User Manual for the graphomate trellis 1.0
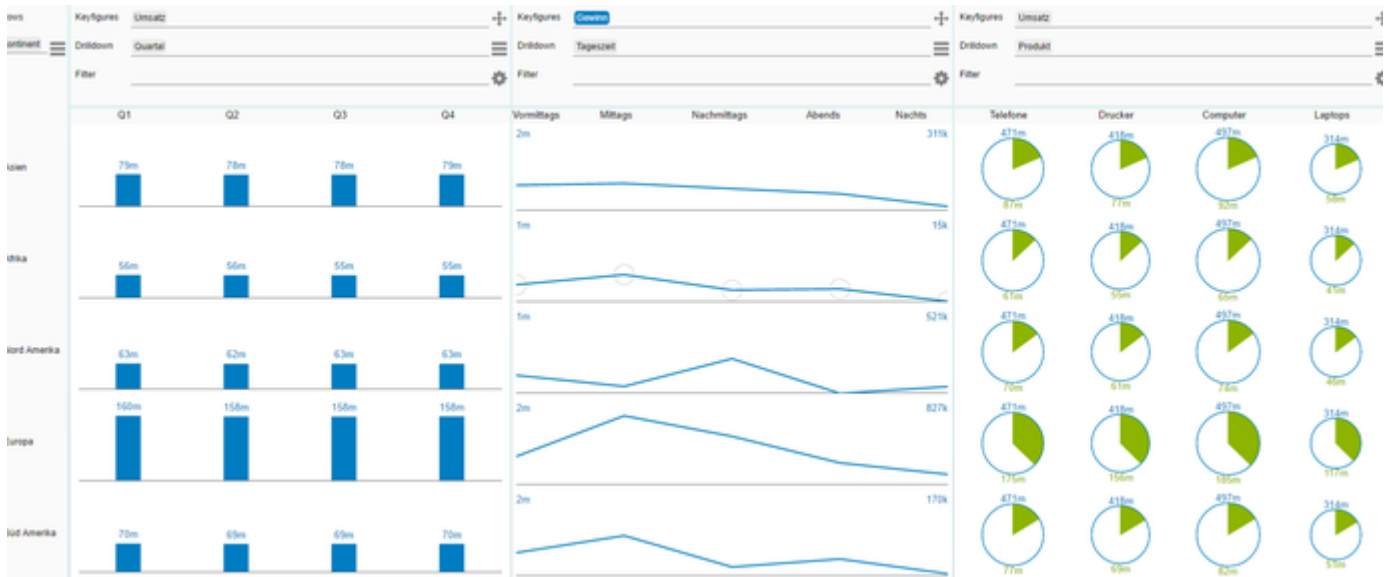# for SAP BusinessObjects Design Studio

Version 1.0 – as of July 2017

https://www.graphomate.com

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Introduction

In contrast to our previous components which aimed to enable designers to create meaningful dashboards, the *g raphomate trellis* aims to be our advance into the world of ad hoc analysis and data exploration. While an informed designer is able to build up an effective starting configuration for dashboards the real power lies in the possibilities the end user has in their own browsers. Here they can drill down or filter every dimension however necessary to find the answer they are looking for. Looking at the data from different angles is only possible if you know which question to ask. So let you experts ask the right questions to get efficient results.

Installation

Local installation of the extension to Design Studio

You have installed Design Studio 1.6 SP00+ on your computer.

1. Save the zipfile *graphomate_trellis1.0.0.0.zip* to a folder of your choice.
2. In Design Studio, choose *Tools Install Extension to Design Studio,* click on *Archive* and select the zipfile which has been saved before.
3. Choose *Finish* to start the installation.
4. Choose *Next* and again *Next* to confirm the installation.
5. Accept the terms of the license agreement and choose *Finish*.
6. Choose *Yes* to allow a restart of Design Studio.
7. After the restart, the graphomate extension appears in the Component View of Design Studio.

Removing the extension from Design Studio

In Design Studio choose *Help > About…*.

1. Click the *Installation Details* button.
2. Select the component *graphomate trellis 1.0.0.0*
3. Choose *Uninstall… .*
4. In the UninstallWizard choose *Finish*.
5. Choose *Yes* to allow Design Studio to restart.

Server installation of the extension

Users need to deploy the locally installed extension to the BI platform before launching the *graphomate trellis* from the BI platform.

1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Select the extension *graphomate trellis* that is installed on your local computer.
3. Choose *Install on Platform.*
4. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Design Studio.
5. The graphomate extension appears under *Extensions Installed on Platform.*
6. Choose *Close.*
7. Again restart the BI Platform Adaptive Processing Servers that host the Analysis Application manually.

Uninstalling the extension from the Server

1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Choose the *graphomate trellis*.
3. Choose *Uninstall from Platform.*
4. Confirm the uninstalling by choosing *Yes.*
5. In order to complete the uninstalling process, manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Design Studio.
6. The *graphomate* trellis is then removed from the *Extensions Installed on Platform.*
7. Choose *Close.*
8. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service.

Quick Start

For the *graphomate trellis* it is advised that you use a data source which is not linked to any other component, because there are adjustments to the initial view during runtime which could otherwise break other components. Please make a copy of your data source exclusively for the *graphomate trellis*. You don't need to configure the data source, just leave the initial view empty if possible.

1. Drag a *graphomate trellis* into the canvas and link a data source to it using drag & drop. We recommend to give the component a suitable size, often maximizing it to use the full page is advantageous.
2. Take a look at the *Additional-Properties-Sheet* to activate saving during runtime.
3. Start the dashboard and switch to your browser, you can configure the visualization details at runtime. For further information visit the section called Interactivity at Runtime in this documentation.

Properties

Basically, there are two possibilities to maintain the features of *graphomate trellis*: with the *Standard Properties Sheet*, which lists all parameters in a structured list or with the *Additional Properties Sheet*. The latter provides a user-friendly interface.

The Checkboxes next to the features in the *Additional Properties Sheet* are used to control the visibility of elements.

The chosen Data Source can only be attributed to the component via drag&drop or via the *Standard Properties Sheet* under *Data Binding*.

> Clicking the **F5** key reinitializes the canvas as well as the *Additional Properties Sheet*. This is sometimes necessary when changes in the Properties are not directly accepted in the canvas.

General Tab	
Styling You can find general styling settings here, like *Padding* and *row height*. Enabling *Column Width Fixed* lets you specify a *Column Width* which will be applied to every column in the *graphomate trellis*, except for the first one. A horizontal scroll bar will be displayed to accommodate total widths exceeding the available space. The colors for all the visualizations can be refined using the three parameters *Data Color, Good Color* and *Bad Color*. The label are generally colored using the *Data Color* and are further modified by the *Text Font Size*.	**Styling** Padding .... 10 px Row Height .... 100 px ☐ Column Width Fixed Column Width ...... 300 px Data Color .... ▮ Good Color .... ▮ Bad Color .... ▮ Text Font Size ... 12 px
Save Options Use the option *Enable Saving at Runtime* to enable the end users to save their current configuration until their next visit to the *graphomate trellis*. Disabling this setting also clears all saved configurations. The information is saved in the local storage of the used browser, so they do not persist across browsers or devices.	**Save Options** ☑ Enable Saving at Runtime

Value Format

Select the format of the table values:

- *Basic*
  Select the format of the absolute and percentage values according the guidelines of numeral.js.
  Locale sets the label country format in the Basic mode. DE, FR, EN and AUTO are available options. Choosing AUTO the Locale is retrieved from the Data Source.
- *Extended*
  If a fixed format is preferred, put the format for absolute and percentage values here. Choosing a "(" in the box Negative Sign will show negative values in brackets: (1234). The parameter in the box Scaling is used as a divisor for scaling the data label. The resulting "format string" can also be set via scripting language.

Please visit the section Number Formatting for further information.

Value Format

Basic	**Extended**				
		abs		%	
Decimal Separator		,	⌄	,	⌄
Thousands Separator		.	⌄	.	⌄
Negative Sign		-	⌄	-	⌄
Scaling		1	⌄	1	⌄
Decimal Places		1	⌄	1	⌄
Prefix					
Suffix				%	

Value Format

Basic	Extended	
Percentage Format		0.0%
Absolute Format		0a
Locale		en ⌄

Basic Format according to numeral.js

Import Konfiguration

To help the end user with a useful starting configuration the designer can specify a preset configuration. For the a dashboard with the *graphomate trellis* can be started and configured to fit the users needs using the runtime UI. A configuration can then be exported by pressing Ctrl + Alt + Shift + Q + E. A small input box will open at the top of the page. Its content string can be copied by clicking it, marking it with Ctrl + A and copying it. Now switch to the *Additional-Properties-Sheet* and paste the string into the text box in the *Import Configuration* section.

Activating the checkbox *Load Preset Configuration* will now result in the configuration beeing loaded every time the *graphomate trellis* is started

Please keep in mind that this configuration is dependent in other conditions. For example, changing the data source will invalidate most selections and therefor break the imported configuration. the *graphomate trellis* will not start in this case.

Import Configuration

☐ Load Preset Configuration

{"bindings":"[{\"drilldown\":[{}],\"filter\":
{},\"viewType\":\"Label
Module\",\"scaleID\":\"\"}]","rowDescription":

Interactivity at Runtime

In its versatility lies the strength of the *graphomate trellis*, which enabled the end user to analyze your business data according to their questions and problems.

Wizard

Using the wizard you can quickly build your own starting configuration, which you can then refine according to your questions and requirements. For this you can use the four following settings:

1. Row Description: This is the row drilldown. For every member in the selected dimension the *graphomate trellis* will yield one row, i.e. one module instance.
2. Keyfigure: The keyfigure to be used by your first module.
3. Chart Type: The starting modules chart type. Please read on for further information about the chart types.
4. Drilldown: Some chart types are able to visualize an optional module drill down which is used in this module in every row. Right now all modules can display this, except the KPI module.

Overview

After choosing your starting configuration you will be presented the first complete visualization if the *graphomate trellis*. The overall structure should become using the for sections marked in the following screenshot:

(1)
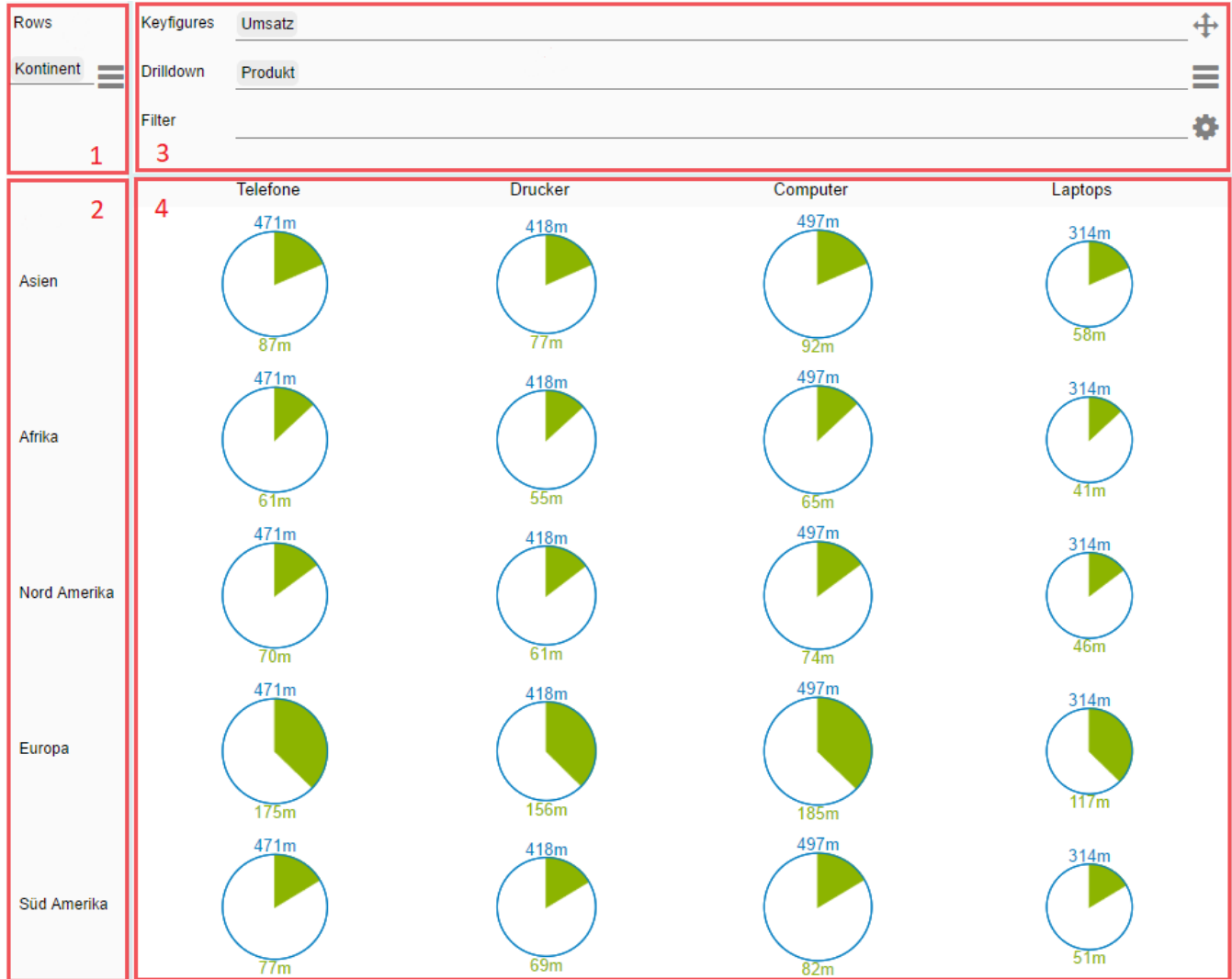
The first columns header holds the information for the current row description. This sets the members used to display each row. For this you can use whole dimensions or single members. Please open the dimension menu and drag & drop whole dimensions into the designated drop area, or open a member menu by clicking on a single dimension. Members can be set in the same fashion, using drag & drop. The options menu can be used to save or load configurations.

(2)

These are the distinct values of your row description.

(3)

This is the modules header. Keyfugre, drill down und filters are displayed here. The available functionality differs for each chart type:

- Keyfigures: Bar chart, column chart and pie chart each can visualize a single keyfigure. The line chart uses one line for each chosen keyfigure while the KPI chart show either a single keyfigure or the deviation between two keyfigures. The order in which the keyfigures are set specify the order in which numbers are substracted.
- Drill down: Currently all charts have a way to visualize module drill downs, except the KPI chart.
- Filter: This filter is only applied to this module, i.e. this column. As a filter you can specify one or more members. If you pick a whole dimension as your filter it will be dissolved into distinct members.

Using the Icon ✛ you can grab a module and drop it between to other modules to change the horizontal order of your visualizations.

With the Button ≡ you can open the dimension menu which lets you reach keyfigures, dimensions and members. To open a member menu click on one of the dimensions.

Using the Button ⚙ an options menu can be opened. This lets you reach the following settings:

- Duplicate: creates a copy of the current module, which is useful if you only want to change one single aspect. For example, you might want to see if the question at hand could be better answered using the same selections with another chart type.
- Add Module: Adds a new module with a minimal configuration which you can then refine.
- Scale Identically: All modules with this setting activated are considered when scaling your values. This setting is used across the whole component.

In addition you can choose a chart type for this module.

(4)

These are the actual visualizations for your data. Several chart types are possible with their distinct advantages and use cases. Currently these are the available chart types:

- line chart, enables you to compare several keyfigures in one module
- column chart, ideal for temporal data
- bar chart, ideal for structural data
- KPI chart, enables you to visualize deviations
- pie chart, provides a visualization of hierarchies

Known Issues

Currently the following issues are known:

- SAP Designstudio has a maximum number of possible datapoints which can be reached during runtime using the *graphomate trellis.* Our component sets this number to 50 000, but it can be overridden by settings on your end. The option for this is the *maxCells* value for data properties.
- As the data source linked to the *graphomate trellis* is modified during runtime it is advised to create an exclusive copy for this component. Otherwise selection on other component may become corrupt which leads to errors. Also, if this data source is modified by other means the *graphomate trellis* may crash.
- A high number of data points can increase the loading times considerably. This is a technical restriction when using the browser as a platform. As an example, rendering a column chart with 21 000 data points took 42 seconds in our test in the Google Chrome browser. If you come across long loading times consider selection resulting in less data points.
- When getting the selected member of an element the dimensions in the row description are currently now supported. They will contains incorrect members. Only fetch the selected members for dimensions used in the module configuration (i.e. keyfigures, drill down or filter)
- As saving during runtime is based on the browsers local storage object it is limited by its capabilities. For example, changing the URL of the dashboard invalidates the saved configurations. This happens when using the local mode after each restart of Design Studio.

Number Formatting

Possible Input 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'	1st
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 absolute numbers are formatted separately. For this two format strings 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 elements of the format string are separated by the "|" character. Format strings with less than 7 elements (or 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 placed inside parentheses, including eventual prefixes and suffixes. If *None* 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. *Please note:* 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 set the input to "10^1".
PointsAfterDecimal	The number of places after the decimal.
Suffix	A suffix for the value, analogous to the prefix.