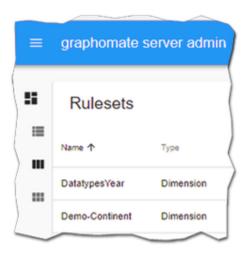
User Manual for the graphomate server 2020.3







Version 2020.3 – as of August 2020 https://www.graphomate.com

graphomate...

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Installation

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

1. Move the graphomate-server.war to the webapps directory of a tomcat server. For example, you can use the Tomcat server of the BI platform (BIP)(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. To test if the server has been installed successfully
 - a. The server URL is http://<URL OF Tomcat>/graphomate-server, e. g. http://bip.super-corp.com:8080 /graphomate-server
 - b. When you open it in the browser, you should see some information about the server.
- 3. If you like to view the admin panel you can add a /admin to the server URL.

Config

When the *graphomate server* is accessed for the first time it will create a folder called *graphomate* at the *tomcat root* folder with initial content. In this folder a file called *auditing.db* will be created which contains the data for the audits. Besides there will be three subfolders. The *templates* folder where templates will will be stored, the *rulesets* folder where rulesets will be stored and the *config* folder where two *.ini-*files will be created.

access.ini

```
protected=true
username=admin
password=graphomate
```

The parameter *protected* defines if the *admin* should be protected by username and password. Set to *false* to deactivate the protection.

If set to *true* the *admin* will promt for the *username* and *password* which are definded in the parameters with the identical name.

config.ini

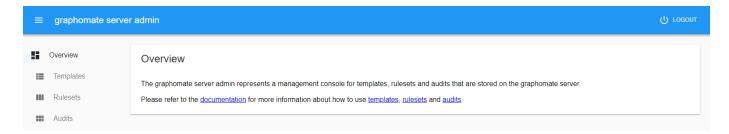
```
[templates]
allow_list=true
allow_create=true
allow_update=true
allow_delete=true
[rulesets]
allow_list=true
allow_create=true
allow_create=true
allow_update=true
allow_update=true
allow_delete=true
[audits]
enable=true
component_white_list=
```

Parameters beginning with *allow*_ are boolean and define if the mentioned operation will be disabled on the API of the *graphomate server*. The header written in square brackets define for which resource the next parameters will match.

For the *auditing* the *enable* parameter einables the auditing in general. It can take up to three days until the clients will check if the auditing is enabled.

The *component_white_list* is a list of component names or regual expressions separated by comma. If defines which components should be tracked by the standalone *auditing component*.

Admin

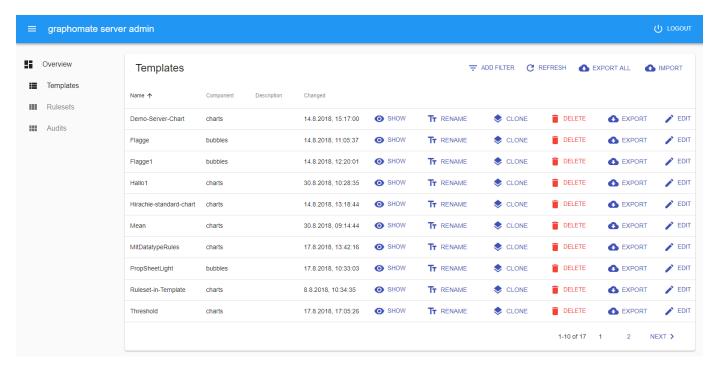


The *graphomate admin* represents a management console for templates, rulesets and audits that are stored on the *graphomate server*.

It can be accessed via http://<URL OF Tomcat>/graphomate-server/admin, e. g. http://bip.super-corp.com:8080/graphomate-server/admin.

The credentials for the login have to be set in the Config.

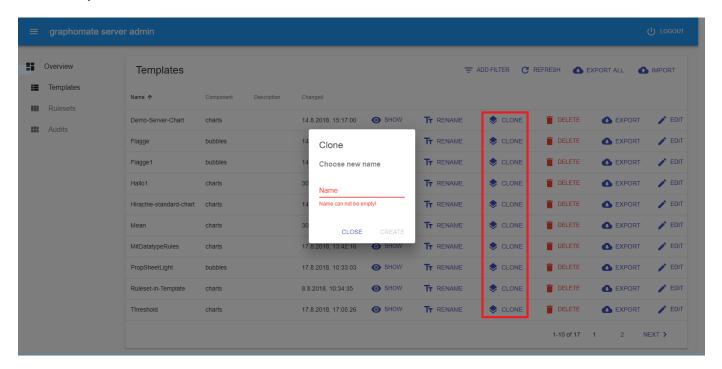
Templates



Templates are collections of settings that are each assigned to a specific graphomate extension. The creation of the templates is done by the graphomate component directly. To do this, select the *Input Output Tab* in the graphomate property sheet, if available.

In the admin all templates which are existing on the server can be administrated. By clicking on the row header the templates will be sorted by the content of the corresponding row. By clicking on *ADD FILTER*, the displayed templates can be selected according to specific criteria. In the list of templates you can choose to rename a template, clone a template, delete a template, export a template or edit its contents. In addition to that it is possible to export all templates, import a template or a collection of templates.

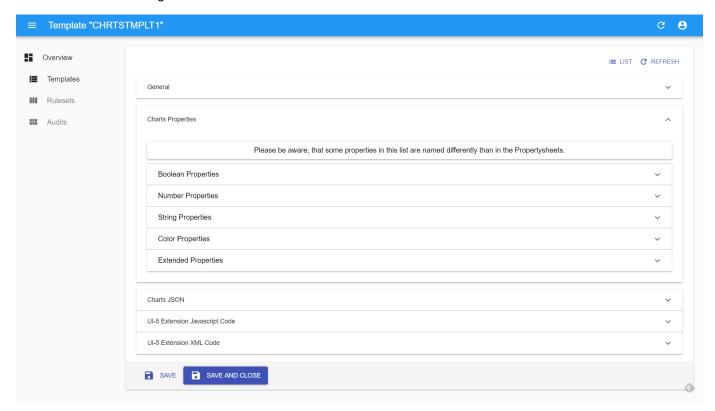
Clone Template



You can clone a template with all its contents by clicking on the *CLONE* button in the templates list. When doing so a dialog will prompt for the name of the cloned template. A valid name can consist out of letters, numbers and dashes.

Edit Template

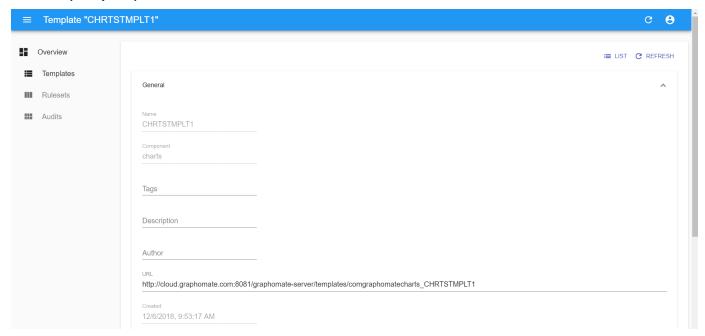
In the template edit mode the contents of a template can be modified. It is divided in five tabs which will be described in the following table.



By clicking the *SAVE* button the changes will be saved but the admin will stay in edit mode. Clicking the *SAVE AND CLOSE* button will result in saving the changes and going back to the list view.

- General (Template)
- Properties (Template)
 - Boolean Properties
 - Number Properties
 - String Properties
 - Color Properties
 - Extended Properties
- JSON (Template)
- UI-5 Extension JavaScript Code (Template)
- UI-5 Extension XML Code (Template)

General (Template)



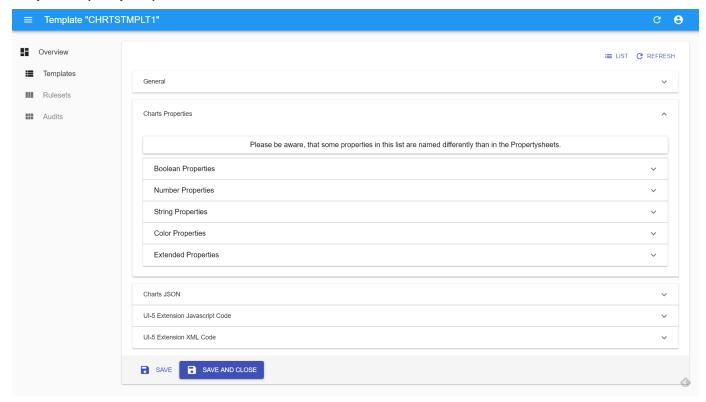
In the *GENERAL* tab the fields for the name and the component are deactivated. To rename a template you could use the rename button in the templates list.

The corresponding graphomate component can not be changed, because the property set in a template can be only applied to the same component which was a well used to create the template.

The field for the tags can be filled with a list of tags which are separated by comma. The description and the author are free text fields.

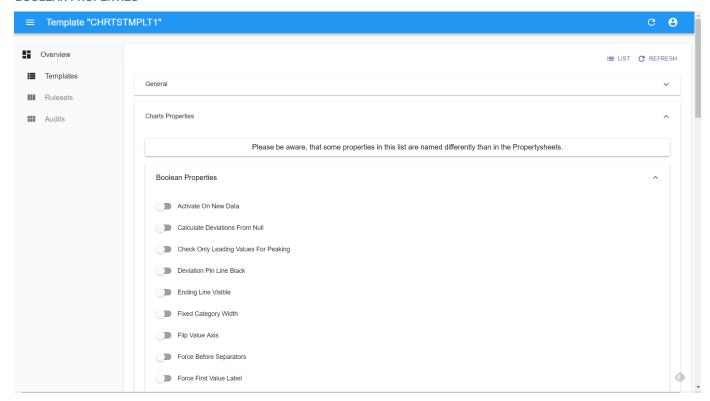
In the *Created* and *Changed* Fields nothing can be changed, because the Changed timestamp will be updated automatically once the template is saved.

Properties (Template)



The PROPERTIES themselves are divided in five categories which are explainend below.

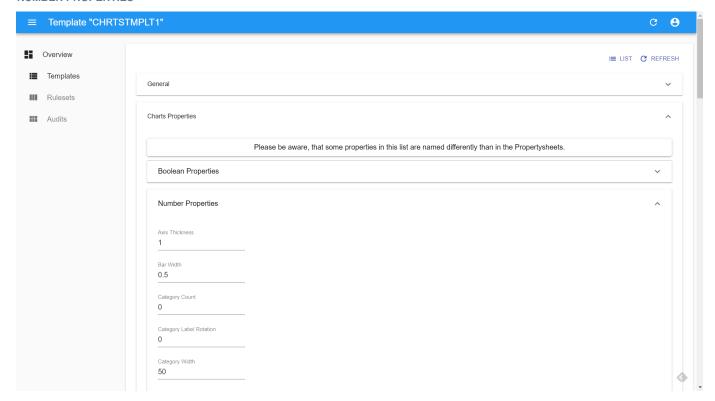
BOOLEAN PROPERTIES



The boolean properties are simple *true | false* switches. If the slider appears blue and is moved to the right the property is activated. The grey slider on the left indicates a deactivated property.

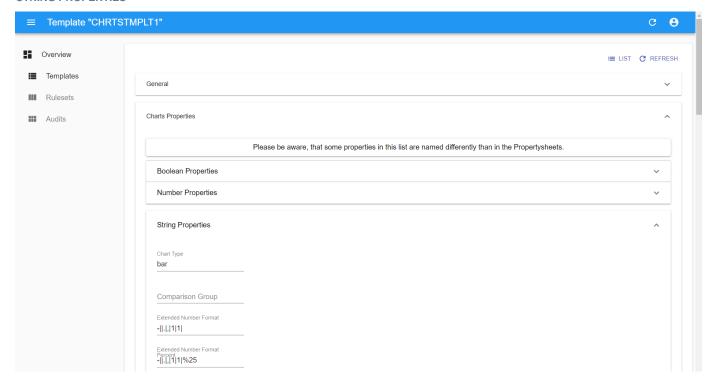
To toggle a change click on the slider or the name of the property.

NUMBER PROPERTIES



All properties that represent numbers can be adjusted in this section.

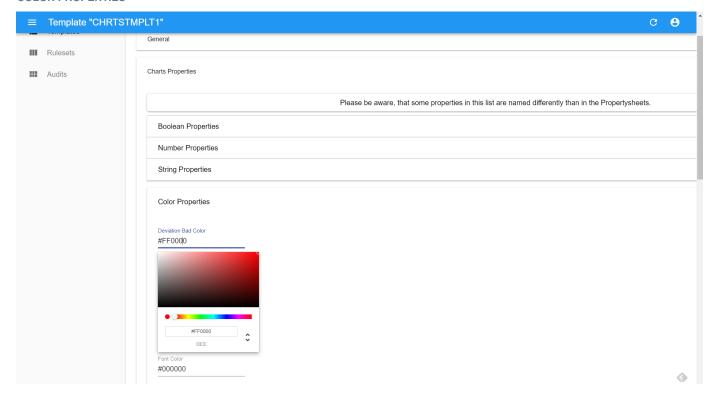
STRING PROPERTIES



The string properties can be changed here. With string properties there is a exeption, some of them only work with a specified set of choices. There is no mechnism that stops you from entering invalid values.

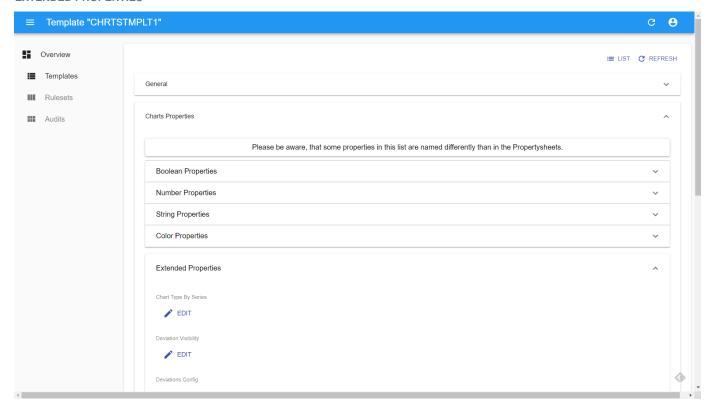
This could result in unwanted behavior when a the template is applied to a graphomate component. Please refer to the manual of the specific component.

COLOR PROPERTIES



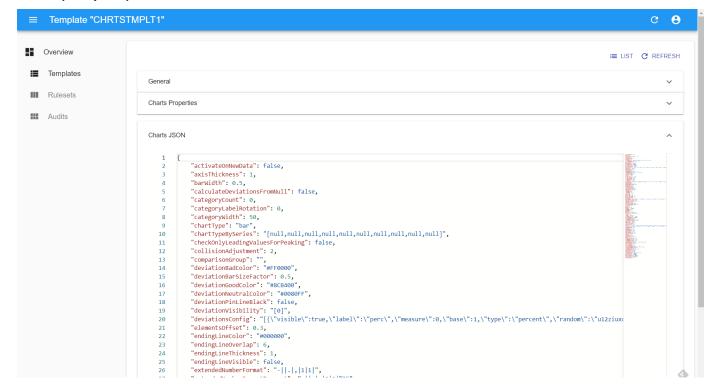
Color properties can be changed by using the color picker which opens on click on the choosen property.

EXTENDED PROPERTIES



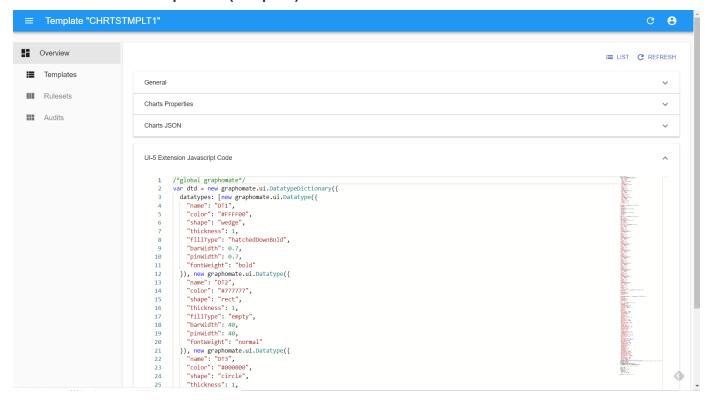
The properties which are more complicated and hence are saved as JSON can be edited by clicking on the *EDIT* bu tton of the specific property. A dialog opens containing the sub-properties. Clicking *OK* will **not** save the changes. It is necessary to click the *SAVE* button after the dialog is closed by clicking *OK*.

JSON (Template)



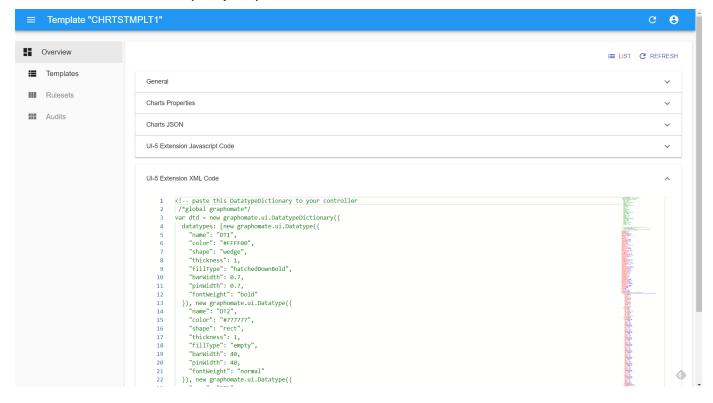
The JSON representation of the properties can be changed manually. This is necessary if you want to add new items to a JSON array for example.

UI-5 Extension JavaScript Code (Template)



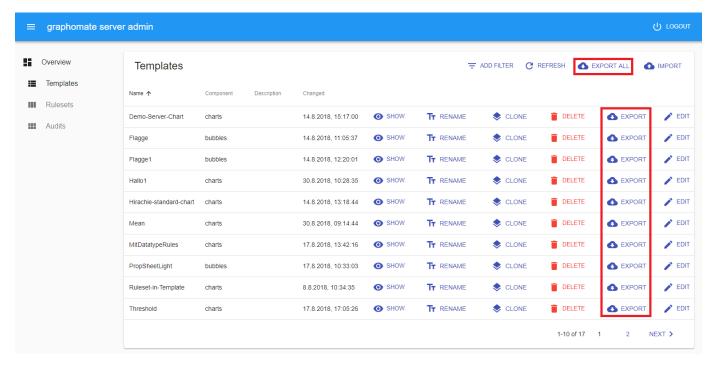
This section displays UI5 code that can be used to add graphomate for UI5 components to an UI5 Javascript application. The parts that need to be customized are documented by comments in the code.

UI-5 Extension XML Code (Template)



This section displays UI5 code that can be used to add graphomate for UI5 components to an UI5 XML view. The parts that need to be customized are documented by comments in the code.

Export Template

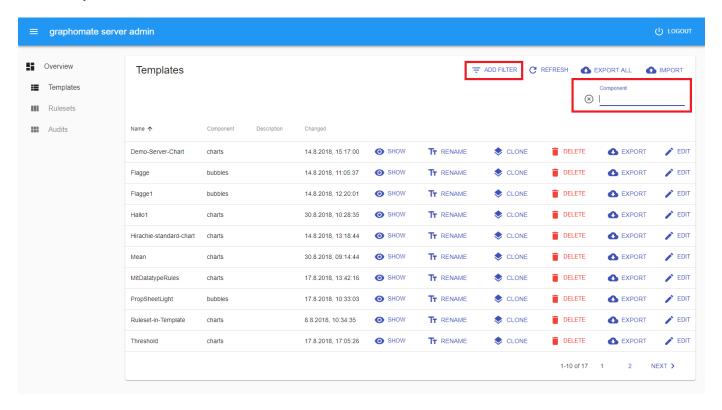


A template with all its contents can be exported by clicking the *EXPORT* button in the template list. The browser will start the download of file which starts with the graphomate component id and after an underscore the template name will follow. The file extension will be *.gmt* which stands for *graphomate template*.

All templates can be exported together by clicking the *EXPORT ALL* button above the template list. A download of a file called *graphomate_templates_<date>.zip* will be started.

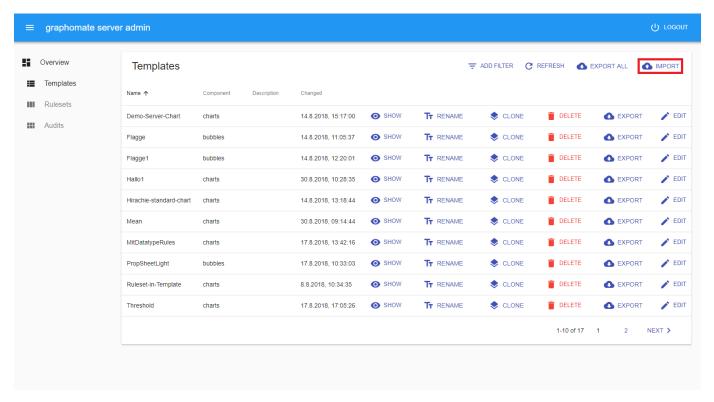
Both a single template and the collection of templates can be imported to the server.

Filter Template



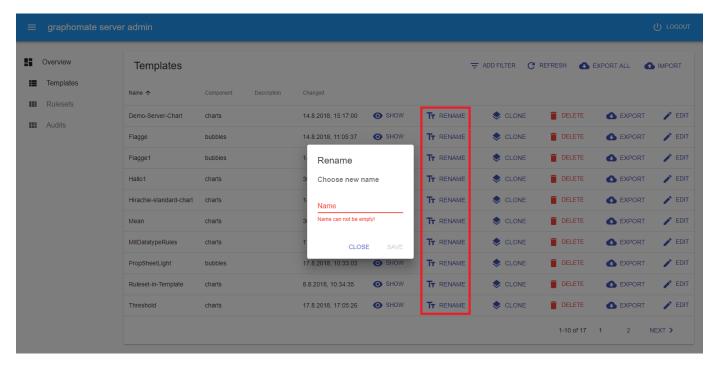
By clicking on *ADD FILTER* right above the list of templates, you can restrict the selection of templates. Select *Tag* to display templates with a specific tag or *Name* to display templates that contain the selected text in the name. Similarly, you can select templates based on their *description* or *author*. In addition, templates that are assigned to a specific *component* can be filtered. All filters can also be used simultaneously.

Import Template



A template or a collection of templates which has been exported can be as well imported. By clicking the *IMPORT* button above the template list the browser will promt for the file to import. Choose the template with the *.gmt* extension or the collection of templates with the *.zip* extension and it will be saved on the server. Existing templates will not be overwritten.

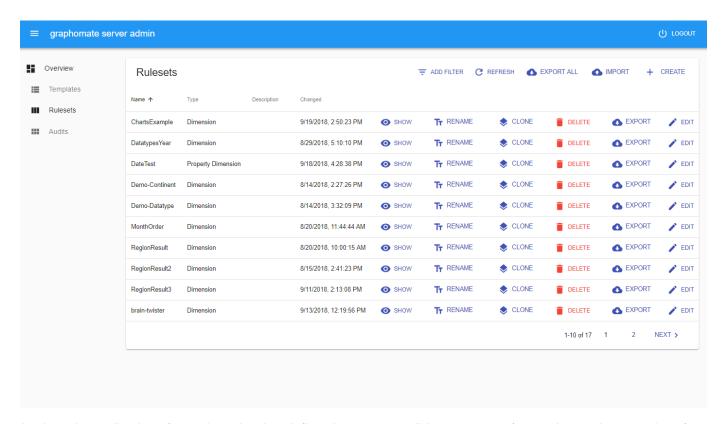
Rename Template



You can rename a template by clicking on the *RENAME* button in the templates list. When doing so a dialog will prompt for the new name of the template. A valid name can consist out of letters, numbers and dashes.

Rulesets (depraceted)

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

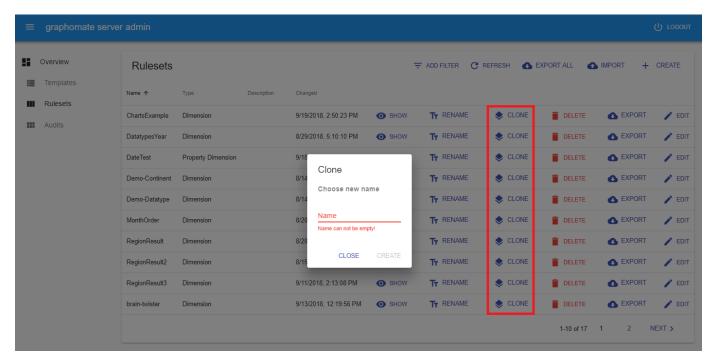


A ruleset is a collection of complex rules that defines how a compatible component (currently: graphomate charts) should extend its data. According to the rules, a component can derive new information based on the data assigned to it. With the help of a ruleset, for example, a graphomate charts component can derive data types from an existing month dimension.

All rulesets available on the server can be managed in the admin area. By clicking on the column header, the templates are sorted according to the content of the corresponding column. By clicking on *ADD FILTER*, the displayed rulesets can be selected according to specific criteria. In the list of rulesets a ruleset can be renamed, clon ed, deleted, exported or its content edited. It is also possible to export or import all or one of the rulesets.

Clone Ruleset

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

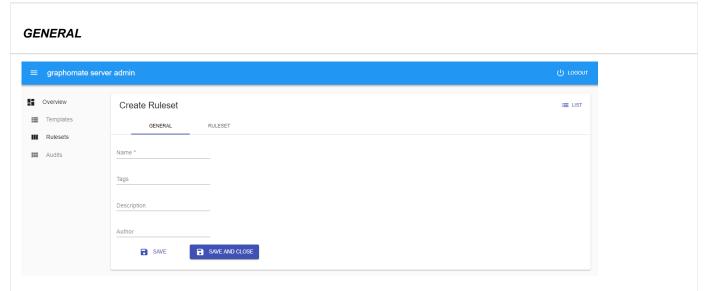


You can clone a ruleset with all its contents by clicking on the *CLONE* button in the ruleset list. When doing so a dialog will prompt for the namen of the cloned ruleset. A valid name can consist out of letters, numbers and dashes.

Create Ruleset

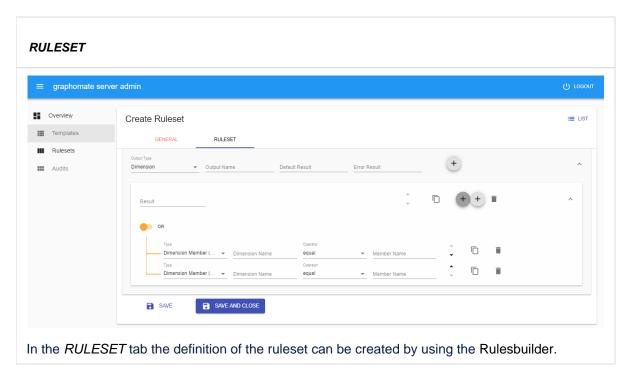
We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

In the ruleset create mode a new ruleset can be created. It is divided in two tabs which will be described in the following table.



In the *GENERAL* tab the field for the name is mandatory. A valid name can consist out of letters, numbers and dashes.

The field for the tags can be filled with a list of tags which are separated by comma. The description and the author are free text fields.



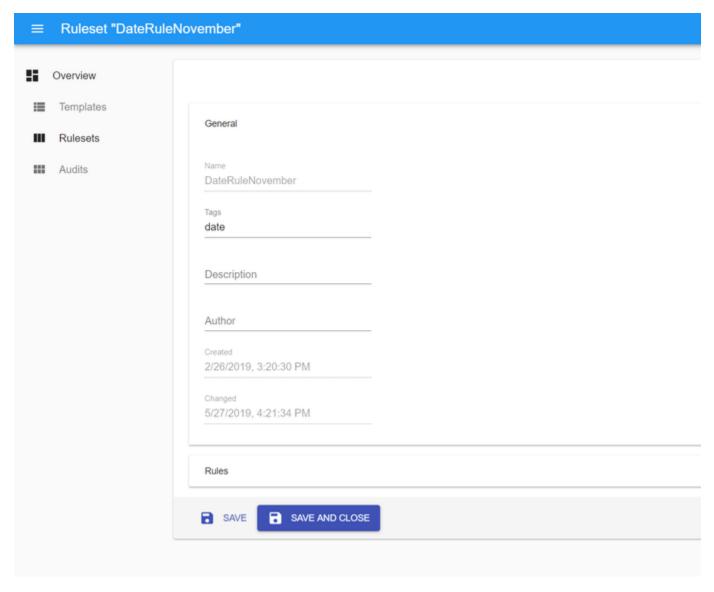
By clicking the *SAVE* button the changes will be saved and the admin will change to edit mode. Clicking the *SAVE AND CLOSE* button will result in saving the changes and going back to the list view.

Edit Ruleset

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

In the ruleset edit mode the contents of a ruleset can be modified. It is divided in three tabs which will be described in the following table.

GENERAL

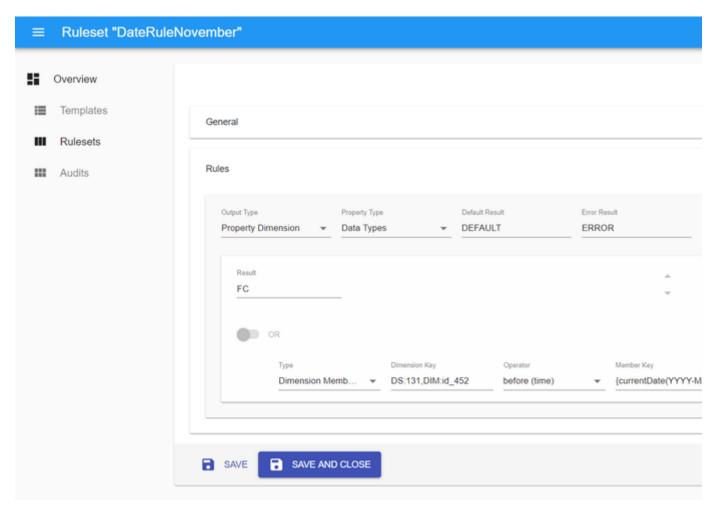


In the *GENERAL* tab the field for the name is deactivated. To rename a ruleset you could use the rename button in the ruleset list.

The field for the tags can be filled with a list of tags which are separated by comma. The description and the author are free text fields.

In the Fields for *Created* and *Changed* nothing can be changed, because the Changed timestamp will be updated automatically once the ruleset is saved.

RULES

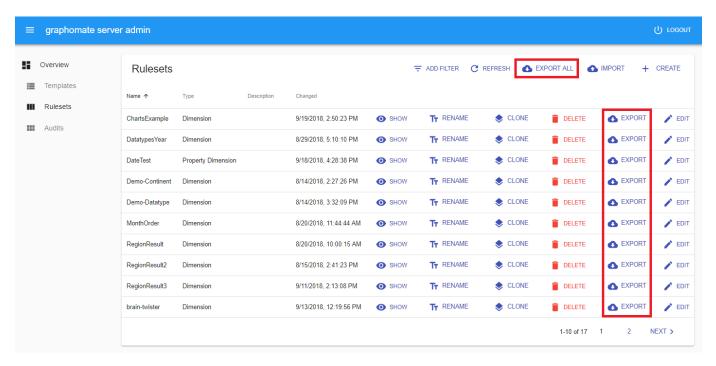


In the RULESET tab the definition of the ruleset can be modified by using the Rulesbuilder.

By clicking the SAVE button the changes will be saved but the admin will stay in edit mode. Clicking the SAVE AND CLOSE button will result in saving the changes and going back to the list view.

Export Ruleset

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.



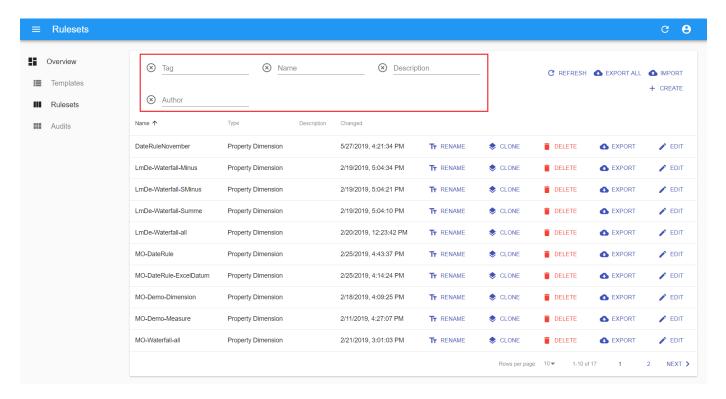
A ruleset with all its contents can be exported by clicking the *EXPORT* button in the ruleset list. The browser will start the download of file with the name of the ruleset. The file extension will be *.gmr* which stands for *graphomate ruleset*.

All rulesets can be exported together by clicking the *EXPORT ALL* button above the ruleset list. A download of a file called *graphomate_rulesets_<date>.zip* will be started.

Both a single ruleset and the collection of rulesets can be imported to the server.

Filter Ruleset

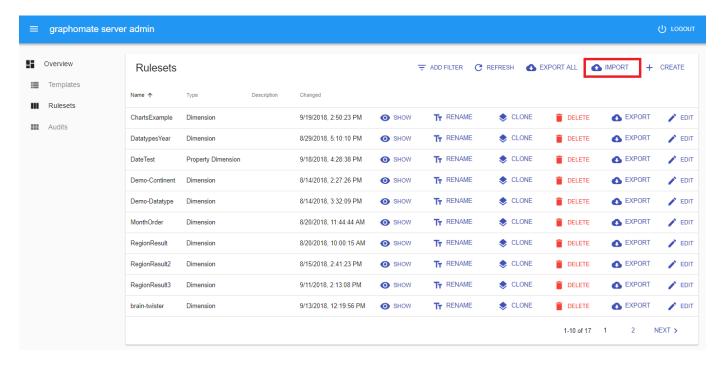
We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.



By clicking on *ADD FILTER* right above the list of rulesets, you can restrict the selection of rulesets. Select *Tag* to display rulesets with a specific tag or *Name* to display rulesets that contain the selected text in the name. Similarly, you can select rulesets based on their *description* or *author*. All filters can also be used simultaneously.

Import Ruleset

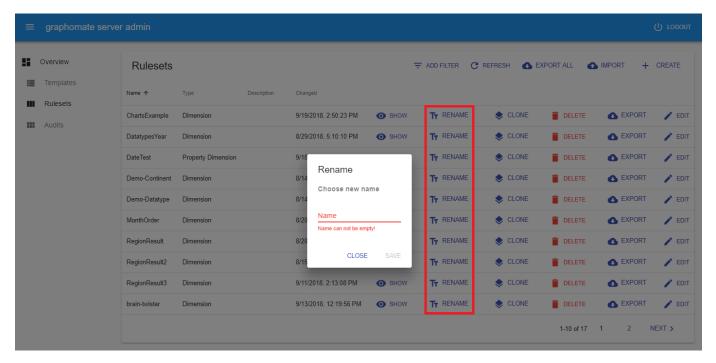
We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.



A ruleset or a collection of rulesets which has been exported can be as well imported. By clicking the *IMPORT* butto n above the ruleset list the browser will promt for the file to import. Choose the ruleset with the *.gmr* extension or the collection of rulesets with the *.zip* extension and it will be saved on the server. Existing rulesets will not be overwritten.

Rename Ruleset

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.



You can rename a ruleset by clicking on the *RENAME* button in the ruleset list. When doing so a dialog will prompt for the new name of the ruleset. A valid name can consist out of letters, numbers and dashes.

Rulesbuilder

We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

Overview



The title shows the currently opened ruleset. The Ruleset tab contains the so-called Rulesbuilder. Here different rules can be created which can be applied to the data of the graphomate charts in order to derive information afterwards. A ruleset serves as a description for a newly generated dimension whose values are generated by applying rules.

In addition to a set of rules, a ruleset has the following properties:

- Output Type: If 'Dimension' is selected, a new dimension is created that is visible to the user. 'Property
 Dimension' leads to an invisible dimension that can only be used for special features of the components
 (Data Types, Number Format,...) and is not displayed in the component itself.
- Output Name: The name of the new dimension to be created based on the rules.
- Default Result: The name of the standard member that is to be assigned to all data points to which no rule applies. A 'data point' in this context refers to a cell in the tabular drilldown of the data.
- Error Result: The name of the member that is to be assigned to all data points when an error occurred during processing. An error could be caused, for example, by an invalid date format or a character string for number comparisons.

The plus button on the right side adds another rule to the ruleset.



For each existing data point of a data source, the system checks whether at least one of the rules applies to it. The first applicable rule determines the value that the respective data point receives in the new dimension. A rule therefore consists of the following elements:

- Result: The name of the member which gets assigned to data points that satisfy this rule.
- Expression Group: A group of logically linked expressions. We offer the logical operators AND and OR.
 Groups of expressions can be nested as desired. To add new expressions or expression groups, use the two plus buttons on the right side.
- Expression: A line consists of 4 elements and is called 'expression'. It is applied to data points to be
 evaluated logically (true/false). The following evaluation properties are available for this:
 - Type: Defines the type of the base of the expression.
 - Key/Name: Defines the basic dimension or key figure of the expression.
 - Operator: Determines the operation between base value and comparison value.
 - Member Name/Key/Value: Sets the comparison value with which the base is compared using the operator.

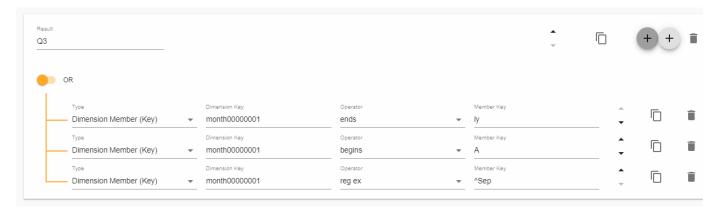
In the example above, a new value named 'Q1' is created to get assigned to each data point for which one of the expressions (OR link) is positively validated. For example, the first expression validates positively for a data point if the name of the member from the dimension with the name 'Month' corresponds to the text 'January'.



In this example, a member 'Q2' is defined that gets applied to all data points of the new dimension to which the following two expressions apply (AND linked):

- A data point whose name of its member from the dimension with the name 'Month' occurs in the list of members after the member with the name 'March'. This condition therefore includes all months that follow March in the list of known members (April to December assuming that the members of the datasource are in the correct order).
- A data point whose name of its member from the dimension with the name 'Month' occurs before the expression with the name 'July'. This condition therefore includes all months prior to July (January to June).

The intersection of the two sets of data points (AND linked) are all those whose members for the dimension 'Month' correspond to the months April, May and June. This gives them the value 'Q2' for the new dimension 'Quarter'.



The same principle can also be applied to the keys of the dimensions and members, whereby in most cases it must be ensured that internal keys are used. In this cryptic example, the first expression would correspond to the month 'July', the second to the month 'April' and 'August' and the last would match the month 'September'.

Expression Type

In addition to the 'Dimension Member' type used in the example, the 'Measure Value' type can also be used for expressions. This allows you to define an expression based on data values. In this case, the internal key or name of the key figure must be entered in the 'Measure Key/Name' field. Analogous to the above examples, the value of a data point can then be compared with a freely selectable 'member value' using an operator.

Operators

Different operators can be selected for different 'expression types'. All string comparisons are considered case insensitive. The following operators are available in all cases:

- equal: Checks whether the base value corresponds exactly to the entered comparison value.
- not equal: Checks whether the base value does not correspond to the entered comparison value.

For the 'Dimension Member (Key/Name)' type, the following operators can be selected:

- contains: Checks whether the base name/key contains the entered comparison name/key.
- begins: Checks whether the base name/key starts with the entered comparison name/key.
- ends: Checks whether the base name/key ends with the entered comparison name/key.
- reg ex: Checks whether the regular expression entered applies to the base name/key.
- before (order): Checks whether the base name/key occurs in the list of members before the specified comparison member/key. This operator only refers to the predetermined order of members which is not necessarily an alphabetical or ascending one.
- after (order): Checks whether the base name/key occurs in the list of members after the specified comparison member/key. This operator only refers to the predetermined order of members which is not necessarily an alphabetical or ascending one.
- before (time): Checks whether the base value is temporally before the comparison value. Can only be used in conjunction with a specified date format. For this, either {currentDate(format, locale)} or {date(date, format, locale)} must be used for the comparison value (see section 'Examples').
- after (time): checks whether the base value is temporally after the comparison value. Can only be used in conjunction with a specified date format. For this, either {currentDate(format, locale)} or {date(date, format, locale)} must be used for the comparison value (see section 'Examples').

The following operators are possible for the 'Measure Value (Key/Name)' type:

- less: Checks whether the base value is smaller than the entered comparison value.
- greater: Checks whether the base value is greater than the entered comparison value.
- less or equal: Checks whether the base value is less or equal to the entered comparison value.
- greater or equal: Checks whether the base value is greater or equal to the entered comparison value.

Wildcards



CURRENT DATE

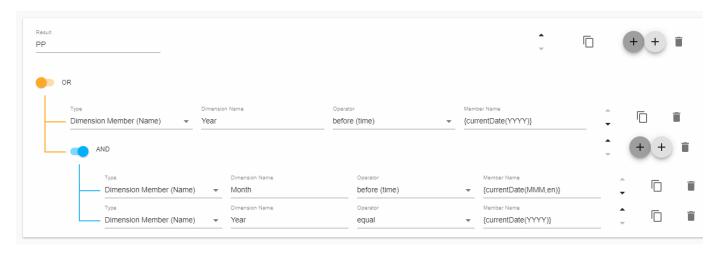
For the 'Expression Type' 'Dimension Member (Key)' or 'Dimension Member (Name)' the member key or name to be checked can be wildcarded. This feature only applies to a small amount of use cases because we do not yet offer formatter functions to match the output of the wildcard to the actual format of member keys or names. However, it can be helpful in scenarios in which the keys or names of values correspond to generally valid date formats. In the example, a new member is created with the name 'AC'. All data points that have a member with the name 'August' (as of the Month this text was written) for their dimension with the name 'Month' get assigned the data type 'AC'. The wildcard expression is structured as follows: {currentDate(format, locale)} - where the format must correspond to a valid moment and the locale ('de', 'fr' or 'en') is optional.

For example, {currentDate(MMMM,en)} corresponds to the current, written out, English month name.

NULL

For the 'Expression Type' 'Measure Value (Key)' or 'Measure Value (Name)' the member key or name to be checked can be wildcarded using **{NULL}**, which allows a comparison with null values. So if data points can contain a null value and should be checked for it, a comparative operator can be used in conjunction with **{NULL}**.

Further Examples



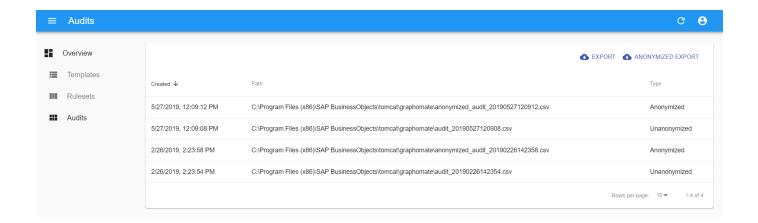
Suppose there is a time hierarchy of months and years, and you want to assign data type PP to all data points in the past. To do this, expressions must be logically linked using the different levels of the time hierarchy. This example includes all data points that are dated with past years or lie in the current year before the current month.

Audits

graphomate Auditing is used to dertermine how many different users use specific graphomate extensions.

The auditing is automatically activated when the server is installed.

All data is stored in a H2 Database. This database is stored at the *tomcat root* in a folder called *graphomate* named *auditing.db*.



Export

To export the Auditing data, you need to log in to the Admin, and click on Audits. Then you should click the "EXPORT" button. The export will run in the background, and will show a dialog when it's finished. It will tell you the path on the server where the csv file can be found. All usernames in the exported file are anonymized and stored as hash, so they can't be translated back to the real usernames. All entries in the database will be exported, not just the ones created since the last export.

The data will be exported with the following layout:

id	date of measure	username	name of component	name of the host environment	name of application	environm ent
1	11.07.2018	mmusterm ann	com.graphomate.	Power BI	TestReport	runtime

An entry will be generated, if a user opens a dashboard, that contains a graphomate component, on the BI Platform using a webbrowser. If the same browser allready created an entry for a specific component in the last few days, it will not be repeated to keep the load for the BI Platform as low as posssible.

Properties

Here are the Properties described which are located in the *graphomate property sheet* lof our extensions that are compatible with the *graphomate server*.

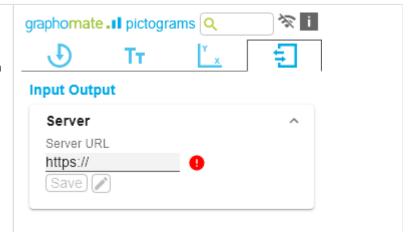
SERVER

Here you can enter the *Server URL* to which the component should connect and from which it should retrieve the templates.

If you have specified the URL to the server, a check mark indicates that a connection could be established.

If another server is used later, you can also press the button next to the Save button and edit the Server URL.

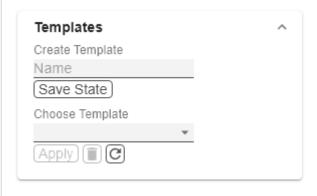
The hyperlink below the buttons allows you to jump to the admin.



TEMPLATES

If the current settings are to be saved as a template, a new template name can be entered in the input field with the name *Create Template* and confirmed by clicking the *Save State* button. If the naming convention entered is correct, the template is saved on the server and a toast with the corresponding message is displayed in the lower part of the graphomate property sheet. However, if the name entered does not meet the expected naming conventions, a toast with the permitted characters is displayed accordingly.

Templates stored on the server can be retrieved and applied via the Template List. Just select the desired template and press the *Apply* button. If you want to delete a template, select the template in the list and press the *Del ete* button. If changes have been made to the templates on the server side, the list must be updated via the *Refresh List* button. Changes should then be visible.



APPLIED RULESETS

The dropdown menue displays all rulesets which are stored at the graphomate server. A ruleset is applied when the checkbox is activated.



Known Issues

• We would like to point out that in future versions of the graphomate server the rulesets will no longer be supported.

At the moment there are no Known Issues