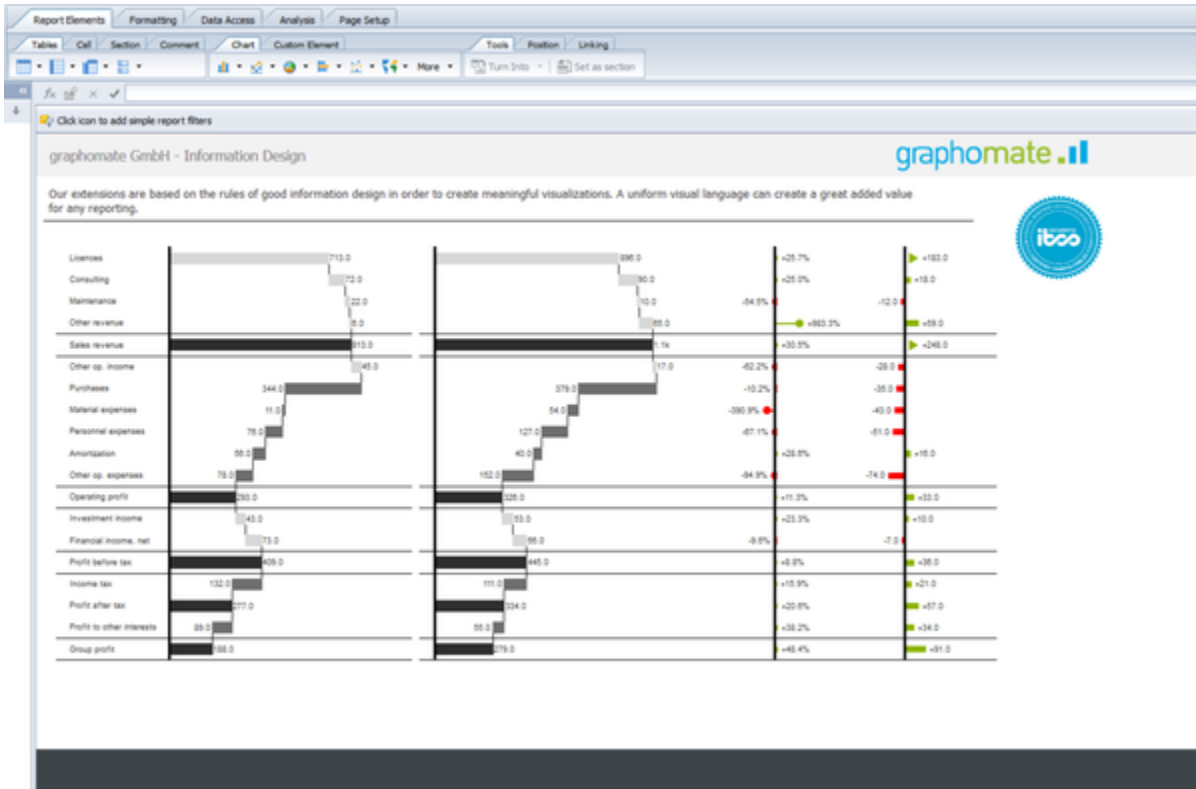


User manual for graphomate extensions 1.4 for SAP BusinessObjects Web Intelligence



Version 1.4 – as of April 2019

<https://www.graphomate.com>



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Introduction

The topic of visualization is gaining in importance for fast and secure communication of information. Simple, but informative information provides support for decision-makers in the recognition of patterns and outliers.

Good information design gives you an overview of your business quickly and effectively.

graphomate charts for WebI

With the graphomate charts we have implemented HICHERT@IBCS as an easy-to-use application that is fully integrated into SAP BusinessObjects. Currently, you can use graphomate charts in SAP Lumira Designer, Microsoft Excel and now also in SAP BusinessObjects Web Intelligence. Also the rules of the information design according to Edward Tufte and Stephen Few can be reproduced with our graphomate charts.

graphomate tables for WebI

Charts, as can be implemented with our graphomate charts Extension, can be interpreted quickly and efficiently by our eye-brain system. They do not have to be "read" like tables. Tables have the advantage that they represent many information in a narrow space. They are therefore well suited for presenting detailed data and are of great importance in the application of BI systems.

Dashboards and BI applications should follow Ben Shneiderman's visualization approach: "overview first, zoom and filter, then details-on-demand"!

Diagrams provide a quick overview, tables provide detailed data at the end of the navigation path of a dashboard application. Our tabular component focuses on the easy-to-read visualization of information according to the rules of HICHERT@IBCS.

The graphomate tables are not an analytical component. Please use it only to display up to 1.000 cells.

graphomate bubbles for WebI

With *graphomate bubbles* we present a highly configurable visualization. The visualization is suitable to map a portfolio of values for a small number of objects on two value axes. A two-dimensional utilization as scatterplot supports up to 100 *bubble* elements. In addition it can be used as a „*bubble chart*“ to find patterns and correlations in up to 5 dimensions of highly aggregated data. *graphomate bubbles* also focuses on the easy-to-read visualization of information according to the rules of HICHERT@IBCS.

System Requirements

graphomate for WebI requires the use of the BI Platform **4.2 SP3+** as well as Internet Explorer 11+. The *graphomate for WebI* is developed and tested exclusively for Windows Server.

For more information, e.g. for deployment via the Business Intelligence Platform (BIP) or SAP Netweaver - please consult the Product Availability Matrix ([PAM](#)).

Please note that from 2017, we no longer support Internet Explorer 9 and 10.

Installation

The installation of the *graphomate for WebI* Custom Elements Service should be carried out by a person with the necessary knowledge and access rights (e. g. system administrator).

1. Move the *graphomate-webi-X.X.war* to the *webapps* directory of the BI platform's tomcat server (e. g. `C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps`).

Depending on the Tomcat configuration used, a restart is required to deploy the WAR file.

2. Open the Central Management Console and switch to Applications and Web Intelligence. On the left side of the configuration window, switch to "Custom elements" and "Add service".
 - a. You can freely select the name of the service, e. g. "graphomate for WebI". Under this name the extensions are made available to users of WebI.
 - b. The service URL is `http://<URL DER BIP>/graphomate-webi-X.X`, e. g. `http://bip.super-corp.com:8080/graphomate-webi-1.4`

As a service URL, do not use localhost, but the address that users also use to log in to the BI platform.

- c. Clicking on "Test" will check whether the specified URL provides a Custom Elements service and displays the offered media formats (text/html und image/png).
 - d. Confirm with "Ok" and then with "Save & Close".
3. Open the Launch Pad, Web Intelligence, and then a document. The graphomate extensions are available under Charts, Custom elements (see [Quick Start](#)).

Update

In order to update the existing installation of the Custom Elements Service *graphomate for Web Intelligence*, the following steps are necessary:

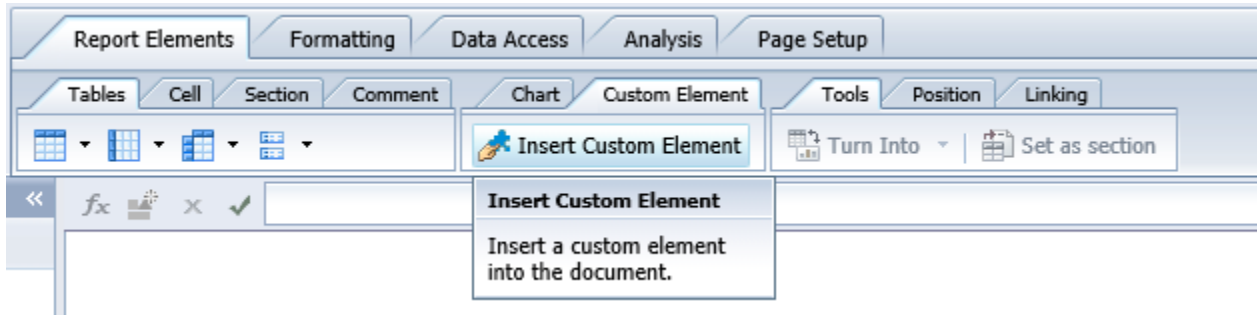
1. Move the `graphomate-webi-X.X.war` into the `webapps` directory of the Tomcat server of the BI platform (for example, `C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps`). A restart of the Tomcat server via the Central Configuration Manager after an update is necessary if the name of the WAR file has not changed, so the service would be unpacked in the same directory as before.
2. Open the Central Management Console and switch to Applications and Web Intelligence. On the left side of the configuration window, switch to "Custom elements" and "Add service".
 - a. Open the configuration of the existing service.
 - b. The name of the service must not be changed.
 - c. The URL must be modified to include the updated version of the service, for example, from `http://webi.super-corp.com:8080/graphomate-webi-1.3` to `http://webi.super-corp.com:8080/graphomate-webi-1.4` (corresponds to the name of the WAR file).
3. Open the Launch Pad, Web Intelligence and a document. Under Charts, Custom elements, the updated *graphomate for WebI* extensions are available (see [Quick Start](#)).

After the update and if you no longer refer to the old service, you can remove the WAR file and the unpacked folder of the old version from the `webapps` directory.

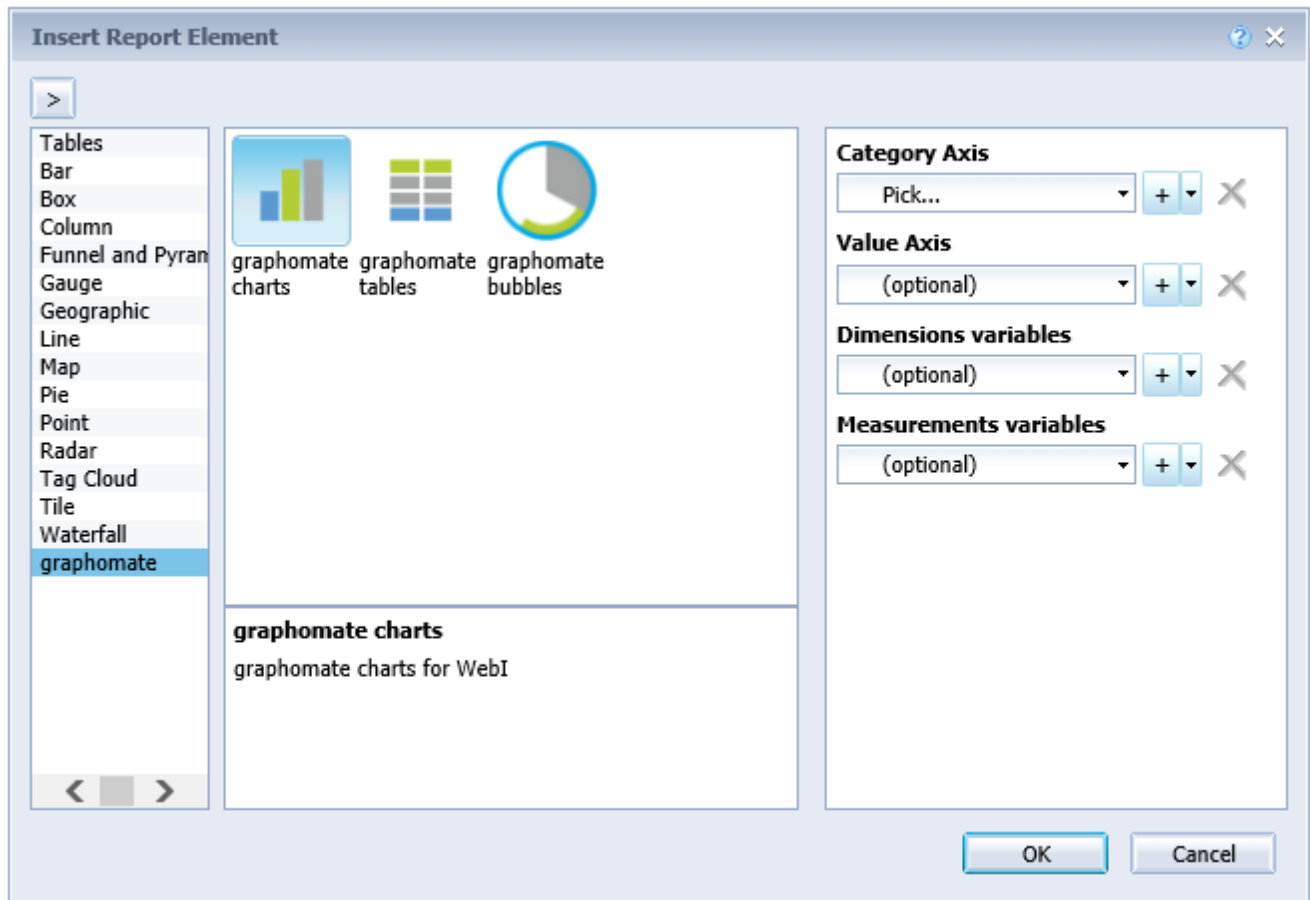
Quick Start

To create a new *graphomate chart*, *graphomate table* or *graphomate bubbles*, follow these steps in WebI:

1. First, click "Custom Element".

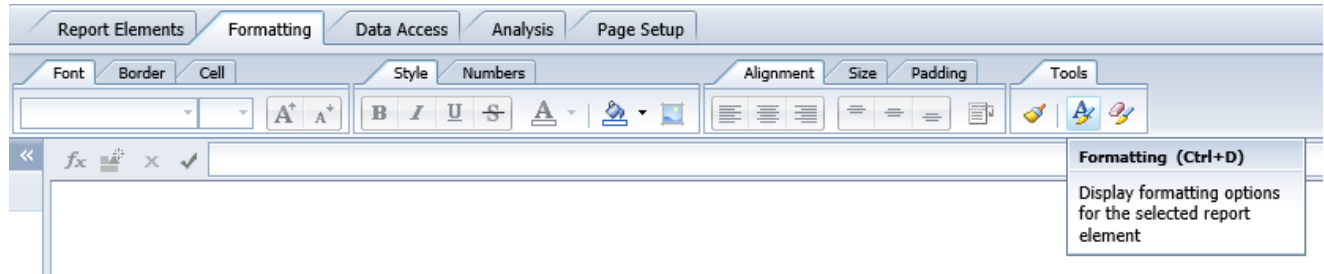


2. Then, click anywhere in the report. This is where the new element is inserted. First, however, a dialog will open, allowing you to select the element:



3. Select the desired *Category Axis* and *Value Axis*. By clicking "+" you can add further data series.

4. Format the chart, the table or the bubble using the *settings dialog*, which you can find under the formatting tab.



Trellis Mode

To draw a Scatter- or Bubble-Diagram, data for the X- and the Y-Axis is necessary to be set in correlation. If one or both of these measures is missing, an alternative mode will be used to draw the Bubbles. The so called *Trellis Mode*



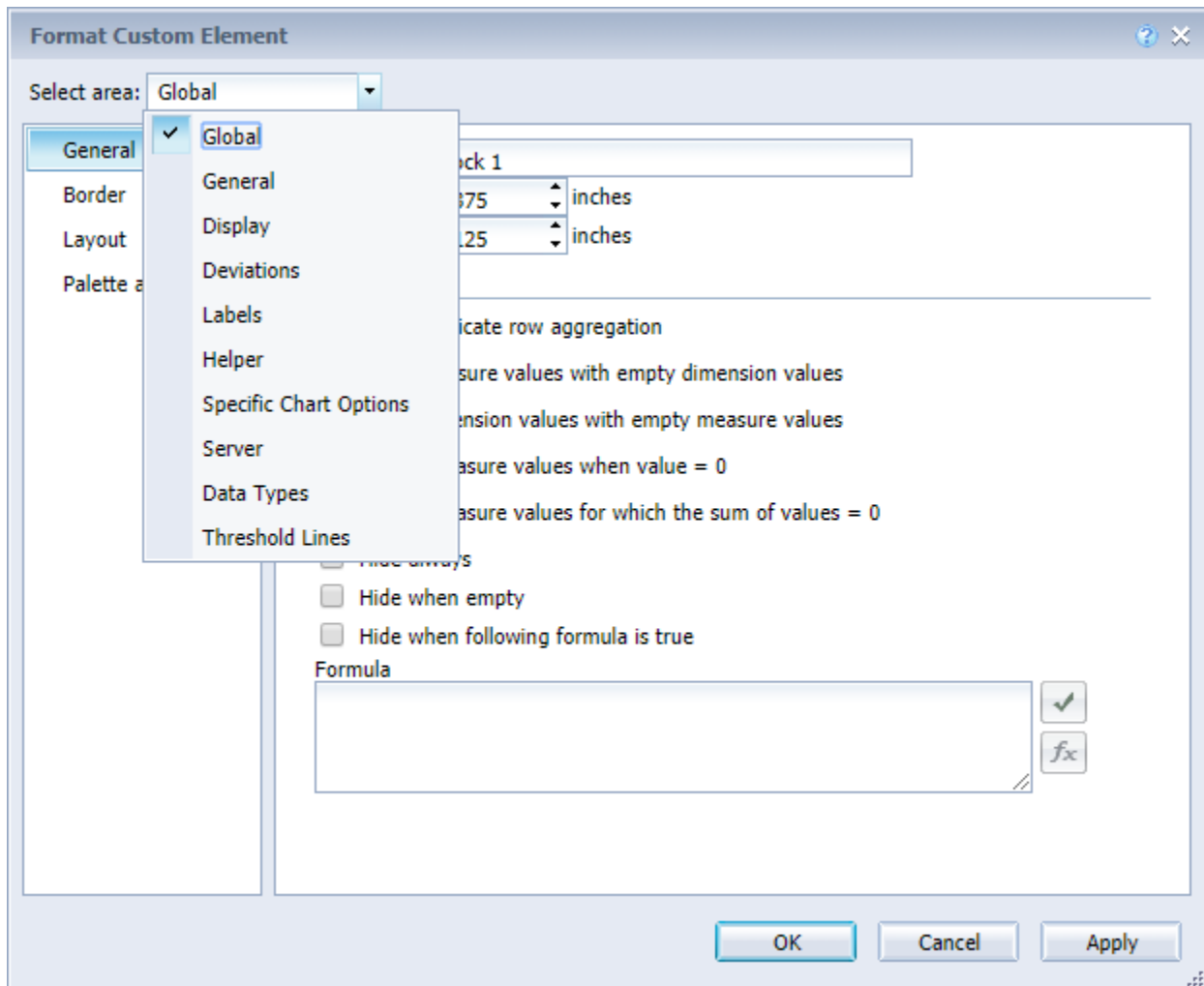
In this mode all data points will be drawn sorted by the *Circle-Measure* from high to low in small tiles. If there are too many data points to be drawn, the smaller ones will be summarized in the *Rest* tile.

Some options and features that are usable in the normal mode are deactivated while the Bubbles are in *Trellis Mode*

Properties

The options for configuring the charts and tables are as described in [Quick Start](#).

The properties are divided into so-called areas (or regions). The areas are further subdivided into groups (on the left side in the picture: *General*, *Border*, etc.). This distribution is also followed by the documentation below. Areas (and individual options) that are used by both extensions are grouped under [Common Options](#).



In general, changing an option does not yet lead to its application to the visualization. A confirmation with "Apply" or "OK" (closes the window!) is necessary. However, it is also possible to change several options at the same time without having to reload the visualization for each option.

Common Options

In the following, options are described which are used by tables, charts and bubbles alike and behave the same.

Data Types

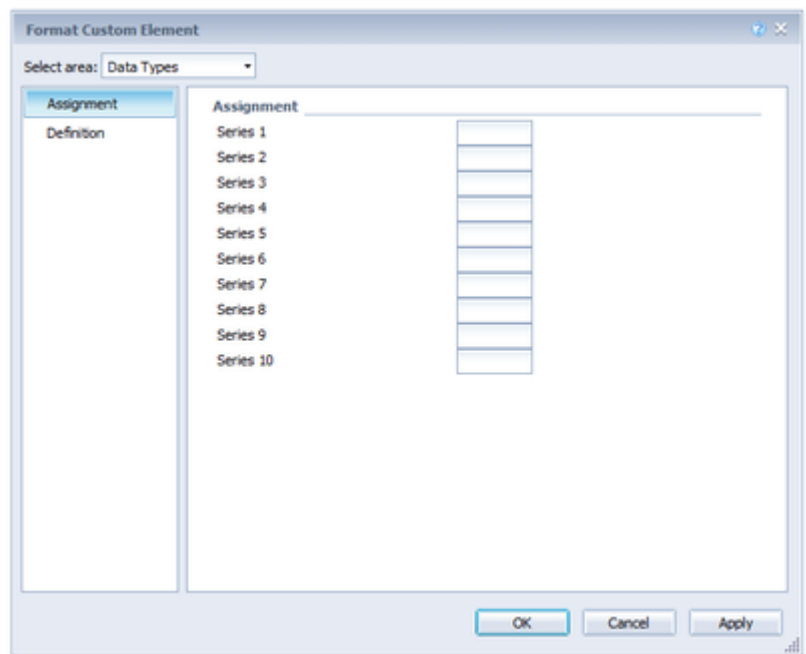
ASSIGNMENT

Specify data types for each individual diagram element of the used data series. Using data types, you can format each element independently in the diagrams. You define data types on the Definition tab (see below).

For the graphomate tables there is only one data series. An element corresponds to a column.

Example (charts): Series 1 and 2 each contain eight values. The data types AC, PP and BU have been created via the definition. The first four values of the series 1 are to have the data type PP, the last four the data type AC, while for the second series, all values are to be linked with the data type BU. On the Assignment tab, you must specify PP, PP, PP, PP, AC, AC, AC, and Series 2: BU, BU, BU, BU, BU, BU, BU, BU.

Example (tables): The table has four columns. The first column shows the current data, the second the previous year, the third the budget, and the fourth the forecast. On the Assignment tab, enter the only available input field: AC, PP, BU, FC



DEFINITION

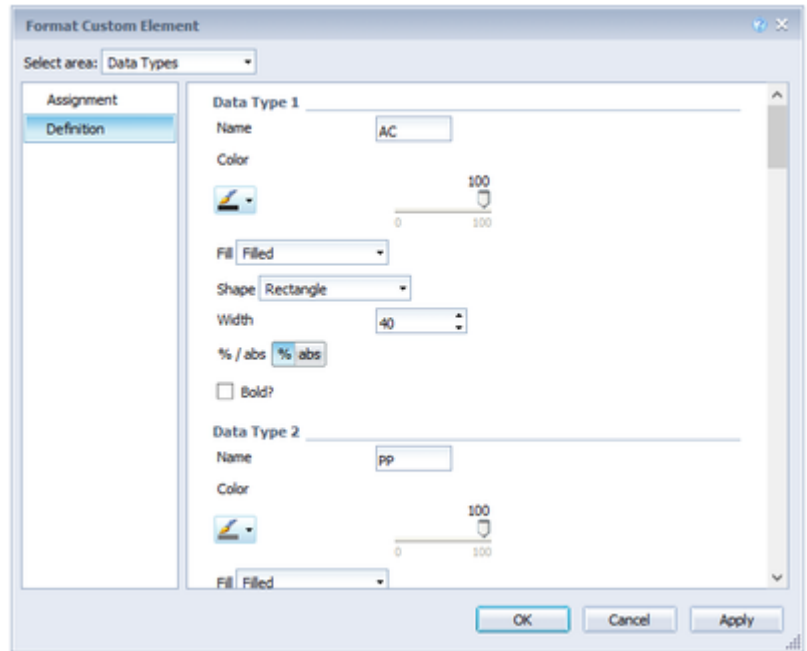
This editor is used to define the data types whose abbreviations can be used on the Assignment tab (see above) and by means of which you can determine the format of the diagram elements individually. You specify these abbreviations in the *Name* column.

Color, *Fill*, and *Shape* determine the appearance of the elements. *Shape* refers to the pin and line heads. The *width* determines the width of the elements. This can be specified by the *% / abs* switch both as a percentage of the category width and absolutely in [px]. *Width* can not be used for stack and waterfall. The last setting *Bold* sets the font of the data label of the data type to bold.

It is currently possible to create ten different data types.

Unlike Lumira Designer, the DataTypes in WebI are not globally available but have to be redefined per chart.

It is possible to import a data type definition from Lumira Designer via the setting *Custom CSS* (on Display tab of the components).



Deviation Configuration

An absolute deviation is defined in the following format:

| *label: measure - base*

A percentage deviation as follows:

| *label: measure % base*

Where *label* is a string (that is, a word or identifier), *base* is the 0-indexed index of the base series, and *measure* is the 0-indexed index of the Measure series. Multiple definitions can be separated by comma. For example, by this configuration:

| *abs: 1 - 0, perc: 1 % 0*

two deviation diagrams are created in which the second value axis represents the *measure* and the first value axis represents the *base*. The first diagram is an absolute deviation diagram corresponding to the text label "abs"; The second diagram is a percentage with the appropriate label "perc". Please note that the following formulas are used to calculate the deviation.

Formula for calculating absolute deviation:

$$(Series1 - Series2)$$

Formula for calculating percentage deviation:

$$\left(\left(\frac{(Series1 - Series2)}{abs(Series2)} \right) * 100 \right)$$

Number Formatting

Possible Inputs for the numeral.js Format String

Floating point		
Number	Format String	Output
10000	'0,0.0000'	10.000,0000
10000.23	'0,0'	10
-10000	'0,0.0'	-10.000,0
-0.23	'.00'	-,23
-0.23	'(.00)'	(,23)
0.23	'0.00000'	0,23000
0.23	'0.0[0000]'	0,23
1230974	'0.0a'	1,2m
1460	'0 a'	1 k
1	'0o'	1 st
Currency		
Number	Format String	Output
1.000.234	'\$0,0.00'	\$1.000,23
1000.2	0,0[.]00 \$'	1.000,20 \$
1001	'\$ 0,0[.]00'	\$ 1.001
Percentage		
Number	Format String	Output
1	'0%'	100%
-0.43	'0 %'	-43%

Source

Possible input for the Extended Number format string

Percentages and numbers are formatted separately. For this two format string are used, which follow the same rules and structure. In general the strings of characters in the format string are simply replaced in the input number. Exceptions to this rule would be scaling factors and the number of decimal places.

The separate elements of the format string are separated by the "|" character. Format strings with less than 7 elements (i.e. 6 "|" characters) are considered invalid and therefore ignored. In this case the standard format without scaling and with one position after the decimal point is used.

The format string consists of the following elements, the ordering is obligatory and cannot be changed:
Negative|Prefix|Thousands|Decimal|Scaling|PointsAfterDecimal|Suffix

Negative	The prefix for negative numbers. The string "(" will result in the number will be placed inside parentheses, including eventual prefixes and suffixes. If <i>None</i> is used the absolute number will be shown.
Prefix	A prefixed string of characters, for example a currency symbol or an identifier for the scaling factor.
Thousands	A separator for thousands.
Decimal	A separator for the decimal places.
Scaling	The scaling factor for the value. This can be given as a whole number or a power, formatted as n^m . A whole number will be calculated as a power to the basis 10 internally. In case of a given power the value will be divided by it directly. Even negative numbers are possible, for example "-3" or "10^-3"; in this case the value will get adequately higher. Non numeric inputs are ignored. <i>Please note:</i> given a "0" or a "1" will result in a scaling factor of 1. The only way to achieve a scaling by 10 is to input "10^1".
PointsAfterDecimal	The number of places after the decimal.
Suffix	A suffix for the value, analogous to the prefix.

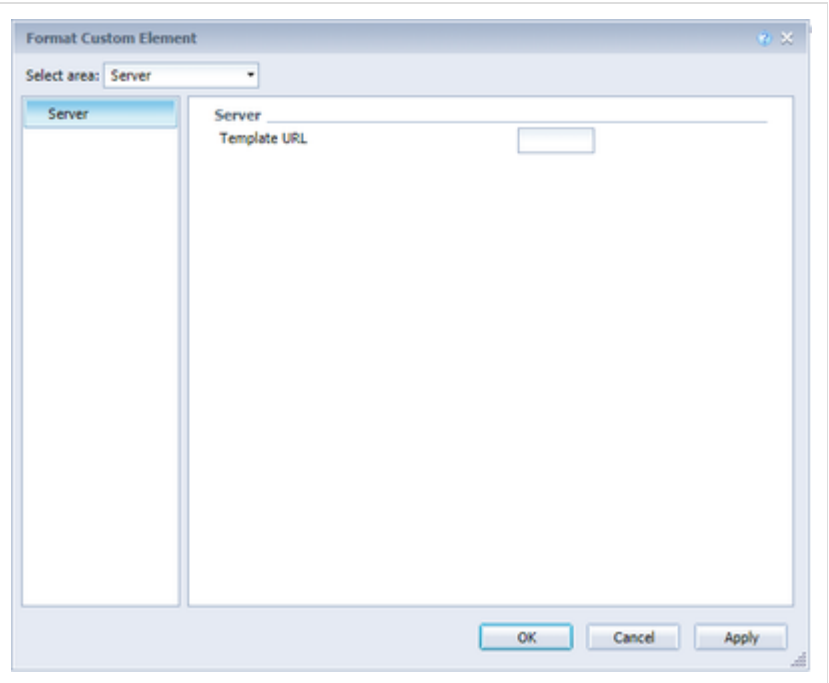
Server

SERVER

Template URL

Enter in this field which template should be used to set the settings. The required URL can be found in the mode for viewing templates in the graphomate server admin.

Note that all settings in the template override the settings previously set in WebI. In addition, it should be noted that the templates are "live". This means that if something changes in the template, these changes will be applied to the next reload of the visualization.



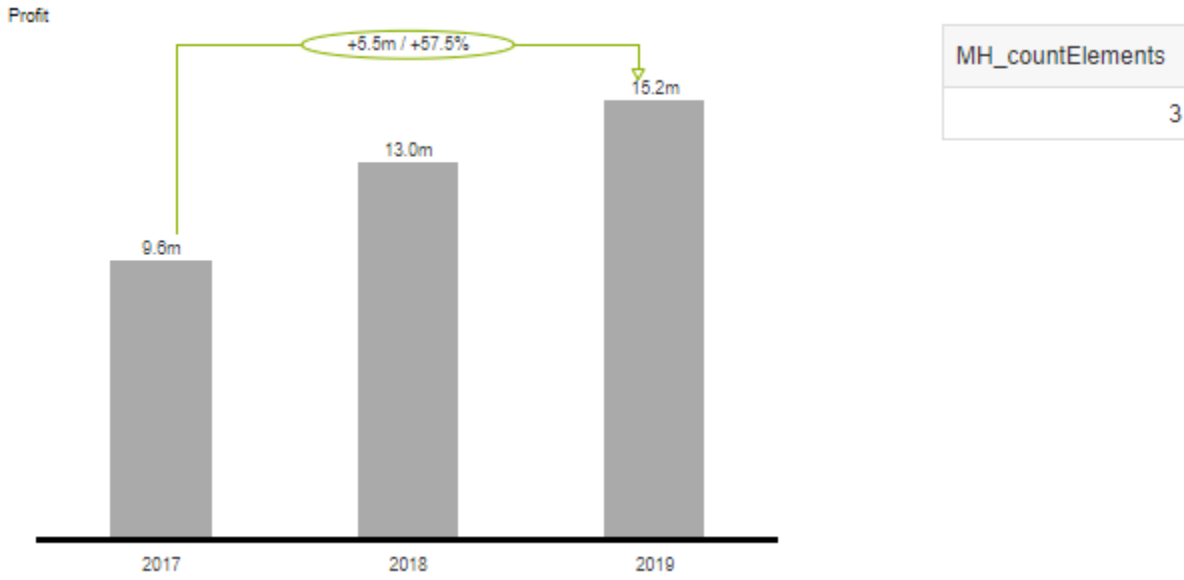
Variables

In our extensions you can bind settings representing numbers or strings to WebI variables. In order to do so you need to fill the corresponding field with the string **\$<VARNAME>\$**. If <VARNAME> in the string is replaced by an existing WebI variable, our extension will use the **first** value in the variable's data series for the settings. To use the variables it's necessary to pass them to the extension (charts, tables, bubbles) during the data allocating process. The following examples will show you the variables' applications within the graphomate extensions.

- [Example 1 - charts - Setting Multihighlights with Variable Number of Elements in a Series](#)
- [Example 2 - charts - Creating Sums with a Series](#)
- [Example 3 - charts - Generating the Title-Element including the current year](#)

Example 1 - charts - Setting Multihighlights with Variable Number of Elements in a Series

In this example the multihighlight is to always be set from the first element to the last in a series. The result should look like this:



Procedure

1) Define a type 'number' and name 'measure' variable which reads the number of elements in a series. Definition of variable <MH_countElements>:

```
=Count([Year]) in report
```

Variable bearbeiten

Definition

Name: Typ:

Beschreibung:

Bezeichnung:

Formel

Verfügbare Objekte

- Variablen
 - Country
 - Date
 - Discount Band
 - Month Name
 - Product
 - Segment
 - Year

Verfügbare Funktionen

- Aggregation
 - Aggregation
 - Anzahl
 - Durchschnitt
 - Erste
 - Interpolation
 - LaufendeAnzahl
 - LaufenderDurchschnitt
 - LaufendesMaximum

Verfügbare Operatoren

= < <= <> > >=

. + - / * ()

Werte ...
Eingabeaufforderungen ...
;
:
{
}
Absteigend

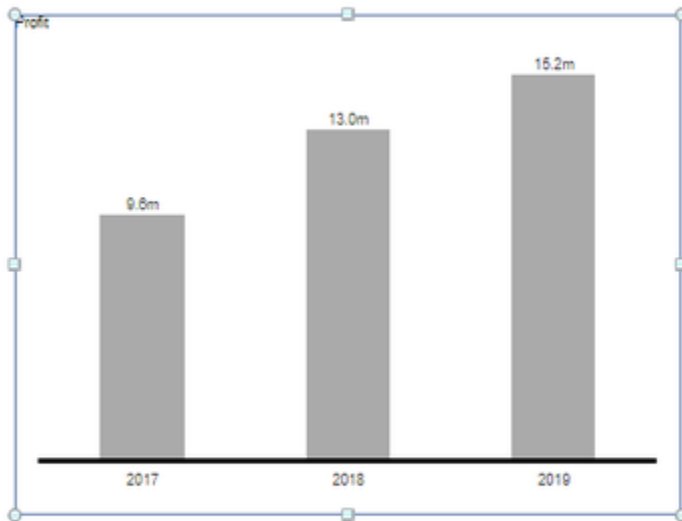
Bericht

Verweist auf alle Daten in einem Bericht

[Mehr Infos zu dieser](#)

OK Abbrechen

2) Add a graphomate chart to your WebI report. While allocating data, remember to set the variable <MH_countElements> as 'Measurements variables'.



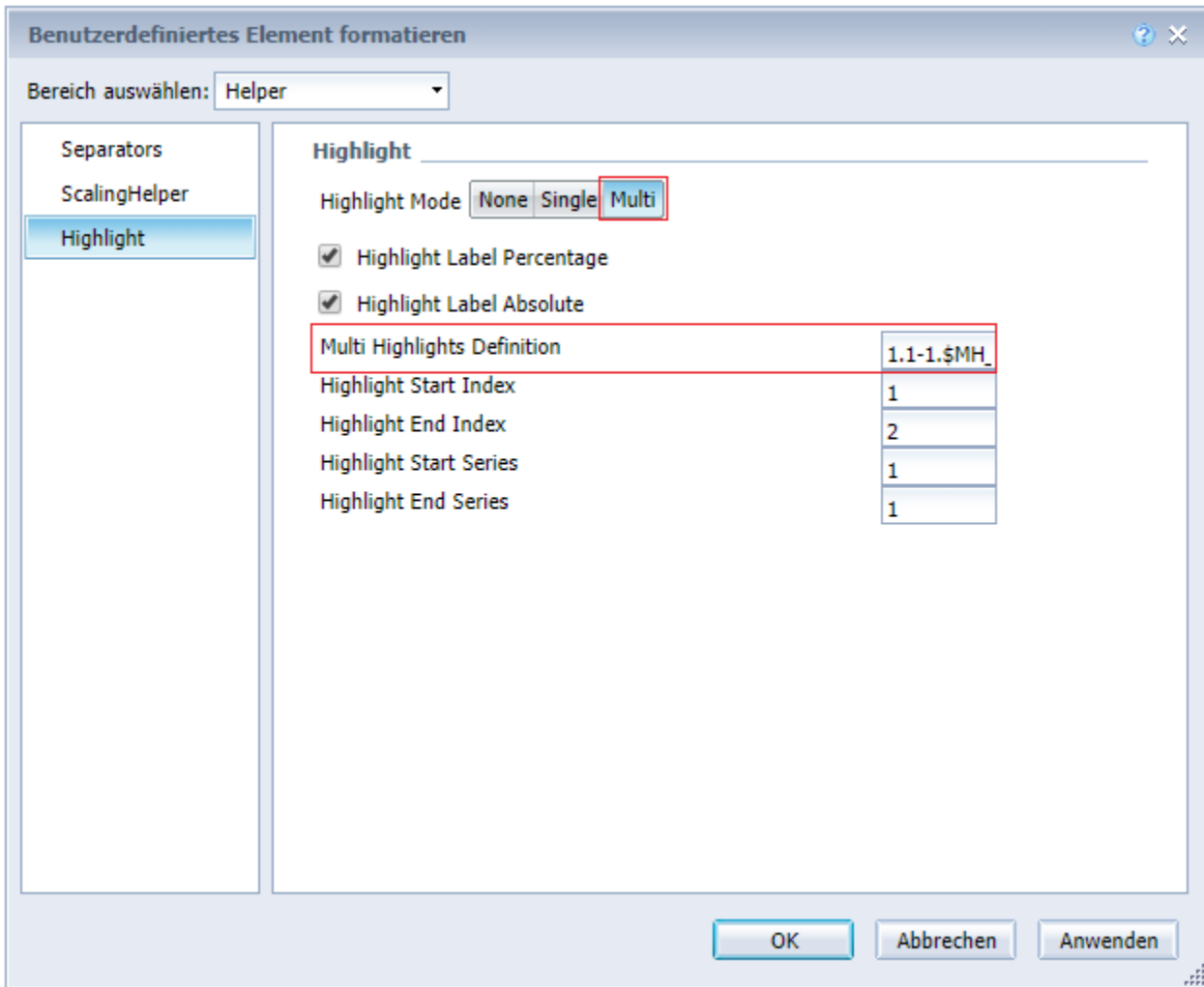
The screenshot shows the 'Daten zuordnen...' (Assign Data) dialog box in Web Intelligence. The dialog has a title bar with a question mark and a close button. Below the title bar is a back arrow button. The main area contains four sections for data assignment:

- Category Axis:** A dropdown menu set to 'Year (Abfrage 1)' with '+' and 'X' buttons.
- Value Axis:** A dropdown menu set to 'Profit' with '+' and 'X' buttons.
- Dimensions variables:** A dropdown menu set to '(optional)' with '+' and 'X' buttons.
- Measurements variables:** A dropdown menu set to 'MH_countElements' with '+' and 'X' buttons. This section is highlighted with a red border.

At the bottom of the dialog are three buttons: 'OK', 'Abbrechen' (Cancel), and 'Anwenden' (Apply).

3) After the graphomate chart was rendered in the report navigate through the chart settings via the context menu to Format Custom Element / Helper / Highlight. Activate the 'Multi' Highlight Mode and enter <MH_countElements> in 'Multi Highlights Definitions'. Pay attention to the string's spelling.

```
1.1-1. $MH_countElements$
```



Input Control Elements can control the visibility of elements in a series. The variables' content will be adjusted correspondingly.

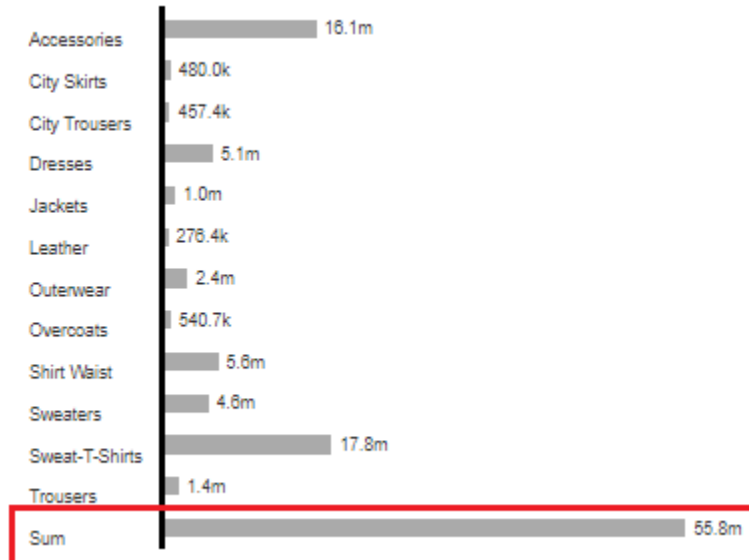
The screenshot displays the SAP Business Intelligence interface. On the left, the 'Eingabesteuerelemente' (Input Control Elements) pane is open, showing a list of 'Berichts-Eingabesteuerelemente (1)'. Under the 'Year' filter, the years 2018 and 2019 are selected with checkboxes. The main area shows a bar chart titled 'Profit' with two bars: 13.0m for 2018 and 15.2m for 2019. A green callout box above the bars indicates a change of '+2.1m / +16.9%'. On the right, a small table shows 'MH_countElements' with a value of 2.

Year	Profit
2018	13.0m
2019	15.2m

MH_countElements	2
------------------	---

Example 2 - charts - Creating Sums with a Series

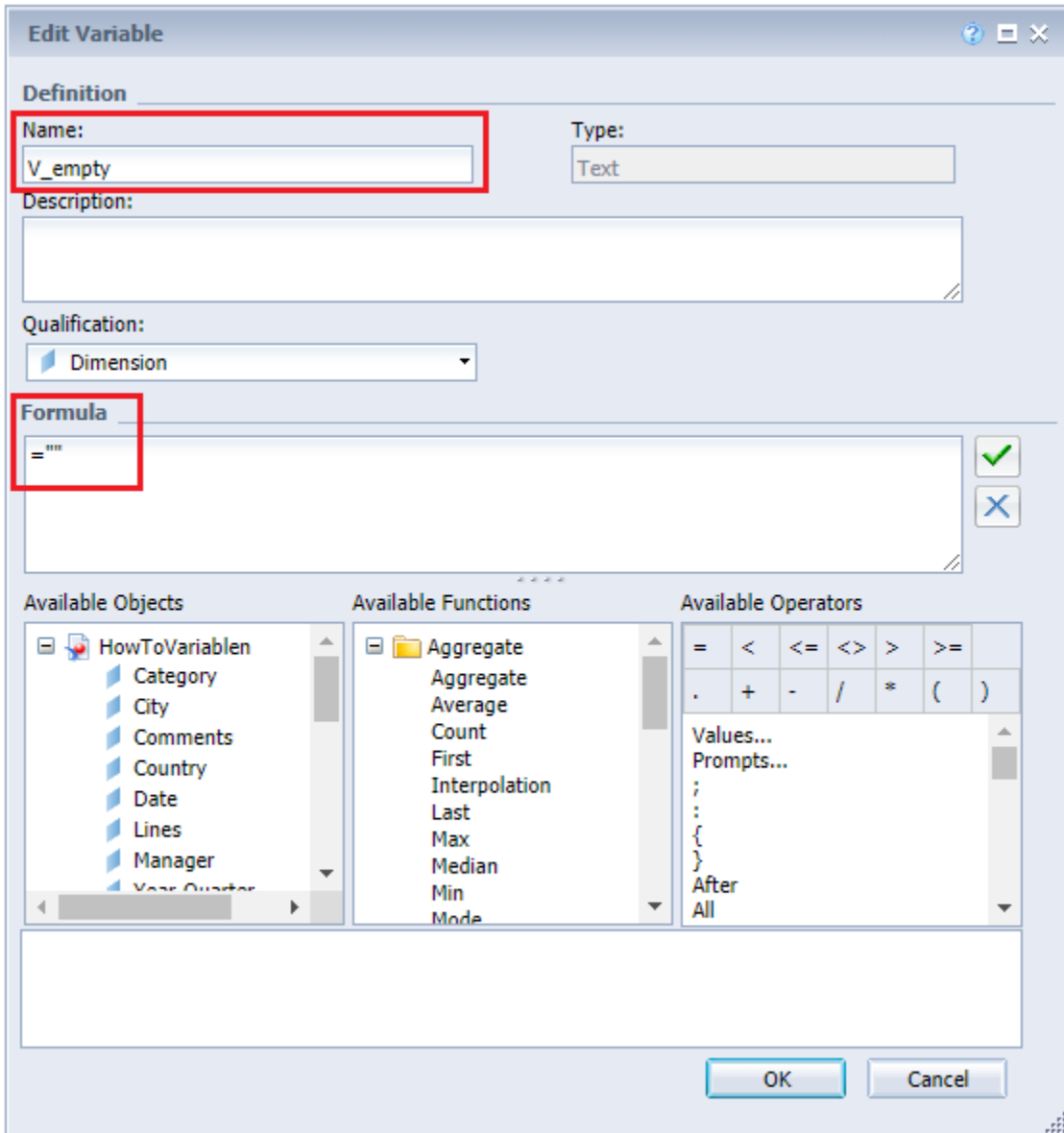
This example shows how to use the graphomate chart's sum function on a series. The result should look like this:



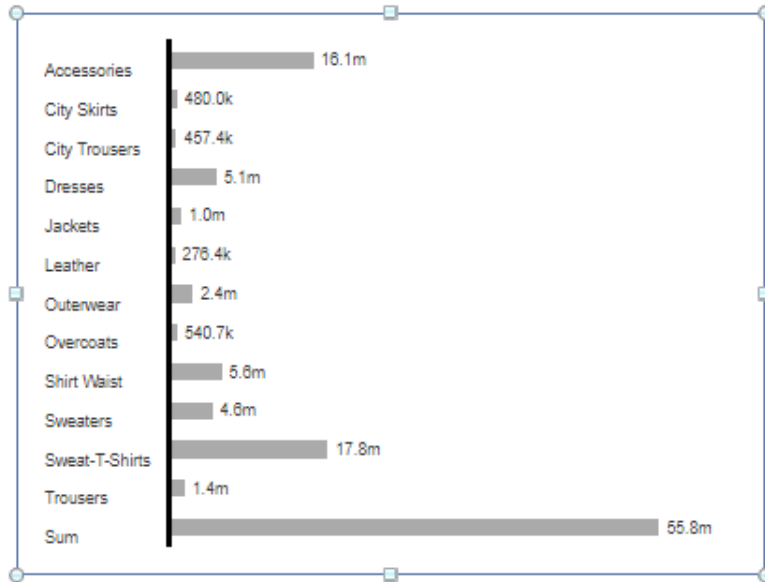
Procedure

1) The first step is to create the variable <V_empty> of type 'Text' and the qualificationn 'Dimension' defined as follows:

```
= ""
```



2) Add a graphomate chart to your WebI report. Make sure to add <V_empty> first to 'Category Axis' while assigning data.



Assign Data...

Category Axis

- V_empty
- Lines (Abfrage 1)

Value Axis

- Quantity sold

Dimensions variables

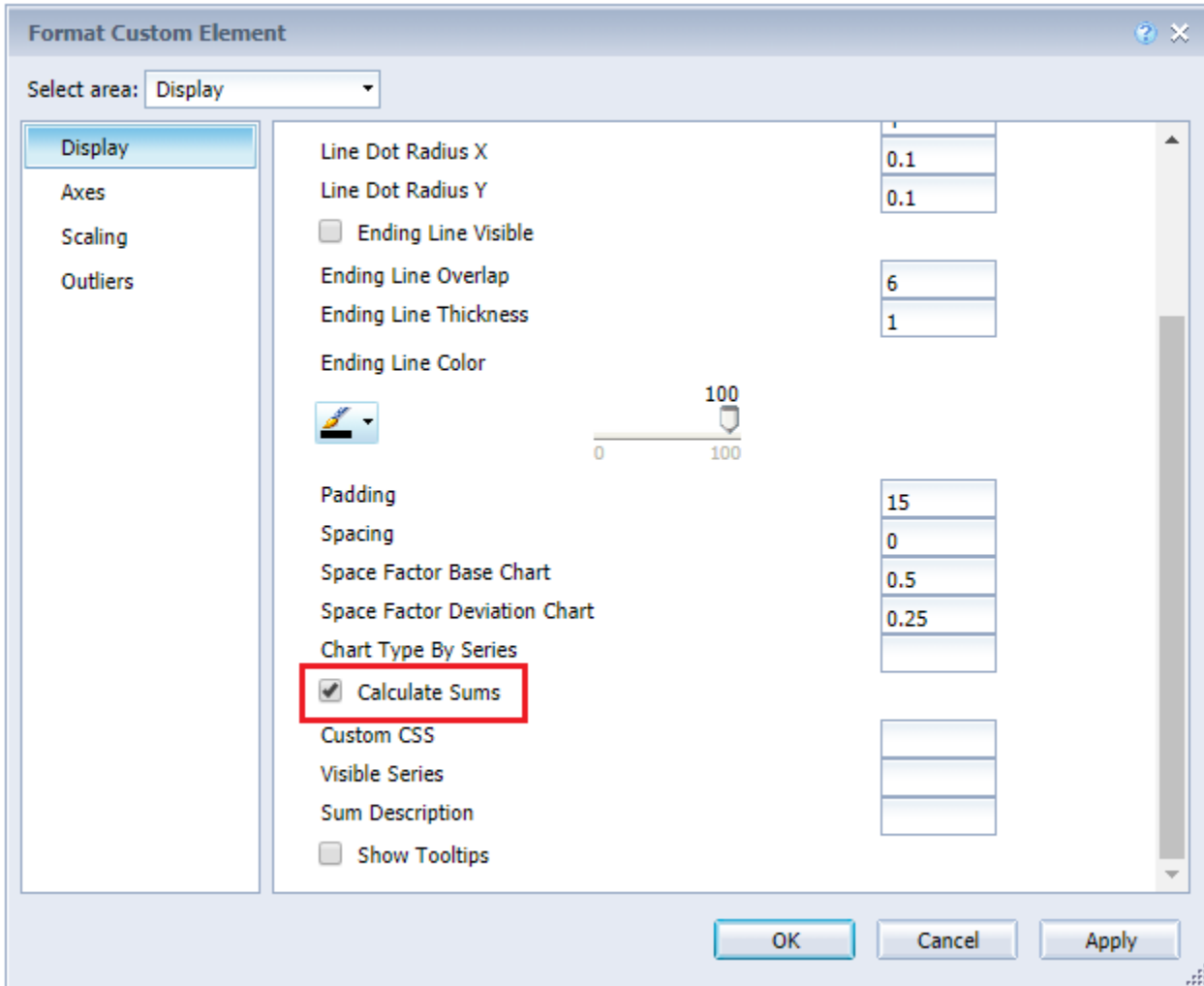
- (optional)

Measurements variables

- (optional)

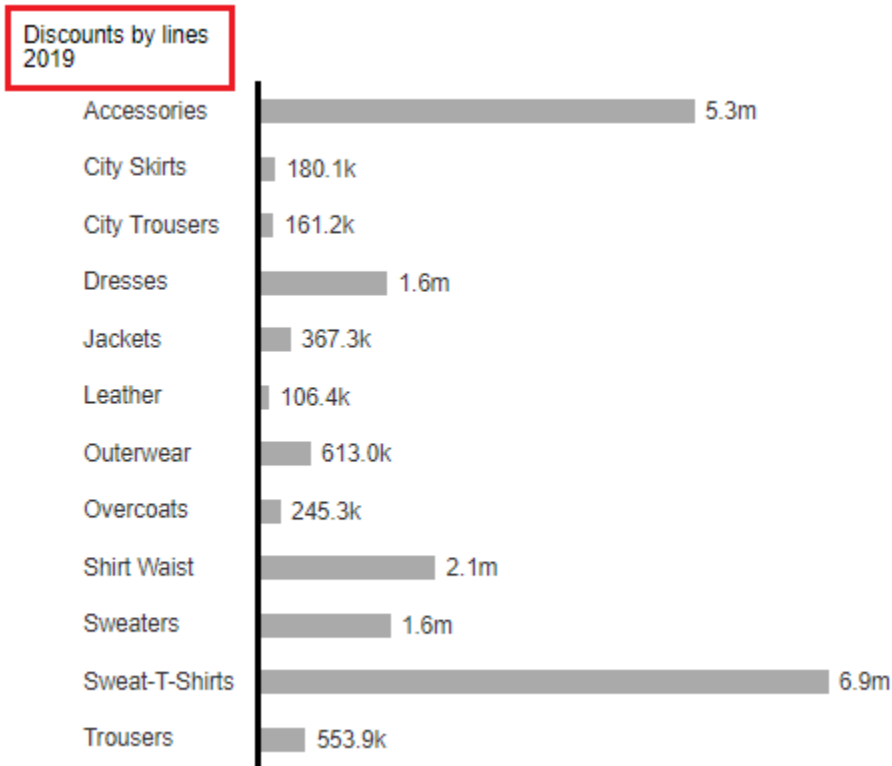
OK Cancel Apply

3) In order to display the sum, in this case 'Quantity sold' with 'Lines', the property 'Calculate Sums' needs to be activated. You can find it in the Format Custom Element Menue under Display / Display.



Example 3 - charts - Generating the Title-Element including the current year

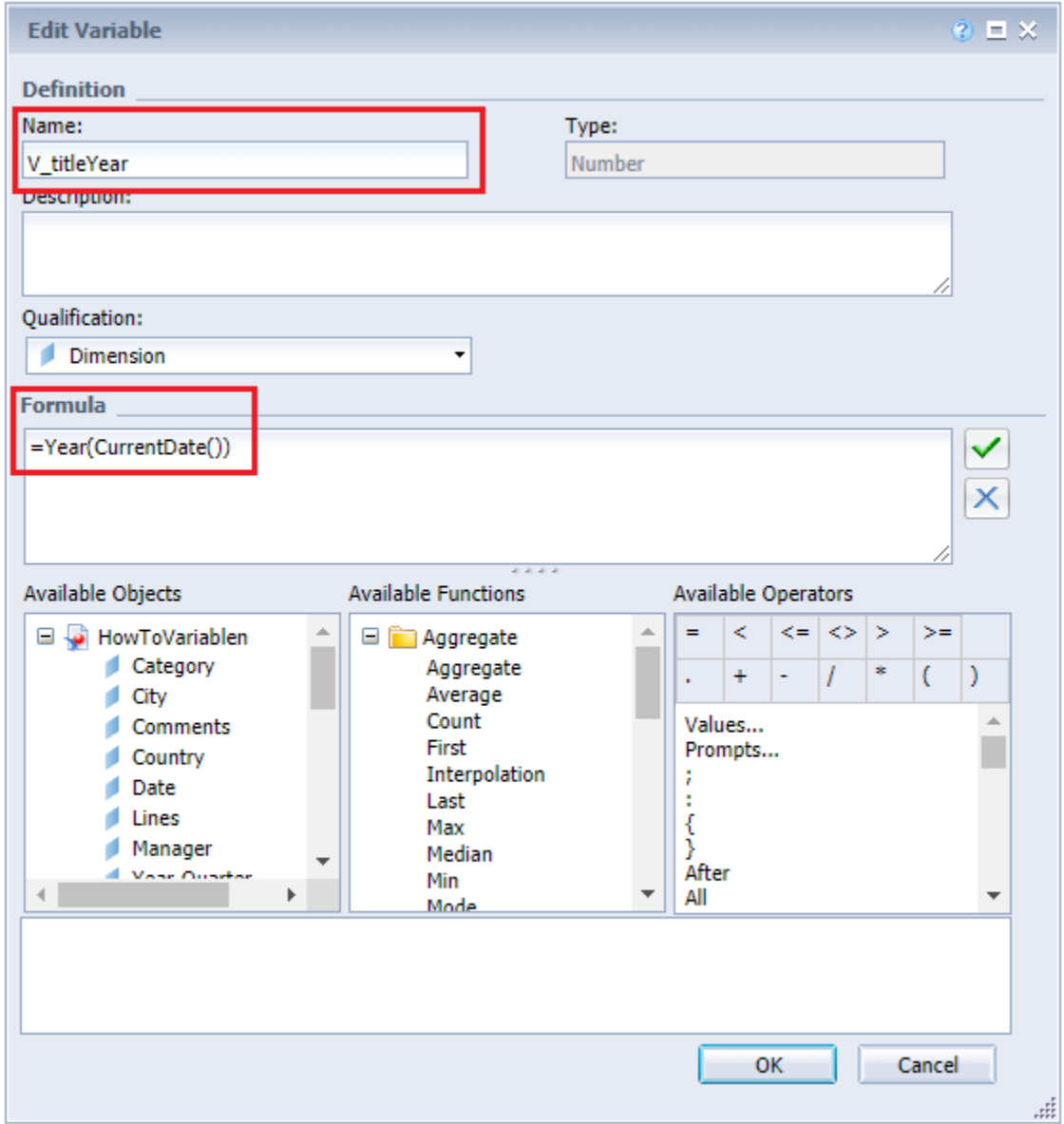
This example illustrates how to set the date automatically in the chart title. The result looks like this



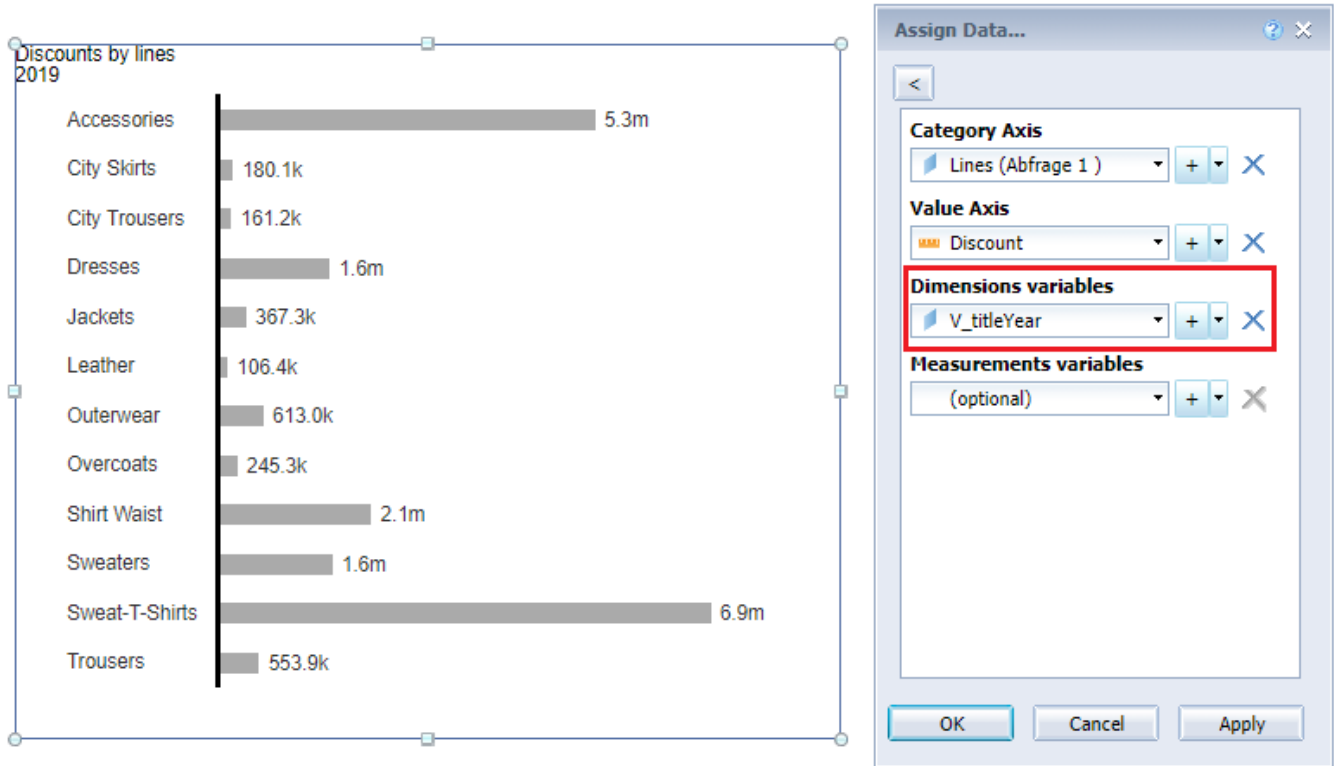
Procedure

1) The first step is to create the variable <V_titleYear> of type 'Number' and the qualificationn 'Dimension' defined as follows:

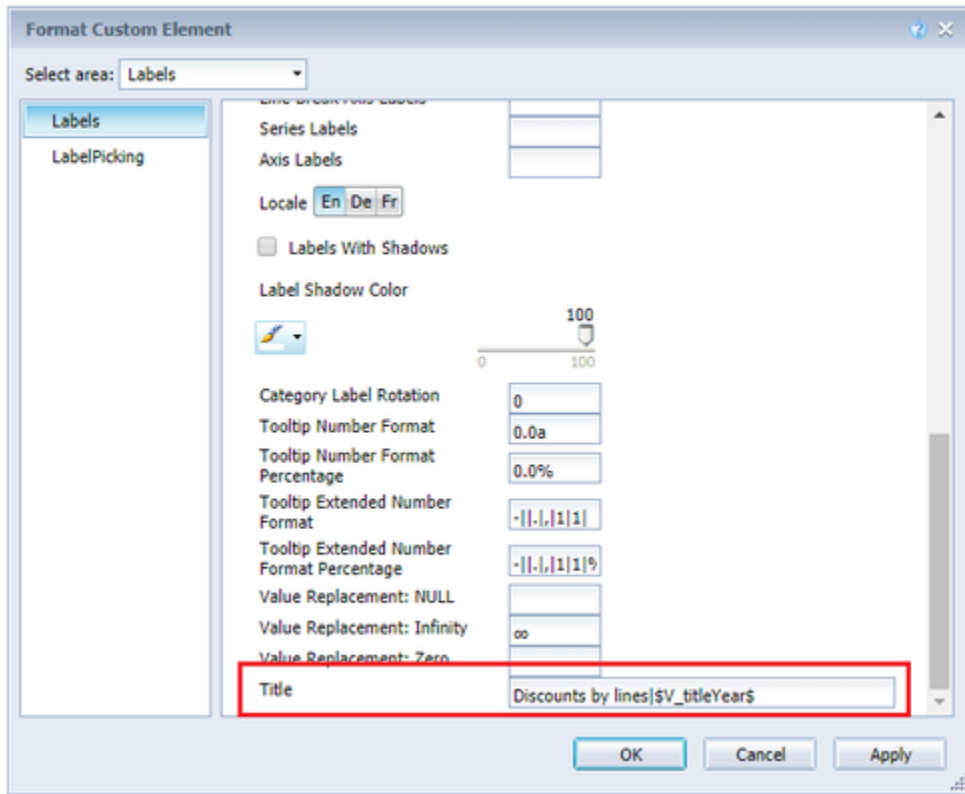
```
=Year(CurrentDate())
```



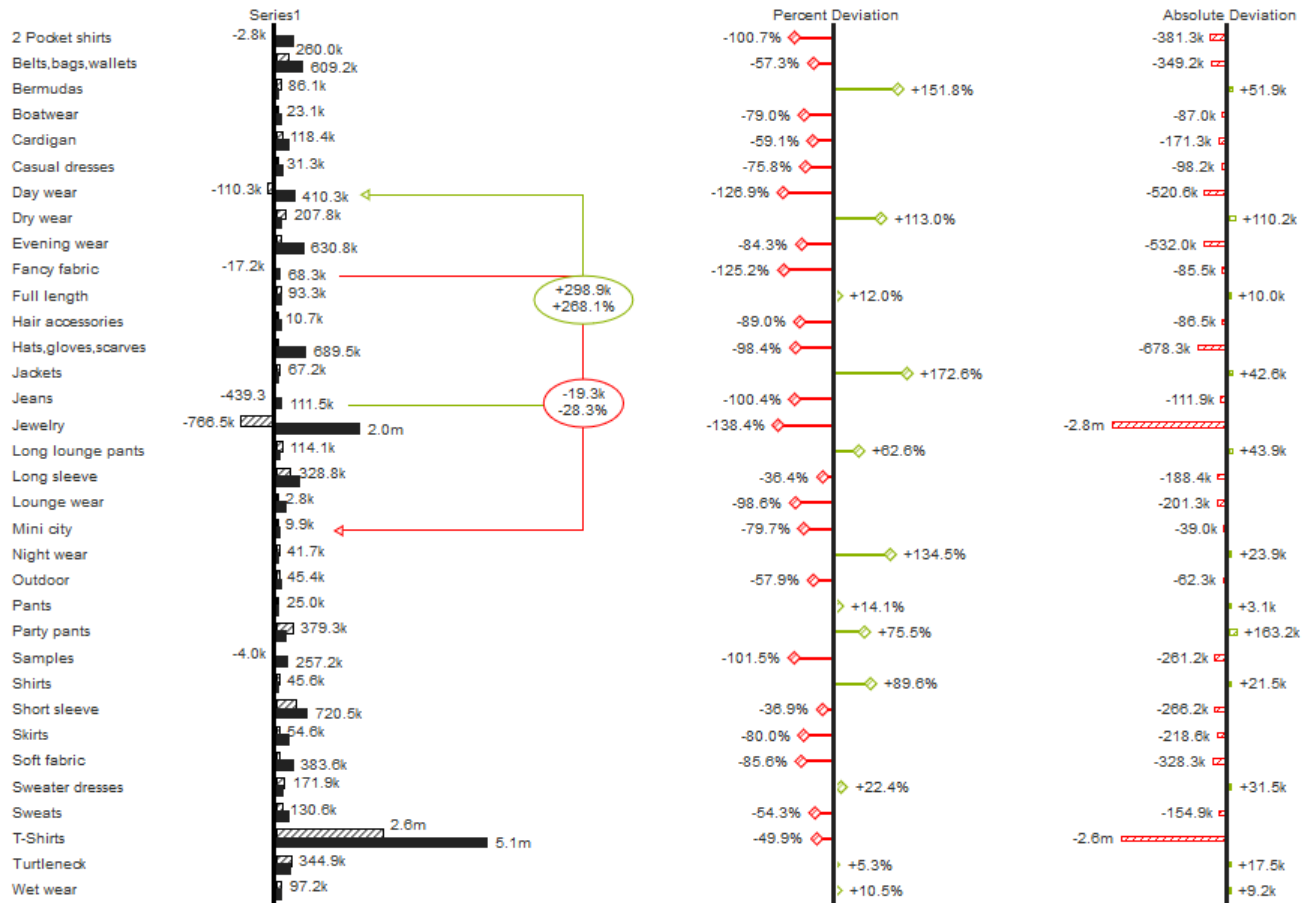
2) Add a graphomate chart to your WebI report. Make sure to add <V_titleYear> to 'Dimensions variables' while assigning data.



3) In order to display the current year in the title, you need to set the Title within the properties of the Format Custom Element Menue under Labels / Labels.



charts



General (charts)

GENERAL

Chart Type

Select the desired chart type by selecting it in the drop-down.

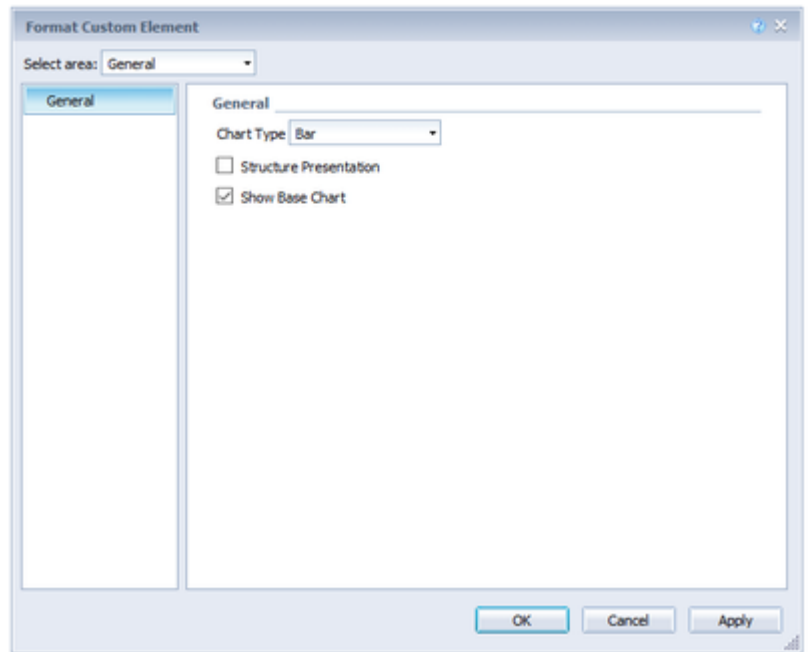
Structure Presentation

All diagrams can be aligned horizontally and vertically:

- **Not** checked: Horizontal for developments over time,
- Checked: Vertical for structural comparisons.

Show Base Chart

The checkbox Base Chart shows the basic diagram on and off. Thus deviations can be used without basic diagrams.



Display (charts)

DISPLAY

Bar Width

The thickness of the elements in stack, waterfall and integrated deviation diagram.

Pin Width

The thickness of the line of pins in needle diagrams. With a pin width = "0", you can implement a dot chart.

Elements Offset

The parameter element offset determines the displacement of the elements on the category axis. This can be expressed as a percentage (value less than or equal to 1) or absolute (value greater than 1) in [px].

Pin Head Radius X, Pin Head Radius Y, Line Dot Radius X, Line Dot Radius Y

Specify the X and Y radius in the pin and line chart. By means of the distinction in X and Y, ellipses and the like can also be implemented.

Ending Line Visible

Should ending lines be displayed?

Ending Line Overlap

Overlap of the KPI ending lines on the right and left over the bar.

Ending Line Thickness

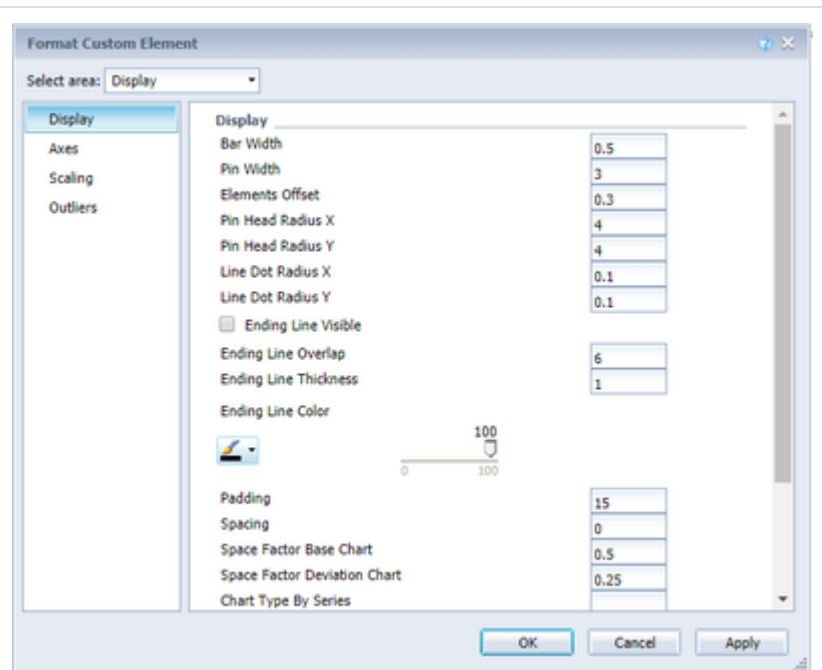
The thickness of the ending lines.

Ending Line Color

Color of KPI ending lines.

Padding

Padding in px, puts a border around the diagram.



Spacing

Spacing also in px defines the distance between the base and deviation diagram.

Space Factor Base Chart

Space factor for the base chart. Formula for determining the space: Factor / (sum of all factors)

Space Factor Deviation Chart

Space a deviation chart occupies. Formula for determining the place: Factor / (sum of all factors)

Chart Type By Series

Enter comma-separated, which chart type should be used per series. Available types are: bar, line, offsetbar, pin, stackedbar, waterfall.

Calculate Sums

By activating this option, totals are automatically calculated and the totals are transferred to the chart.

Custom CSS

At this point, you can specify any CSS string, which is then applied to the visualization.

Visible Series

So that only certain series are visible, you can use this setting to set which series should be visible. To do this, the indices of the corresponding series are separated by comma, for example:

0, 1, 3

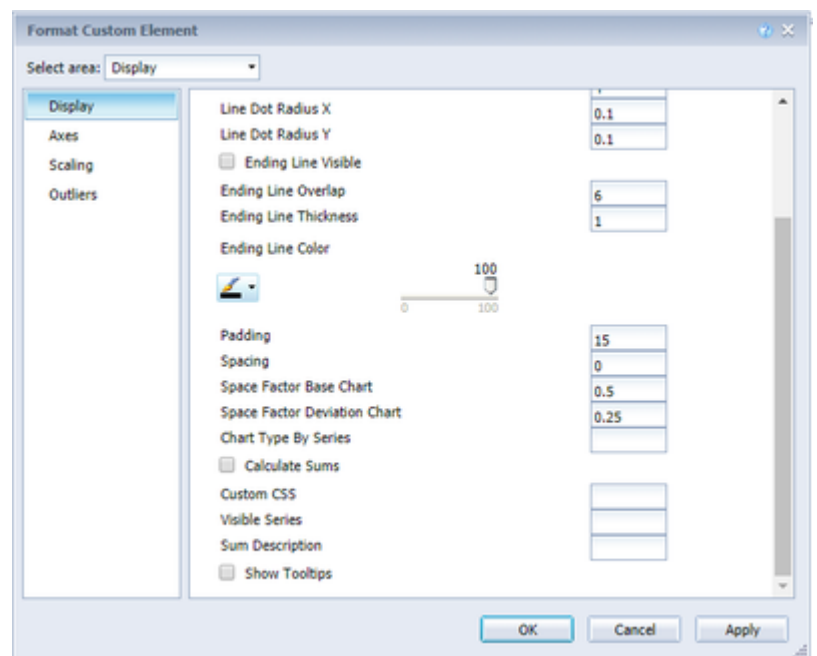
Note that the indexing begins with 0 in this case.

Sum Description

Assign a name for the sums in this field.

Show Tooltips

Activate Tooltips here.



AXES

Show Category Axis

If the checkbox is activated, the category axis is displayed.

Axis Thickness

Determines the thickness of the axis in px.

Category Width Is Fixed

Whether the categories should have a fixed size. If not, the category width is automatically determined depending on the chart width and the number of categories.

Category Width

With *Category Width*, the fixed category width can be defined in px.

Show Value Axis/Flip Value Axis

When you activate the *Show Value Axis* checkbox, the value axes in the diagram as well as the help lines are displayed according to the entered interval. If *Flip Value Axis* is activated, the value axis is switched to the other side (from right to left or from top to bottom).

Value Axis Tick Distance

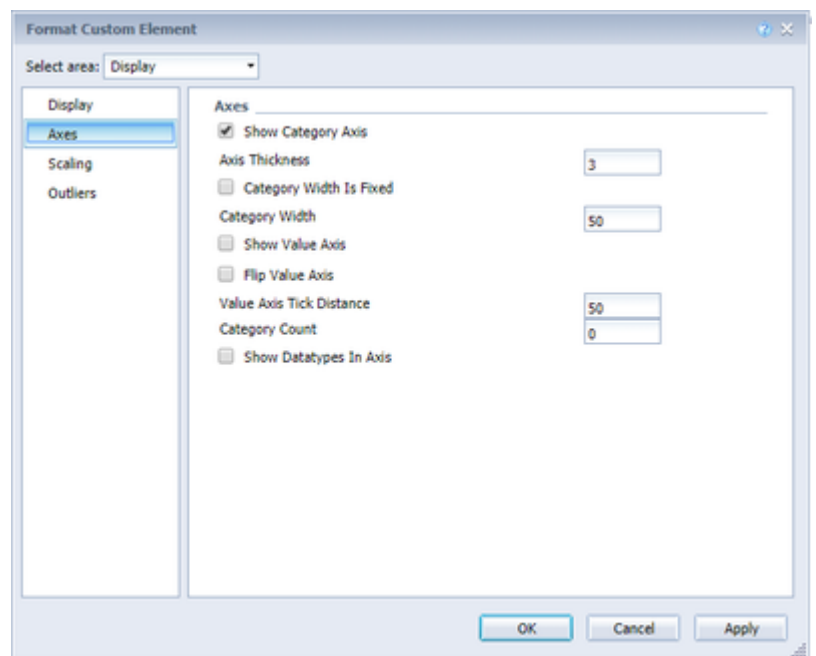
The distance between the ticks of the value axis. This is only a guideline. The ticks are always positioned on "even" values.

Category Count

If this value is not equal to 0, it indicates how many categories should be displayed. Excess elements are then truncated, missing elements filled with empty categories.

Show Datatypes In Axis

If the checkbox is activated, the data types of the first data series are displayed in the axes if the size is greater than or equal to 3px.



SCALING

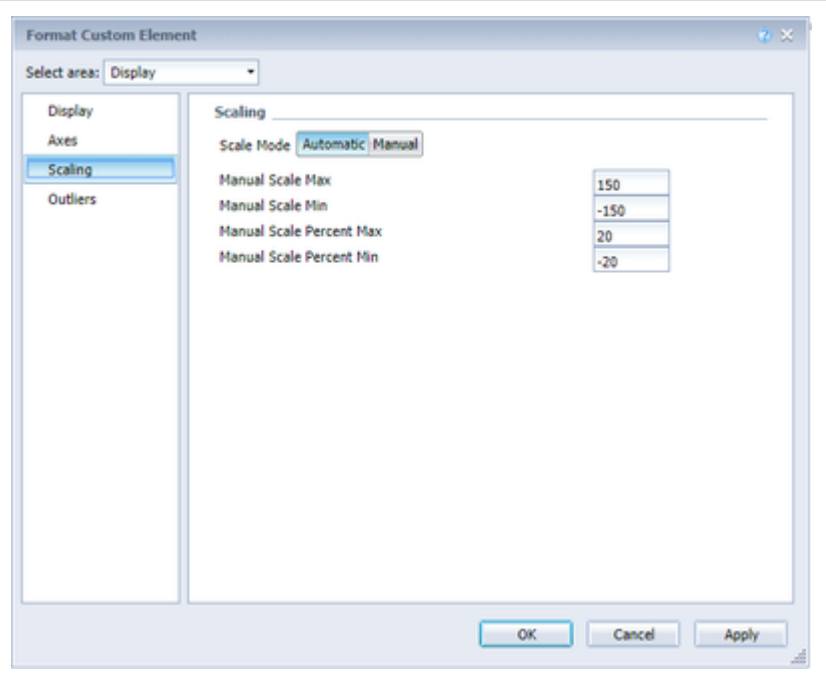
Scale Mode

Choose between *Automatic* or *Manual*.

Manual Scale Max, Manual Scale Min, Manual Scale Percent Max, Manual Scale Percent Min

Define the value ranges by filling in own values.

Using Manual Scaling makes it possible to compare several charts in one Web Intelligence report, while using the same values for each chart.



OUTLIERS

Outlier Size

The size of the outlier character in pixels.

Use Outlier Threshold

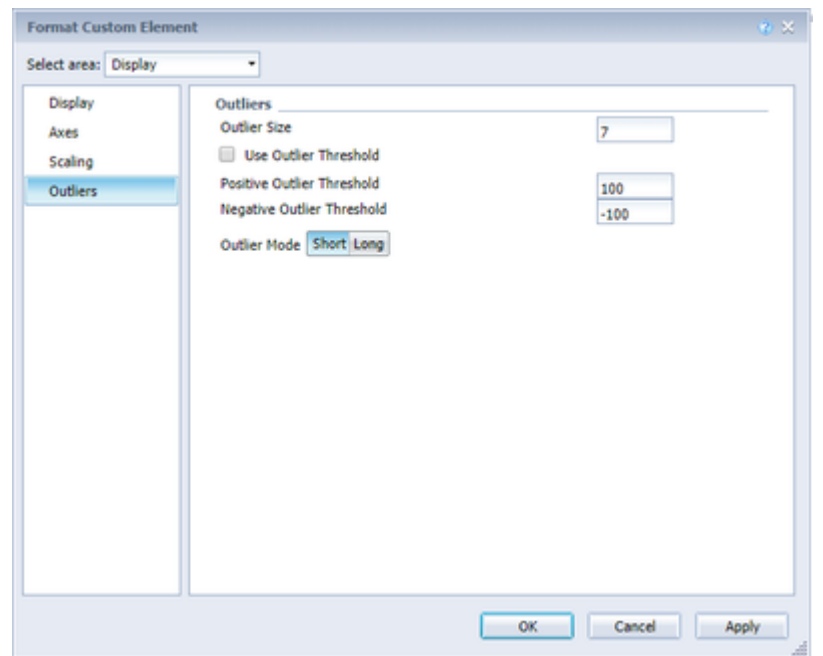
Controls whether the outlier limit is to be used (*Scale Mode Auto* only).

Positive/Negative Outlier Threshold

If the scale is automatically scaled, the value is automatically scaled up in the diagram. If a value in the data exceed this limit, this value is used as the maximum. All values above this value are then displayed as outliers.

Outlier Mode

Here you can choose how exactly outliers are displayed. In the Short mode, the outliers are represented as small triangles on the axis. In the Long mode, however, the outliers are displayed over the entire available area - according to the IBCS.



Deviations (charts)

DEVIATIONS

Negative Deviation Is Good

Activate the Invert checkbox, if positive deviations between the measurement values and the underlying values are not assessed as good, e.g. for actual plan cost comparison.

Calculate Deviations From NULL

Specifies whether deviations should also be calculated from NULL values. Resulting "" characters get the CSS class infinityLabel.

Deviation Good Color

Specify the color for the positive deviations.

Deviation Bad Color

Specify the color for the negative deviations.

Deviations Config

See [Deviation Configuration](#).

Deviation Visibility

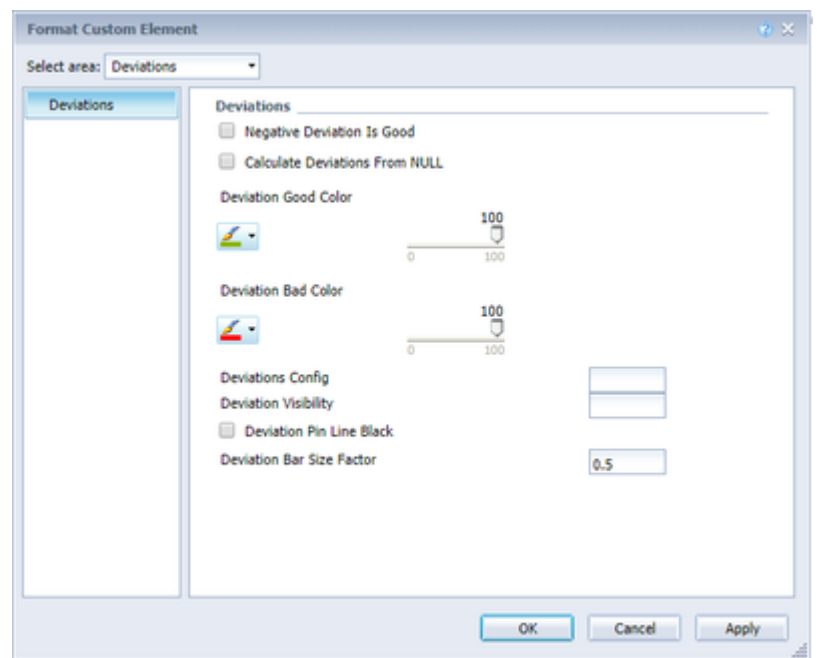
Enter comma-separated zero indicated which deviation graphs should be drawn, for example 0,2. An empty field causes all created deviations to be drawn.

Deviation Pin Line Black

Whether the line of the deviation pins should be black (or red / green).

Deviation Bar Size Factor

The percentage width of the deviation bar depending on the element width in the base chart (only possible if data types are used).



Labels (charts)

LABELS

Show Category Labels

By activating this checkbox, the category labels are displayed in the diagram. These are automatically determined from the metadata of the data series.

Show Title

If the checkbox is activated, the title is displayed.

Label Positioning Mode

The None, Fix, and Auto buttons control the data labels (labels):

- None: No labels are displayed.
- Fix: The labels are always displayed.
- Auto: If labels are overlapping, labels are dimmed or offset - using Collision Adjustment - see next setting.

Collision Adjustment

Adjusts the collision algorithm of the labels of the AUTO mode of the element labels. The smaller the value, the more sensitive the collision algorithm. Negative values are also allowed.

Signed Labels

Signs before all values are displayed.

Number Format (Percentage), Extended Number Format (Percent)

See [Number Format](#).

Series Labels Left/Top, Series Labels Right/Bottom

Select the checkboxes to display the data label on the data series.

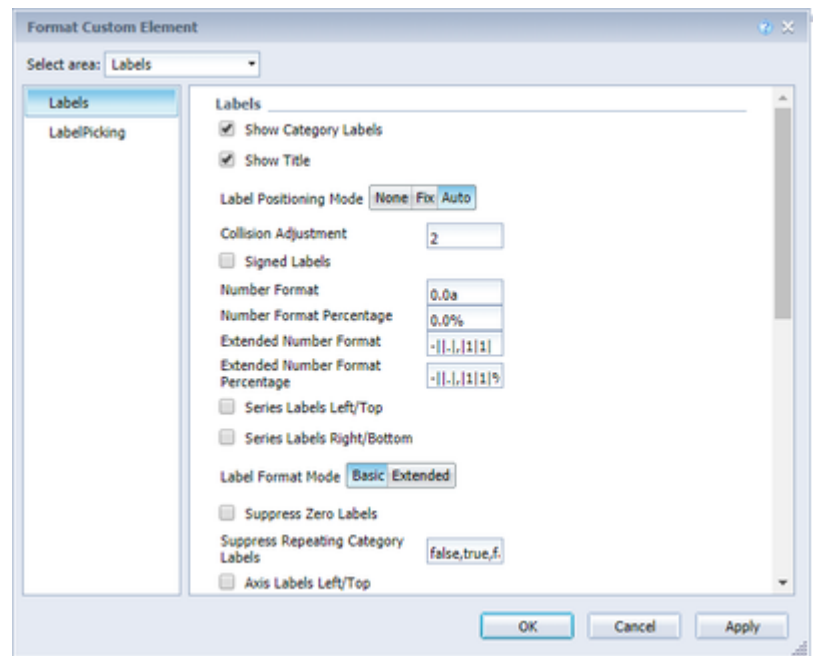
Label Format Mode

See [Number Format](#).

Suppress Zero Labels

The data label at zero values are dimmed.

Suppress Repeating Category Labels



Controls line-by-line, whether to suppress repeating category labels or whether to display them. Entries are made individually for each line, for example: „true, false, true“.

Axis Labels Left/Top, Axis Labels Right/Bottom

Activate the checkboxes to display the legend on the axes.

Max Series Labels Width

Maximum width of data row labels until the *padding* scales with. If this value is exceeded, the labels are truncated.

Line Break Category Labels

The character or string, replacing category labels on several lines. Thus, with a space from the label "ACT Jan 2001" would be a three-line label.

Line Break Axis Labels

The character or string, where the axis labels are split into several lines (similar to the PropertyLine BreakCategoryLabels).

Series Labels

In order to overwrite the series labels, which are displayed on show series labels, for example, others can be specified here. The labels for the series are separated by commas, e. g.: Budget, Actual

Axis Labels

Enter here separated by a comma, which label should be displayed on the left and which on the right of the axis. The first element is then left and the second right.

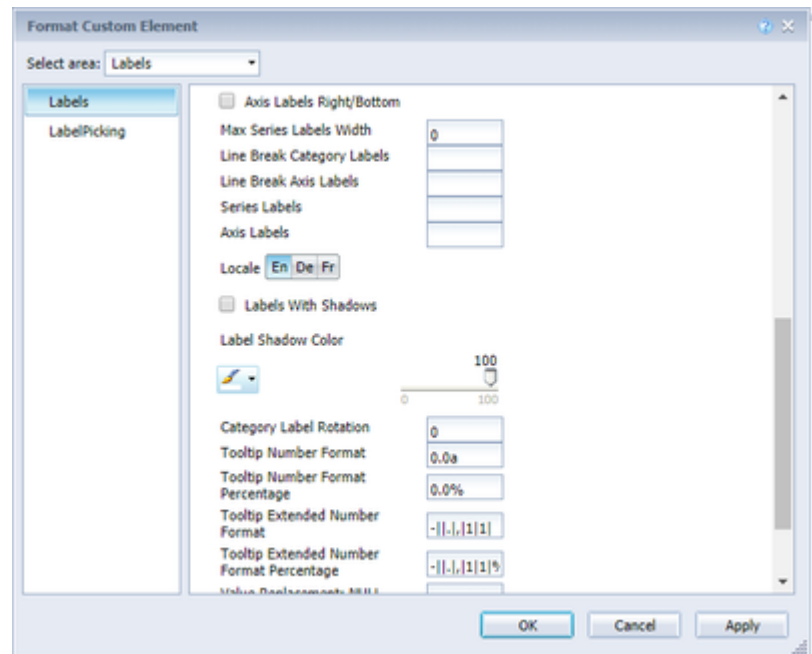
Locale

See [Number Format](#).

Labels With Shadows, Label Shadow Color

Shadows with defined colors can be added in order to distinguish fonts more clearly from possible background colors.

Category Label Rotation



Specifies the angle at which the category labels are rotated. The rotation is counterclockwise.

Tooltip Number Format, Tooltip Number Format Percentage, Tooltip Extended Number Format, Tooltip Extended Number Format Percentage

Define the display of the numbers in the tooltip. See [Number Format](#).

Value Replacement: NULL

If set, all NULL values are represented by this string

Value Replacement: Zero

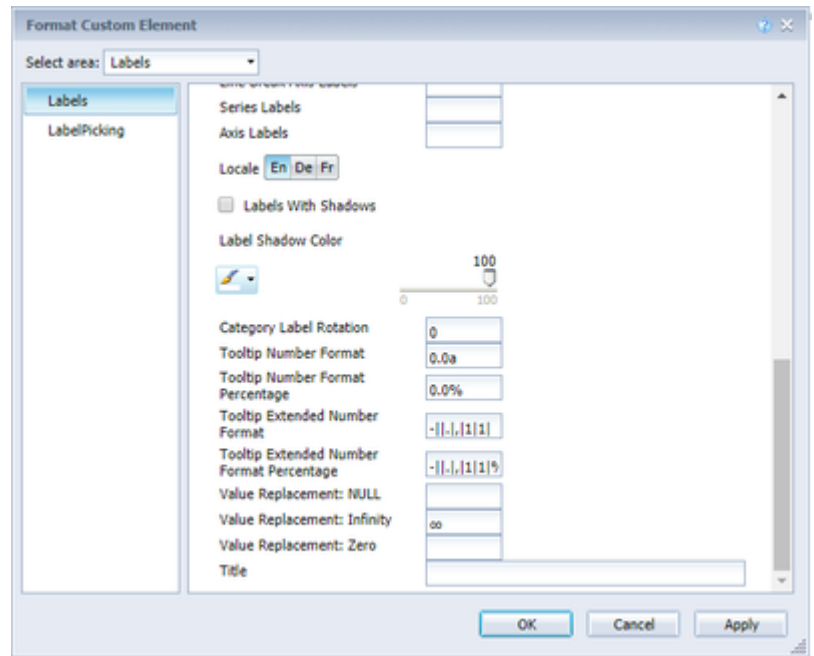
When set, all 0 values are represented by this string

Value Replacement: Infinity

If set, all infinity values are represented by this string

Title

At this point, a title can be created for the chart. Line breaks are possible with a pipe (|).



LABELPICKING

Pick Labels

If this option is enabled, you can use subordinate settings to control which labels to display based on specific criteria. Only those labels will then be displayed to which the selected criteria apply. There are the following options:

Force First Value Label

The first label of a series is shown

Force Last Value Label

The last label of a series is shown

Force Min Value Label

The value minimum of each series is displayed

Force Max Value Label

The value maximum of each series is displayed

Force Before Separators

All values in front of a separator are displayed. This option depends on the settings under Separators

Force Peak Labels

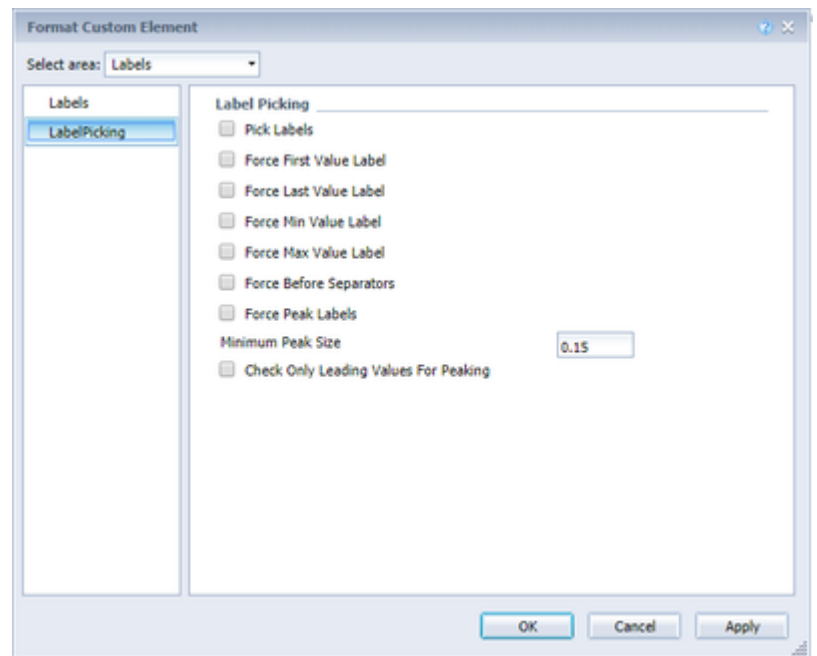
This option displays local minima and maxima. What is a local minimum / maximum can be controlled by the option Minimum Peak Size in %.

Minimum Peak Size

Determines how much values must deviate from their neighbors to be considered a local minimum / maximum.

Check Only Leading Values For Peaking

The peak calculation only refers to the previous value; the following value is not taken into account



Helper (charts)

SEPARATORS

You have the possibility to set so-called separators - category separators - in the diagram.

Separator Length, Thickness und Color

Determines the length, thickness, and color of the markers in px.

Separators in Front

Determines whether the separators should be displayed in front of the axis or behind them.

Separator Source

Source Row determines the category row to show the data series according to their data separators.

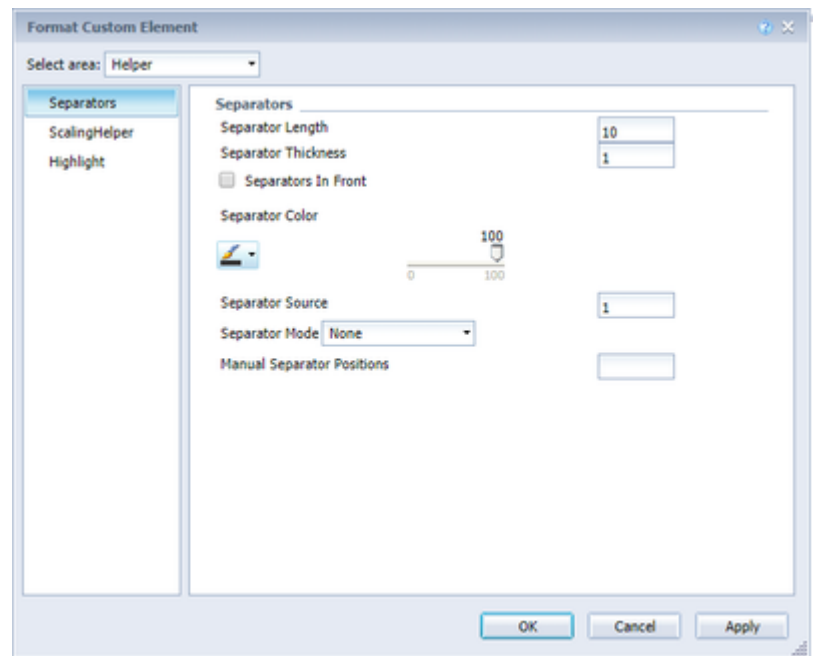
Separator Mode

Separators can be set automatically according to the selected switch automatically with modified data types or categories or manually.

Manual Separator Positions

In order for the separator positions to be used, the Mode *Manually* must be set as the separator. The positions of the separators can then be set as a comma-separated string. So for example:

2 , 4 , 5



SCALING HELPER

Scaling Helper

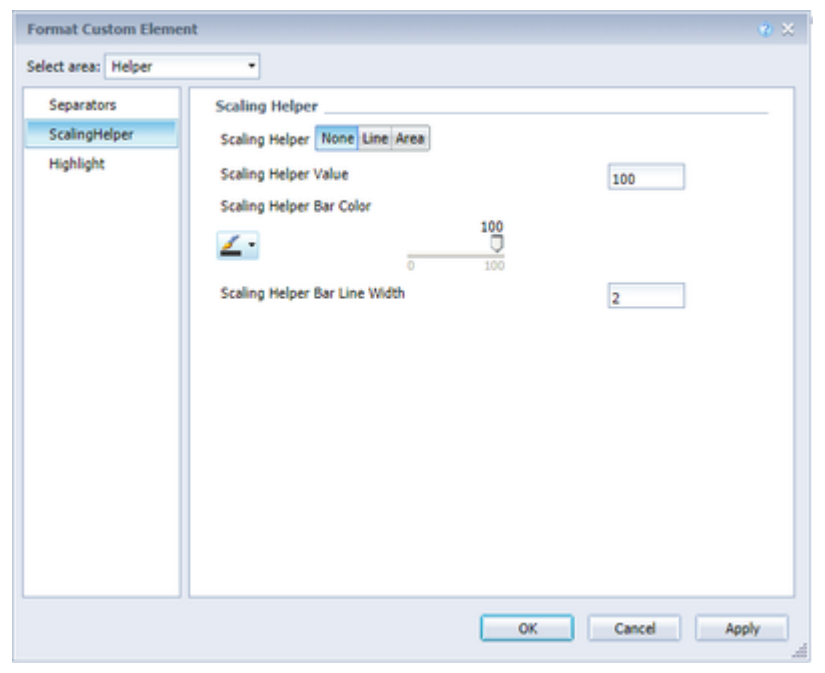
Here you can activate and define the appearance of the line (bar) or area ...

Scaling Helper Value

... as well as the position (value) of the scaling helper.

Scaling Helper Bar Color und Line Width

Specifies the color and thickness of the Scaling Helpers when it is of the Line type.



HIGHLIGHT

Highlight Mode

You can choose between a single highlight on the page (single) or highlighting multiple items within the chart (multi).

Highlight Label Percentage/Absolute

You can use this function to highlight the absolute and / or percentage difference between different diagram elements.

Multi Highlights Definition

For the multi-highlights to be applied, the *Highlight Mode* "Multi" must be selected. The format of the multi-highlights is then

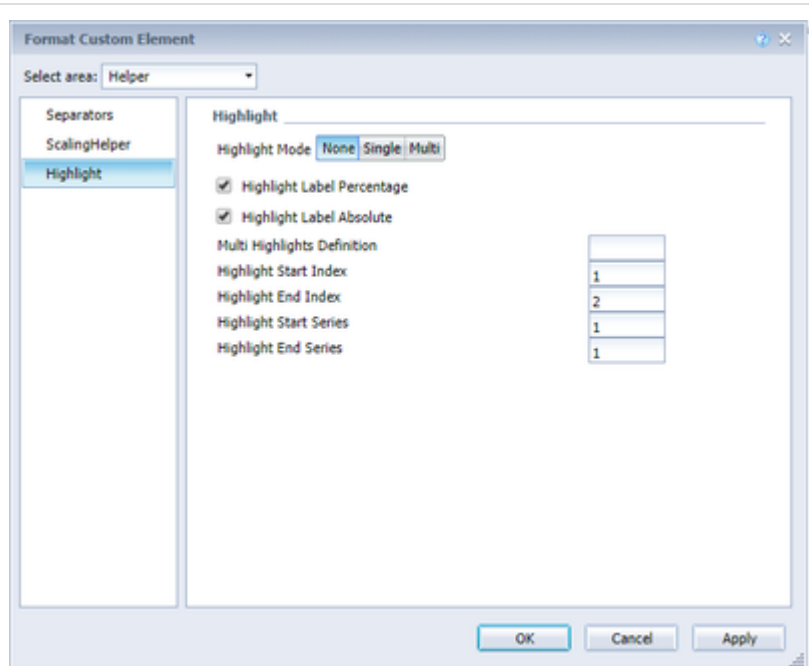
```
<Start Serie>.<Start Element>
-<End Serie>.<End Element>
[, <further definitions>]
```

For example:

```
1.1-1.3 , 2.3-2.2 , 2.3-2.3
```

Highlight Start/End Index/Series

Allows you to configure the start and end point of the highlight by specifying the appropriate series (Index of the Value Axis) and the element index.



Specific Chart Options (charts)

OFFSETBAR CHART

Offsetbar Offset On Left

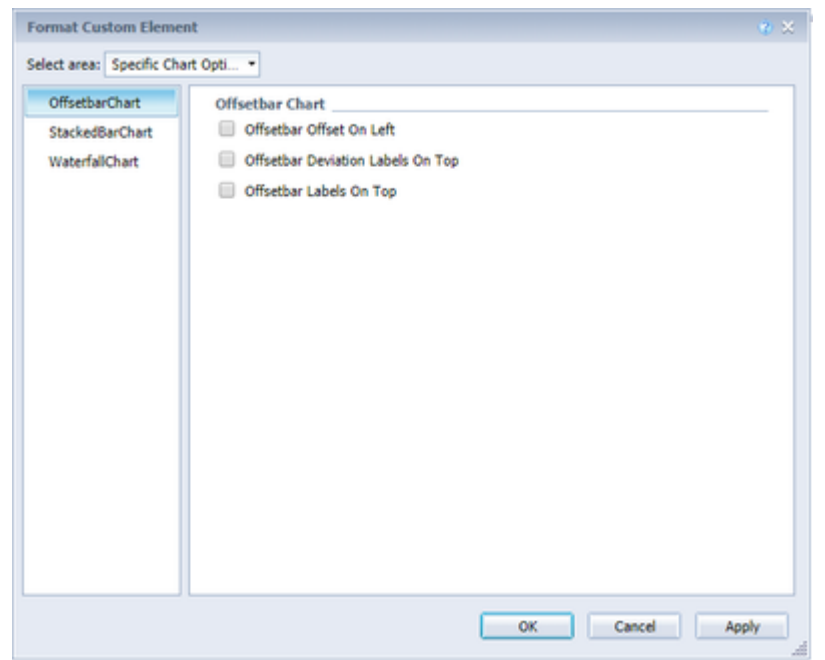
Display the deviation bar of the offset bar chart instead of the right.

Offsetbar Deviation Labels On Top

Always display the labels of the deviations in the offset bar charts at the top. Otherwise, the negative offset labels are displayed within the bar.

Offsetbar Labels On Top

Display the labels of the offset bar above the bar and not within.



STACKED BAR CHART

Stacked Bar Sums Visible

Do you want to display totals above the stack?

Stacked Bar Mode

Controls the mode of the stacked bar chart. There are the following modes:

Regular: The sums are made up from absolute values; negative values are added as positive.

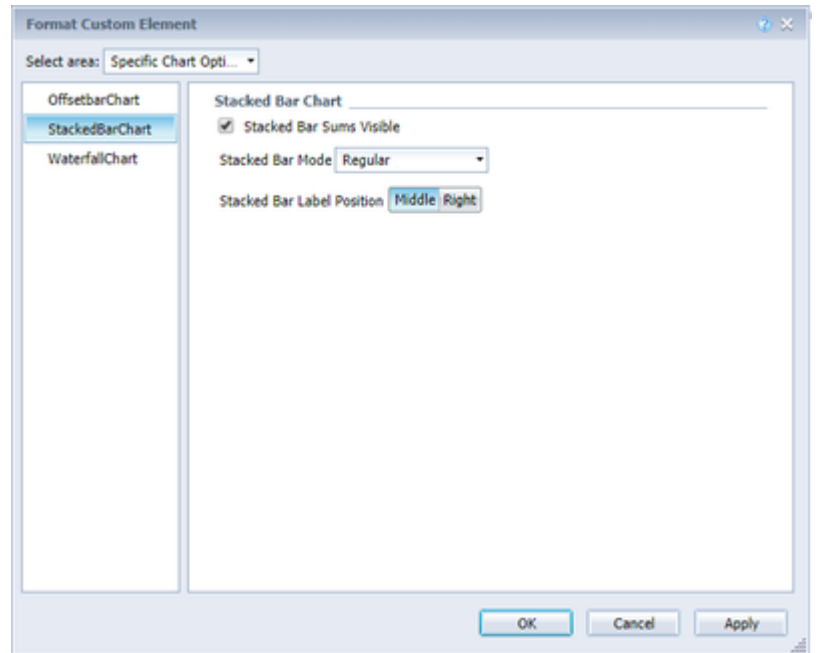
Negative: Negative values are treated as such and are represented as a separate negative stack.

Real Values: The sums are made up from real numbers (not absolute ones), but only positive stacks are made up.

Percent: The stack segments are displayed as percentage parts from the stack sum.

Stacked Bar Label Position

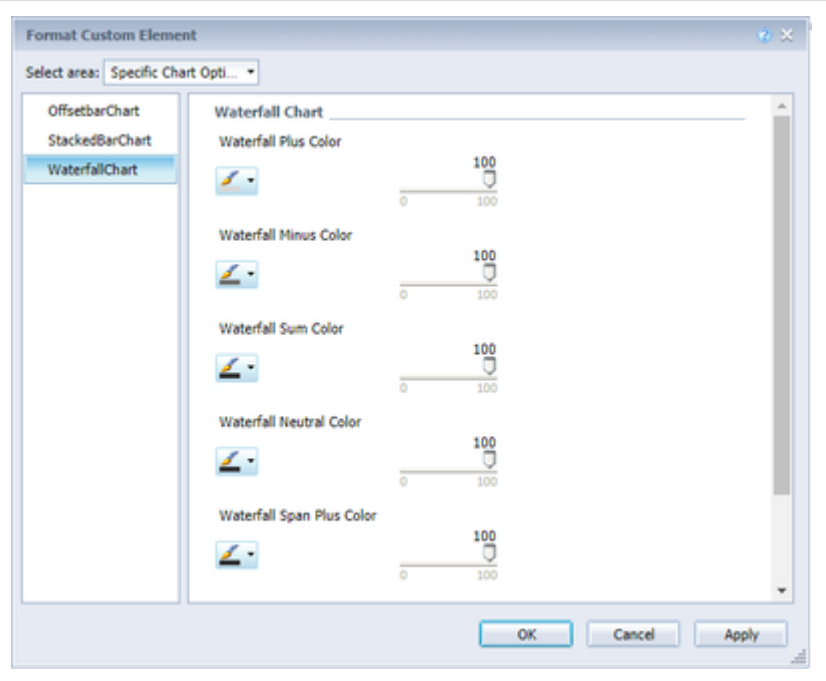
Controls where the captions of the stack (inside or right) are displayed.



WATERFALL CHART

Here you can determine the colors of the waterfall elements - corresponding to the Waterfall Calculation Path (Calculation Path, at the bottom of the tab). Please note that the use of data types exceeds this formatting.

A detailed explanation of the *Waterfall Calculation Path* can be found in the [documentation of the graphomate charts for Lumira Designer](#).



Server (charts)

See [Server](#).

Data Types (charts)

See Data Types.

Threshold Lines (charts)

CONFIGURATION

At this point you can create up to 10 configurations for Threshold Lines. The options for each line are described below.

Visible?

The checkbox decides whether the corresponding line should be visible or not.

Label

Indicate how the line should be labeled.

Type

There are four different types between which you can choose:

- *Threshold*: A line parallel to the category axis is drawn, the position of which can be determined via the number field *Value*.
- *Lin.Reg.*: A regression line is displayed for all values of a visible series. Via the numeric field *Value*, the index (starting at 1) of the desired series can be selected.
- *Median*: Represents the median of a visible series as a line parallel to the category axis. Use the *Value* field to select the index (starting at 1) of the desired series.
- *Average*: Represents the average of a visible series in the form of a line parallel to the category axis. The number field *Value* can be used to select the index (starting at 1) of the desired series.

Value

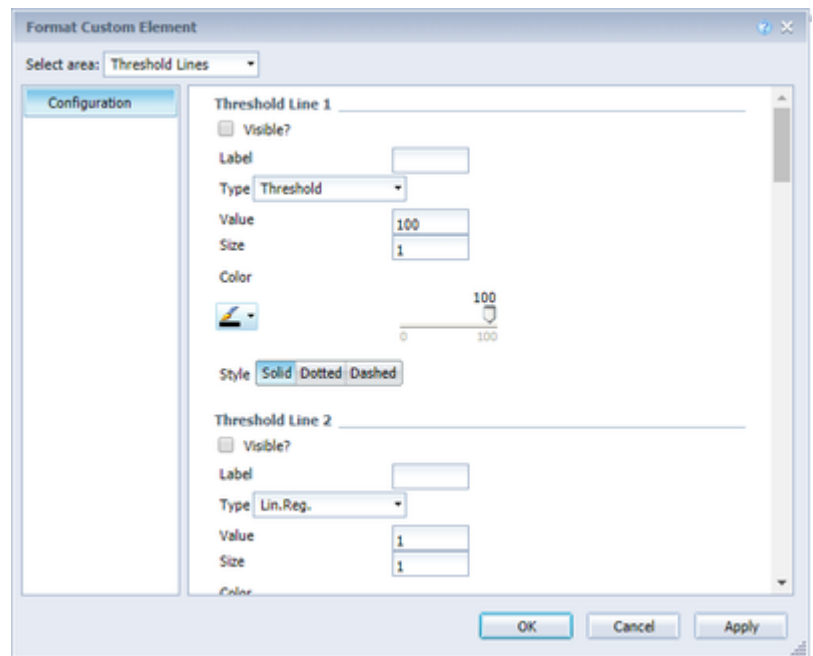
The content of the value field differs depending on the selected type and is therefore described individually for the types.

Size

The thickness of the line.

Color

The color of the line.



Style

The appearance of the line. Solid, dotted or dashed.

tables

	Discount	Margin	Quantity sold	Sales revenue	Sales-Discount	Sales-Margin
Fancy fabric	-15.6k	20.8k	292.0	53.4k	+89.0k	+53.1k
Evening wear	17.5k	287.7k	5.0k	711.6k	+894.1k	+706.6k
Dry wear	66.8k	60.6k	502.0	126.2k	+59.4k	+125.7k
Day wear	-98.4k	270.0k	5.0k	675.8k	+774.2k	+670.8k
Casual dresses	8.4k	45.0k	950.0	145.3k	+137.0k	+144.4k
Cardigan	28.8k	201.5k	3.8k	619.3k	+590.5k	+615.5k
Boatwear	8.6k	6.8k	132.0	18.9k	+10.4k	+18.8k
Bermudas	24.4k	21.9k	253.0	53.8k	+29.4k	+53.5k
Belts,bags,wallets	34.5k	158.6k	3.7k	492.9k	+458.5k	+489.3k
2 Pocket shirts	-25.3k	53.0k	537.0	127.0k	+152.3k	+126.5k
- 2005	1.0m	5.2m	79.9k	13.2m	+12.2m	+13.2m
Wet wear	31.3k	29.0k	289.0	58.7k	+27.5k	+58.5k
Turtleneck	76.0k	26.6k	374.0	72.8k	-3.2k	+72.4k
T-Shirts	898.0k	1.3m	15.6k	2.6m	+1.7m	+2.6m
Sweats	3.5k	11.4k	97.0	20.0k	+16.6k	+19.9k
Sweater dresses	46.2k	23.7k	437.0	57.2k	+11.0k	+56.8k
Soft fabric	13.4k	31.9k	366.0	64.4k	+50.9k	+64.0k
Skirts	5.5k	10.3k	145.0	21.3k	+15.7k	+21.1k
Short sleeve	166.1k	220.4k	2.6k	432.1k	+266.0k	+429.5k
Shirts	13.5k	7.1k	95.0	17.3k	+3.8k	+17.2k
Party pants	133.3k	60.2k	1.2k	158.0k	+24.7k	+156.8k
Pants	8.3k	7.3k	58.0	11.9k	+3.5k	+11.8k
Outdoor	15.3k	35.9k	475.0	77.8k	+62.6k	+77.4k
Night wear	11.5k	5.5k	60.0	12.7k	+1.2k	+12.6k
Mini city	2.0k	1.7k	47.0	5.7k	+3.7k	+5.6k
Lounge wear	4.4k	41.8k	649.0	91.9k	+87.5k	+91.2k
Long sleeve	118.7k	147.3k	2.1k	322.6k	+203.9k	+320.5k
Long lounge pants	33.9k	19.8k	308.0	44.0k	+10.1k	+43.7k
Jewelry	-149.5k	666.2k	10.1k	1.5m	+1.7m	+1.5m

Behaviour (tables)

BEHAVIOUR

Display Heatmap

If this option is activated, the value columns of the table are displayed as a heatmap, this means they are provided with a colored background. For this purpose, all values of the table are mapped to a color scale, which can be set under *Heatmap Scale*.

Heatmap Scale

It can be realized on all color scales, which are defined by [ColorBrewer](#). The definition of a color scheme consists of two comma-separated parts: the abbreviated color scale (eg, YlOrRd for "Yellow to Orange to Red") and the number of gradations.

Columns To Show Incell-Charts

Starting at 0, enter the columns in which bar charts should be displayed to visualize the value.

Incell Bar Height Factor

You can use this factor to set the height of the bars in relation to the size of the table cell (values between 0 and 1 are possible).

Incell Bar Opacity

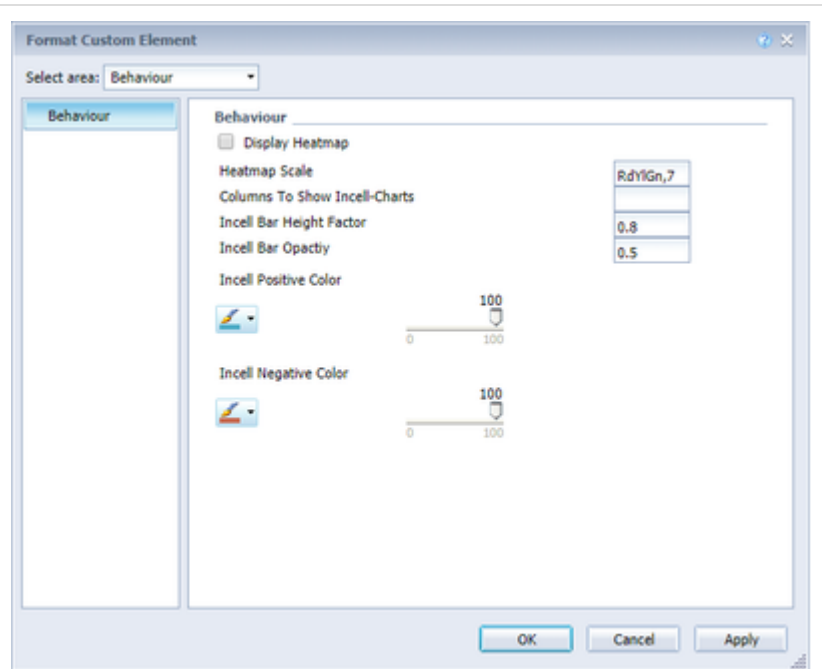
The bars of the Incell Bars are provided with a transparency. You can influence the degree of transparency with the *Bar Opacity* (values between 0 and 1 are possible).

Incell Positive Color

Positive values in the Incell Bars are colored in this color.

Incell Negative Color

Negative values in the Incel Bars are colored in this color.



Display (tables)

DISPLAY

Left Padding In Em

Sets the width (in em) used to indent a hierarchy level.

Fixed Column Width

If the checkmark is set, then the mode for determining the column width is "Fixed", otherwise "Auto".

- Auto: If the Auto mode is activated, the existing space (width of the component) is evenly divided into the columns.
- Fixed: Use the *Column Width* option to specify a fixed width (in px) of the data columns.

Column Width (in Px)

See *Fixed Column Width*, Modus Fixed.

Apply Data Types To Cells, Show Data Types In Header

Enables the Data Types bars in column headers (*Data Types in Header*) and applies the Data Types color to each data cell (*Apply Data Types To Cells*). The latter exceeds all other color settings.

Table Header Position Fixed

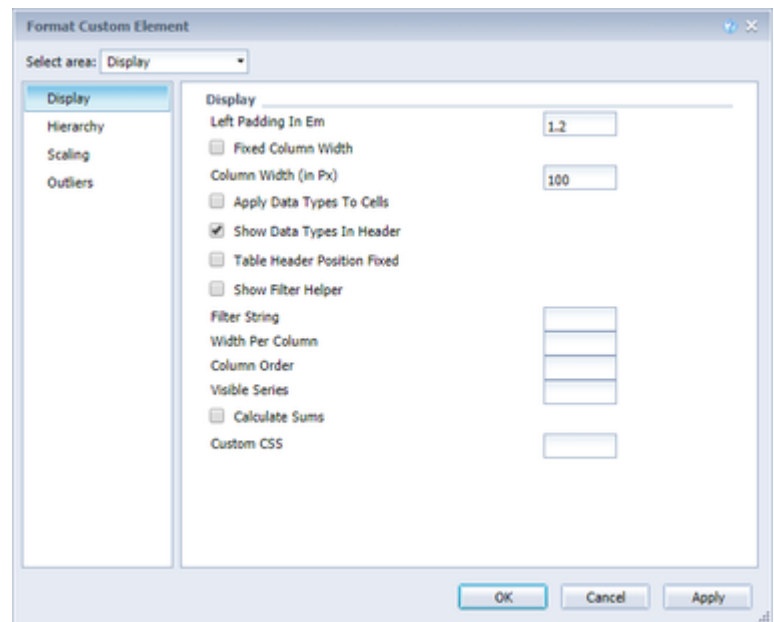
If the column titles should be permanently visible, even if scrolled, this can be set here.

Show Filter Helper

In the first cell of the graphomate tables on the upper left, we have implemented a filter function.

Check this box to highlight this feature visually. However, it can also be activated and used without this option. Just type letters or regular expressions (RegExp) into this cell, and only the table lines containing these letters are shown. The case is not case-sensitive.

The filter box is not accessible by the user in Java mode, but only in HTML mode.



Filter String

By specifying a filter string at this point, an initial filter can be set and applied. (Also in Java mode!)

Width Per Column

Enter here the width of each column, separated with ',' (for example: 100,200,100,200).

Column Order

If the series and deviations should appear in a different order than the default, this setting allows you to rearrange the columns. To do so, the new order must be specified in the following form (example):

```
series1, deviation0, series2,
series3, deviation1
```

Note that the indexing of the series starts at 1, the deviations at 0.

Visible Series

So that only certain series are visible, you can use this setting to set which series should be visible. To do this, the indices of the corresponding series are separated by comma, for example:

```
0, 1, 3
```

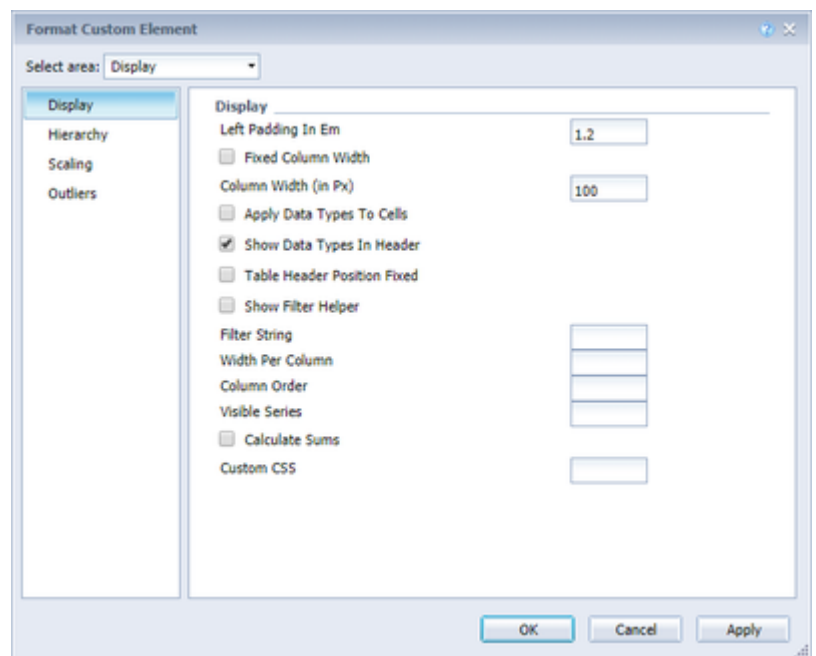
Note that the indexing begins with 0 in this case.

Calculate Sums

By activating this option, totals are automatically calculated and the totals are transferred to the chart.

Custom CSS

At this point, you can specify any CSS string, which is then applied to the visualization.



HIERARCHY

Hierarchy Indent

Determines how far the individual hierarchy levels should be moved to the previous stage in em.

Show Hierarchy

Select the hierarchical representation of the dimension using the checkbox in front of *Show Hierarchy*.

Collapsible Hierarchy

If you want the hierarchy to be able to be opened and closed during the runtime in the dashboard, set the checkmark to *Collapsible Hierarchy*.

Node Style Bold, Italic und Color

Here, you control the color and font of the hierarchy nodes in the table. The color overwrites the font color set in *Text Color*.

Expand To

Determines to which hierarchical level the hierarchy is to be displayed expanded at the beginning (starting with level 0).

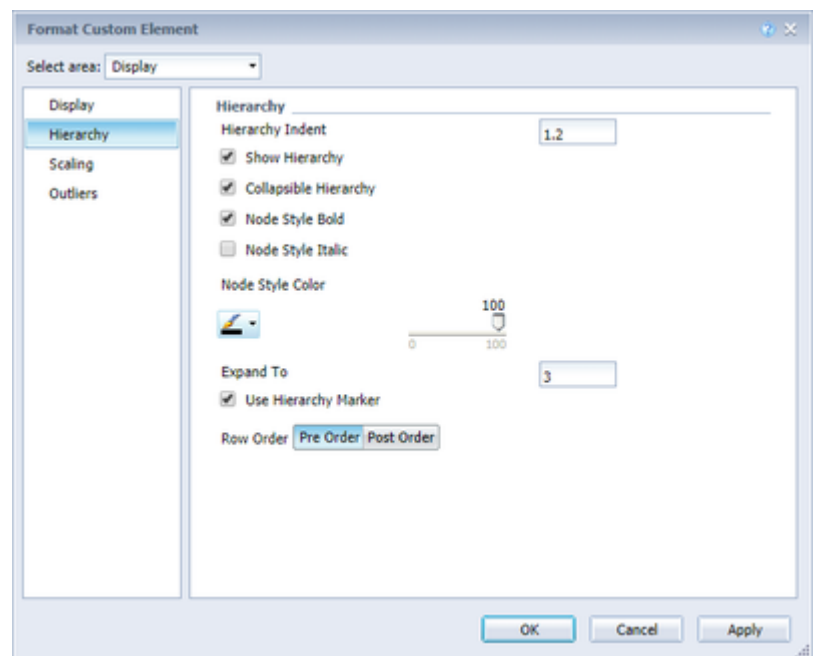
If there are totals and there is no common, top node for the grand total, the level starts with 1.

Use Hierarchy Marker

You can open a hierarchy node using the hierarchy markers (+ / -). If this option is set to false, it is also possible to open and close hierarchy nodes by clicking on the line title.

Row Order

This setting allows you to change whether the totals are displayed before or after the elements from which the totals are created.



SCALING

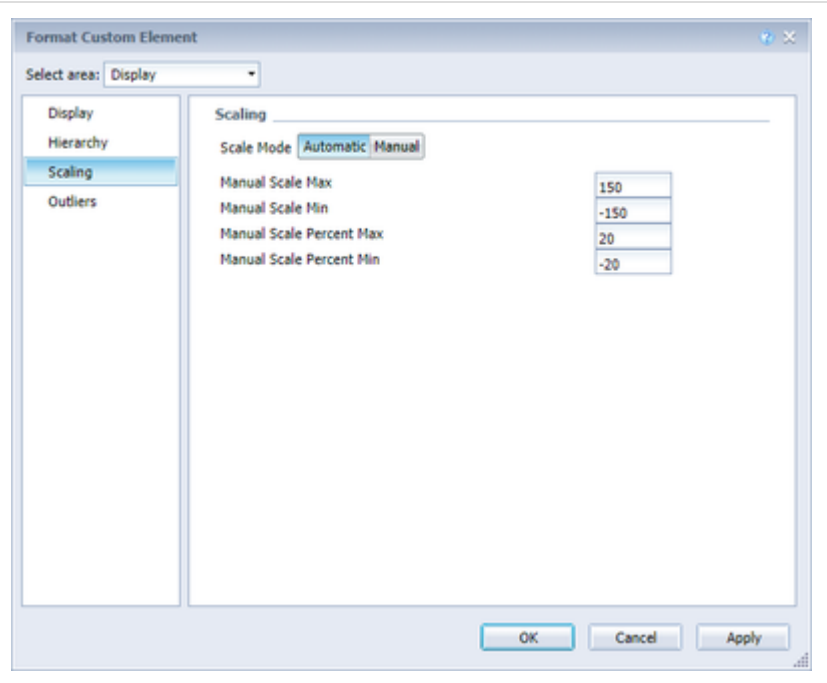
Scale Mode

Choose between *Automatic* or *Manual*.

Manual Scale Max, Manual Scale Min, Manual Scale Percent Max, Manual Scale Percent Min

Define the value ranges by filling in own values.

Using Manual Scaling makes it possible to compare several tables in one Web Intelligence report, while using the same values for each table.

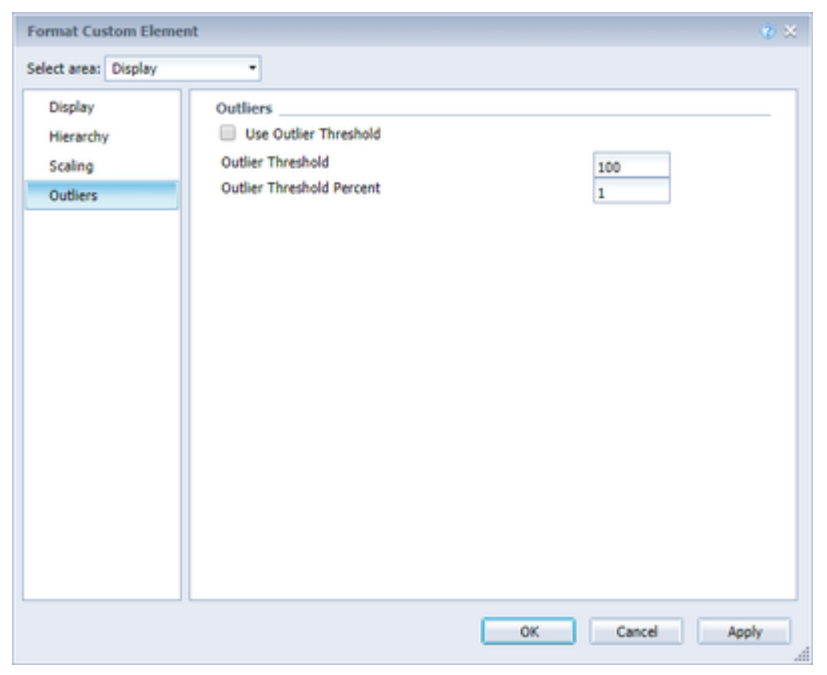


OUTLIERS

Outlier Threshold, Outlier Threshold Percent, Use Outlier Threshold

The use of the Outlier Thresholds is activated with *Use Outlier Threshold*.

If use is enabled, all values that are greater than the threshold or less than the negative threshold are represented as outliers. Thresholds thus indicate the amount of positive and negative limits. Values for the property Outlier Threshold Percent must be entered as a decimal percentage representation, eg 0.6 for "60%".



Deviations (tables)

DEVIATIONS

Deviations Config

See [Deviation Configuration](#).

Semantic Axis

If *Semantic Axis* is activated, the axes of the deviation representations are drawn according to the Base Series' data type.

Axis Width

Determines the thickness of the deviation axis.

Deviation Good/Bad Color

Specify the colors for the deviations.

Negative Deviation Is Good

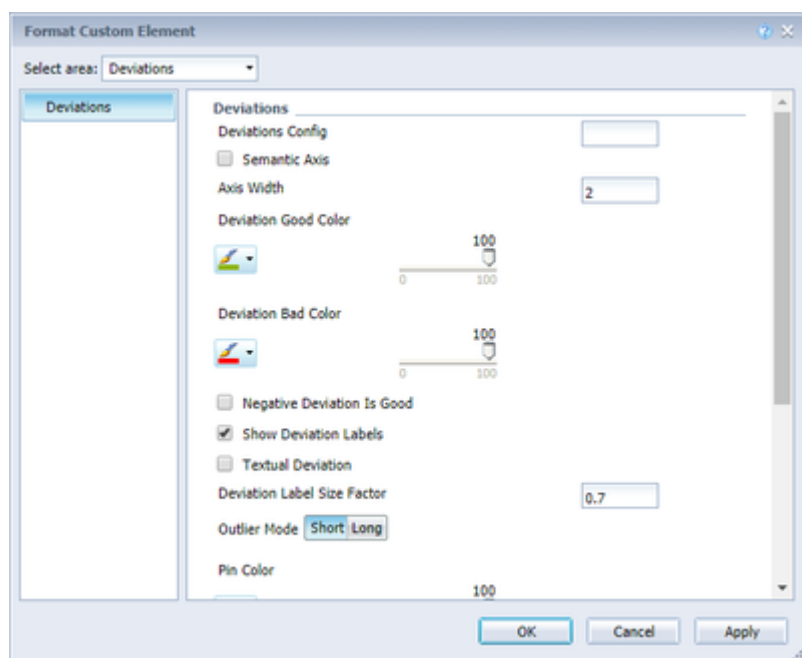
If positive deviations are not estimated as good (as for example, for actual cost-of-cost comparisons), activate this checkbox.

Show Deviation Labels

Show Deviation Labels controls the visibility of the deviations. If the option is deactivated, only the graphic deviation elements are visible, but not the exact values.

Textual Deviation

If no deviation diagrams are desired, but the deviations should appear as text columns, this can be set.



Deviation Label Size Factor

The size of the labeling of the texts in the deviation columns is determined according to the text size of the table (according to the IBCS). The default factor is 0.7: the font size multiplied by 0.7 gives the font size in the deviations. This factor can be adjusted.

Please note that there may be errors in the display for factors below 0.3 or above 1.2.

Outlier Mode

Choose the appearance of the outliers here. In the mode *Short* the outliers are shown as small triangles on the axis. In the mode *Long* they are drawn over the entire available area – according to the rules by IBCS.

Apply Pin Color, Pin Color

As a rule, the negative or positive deviation color (depending on the sign) is used for the color of the deviation pins in percentage deviations. If a different color is to be used for the pins, the *Apply Pin Color* property must be set to true and a *Pin Color* must be defined.

Deviations From NULL

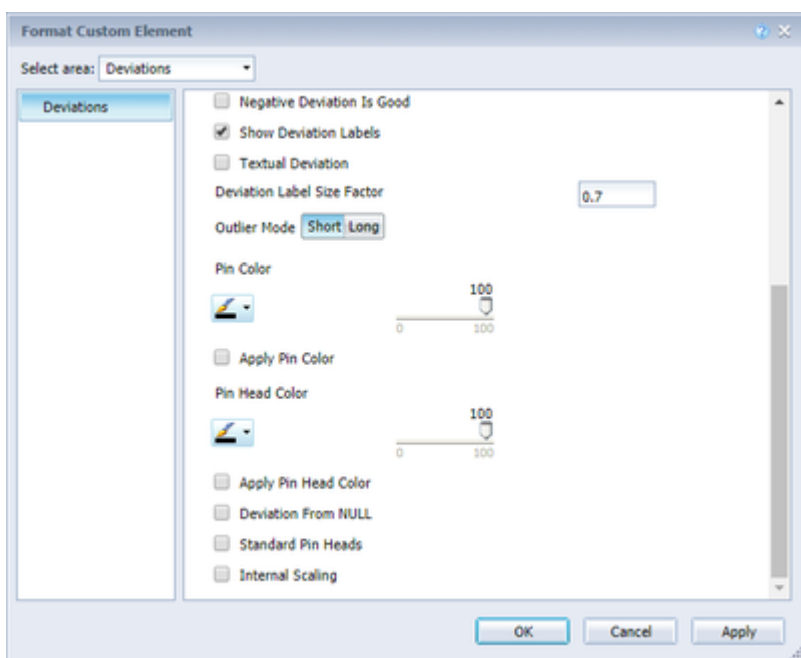
This property affects whether a NULL value is interpreted as 0 or as non-existent in the calculation of the deviation. If the property is set to false, the value is considered non-existent and no deviation is drawn; otherwise the difference between 0 and the value is calculated as the deviation.

Standard Pin Heads

The *Standard Pin Heads* option displays the pinheads of the percentage deviations according to the IBCS.

Internal Scaling

The deviation diagrams are not scaled within the table by default. If a scaling is desired, however, this is possible by hooking this setting.



Labels (tables)

LABELS

Row Title Alignment Right

If desired, row titles of the first column can be aligned to the right by activating the checkbox.

Data Cell Alignment Right

By default, the cell contents are aligned right. Left-aligned text is implemented by removing the checkmark.

Title

At this point, a title can be created for the chart.

(Extended) Number Format (Percentage)

See [Number Format](#).

Number Format Per Column

You can use this property to create (different) extended number formats for each column. For this purpose, the single formats are given separated by the @ sign (with the respective extended number format, see [Number Format](#)). An empty format means that the number format set for the table is to be used.

Example of two columns: - | | . | , | 10^6 | 1
| @ - | | . | , | 1 | 1 | % 25

Label Format Mode.

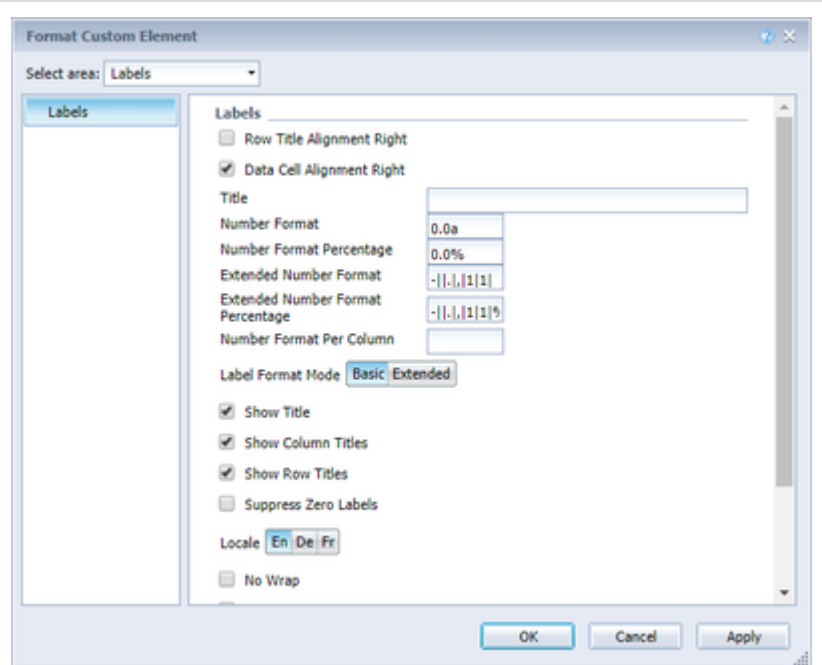
See [Number Format](#).

Show Title

Sets the visibility of the title text set in *Title*.

Show Column Titles

If no column titles are desired, they can be hidden via this property.



Show Row Titles

If no row titles are desired, they can be hidden via this property.

Suppress Zero Labels

If this checkbox is activated, the labels of zero values will not be shown, both in the table itself as well as in the deviation diagrams.

Locale

See [Number Format](#).

No Wrap

Too long row titles are wrapped as standard. The *No Wrap* property allows this behavior to be affected by the fact that the split titles are instead abbreviated.

Remove Repeated Labels

If multiple characteristics are repeated in a column header, this property can be used to set the individual title components not to be repeated.

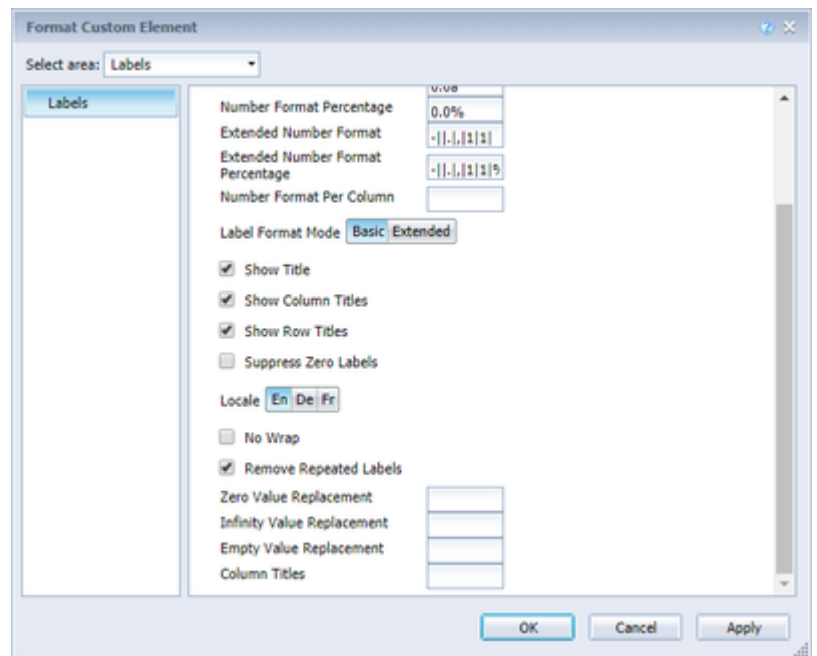
Zero, Empty und Infinity Value Replacement

This property is used to replace certain values ('0', 'null' or '') in the table with another value.

For example, to replace the " character in the deviations with '~', enter '~' for the Infinity Value Replacement. If you want to display '-' instead of an empty table cell (with a 'null' value), you can maintain it using the Empty Value Replacement

Column Titles

Define costum titles for each cloumn.
Example: Actual,Budget



Helper (tables)

DIVIDERS

Dividers

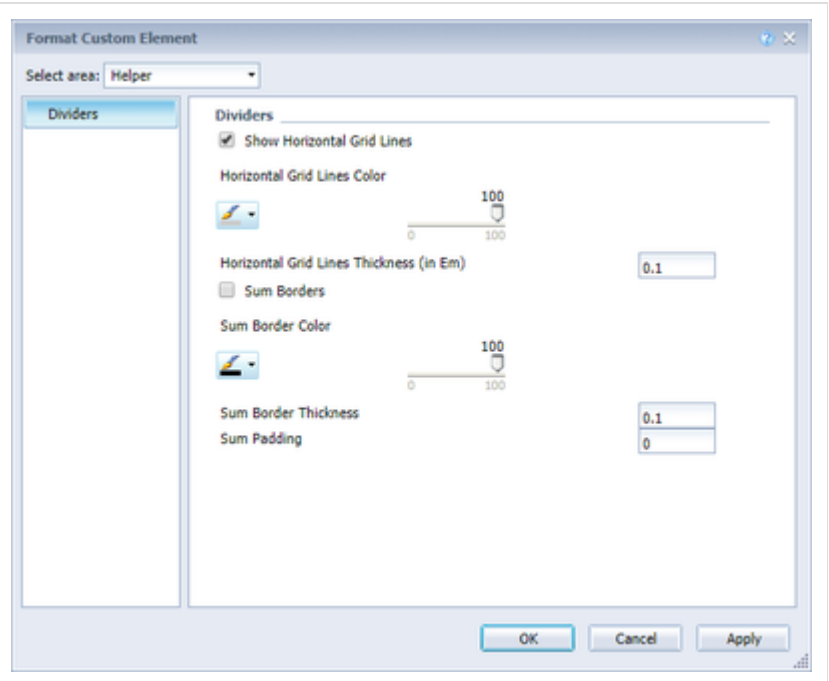
Switch the horizontal grid lines (dividers) on or off using the checkbox and determine their thickness and color.

Sum Borders

Use the *Sum Borders* checkbox to toggle the sum separators on or off and determine their thickness and color.

Padding allows you to add a space between the totals and the child elements.

We recommend that you disable the *Preceding Hierarchy Nodes* option to use Sum separators to list the totals below the table values.



Server (tables)

See [Server](#).

Data Types (tables)

See Data Types.

Exceptions (tables)

EXCEPTIONS

The tables allow the creation of exception icons that are displayed in the table in a cell when a certain condition is met. Currently, ten different definitions for exceptions can be created. The following options must be maintained for each exception:

Source

Under *Source*, select exactly one column as the basis for checking the *condition*. It is possible to select row titles, data columns and deviations. To do so, you specify a data column, for example, with *series2*, a deviation with *deviation1*, and the row title with *rowHeader*.

Target

Under *Target*, select one or more target columns, which are assigned to the selected style. *Target* is the index of the column, where the column with the index 0 describes the row titles.

Only the visible columns are considered for the index of the columns.

In addition to the input of a single column, there are two other ways to select target cells: Firstly, a comma-separated list of indexes can be specified (for example, 2,3), then the selection is applied to all selected columns. On the other hand, all the columns of the table can be selected with the keyword.

Operator, From/Value und To

A condition consists of one operator and one (*From/Value*) or two (additional *To*) values. The value of the corresponding source is checked by the operator. If the check is positive, the exception is drawn.

In addition to the usual mathematical operators for comparing two values, there are some additional operators:

The screenshot shows the 'Format Custom Element' dialog box with the 'Exceptions' area selected. It displays three exception configurations. Each configuration includes a 'Source' field, a 'Target' field, an 'Operator' dropdown menu (currently set to 'greaterThan'), a 'From/Value' field, a 'To' field, and a 'Style' field. The dialog also features 'OK', 'Cancel', and 'Apply' buttons at the bottom.

- *Alert Level*: This allows you to take over an alert level from the exceptions of a BW query.

Alert Level is not possible in Webl and will be removed in a later version

- *Contains*: You can use *Contains* to check whether a string contains another string (which can be specified in *Value / From*). It is also possible to formulate terms using [regular expressions](#).
- *Always*: This condition always matches whatever value is in the source cell or the value.
- *Hierarchy*: With this condition the hierarchy levels can be selected. The hierarchy level that is assigned to a row can be read from the CSS class of the row.
- *Key*: The *key* specified in *Value* is matched to the source cell. If the values are exactly the same, the *Row Format Configuration* is applied.
- *Index*: The *Row Format Configuration* is applied directly to the line with the specified index. It is possible to specify both a single index (2), a comma-separated list (1,3,4,6) or a range (2.6).

The *condition* and the *source* are used to restrict the cells of the target column that are given a style.

Style

The appearance of an exception icon can be defined via the *style*. For this purpose, three information must be separated by spaces:

```
<filltype> <color> <shape>
```

Examples of valid definitions are, for example:

- filled green rhomb
- empty #00f723 circle

The *color* can be any color in Hex notation. The following selection options are available for the *filltype*:

- filled
- empty
- hatchedUp
- hatchedDown
- dotted

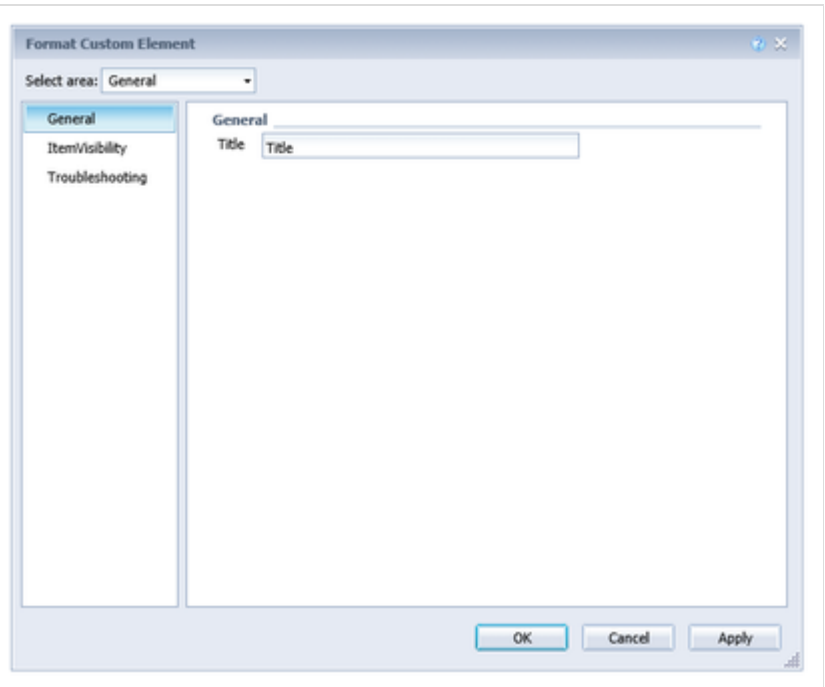
With *shape* you can choose between these options:

- circle
- rect
- rhomb
- harvey
- arrowUp
- arrowRight
- arrowDown

The current scope of the *exception* definition does not yet match the *Row Format Configuration* in the Lumira Designer tables.

General (bubbles)**GENERAL*****Title***

Enter a title for the chart. Line breaks can be used.



ITEMVISIBILITY***Display Title***

Displays or hides the title.

Display Legend

Displays or hides the legend.

Display Outer Grid Lines

Displays or hides a border around the chart. If the option 'Draw Full Boxes' (Layout Scaling) and 'Display Inner Grid Lines' (General ItemVisibility) is activated, this option has no effect.

Display Inner Grid Lines

If activated displays a grid in the chart.

Display Annotations

If activated displays annotations. Annotations are temporary labels which are displayed while hovering over a bubble and shows its values on the x- and y-axis.

Interval Size X Axis

Draws lines in the given interval.

Interval Size Y Axis

Draws lines in the given interval.

Interval Count X Axis

Draws the given amount of lines in regular distances.

Interval Count Y Axis

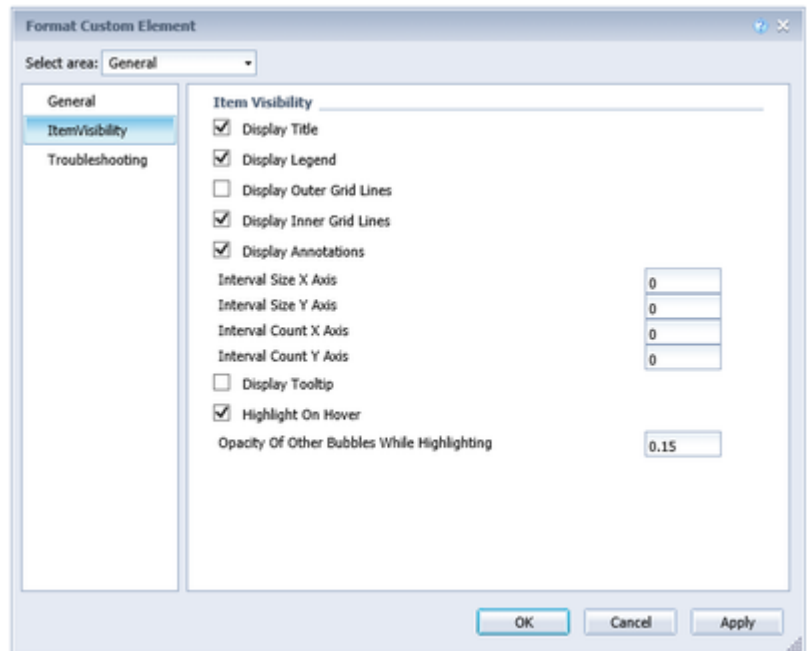
Draws the given amount of lines in regular distances.

Display Tooltip

Displays more information when hovering over a bubble.

Highlight On Hover

If activated other bubbles become transparent when hovering over a bubble.



TROUBLESHOOTING

Draw Boundaries

When activated draws rectangles around all objects in the chart, displaying the boundaries.

Collision Adjustment Factor

The amount of pixels labels are allowed to overlap until the collision logic removes them.

Reserve Space For Hidden Labels

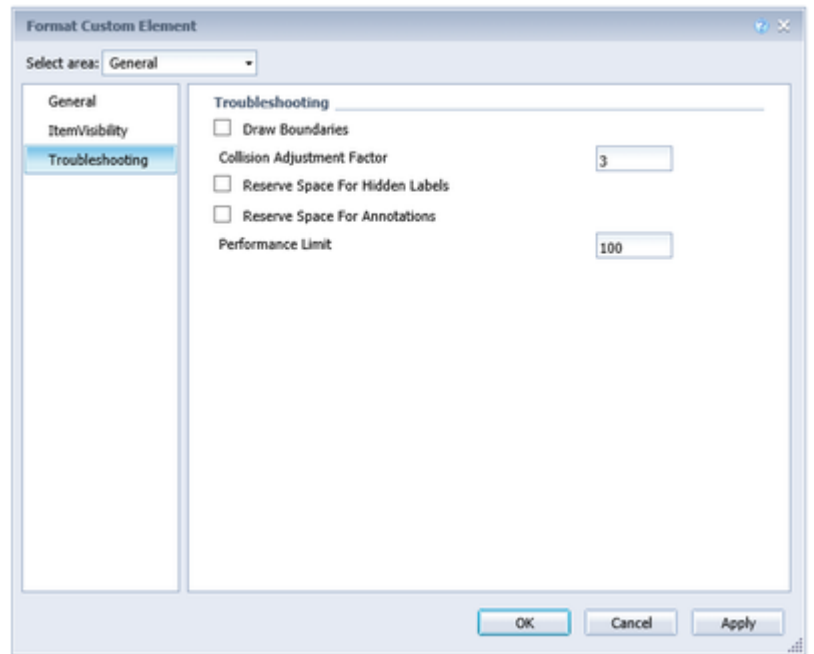
Make sure labels which are not displayed would be in the chart.

Reserve Space For Annotations

Sets the width of the edge so that all annotations could be displayed.

Performance Limit

Sets the maximum number of bubbles until performance-problems occur. If the amount is passed a performance-optimized version is used. Using more than 100 is not recommended and happens at own risks



Layout (bubbles)

LAYOUT

Padding

The distance in pixels that surrounds the whole diagram.

Legend Offset

The distance in pixels between all elements in the legend on the y-axes.

Legend Padding

The distance in pixels between the legend and the diagram.

Legend Radius

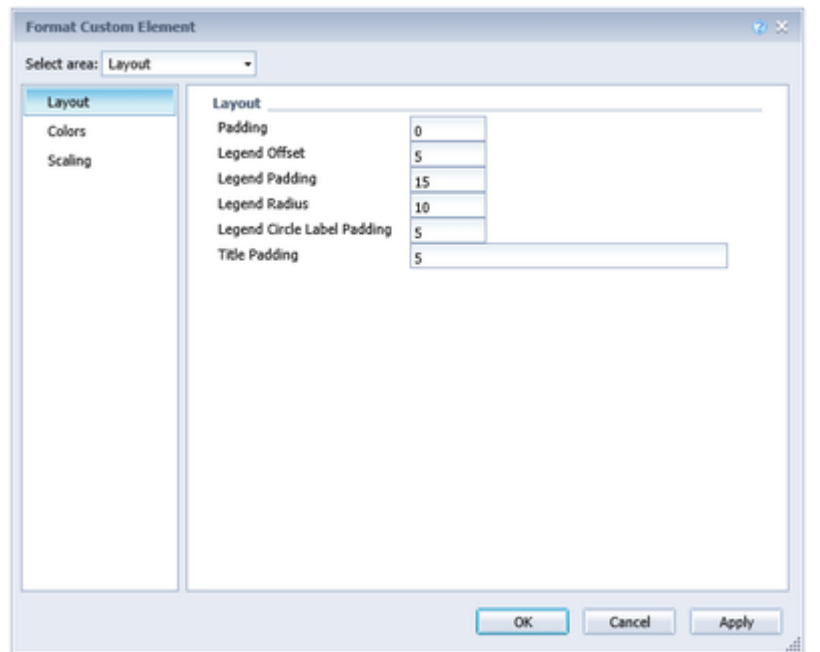
Radius of the exemplary bubbles and the legend-label in pixel.

Legend Circle Label Padding

The distance between the exemplary bubbles and the legend-labels in pixels.

Title Padding

The distance between the title and the diagram in pixel.



COLORS

Circle Color

The color of the circles around the bubbles and the backgroundcolor if 'Colored Circle' is activated.

Arc Color

The color the value 'Arc' is displayed in.

Good Color

The color a positiv difference is displayed in.

Bad Color

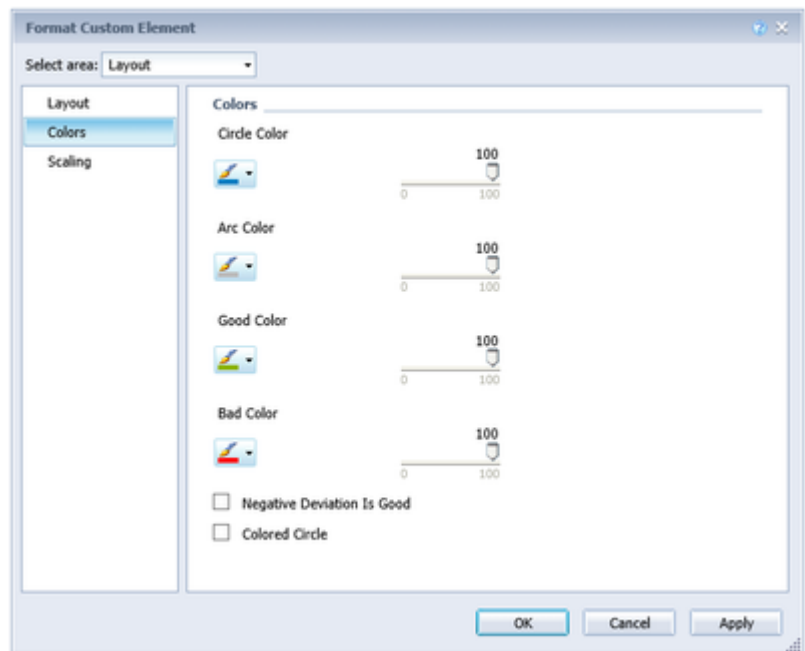
The color a negative difference is displayed in.

Negative Division Is Good

Exchanges 'Good Color' and 'Bad Color'.

Colored Circle

If activated the background of the bubble has the color given in 'Circle Color'.



SCALING

Minimal Radius

The minimum radius of Bubbles.

Maximal Radius

The maximum radius of Bubbles.

Draw Full Boxes

If activated all parts of the grid gets drawn with equal size. This rescales the chart.

Use Fixed Begin Of X Axis

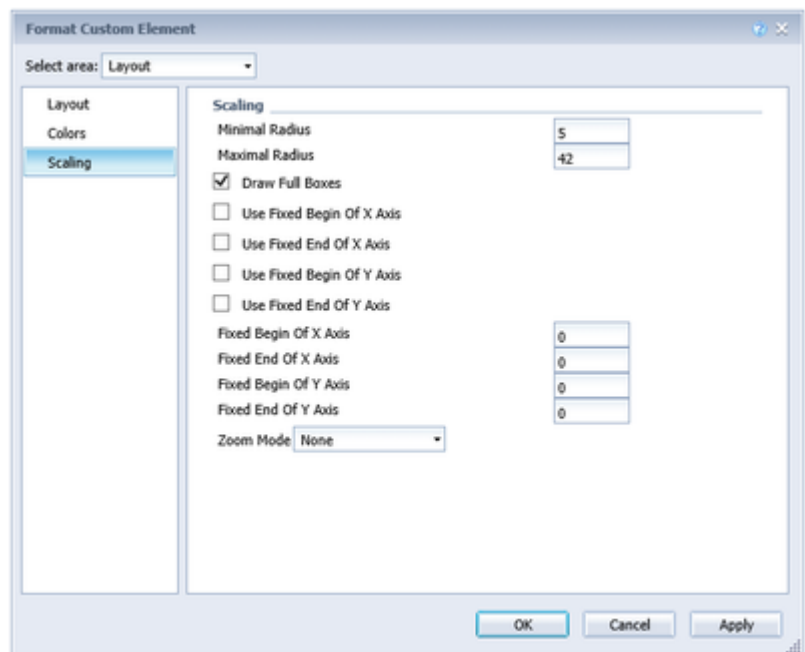
If activated 'Fixed Start Of X Axis' will be used.

Use Fixed End Of X Axis

If activated 'Fixed End Of X Axis' will be used.

Use Fixed Begin Of Y Axis

If activated 'Fixed Start Of Y Axis' will be used.



Use Fixed End Of Y Axis

If activated 'Fixed End Of Y Axis' will be used.

Fixed Begin Of X Axis

If 'Use Fixed Begin Of X Axis' is activated, the diagram starts with the given value.

Fixed End Of X Axis

If 'Use Fixed End Of X Axis' is activated, the diagram ends with the given value.

Fixed Begin Of Y Axis

If 'Use Fixed Begin Of Y Axis' is activated, the diagram starts with the given value.

Fixed End Of Y Axis

If 'Use Fixed End Of Y Axis' is activated, the diagram ends with the given value.

Zoom Mode

Sets the zoom-mode. A right mouse click will reset the zoom.

None: Zoom is deactivated.

Rect: The chart displays a selected area (The size of the bubble does not change).

Zoom: The charts will be enlarged and moved, the title and the legend will not be affected.

Scale: The chart zooms in and can be moved (The size of the bubble does not change).

Labels (bubbles)

LABELS

Display Value Labels

If activated the values of 'Arc' and 'Deviation' are displayed as text.

Display Category Labels

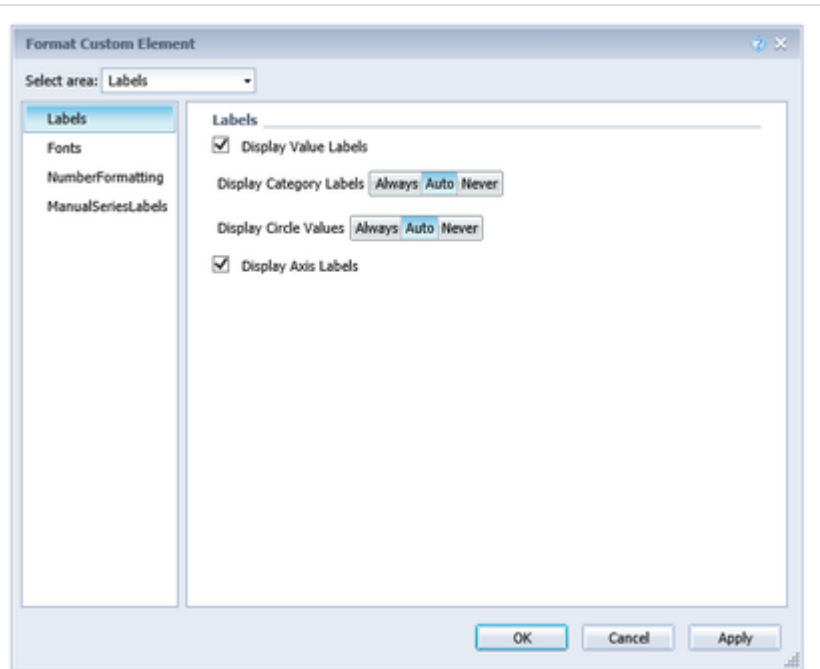
- *Always*: The category labels are always displayed and are ignored by the collision logic.
- *Auto*: The category labels are effected by the collision logic and will be hidden if necessary.
- *Never*: No category labels are displayed.

Display Circle Values

- *Always*: The circle values are always displayed and are ignored by the collision logic.
- *Auto*: The circle values are effected by the collision logic and will be hidden if necessary.
- *Never*: No circle values are displayed.

Display Axis Labels

If activated the labels for the axes are displayed.



FONTS

Legend Font Size

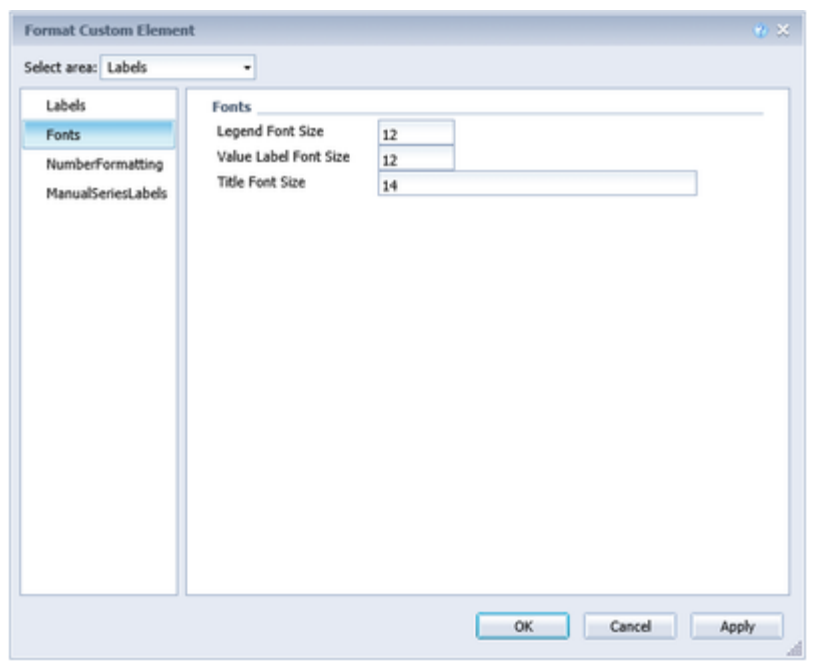
The fontsize of the legend in pixels.

Value Label Font Size

The fontsize of the values of the bubbles in pixels.

Title Font Size

The fontsize of the title in pixels.



NUMBERFORMATTING***Numeral JS String***

See [Number Format](#).

Locale

The language and formatting.

Label Format Mode

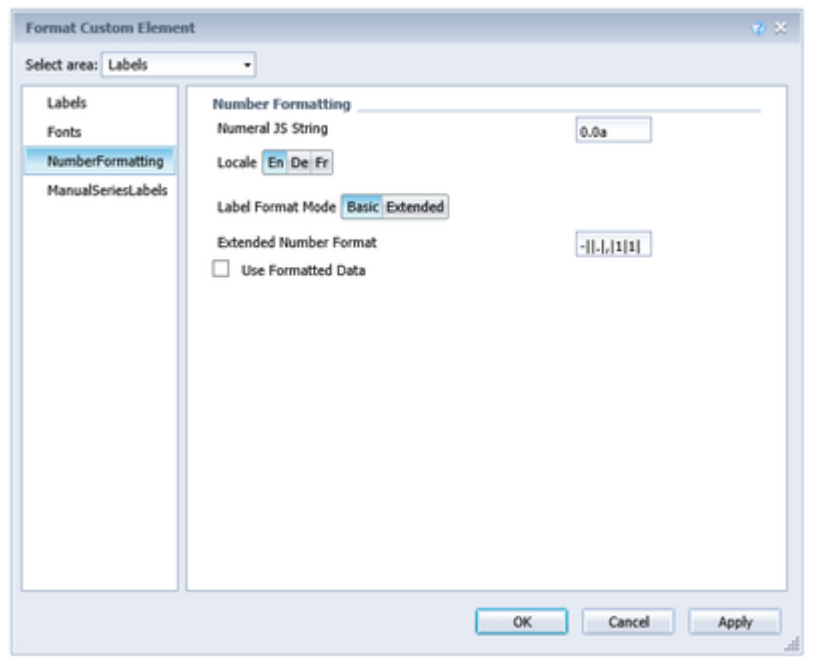
See [Number Format](#).

Extended Number Format

See [Number Format](#).

Use Formated Data

If activated 'Extended Number Format' or 'Numeral JS String' are used.



MANUALSERIESLABELS

X Label

The label for the x-axes.

Y Label

The label for the y-axes.

Circle Label

The label for the circle-category in the legend.

Arc Label

The label for the arc-category in the legend.

Deviation Label

The label for the deviation-category in the legend.

Use Manual X Label

If activated the label for the x-axes will be replaced with the value from 'X Label'.

Use Manual Y Label

If activated the label for the y-axes will be replaced with the value from 'Y Label'.

Use Manual Circle Label

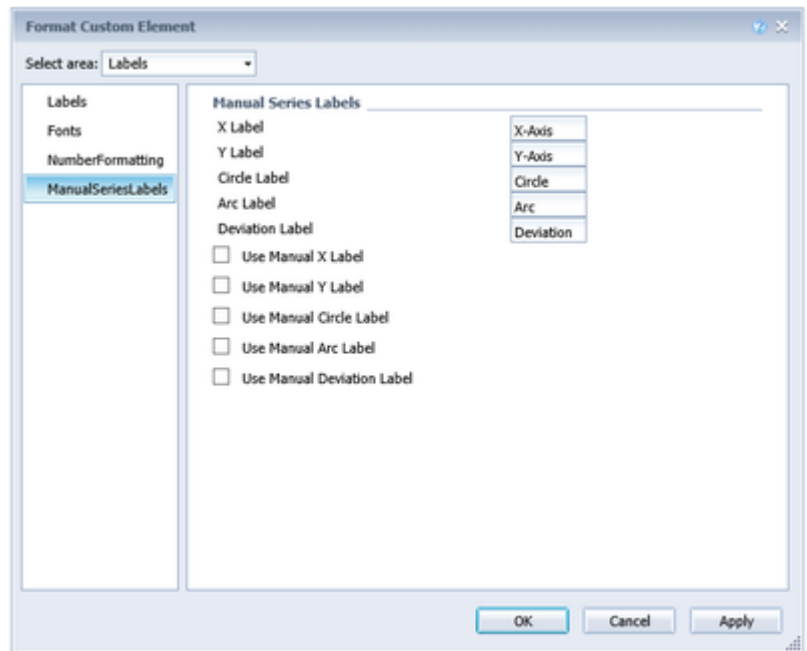
If activated the label for the circle-category will be replaced with the value from 'Circle Label'.

Use Manual Arc Label

If activated the label for the arc-category will be replaced with the value from 'Arc Label'.

Use Manual Deviation Label

If activated the label for the deviation-category will be replaced with the value from 'Deviation Label'.



Server (bubbles)

See [Server](#).

Advanced (bubbles)

GUIDELINESXAXIS (YAXIS)

Enabled

If activated the guideline is visible.

Label

Creates a label at the given position. If the label is "auto" the label is the value of the axis it is displayed on, if the label is "none" no label is displayed, every other text will be displayed as a label.

Value

Sets the position of the guideline. If the value is "mean" the average value of the axis is used.

Width

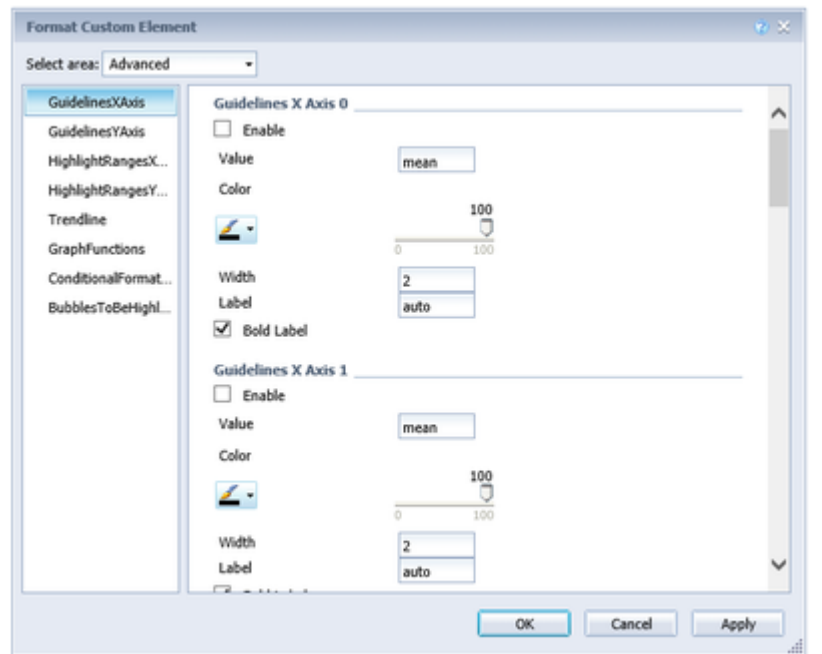
Sets the width of the guideline.

Color

Sets the color of the guideline.

Bold Label

If activated the label is bold.



HIGHLIGHTRANGESXAXIS (YAXIS)

Enable

If activated the highlight range will be visible.

Start Value

The start of the highlight range. Instead of a number you can use *min*, *mean* and *max*.

End Value

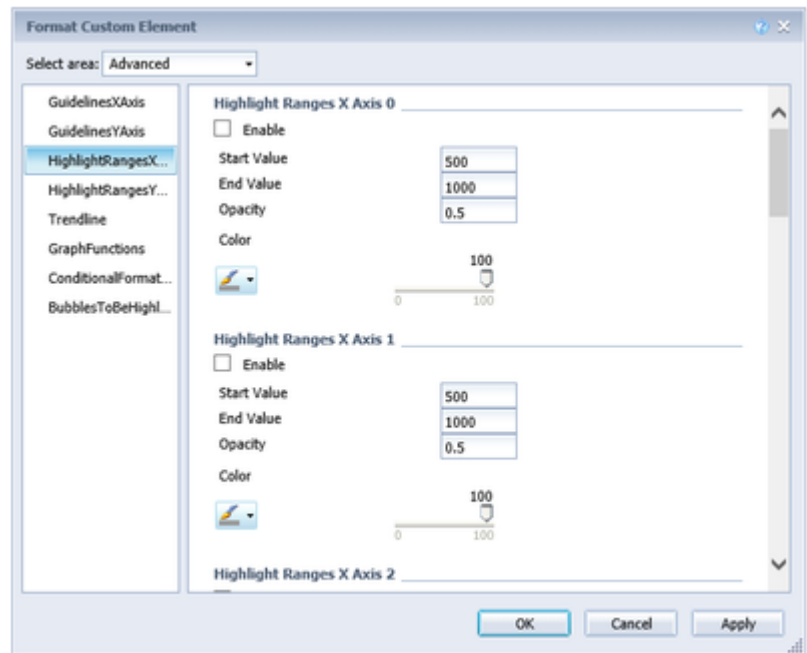
The end of the highlight range. Instead of a number you can use *min*, *mean* and *max*.

Opacity

Sets the transparency of the highlight range from 0 (invisible) to 1 (no transparency)

Color

Sets the color of the highlight range.



TRENDLINE

Enable

If activated the trendline will be visible.

Color

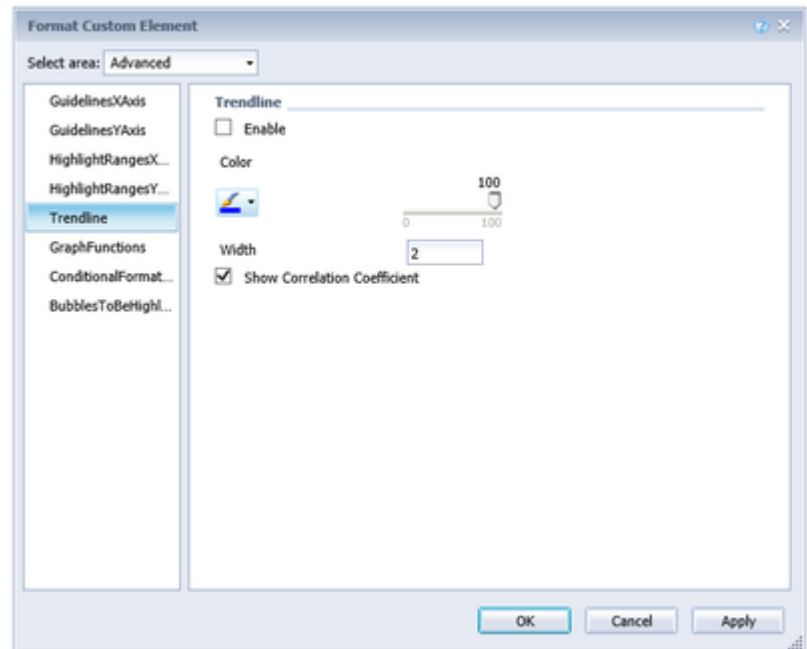
The color of the trendline.

Width

The width of the trendline in pixels.

Show Correlation Coefficient

Activates the display of the correlation coefficient under the legend of the Bubbles. This indicates exactly how the trend of the trend line can be determined. The value varies between 1 (absolutely accurate trend line) and 0 (trend line not meaningful).



GRAPHFUNCTIONS

Enable

If activated the function will be visible.

Math.js Function

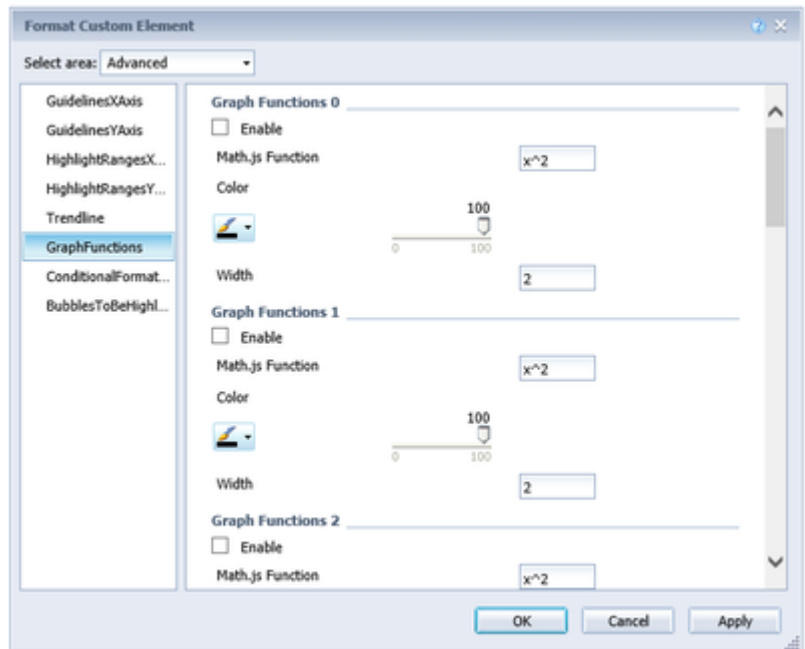
The function in [math.js Syntax](#). With variable **x**.

Color

The color in which the function-graph should be drawn.

Width

The width of the function-graph in pixels.



CONDITIONALFORMATTING

Enable

Activates or deactivates the formatting.

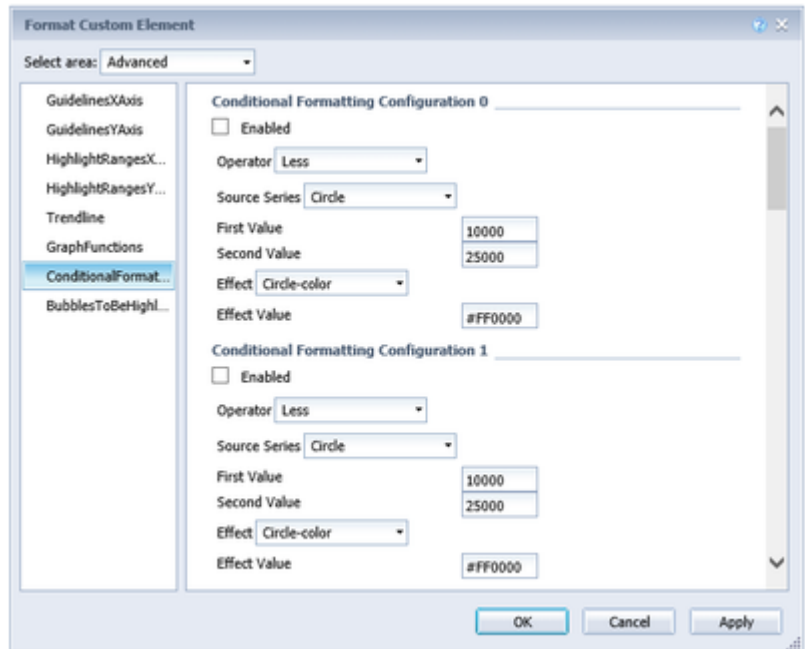
Source Series

Sets the datasource for the operands.

- **x**: The value of the position on the x-axes.
- **y**:The value of the position on the y-axes..
- **circle**: The value the size of the bubble uses.
- **arc**: The value the bubble uses to get the circle section.
- **dev**: The value the bubble uses to get the deviation.
- **label**: The label under the bubble.

Operator

The operation of the condition.



- *equal*: Both value equal?
- *not equal*: Both value not equal?
- *less*: The first value less than the second?
- *less/equal*: The first value less or equal to the second?
- *greater*: The first value greater than the second?
- *greater/equal*: The first value greater or equal to the second?
- *between*: The value between the first and the second value?
- *not between*: The value not between the first and the second value?
- *contains*: The value is in the bubble-category-label
- *always*: The effect has not condition.

First / Second Value

The values the operator uses.

Effect

The effect if the condition is true.

- *circle color*: Changes the color of the circle.
- *stroke color*: Changes the color of the circleborder.
- *stroke width*: Changes the width of the circleborder.
- *css class*: Adds the given CSS-class.

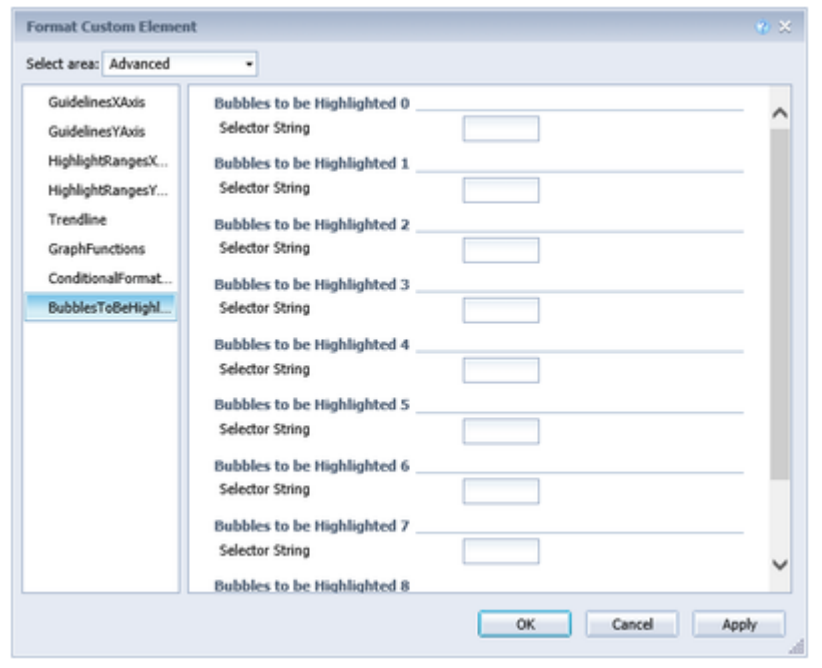
Effect Value

The value of the effect.

BUBBLESTOBEHIGHLIGHTED

Selector String

The selector determines which bubbles should be displayed.



Interactivity

The extensions allow the user, in both design and view modes, to have some degree of interactivity away from the settings with options. This is described in more detail below.

charts

TOOLTIPS

When the Tooltips item is enabled in the Helper tab, tooltips appear on the chart that display detailed information for the item.

tables

COLLAPSIBLE HIERARCHIES

If the Collapsible option is enabled on hierarchy in the Behavior tab, hierarchical representations of the dimensions in the dashboard can be opened and closed.

FILTER BOX

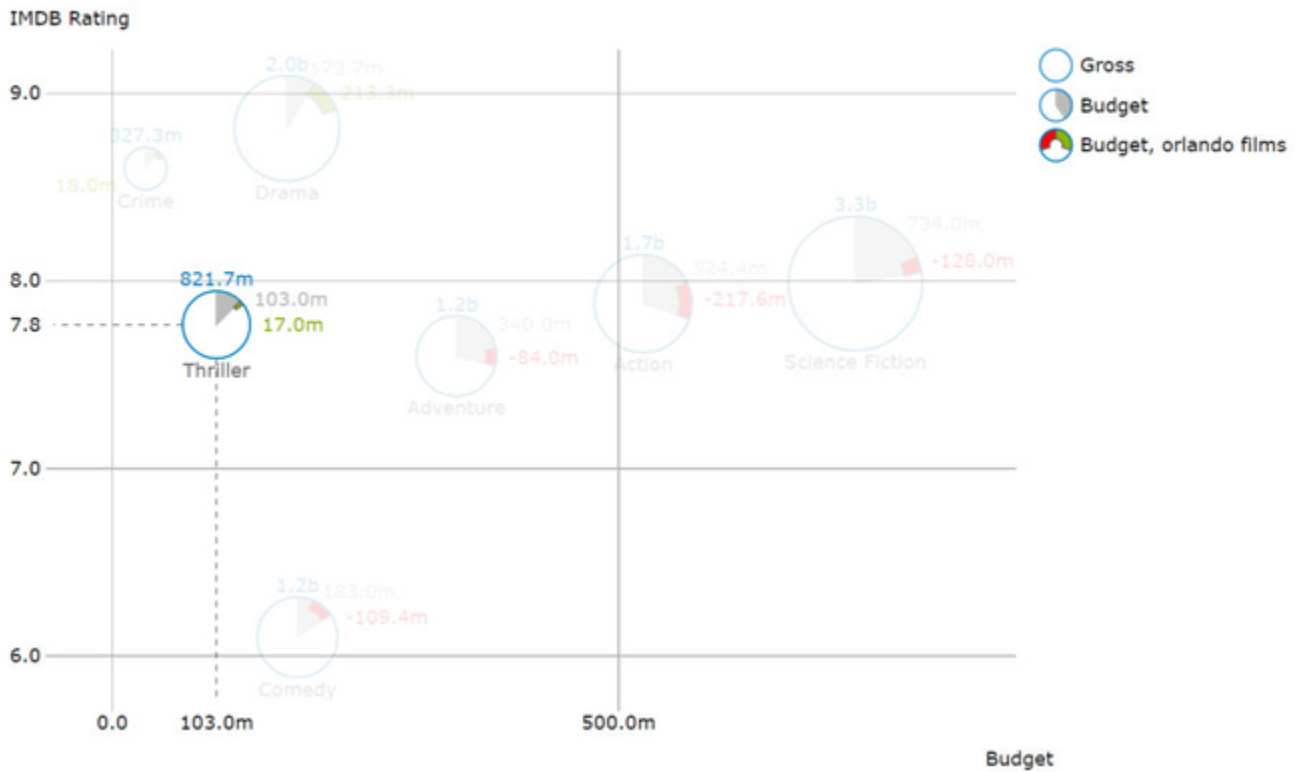
A filter function is implemented in the first line of the graphomate tables on the upper left. At runtime, simply type letters or [regular expressions](#) into this upper-left cell, and only the table rows containing these letters are shown. The case is not case-sensitive.

bubbles

HIGHLIGHT ON HOVER

The *graphomate bubbles* provide the functionality to selectively show all the information associated with a single *Bubble*. To highlight a data point use your mouse to hover over a single *Bubble*. Now all the values, labels and annotations will be displayed.

Average IMDb Rating, worldwide Gross by Genre and Budget (\$) studio 90, 2016

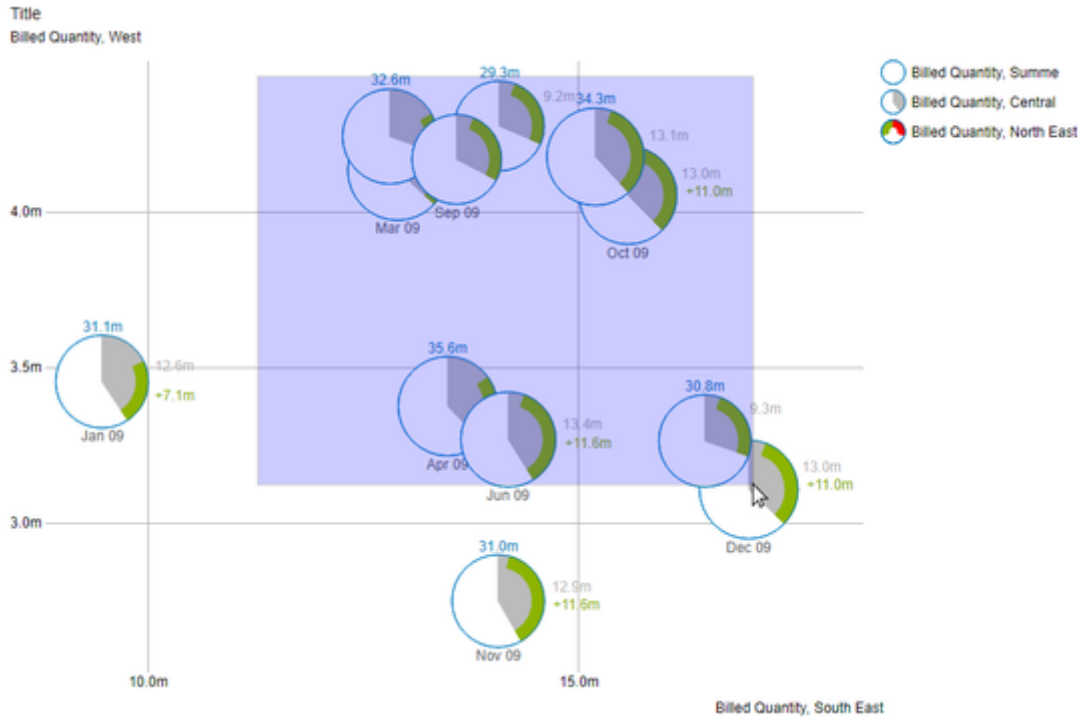


ZOOM MODES

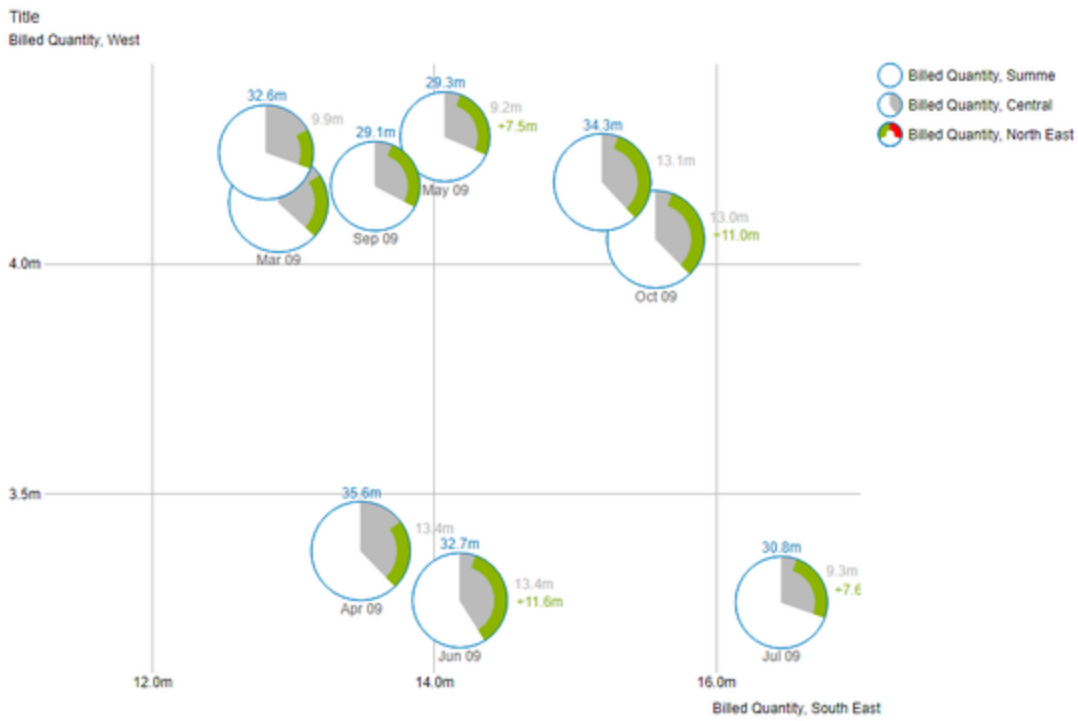
The following four Zoom Modes **Rectangular Section**, **Magnification** and **Scaling Adjustment** can be set under *Labels / Scaling Zoom Mode*. Following selections are possible: **Rect** the rectangular section, **Magnify** the magnification and **Scale** the scale adjustment.

Rectangular Section

After the selection has been made (releasing the mouse button), the scaling is changed.

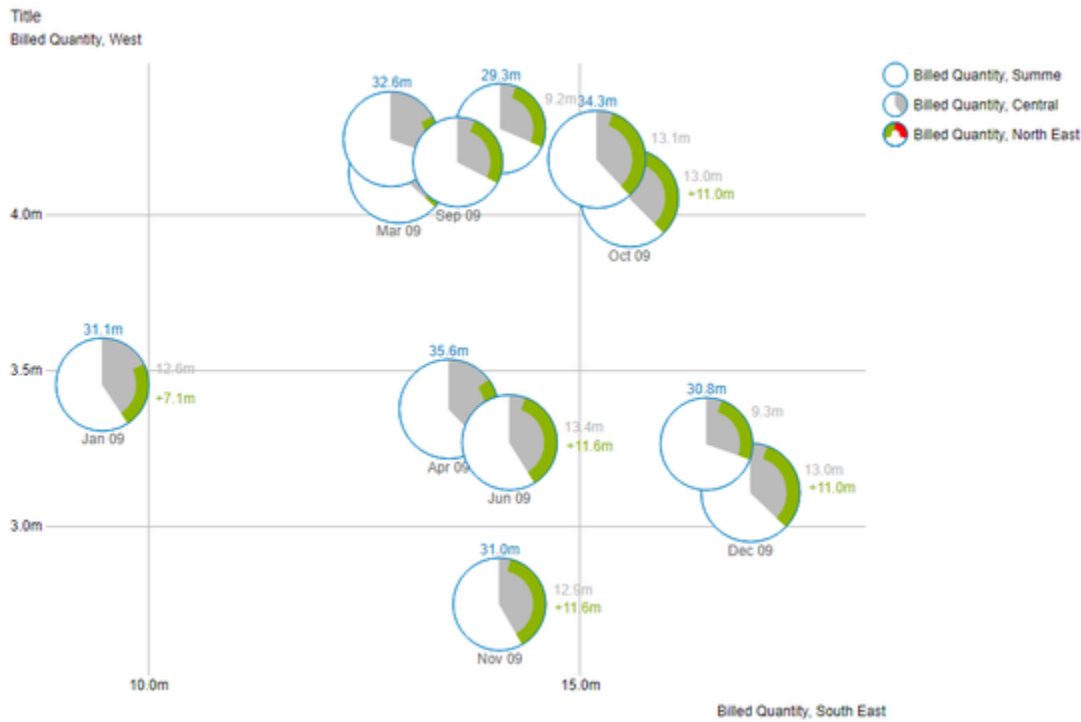


So that only the bubbles, which are in the selected area, are shown.

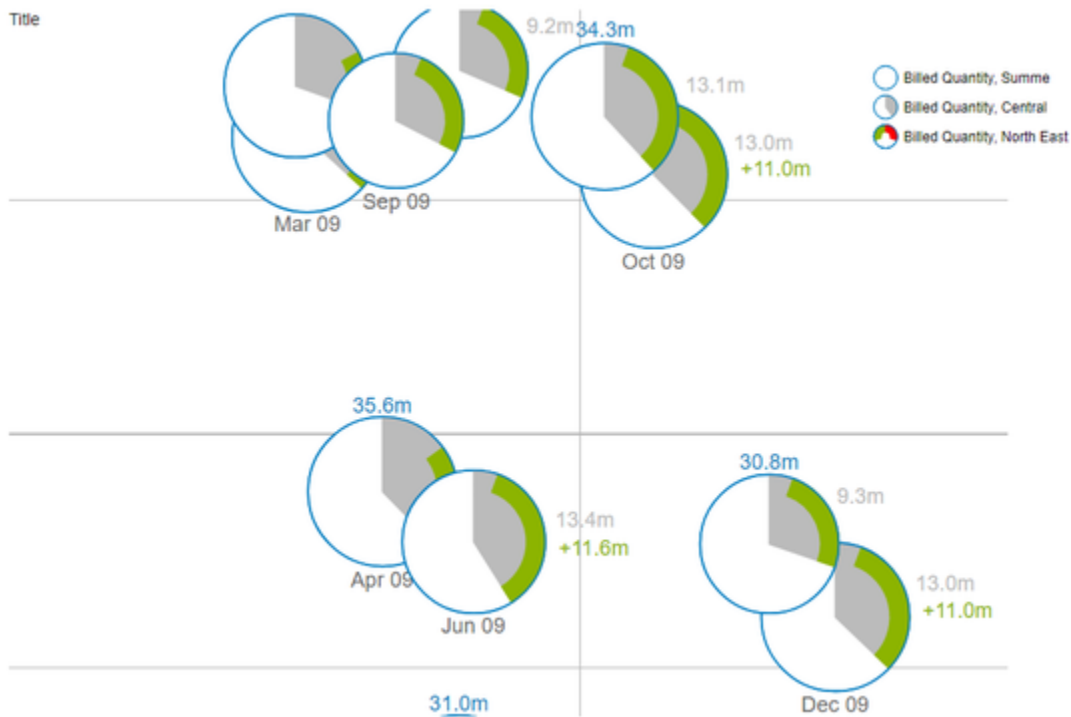


Magnification

A section of the bubbles can be enlarged by means of the mouse wheel (scrolling).

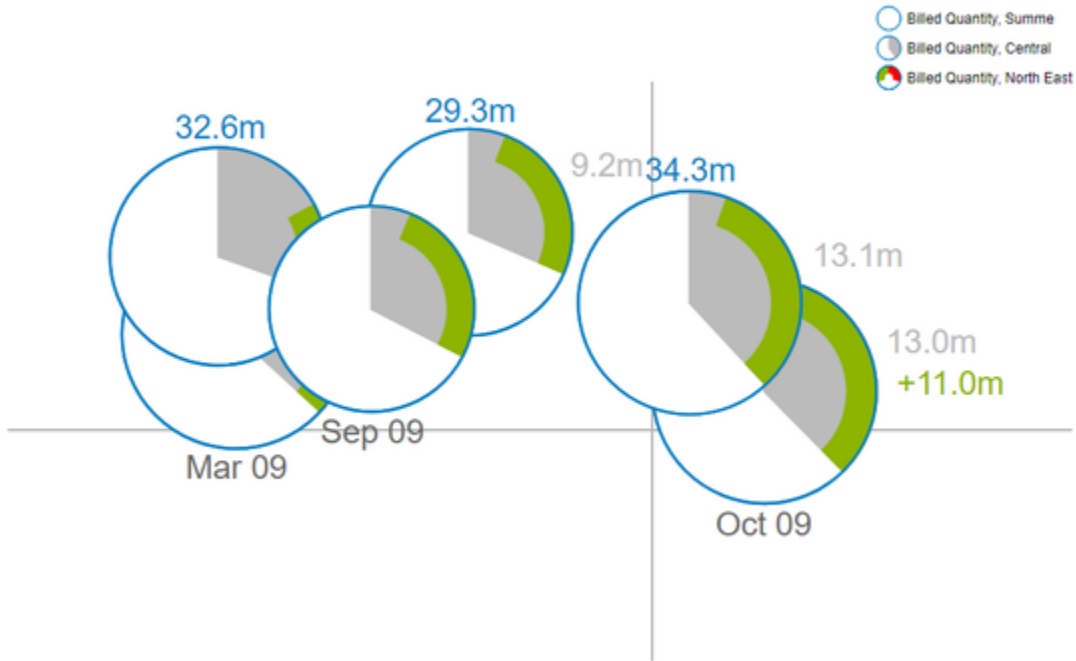


The point at which the magnification is directed is determined by the position of the mouse pointer.



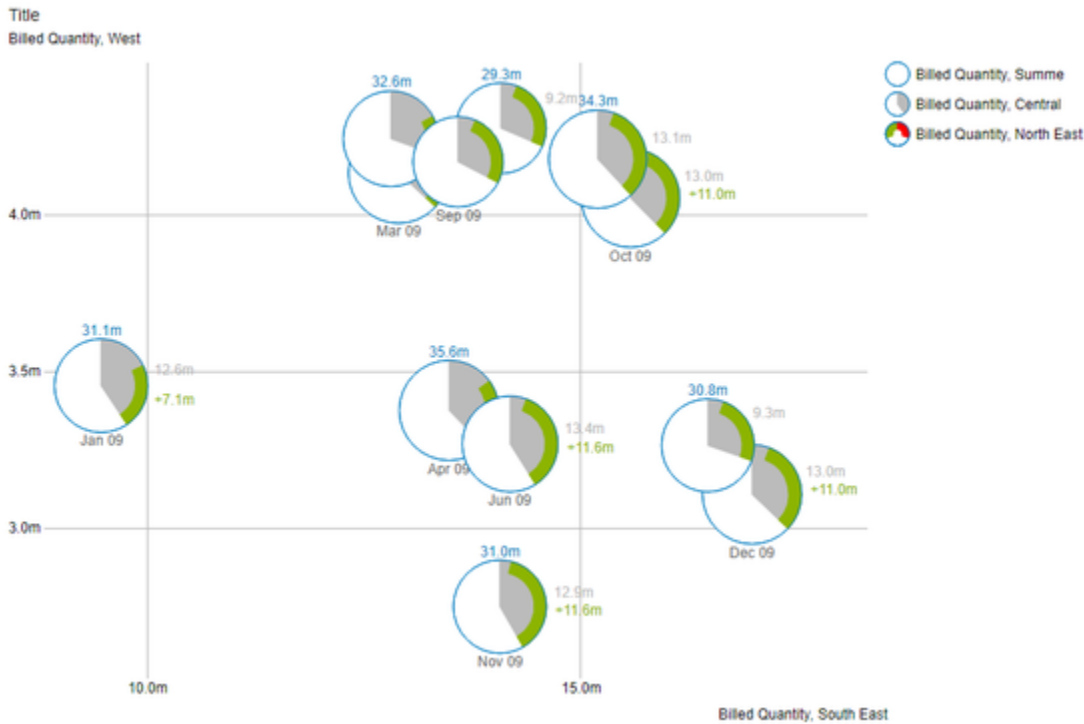
In addition, the displayed section can be moved by drag & drop.

Title

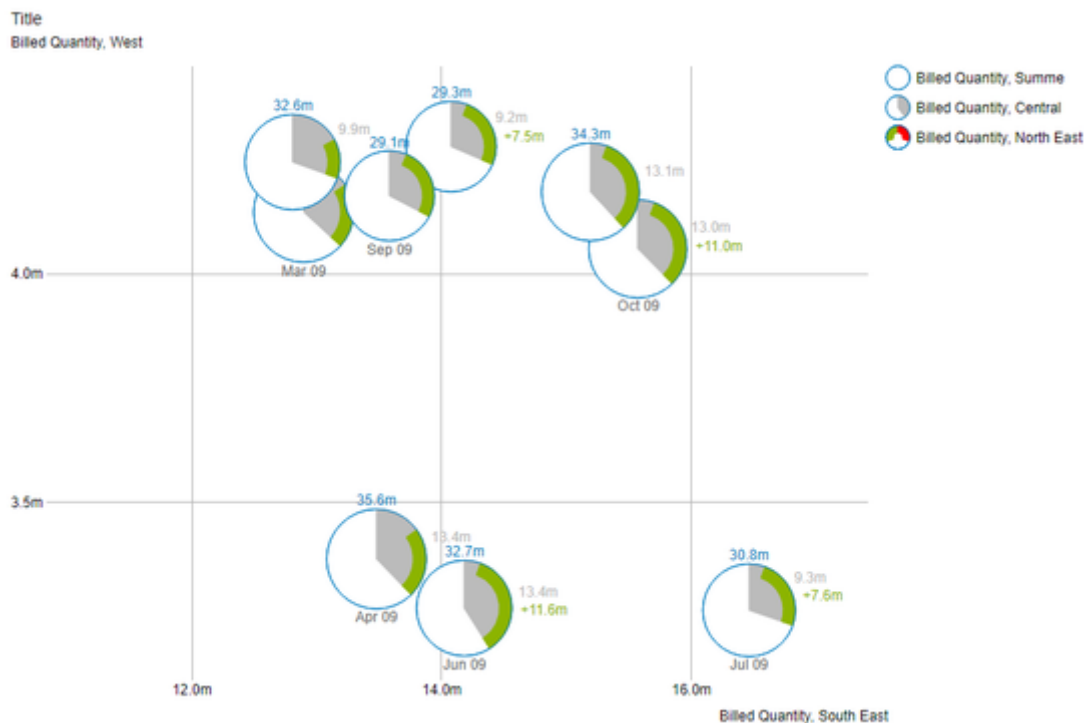


Scale adjustment

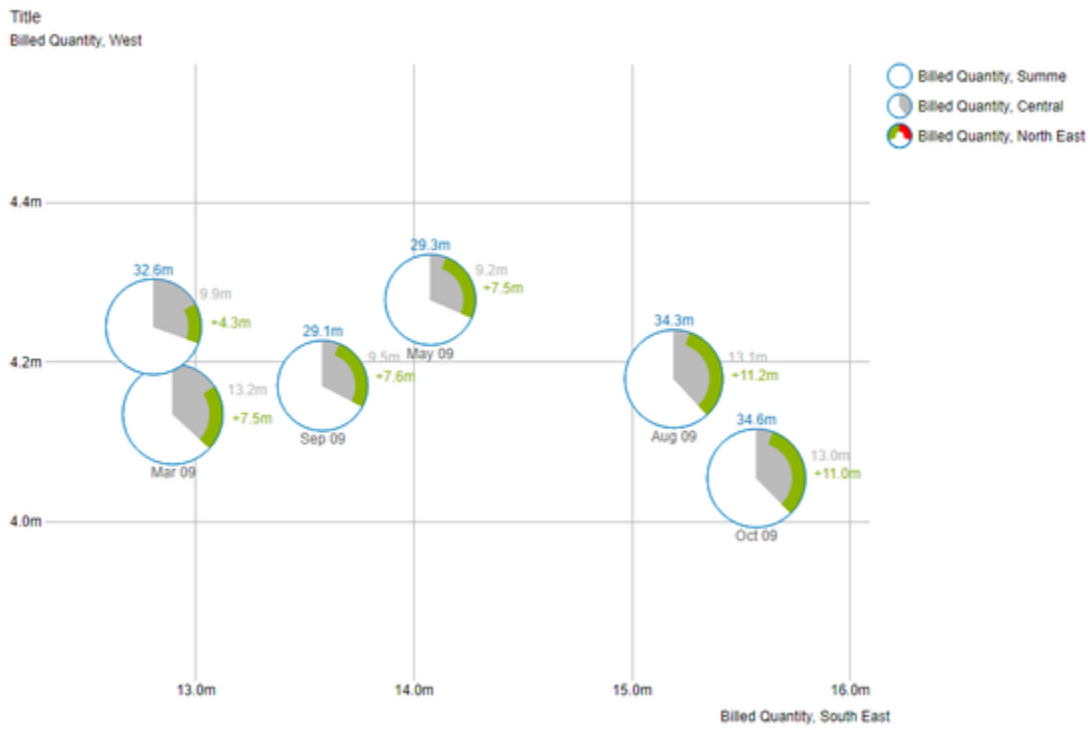
This mode behaves in the same way as the **Magnification** mode, i.e. Scrolling and drag & drop.



The scaling of the axes is then adjusted so that only a portion of the bubbles is displayed. This section is determined by the position of the mouse pointer.



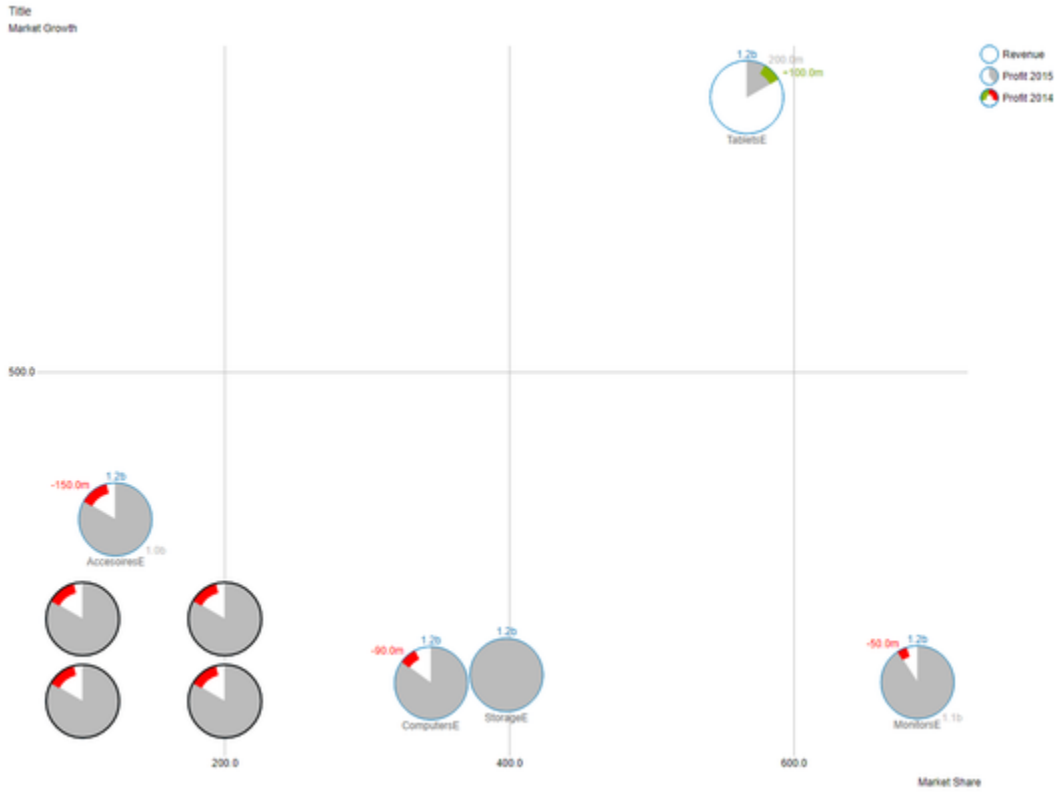
The displayed section can be moved by drag & drop.



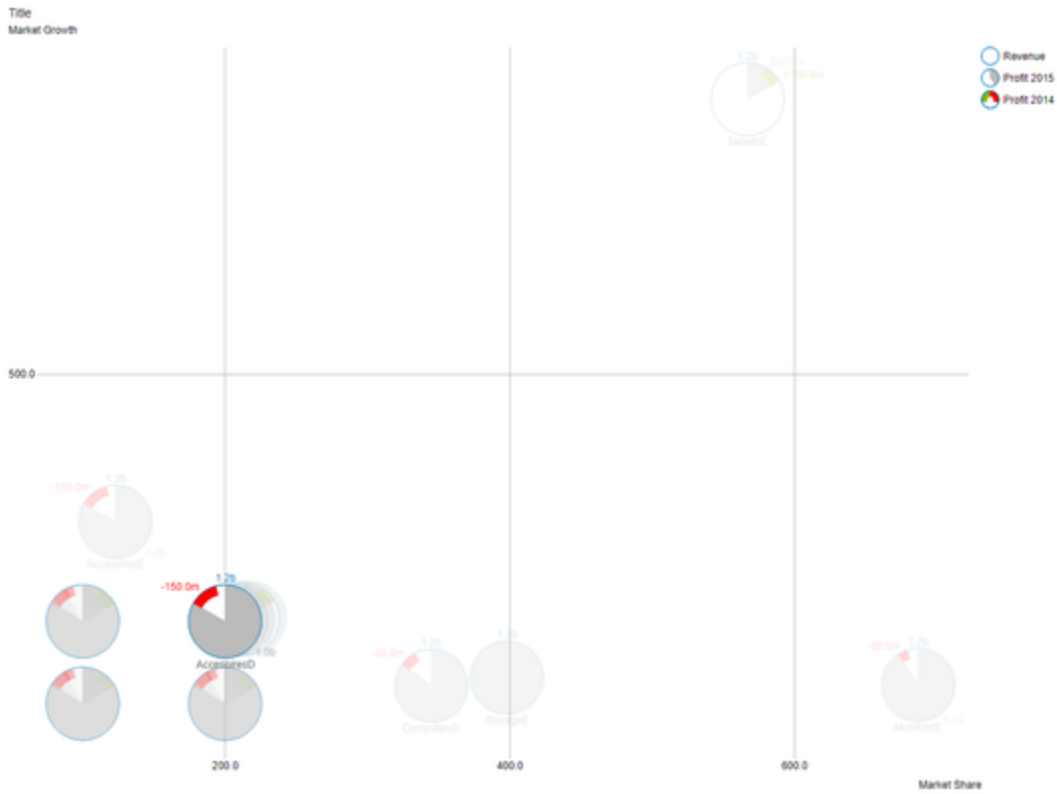
For technical reasons, this mode is more complex and thus consumes more resources while expanding. As a result, too many bubbles lead to a delay in drawing. Internet Explorer also leads to a noticeable slowdown.

Clustering

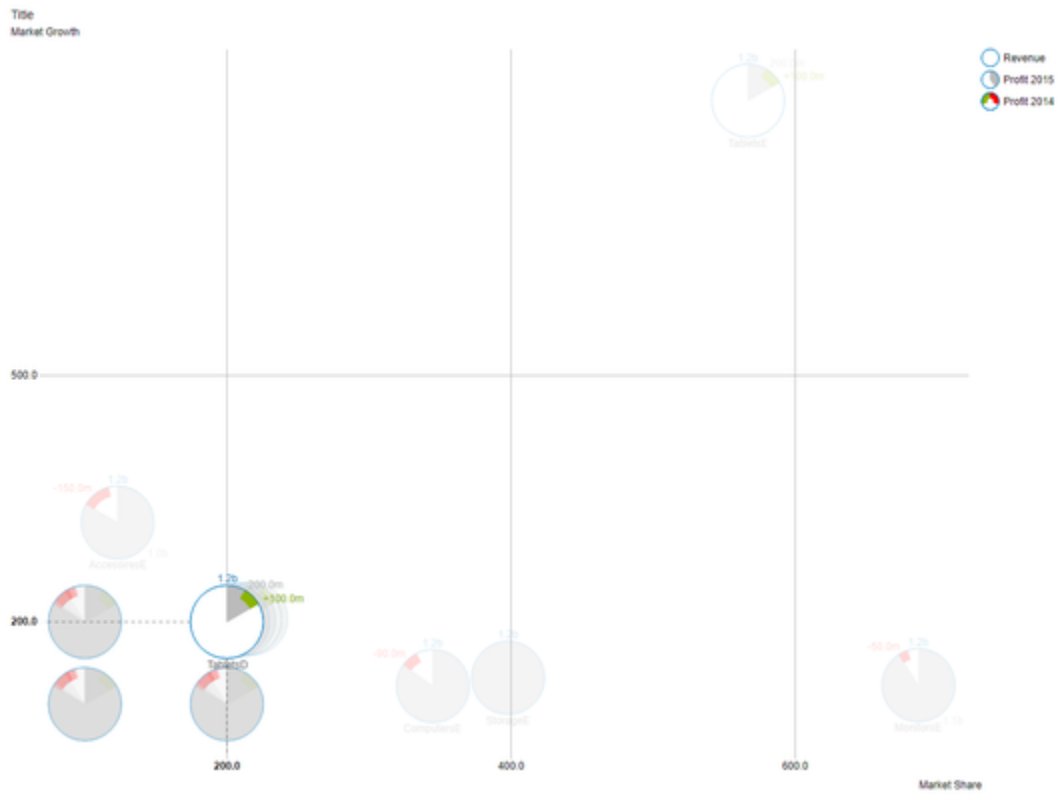
Depending on the data set, Bubbles can be drawn with the same X and Y position and the same radius. The accumulations of bubbles are then characterized by the fact that they lack any labeling and the border is drawn thicker.



If the mouse is hovered over such a **Cluster** of bubbles, the underlying bubbles fan out aside. The front bubble is displayed completely including their labels.



If one of the fanned bubbles is now hovered, this one is brought to the foreground and displayed in the correct (original) position with its labels.



Known Issues

This page lists a number of known problems. If you have a problem that is not listed here, please let us know about our support desk.

General Issues

- Please use the latest patch level of GDP!
- The PDF view in Reading mode has problems (which we can not influence). Please use PDF export.
- Performance: As soon as a change to an extension is made, all extensions are redrawn. This is a problem with WebI, the SAP is working on it at the moment.
- Differences between the Java and the HTML client: The usage is different in some cases, depending on which client is used. SAP tries to remove these differences in a new HTML client.
- Changing the extension size in the HTML client does not work with drag & drop with the mouse. This is also a problem with the host application.
- Alpha channel (transparency) for color options is currently not supported (and probably in the future). Although the alpha channel can be displayed in principle, it causes massive problems when exporting the visualizations.
- BI Mobile: The app currently does not support WebI extensions. We therefore recommend the presentation in the app as PDF.
- "Turn Into": If you create a table with the "Turn Into" functionality from a chart, then the deviations will no longer react to changes.
- If there are double quotes in a value that is chosen for a property errors will occur and no drawing will be possible.
- When the graphomate Custom Elements service is reinstalled, e.g. during BIP update, the new service has to be named identically to the old one. Otherwise old reports will not work properly.
- Using the Java Mode in combination with self signed SSL certificates is possible, but it is necessary to add the certificate to the keystore used by the BOE Java Virtual Machine.
- If there are empty cells in the selection, the correct assignment of the data points can no longer take place.
- New line characters in the "Custom CSS" string result in demo data being displayed.
- Text settings that contain only spaces are not passed on by WebI and thus do not work.
- Properties with a string as an Input need to get the % sign encoded as %25 to be displayed.
- X and Y values above 9007199254740991 (MAX_SAFE_INTEGER) are interpreted as 0.

Printing

- The result of the printing may deviate from the one shown in the design. This is due to the used DPI.
- For high DPI, the font size must be adjusted manually for a usable result. The font may appear very large in draft.
- If the font is compressed in the charts, the height of the chart must be increased until the font appears "normal" again.
- Please use relative sizes to affect font-sizes in export if you are using css.

charts

- The highlighting function is not supported for different chart types per series

tables

- The axes of the deviation diagrams are not traversed in PNG export (that is, also in Java mode).
- Sorting values: When using the sorting function built into WebI, a meaningful hierarchy can not be created. Sorting can cause the table to contain empty rows or incorrectly assign values. For this reason, we recommend that you do not use the sorting function in conjunction with hierarchical tables.

bubbles

- Currently, we are not aware of any bubble-specific issues.

Differences to the Lumira Designer version of the extensions

At this point differences against the Lumira Designer version of our extensions are explained. These deviations are usually complex options or behavior, the implementation of which is planned in the medium term.

general

- The scaling group is not supported.
- The global data types are not supported (but there is the possibility to specify data types per element).
- The context menu is not supported.
- Since Deviations are defined in WebI in a different way, the *Deviation Labels* and *Deviation Visibility* options are not offered.
- WebI does not have scripting. Therefore, there are no options related to script functions (for example, *User Highlight List*).

charts

The following options are not supported:

- PNG Export Available
- Excel Export Available

tables

The following options are not supported:

- Row Format Configuration with all settings; Currently only exceptions can be created
- Show Header Dimensions

Usage of graphomate with SSL (BO Server)

We recommend the following steps to set up SSL:

1. Activation of SSL according to the following SAP BO document <https://blogs.sap.com/2017/11/08/enabling-ssl-in-bi-platform-4.2-sp05/>
2. If the setup does not lead to the desired result yet (resp. the graphomate plugin still not works) please follow those instructions <https://launchpad.support.sap.com/#/notes/1981326>

Additional Tips:

- Change the standardport 8443 to https 443