Comparison of SAS® BI Dashboard Indicators and SAS® Visual Analytics Objects
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Contents

Introduction ................................................................. 3

Bar Charts ........................................................................ 4
  Simple Bar Chart ............................................................... 4
  Bar Chart with Bullet ......................................................... 5
  Bar Chart with Reference Lines ........................................... 6
  Clustered Bar Chart ........................................................... 7
  Stacked Bar Chart ............................................................. 8
  Stacked Bar and Line Chart ................................................ 9
  Targeted Bar Chart ........................................................... 10

Bubble Plot ........................................................................ 11

Chart with Slider Prompt ..................................................... 12

Custom Graph .................................................................... 13

Dynamic Prompt ............................................................... 14

Dynamic Text .................................................................... 14

Forecast Chart ................................................................... 15

Interactive Summary Chart and Plot .................................... 16
  Interactive Summary and Bar Chart ................................... 16
  Interactive Summary and Scatter Plot ................................. 16
  Interactive Summary and Targeted Bar Chart ...................... 16

Key Performance Indicators (KPIs) ....................................... 17

Line Charts ........................................................................ 23
  Dual Line Chart ............................................................... 23
  Line Chart with Reference Lines ....................................... 24
  Multi-Line Chart ............................................................. 25
Introduction

The purpose of this document is to outline the differences and similarities between SAS® BI Dashboard indicators and SAS® Visual Analytics objects. The intent is to facilitate changing from enterprise dashboards developed using SAS BI Dashboard and to recreate those dashboards using SAS Visual Analytics. This document is written for business intelligence developers who have experience creating indicators using SAS BI Dashboard.

This document lists SAS BI Dashboard indicators alongside the complementary SAS Visual Analytics objects. Brief relevant notes are included. It is noted if no corresponding report object exists in SAS Visual Analytics. See the SAS® BI Dashboard User’s Guide for a complete description of each indicator.

This document is designed as a quick reference guide and is not intended to be a comprehensive listing of all SAS BI Dashboard indicators or all SAS Visual Analytics objects. SAS Visual Analytics offers more graph and report objects than are referenced in this document. For a complete list of objects, see the “Gallery of Report Objects” appendix in the SAS® Visual Analytics User’s Guide. It is important to note that all available objects might not be listed on the Objects tab in the SAS® Visual Analytics Designer by default. To customize which objects are listed, use the Show or Hide Objects dialog box on the Objects tab.

This document is also not intended to replace each application’s user guide. Instead, this document is simply an outline to show how SAS BI Dashboard indicators can be mapped to SAS Visual Analytics objects.

Images in this document have various data skins applied. Note that changing the data skin for each indicator and/or report object will result in a different look-and-feel for the chart.

SAS® BI Dashboard Documentation  
http://support.sas.com/documentation/onlinedoc/bidashboard/index.html

SAS® Visual Analytics Documentation  
http://support.sas.com/documentation/onlinedoc/va/index.html

Versions used to create this document:  
SAS® BI Dashboard 4.4  
SAS® Visual Analytics 7.3
Bar Charts

Simple Bar Chart

In SAS BI Dashboard, a simple bar chart indicator only supports vertical bars.

In SAS Visual Analytics, the bar chart can be shown horizontally or vertically.
In SAS BI Dashboard, a bar chart with bullet can be displayed either horizontally or vertically.

SAS Visual Analytics does not have a bar chart with bullet report object or exploration. The same type of graphic display can be created using the Custom Graph Builder to overlay two bar charts. Increasing the bar spacing for the second bar chart creates the “bullet” effect.
Bar Chart with Reference Lines

In SAS BI Dashboard, the reference lines and bar colors are controlled by the intervals defined in the associated range object.

SAS Visual Analytics does not have a specific report object or exploration like the SAS BI Dashboard bar chart with reference lines. However, the bar chart report object allows users to define colored reference lines on the Properties tab. Column colors can be defined on the Display Rules tab of the bar chart report object.
SAS Visual Analytics does not have a specific clustered bar chart report object or exploration like the SAS BI Dashboard clustered bar chart indicator. Using the bar chart report object in SAS Visual Analytics with a **Group role** defined and a **Grouping style of Cluster** produces the same result.
In SAS BI Dashboard, a stacked bar chart indicator only supports vertical bars.

In a SAS Visual Analytics bar chart, bars can be displayed horizontally or vertically. Selecting the **Grouping style** of **Stack** on the **Properties** tab and assigning a **Group role** will produce the same style of chart.
Stacked Bar and Line Chart

In SAS BI Dashboard, the stacked bar and line chart indicator only supports vertical bars.

SAS Visual Analytics does not have a stacked bar and line chart report object or exploration. The same type of graphic display can be created using the Custom Graph Builder to overlay a bar chart with a line chart. For the chart in the image above, a Group role was added to the bar chart and the Grouping style was set to Stack. Both of the charts use a Shared role for the category (which is Product in the image above).
In SAS BI Dashboard, a targeted bar chart can be displayed horizontally or vertically. The same is true for the targeted bar chart in SAS Visual Analytics.
Bubble Plot

SAS BI DASHBOARD: Bubble Plot

SAS VISUAL ANALYTICS: Bubble Plot

This bubble plot uses **Year** for the **Lattice columns**

This bubble plot uses **Year** as the **Animation**

The bubble plot in SAS Visual Analytics can include animation. By placing a date value, in this case **Year**, in the **Animation** role, interactive tools are added to play through those values by using the controls below the plot. In addition, adding **Data tip values** results in other statistics being shown when the mouse is moved over a particular bubble. Note that both the X and Y axis must be numeric, not a category.
In SAS BI Dashboard, a chart with slider prompt (pointed to by the red arrow) is commonly used with time values on the X axis.

When adding a forecast to a line chart in SAS Visual Analytics Explorer, a slider box is added below the chart. This allows users to select the time period on which they want to focus. The first example is looking at dates from the last two weeks of December 2010 to the end of February 2011. An added feature in SAS Visual Analytics is that the values appear in a pop-up box when the mouse is moved over a point.
Custom Graph

SAS BI DASHBOARD: Custom Graph

SAS VISUAL ANALYTICS: Custom Graph

In SAS BI Dashboard, the image or graph displayed in a custom graph is a static image.

In SAS Visual Analytics, custom graphs can be included in reports in two ways—by a stored process or by a custom graph created using the Custom Graph Builder. The Custom Graph Builder allows users to create graph templates by combining various types of graphs and defining specific properties for each graph.
Dynamic Prompt

In SAS BI Dashboard, a dynamic prompt filters specified indicators. In SAS Visual Analytics, a drop-down list control object can be used to filter specific report objects, the report section, or the entire report. Drop-down lists can optionally display frequency or frequency percent for the list items. Note that SAS Visual Analytics offers several other control objects, such as a list, button bar, text input, and range slider.

Dynamic Text

In SAS BI Dashboard, a dynamic text object can dynamically display the value of a data field in addition to other static text. For example, in the image above, the user-selected dynamic prompt value of Asia determines the amount of total sales displayed in the dynamic text box (on the right). SAS Visual Analytics does not include a similar report object.
Forecast Chart

SAS BI DASHBOARD:
Forecast Chart

SAS VISUAL ANALYTICS Explorer:
Dual Axis Line Chart with Analysis

Here is the data structure for the forecast chart:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Year</td>
<td>ACTUAL</td>
<td>FORECAST</td>
<td>LS</td>
<td>US</td>
<td>TARGET</td>
</tr>
<tr>
<td>2</td>
<td>2001</td>
<td>$17,142,548</td>
<td>$9,244,795</td>
<td>1.242549</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2002</td>
<td>$14,879,983</td>
<td>$13,843,947</td>
<td>1.4073803</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2003</td>
<td>$15,677,312</td>
<td>$18,451,599</td>
<td>1.6877312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2004</td>
<td>$23,094,239</td>
<td>$23,655,251</td>
<td>2.3004239</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2005</td>
<td>$17,895,781</td>
<td>$27,556,963</td>
<td>1.7992780</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2006</td>
<td>$26,180,912</td>
<td>$32,252,596</td>
<td>2.6180912</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2007</td>
<td>$34,764,159</td>
<td>$36,866,268</td>
<td>3.4764159</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2008</td>
<td>$39,321,366</td>
<td>$41,469,960</td>
<td>3.9321366</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>2009</td>
<td>$46,073,512</td>
<td>$56,883,725</td>
<td>$65,943,296</td>
<td>4.9504657</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2010</td>
<td>$50,677,144</td>
<td>$60,023,295</td>
<td>$71,025,060</td>
<td>5.7556961</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>2011</td>
<td>$55,280,916</td>
<td>$63,091,877</td>
<td>$77,469,758</td>
<td>6.1364946</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>2012</td>
<td>$59,884,469</td>
<td>$66,023,106</td>
<td>$83,745,826</td>
<td>6.5028885</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2013</td>
<td>$64,488,120</td>
<td>$88,848,555</td>
<td>$90,127,386</td>
<td>6.8560818</td>
<td></td>
</tr>
</tbody>
</table>

SAS Visual Analytics Designer does not have a complementary forecast chart report object similar to the forecast chart indicator in SAS BI Dashboard. However, you can create a forecast chart in SAS Visual Analytics Explorer by using a line chart visualization with forecasting analysis. In the SAS Visual Analytics Explorer image above, Year and Total Retail Sales were selected. By selecting Analysis on the main menu, you get a forecast for the associated time intervals selected. In the example above, five time intervals were selected.
Interactive Summary Chart and Plot

**SAS BI DASHBOARD:** Interactive Summary and Charts or Plots

Interactive Summary and Bar Chart

![Interactive Summary and Bar Chart](image1)

Interactive Summary and Scatter Plot

![Interactive Summary and Scatter Plot](image2)

Interactive Summary and Targeted Bar Chart

![Interactive Summary and Targeted Bar Chart](image3)

**SAS® VISUAL ANALYTICS:** Interactive Summary and Charts or Plots

![SAS® VISUAL ANALYTICS](image4)

SAS Visual Analytics does not have an equivalent to the SAS BI Dashboard interactive summary chart and plot. However, similar results can be achieved by using a slider control object. In the example above, a slider control object is used as a section filter. In the first SAS Visual Analytics image, the range is not filtered, so all of the chart is displayed. In the second image, the slider has been adjusted to only look at values between $16,576,877 and $53,921,386, so the only years that appear are those that had values within that range. The years 2005 and 2006 are not shown.
Key Performance Indicators (KPIs)

In SAS BI Dashboard, key performance indicators (KPI) can be speedometers, thermometers, tachometers, sliders, dials, arrows, traffic lights, and other types of gauges.

SAS Visual Analytics offers multiple gauge types instead of a key performance indicator (KPI) report object or exploration type. SAS Visual Analytics does not offer all of the same KPI options that are available in SAS BI Dashboard. In SAS BI Dashboard, the same range object can be applied to multiple KPI indicators. In SAS Visual Analytics, display rules must be defined for each report object.

SAS BI Dashboard offers numerous dial gauge options for the KPI indicator. SAS Visual Analytics has one dial gauge report object. However, the various data skins (found on the Styles tab) make the dial gauges look entirely different.

SAS BI DASHBOARD: KPI - Dial

SAS VISUAL ANALYTICS: Dial Gauge with Basic KPI Data Skin (Object= Gauge, Type=Dial)
SAS BI DASHBOARD:  
KPI - Dynamic Bullet Bar

SAS VISUAL ANALYTICS:  
Bullet Gauge  
(Object= Gauge, Type=Bullet)
SAS BI DASHBOARD:
KPI – Dynamic Thermometer

SAS VISUAL ANALYTICS:
Thermometer Gauge with Display Rules
(Object= Gauge, Type=Thermometer)

SAS BI DASHBOARD:
KPI - Dynamic Traffic Light

SAS VISUAL ANALYTICS

There is not a complementary traffic light object.
SAS BI DASHBOARD:
KPI-Slider
(Dynamic Slider, Stylized, etc.)

Dynamic Slider

SAS VISUAL ANALYTICS:
Slider Gauge with Basic Data Skin
(Object= Gauge, Type=Slider)

Dynamic Slider

Stylized Slider

Vertical Slider with Onyx Data Skin.
SAS BI DASHBOARD: KPI - Speedometer

SAS VISUAL ANALYTICS: Speedometer Gauge
(Object= Gauge, Type=Speedometer)

Dynamic Speedometer
SAS BI DASHBOARD:  
Variety of Tachometers

SAS VISUAL ANALYTICS

There is not a complementary tachometer object.
Line Charts

Dual Line Chart

SAS BI DASHBOARD:
Dual Line Chart

SAS VISUAL ANALYTICS:
Dual Axis Line Chart

In the SAS BI Dashboard dual line chart, both Y axis values are displayed on the same left axis.

The dual axis line chart in SAS Visual Analytics allows for the display of a second Y axis on the right side. In addition, the left and right Y axis minimum and maximum values can be adjusted on the Properties tab. In the image above, the maximum for the right Y axis was modified.
In SAS BI Dashboard, the reference lines are controlled by the intervals defined in the associated range object.

In SAS Visual Analytics, colored reference lines can be added to the line chart on the Properties tab.
A chart similar to the multi-line chart in SAS BI Dashboard can be created in SAS Visual Analytics by defining a category for the **Group** role on a line chart.
In SAS BI Dashboard, a multi-area chart is a stacked multi-line chart with the space below each line segment filled down to the X axis.

The same effect can be accomplished in SAS Visual Analytics using the line chart with Stack Filled applied for the Grouping style.
Needle Plot

The needle plot is a not a default report object or exploration type in SAS Visual Analytics, as it is in SAS BI Dashboard. However, a needle plot graph element is available in the Custom Graph Builder. This element allows for more customizations than in SAS BI Dashboard.
Pie Chart

SAS BI Dashboard and SAS Visual Analytics have a similar pie chart indicator/report object.
SAS BI DASHBOARD:
Range Map

SAS VISUAL ANALYTICS:

SAS Visual Analytics does not have a complementary map.
SAS Visual Analytics Explorer offers a histogram. SAS Visual Analytics Designer does not currently offer a default report object complementary to the SAS BI Dashboard Scatter Histogram. The Custom Graph Builder also does not include histograms. However, bar charts can be used for a similar effect. This choice allows for more customizations to the scatter histogram than in SAS BI Dashboard. In the example above, a scatter and two bar charts were included in a custom graph to produce a graph similar to a scatter histogram.
Both SAS BI Dashboard and SAS Visual Analytics offer a scatter plot indicator/report object.
Schedule Chart

The schedule chart (also known as a Gantt chart) is not a default report object or exploration type in SAS Visual Analytics as it is in SAS BI Dashboard. However, a schedule chart graph element is available in the Custom Graph Builder. This element allows for more customizations than are available in SAS BI Dashboard.
There are many different gauges that can be used with the SAS BI Dashboard spark table.

In SAS Visual Analytics, gauges can be included in a list table using a display rule. SAS Visual Analytics does not offer as many gauge options as SAS BI Dashboard.
In SAS BI Dashboard, a range object defines the intervals and colors applied to the tile chart.

In SAS Visual Analytics, range colors can be assigned on the Display Rules tab. In both the SAS BI Dashboard tile charts and SAS Visual Analytics tree maps, two distinct measures can be included—one for the size of tiles/rectangles and another for the color. In the examples above, Total Retail Price was used for both measures.
In SAS BI Dashboard, intervals defined on the associated range objects control the arrow colors.

SAS Visual Analytics does not have a default report object or exploration type. However, a vector plot graph element is available in the Custom Graph Builder. This element allows for more customizations than in SAS BI Dashboard. In SAS Visual Analytics, colored range values can be assigned on the Display Rules tab.
A waterfall chart is also known as a progressive bar chart.

In SAS Visual Analytics, the Final bar is automatically included (even if it was not a part of the original data), and the change value is automatically labelled as increasing and decreasing. SAS BI Dashboard does not append a Final bar to the waterfall chart.