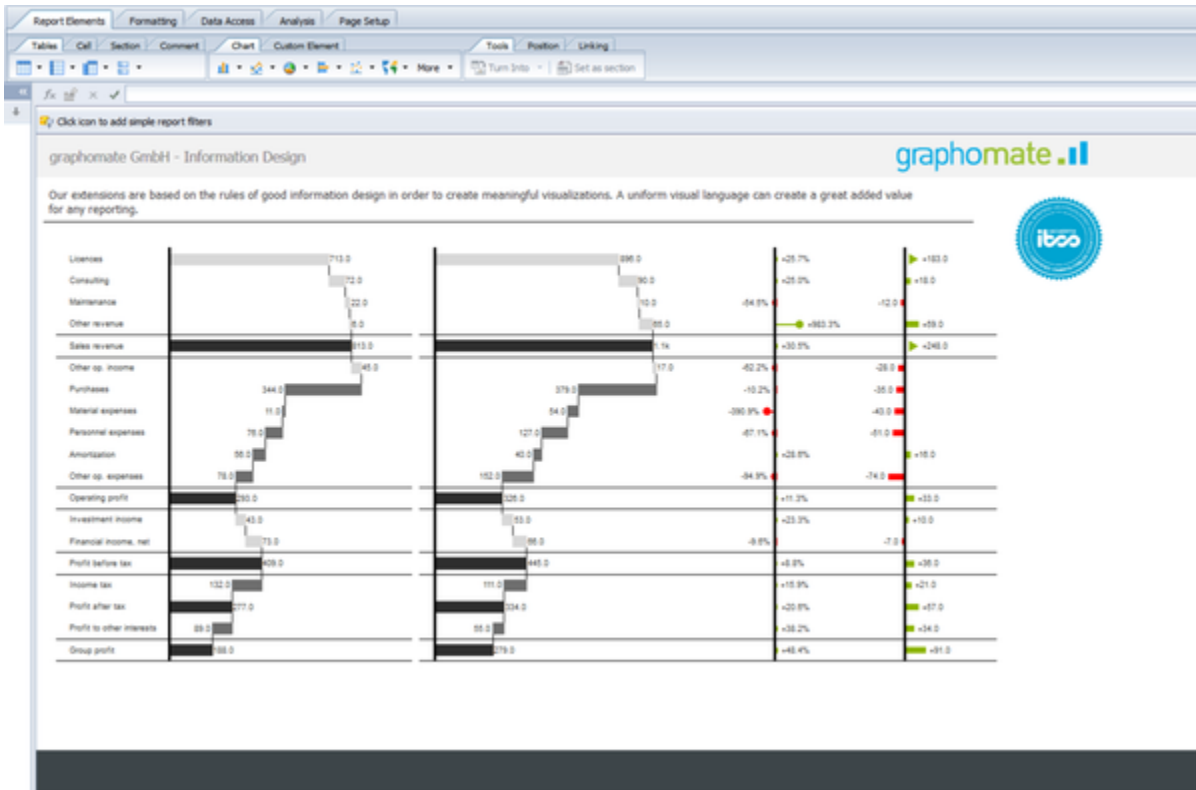


# User manual for graphomate extensions 1.0 for SAP BusinessObjects Web Intelligence



Version 1.0 – as of May 2017

<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 BusinessObjects Design Studio, SAP BusinessObjects Dashboards 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.

## 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 will 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-1.0>

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](#)).

## Demo

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

1. 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://webidemo.graphomate.com:9090/graphomate-webi-1.0>
  - 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".
2. 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:

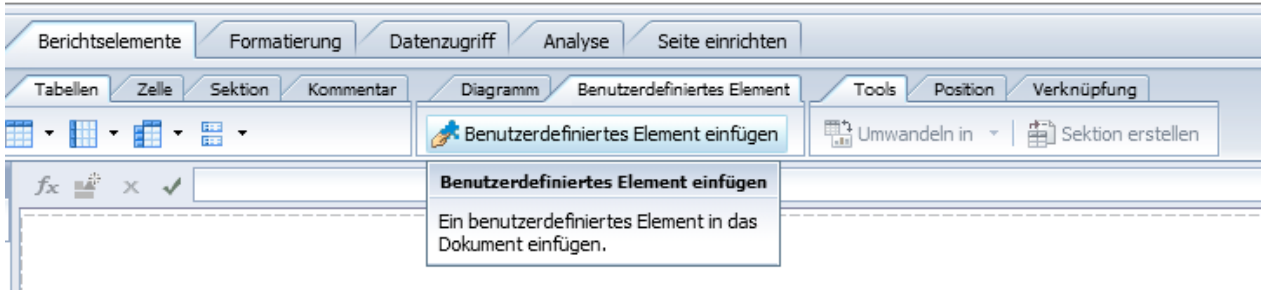
1. Move the *graphomate-webi-X.X.war* into the *webapps* directory of the Tomcat server of the BI platform (for example, *C:\Program Files (x86)\SAP BusinessObjects\tomcat\webapps*). A restart of the Tomcat server via the Central Configuration Manager after an update is necessary if the name of the WAR 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-1.0* to *http://webi.super-corp.com:8080/graphomate-webi-1.1* (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.

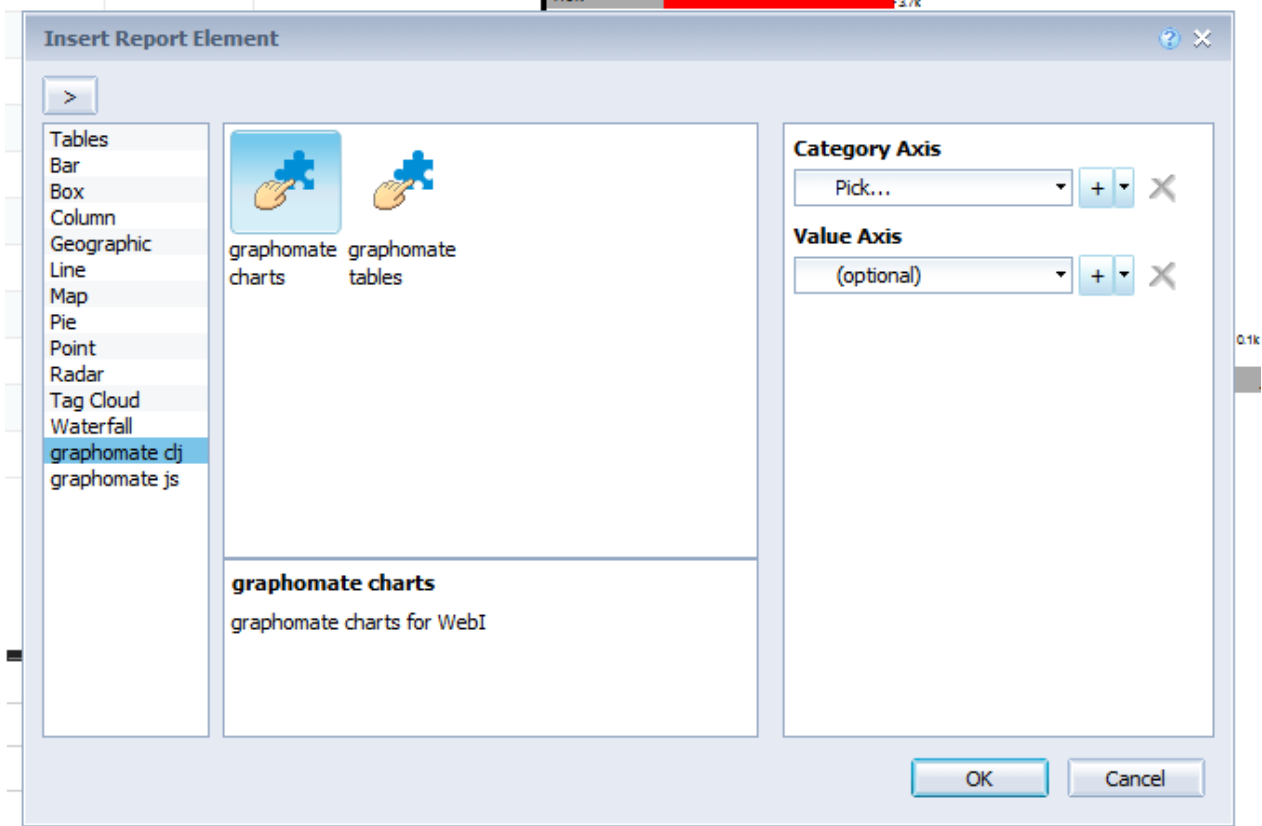
## Quick Start

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

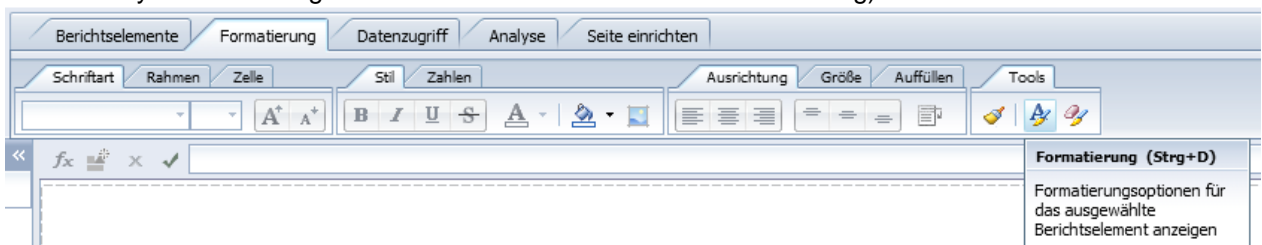
1. First, click "Custom Element".



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 or the table using the *settings dialog*, which you can find under the formatting tab (in the Java client you can also right-click on the visualization to reach the dialog).



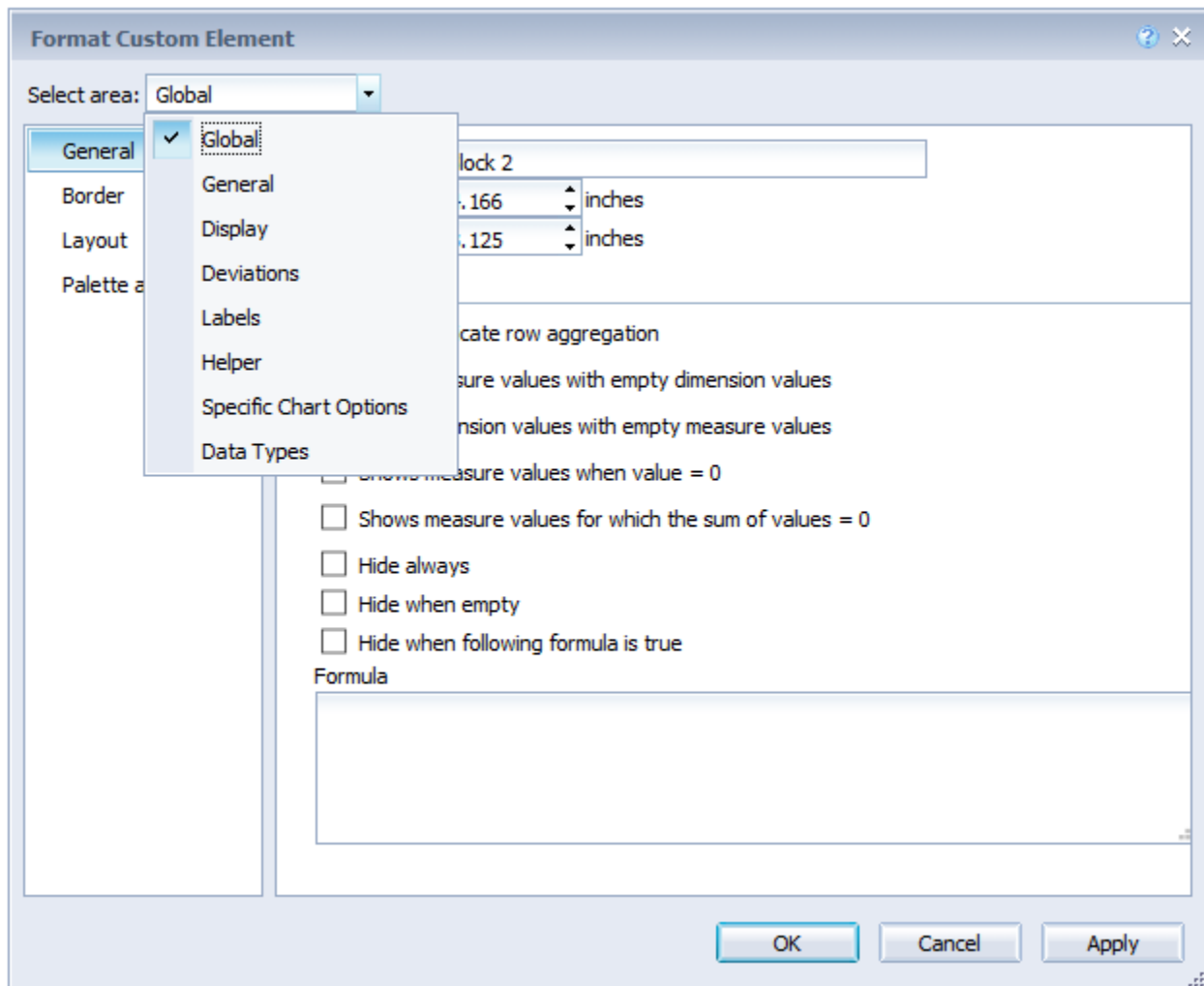




## Properties

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 and charts alike and behave the same.

## Data Types

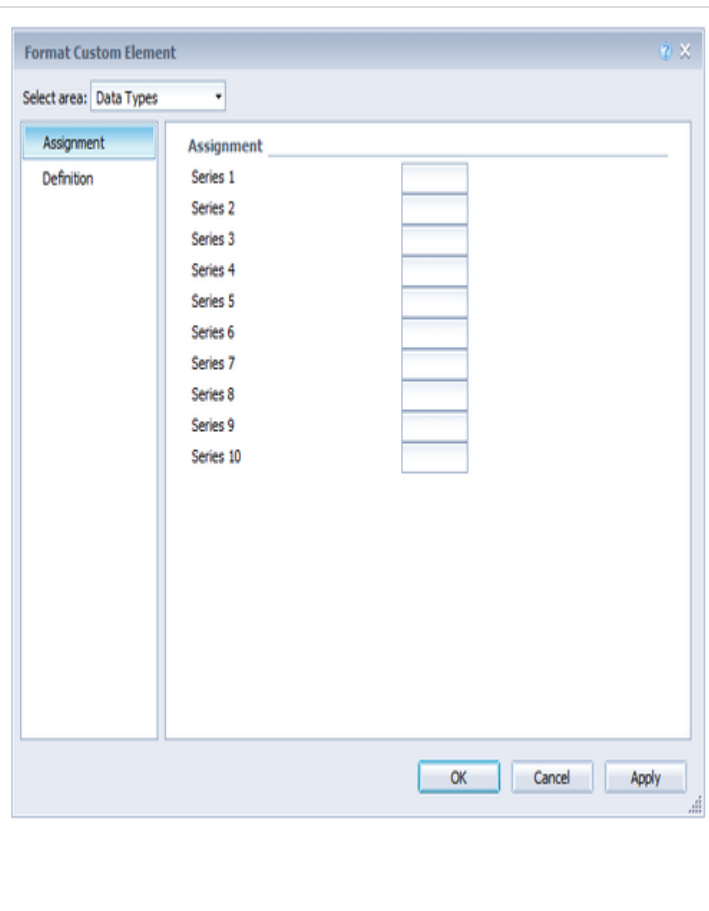
### Assignment

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.

**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

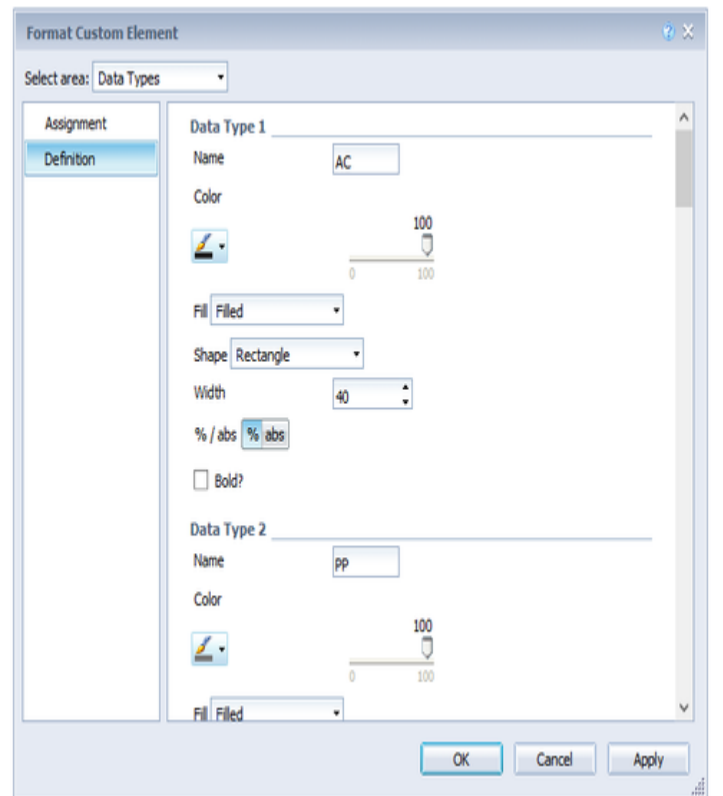
This editor is used to define the data types whose abbreviations can be used on the Assignment tab (see above) and by means of which you can determine the format of the diagram elements individually. You specify these abbreviations in the *Name* column.

*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 Design Studio, 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 Design Studio 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 <sup>st</sup>
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.

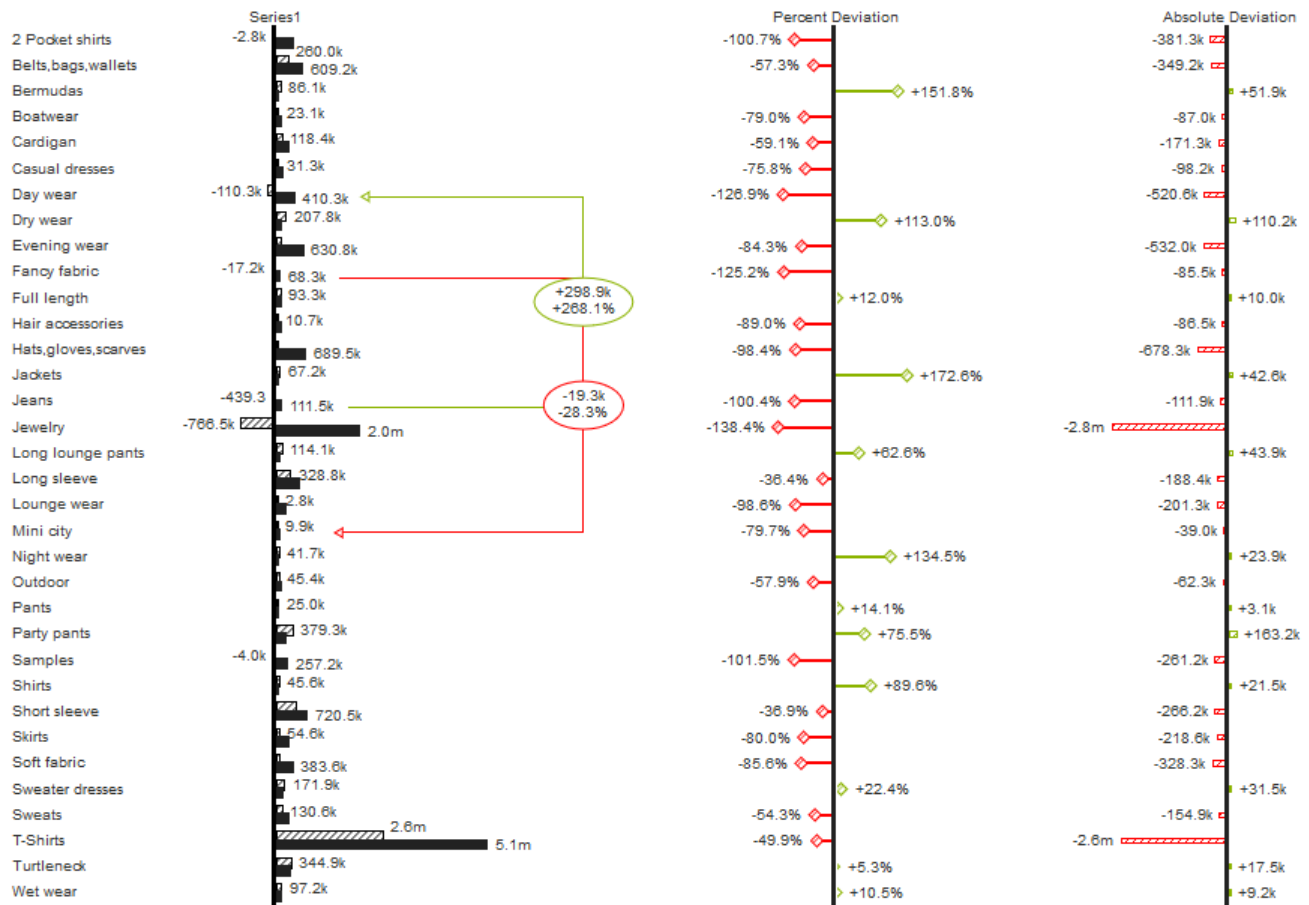
The separate elements of the format string are separated by the "|" character. Format strings with less than 7 elements (i.e. 6 "|" characters) are considered invalid and therefore ignored. In this case the standard format without scaling and with one position after the decimal point is used.

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.



charts



## General (charts)

### General

#### **Chart Type**

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

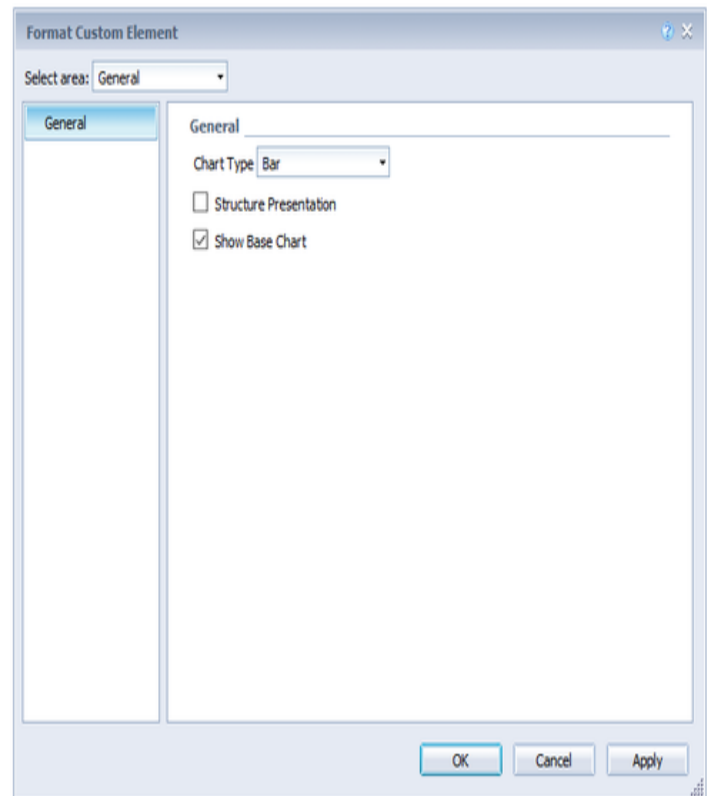
#### **Structure Presentation**

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 BaseChart 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**

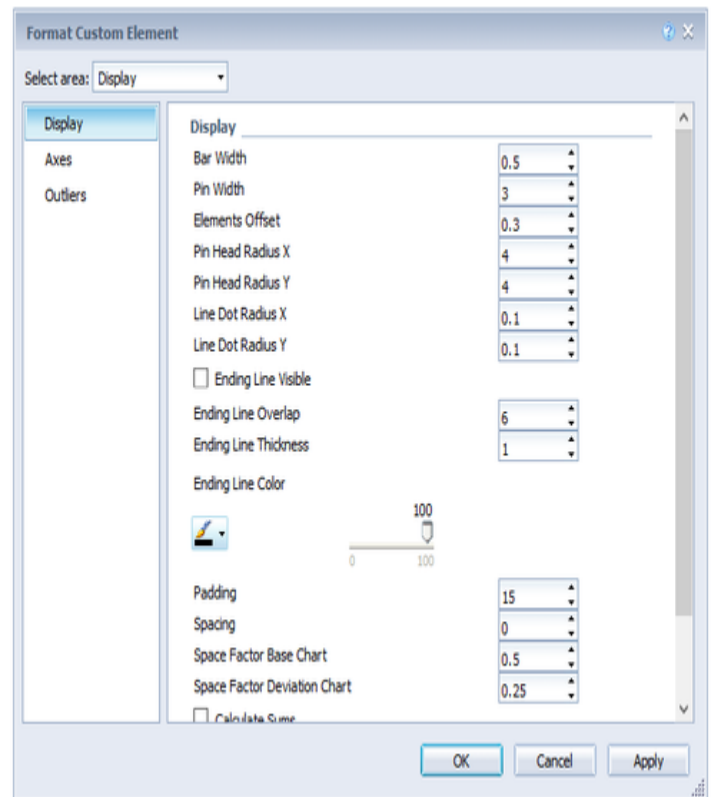
The thickness of the line of pins in needle diagrams. With a pin width = "0", you can implement a dot chart.

#### **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]. Negative values can also be used for the displacement in the direction of the opposite direction.

#### **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:  $\text{Factor} / (\text{sum of all factors})$

**Space Factor Deviation Chart**

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

**Calculate Sums**

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

**Custom CSS**

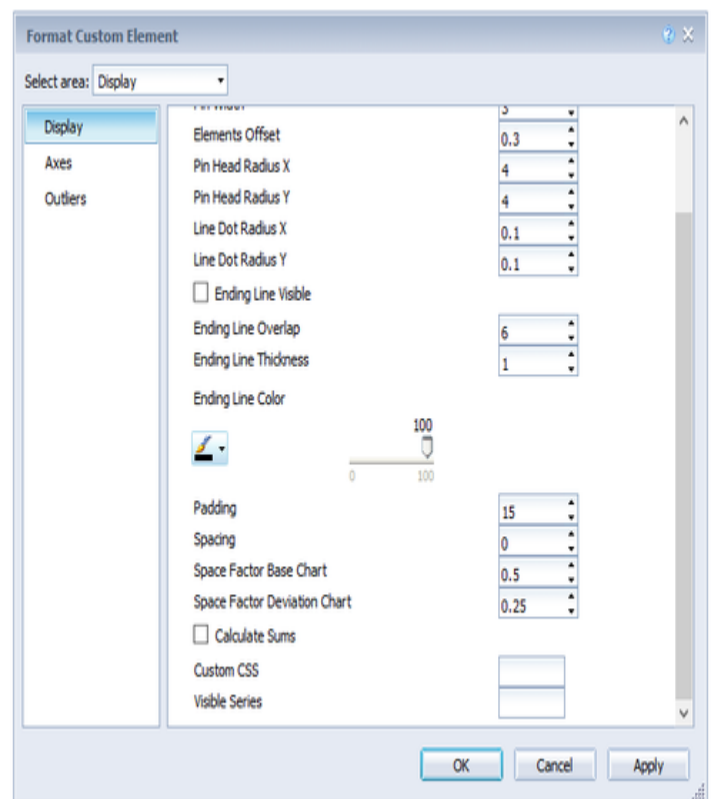
At this point, you can specify any CSS string, which is then applied to the visualization.

**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.



## 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* check box, 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

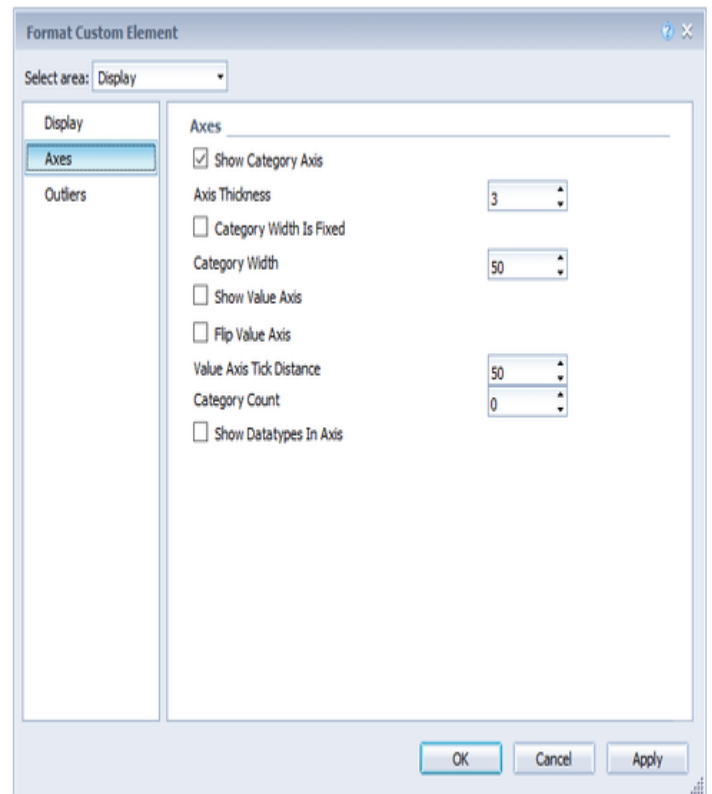
The distance between the ticks of the value axis. This is only a guideline. The ticks are always positioned on "even" values.

### 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.



## Outliers

### *Outlier Size*

The size of the outlier character in pixels.

### *Use Outlier Threshold*

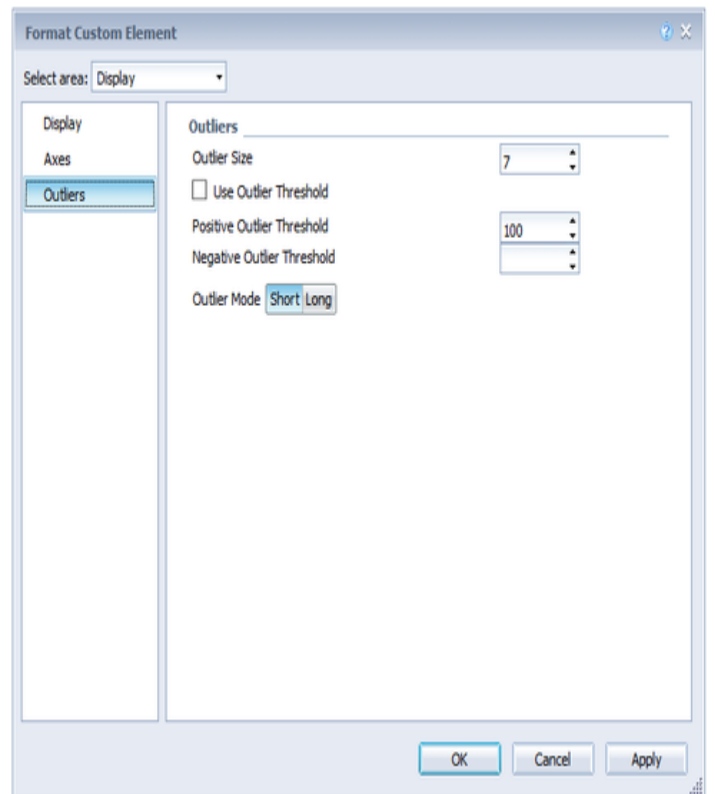
Controls whether the outlier limit is to be used (*Scale Mode Auto* only).

### *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***

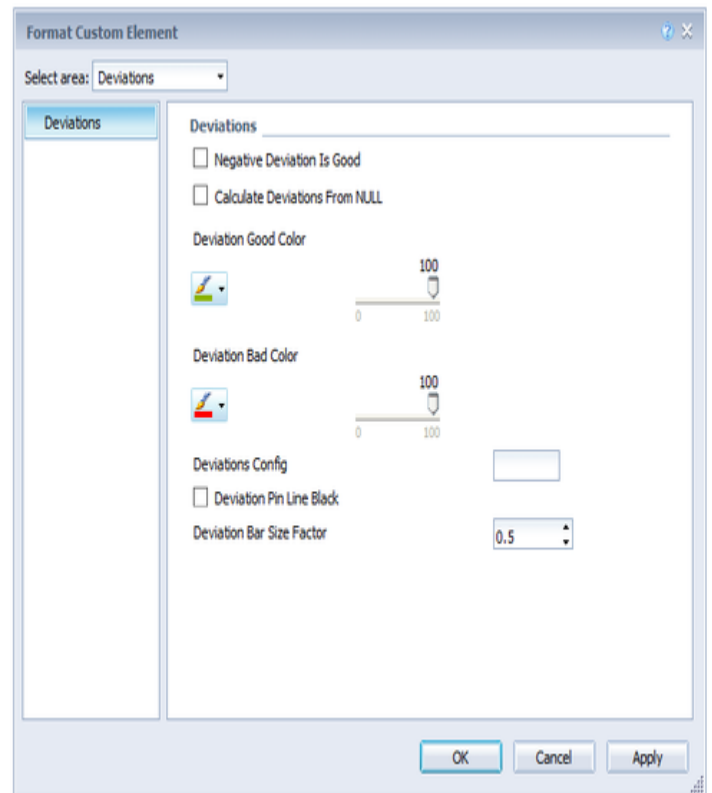
See [Deviation Configuration](#).

#### ***Deviation 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.

#### Font Size, Family und Color

Select the font size, family and color of the diagram labels.

#### 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

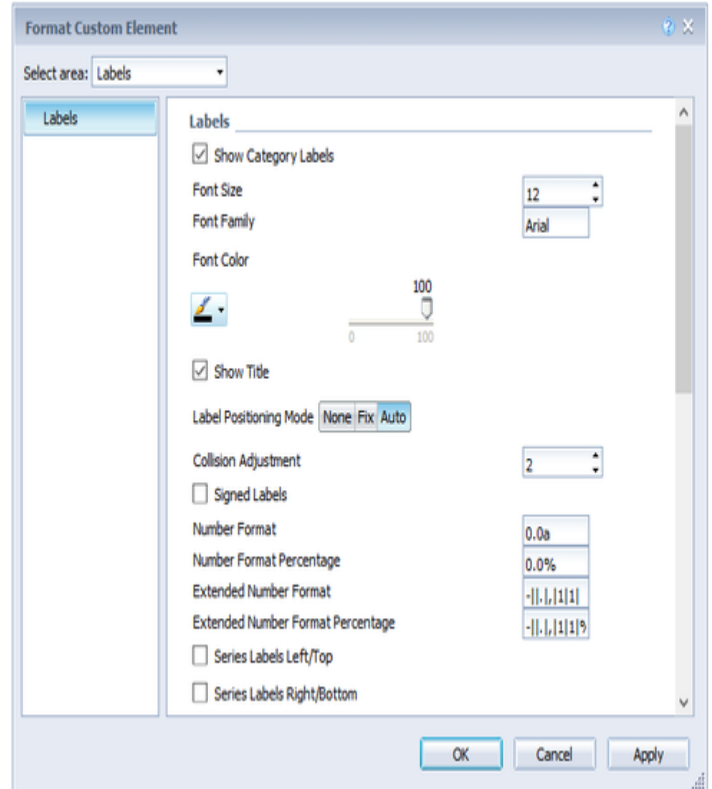
Select the checkboxes to display the data label on the data series.

#### 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

**Locale**

See [Number Format](#).

**Labels With Shadows, Label Shadow Color**

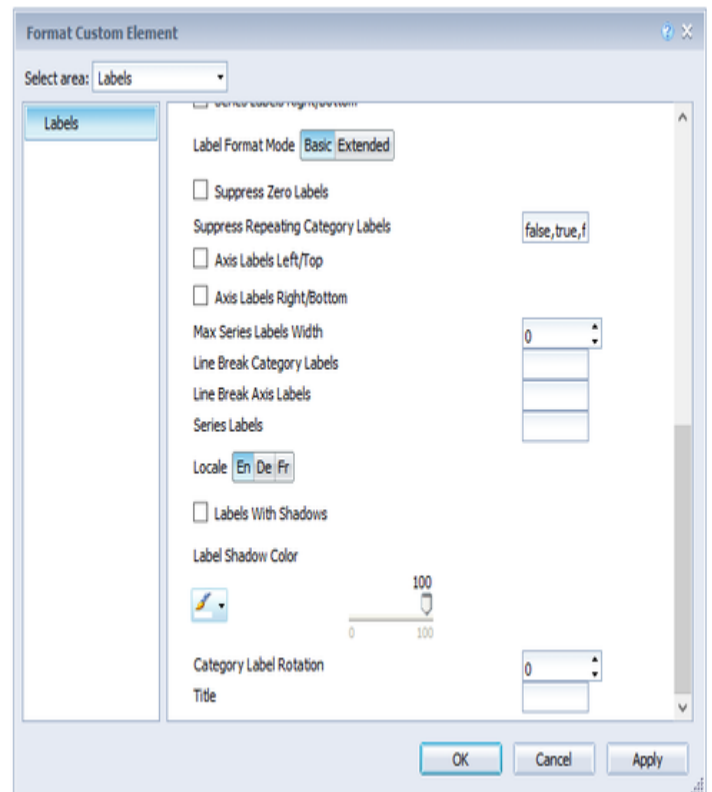
Shadows with defined colors can be added in order to distinguish fonts more clearly from possible background colors.

**Category Label Rotation**

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

**Title**

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





## 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.

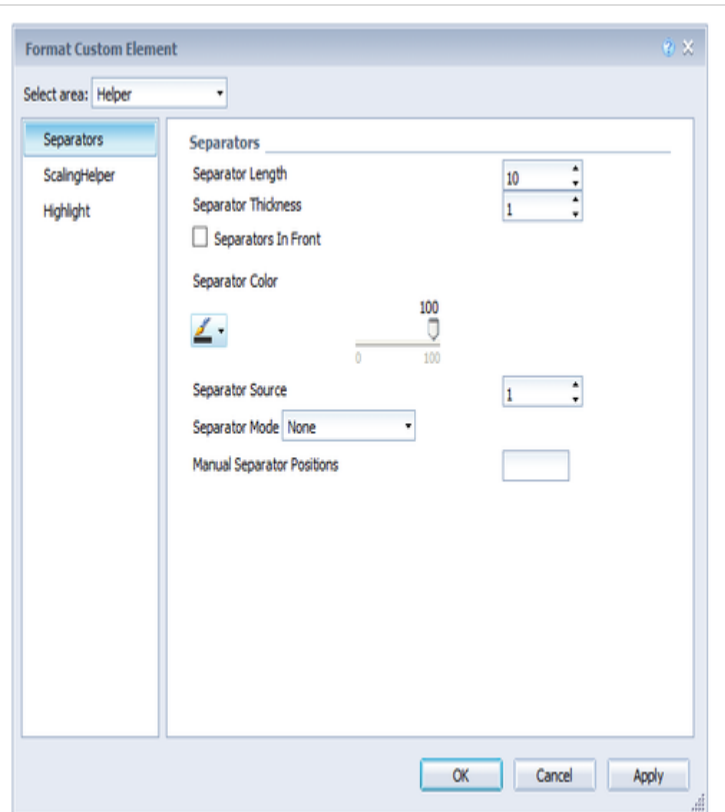
#### **Separator Mode**

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 ...

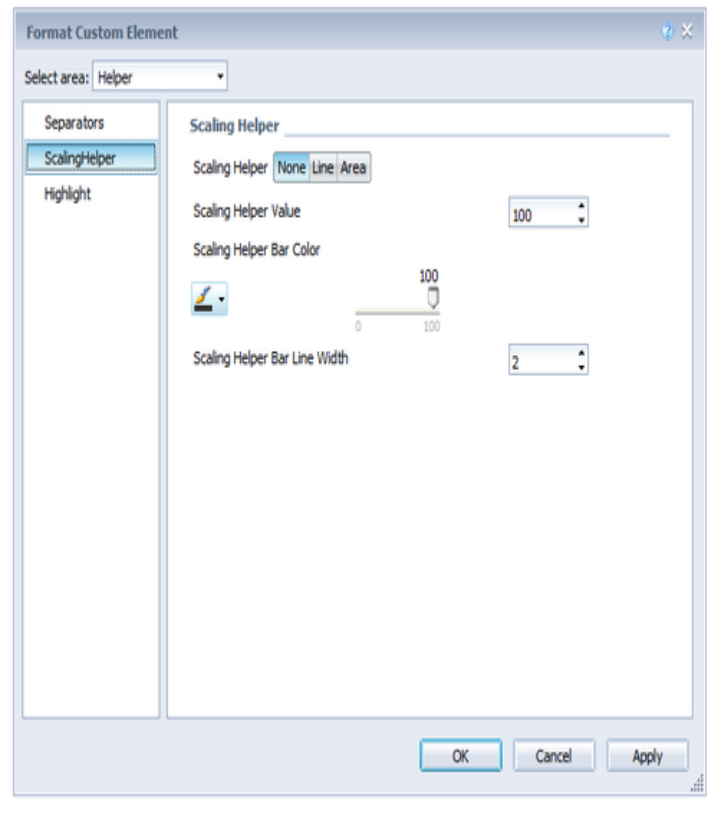
### **Scaling Helper Value**

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

Currently, because of a bug in Web Intelligence, it is not possible to enter a value over 10,000.

### **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

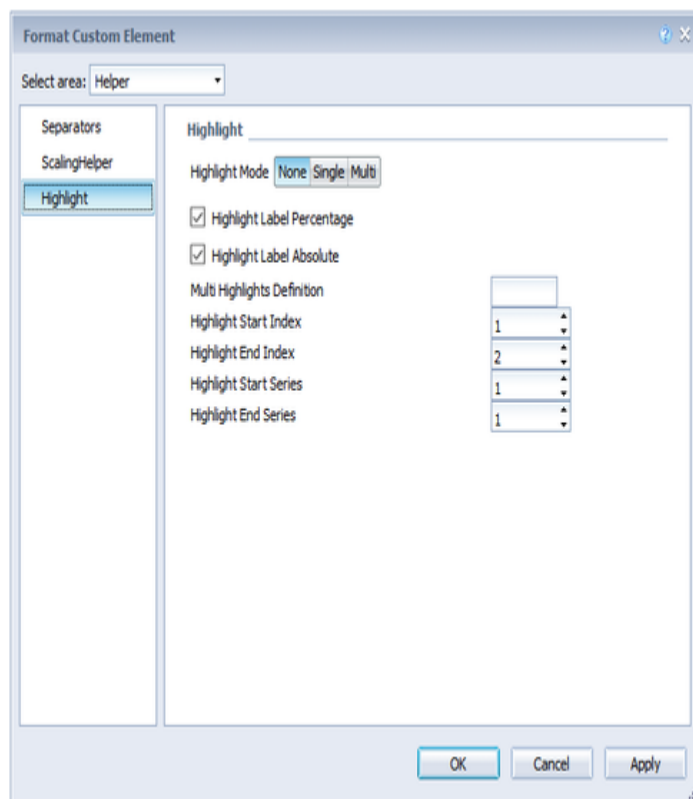
```
<Start Serie>.<Start Element>
-<End Serie><End Element>
[, <further definitions>]
```

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

### Offsetbar Chart

#### **Offsetbar Offset On Left**

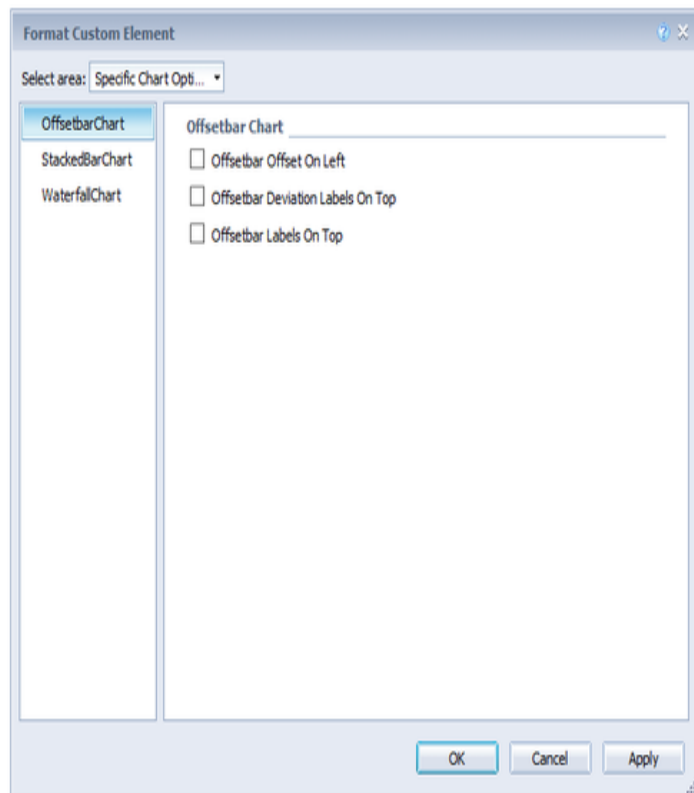
Display the deviation bar of the offset bar chart instead of the right.

#### **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**

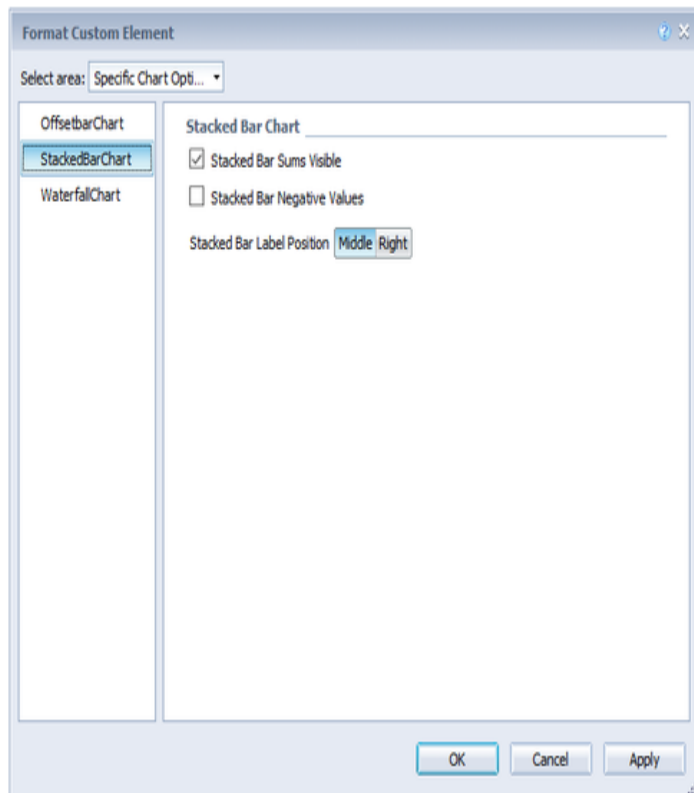
Do you want to display totals above the stack?

#### **Stacked Bar Negative Values**

Should negative values be allowed in the stack?

#### **Stacked Bar Label Position**

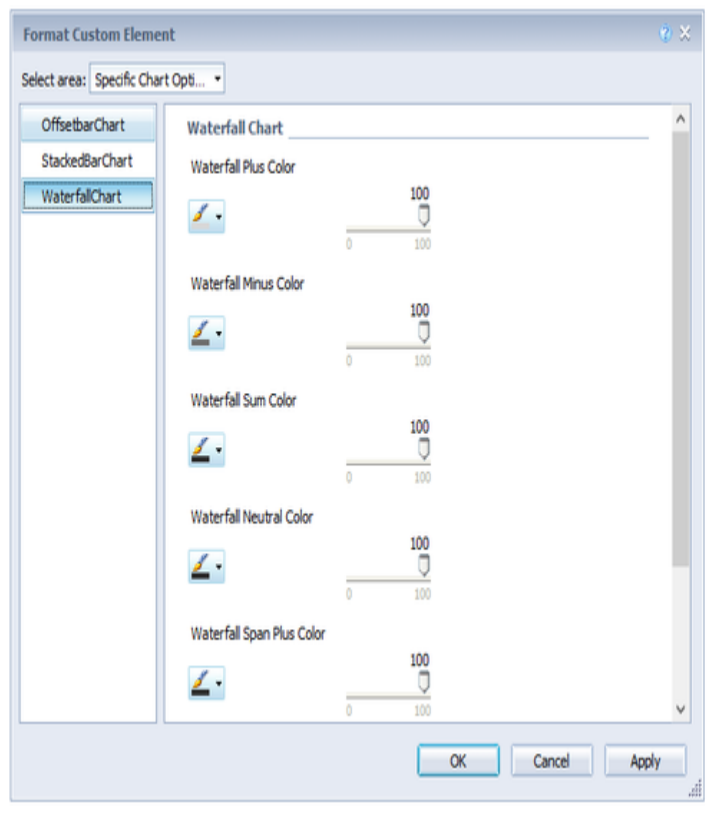
Controls where the captions of the stack (inside or right) are displayed.



### 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 Design Studio.



## Data Types (charts)

See Data Types.



tables

	Discount	Margin	Quantity sold	Sales revenue	Sales-Discount	Sales-Margin
Fancy fabric	-15.6k	20.8k	292.0	53.4k	+69.0k	+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	+468.5k	+489.3k
2 Pocket shirts	-25.3k	53.0k	537.0	127.0k	+152.3k	+126.5k
<b>- 2005</b>	<b>1.0m</b>	<b>5.2m</b>	<b>79.9k</b>	<b>13.2m</b>	<b>+12.2m</b>	<b>+13.2m</b>
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

## 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**

The screenshot shows the 'Format Custom Element' dialog box with the 'Display' area selected. The options are as follows:

- Left Padding In Em:** 1.2
- Fixed Column Width
- Column Width (in Px):** 100
- Apply Data Types To Cells
- Show Data Types In Header
- Table Header Position Fixed
- Show Filter Helper
- Filter String:** [Empty text box]
- Width Per Column:** [Empty text box]
- Column Order:** [Empty text box]
- Visible Series:** [Empty text box]
- Calculate Sums
- Custom CSS:** [Empty text box]

Buttons for 'OK' and 'Cancel' are visible at the bottom right.

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, Emph 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).

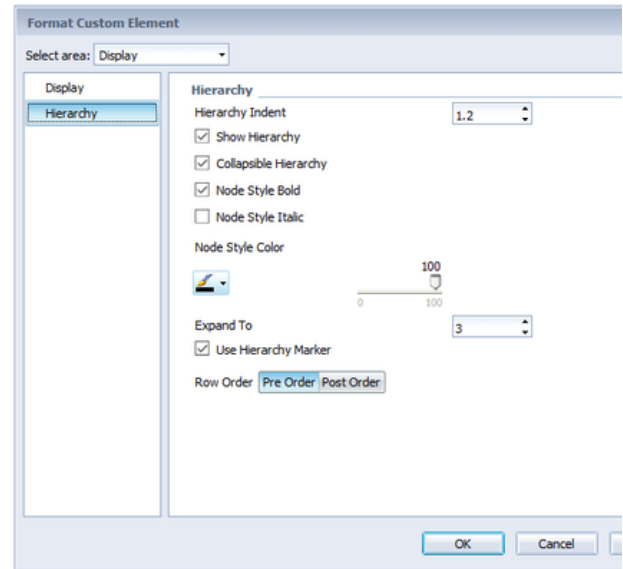
If there are totals and there is no common, top node for the grand total, the level starts with 1.

### **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.



## 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**

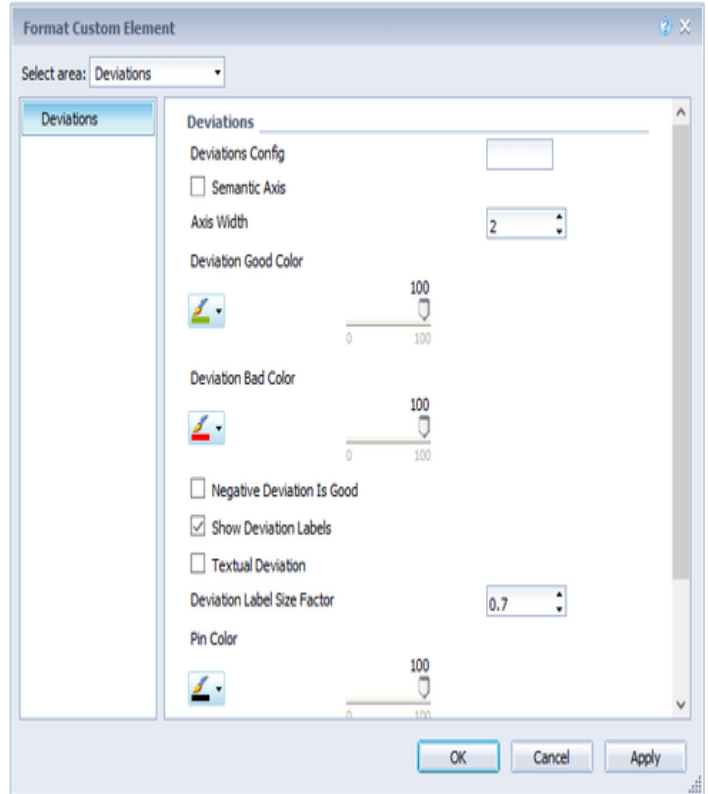
Specify the colors for the deviations.

#### **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.

**Apply Pin Color, Pin Color**

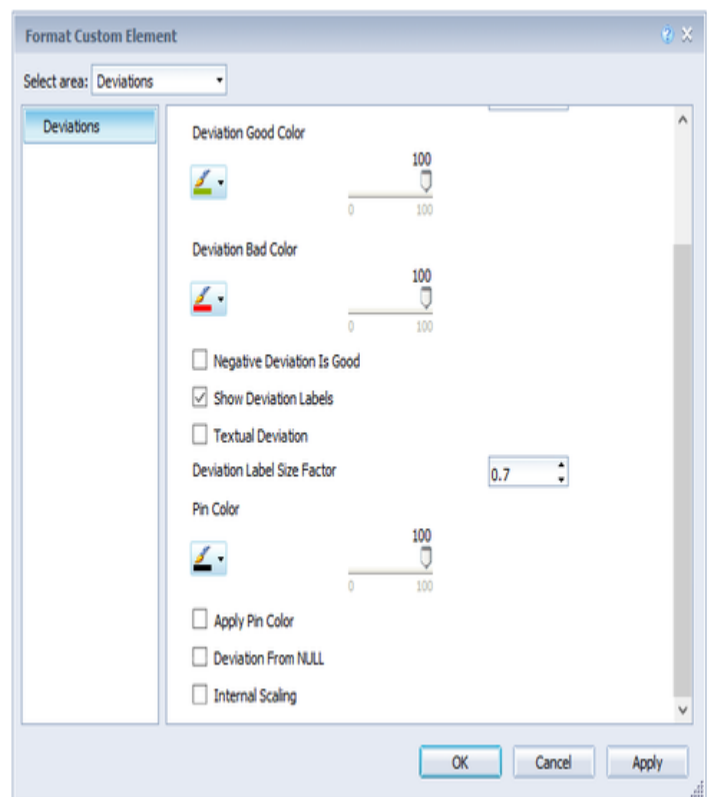
As a rule, the negative or positive deviation color (depending on the sign) is used for the color of the deviation pins in percentage deviations. If a different color is to be used for the pins, the *Apply Pin Color* property must be set to true and a *Pin Color* must be defined.

**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.

**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

#### Font Size

Select the font size here. This implicitly affects the dimensioning of the table. For this purpose, parameters are indicated in the unit "fs" (font size), i. e. depending on the font size. Some of these parameter values can be maintained via the properties.

#### Font Family

Sets the font family of the text.

#### Text Color

Sets the color of the text (including the text specified in the title). If the table contains a hierarchy, the color that is defined in the *Hierarchy Nodes* section (or the *Node Style Color* property) is applied to it. If a Data Type is assigned to a column, and the *Apply Data Types to Cells* option is enabled, the color specified for the data type is applied to the entire column, overwriting the text color set here.

#### 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

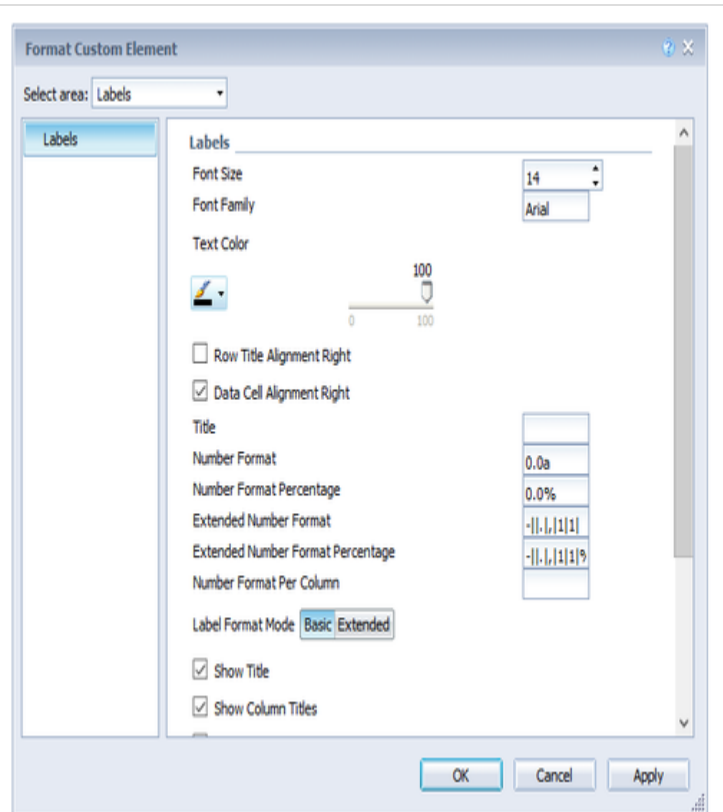
By default, the cell contents are aligned right-aligned. Left-aligned text is implemented by removing the checkmark.

#### Title

At this point, a title can be created for the chart. For matting can be done by using HTML.

#### (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, an array of strings (with the respective extended number format, see [Number Format](#)) is created. An empty string 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**

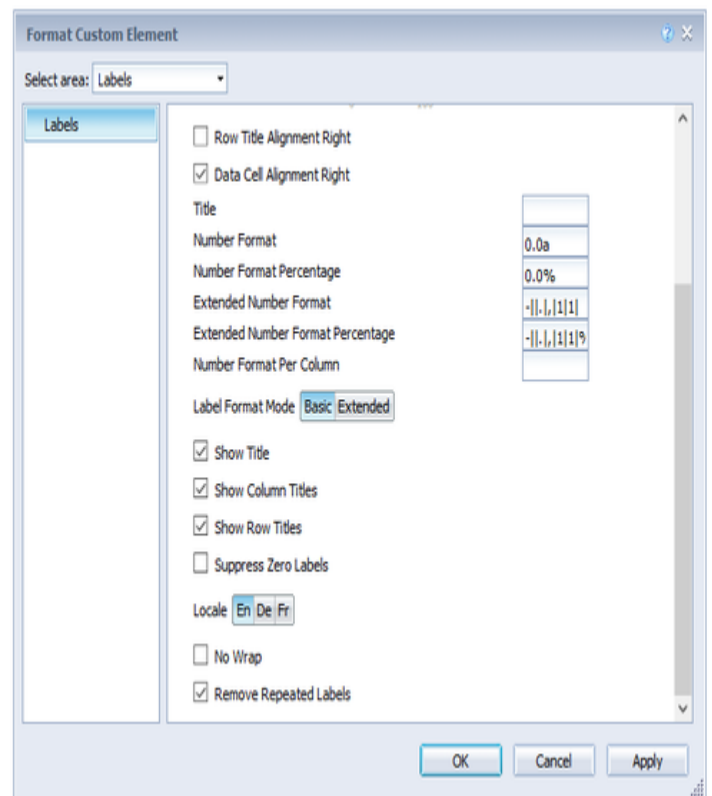
See [Number Format](#).

**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.





## Helper (tables)

### Dividers

#### Dividers

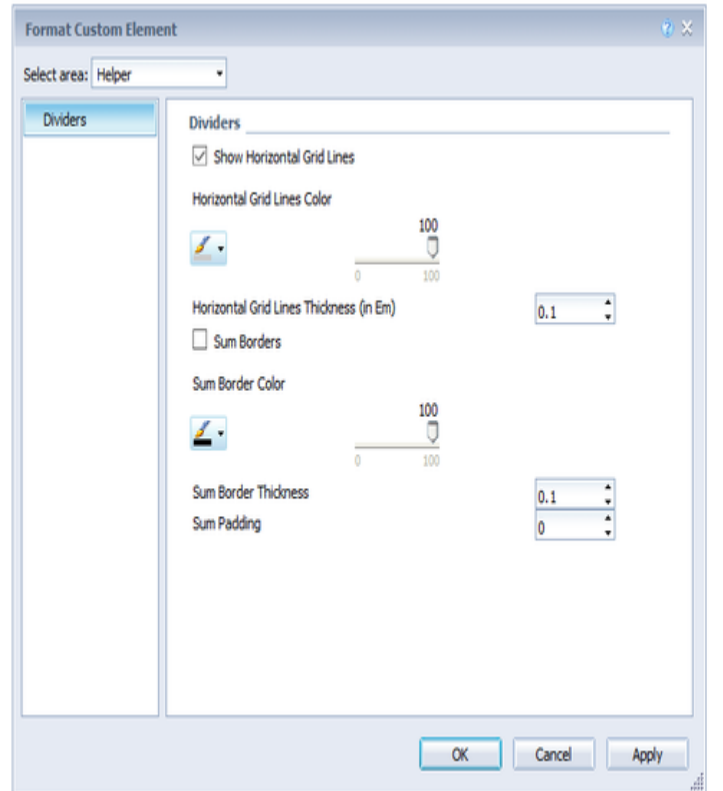
Switch the horizontal grid lines (dividers) on or off using the checkbox and determine their thickness and color.

#### 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.



## 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. At the top, 'Select area' is set to 'Exceptions'. Below this, there is a list of definitions on the left, which is currently empty. The main area contains three exception definitions, each with the following fields: 'Source', 'Target', 'Operator' (set to 'greaterThan'), 'From/Value', 'To', and 'Style'. Each field has a corresponding input box or dropdown menu. At the bottom right, there are 'OK', 'Cancel', and 'Apply' buttons.

- *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 Design Studio tables.

## 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.

Interactivity is primarily available in HTML and not in Java mode.

### 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.

## 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.

### charts

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

### 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.

## Differences to the Design Studio version of the extensions

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

### Allgemein

- 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 there is a context menu in WebI (in the Java client), it is unclear whether support will be given in the future.
- 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 yet:

- PNG Export Available
- Excel Export Available

### tables

The following options are not supported yet:

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



