QuintusVisuals

QuintusVisuals® for TIBCO Spotfire®
User Manual

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Quintus consultants b.v. provides and implements IT solutions. Quintus is specialized in IT implementations for financial organizations such as banks and insurance companies, but also provides services to financial departments (including mergers and acquisitions) in other business areas, such as energy companies.

Disclaimer

Intended audience

This document is intended for:
- TIBCO Spotfire end-users and administrators

Version history

Version	Author	Description	Date
v0.9	Quintus consultants b.v.	Lay-out of chapters changed.	2011-09-06

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1 Cascade visualization

1.1 What is a Cascade visualization?

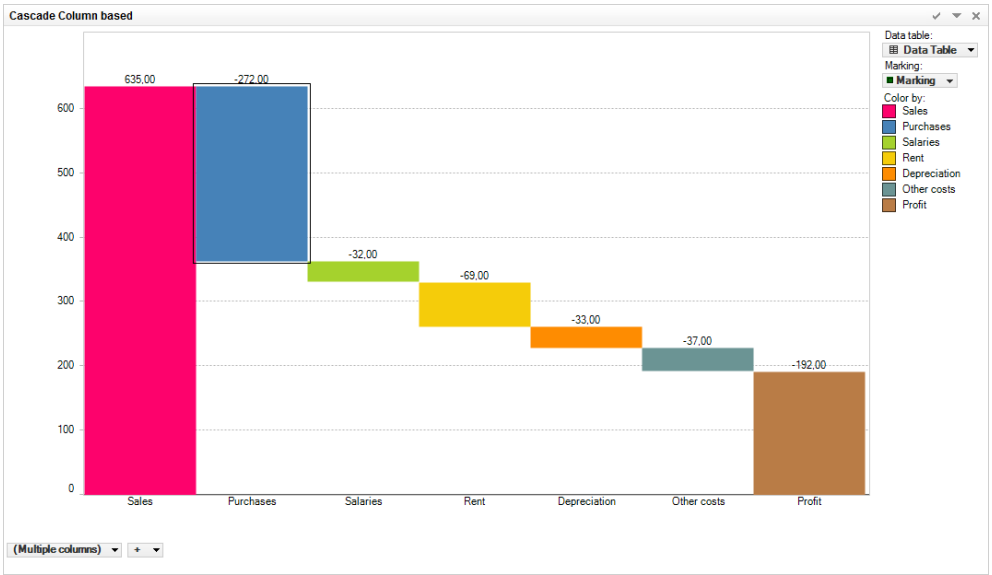
A Cascade visualization, also known as a waterfall plot, is a barchart-like graph that is used to show the effect of sequentially positive and negative values. It has a begin situation, optional intermediate situations and an end situation. Using the sequentially positive and negative values the visualization shows how the begin situation transitions to the intermediate and finally to the end situation.

For analytical purposes a Cascade graph can assist in explaining transitions in quantitative data. For example, it can show how the net result transitions over years via a dimension such as a physical location or a product type.

There are two Cascade flavors available.

- The first flavor is the so-called manual column based cascade.
  This flavor shows how values can be broken down into individual parts. As shown in the example below, each column is represented by a bar chart. The sales are broken down into several cost components so it can be identified how total sales are distributed over the cost categories. Each bar represents a column.

  Example column based cascade:



The column based visualisation as shown above provides an explanation on the composition of a profit and loss statement. The columns in the dataset are [Sales], [Purchases], [Salaries], [Rent], [Depreciation], [Other costs] and [Profit]. [Sales] values are positive, all costs are shown as negative, including the remaining profit.

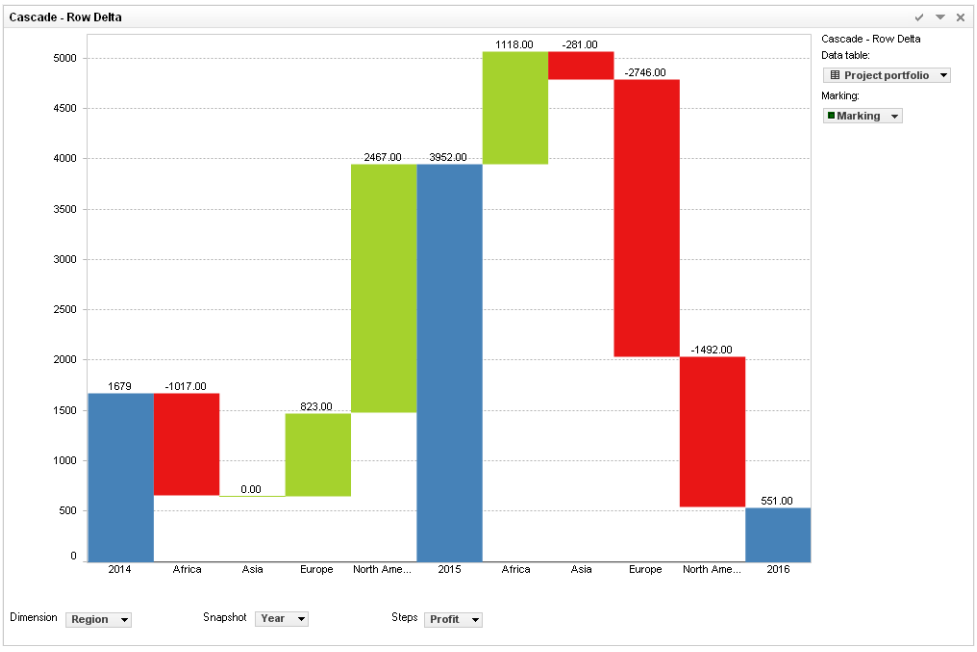
These columns are listed on the x-axis (shown as “Multiple columns”). On the y-axis, the sum of values are automatically shown for each of the columns.

Each column starts at the end result of the previous column.
Hence, the first column starts at 0 and since the values for [Sales] are positive, the bar goes up to the sum([Sales]), here at 635. The second column starts at 635 and since sum([Purchases]) is -272, the bar shown is from 635 to 363. The third bar in this case starts at 363 and since sum([Salaries]) is -32, the bar shown is from 363 to 331, etc.

Since filtering, trellis and other functions can be applied, this visualisation allows for explanations of the profit & loss statement in a visual way, showing the impact of each cost category for the total result.

- The second flavor is the so-called automatic row based cascade.
Instead of using multiple data table columns to show transitions, this flavor is based on the combination of a snapshot, dimension and a single steps column expression to show transitions. This flavor requires that the data table contains for example time, location or person structured sequential quantitative information.
This flavor has two sub-flavors.
The first sub-flavor is the row based **delta** cascade. This cascade visualization shows how one snapshot total transitions to the next snapshot total.
The second sub-flavor is the row based **aggregate** cascade. This cascade visualization shows how one snapshot total transitions to the next snapshot total, where a snapshot total is the aggregated total of the current snapshot and all preceding snapshot totals.

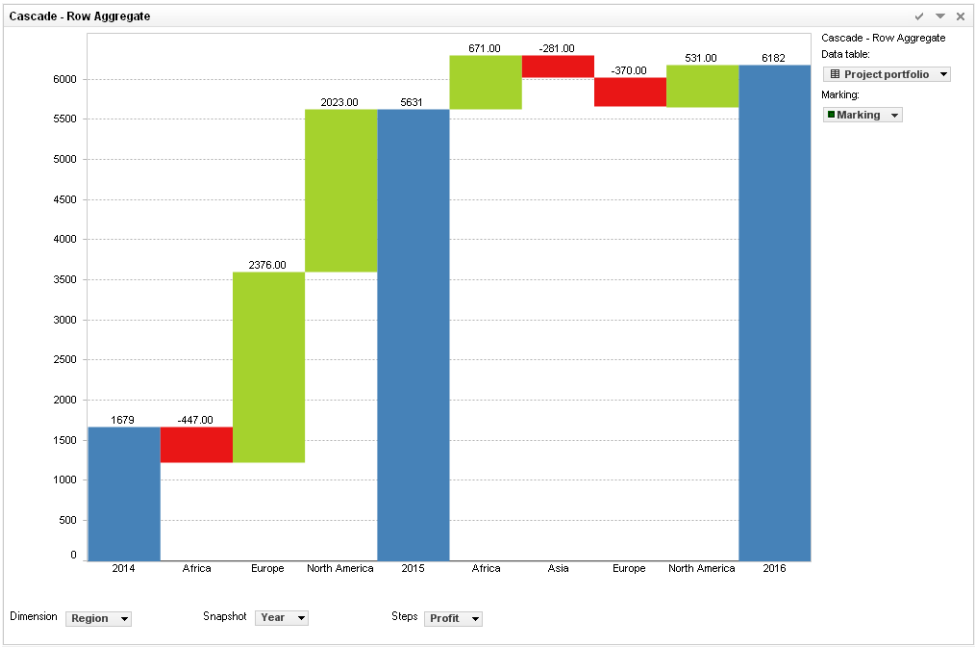
Example row based cascade **delta**:



In this example we see the impact over time on the projected [Profit] per [Region]. We see that the [Profit] is shown starting at [Year] 2014 (value 1679), then steeply increases via [Year] 2015 (value 3952) to a substantially lower profit in [Year] 2016 (value 551). We can see how each of the regions influences the profit year over year. For example, [Region] Africa has in 2015 a

decreasing profit, when compared to 2014, but has an increasing profit in 2016, when compared to 2015.

Example row based cascade **aggregate**:



This example uses the same data as the previous cascade row. However, what is shown here is the aggregated projected [Profit] over the [Year] 2014 up to 2016, and how each [Region] contributes to the aggregated snapshot profit totals.
Example: the snapshot total for 2016 shown here is the aggregated [Profit] of [Year] 2014 plus [Year] 2015 plus [Year] 2016.

See also:

How to use the Cascade graph

Cascade Properties

1.2 How to use the Cascade graph

1. To create a new Cascade:

   Click on the new Cascade icon  on the toolbar.

   Comment: You can also select Insert → New Visualization → Cascade from the menu.

   Response: A first attempt to set up a suitable manual column based cascade is made by the application.

2. To adjust the Cascade:

   Right click on the visualization, select Properties and click on the Data tab to select the applicable data table. Then adjust the Cascade to display either a manual column based or automatic row based. To switch between manual column based and automatic row based cascade right click on the visualization, select Properties and then the X Axis tab.

   For a manual column based Cascade:

   The column based Cascade requires columns that need to be displayed, in what order and which aggregation method will be used.

   Select one by one the columns that need to be displayed in the cascade. The default aggregation method will be sum, however, by clicking on each column, this can be changed using aggregation. Also, using right click, a custom expression can be defined here for each column.

   The "offset" defines where the next column will start. To maintain a direct connection from one bar to the next (as in the examples) keep them as they are. However, if there is a need to adjust the offset, you can change the offset for each column by right clicking and then change the custom expression.

   To change the order of the columns, you can right click on each column and then "move right" or "move left". The outer columns (the one most left and the one most right) will obviously show only one of these options.

   For an automatic row based Cascade:

   The axis dimension column has the attribute values over which the steps measure is aggregated. For example: You want to display for each Location (dimension) the Net Result (steps).

   The axis snapshot column has the attribute value indicating the viewing sequence. For example: You want to display per Year (snapshot) the Net Result (steps) for every Location (dimension).

   The axis steps column has the quantitative attribute value. For example: You want to display the Profit (steps) or Sales Volume (steps) or Safety Incidents (steps) per Year (snapshot) for each Location (dimension).

Comment: For the Axis Steps you can also select **Custom Expression...** (right mouse click on value) from the menu and create your own expression.

Response: The automatic row based Cascade is updated to show the new information.

Comment: For more information about how to change or what to show on the several axes, see **Properties**.

1.3 Cascade Properties

The Cascade Properties dialog consists of several tabs:

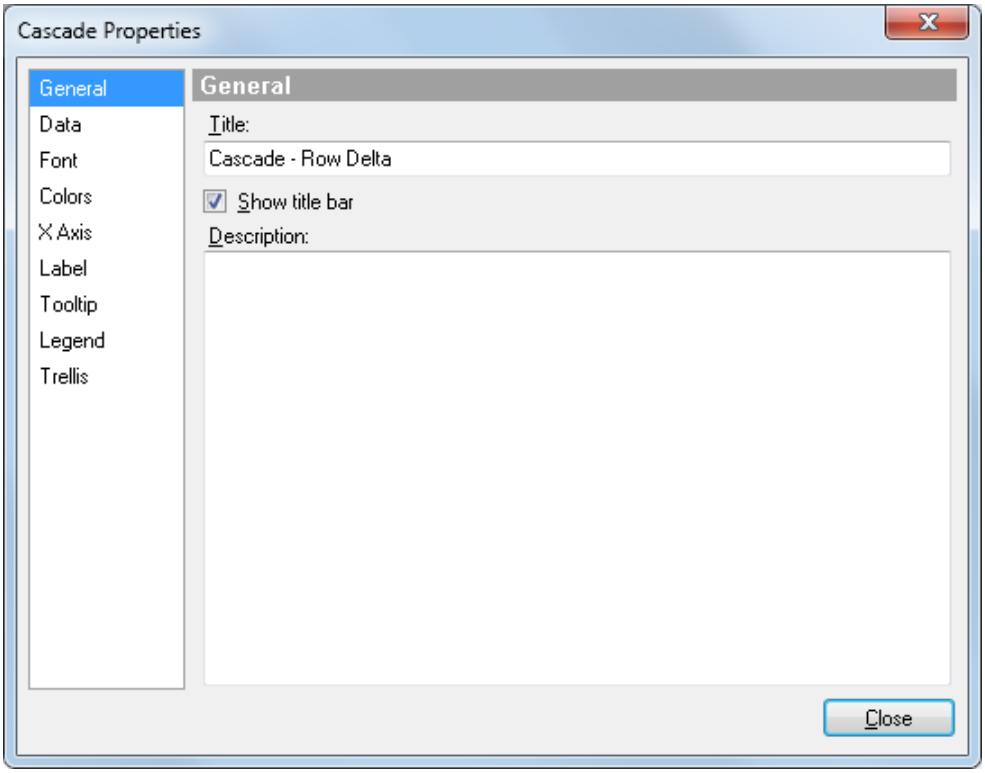
- General
- Data
- Font
- Colors (only available for manual column based flavour)
- X Axis
- Label
- Tooltip
- Legend
- Trellis

To reach the Cascade Properties dialog:

1. Right-click on the Cascade visualization.
2. Select **Properties** from the pop-up menu.

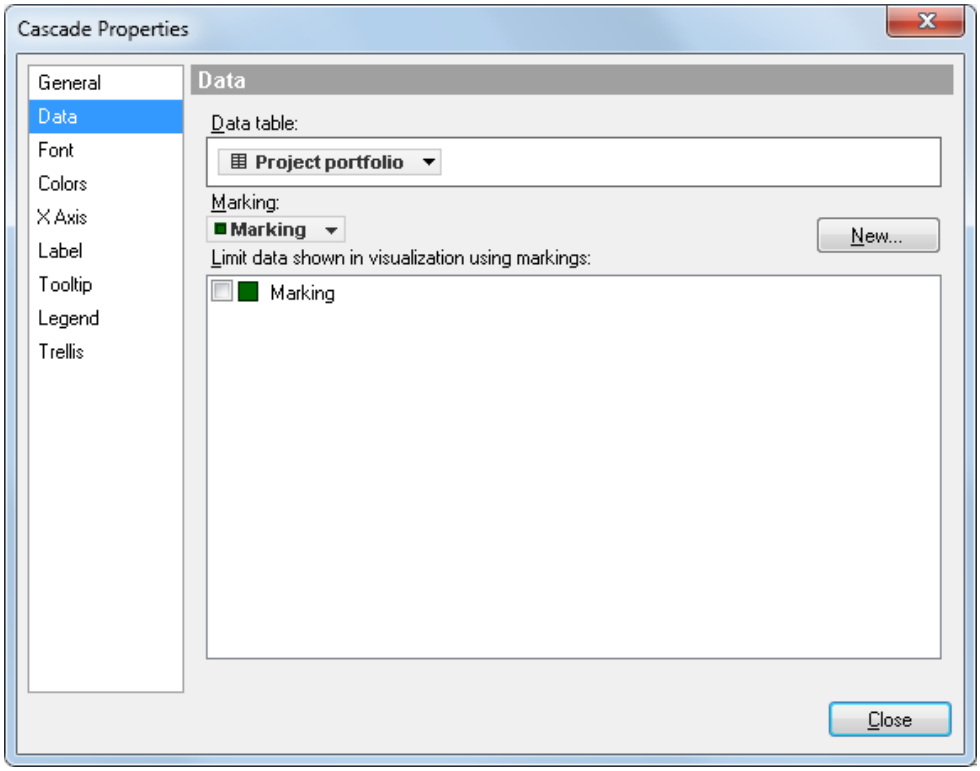
Comment: You can also click on the Cascade visualization to make it active and then select **Edit** → **Visualization Properties**.

1.4 Cascade Properties – General



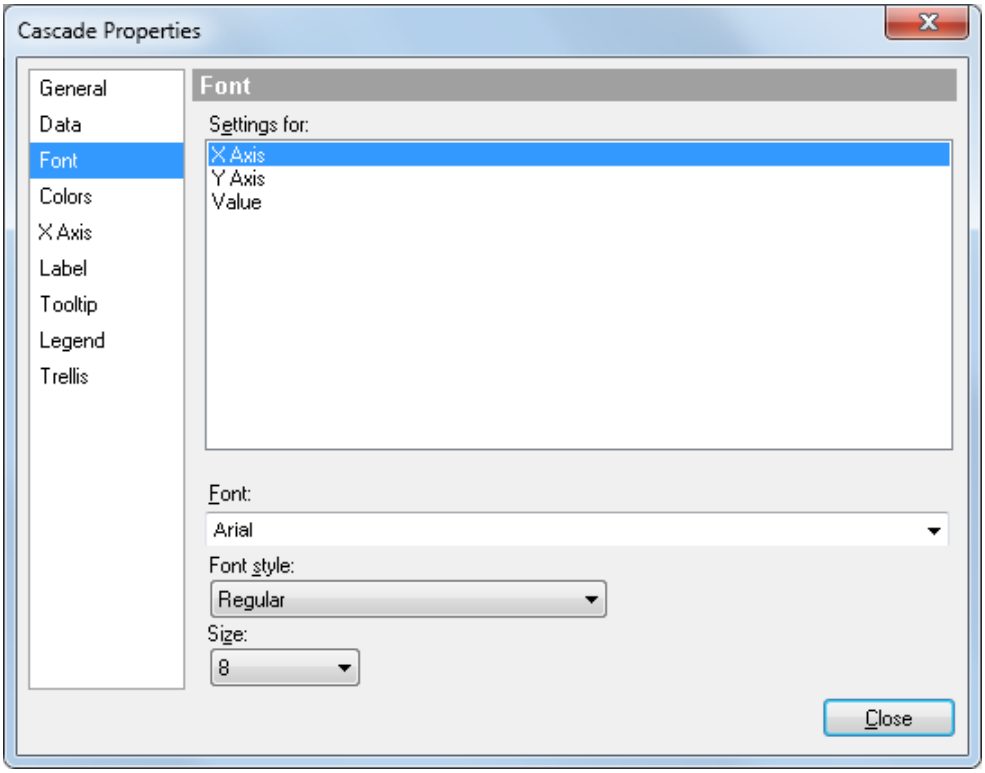
Option	Description
Title	The title of the visualization. Tip: Double-click on the title bar of the visualization for a shortcut to this field.
Show title bar	Specifies whether or not to show the visualization title.
Description	A description of the visualization. This description can optionally be shown in the Legend.

1.5 Cascade Properties – Data



Option	Description
Data table	Specifies the data table on which the visualization will work.
Marking	Specifies the marking (hence, the color and relationships to other marked items) that will be used to mark items in this visualization.
New...	Opens the New Marking dialog where you can specify a new marking. The color of a previously created marking is edited in the Document Properties dialog.

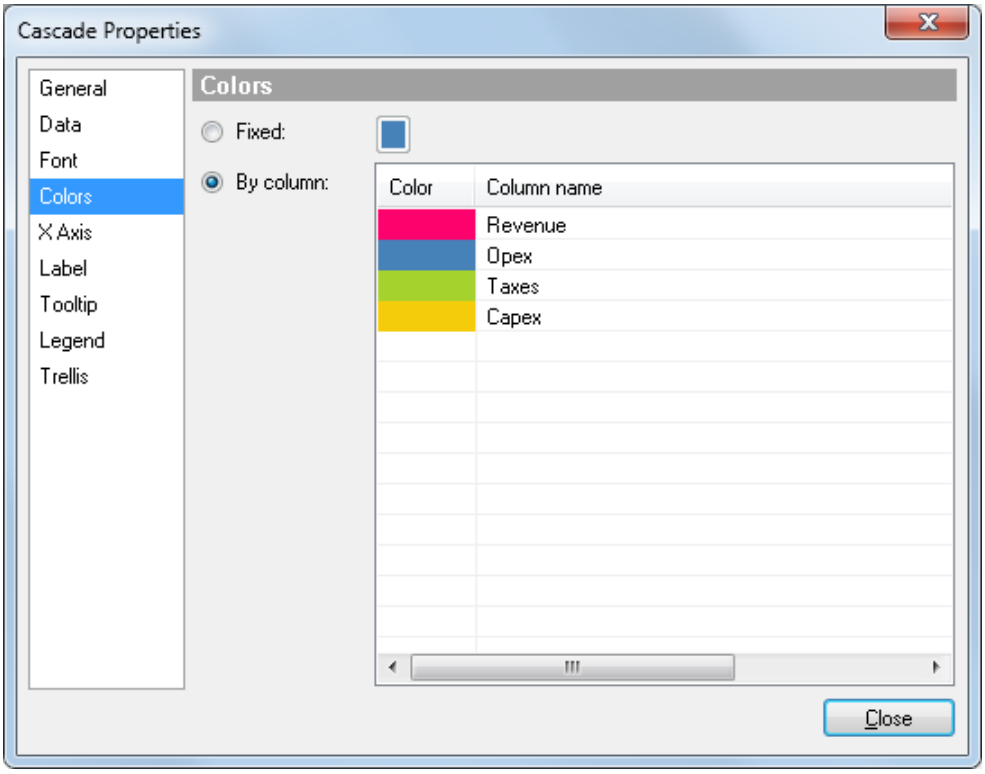
1.6 Cascade Properties – Font



Option	Description
Setting for	Lists all items for which the font settings can be changed. Click to select an item in the list to change the font settings for that item in the visualization.
Font	Specifies the font to use for the selected item.
Font style	Specifies the font style to use for the selected item.
Size	Specifies the font size to use for the selected item.

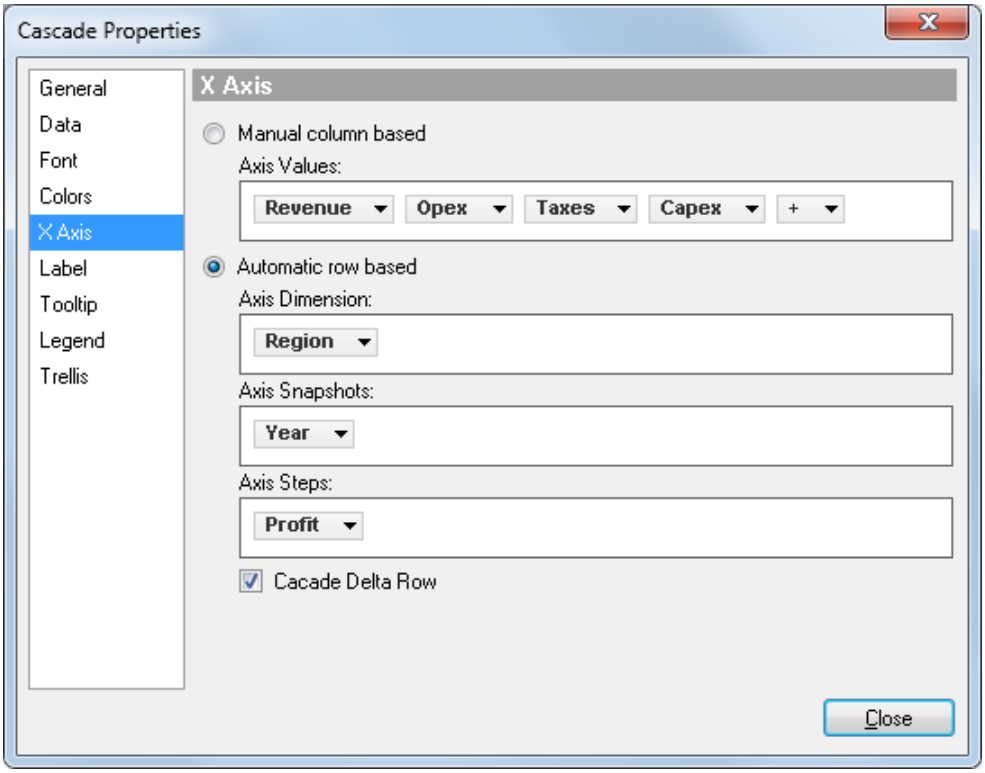
1.7 Cascade Properties – Colors

Note: the Colors properties are only applicable for the manual column based flavor.



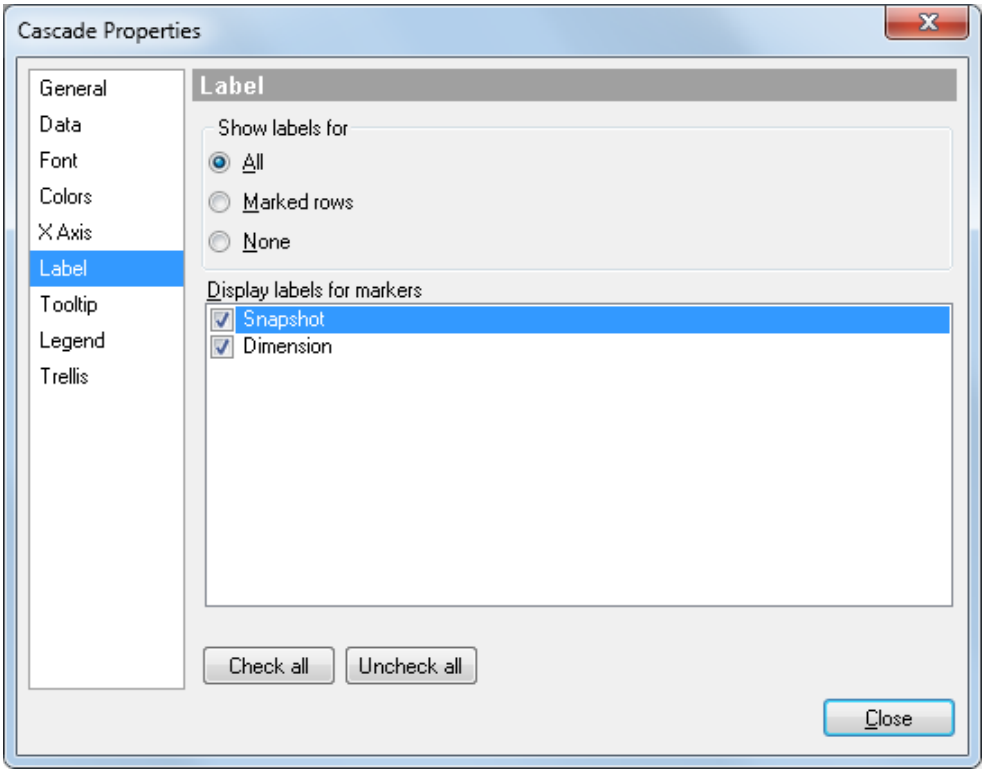
Option	Description
Fixed	Use this option to apply a single fixed color in a manual column based cascade. Use the palette to change to a different color.
By column	Use this option to apply a color scheme with different colors for all columns in a manual column based cascade.

1.8 Cascade Properties – X Axis



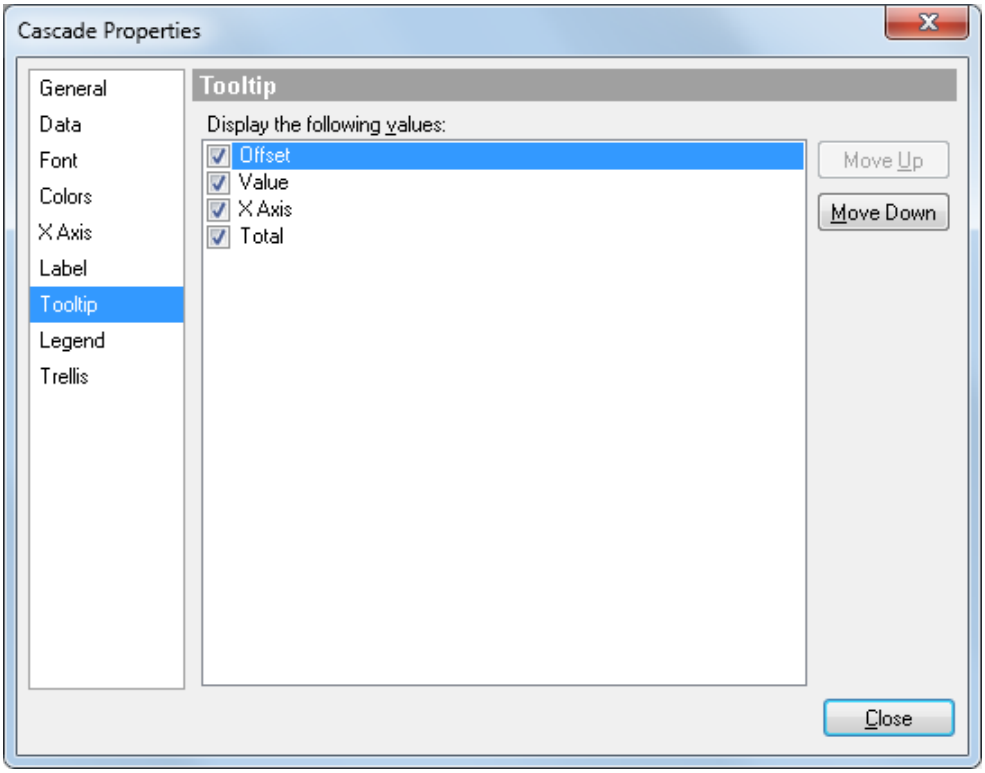
Option	Description
Manual column based	Use this option to setup the axes of a manual column based cascade.
Automatic row based	Use this option to setup the axes of an automatic row based cascade. Use the Cascade Delta Row tickbox to switch between the Delta and Aggregate sub-flavor.

1.9 Cascade Properties – Label



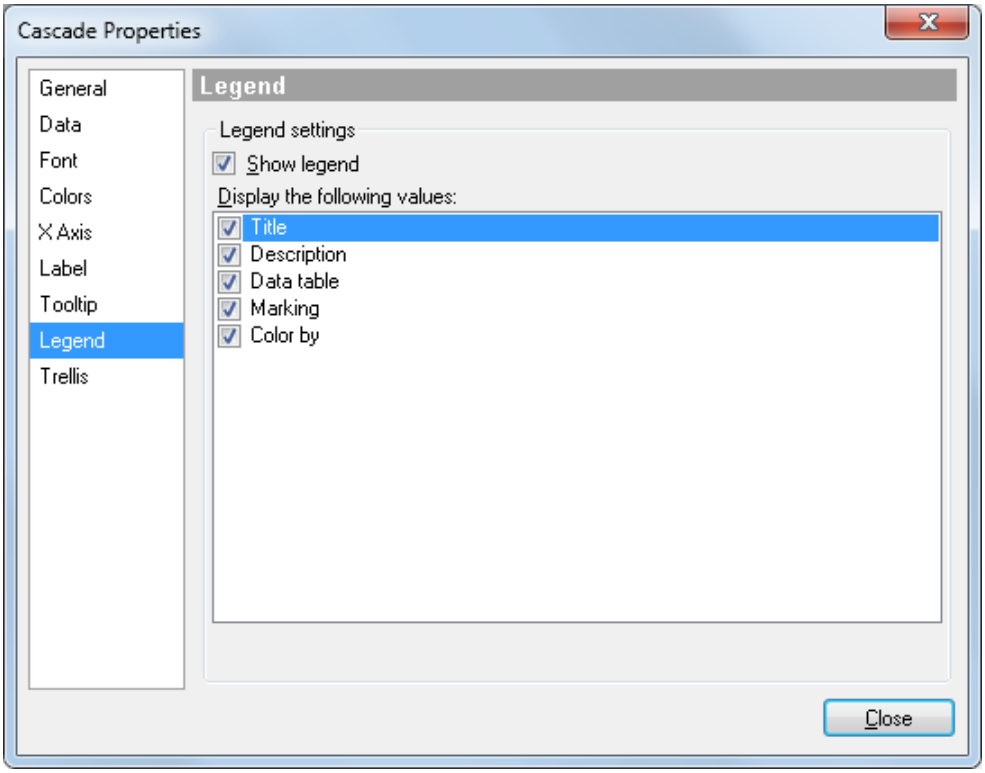
Option	Description
Show labels for	Determines whether to show labels on all bars (All), bars containing marked rows only (Marked rows), or not to show any labels at all (None).
Display labels for markers	Determines whether to show labels for markers. The list of columns shown depends on the selected cascade flavor.

1.10 Cascade Properties – Tooltip



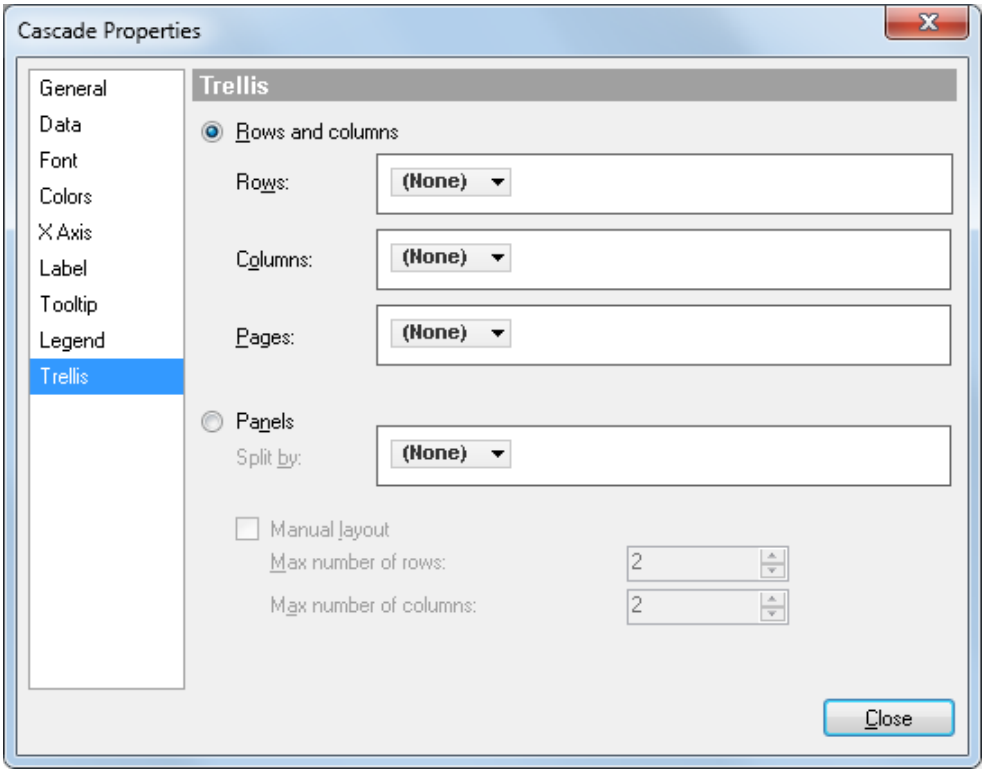
Option	Description
Display the following values	Specifies what information is to be shown when a cascade is hovered. Offset: the value where the bar starts Total: the value where the bar ends Value: the size of the bar (= Total – Offset) X Axis: the Axis Steps name

1.11 Cascade Properties – Legend



Option	Description
Show legend	Specifies whether or not the legend is shown in the visualization.
Display the following values	Specifies the items that will be shown in the legend.

1.12 Cascade Properties – Trellis



Option	Description
Rows and columns	Splits the visualization into different panels for all categories in the selected columns. The number of values in the specified column or hierarchy controls the number of panels to be displayed in each row, column or page, respectively.
Rows	A row with trellis panels will be created for each value in the selected column.
Columns	A column with trellis panels will be created for each value in the selected column or hierarchy.
Pages	A new page with trellis panels will be created for each value in the selected column or hierarchy. Scroll down in the visualization to see the next page.
Panels	Splits the visualization into different panels for all categories in the selected column or hierarchy, without binding any dimensions to either rows or columns. This means that the number of actual values in the column to split by does not control the number of shown rows or columns in any way. The number of panels that is visible on each page is instead specified using the Max number of rows and Max number of columns controls below.
Split by	Specifies the column or hierarchy to define the categories by which the visualization should be split.
Manual layout	Select the check box to manually specify the number of rows and columns that should be visible without scrolling. If the check box is cleared, the application will automatically specify the number of rows and columns.
Max number of rows	Specifies the maximum number of panels that should be visible on each page.
Max number of columns	Specifies the maximum number of panels that should be visible on each page.

2 Dashboard visualization

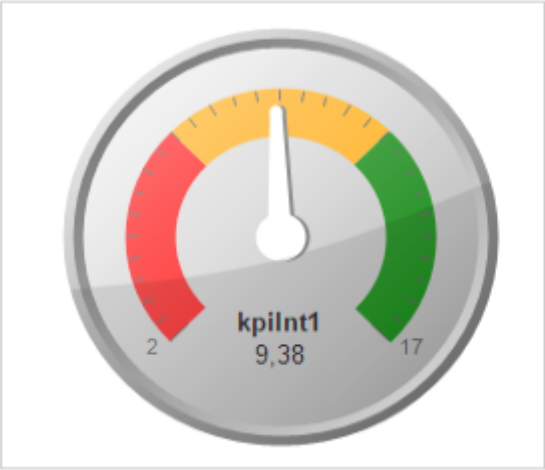
2.1 What is a Dashboard visualization? (Speed dial and Traffic light)

A dashboard consists of a number of graphs, plots and tables that are generally financial which reproduce information or key performance indicators in a logical, structured way. A dashboard is also often compared to your car's cockpit, which also uses dials, counters and warning lights to give you a clear overview of your car's status. This enables you to see at a glance what the state of affairs is.

The **Speed dial** and **Traffic light** provided here make it possible to build an attractive dashboard in Spotfire which gives you a clear overview of your targets and whether or not they are still attainable.

The status of the metric is shown by using minimum and maximum values (KPI values) that you have been defined in advance.

Example:
A data table contains sales figures for a number of different products and shops. The speed dial and traffic light can show the current total sum of Sales Amount against the KPI for the current year.



See also:

How to use the Speed dial and Traffic light

Speed dial and Traffic light Properties

2.2 How to use the Speed dial and Traffic light

1. To create a new Speed dial or Traffic light:

   Click on the new Speed dial  or Traffic light  button on the toolbar.

   Comment: You can also select Insert → New Visualization → Speed dial or Traffic light from the menu.

   Response: A first attempt to set up a suitable Speed dial or Traffic light is made by the application.

2. To adjust the Speed dial or Traffic light to display the categories and measures of your choice:

   Right click on the visualization, select properties and click on the Data tab. Select the data table, then select the measure. You can also drag and drop a column from the filter panel on the visualization.

   For changing the aggregation left mouse click on value and select **Aggregation**, then select a new aggregation method from the submenu.

   Comment: You can also select **Custom Expression…** (right mouse click on value) from the menu and create your own expression.

   Response: The Speed dial or Traffic light is updated to show the new information.

3. To apply changes to the segments and colors:

   Right click on the visualization, select properties and click on the Segments tab and create your own segments. By default three segments are created. You can add new segments, change the name, color and values for the low and high boundaries.

   Low boundary: This is the minimum value limiting the range of the visualization.

   Max boundary: This is the maximum value limiting the range of the visualization.

4. To apply changes to presentation:

   Right click on the visualization, select properties and click on the Presentation tab. You can hide or show the measurement, scale and the text elements from the visualization.

   In the text editor you create your own text which will be displayed in the visualization.

   Text example: "€ " & Sum([SalesAmount])/1000 & " (*10^3)"

   You can use the expression builder to change the expression.

   When your dataset contains large numbers you can round these using an expression. For example: {0}/1000

   In the steps and labels option you can change the number of steps and the number of labels on the scale.

In the decimals option you can change the number of decimal point digits shown in the scale.

2.3 Speed dial and Traffic light Properties

The Speed dial and traffic light Properties dialog consists of several pages:

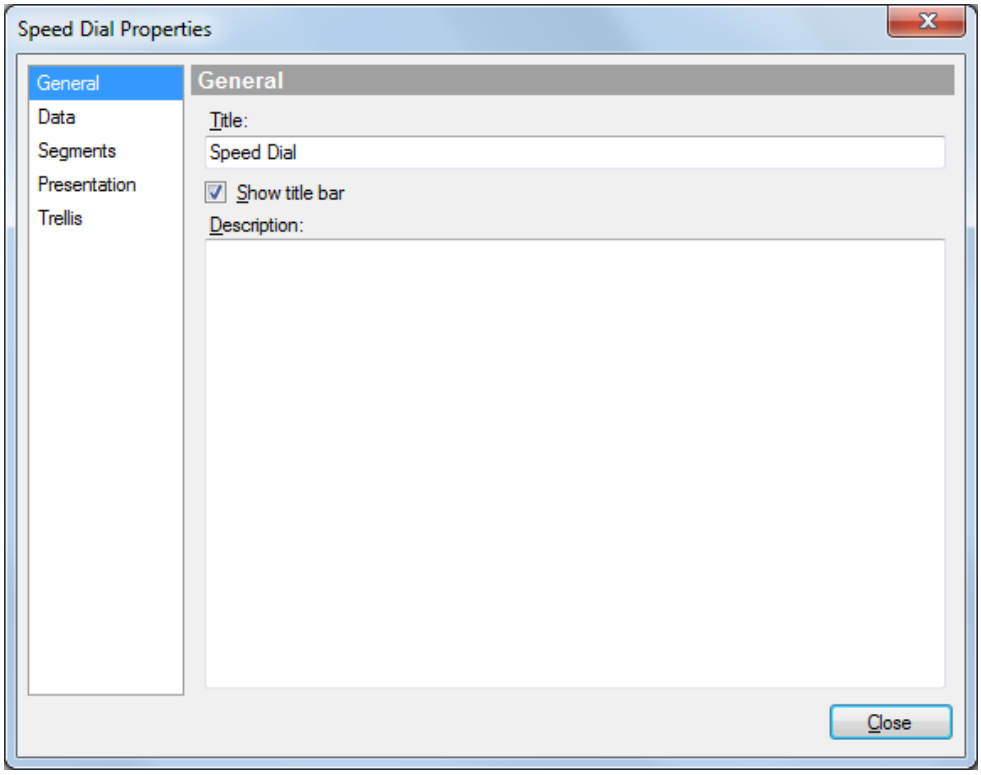
- General
- Data
- Segments
- Appearance
- Presentation (only available for speed dial)
- Trellis

To reach the Speed dial and Traffic light Properties dialog:

1. Right-click on the Speed dial or Traffic light visualization.
2. Select **Properties** from the pop-up menu.

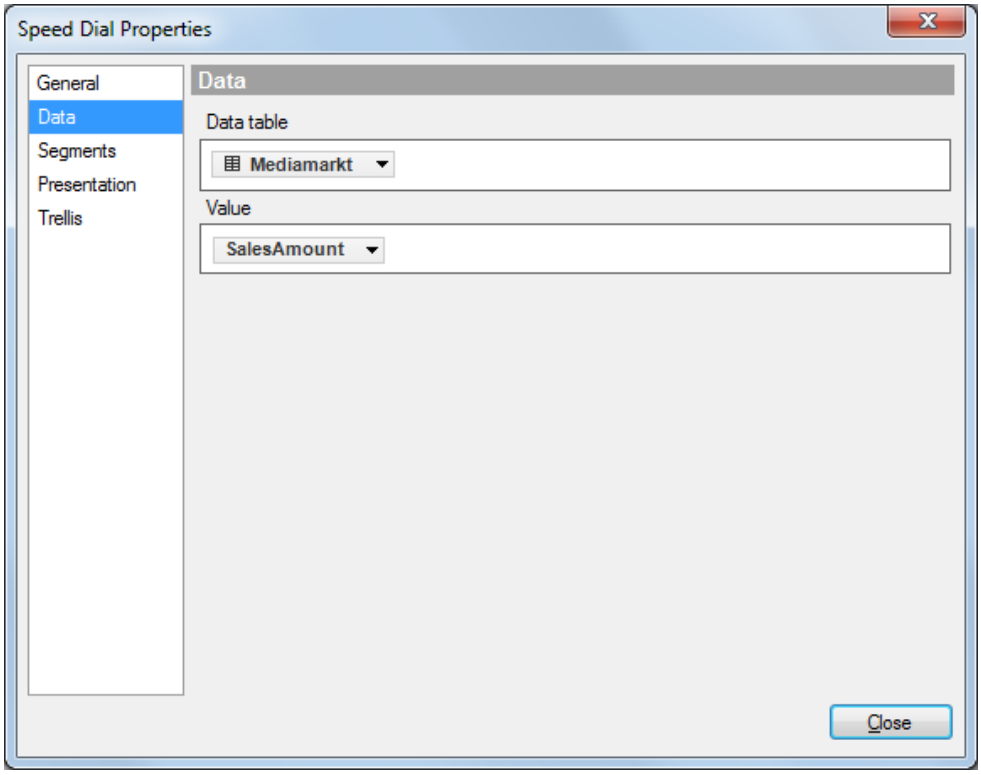
Comment: You can also click on the Speed dial and Traffic light visualization to make it active and then select **Edit** → **Visualization Properties**.

2.4 Speed dial and Traffic light Properties – General



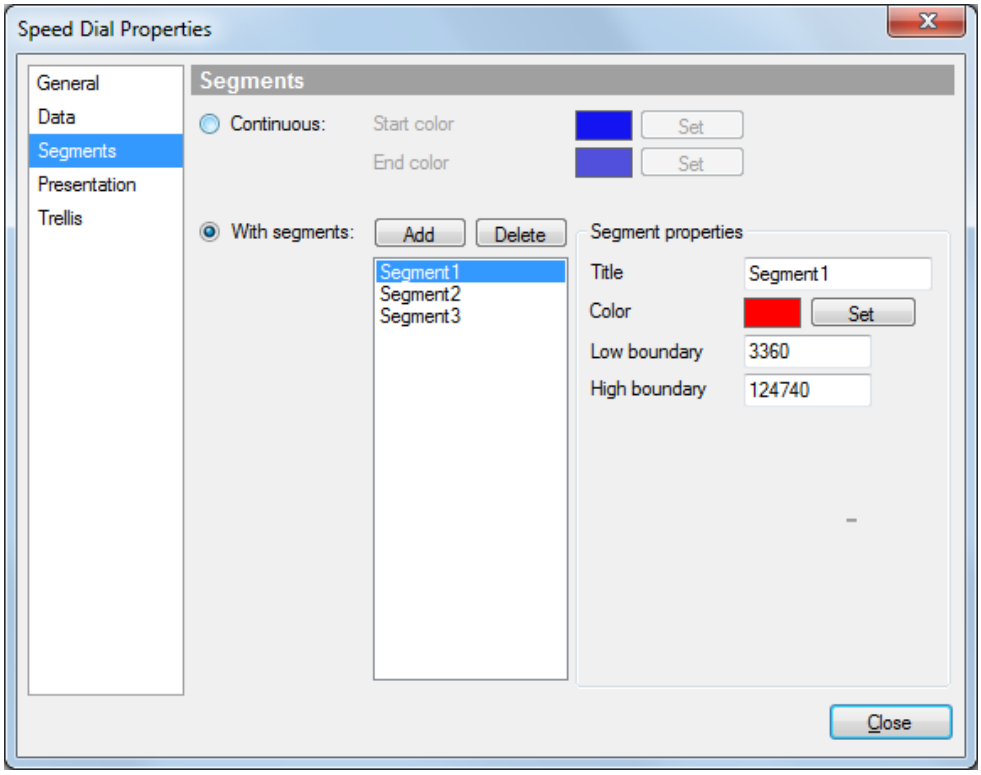
Option	Description
Title	The title of the visualization. Tip: Double-click on the title bar of the visualization for a shortcut to this field.
Show title bar	Specifies whether or not to show the visualization title.
Description	A description of the visualization. This description can optionally be shown in the Legend.

2.5 Speed dial and Traffic light Properties – Data



Option	Description
Data table	Specifies the data table on which the visualization will work.
Value	Specifies the measurement value to be displayed in the Speed dial or Traffic light, based on the defined KPI value for the current period.

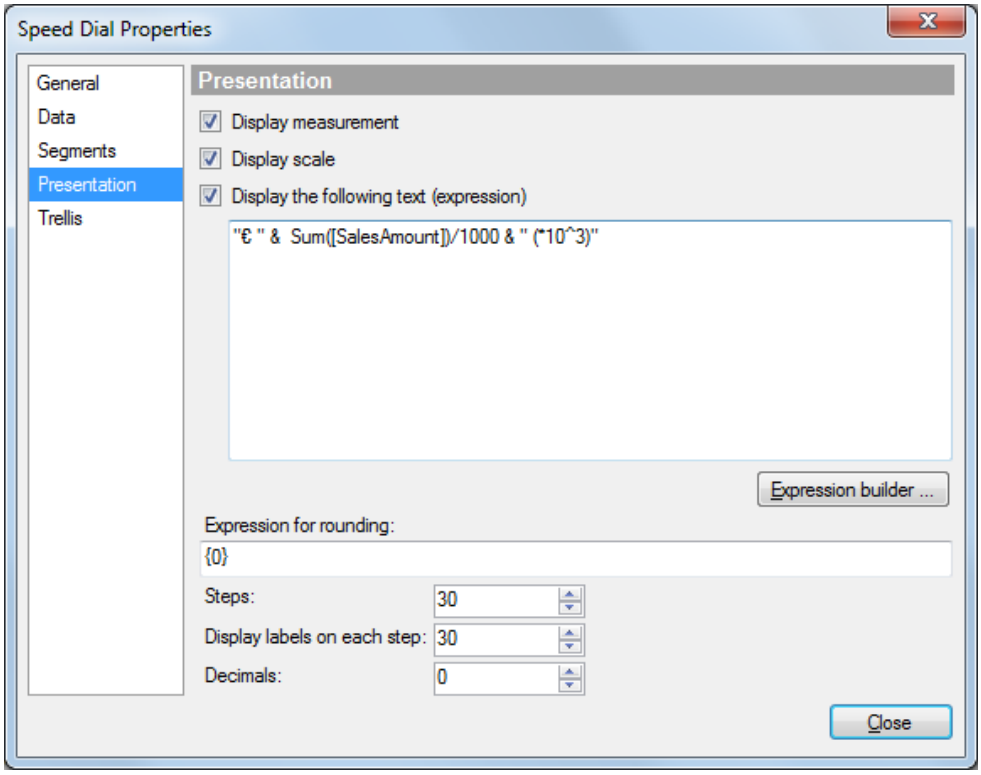
2.6 Speed dial and Traffic light Properties – Segments



Option	Description
Continuous	Specifies a start color and end color for the speed dial (this option is only available in the speed dial) Continuous coloring is based on one segment.
With segments	The Segments option is used for defining the segments making up the visualization. Both visualizations must have at least one segment. The segments make up differently colored areas in the visualization background. For traffic light each segment corresponds to one light. • Add Click this button to add a new segment to the visualization. • Delete Click this button to remove the currently selected segment from the visualization. • Title Specifies a name for the selected segment. This name is for identification only and is not relevant for drawing the visualization. • Color Specifies the color for a segment. Change the color with a color picker. • Low boundary This is the minimum value for the segment. • High boundary This is the maximum value for the segment.

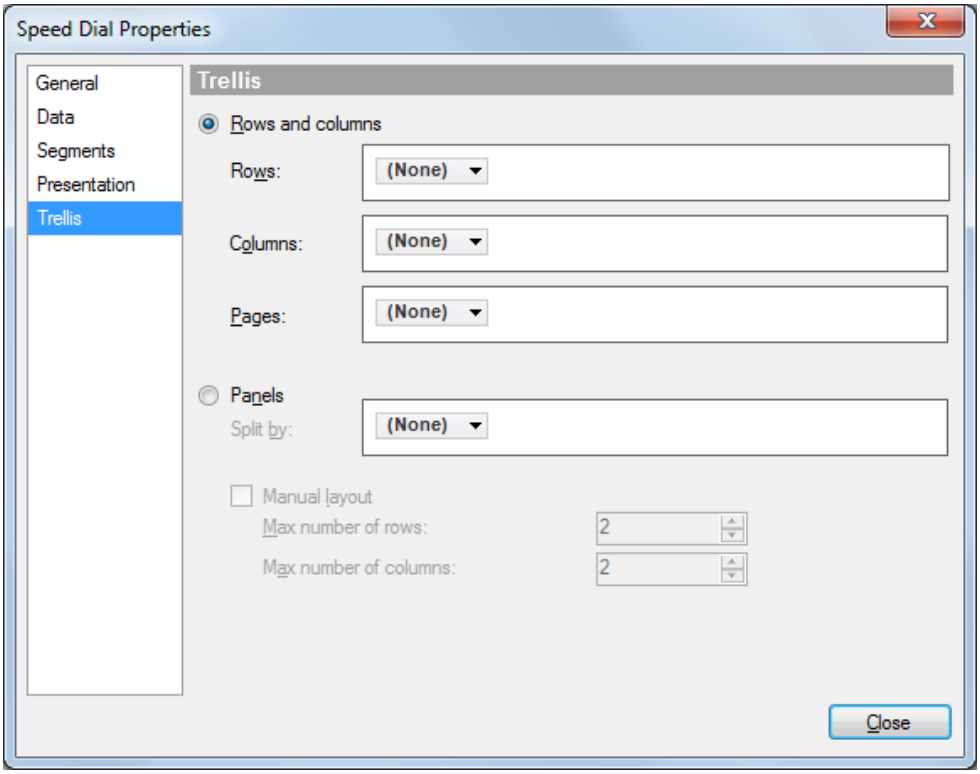
2.7 Speed dial and Traffic light Properties – Presentation

Note: The presentation tab is only available in the Speed dial.



Option	Description
Display measurement	Hide or show the measurement title in the visualization.
Display scale	Hide or show the scale in the visualization.
Display the following text	Hide or show text in the visualization.
Expression	In the expression text box you can create your own expression. You can use the expression builder to create an expression.
Expression for rounding	When your dataset contains large numbers you can round these using an expression. For example: {0}/1000
Steps	With the steps and display labels option you can change the number of steps and the number of labels on the scale.
Display labels on each step	With the steps and display labels option you can change the number of steps and the number of labels on the scale.
Decimals	With the decimals option you can change the number of decimal point digits shown in the scale.

2.8 Speed dial and Traffic light Properties – Trellis



Option	Description
Rows and columns	Splits the visualization into different panels for all categories in the selected columns. The number of values in the specified column or hierarchy controls the number of panels to be displayed in each row, column or page, respectively.
Rows	A row with trellis panels will be created for each value in the selected column.
Columns	A column with trellis panels will be created for each value in the selected column or hierarchy.
Pages	A new page with trellis panels will be created for each value in the selected column or hierarchy. Scroll down in the visualization to see the next page.
Panels	Splits the visualization into different panels for all categories in the selected column or hierarchy, without binding any dimensions to either rows or columns. This means that the number of actual values in the column to split by does not control the number of shown rows or columns in any way. The number of panels that is visible on each page is instead specified using the Max number of rows and Max number of columns controls below.
Split by	Specifies the column to define the categories by which the visualization should be split.
Manual layout	Select the check box to manually specify the number of rows and columns that should be visible without scrolling. If the check box is cleared, the application will automatically specify the number of rows and columns.
Max number of rows	Specifies the maximum number of panels that should be visible on each page.
Max number of columns	Specifies the maximum number of panels that should be visible on each page.

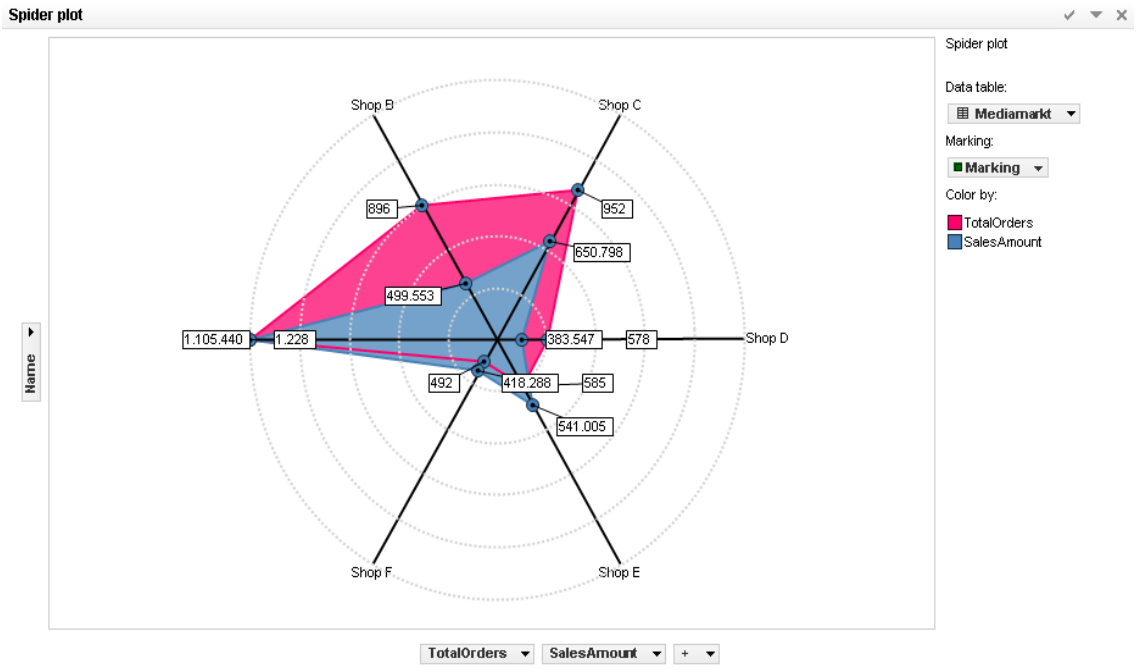
3 Spider plot visualization

3.1 What is a Spider plot visualization?

A Spider plot, also known as a radar plot, is a diagram in the form of a web that is used to indicate the relative influence of different parameters. This is usually done when there are more than three factors that can influence a result.

Spider plots can be used to show the different causes of a problem situation. The factors that have most influence are mainly located on the periphery of the web and parameters that have little influence on problem situations are located at the web's centre.

Example:
A data table contains sales figures for a number of different products and shops. The Spider plot can show the Sales Amount against the number of orders.



See also:

How to use the Spider plot

Spider plot Properties

3.2 How to use the Spider plot

1. To create a new Spider plot:

   Click on the new Spider plot button  on the toolbar.

   Comment: You can also select **Insert** → **New Visualization** → **Spider plot** from the menu.

   Response: A first attempt to set up a suitable Spider plot is made by the application.

2. To adjust the Spider plot to display the dimensions and measures of your choice:

   The dimension has the attribute value where the measure is over the aggregated value, for example: You want to display the Sales amount (measure) for every shop (dimension attribute).

   Right click on the visualization, select Properties and click on the Data tab. Choose the appropriate data table and the measure and dimension values on the Dimension tab or drag and drop the values from the filter panel on the visualization.

   For changing the aggregation left mouse click on the column and select **Aggregation**, then select a new aggregation method from the submenu.

   Comment: You can also select **Custom Expression...** (right mouse click on value) from the menu and create your own expression.

   Response: The Spider plot is updated to show the new information.

   Comment: For more information about how to change or what to show on the two axes, see **Properties**.

3. To apply changes to the ranges of the axes.

   Right click on the visualization, select Properties and click on the Dimension tab. In the range section you can change values for low and high ranges.

   By default the minimum and maximum values for the measure value are used.

   Low range: This is the minimum value limiting the range of the visualization.

   Max range: This is the maximum value limiting the range of the visualization.

4. To apply changes to presentation settings.

   Right click on the visualization, select Properties and click on the Appearance tab. On this tab you can change many properties for the visualization. You can hide or show the markers, labels, grid lines, thickness of lines, reverse the scale and toggle the chart. Toggling a chart means swapping the measures and the dimension in the visualization. Toggling requires at least two measures.

3.3 Spider plot Properties

The Spider plot Properties dialog consists of several pages:

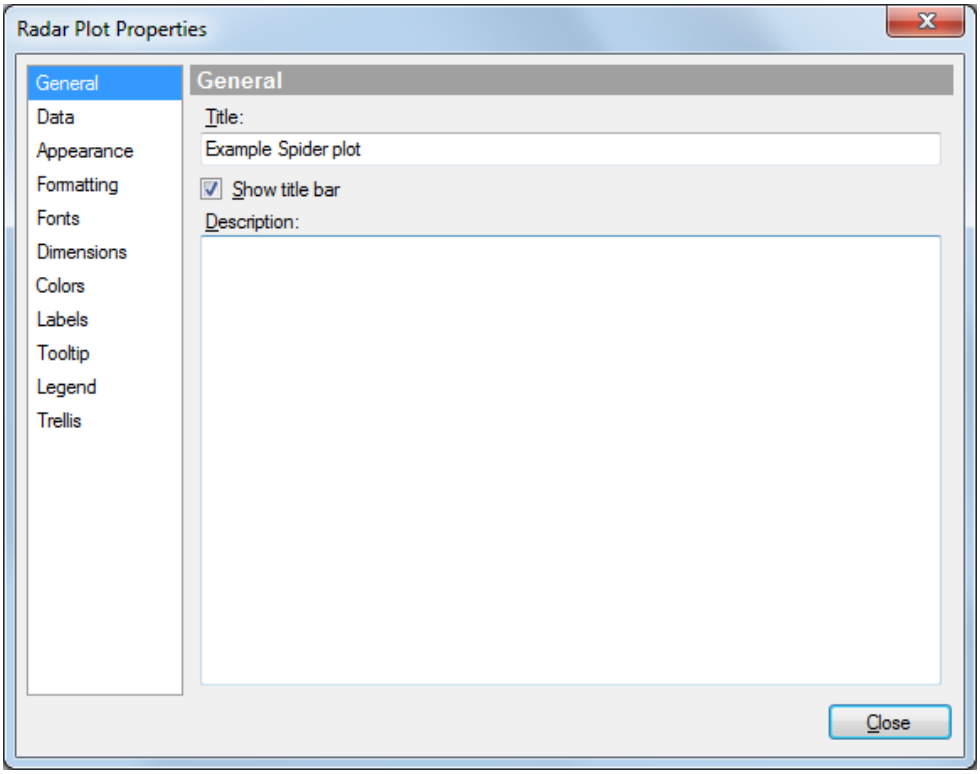
- General
- Data
- Appearance
- Formatting
- Fonts
- Dimensions
- Colors
- Labels
- Tooltip
- Legend
- Trellis

To reach the Spider plot Properties dialog:

1. Right-click on the Spider plot visualization.
2. Select **Properties** from the pop-up menu.

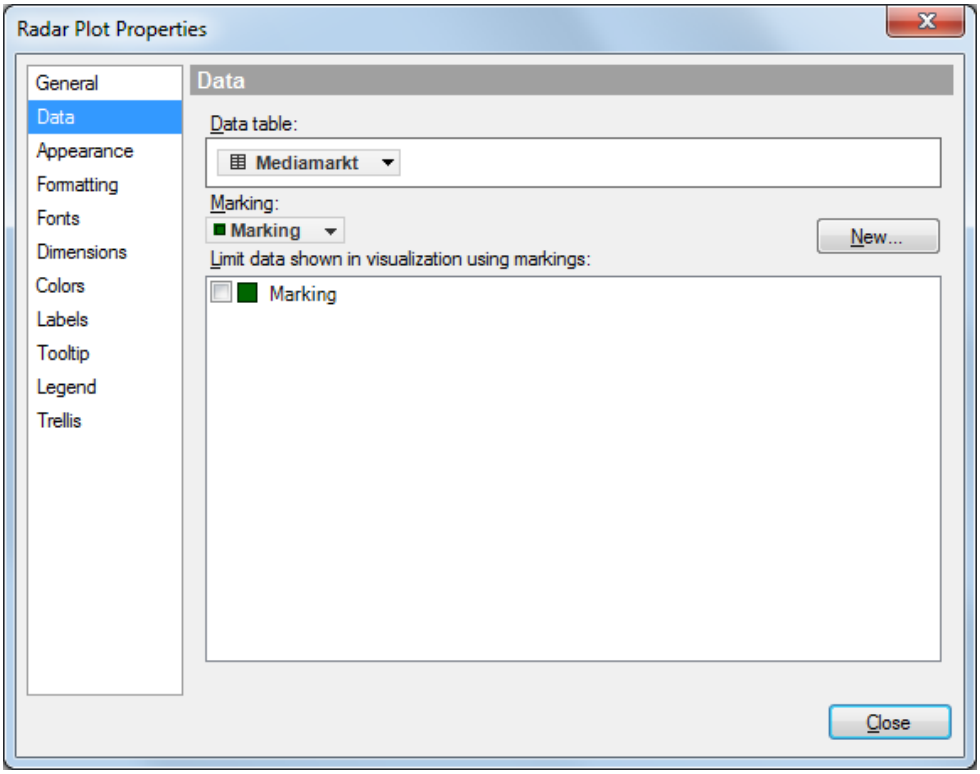
Comment: You can also click on the Spider plot visualization to make it active and then select **Edit** → **Visualization Properties**.

3.4 Spider plot Properties – General



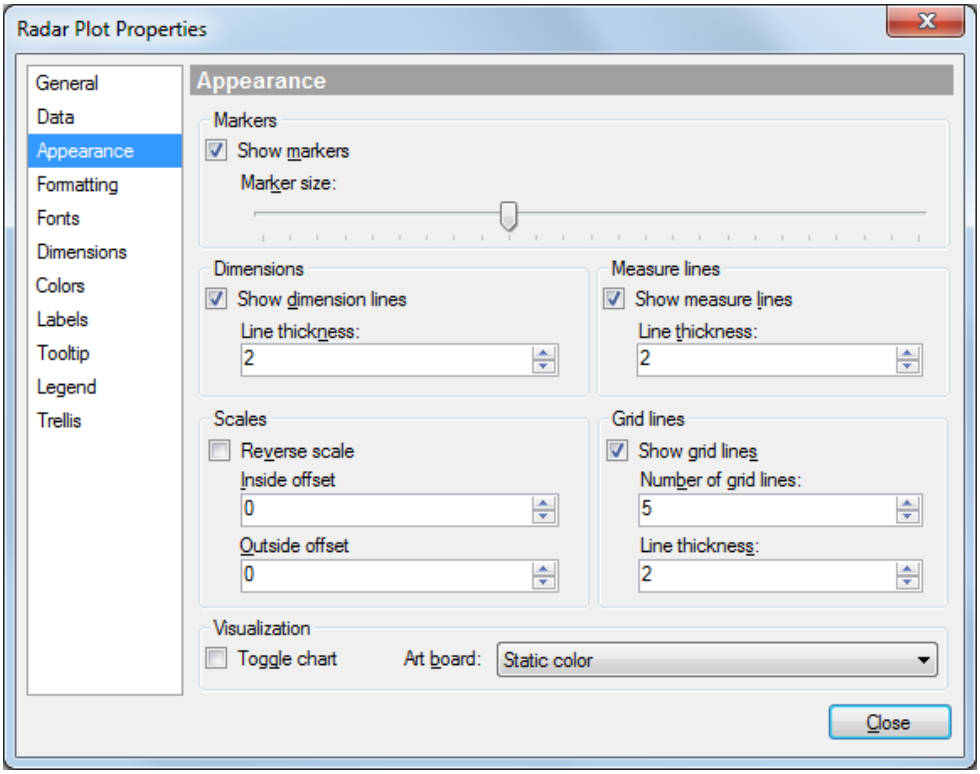
Option	Description
Title	The title of the visualization. Tip: Double-click on the title bar of the visualization for a shortcut to this field.
Show title bar	Specifies whether or not to show the visualization title.
Description	A description of the visualization. This description can optionally be shown in the Legend.

3.5 Spider plot Properties – Data



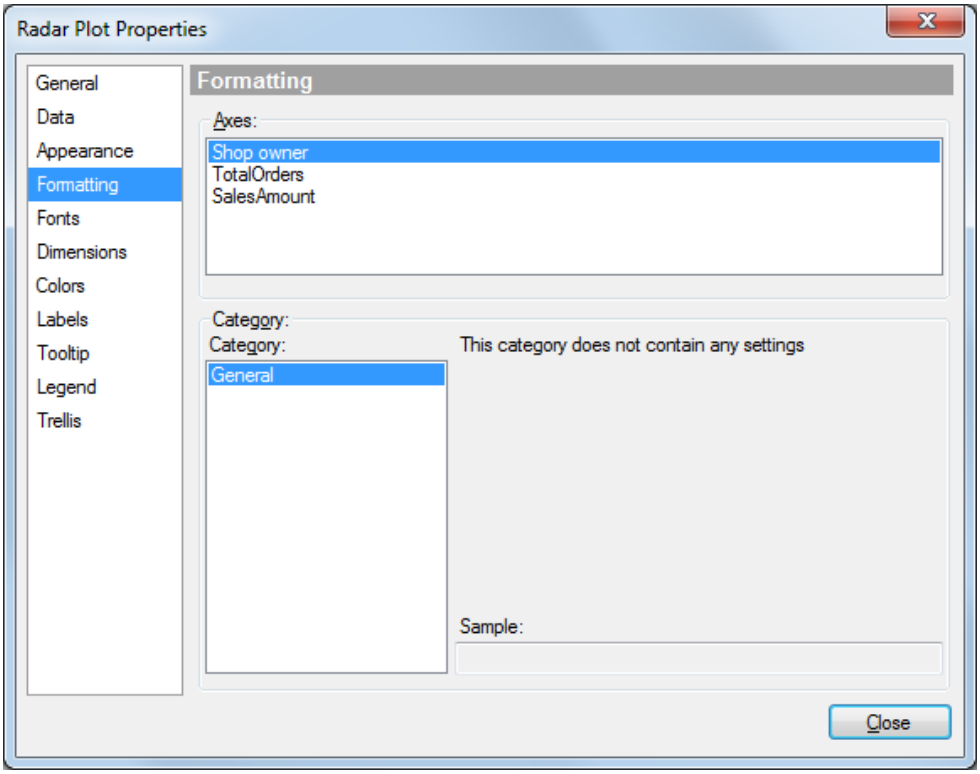
Option	Description
Data table	Specifies the data table on which the visualization will work.
Marking	Specifies the marking (hence, the color and relationships to other marked items) that will be used to mark items in this visualization.
New...	Opens the New Marking dialog where you can specify a new marking. The color of a previously created marking is edited in the Document Properties dialog.

3.6 Spider plot Properties – Appearance



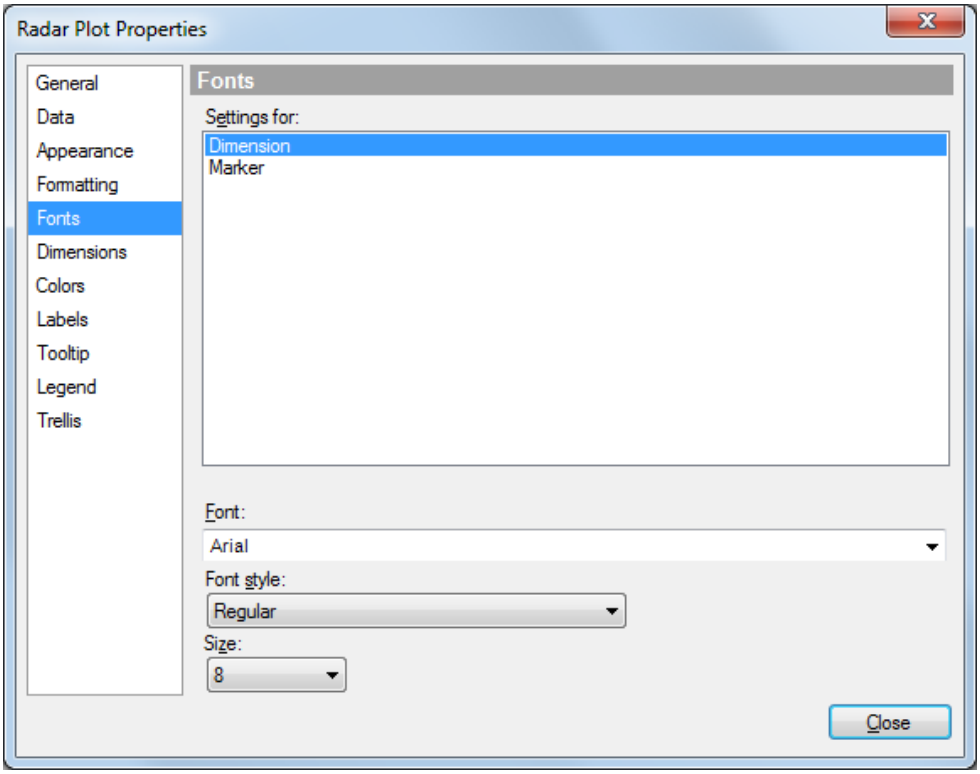
Option	Description
Show markers	Specifies showing of markers on the Spider plot.
Marker size	Specifies the marker size.
Show dimension lines	If a checkmark is shown in the check box, then the reference line is shown in the visualization. Clear the check box to hide the lines. With line thickness you can specify the thickness.
Show measure lines	If a checkmark is shown in the check box, then the reference line is shown in the visualization. Clear the check box to hide the lines. With line thickness you can specify the thickness.
Scales Inside offset	With the inside offset setting you can specify an offset from the centre of the Spider plot. Use this offset when many points are close together to the centre of the visualization.
Scales Outside offset	With the outside offset setting you can specify an offset from the outer side boundary of the Spider plot. Use this option to force points to move from the outer side boundary towards the centre of the visualization.
Scales Reverse scale	Reverses the current sort order, so that the lowest value is displayed at the top of the scale.
Show grid lines	Specifies whether or not gridlines should be visible.
Number of grid lines	To change the number of grid lines.
Grid line thickness	With line thickness you can specify the thickness.
Toggle chart	Swap the measures and the dimension in the visualization.
Art board	Change the continuous coloring.

3.7 Spider plot Properties – Formatting



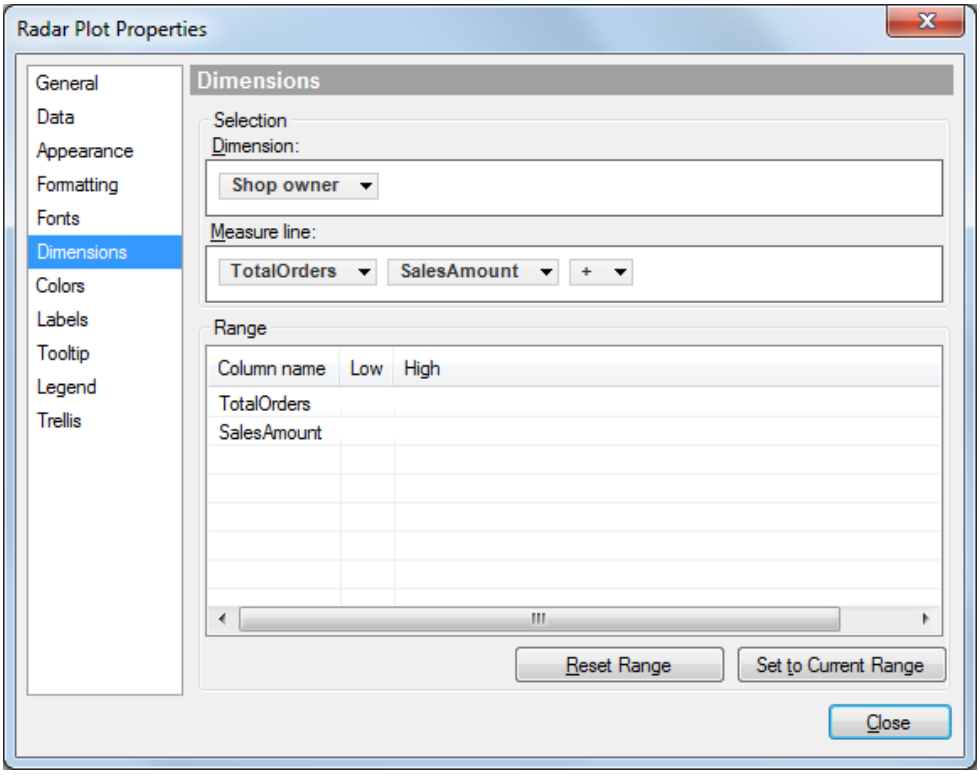
Option	Description
Axes	Displays which axes are currently being used in the Spider plot. Click an axis to change its formatting category.
Category	Lists the available formatting categories for the selected axis. Each category in this list has separate settings. Which categories are available depends on the data type of the selected axis. See Formatting Settings in Spotfire documentation for a full description of all possible options.

3.8 Spider plot Properties – Fonts



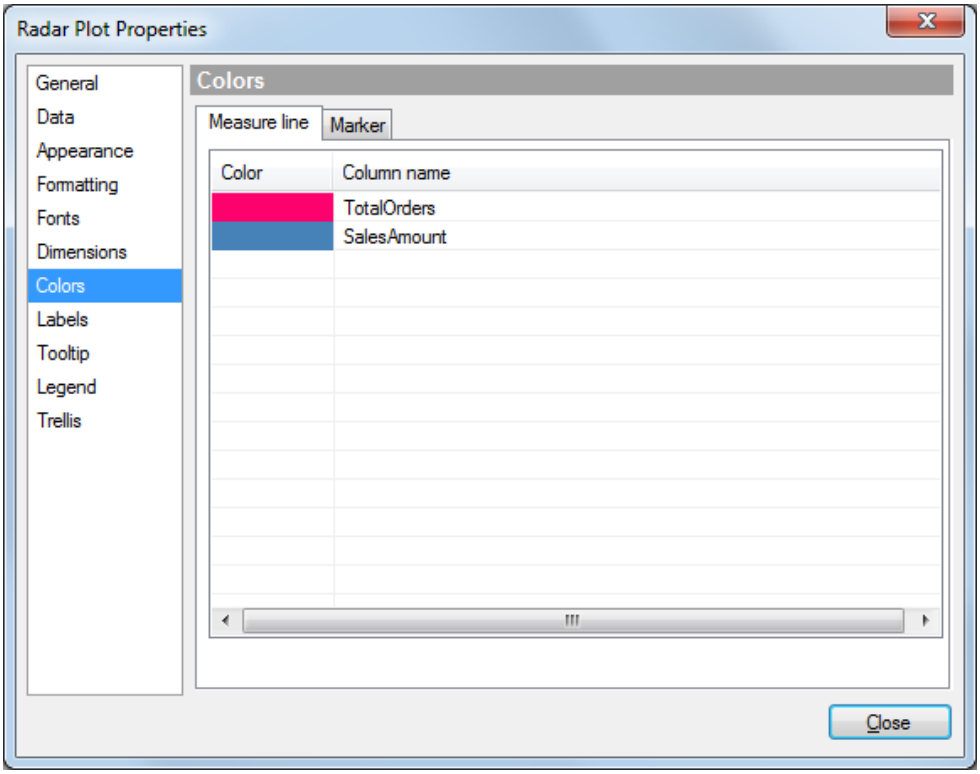
Option	Description
Settings for	Lists all items for which you can change the font settings. Click to select an item in the list to change the font settings for that text in the visualization.
Font	Specifies the font to use for the selected items.
Font style	Specifies the font style to use for the selected items.
Size	Specifies the font size to use for the selected items.

3.9 Spider plot Properties – Dimensions



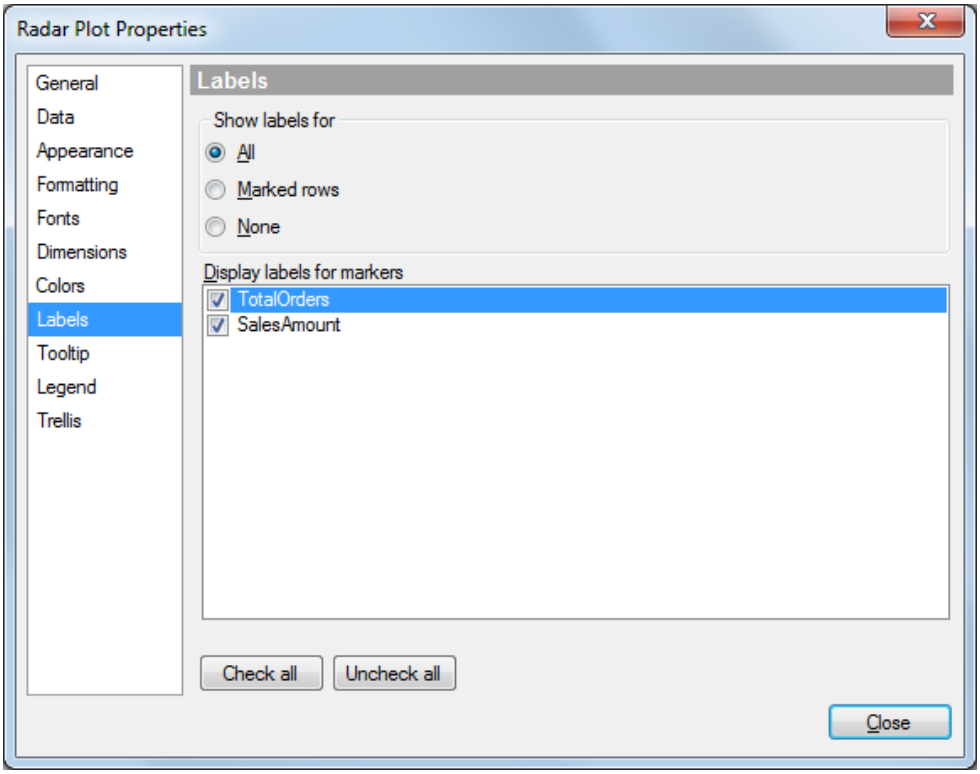
Option	Description
Dimension	Specifies the selected dimension. Comment: You can also select **Custom Expression...** (Right mouse click on value) from the menu and create your own expression.
Measure line	Specifies the selected measures. Comment: You can also select **Custom Expression...** (Right mouse click on value) from the menu and create your own expression.
Range	Specifies the boundaries for drawing the plot with the Low and High values.

3.10 Spider plot Properties – Colors



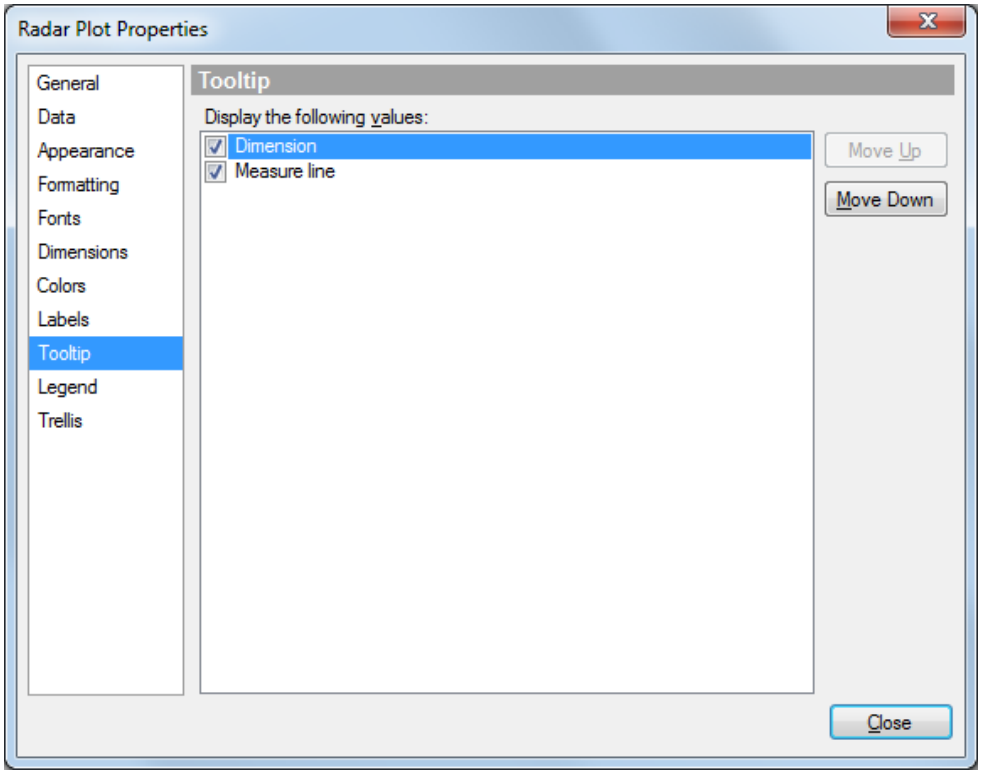
Option	Description
Measure line	Use this option to apply a single, fixed color per measure line. Use the palette to change to a different color.
Marker	Use this option to apply a color scheme with different colors for all values in a (categorical) column, or a continuous color gradient for numeric columns.

3.11 Spider plot Properties – Labels



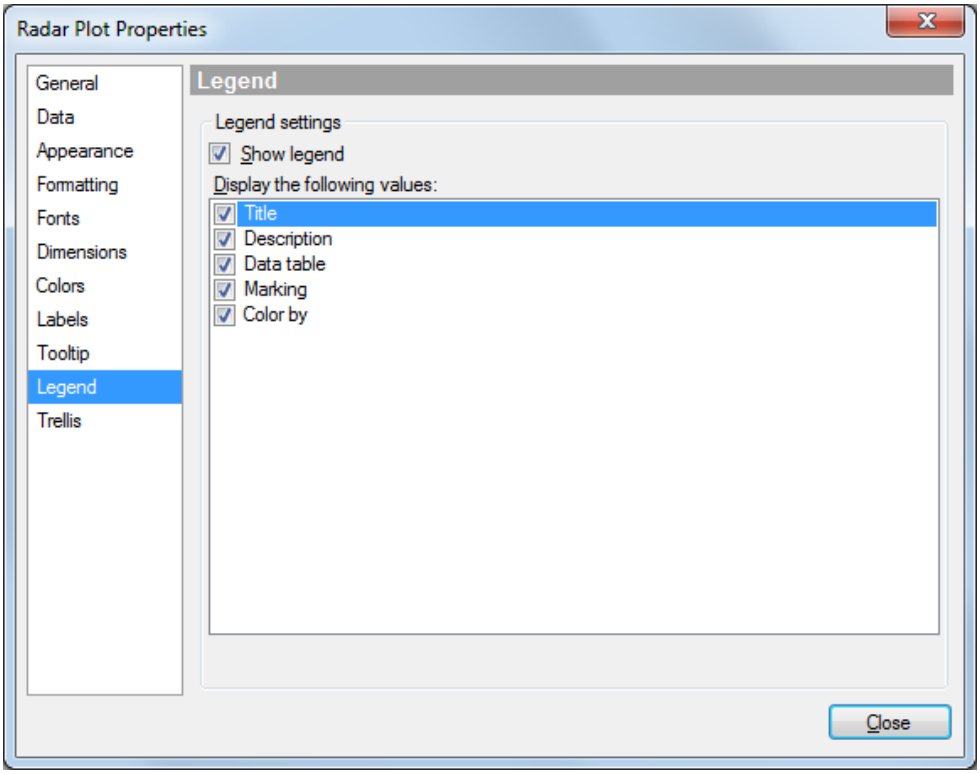
Option	Description
Show labels for	Determines whether to show labels on all bars (All), bars containing marked rows only (Marked rows), or not show any labels at all (None).
Display labels for markers	Determines whether to show labels for markers.

3.12 Spider plot Properties – Tooltip



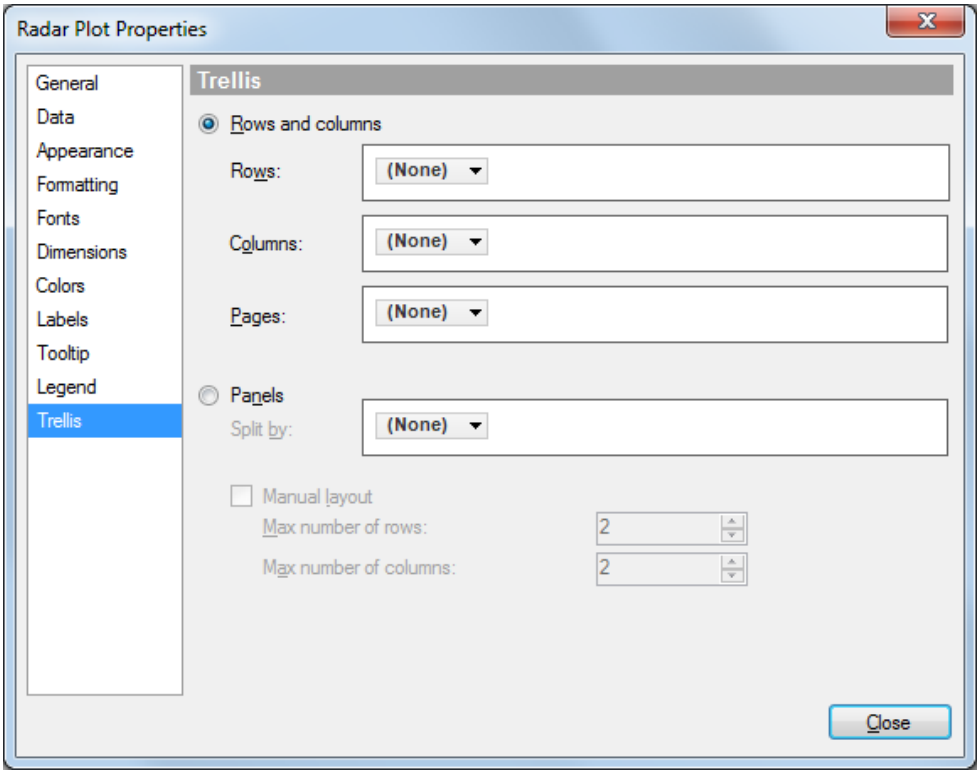
Option	Description
Display the following values	Defines what to show in the tooltip label and in what order it should be presented.

3.13 Spider plot Properties – Legend



Option	Description
Show legend	Specifies whether or not the legend should be shown in the visualization.
Display the following values	Specifies what will be shown in the legend.

3.14 Spider plot Properties – Trellis



Option	Description
Rows and columns	Splits the visualization into different panels for all categories in the selected columns. The number of values in the specified column or hierarchy controls the number of panels to be displayed in each row, column or page, respectively.
Rows	A row with trellis panels will be created for each value in the selected column.
Columns	A column with trellis panels will be created for each value in the selected column or hierarchy.
Pages	A new page with trellis panels will be created for each value in the selected column or hierarchy. Scroll down in the visualization to see the next page.
Panels	Splits the visualization into different panels for all categories in the selected column or hierarchy, without binding any dimensions to either rows or columns. This means that the number of actual values in the column to split by does not control the number of shown rows or columns in any way. The number of panels that is visible on each page is instead specified using the Max number of rows and Max number of columns controls below.
Split by	Specifies the column to define the categories by which the visualization should be split.
Manual layout	Select the check box to manually specify the number of rows and columns that should be visible without scrolling. If the check box is cleared, the application will automatically specify the number of rows and columns.
Max number of rows	Specifies the maximum number of panels that should be visible on each page.
Max number of columns	Specifies the maximum number of panels that should be visible on each page.