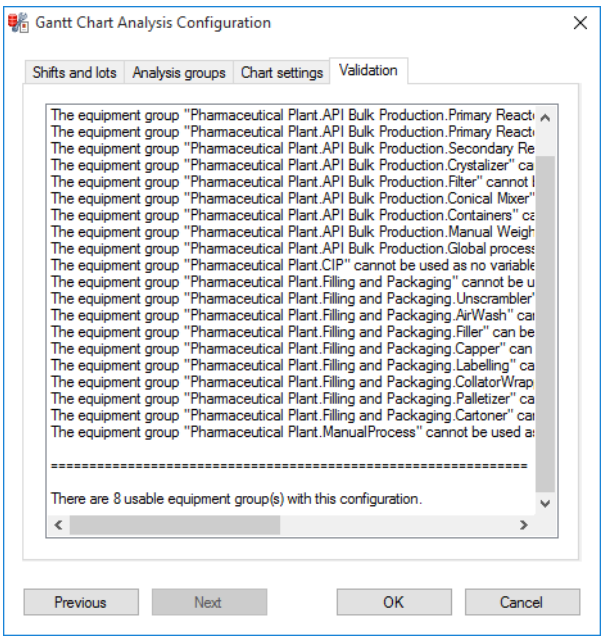
2. Issue labels for the Meanings in the **analysis groups** tab.



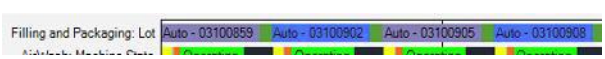
3. Configure the diagram settings.



4. Close the configuration with the validation.



The time range and lot name are then displayed as the lot information in the report.



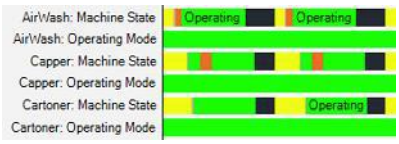
We have defined two analysis groups in our example:

1. Status: Shows the operating status of the equipment as `in operation`, `defective`, `being cleaned`, or `standstill`.

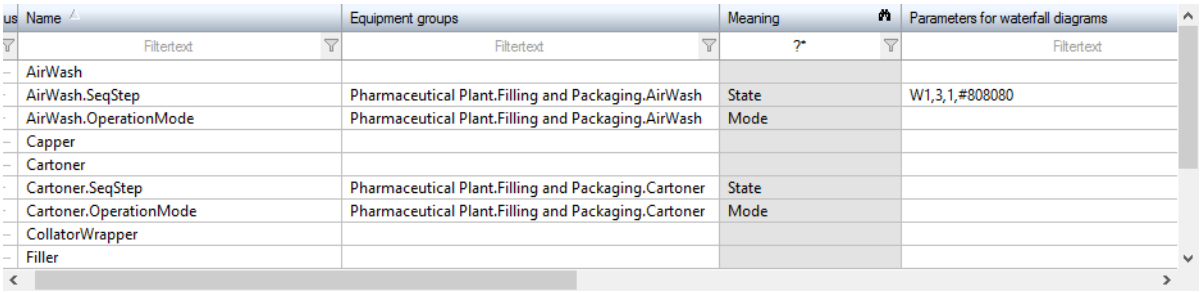
2. Operating mode: for example `automatic`, `semi-automatic` or `manual`.

The number of definable groups is unlimited for this type of report. There is a Meaning for each group. And for each item of equipment, there must be the same label issued in zenon for the Meaning for each item of equipment in the report.

The following illustration shows the two analysis groups **Status** and **operating type** for the equipment **AirWash**, **Capper** and **Cartoner**:



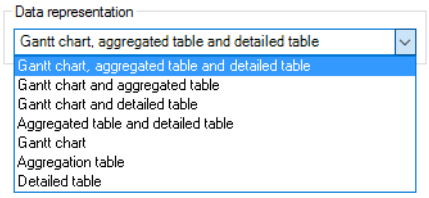
In zenon:



us	Name	Equipment groups	Meaning	Parameters for waterfall diagrams
	Filtertext	Filtertext	?*	Filtertext
	AirWash			
	AirWash.SeqStep	Pharmaceutical Plant.Filling and Packaging.AirWash	State	W1,3,1,#808080
	AirWash.OperationMode	Pharmaceutical Plant.Filling and Packaging.AirWash	Mode	
	Capper			
	Cartoner			
	Cartoner.SeqStep	Pharmaceutical Plant.Filling and Packaging.Cartoner	State	
	Cartoner.OperationMode	Pharmaceutical Plant.Filling and Packaging.Cartoner	Mode	
	CollatorWrapper			
	Filler			

The Meanings must be exported to the zenon Analyzer.

The report output can contain all information in one report. However, a selection of the information can also be configured in the **data display** option and output as desired.



4.7 Administer standard parameters in the Report Launcher

In ZAMS, different dynamic filters can be configured, depending on the selected report template. For example: For an alarm aggregation report with the `Project and equipment group` option selected in the **alarm filter (dynamic)**, the desired project and one or more equipment groups must be selected when the report is opened in Report Launcher.

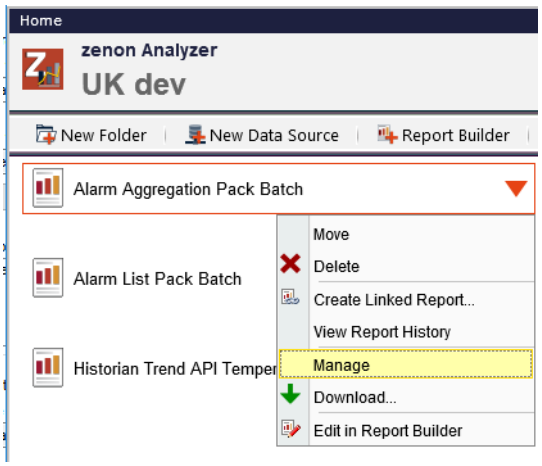
The report can be left so that this information must be entered each time it is opened. However we can also define standard parameters with which the report is executed each time.

DEFINING STANDARD PARAMETERS

To define parameters as a standard:

1. Go to the report selection in the Report Launcher.
2. Move the mouse over the report.
3. A colored frame is displayed around the report, with a triangle on the right-hand side.
4. Click on the triangle.

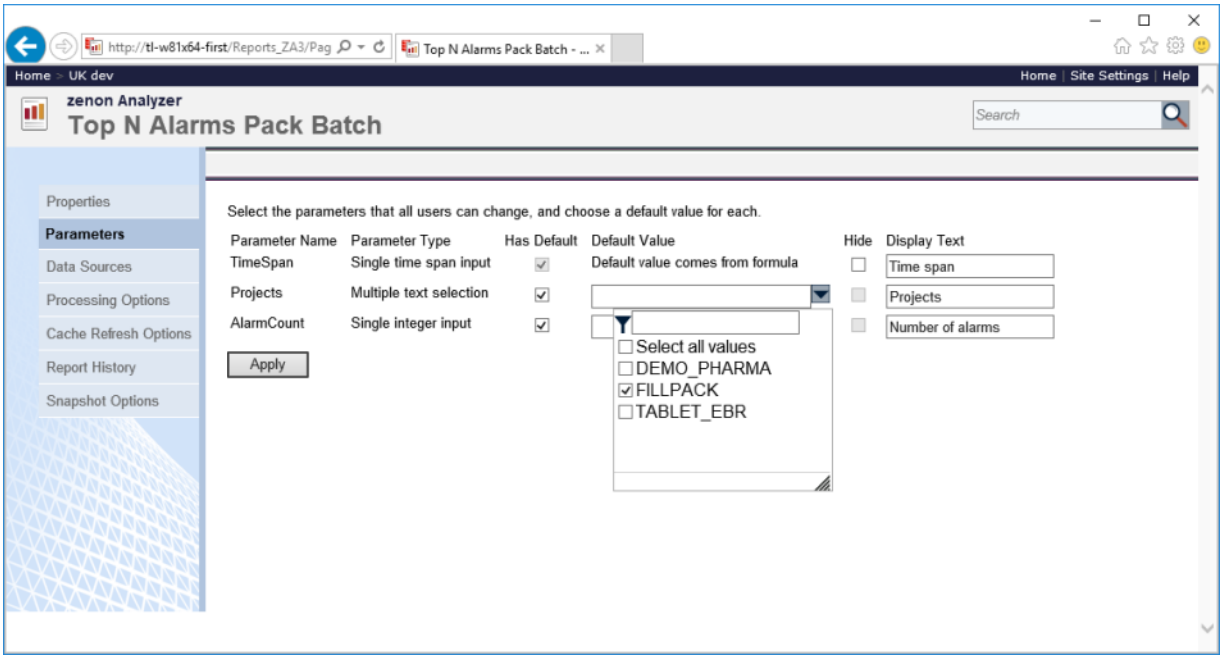
   a drop-down list is opened



5. Click on **Manage**.

   A dialog is opened.

6. Click on **Parameters**.

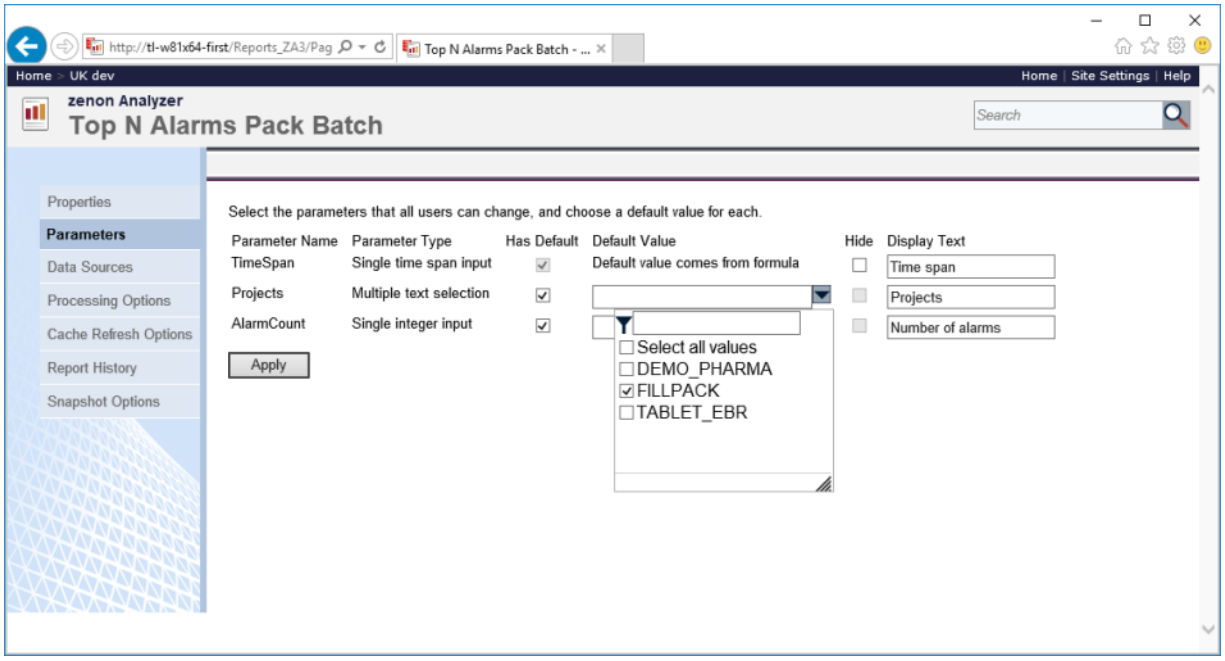


7. Select the desired standard requirements.
   a) Select the parameters by activating the **Has standard value** checkbox.
   b) Select the desired entries in the drop-down list for **standard value**.
      Clicking on the triangle closes the drop-down list again.
   c) You can also hide the display of the options. To do this, activate the **Hide** checkbox.
      In this case, the parameters can no longer be amended in the report.
      Hint: Leave parameters visible and allow them to be edited if many elements such as curves or equipment models are to be processed,

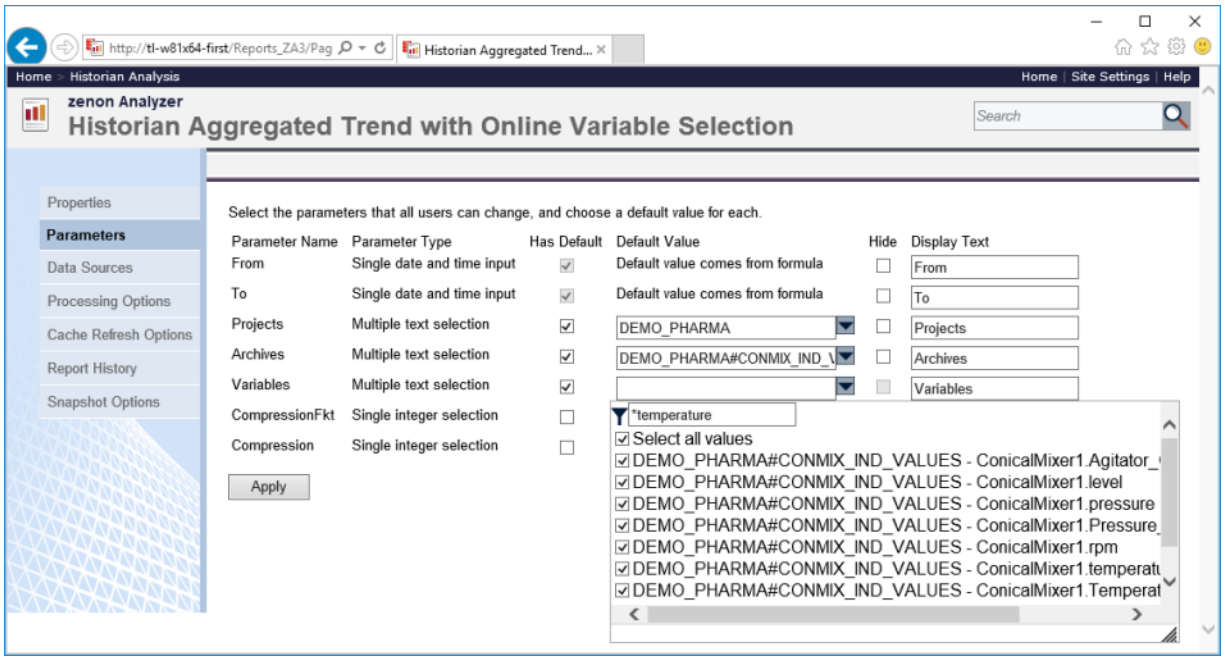
If a report has all necessary parameters, it is automatically created immediately when opened. It is not necessary to click on **Show report**.

EXAMPLES

Standard projects:



Standard archives:



Standard equipment groups: