

# PK\_JRXML2PDF\_REPGEN

## *Introduction*

### **Description**

PK\_JRXML2PDF\_REPGEN is a pure PL/SQL-solution to generate PDF-documents from database-content, based on an jrxml-report-definition. With this, you can fully develop and test the report graphically in iReport by JasperSoft and then run the report in a database-only-environment without the need of any „middleware“ or java-tier.

### **Disclaimer**

This package does not support the full functionality of JasperReports. It supports only a subset of the possibilities as described in this document.

I tried to make the output as pixel-perfect as it is in JasperReports, but i can't guarantee it. Be sure to check the result generated with PL-jrxml2pdf.

### **Legal Disclaimer**

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### **Credits**

The actual writing of data in PDF-format is done using the great package AS\_PDF3 written by Anton Scheffer (see license-section in the package-specification), with a few additions of me.

### **License**

The software is currently available under both MIT and LGPL-licences. Choose the one which best fits your needs. Licenses are included with the software in the license-directory.

### **Document-version**

| Version | Date     | Description   |
|---------|----------|---|
| 0.6.1.1 | 16.06.12 | Initial version, matching package version 0.6.0.1                             |
| 0.6.2.1 | 01.07.12 | Description of the new install using the delivered APEX-application           |
| 0.6.3.1 | 13.07.12 | Rewrite of all XMLTABLE-usages because of strange behaviour in 11G 11.2.0.3.0 |
| 0.7.0.0 | 03.08.12 | Support for table-objects and various enhancements and bug-fixes              |
| 0.8.0.0 | 09.09.12 | Support for crosstabs and NLS. Some enhancements and bug-fixes                |
| 0.9.0.0 | 04.10.12 | Support for HTML-markup, map-component and various enhancements               |
| 1.1.3.4 | 28.12.12 | Support for charts (pie, bar and bar3D, XY-linecharts, Timeseries-            |

|         |          |  |
|---------|----------|--|
|         |          | linecharts), text-rotation and placement of title and summary-region, enhancements and corrections for tables  |
| 1.2.0.0 | 05.01.13 | Possitibility to run two or more reports after each other and putting the result into one PDF<br>Support for stacked barchart (2D and 3D)<br>Possibility to set PDF-metadata for title, author, subject and keywords   |
| 1.2.0.1 | 05.02.13 | Bug-Fixes only (see Package-header)  |
| 1.2.0.2 | 16.02.13 | Bug-Fixes only (see Package-header)  |
| 1.2.3.3 | 06.04.13 | Introduction of the new JRXML-generator (see separate document PK_JRXML2PDF_APEX2JRXML.pdf)<br>Detection and usage of currency symbol in number-formats<br>Added support for HeaderCells for crosstabs<br>new system parameters to allow the usage of custom fonts for standard font-names (see chapter fonts)<br>Various performance-changes in AS_PDF3_MOD<br>Handling of Adler32-checksum for static images |
| 1.2.4.5 | 24.10.13 | Minor enhancements and bug-fixes (see Package-Header)  |
| 1.2.4.6 | 19.04.14 | Minor enhancements and bug-fixes (see Package-Header)  |
| 1.3.0.0 | 20.06.14 | Support for variables<br>Support for stacked areacharts  |
| 1.3.1.1 | 23.08.14 | Minor enhancements and bug-fixes (see Package-Header)  |

## ***Installation***

### **DB-requirements**

1. A schema with resource-rights
2. To run the demo-report you need the tables from the APEX-demo-application
3. The packages make use of UTL\_FILE, you may need to grant access to that package
  - sqlplus sys/password
  - GRANT EXECUTE ON UTL\_FILE TO <USER>
4. The package makes use of the view NLS\_SESSION\_PARAMETERS, the grants to access it should be given by default.
5. If you want to use the map-component and you're on 11G, you need to grant access to <http://maps.google.com>, as the google api is used to render the maps. You can use the script ACL\_FOR\_GOOGLE\_MAPS.sql in the install-dir (must be run as sys)

### **Installation possibilities**

You can either do an installation the „old fashioned way“ by hand, using sqlplus, or simply install the delivered APEX-application with the supporting objects.

### **Installation of database-objects „by hand“**

1. go to the install-directory
2. connect to the database using sqlplus and your schema where you want to install to
  - sqlplus user/password
- 3a. run install.sql
  - @install.sql
  - or
- 3b. if you already have installed a version prior to 0.8.0.0
  - @upgrade\_0700\_to\_0800.sql
  - or
- 3c. if you already have installed a version prior to 0.9.0.0
  - @upgrade\_0800\_to\_0900.sql
- 3d. if you already have installed a version prior to 1.0.0.0
  - @upgrade\_0900\_to\_1000.sql
- 3e. if you already have installed a version prior to 1.1.3.4
  - @upgrade\_1000\_to\_1200.sql
- 3f. if you already have installed a version prior to 1.2.0.1
  - @upgrade\_1200\_to\_1201.sql
- 3g. if you already have installed a version prior to 1.2.0.2
  - @upgrade\_1201\_to\_1202.sql

3h. if you already have installed a version prior to 1.2.3.3

@upgrade\_1202\_to\_1233.sql

3i. if you already have installed a version prior to 1.2.4.6

@upgrade\_1245\_to\_1246.sql

3j. if you already have installed a version prior to 1.3.0.0

@upgrade\_1246\_to\_1300.sql

3k. if you already have installed a version prior to 1.3.1.1

@upgrade\_1300\_to\_1311.sql

or

3d. install tables and packages by hand (using your favorite sql-tool)

- JRXML\_REPORT\_DEFINITIONS.sql
- JRXML\_REPORT\_IMAGES.sql
- JRXML\_FONTS.sql
- JRXML\_LOGGING.sql
- JRXML-NLS\_PARAMETERS.sql
- JRXML\_RESOURCE\_FILES.sql
- JRXML\_RESOURCE\_ENTRIES.sql
- JRXML\_APEX2JRXML\_TEMPLATES.sql
- JRXML\_SEQ.sql
- AS\_PDF3\_MOD.pls
- PK\_JRXML2PDF\_LOG.pls
- PK\_JRXML2PDF\_UTIL.pls
- PK\_JRXML2PDF\_TYPES.pls
- PK\_JRXML2PDF\_LOADER.pls
- PK\_JRXML2PDF\_CHARTS.pls
- PK\_JRXML2PDF\_REPGEN.pls
- PK\_JRXML2PDF\_APEX2JRXML.pls
- INSTALL-NLS\_DATA.sql
- INSTALL\_TEMPLATES.sql

4. for using the demo-reports in the database, run demodata.sql from sqlplus

- @demodata.sql
- @demodata2.sql
- @demodata3.sql
- @demodata4.sql
- @demodata5.sql

-@demodata6.sql

## Installation by APEX

1. Install the application-export-file fl14.sql from the subdirectory apex into your workspace. This will install an application to manage all the PL-jrxml2pdf-objects and to run reports and view the result. All required DB-objects come with the install. Make sure you install the supporting objects.

- install application
- install supported objects

## Client-Requirements (for developing reports)

1. Install iReport-Designer from JasperSoft (tested with version 4.7.0), **its up to you to make sure you agree the license terms**.
2. make sure the file jrxml2pdf.jar from the directory java\_for\_ireport is the in iReport-classpath
3. The sample jrxml-files in the directory jrxml-definitions match those from the demodata.

## Running reports in batch

1. for testing reports from batch you need to create a directory in the database to output the pdf's
  - sqlplus user/password
  - CREATE DIRECTORY MY\_DIR AS 'c:\temp'
2. for testing in batch, change to directory run
  - edit run\_report.sql and set the appropriate report-name
  - sqlplus user/password
  - run\_report.sql

## Running reports from APEX (example)

1. Have a look at page 7 of the delivered APEX-application, there is a "On load-Before Header"-process which runs the report and shows the result. You can use a similar page in your application.

Alternatively..

1. Create a button on the page you want to call your report from, make it submit the page with a specific request, e.g. RUNREPORT
2. Create a page process "On submit, after validations and computations" of type PL/SQL with something like

```
DECLARE
    vcName  VARCHAR2(200);
    lParams PK_JRXML2PDF_REPGEN.TPARAMLIST;
    b1      BLOB;
BEGIN
    vcName:='THE_NAME_OF_YOUR_REPORT_IN_JRXML_REPORT_DEFINITIONS';
```

```
    b1      :=PK_JRXML2PDF_REPGEN.FK_RUN(i_vcName=>vcName);  
    PK_JRXML2PDF_REPGEN.PR_SHOW_REPORT(b1);  
    APEX_APPLICATION.STOP_APEX_ENGINE;  
END;
```

## Feature-Overview

The package is capable of „running“ a jrxml-report inside the database. The result is either returned as a blob, or stored in a directory as file. For the usage in Oracle APEX there is also a helper method to show a blob in a page.

## Report structure

The basic structure of a report is so that you have a query which provides the data for the report. The query in the report-definition is parsed and executed using DBMS\_SQL, so it provides the full SQL-possibilities of the used database-version.

A set of so called regions which contain the objects to be rendered in the report organized in one or more bands. The regions are rendered in a certain order:

| Region              | Rendered when  |
|---------------------|--|
| Title-region        | Rendered once at start of the report                               |
| Pageheader-region   | Rendered once after the title-region and at the start of each page |
| Columnheader-region | Once on each page above the detail-region                          |
| Detail-region       | Rendered once for each record in the query-result                  |
| Columnfooter-region | Once on each page below the detail-region                          |
| Pagefooter-region   | Rendered at the end of each page                                   |
| Summary-region      | Rendered once at end of the report                                 |
| Background-region   | Rendered on each page as background                                |
| Last page footer    | Not supported yet  |
| No data             | Not supported yet  |

## Subreports

Inside a region you can place an object named „subreport“. A subreport is a separate report-definition which is rendered „inside“ the calling master-report. With that you can build up structures like master-detail-reports or even deeper nested reports. Currently its recommended to use only one subreport per band, if you need more subreports, use one band for each subreport. Its possible to pass parameters from a master-report to a subreport. Also its possible to takeover returnvalues from the subreport into a variable in the main-report.

## Tables

Instead of using a subreport to build up a master-detail-structure, you can also use a tabe-object, as long as your detail should be shown in a tabular way. Advantage of the table-object over a subreport is, that you do not need a separate report-definition. Another advantage is, that you can apply a when-condition to a column or column-group. If the when-condition doesn't return true, the whole column is not rendered all all following column while mobve to the left to „fit the gap“.

column-groups can be nested, so you can have a column-group inside a column-group. Currently, PL-JRXML2PDF supports a when-condition only on the top-level columns and column-groups.

A table-object consists of one or more column's or column-groups. The structure is similar to the report-structure, so you can have

| Object-type    | Rendered when                                     |
|----------------|---|
| tableHeader    | Rendered once at start of the table               |
| columnHeader   | Once on each page above the detailCell            |
| detailCell     | Rendered once for each record in the query-result |
| columnFooter   | Once on each page below the detailCell            |
| Summary-region | Rendered once at end of the table                 |

## Crosstabs

Crosstabs or matrix-reports are supported. You can have unlimited numbers of rowgroups, columngroups and measures. Currently supported measure-functions are

- Count
- Sum
- Highest
- Lowest
- Nothing
- Average

Total-Headers are supported for both rows and columns, positioning can be Start or End. The functionality with intermediate-variables to access summary-information at inner levels is supported. For examples, check the samples „crosstab\_orders“ and „crosstab\_chess“.

## Map-component

The map-component can be used to render a map based on latitude/longitude-values by using the Google-Maps-API. The map is rendered by using HTTPURITYPE and needs the appropriate grants to access the google-api-url <http://maps.google.com>. Be sure to read the usage-notes for the static map api (<https://developers.google.com/maps/documentation/staticmaps>) and be sure to agree with it, especially the usage limits.

## Fonts

### Standard fonts

PK\_JRXML2PDF\_REPGEN supports the standard fonts

- „Times New Roman“
- „Arial“
- „Courier New“
- „WingDings“

all in the styles Standard, Bold, Italic and BoldItalic. Since version 1.2.3.3 it possible to use „Arial“, „Courier New“ or „Times New Roman“ as font in a report-element, but not use the internal fonts but custom fonts from the fonts-table. To do so, add one of the following parameters along with a parameter-value of „Y“ to the report-generation-call:

- \$\$EXTERNAL\_FONT\_ARIAL\$\$ - the font for Arial is loaded from the font-table
- \$\$EXTERNAL\_FONT\_TIMES\$\$ - the font for Times New Roman is loaded from the font-table
- \$\$EXTERNAL\_FONT\_COURIER\$\$ - the font for Courier new is loaded from the font-



table

## Custom fonts

Custom ttf-fonts are supported and handled the following way

A ttf-fontfile contains one font in one specific style (Standard, Bold, Italic, BoldItalic). If a font supports more than the style „Standard“, there will be one ttf-file for each supported style (on Windows, open system control panel->fonts to find out the what styles are supported by a font and what filename the ttf-font is stored in).

If a custom font should be used in a report, it has to be loaded into the table JRXML\_FONTS first. Create a record for each font and style you want to use in JRXML\_FONTS and load the ttf-fontfile in the BLOB-column JRF\_FONT. The setting of the column JRF\_NAME must follow certain rules:

- For a font in style standard, set the name to „<Fontname>“
- For a font in style bold, set the name to „<Fontname>-Bold“
- For a font in style italic, set the name to „<Fontname>-Italic“
- For a font in style BoldItalic, set the name to „<Fontname>-BoldItalic“

where <Fontname> is the name of the font as shown in the font-properties in the report-definition. Be aware that the fontname is case-sensitive.

The column JRF\_TYPE must be set to „TTF“, ttc-fonts are currently not supported.

If a font with a specific style is used in a report-definition and cannot be found in JRXML\_FONTS according to the naming conventions, PK\_JRXML2PDF\_REPGEN will try to use the specified font in the style Standard, if that font is also not found, the font is set to the standard font Arial.

If a font with the style Standard is used in a report-definition and cannot be found in JRXML\_FONTS according to the naming conventions, PK\_JRXML2PDF\_REPGEN will use the standard font Arial.

## Images

PK\_JRXML2PDF\_REPGEN supports both „static“ images like company logos (stored in the JRXML\_REPORT\_IMAGES-table) and „data“-images (image-items with a BLOB-column as expression). Currently supported are GIF, JPG and PNG-images. Be aware that images with Alpha-channels are not supported and will look distorted in the resulting pdf. Also images must be 24bit-images (8-bit grayscale is not supported).

## Expressions

There are several properties for different objects which contain expression. Expressions can contain

- static data and references to
- fields from the query
- parameters passed to the report
- variables defined in the report.

Expressions are currently supported in the following cases

- in the property „textFieldExpression“ to define the content of a specific object to be printed
- in the property „groupExpression“ to define the value of a grouping
- in the property „printWhenExpression“ to suppress the printing of objects or whole bands
- in the property „conditionExpression“ to apply conditional styles based on some condition.

Expressions can contain formulas and calculations, they are evaluated using EXECUTE

IMMEDIATE and therefore have to be valid SQL-logic. The most common java-conditions are allowed and mapped to the appropriate SQL.

Currently supported in expressions are

- literals, enclosed by „“
- + used as concatenation (not numeric addition)
- > for greater
- >= for greater or equal
- < for less
- <= for less or equal
- == for equal
- != for not equal
- ==null for IS NULL
- !=null for IS NOT NULL
- „new java.util.Date()“ for SYSDATE
- || for logical OR
- && for logical AND
- „jrxml2pdf.Wrappers.mod“ for MOD (used for row-banding)
- ! for NOT
- startsWith for LIKE

For textfields there is the possibility to define a evaluation-time, which determines when the expression is evaluated. Default is „Now“ which means at the moment the field occurs in the rendering-order of the items.

When evaluationTime is set to „Report“, the expression is evaluated at the end of the report (but positioned at the place where it should be based on the rendering-order). This can be used to print the total number of pages.

When evaluationTime is set to „Group“, the expression is evaluated at each change of a group-entry (but positioned at the place where it should be based on the rendering-order). This can be used to print the total number of pages when the property isResetPageNumber for the group is set to true.

## Groups

Groups are used to structure data and layout according to the content of a specific field. Groups can also be used to build up a master-detail-like structure. Groups have one or more headers and one or more details. Groups are supported, see features by object-type for specific properties.

## Variables

Starting with version 1.3.0.0 the usage of variables is supported. A variable is a value-store used to do calculations over more than one record (similar to the aggregate-function in sql). Variable have a reset-type, which defines when the value of the variable it resetted to null or the given initial-value, and have an increment-type, which defines when a variables is incremented with the amount specifec in the value-expression. Supported are the following calculations:

- Nothing
- Sum
- Avg
- Lowest
- Highest

- First

and the following reset- and increment-types

- Report
- Group
- Page
- None (each record)

Variables can be used as report-level-objects to calculate variables based on the main query, but you can also define variables in a sub-dataset and use them e.g. in the row and group-elements of a table-component.

Lastly, its also possible to takeover return-values from a subreport and use them in the main-report.

## Stretching fields

If a field-value is larger then the defined „rectangle“ to hold the text, there are two possibilities controlled by the property „isStretchWithOverflow“. If this is not set or set to false, text not fitting in the rectangle is truncated. If the property is set to true, the field will stretch vertically, means the width will stay the same, but the height will be increased so that the whole text is shown. If you have a table with several fields and borders around the fields, where one of them may stretch, this can result in „ugly“ looking tables. Setting the property „stretchType“ to „RelativeToBandHeight“ at the not stretching items will make them also stretch to the same size as the largest stretched item. Using the position-type you can „pin“ fields either relative to the top (which is the standard), or relative to bottom, which means the element moves along as the field „grows“.

You can have a frame around a region stretching over more than one page, but there is currently an implementation restriction: this frame cannot have a opaque background. If you have set the Opaque, the frames contents may be „hidden“ by the frame itself.

## NLS/Locale

PL-jrxml2pdf supports internationalization of reports. For this, you can use the \$R{}-syntax in textfield-expressions, to address a resource-file-entry instead of given a fixed text. Resource-files are stored in the table JRXML\_RESOURCE\_FILES and are split at first use into JRXML\_RESOURCE\_ENTRIES.

You can define the locale to use when running a report by passing the parameter REPORT\_LOCALE with a valid locale in java-syntax (like „en\_US“). If no locale is passed, the locale is derived from the NLS-settings of the DB-session.

All date-, time- and numeric-related settings are read from JRXML-NLS\_PARAMETERS with the reports locale. The date- and time-formats „short“, „medium“, „long“ and „default“ are now supported.

The msg()-function in an expression can be used to build a text with placeholders.

Currently missing is RTL-support in tables and crosstabs and support for timezones.

## HTML-markup

PL-jrxml2pdf supports the markup-type „html“ for textfields. If set, the content is treated as HTML and will be rendered appropriately. Be aware that only a subset of HTML-tags are supported. The initial HTML-rendering-possibilities were needed to properly reproduce HTML which was entered in an APEX-Rich-Text-editor which details set to „Intermediate“, so supported tags are

- h1
- h2
- h3
- h4
- br
- p
- ul
- ol
- li
- pre
- code
- span

and properties for

- font
- font-size
- color

The default font, font-size and color is taken from the definitions from the textfield itself. By default h1, h2, h3 and h4-tags are rendered in the same size as „standard“ text (as this is the way Jasper-reports does it). You can change that behaviour by putting the text „enhanced“ the the „key“-property of the textfield. If done, the headers will render with different font-sizes.

## ***Charts***

Starting with version 1.0.0.0 there is support for charts. Charts are rendered directly into the resulting pdf using PDF-drawing-capabilities.

Currently supported are

- barcharts
- 3D-barcharts
- piecharts
- linecharts (category-linecharts, XY-linecharts, timeseries-linecharts)

You can use the main-report-query as dataset or a defined sub-dataset. Currently, you cannot use the group-functions for the chart-data, always the whole dataset is taken. If you have to restrict data, use a sub-dataset with a parameter.

The customizerclass-attribute can be used to have fine grained control over how the chart looks in detail. If this attribute is filled, its treated as the name of a procedure (either standalone or in a package). This procedure is called immediatly before rendering the chart. Inside the procedure, the chart can be modified by modifying the package-global

PK\_JRXML2PDF\_CHARTS.rCustomizableChart. This chart-definition is readymade form the jrxml-definition and is taken after the procedure-call to do the final rendering.

## Concatenating several reports into one PDF

You can run several reports after each other and have the result concatenated into one pdf. You can do so calling the new overloaded FK\_RUN with a list of report-names. You can decide whether the page-numbering starts with one for each report inside the resulting pdf, or if the pages are numbered over all reports.

## Setting pdf-metadata-properties

When giving values for the internal parameters \$\$TITLE\$\$, \$\$AUTHOR\$\$, \$\$SUBJECT\$\$ and \$\$KEYWORDS\$\$ you can set the pdf-metadata-values for Title, Author, subject and Keywords.

## Supported properties by Object-type

All property-names are those present in the xml-structure of the report-definition, not those shown in iReports.

## Report-properties

|                                   |  |
|-----------------------------------|--|
| @pageWidth                        | Width of the page  |
| @pageHeight                       | Height of the page   |
| @leftMargin                       | Left margin  |
| @rightMargin                      | Right margin   |
| @topMargin                        | Top margin   |
| @bottomMargin                     | Bottom margin  |
| queryString                       | Query to execute (currently limited to 32767 chars)  |
| @isFloatColumnFooter              | controls whether columnfooters are printed immediately after the details or at the page-bottom             |
| @resourceBundle                   | name of the Resource-bundle to use. Resource with this name must exist in the Resource-Files-tables        |
| subDataset                        | 0-n subdataset for tables  |
| @isTitleNewPage                   | Defines if the title is rendered on a separate page  |
| @isSummaryNewPage                 | Defines if the summary is rendered on a separate page  |
| @isSummaryWithPageHeaderAndFooter | Defines if a page-header and footer are rendered on the summary-page (only when @isSummaryNewPage is true) |
| title                             | region for title   |
| summary                           | region for summary   |
| pageHeader                        | region for page-header   |
| pageFooter                        | region for page-footer   |
| columnHeader                      | region for column-header   |

|              |                          |
|--------------|--------------------------|
| columnFooter | region for column-footer |
| detail       | region for detail        |
| background   | region for background    |
| variable     | 0-n variables            |

## subDataset-properties

|             |   |
|-------------|---|
| @name       | name of the subdataset, referenced by the dataset used in a table |
| queryString | query for the subdataset  |
| variable    | 0-n variables   |

## variable-properties

|                        |  |
|------------------------|--|
| @name                  | name of the variable   |
| @class                 | class for datatype   |
| @calculation           | calculation for the variable supported are<br>Nothing<br>Count<br>Sum<br>Highest<br>Lowest<br>Average<br>First                 |
| @resetType             | level at which the variables value is resetted, supported are<br>Report<br>Group<br>Page<br>None                               |
| @resetGroup            | Name of the reset-group, if resetType is Group   |
| @incrementType         | level at which the variables value is incremented by the variable expression, supported are<br>Report<br>Group<br>Page<br>None |
| @incrementGroup        | Name of the increment-group, if incrementType is Group   |
| variableExpression     | Expression to be evaluated to calculate the variables increment  |
| initialValueExpression | Expression to be evaluated to calculate the value to be shown for the variable before it is calculated the first ime           |

## Style-properties

|                            |   |
|----------------------------|---|
| @name                      | name  |
| @backcolor                 | background-color  |
| @forecolor                 | foreground-color  |
| box/pen/@lineWidth         | linewidth for all lines of a box, if the specific pen is not applied  |
| box/topPen/@lineWidth      | linewidth for top-line of a box   |
| box/bottomPen/@lineWidth   | linewidth for bottom-line of a box  |
| box/leftPen/@lineWidth     | linewidth for left line of a box  |
| box/rightPen/@lineWidth    | linewidth for right line of a box   |
| box/pen/@lineColor         | linecolor for all line of a box, if the specific pen is not applied   |
| box/topPen/@lineColor      | linecolor for top-line of a box   |
| box/bottomPen/@lineColor   | linecolor for bottom-line of a box  |
| box/leftPen/@lineColor     | linecolor for left line of a box  |
| box/rightPen/@lineColor    | linecolor for right line of a box   |
| box/@topPadding            | space between top of a box and vertical start of text   |
| box/@bottomPadding         | space between bottom of a box and vertical end of text  |
| box/@leftPadding           | space between left of a box and horizontal start of text  |
| box/@rightPadding          | space between right of a box and horizontal end of text   |
| paragraph/@lineSpacing     | Linespacing, supported values are <ul style="list-style-type: none"> <li>• Single</li> <li>• 1_1_2</li> <li>• Double</li> <li>• Proportional</li> </ul> |
| paragraph/@lineSpacingSize | Custom Value for linespacing when lineSpacing is set to „Proportional“  |
| @fontName                  | Font-name (see fonts)   |
| @fontSize                  | font size   |
| @isBold                    | flag for bold text  |
| @isItalic                  | flag for italic text  |
| pen/@lineWidth             | linewidth   |
| @textAlignment             | horizontal text-alignment   |
| @verticalAlignment         | vertical text-alignment   |
| @mode                      | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“  |

|                                      |   |
|--------------------------------------|---|
| conditionalStyle                     | 0-n conditional styles to be applied when certain conditions evaluate to true |
| conditionalStyle/conditionExpression | Expression to evaluate to check if the conditional style should be applied    |
| conditionalStyle/style               | same as style   |

## Group-properties

|                            |   |
|----------------------------|---|
| @name                      | Name  |
| groupExpression            | Expression on which group changes occur   |
| @isStartNewPage            | Flag, if each group-entry should start on a new page  |
| @isResetPageNumber         | flag, if the page-numbering should be reset for each group-entry  |
| @isReprintHeaderOnEachPage | when set to true, repeats the groupheader on each page of the group   |
| @minHeightToStartNewPage   | the minimum space which must be available on the current page to start rendering the group, otherwise a page-break is done before rendering the group |
| groupHeader                | Region for group header   |
| groupFooter                | Region for group footer   |

## Region-properties

|      |   |
|------|---|
| band | one or more bands with objects to render (not all regions support multiple bands) |
|------|---|

## Band-properties

|                     |   |
|---------------------|---|
| @height             | height of the band  |
| @splitType          | defines the way a band may be split when reaching the page-footer |
| printWhenExpression | Expression to evaluate to check if the band should be rendered    |
| line                | 0-n lines   |
| rectangle           | 0-n rectangles  |
| staticText          | 0-n static texts  |
| frame               | 0-n frames  |
| textField           | 0-n textfields  |
| image               | 0-n images  |
| break               | 0-n breaks  |



|                 |                           |
|-----------------|---------------------------|
| subreport       | 0-n subreports            |
| table           | 0-n tables                |
| map             | 0-n maps                  |
| barChart        | 0-n barcharts             |
| bar3DChart      | 0-n 3D-barcharts          |
| pieChart        | 0-n piecharts             |
| lineChart       | 0-n linecharts            |
| xyLineChart     | 0-n xy-linecharts         |
| timeSeriesChart | 0-n timeseries-linecharts |

## Frame-properties

|                             |  |
|-----------------------------|--|
| reportElement/@x            | x-position of the frame  |
| reportElement/@y            | y-position of the frame  |
| reportElement/@width        | width of the frame   |
| reportElement/@height       | height of the frame  |
| reportElement/@style        | name of the style to apply to the frame                                      |
| printWhenExpression         | Expression to evaluate to check if the frame should be rendered              |
| reportElement/@backcolor    | background-color   |
| reportElement/@forecolor    | foreground-color   |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom                               |
| box/pen/@lineWidth          | box/pen/@lineWidth   |
| box/topPen/@lineWidth       | linewidth for top-line of a box  |
| box/bottomPen/@lineWidth    | linewidth for bottom-line of a box   |
| box/leftPen/@lineWidth      | linewidth for left line of a box   |
| box/rightPen/@lineWidth     | linewidth for right line of a box  |
| box/pen/@lineColor          | linecolor for all line of a box, if the specific pen is not applied          |
| box/topPen/@lineColor       | linecolor for top-line of a box  |
| box/bottomPen/@lineColor    | linecolor for bottom-line of a box   |
| box/leftPen/@lineColor      | linecolor for left line of a box   |
| box/rightPen/@lineColor     | linecolor for right line of a box  |
| @mode                       | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“ |
| line                        | 0-n lines  |
| rectangle                   | 0-n rectangles   |

|            |                  |
|------------|------------------|
| staticText | 0-n static texts |
| frame      | 0-n frames       |
| textField  | 0-n textfields   |
| image      | 0-n images       |
| break      | 0-n breaks       |
| subreport  | 0-n subreports   |
| table      | 0-n tables       |
| crosstab   | 0-n crosstabs    |
| map        | 0-n maps         |

## Line-properties

|                               |  |
|-------------------------------|--|
| reportElement/@x              | x-position of the line   |
| reportElement/@y              | y-position of the line   |
| reportElement/@width          | width of the line  |
| reportElement/@height         | height of the line   |
| reportElement/@style          | name of the style to apply to the line                         |
| reportElement/@stretchType    | stretchtype (see stretching fields)                            |
| reportElement/@positionType   | either FixRelativeToTop or FixRelativeToBottom                 |
| printWhenExpression           | Expression to evaluate to check if the line should be rendered |
| reportElement/@backcolor      | background-color   |
| graphicElement/pen/@lineWidth | linewidth  |
| graphicElement/pen/@lineColor | color of the line  |

currently only vertical and horizontal lines are supported

## Rectangle-properties

|                             |   |
|-----------------------------|---|
| reportElement/@x            | x-position of the rectangle   |
| reportElement/@y            | y-position of the rectangle   |
| reportElement/@width        | width of the rectangle  |
| reportElement/@height       | height of the rectangle   |
| reportElement/@style        | name of the style to apply to the rectangle                         |
| reportElement/@stretchType  | stretchtype (see stretching fields)                                 |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom                      |
| printWhenExpression         | Expression to evaluate to check if the rectangle should be rendered |
| reportElement/@backcolor    | background-color  |

|                               |  |
|-------------------------------|--|
| reportElement/@forecolor      | foreground-color (only used if graphicElement/pen/@lineColor is not set)     |
| graphicElement/pen/@lineWidth | linewidth  |
| graphicElement/pen/@lineColor | color of the line  |
| @mode                         | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“ |

## StaticText-properties

|                             |  |
|-----------------------------|--|
| reportElement/@x            | x-position of the textbox  |
| reportElement/@y            | y-position of the textbox  |
| reportElement/@width        | width of the textbox   |
| reportElement/@height       | height of the textbox  |
| reportElement/@style        | name of the style to apply to the text and box                       |
| reportElement/@stretchType  | stretchtype (see stretching fields)                                  |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom                       |
| printWhenExpression         | Expression to evaluate to check if the text should be rendered       |
| reportElement/@backcolor    | background-color for the box   |
| reportElement/@forecolor    | foreground-color (only used if boxcolors are not set)                |
| box/pen/@lineWidth          | linewidth for all lines of a box, if the specific pen is not applied |
| box/topPen/@lineWidth       | linewidth for top-line of the box                                    |
| box/bottomPen/@lineWidth    | linewidth for bottom-line of the box                                 |
| box/leftPen/@lineWidth      | linewidth for left line of the box                                   |
| box/rightPen/@lineWidth     | linewidth for right line of the box                                  |
| box/pen/@lineColor          | linecolor for all line of a box, if the specific pen is not applied  |
| box/topPen/@lineColor       | linecolor for top-line of the box                                    |
| box/bottomPen/@lineColor    | linecolor for bottom-line of the box                                 |
| box/leftPen/@lineColor      | linecolor for left line of the box                                   |
| box/rightPen/@lineColor     | linecolor for right line of a box                                    |
| box/@topPadding             | space between top of the box and vertical start of text              |
| box/@bottomPadding          | space between bottom of the box and vertical end of text             |
| box/@leftPadding            | space between left of the box and horizontal start of text           |
| box/@rightPadding           | space between right of the box and horizontal                        |

|                                |  |
|--------------------------------|--|
|                                | end of text  |
| textElement/font/@fontName     | Font-name (see fonts)  |
| textElement/font/@fontSize     | font size  |
| textElement/font/@isBold       | flag for bold text   |
| textElement/font/@isItalic     | flag for italic text   |
| textElement/@textAlignment     | horizontal text-alignment  |
| textElement/@verticalAlignment | vertical text-alignment  |
| textElement/@rotation          | Rotation of the text   |
| reportElement/@mode            | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“ |
| text                           | the text to render   |

## Textfield-properties

|                             |  |
|-----------------------------|--|
| reportElement/@x            | x-position of the textbox  |
| reportElement/@y            | y-position of the textbox  |
| reportElement/@width        | width of the textbox   |
| reportElement/@height       | height of the textbox  |
| reportElement/@style        | name of the style to apply to the text and box   |
| reportElement/@stretchType  | stretchtype (see stretching fields)  |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom   |
| reportElement/@key          | only used in markup html. If set like „enhanced %“, special html-tags are rendered different from Jasper-standard. |
| printWhenExpression         | Expression to evaluate to check if the text should be rendered   |
| reportElement/@backcolor    | background-color for the box   |
| reportElement/@forecolor    | foreground-color (only used if boxcolors are not set)  |
| box/pen/@lineWidth          | linewidth for all lines of a box, if the specific pen is not applied   |
| box/topPen/@lineWidth       | linewidth for top-line of the box  |
| box/bottomPen/@lineWidth    | linewidth for bottom-line of the box   |
| box/leftPen/@lineWidth      | linewidth for left line of the box   |
| box/rightPen/@lineWidth     | linewidth for right line of the box  |
| box/pen/@lineColor          | linecolor for all line of a box, if the specific pen is not applied  |
| box/topPen/@lineColor       | linecolor for top-line of the box  |
| box/bottomPen/@lineColor    | linecolor for bottom-line of the box   |

|  |   |
|--|---|
| box/leftPen/@lineColor                 | linecolor for left line of the box  |
| box/rightPen/@lineColor                | linecolor for right line of a box   |
| box/@topPadding                        | space between top of the box and vertical start of text   |
| box/@bottomPadding                     | space between bottom of the box and vertical end of text  |
| box/@leftPadding                       | space between left of the box and horizontal start of text  |
| box/@rightPadding                      | space between right of the box and horizontal end of text   |
| textElement/font/@fontName             | Font-name (see fonts)   |
| textElement/font/@fontSize             | font size   |
| textElement/font/@isBold               | flag for bold text  |
| textElement/font/@isItalic             | flag for italic text  |
| textElement/@textAlignment             | horizontal text-alignment   |
| textElement/@verticalAlignment         | vertical text-alignment   |
| textElement/@rotation                  | Rotation of the text  |
| textElement/@markup                    | supported are empty for normal text or html for html-rendering  |
| textElement/paragraph/@lineSpacing     | Linespacing, supported values are <ul style="list-style-type: none"> <li>• Single</li> <li>• 1_1_2</li> <li>• Double</li> <li>• Proportional</li> </ul> |
| textElement/paragraph/@lineSpacingSize | Custom Value for linespacing when lineSpacing is set to „Proportional“  |
| textFieldExpression                    | expression which is evaluated, result is the text to render   |
| @pattern                               | format mask, apply to date-fields and number-fields   |
| @patternExpression                     | an expression which result in a format mask, the \$R{}-syntax can be used to use a pattern from the resource-files                                      |
| @isStretchWithOverflow                 | flag, if the textbox may „grow“ with the text (see stretching fields)   |
| reportElement/@isPrintRepeatedValues   | flag, if text is rendered when the evaluated expression has the same result as in the line above the current line                                       |
| reportElement/@mode                    | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“  |
| @evaluationTime                        | time, when the expression should be evaluated (see expressions)   |

|                  |   |
|------------------|---|
| @evaluationGroup | group, at which an expression with evaluationTime="Group" should be evaluated |
|------------------|---|

## Image-properties

|                             |   |
|-----------------------------|---|
| reportElement/@x            | x-position of the image-rectangle                               |
| reportElement/@y            | y-position of the image-rectangle                               |
| reportElement/@width        | width of the image-rectangle                                    |
| reportElement/@height       | height of the image-rectangle                                   |
| reportElement/@style        | name of the style to apply to the image and box                 |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom                  |
| printWhenExpression         | Expression to evaluate to check if the image should be rendered |
| reportElement/@backcolor    | background-color for the box                                    |
| reportElement/@forecolor    | foreground-color (only used if boxcolors are not set)           |
| box/topPen/@lineWidth       | linewidth for top-line of the image-rectangle                   |
| box/bottomPen/@lineWidth    | linewidth for bottom-line of the image-rectangle                |
| box/leftPen/@lineWidth      | linewidth for left line of the image-rectangle                  |
| box/rightPen/@lineWidth     | linewidth for right line of the image-rectangle                 |
| box/topPen/@lineColor       | linecolor for top-line of the image-rectangle                   |
| box/bottomPen/@lineColor    | linecolor for bottom-line of the image-rectangle                |
| box/leftPen/@lineColor      | linecolor for left line of the image-rectangle                  |
| box/rightPen/@lineColor     | linecolor for right line of a image-rectangle                   |
| imageExpression             | name of the image (for static images) or expression             |

## break-properties

|                                   |   |
|-----------------------------------|---|
| reportElement/@y                  | y-Position  |
| reportElement/printWhenExpression | Expression to evaluate to check if the break should be rendered |

## subreport-properties

|                     |  |
|---------------------|--|
| reportElement/@x    | x-position of the subreport  |
| reportElement/@y    | y-position of the subreport  |
| subreportExpression | name of the subreport either with fullpath or as expression, both will be deleted (see subreports) |
| subreportParameter  | 0-n subreport-parameters, both with  |

|   |  |
|---|--|
| subreportParameter/@name                        | name of the parameter  |
| subreportParameter/subreportParameterExpression | expression to evaluate for the value which should be passed for the parameter                          |
| returnValue                                     | 0-n returnvalues, each with  |
| returnValue/@subreportVariable                  | name of the variable in the subreport, from which the value should be returned to the calling-report   |
| returnValue/@toVariable                         | name of the variable in the calling-report, into which the value from the subreport should be returned |
| returnValue/@calculation                        | The calculation to be applied when taking the value to the toVariable                                  |

## map-properties

|                             |  |
|-----------------------------|--|
| reportElement/@x            | x-position of the image-rectangle                                  |
| reportElement/@y            | y-position of the image-rectangle                                  |
| reportElement/@width        | width of the image-rectangle                                       |
| reportElement/@height       | height of the image-rectangle                                      |
| reportElement/@style        | name of the style to apply to the image and box                    |
| reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom                     |
| printWhenExpression         | Expression to evaluate to check if the image should be rendered    |
| reportElement/@backcolor    | background-color for the box                                       |
| reportElement/@forecolor    | foreground-color (only used if boxcolors are not set)              |
| box/topPen/@lineWidth       | linewidth for top-line of the image-rectangle                      |
| box/bottomPen/@lineWidth    | linewidth for bottom-line of the image-rectangle                   |
| box/leftPen/@lineWidth      | linewidth for left line of the image-rectangle                     |
| box/rightPen/@lineWidth     | linewidth for right line of the image-rectangle                    |
| box/topPen/@lineColor       | linecolor for top-line of the image-rectangle                      |
| box/bottomPen/@lineColor    | linecolor for bottom-line of the image-rectangle                   |
| box/leftPen/@lineColor      | linecolor for left line of the image-rectangle                     |
| box/rightPen/@lineColor     | linecolor for right line of a image-rectangle                      |
| map/latitudeExpression      | latitude to use as the center of the map                           |
| map/longitudeExpression     | longitude to use as the center of the map                          |
| map/zoomExpression          | Zoom-level as defined by Google (0-earth, +21 individual building) |

## table-properties

|  |  |
|--|--|
| reportElement/@x                                       | x-position of the table  |
| reportElement/@y                                       | y-position of the table  |
| reportElement/@width                                   | width of the table   |
| reportElement/printWhenExpression                      | expression, if the table should be rendered  |
| reportElement/@style                                   | style for the table, used are the border-elements                                    |
| datasetRun/@subDataset                                 | the dataset to be used as the tables query (see subDataset-property at report-level) |
| datasetRun/datasetParameter/@name                      | name of the parameter to pass to the subDataset                                      |
| datasetRun/datasetParameter/datasetParameterExpression | expressions to evaluate for the value which should be passed for the parameter       |
| column   | 0-n columns  |
| columnGroup  | 0-n columnngroups  |

## column-properties

|                     |   |
|---------------------|---|
| @width              | width of the column   |
| printWhenExpression | expression, if the column should be rendered (only for top-level-columns) |
| columnGroup         | 0-n columnngroups   |
| tableHeader         | 0-1 table-headers   |
| columnHeader        | 0-1 column-headers  |
| detail-cell         | 0-1 detail-cells  |
| columnFooter        | 0-1 column-footers  |
| tableFooter         | 0-1 table-footers   |

## properties for tableHeader, colmnHeader, detailCell, columnFooter and tableFooter

|                          |   |
|--------------------------|---|
| @height                  | height of the object  |
| box/pen/@lineWidth       | linewidth for all lines of the object-box, if the specific pen is not applied |
| box/topPen/@lineWidth    | linewidth for top-line of the object-box                                      |
| box/bottomPen/@lineWidth | linewidth for bottom-line of the object-box                                   |
| box/leftPen/@lineWidth   | linewidth for left line of the object-box                                     |
| box/rightPen/@lineWidth  | linewidth for right line of the object-box                                    |
| box/pen/@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied  |
| box/topPen/@lineColor    | linecolor for top-line of the object-box                                      |
| box/bottomPen/@lineColor | linecolor for bottom-line of the object-box                                   |
| box/leftPen/@lineColor   | linecolor for left line of the object-box                                     |



|                         |  |
|-------------------------|--|
| box/rightPen/@lineColor | linecolor for right line of the object-box |
| @style                  | style for the object                       |
| line                    | 0-n lines                                  |
| rectangle               | 0-n rectangles                             |
| staticText              | 0-n static texts                           |
| frame                   | 0-n frames                                 |
| textField               | 0-n textfields                             |
| image                   | 0-n images                                 |
| break                   | 0-n breaks                                 |
| subreport               | 0-n subreports                             |
| table                   | 0-n tables                                 |

## columnGroup-properties

|                     |   |
|---------------------|---|
| @width              | width of the column-group   |
| printWhenExpression | expression, if the column-group should be rendered (only for top-level-column-groups) |
| column              | 0-n columns   |
| columnGroup         | 0-n columngroups  |
| tableHeader         | 0-1 table-headers   |
| columnHeader        | 0-1 column-headers  |
| columnFooter        | 0-1 column-footers  |
| tableFooter         | 0-1 table-footers   |

## crosstab-properties

|   |   |
|---|---|
| reportElement/@x                              | x-position of the crosstab  |
| reportElement/@y                              | y-position of the crosstab  |
| reportElement/@width                          | width of the crosstab   |
| reportElement/printWhenExpression             | expression, if the crosstab should be rendered  |
| reportElement/@style                          | style for the crosstab, used are the border-elements                                    |
| @isRepeatRowHeaders                           | If true, rowheaders are repeated if there is a page-overflow for rows                   |
| @isRepeatColumnHeaders                        | If true, columnheaders are repeated if there is a page-overflow for columns             |
| @columnBreakOffset                            | space between two crosstab-areas when having a column-break                             |
| crosstabDataset/datasetRun/@subDataset        | the dataset to be used as the crosstabs query (see subDataset-property at report-level) |
| crosstabDataset/datasetRun/datasetParameter/@ | name of the parameter to pass to the subDataset   |

|  |  |
|--|--|
| name   |  |
| crosstabDataset/datasetRun/datasetParameter/datasetParameterExpression | expressions to evaluate for the value which should be passed for the parameter |
| rowGroup   | 0-n rowgroups  |
| columnGroup  | 0-n columngroups   |
| measure  | 0-n measures   |
| crosstabCell   | 0-n crosstab-cells   |

## crosstab-rowgroup-properties

|   |   |
|---|---|
| @name   | name of the rowgroup  |
| @width  | width of the rowgroup   |
| @totalPosition  | total-position, Start or End  |
| @headerPosition   | header-position, Top, Middle or bottom  |
| bucket/bucketExpression                                 | Expression for the row-buckets  |
| bucket/@order   | ordering of the buckets, Ascending or descending                              |
| bucket/@class   | class of data   |
| Visual properties for crosstab-Header                   |   |
| crosstabRowHeader/cellContents/box/pen/@lineWidth       | linewidth for all lines of the object-box, if the specific pen is not applied |
| crosstabRowHeader/cellContents/box/topPen/@lineWidth    | linewidth for top-line of the object-box                                      |
| crosstabRowHeader/cellContents/box/bottomPen/@lineWidth | linewidth for bottom-line of the object-box                                   |
| crosstabRowHeader/cellContents/box/leftPen/@lineWidth   | linewidth for left line of the object-box                                     |
| crosstabRowHeader/cellContents/box/rightPen/@lineWidth  | linewidth for right line of the object-box                                    |
| crosstabRowHeader/cellContents/box/pen/@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied  |
| crosstabRowHeader/cellContents/box/topPen/@lineColor    | linecolor for top-line of the object-box                                      |
| crosstabRowHeader/cellContents/box/bottomPen/@lineColor | linecolor for bottom-line of the object-box                                   |
| crosstabRowHeader/cellContents/box/leftPen/@lineColor   | linecolor for left line of the object-box                                     |
| crosstabRowHeader/cellContents/box/rightPen/@lineColor  | linecolor for right line of the object-box                                    |
| crosstabRowHeader/cellContents/@style                   | style for the object  |
| crosstabRowHeader/cellContents/@mode                    | Set to „Opaque“ to fill the object's background,                              |

|  |   |
|--|---|
|  | „Transparent“ for „no fill“   |
| crosstabRowHeader/cellContents/line                              | 0-n lines   |
| crosstabRowHeader/cellContents/rectangle                         | 0-n rectangles  |
| crosstabRowHeader/cellContents/staticText                        | 0-n static texts  |
| crosstabRowHeader/cellContents/frame                             | 0-n frames  |
| crosstabRowHeader/cellContents/textField                         | 0-n textfields  |
| crosstabRowHeader/cellContents/image                             | 0-n images  |
| Visual properties for crosstab-Total-Header                      |   |
| crosstabTotalRowHeader/cellContents/box/pen/<br>@lineWidth       | linewidth for all lines of the object-box, if the specific pen is not applied |
| crosstabTotalRowHeader/cellContents/box/topPen/<br>@lineWidth    | linewidth for top-line of the object-box                                      |
| crosstabTotalRowHeader/cellContents/box/bottomPen/<br>@lineWidth | linewidth for bottom-line of the object-box                                   |
| crosstabTotalRowHeader/cellContents/box/leftPen/<br>@lineWidth   | linewidth for left line of the object-box                                     |
| crosstabTotalRowHeader/cellContents/box/rightPen/<br>@lineWidth  | linewidth for right line of the object-box                                    |
| crosstabTotalRowHeader/cellContents/box/pen/<br>@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied  |
| crosstabTotalRowHeader/cellContents/box/topPen/<br>@lineColor    | linecolor for top-line of the object-box                                      |
| crosstabTotalRowHeader/cellContents/box/bottomPen/<br>@lineColor | linecolor for bottom-line of the object-box                                   |
| crosstabTotalRowHeader/cellContents/box/leftPen/<br>@lineColor   | linecolor for left line of the object-box                                     |
| crosstabTotalRowHeader/cellContents/box/rightPen/<br>@lineColor  | linecolor for right line of the object-box                                    |
| crosstabTotalRowHeader/cellContents/@style                       | style for the object  |
| crosstabTotalRowHeader/cellContents/@mode                        | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“  |
| crosstabTotalRowHeader/cellContents/line                         | 0-n lines   |
| crosstabTotalRowHeader/cellContents/rectangle                    | 0-n rectangles  |
| crosstabTotalRowHeader/cellContents/staticText                   | 0-n static texts  |
| crosstabTotalRowHeader/cellContents/frame                        | 0-n frames  |
| crosstabTotalRowHeader/cellContents/textField                    | 0-n textfields  |
| crosstabTotalRowHeader/cellContents/image                        | 0-n images  |

## crosstab-columnGroup-properties

|       |                         |
|-------|-------------------------|
| @name | name of the columngroup |
|-------|-------------------------|

|  |   |
|--|---|
| @height  | height of the columngroup   |
| @totalPosition   | total-position, Start or End  |
| @headerPosition  | header-position, Left, Center or Right  |
| bucket/bucketExpression                                    | Expression for the column-buckets   |
| bucket/@order  | ordering of the buckets, Ascending or descending                              |
| bucket/@class  | class of data   |
| Visual properties for crosstab-Header                      |   |
| crosstabColumnHeader/cellContents/box/pen/@lineWidth       | linewidth for all lines of the object-box, if the specific pen is not applied |
| crosstabColumnHeader/cellContents/box/topPen/@lineWidth    | linewidth for top-line of the object-box                                      |
| crosstabColumnHeader/cellContents/box/bottomPen/@lineWidth | linewidth for bottom-line of the object-box                                   |
| crosstabColumnHeader/cellContents/box/leftPen/@lineWidth   | linewidth for left line of the object-box                                     |
| crosstabColumnHeader/cellContents/box/rightPen/@lineWidth  | linewidth for right line of the object-box                                    |
| crosstabColumnHeader/cellContents/box/pen/@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied  |
| crosstabColumnHeader/cellContents/box/topPen/@lineColor    | linecolor for top-line of the object-box                                      |
| crosstabColumnHeader/cellContents/box/bottomPen/@lineColor | linecolor for bottom-line of the object-box                                   |
| crosstabColumnHeader/cellContents/box/leftPen/@lineColor   | linecolor for left line of the object-box                                     |
| crosstabColumnHeader/cellContents/box/rightPen/@lineColor  | linecolor for right line of the object-box                                    |
| crosstabColumnHeader/cellContents/@style                   | style for the object  |
| crosstabColumnHeader/cellContents/@mode                    | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“  |
| crosstabColumnHeader/cellContents/line                     | 0-n lines   |
| crosstabColumnHeader/cellContents/rectangle                | 0-n rectangles  |
| crosstabColumnHeader/cellContents/staticText               | 0-n static texts  |
| crosstabColumnHeader/cellContents/frame                    | 0-n frames  |
| crosstabColumnHeader/cellContents/textField                | 0-n textfields  |
| crosstabColumnHeader/cellContents/image                    | 0-n images  |
| Visual properties for crosstab-Total-Header                |   |
| crosstabTotalColumnHeader/cellContents/box/pen/@lineWidth  | linewidth for all lines of the object-box, if the specific pen is not applied |
| crosstabTotalColumnHeader/cellContents/box/to              | linewidth for top-line of the object-box                                      |

|   |  |
|---|--|
| pPen/@lineWidth   |  |
| crosstabTotalColumnHeader/cellContents/box/bottomPen/@lineWidth | linewidth for bottom-line of the object-box                                  |
| crosstabTotalColumnHeader/cellContents/box/leftPen/@lineWidth   | linewidth for left line of the object-box                                    |
| crosstabTotalColumnHeader/cellContents/box/rightPen/@lineWidth  | linewidth for right line of the object-box                                   |
| crosstabTotalColumnHeader/cellContents/box/pen/@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied |
| crosstabTotalColumnHeader/cellContents/box/topPen/@lineColor    | linecolor for top-line of the object-box                                     |
| crosstabTotalColumnHeader/cellContents/box/bottomPen/@lineColor | linecolor for bottom-line of the object-box                                  |
| crosstabTotalColumnHeader/cellContents/box/leftPen/@lineColor   | linecolor for left line of the object-box                                    |
| crosstabTotalColumnHeader/cellContents/box/rightPen/@lineColor  | linecolor for right line of the object-box                                   |
| crosstabTotalColumnHeader/cellContents/@style                   | style for the object   |
| crosstabTotalColumnHeader/cellContents/@mode                    | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“ |
| crosstabTotalColumnHeader/cellContents/line                     | 0-n lines  |
| crosstabTotalColumnHeader/cellContents/rectangle                | 0-n rectangles   |
| crosstabTotalColumnHeader/cellContents/staticText               | 0-n static texts   |
| crosstabTotalColumnHeader/cellContents/frame                    | 0-n frames   |
| crosstabTotalColumnHeader/cellContents/textField                | 0-n textfields   |
| crosstabTotalColumnHeader/cellContents/image                    | 0-n images   |

## **crosstab-measure-properties**

|                   |  |
|-------------------|--|
| @name             | name of the measure  |
| @calculation      | calculation for the measure supported are<br>Nothing<br>Count<br>Sum<br>Highest<br>Lowest<br>Average |
| measureExpression | expression for the measure   |
| @class            | class of the measure's data  |

## crosstab-cell-properties

|                                       |   |
|---------------------------------------|---|
| @name                                 | name of the cell  |
| @width                                | width of the cell   |
| @height                               | height of the cell  |
| @rowTotalGroup                        | row-total-group in which the cell should be used                              |
| @columnTotalGroup                     | column-total-group in which the cell should be used                           |
| Visual properties for cell            |   |
| cellContents/box/pen/@lineWidth       | linewidth for all lines of the object-box, if the specific pen is not applied |
| cellContents/box/topPen/@lineWidth    | linewidth for top-line of the object-box                                      |
| cellContents/box/bottomPen/@lineWidth | linewidth for bottom-line of the object-box                                   |
| cellContents/box/leftPen/@lineWidth   | linewidth for left line of the object-box                                     |
| cellContents/box/rightPen/@lineWidth  | linewidth for right line of the object-box                                    |
| cellContents/box/pen/@lineColor       | linecolor for all line of the object-box, if the specific pen is not applied  |
| cellContents/box/topPen/@lineColor    | linecolor for top-line of the object-box                                      |
| cellContents/box/bottomPen/@lineColor | linecolor for bottom-line of the object-box                                   |
| cellContents/box/leftPen/@lineColor   | linecolor for left line of the object-box                                     |
| cellContents/box/rightPen/@lineColor  | linecolor for right line of the object-box                                    |
| cellContents/@style                   | style for the object  |
| cellContents/@mode                    | Set to „Opaque“ to fill the object's background, „Transparent“ for „no fill“  |
| cellContents/line                     | 0-n lines   |
| cellContents/rectangle                | 0-n rectangles  |
| cellContents/staticText               | 0-n static texts  |
| cellContents/frame                    | 0-n frames  |
| cellContents/textField                | 0-n textfields  |
| cellContents/image                    | 0-n images  |

## General chart-properties

|                                   |   |
|-----------------------------------|---|
| chart/reportElement/@x            | x-position of the chart                         |
| chart/reportElement/@y            | y-position of the chart                         |
| chart/reportElement/@width        | width of the chart                              |
| chart/reportElement/@height       | height of the chart                             |
| chart/reportElement/@style        | name of the style to apply to the chart and box |
| chart/reportElement/@positionType | either FixRelativeToTop or FixRelativeToBottom  |

|   |  |
|---|--|
| chart/reportElement/printWhenExpression | Expression to evaluate to check if the chart should be rendered  |
| chart/reportElement/@backcolor          | background-color for the box   |
| chart/reportElement/@forecolor          | foreground-color (only used if boxcolors are not set)  |
| chart/box/pen/@lineWidth                | linewidth for all lines of a box, if the specific pen is not applied   |
| chart/box/topPen/@lineWidth             | linewidth for top-line of the box  |
| chart/box/bottomPen/@lineWidth          | linewidth for bottom-line of the box   |
| chart/box/leftPen/@lineWidth            | linewidth for left line of the box   |
| chart/box/rightPen/@lineWidth           | linewidth for right line of the box  |
| chart/box/pen/@lineColor                | linecolor for all line of a box, if the specific pen is not applied  |
| chart/box/topPen/@lineColor             | linecolor for top-line of the box  |
| chart/box/bottomPen/@lineColor          | linecolor for bottom-line of the box   |
| chart/box/leftPen/@lineColor            | linecolor for left line of the box   |
| chart/box/rightPen/@lineColor           | linecolor for right line of a box  |
| chart/box/@topPadding                   | space between top of the box and vertical start of chart   |
| chart/box/@bottomPadding                | space between bottom of the box and vertical end of chart  |
| chart/box/@leftPadding                  | space between left of the box and horizontal start of chart  |
| chart/box/@rightPadding                 | space between right of the box and horizontal end of chart   |
| chart/box/pen/@lineWidth                | width of line in general   |
| chart/box/pen/@lineColor                | color of line in general   |
| chart/@isShowLegend                     | Flag if a legend should be rendered  |
| chart/@customizerClass                  | If filled, the name is interpreted as a procedure-name which is called via EXECUTE IMMEDIATE before the chart is rendered into pdf. See documentation for charts |
| chart/chartTitle/@position              | title-position   |
| chart/chartTitle/titleExpression        | title-expression   |
| chart/chartTitle/font/@fontName         | fontname for the title   |
| chart/chartTitle/font/@size             | fontsize for the title   |
| chart/chartTitle/font/@isBold           | flag, if title is rendered bold  |
| chart/chartTitle/font/@isItalic         | flag, if title is rendered italic  |
| chart/chartTitle/@color                 | textcolor for the title  |
| chart/chartSubtitle/subtitleExpression  | subtitle-expression  |

|                                    |   |
|------------------------------------|---|
| chart/chartSubtitle/font/@fontName | fontname for the subtitle                   |
| chart/chartSubtitle/font/@size     | fontsize for the subtitle                   |
| chart/chartSubtitle/font/@isBold   | flag, if subtitle is rendered bold          |
| chart/chartSubtitle/font/@isItalic | flag, if subtitle is rendered italic        |
| chart/chartSubtitle/@color         | textcolor for the subtitle                  |
| chart/chartLegend/@textColor       | textcolor for the legend                    |
| chart/chartLegend/@backgroundColor | background-color of the legend              |
| chart/chartLegend/@position        | position of the legend                      |
| chart/chartLegend/font/@fontName   | fontname for the legend                     |
| chart/chartLegend/font/@size       | fontsize for the legend                     |
| chart/chartLegend/font/@isBold     | flag, if legend-entries are rendered bold   |
| chart/chartLegend/font/@isItalic   | flag, if legend-entries are rendered italic |

### Additional properties for piecharts

|                                  |   |
|----------------------------------|---|
| piePlot/@isShowLabels            | Flag, if labels are shown next to the chart     |
| piePlot/@labelFormat             | format for the label, may include {0}, {1}, {2} |
| piePlot/@legendLabelFormat       | format for the label, may include {0}, {1}, {2} |
| piePlot/itemLabel/@color         | textcolor for labels                            |
| piePlot/itemLabel/font/@fontName | font for labels                                 |
| piePlot/itemLabel/font/@size     | fontsize for labels                             |
| piePlot/itemLabel/font/@isBold   | flag, if subtitle is rendered bold              |
| piePlot/itemLabel/font/@isItalic | flag, if subtitle is rendered italic            |
| pieDataset/dataset/datasetRun    | the dataset used for the chart-data             |
| pieDataset/keyExpression         | expression taken from the dataset as key        |
| pieDataset/valueExpression       | expression taken from the dataset as value      |
| piePlot/plot/seriesColor         | 0-n seriescolors                                |

### Additional properties for barcharts (same for bar3DChart, stackedBarChart, stackedBar3DChart)

|                                  |  |
|----------------------------------|--|
| barPlot/@isShowLabels            | flag, if labels are shown                |
| barPlot/@isShowTickLabels        | flag, if tick-label are shown            |
| barPlot/@isShowTickMarks         | flag, if tick-marks are shown            |
| barPlot/plot/@labelRotation      | rotation of the ticklabels in degrees    |
| barPlot/itemLabel/@color         | color for item-labels                    |
| barPlot/itemLabel/font/@fontName | font for item-labels                     |
| barPlot/itemLabel/font/@size     | size for item-labels                     |
| barPlot/itemLabel/font/@isBold   | flag, if item-labels are rendered bold   |
| barPlot/itemLabel/font/@isItalic | flag, if item-labels are rendered italic |



|  |  |
|--|--|
| barPlot/categoryAxisLabelExpression                                | Expression for category-axis-text                      |
| barPlot/categoryAxisFormat/axisFormat/@labelColor                  | color for category-axis labels                         |
| barPlot/categoryAxisFormat/axisFormat/@tickLabelColor              | color for category-axis tick-labels                    |
| barPlot/categoryAxisFormat/axisFormat/@tickLabelMask               | Format-mask for category-axis tick-labels              |
| barPlot/categoryAxisFormat/axisFormat/@axisLineColor               | color for category-axis line                           |
| barPlot/categoryAxisFormat/axisFormat/labelFont/font/@fontName     | font for category-axis label                           |
| barPlot/categoryAxisFormat/axisFormat/labelFont/font/@size         | size for category-axis label                           |
| barPlot/categoryAxisFormat/axisFormat/labelFont/font/@isBold       | flag, if category-axis label is rendered bold          |
| barPlot/categoryAxisFormat/axisFormat/labelFont/font/@isItalic     | flag, if category-axis label is rendered italic        |
| barPlot/categoryAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for category-axis tick-labels                     |
| barPlot/categoryAxisFormat/axisFormat/tickLabelFont/font/@size     | size for category-axis tick-labels                     |
| barPlot/categoryAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if category-axis tick-labels are rendered bold   |
| barPlot/categoryAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if category-axis tick-labels are rendered italic |
| barPlot/valueAxisLabelExpression                                   | expression for value-axis text                         |
| barPlot/valueAxisFormat/axisFormat/@labelColor                     | color for value-axis text                              |
| barPlot/valueAxisFormat/axisFormat/@tickLabelColor                 | color for value-axis tick-labels                       |
| barPlot/valueAxisFormat/axisFormat/@tickLabelMask                  | format-mask for value-axis tick-labels                 |
| barPlot/valueAxisFormat/axisFormat/@axisLineColor                  | color for value-axis line                              |
| barPlot/valueAxisFormat/axisFormat/labelFont/font/@fontName        | font for value-axis label                              |
| barPlot/valueAxisFormat/axisFormat/labelFont/font/@size            | size for value-axis label                              |
| barPlot/valueAxisFormat/axisFormat/labelFont/font/@isBold          | flag, if value-axis label is rendered bold             |
| barPlot/valueAxisFormat/axisFormat/labelFont/font/@isItalic        | flag, if value-axis label is rendered italic           |
| barPlot/valueAxisFormat/axisFormat/tickLabelFont                   | font for value-axis tick-labels                        |

|   |   |
|---|---|
| ont/font/@fontName  |   |
| barPlot/valueAxisFormat/axisFormat/tickLabelFont/ont/font/@size     | size for value-axis tick-labels                     |
| barPlot/valueAxisFormat/axisFormat/tickLabelFont/ont/font/@isBold   | flag, if value-axis tick-labels are rendered bold   |
| barPlot/valueAxisFormat/axisFormat/tickLabelFont/ont/font/@isItalic | flag, if value-axis tick-labels are rendered italic |
| barPlot/domainAxisMinValueExpression                                | minimum value to be shown on category-axis          |
| barPlot/domainAxisMaxValueExpression                                | maximum value to be shown on category-axis          |
| barPlot/rangeAxisMinValueExpression                                 | minimum value to be shown on value-axis             |
| barPlot/rangeAxisMaxValueExpression                                 | maximum value to be shown on value-axis             |
| categoryDataset/dataset/datasetRun                                  | the dataset used for the chart-data                 |
| barPlot/plot/seriesColor  | 0-n series colors                                   |

## Additional properties for linecharts

|  |  |
|--|--|
| lineChart/@isShowLabels  | flag, if labels are shown                    |
| lineChart/@isShowTickLabels  | flag, if tick-label are shown                |
| lineChart/@isShowTickMarks   | flag, if tick-marks are shown                |
| lineChart/plot/@labelRotation  | rotation of the ticklabels in degrees        |
| lineChart/plot/@isShowLines  | flag, if lines are shown in the plot         |
| lineChart/plot/@isShowShapes   | flag, if shapes are shown for each datapoint |
| lineChart/itemLabel/@color   | color for item-labels                        |
| lineChart/itemLabel/font/@fontName                                   | font for item-labels                         |
| lineChart/itemLabel/font/@size                                       | size for item-labels                         |
| lineChart/itemLabel/font/@isBold                                     | flag, if item-labels are rendered bold       |
| lineChart/itemLabel/font/@isItalic                                   | flag, if item-labels are rendered italic     |
| lineChart/categoryAxisLabelExpression                                | Expression for category-axis-text            |
| lineChart/categoryAxisFormat/axisFormat/@labelColor                  | color for category-axis labels               |
| lineChart/categoryAxisFormat/axisFormat/@tickLabelColor              | color for category-axis tick-labels          |
| lineChart/categoryAxisFormat/axisFormat/@tickLabelMask               | Format-mask for category-axis tick-labels    |
| lineChart/categoryAxisFormat/axisFormat/@axisLineColor               | color for category-axis line                 |
| lineChart/categoryAxisFormat/axisFormat/labelFont/ont/font/@fontName | font for category-axis label                 |
| lineChart/categoryAxisFormat/axisFormat/labelFont/ont/font/@size     | size for category-axis label                 |

|  |  |
|--|--|
| lineChart/categoryAxisFormat/axisFormat/labelFont/font/@isBold       | flag, if category-axis label is rendered bold          |
| lineChart/categoryAxisFormat/axisFormat/labelFont/font/@isItalic     | flag, if category-axis label is rendered italic        |
| lineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for category-axis tick-labels                     |
| lineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@size     | size for category-axis tick-labels                     |
| lineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if category-axis tick-labels are rendered bold   |
| lineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if category-axis tick-labels are rendered italic |
| lineChart/valueAxisLabelExpression                                   | expression for value-axis text                         |
| lineChart/valueAxisFormat/axisFormat/@labelColor                     | color for value-axis text                              |
| lineChart/valueAxisFormat/axisFormat/@tickLabelColor                 | color for value-axis tick-labels                       |
| lineChart/valueAxisFormat/axisFormat/@tickLabelMask                  | format-mask for value-axis tick-labels                 |
| lineChart/valueAxisFormat/axisFormat/@axisLineColor                  | color for value-axis line                              |
| lineChart/valueAxisFormat/axisFormat/labelFont/font/@fontName        | font for value-axis label                              |
| lineChart/valueAxisFormat/axisFormat/labelFont/font/@size            | size for value-axis label                              |
| lineChart/valueAxisFormat/axisFormat/labelFont/font/@isBold          | flag, if value-axis label is rendered bold             |
| lineChart/valueAxisFormat/axisFormat/labelFont/font/@isItalic        | flag, if value-axis label is rendered italic           |
| lineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@fontName    | font for value-axis tick-labels                        |
| lineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@size        | size for value-axis tick-labels                        |
| lineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isBold      | flag, if value-axis tick-labels are rendered bold      |
| lineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isItalic    | flag, if value-axis tick-labels are rendered italic    |
| lineChart/domainAxisMinValueExpression                               | minimum value to be shown on category-axis             |
| lineChart/domainAxisMaxValueExpression                               | maximum value to be shown on category-axis             |
| lineChart/rangeAxisMinValueExpression                                | minimum value to be shown on value-axis                |
| lineChart/rangeAxisMaxValueExpression                                | maximum value to be shown on value-axis                |
| categoryDataset/dataset/datasetRun                                   | the dataset used for the chart-data                    |

|                            |                  |
|----------------------------|------------------|
| lineChart/plot/seriesColor | 0-n seriescolors |
|----------------------------|------------------|

## Additional properties for XY-linecharts

|  |  |
|--|--|
| xyLineChart/@isShowLabels  | flag, if labels are shown                              |
| xyLineChart/@isShowTickLabels  | flag, if tick-label are shown                          |
| xyLineChart/@isShowTickMarks   | flag, if tick-marks are shown                          |
| xyLineChart/plot/@labelRotation  | rotation of the ticklabels in degrees                  |
| xyLineChart/plot/@isShowLines  | flag, if lines are shown in the plot                   |
| xyLineChart/plot/@isShowShapes   | flag, if shapes are shown for each datapoint           |
| xyLineChart/itemLabel/@color   | color for item-labels                                  |
| xyLineChart/itemLabel/font/@fontName                                   | font for item-labels                                   |
| xyLineChart/itemLabel/font/@size                                       | size for item-labels                                   |
| xyLineChart/itemLabel/font/@isBold                                     | flag, if item-labels are rendered bold                 |
| xyLineChart/itemLabel/font/@isItalic                                   | flag, if item-labels are rendered italic               |
| xyLineChart/categoryAxisLabelExpression                                | Expression for category-axis-text                      |
| xyLineChart/categoryAxisFormat/axisFormat/@labelColor                  | color for category-axis labels                         |
| xyLineChart/categoryAxisFormat/axisFormat/@tickLabelColor              | color for category-axis tick-labels                    |
| xyLineChart/categoryAxisFormat/axisFormat/@tickLabelMask               | Format-mask for category-axis tick-labels              |
| xyLineChart/categoryAxisFormat/axisFormat/@axisLineColor               | color for category-axis line                           |
| xyLineChart/categoryAxisFormat/axisFormat/labelFont/font/@fontName     | font for category-axis label                           |
| xyLineChart/categoryAxisFormat/axisFormat/labelFont/font/@size         | size for category-axis label                           |
| xyLineChart/categoryAxisFormat/axisFormat/labelFont/font/@isBold       | flag, if category-axis label is rendered bold          |
| xyLineChart/categoryAxisFormat/axisFormat/labelFont/font/@isItalic     | flag, if category-axis label is rendered italic        |
| xyLineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for category-axis tick-labels                     |
| xyLineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@size     | size for category-axis tick-labels                     |
| xyLineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if category-axis tick-labels are rendered bold   |
| xyLineChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if category-axis tick-labels are rendered italic |

|   |   |
|---|---|
| xyLineChart/valueAxisLabelExpression                                | expression for value-axis text                      |
| xyLineChart/valueAxisFormat/axisFormat/@labelColor                  | color for value-axis text                           |
| xyLineChart/valueAxisFormat/axisFormat/@tickLabelColor              | color for value-axis tick-labels                    |
| xyLineChart/valueAxisFormat/axisFormat/@tickLabelMask               | format-mask for value-axis tick-labels              |
| xyLineChart/valueAxisFormat/axisFormat/@axisLineColor               | color for value-axis line                           |
| xyLineChart/valueAxisFormat/axisFormat/labelFont/font/@fontName     | font for value-axis label                           |
| xyLineChart/valueAxisFormat/axisFormat/labelFont/font/@size         | size for value-axis label                           |
| xyLineChart/valueAxisFormat/axisFormat/labelFont/font/@isBold       | flag, if value-axis label is rendered bold          |
| xyLineChart/valueAxisFormat/axisFormat/labelFont/font/@isItalic     | flag, if value-axis label is rendered italic        |
| xyLineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for value-axis tick-labels                     |
| xyLineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@size     | size for value-axis tick-labels                     |
| xyLineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if value-axis tick-labels are rendered bold   |
| xyLineChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if value-axis tick-labels are rendered italic |
| xyLineChart/domainAxisMinValueExpression                            | minimum value to be shown on category-axis          |
| xyLineChart/domainAxisMaxValueExpression                            | maximum value to be shown on category-axis          |
| xyLineChart/rangeAxisMinValueExpression                             | minimum value to be shown on value-axis             |
| xyLineChart/rangeAxisMaxValueExpression                             | maximum value to be shown on value-axis             |

## Additional properties for timeseries-linecharts

|  |  |
|--|--|
| timeSeriesChart/@isShowLabels            | flag, if labels are shown                    |
| timeSeriesChart/@isShowTickLabels        | flag, if tick-label are shown                |
| timeSeriesChart/@isShowTickMarks         | flag, if tick-marks are shown                |
| timeSeriesChart/plot/@labelRotation      | rotation of the ticklabels in degrees        |
| timeSeriesChart/plot/@isShowLines        | flag, if lines are shown in the plot         |
| timeSeriesChart/plot/@isShowShapes       | flag, if shapes are shown for each datapoint |
| timeSeriesChart/itemLabel/@color         | color for item-labels                        |
| timeSeriesChart/itemLabel/font/@fontName | font for item-labels                         |
| timeSeriesChart/itemLabel/font/@size     | size for item-labels                         |

|  |  |
|--|--|
| timeSeriesChart/itemLabel/font/@isBold                                     | flag, if item-labels are rendered bold                 |
| timeSeriesChart/itemLabel/font/@isItalic                                   | flag, if item-labels are rendered italic               |
| timeSeriesChart/categoryAxisLabelExpression                                | Expression for category-axis-text                      |
| timeSeriesChart/categoryAxisFormat/axisFormat/@labelColor                  | color for category-axis labels                         |
| timeSeriesChart/categoryAxisFormat/axisFormat/@tickLabelColor              | color for category-axis tick-labels                    |
| timeSeriesChart/categoryAxisFormat/axisFormat/@tickLabelMask               | Format-mask for category-axis tick-labels              |
| timeSeriesChart/categoryAxisFormat/axisFormat/@axisLineColor               | color for category-axis line                           |
| timeSeriesChart/categoryAxisFormat/axisFormat/labelFont/font/@fontName     | font for category-axis label                           |
| timeSeriesChart/categoryAxisFormat/axisFormat/labelFont/font/@size         | size for category-axis label                           |
| timeSeriesChart/categoryAxisFormat/axisFormat/labelFont/font/@isBold       | flag, if category-axis label is rendered bold          |
| timeSeriesChart/categoryAxisFormat/axisFormat/labelFont/font/@isItalic     | flag, if category-axis label is rendered italic        |
| timeSeriesChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for category-axis tick-labels                     |
| timeSeriesChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@size     | size for category-axis tick-labels                     |
| timeSeriesChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if category-axis tick-labels are rendered bold   |
| timeSeriesChart/categoryAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if category-axis tick-labels are rendered italic |
| timeSeriesChart/valueAxisLabelExpression                                   | expression for value-axis text                         |
| timeSeriesChart/valueAxisFormat/axisFormat/@labelColor                     | color for value-axis text                              |
| timeSeriesChart/valueAxisFormat/axisFormat/@tickLabelColor                 | color for value-axis tick-labels                       |
| timeSeriesChart/valueAxisFormat/axisFormat/@tickLabelMask                  | format-mask for value-axis tick-labels                 |
| timeSeriesChart/valueAxisFormat/axisFormat/@axisLineColor                  | color for value-axis line                              |
| timeSeriesChart/valueAxisFormat/axisFormat/labelFont/font/@fontName        | font for value-axis label                              |
| timeSeriesChart/valueAxisFormat/axisFormat/labelFont/font/@size            | size for value-axis label                              |
| timeSeriesChart/valueAxisFormat/axisFormat/labelFont/font/@isBold          | flag, if value-axis label is rendered bold             |
| timeSeriesChart/valueAxisFormat/axisFormat/labelFont/font/@isItalic        | flag, if value-axis label is rendered italic           |

|   |   |
|---|---|
| belFont/font/@isItalic  |   |
| timeSeriesChart/valueAxisFormat/axisFormat/tickLabelFont/font/@fontName | font for value-axis tick-labels                     |
| timeSeriesChart/valueAxisFormat/axisFormat/tickLabelFont/font/@size     | size for value-axis tick-labels                     |
| timeSeriesChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isBold   | flag, if value-axis tick-labels are rendered bold   |
| timeSeriesChart/valueAxisFormat/axisFormat/tickLabelFont/font/@isItalic | flag, if value-axis tick-labels are rendered italic |
| timeSeriesChart/domainAxisMinValueExpression                            | minimum value to be shown on category-axis          |
| timeSeriesChart/domainAxisMaxValueExpression                            | maximum value to be shown on category-axis          |
| timeSeriesChart/rangeAxisMinValueExpression                             | minimum value to be shown on value-axis             |
| timeSeriesChart/rangeAxisMaxValueExpression                             | maximum value to be shown on value-axis             |