CALABRIO™

Calabrio ONE

ADVANCED REPORTING USER GUIDE FOR ON-PREMISES DEPLOYMENTS

Version 11.5

November 26, 2019

Notice

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Contents

About Advanced Reporting

Advanced Reporting combines a data integration and orchestration platform with a data design and visualization platform. This combination allows you to take disorganized, complex data and convert it into actionable business information on demand.

ARCHITECTURE

Each layer of the Advanced Reporting architecture works together to allow you to connect to your data and create useful business intelligence that fits your data needs. The following sections describe layers of the architecture that make Advanced Reporting work.

Data Connection

Advanced Reporting provides data connectors that are designed to broker communications between Advanced Reporting and the source data system. These connectors can be cloud-based or remote. Advanced Reporting is continually adding connectors to increase the types and sources of data you can add.

Data Modeler

Using the Data Modeler, Advanced Reporting helps you organize the complexity of data obtained from a variety of different data sources, into a comprehensive, cohesive, meaningful library of data. Essentially, the Data Modeler helps you teach Advanced Reporting what your data looks like and how it interrelates.

You map the pathways through your data with the Data Modeler, creating a foundation for new contributions of data. These pathways allow Advanced Reporting to automatically understand new additions of data and provide a foundation to create reports using questions assembled using business terms instead of queries.

SPRITE Data Engine

The SPRITE Data Engine is the programmatic machinery that handles analytics and data processing using the definitions and relationships established in the Data Designer. These logical connections help the SPRITE Data Engine construct the building blocks needed to

create Advanced Reporting Analytics, allowing your data to become a report or dashboard.

> **NOTE** Advanced Reporting users and customers have no direct control over the workings of the SPRITE Data Engine.

Report and Dashboard Designers

Advanced Reporting gives you the tools to create meaningful visual content from the contents of your data library in the form of reports and dashboards. Using the Advanced Reporting Report Designer or Dashboard Designer, you can access the building blocks constructed by the Advanced Reporting engine to create useful visualizations of your data.

Advanced Reporting Administration

Advanced Reporting Administration helps control the front-end interaction with the system. This is done primarily by organizing Advanced Reporting users into groups. Groups are used to organize the sharing of reports and dashboards as well as determining which users have access to the Data Modeler, Administration tools, and analytics tools.

Cloud API

The Advanced Reporting Cloud API is a RESTful API for integration into cloud applications. With the Advanced Reporting Cloud API you can integrate Advanced Reporting analytics into your own tools, leveraging Advanced Reporting's powerful data architecture to fit your company's needs.

About the User Interface

As you move throughout the Advanced Reporting interface, there are a few elements that will remain the same. The following menu bar can be seen at the top of each page:

The menu bar in Advanced Reporting includes links to the following three pages.

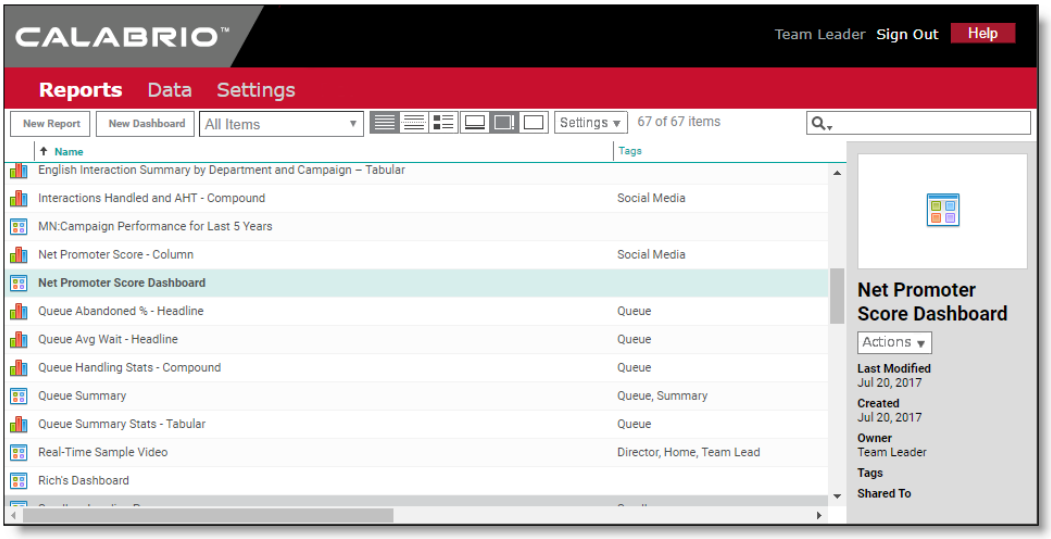
- Reports
- Data
- Settings

The following sections describe the functions included in each of these pages.

Reports

The Reports page displays all of your available reports and dashboards in an organized list. Also, it allows you to create, edit, and delete reports and dashboards. If you click a report or dashboard, the Detail pane displays information about that report or dashboard, as seen in the following image.

> **NOTE** The Detail pane can be removed or set to appear at the bottom of the page using the Detail Pane Options section of the Reports Page toolbar.



The Details pane also includes an Actions drop-down menu. Depending on your permissions, the Actions menu include the options in the following table:

ACTION	DESCRIPTION
View/Edit	Open the report or dashboard designer page similar to double-clicking the item in the list.
Copy	Create a duplicate of the item.
Share	Allow members of a group to view, explore, edit, copy, or

ACTION	DESCRIPTION
	save the item.
Deliver	Schedule the automatic delivery of report or dashboard content.
Tag	Add metadata to the item for sorting, searching, and filtering.
Get Info	Display the details including the Internal Qualified Name (IQN).
Delete	Erase reports or dashboards

REPORTS PAGE TOOLBAR

The Reports Page toolbar appears at the top of the Reports page in Advanced Reporting. This group of interactive controls is used in the creation of new reports and dashboards and provides options for how the reports and dashboards list is displayed. The buttons on the Reports Toolbar can be seen in the following image.

NOTE Only users with the certain permissions can create reports and dashboards. Your user account must be configured by the Advanced Reporting Administrator to be able to create content.

The following table describes each tool on the Reports Page toolbar.

IMAGE	DESCRIPTION
New Report	New Report button—Opens the report designer page.
New Dashboard	New Dashboard button—Opens the dashboard designer page.

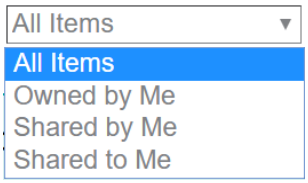
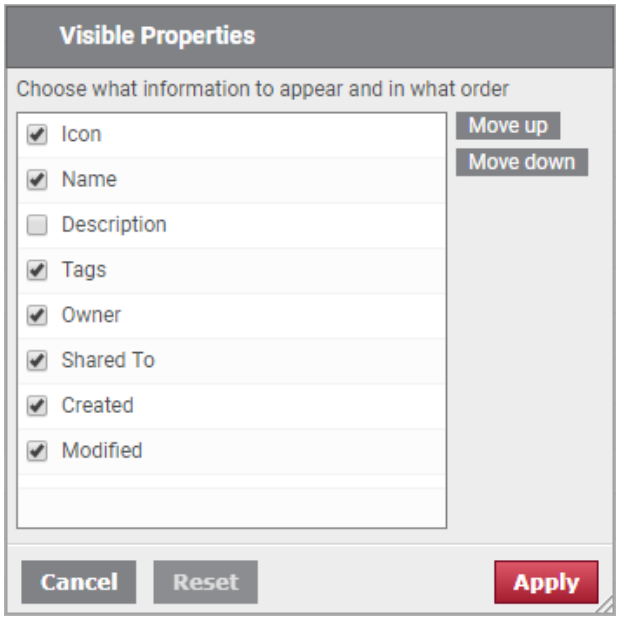
IMAGE	DESCRIPTION
	Items drop-down list—Filters the items in the list to the option you select.
	View options—Changes the order and display of the items in the list. The following options are available: ■ Flat list—Provides no separation between reports and dashboards ■ Categorized list—Separates items according to their category ■ Thumbnail view—Displays items as thumbnails
	Preview Panel options—Changes the position and display of the preview panel.

IMAGE	DESCRIPTION
	Settings—Configures the order of the list and the columns available with the following options: ■ Arrange By—Lists the available columns and controls which column the list is sorted by. Select a column to sort by that column in descending order. Selct that same column again to sort by that column in ascending order. This function can be achieved by clicking the header row of the column, as well. ■ Visible Properties—Opens the Visible Properties dialog box, which is used to organize the columns in the list on the Reports page. See To organize the list on the Reports page: for instructions for working with the Visible Properties dialog box.

IMAGE	DESCRIPTION
	
	Search—Enter keywords or parts of keywords to filter the reports and dashboards. The Search icon allows you to limit your search to specific items. When you click the Search icon, the Search drop-down menu opens with options to search by items like Name, Description, or Tag.

To organize the list on the Reports page:

1. Select **Visible Properties** from the Settings drop-down menu in the Reports Page toolbar.
2. Mark the check box next to an item in the Visible Properties list to set that item as a column in the Reports Page list.
3. Clear the check box next to an item in the Visible Properties list to exclude that item from being a column in the Reports Page list.

4. Highlight an item and click **Move up** or **Move down** to organize the columns in the list from left to right.
5. Click **Apply** to save your changes to the list.

CREATE A REPORT

Reports are the building blocks of Advanced Reporting that help you visualize trends in your data. You create a report by defining the question you want to answer and configuring the output so the answer is presented in a meaningful way. To start the process, you break the question down into its individual parts:

- What—The measures or metrics you want to understand
- How—The subjects you want to group your measure by
- Filters—The boundaries that you want the information to fall within

These three simple pieces can make up the structure of incredibly complex and useful reports.

Advanced Reporting allows you to create reports that provide the specific information that you need. You can decide which type of chart or table best displays your report and customize that chart to show only the measures that you want to see.

> **NOTE** All time data available for reporting in Data Explorer is in UTC format. Time values can be expressed on reports using other time formats by adding a time subject as a custom measure and applying the Time Zone content attribute. See Customize a Measure's Appearance for more information.

To create a custom report, click **New Report**. The custom report design page opens.

Understanding Measures

Measures are the numeric values that you include in a report. They are the numbers you measure your business with.

There is a list of measures that you can choose from, or you can create your own custom measures. Multiple measures are often used in reports. A report showing contact duration in hours may also show the average contact duration.

Create a Question

To create a report, first determine the question that you want the report to answer. Use the Question panel to choose what measure of information the report shows, how the report groups the information, and what information is filtered out of the report.

Choose a Measure

The first step in creating a question is deciding what information you want your report to show. This information is called the measure.

To determine what the report will show:

1. Click **New Report**. The custom report designer opens with the Question panel on the right.
2. Click **Unnamed Report**, and then enter a name for the new report.
3. In the What section of the Question panel next to Show, click **[measure]**. The Select Measure dialog box opens.
4. Select the measure you want to include in the report from the list of available measures, or click **Custom** in the top right corner to create a custom measure. For more information about custom measures, see Creating a Custom Measure.
5. (Optional) Customize the measure using the Measure Configuration section of the Select Measure dialog box. The Measure Configuration section is the same for measures and custom measures. For more information about measure configuration, see the Measure Configuration section.
6. Click **Add**.
   The measure you added is displayed in the Question panel, and another Show field is added below the one you completed. Use this field to add additional measures to your question.
7. (Optional) Measures display as columns by default. Click **as columns** to change whether the measures are displayed as columns or rows.

Choose a Group

After you have defined the topic of your question with the measure, determine how to group the information. The How question term is often the organization of people, places, things, and time frames that provide real-world subjects or circumstances for the report. It is common to have multiple How subjects in a report.

To determine how the report will group the information:

1. In the How section of the Question panel next to Group, click **[grouping]**. The Select Grouping dialog box opens.
2. Chose the grouping, and then click **Add**.
   The grouping you added is displayed in the Question panel, and another **[grouping]** field is added below the one you completed. Use this field to add additional groups to your question.

> **NOTE** If you select **with totals** in the Group section of the Question panel and select **Preserve Totals** when creating a visualization, the chart will display the total value as an additional column.

Set a Filter

The final step of defining a question is choosing a filter. A measure alone can return a large amount of information. The filter serves to target the specific information you want to include in your report or exclude from your report. You can select specific values to include or exclude, or you can set text comparison filters or range comparison filters to determine which range of values are included in your report.

To include only certain values of a subject in the report:

1. In the Filters section of the Question panel next to Limit to, click **[limit]**. The Select Filter dialog box opens.
2. Select a subject, and then select a field to filter the report by.
3. Clear the **All Values** check box, and select the check box for the values you want to include.
4. Click **Add** to filter the report.

To exclude certain values from the report:

1. In the Filters section of the Question panel next to Limit to, click **[limit]**. The Select Filter dialog box opens.
2. Select a subject, and then select a field to filter the report by.
3. Clear the **All Values** check box, and then select the check box for one or more of the values that you want to exclude.
4. Click **Add**.
5. In the Filter section of the Question Panel, click the **is** drop-down list in the filter you created and select **is not** from the drop-down list.

To include or exclude values using comparison filters:

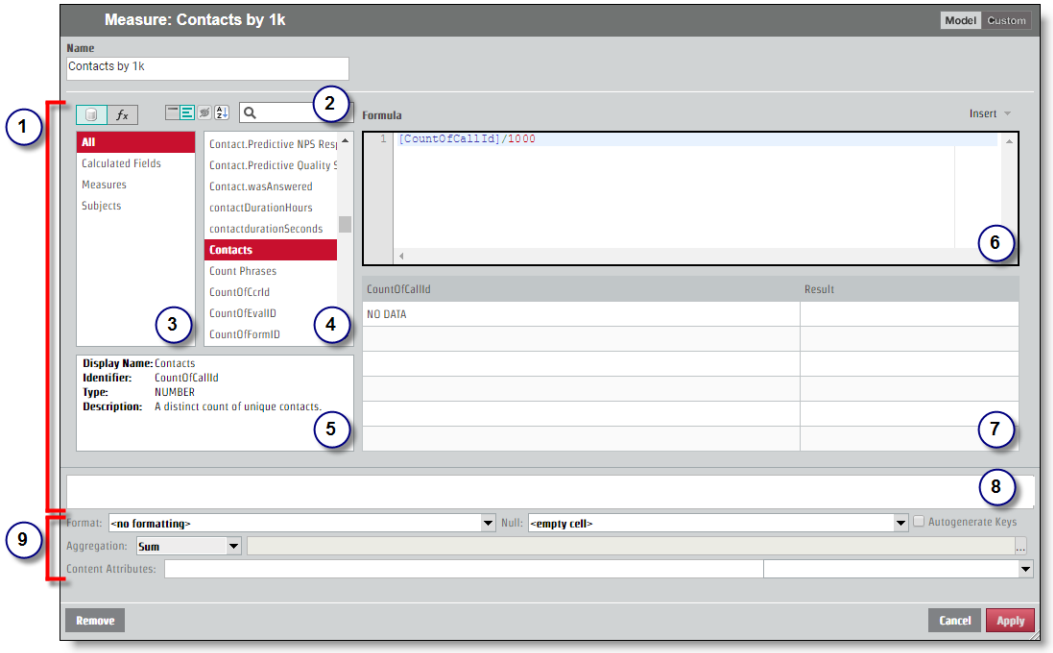
1. In the Filters section of the Question panel next to Limit to, click **[limit]**. The Select Filter dialog box opens.
2. Select a subject, and then select a field to filter the report by.
3. Clear the **All Values** check box, and then take one of the following actions:
   - Select the check box for the value to set it as a comparison.
   - On the Specify tab, enter a value in quotation marks to set as a comparison.
4. Click **Add**.
5. In the Filters section of the Question panel, click the **is** drop-down list in the new filter and select the operator you would like to apply to the value.

Creating a Custom Measure

If you want to add a measure to a report that is not in the list of measures, you can create a custom measure by clicking **Custom** in the Select Measure dialog box.

Custom measures use formulas to alter measures and fields that already exist. You can create a formula by manually entering measures and operators into the Formula pane. Also, the Create Measure dialog box includes lists of measures, operators, and references that you can choose from to build a formula. For more information, see Formula Operators

The Create Measure dialog box is made up of two sections: the Formula Editor section and the Measure Configuration section. These sections and the components of the Formula Editor section are called out in the following image.



The following table describes the callouts on the Custom Measure dialog box.

CALLOUT	DESCRIPTION
1	Formula Editor—The section you use to define a formula. The Formula Editor section allows you to choose the data and functions to include in your custom formula, to manually enter a formula, to add a description to your measure, and to monitor your formula for compilation errors. The Formula Editor is context-specific and allows you to include only the data elements, functions, and other features within your formula that are appropriate to your current context.
2	Formula Editor toolbar—The icons that allow you to choose whether the filter and selection lists display data elements or functions and the icons to sort those

CALLOUT	DESCRIPTION
	lists. For more information, see Formula Editor Toolbar.
3	Data Element/Function Filter pane—The options that are used to narrow the number of data elements or functions in the Data Element/Function Selections pane.
4	Data Element/Function Selection pane—The data elements or functions to add to your formula.
5	Data Element/Function Description pane—The information about the data element or function that is selected.
6	Formula pane—The display of the formula as it is being created. This pane includes the data element or function you select, and it allows you to enter a formula or part of a formula manually.
7	Results pane—The results of the formula. As you work in the Formula Editor and the Formula pane, the system attempts to compile your formula. Either a result or a message displays in this box. The message “NO DATA” in the Results pane indicates that your script syntax is correct. It does not indicate that your formula has no matching results. The data retrieved by your formula will be displayed in the report.
8	This text box is not used at this time.
9	Measure Configuration—The tools that configure how the measure is displayed. For more information, see Measure Configuration.

Formula Editor Toolbar

The Formula Editor Toolbar is located at the top of the Formula Editor section. The following table describes the Formula Editor toolbar.

ICONS	DESCRIPTION
	Data Element/Function toggle—Switches the Filters list, the Selections list, and the Description pane between data elements and functions. Data elements are the fields in the data library that are available for use in your formula, and functions are defined operational tasks.
	Name/Identifier toggle—Switches the display of data elements or functions between display names and identifiers.
	This icon is not used at this time.
	Sort Order toggle—Sorts the Data Element or Function Selection list by ascending or descending alphabetical order.
	Data Element/Function Search field—Searches data elements or functions by keyword.

Measure Configuration

The Measure Configuration section is available in the Select a Measure dialog box whether you are selecting a measure or creating a custom measure. Use this section to control how the values are displayed in your report.

The following table describes the fields in the Measure Configuration section.

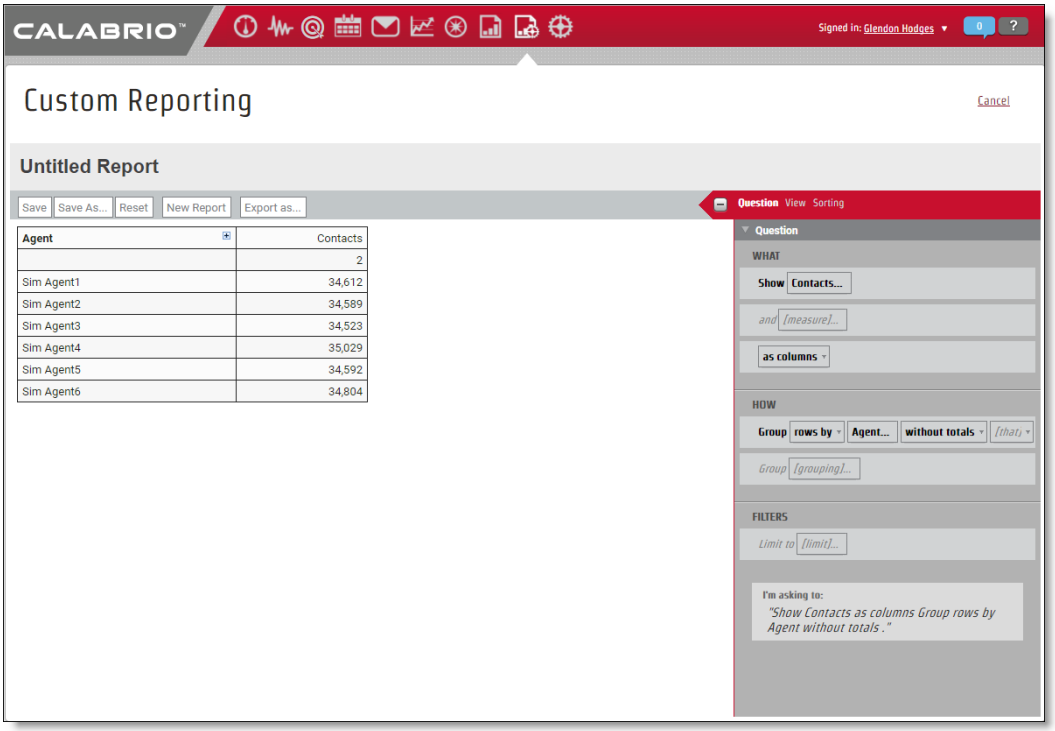
FIELD	DESCRIPTION
Format	The format of displayed numbers, dates, and times
Null	The manner in which null values are displayed
Aggregation	The consolidation method for values
Content Attributes	The text box where you can enter attributes you want for the measure

Example of a Custom Measure

The Custom Measure function is a tool that can be used to create many different types of formulas with different levels of complexity. There are several ways to create a formula. The following example explains one way to create a custom measure.

Problem

The total number of contacts in the Contacts measure can get very large. In this example, each agent has a similar, large number of contacts. If you want to see if any one agent is performing above or below the rest of the group, the exact number of contacts is too much information.

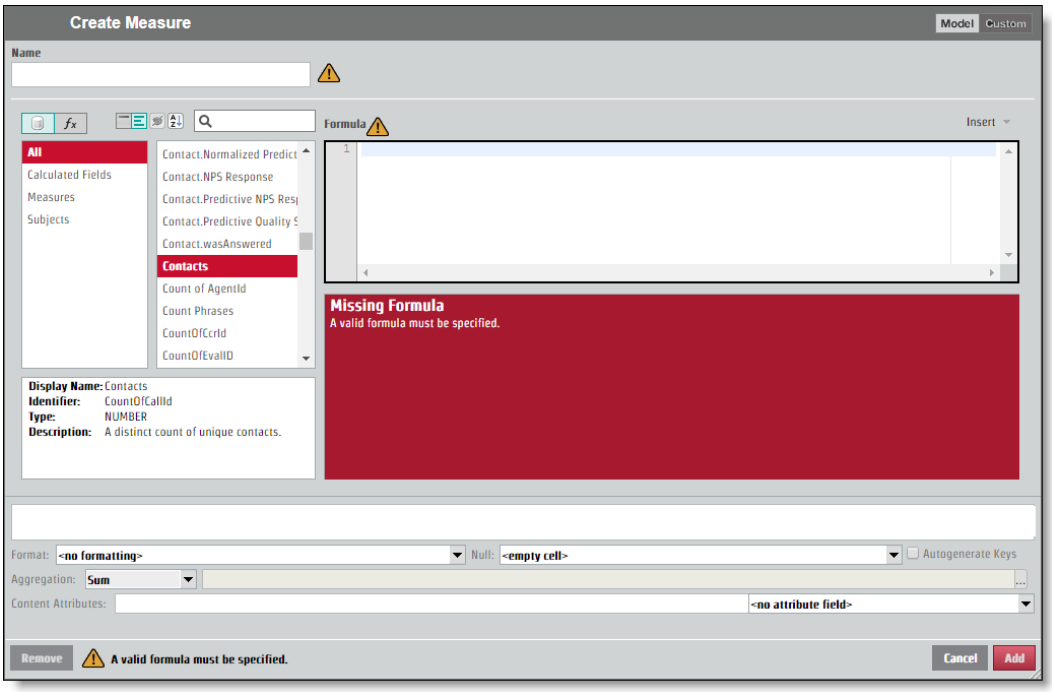


Solution

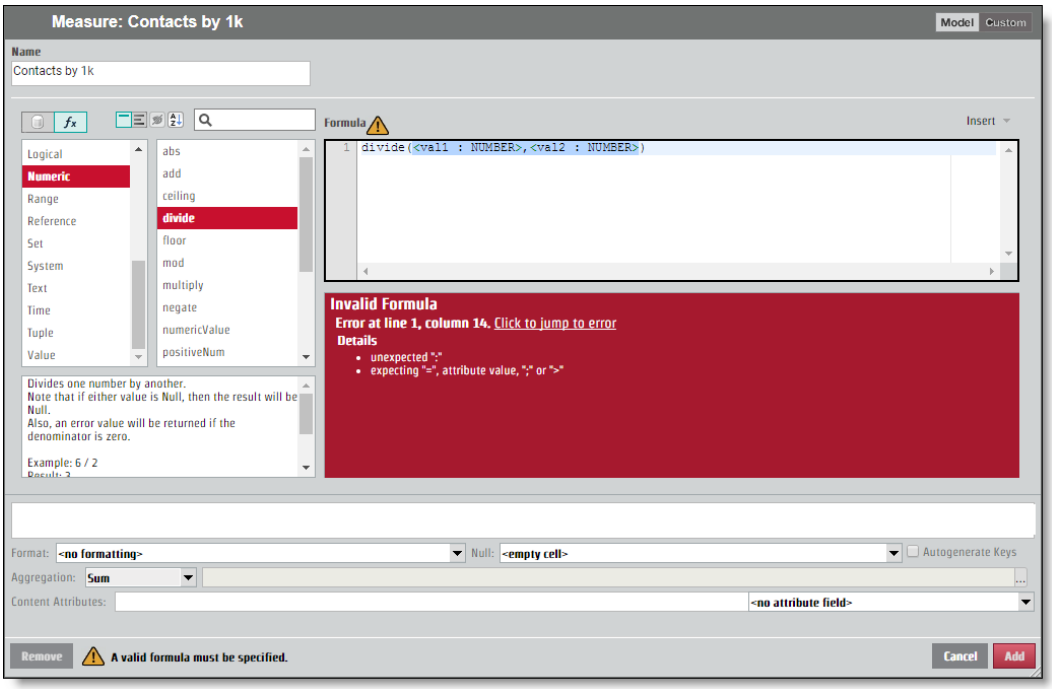
It is beneficial in this situation to reduce the amount of information you see and to present the value of contacts in factors of 1,000. That way you can see agent productivity at a glance. This section shows you how to create a custom measure that divides the number of contacts by 1,000.

To create a custom measure to divide contacts by 1,000:

1. On the Question tab of the Question panel beside Show, click **[measure]**. The Select Measure dialog box opens.
2. Click **Custom**. The Create Measure dialog box opens. The text boxes will be empty, and several warnings will display in the dialog box.



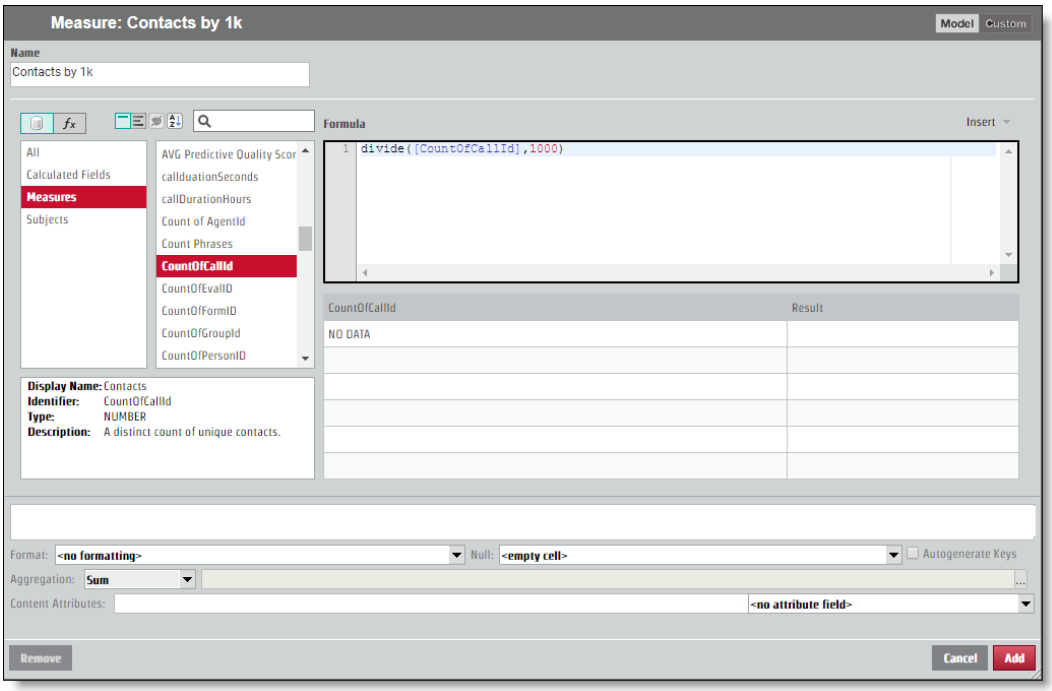
3. Enter a name for the measure in the **Name** text box. Enter “Contacts by 1k” for this measure.
4. To use the Divide function, click the **Data Elements/Functions** toggle so the Filters and Selections lists display functions.
5. Click **Numeric** in the Functions Filter pane, and then double-click **divide** in the Selection pane. The Divide function text will display in the Formula pane.



The Divide function text is an outline of the formula. You must replace the placeholder text with the values you want to divide in the order that they would appear in a mathematical equation.

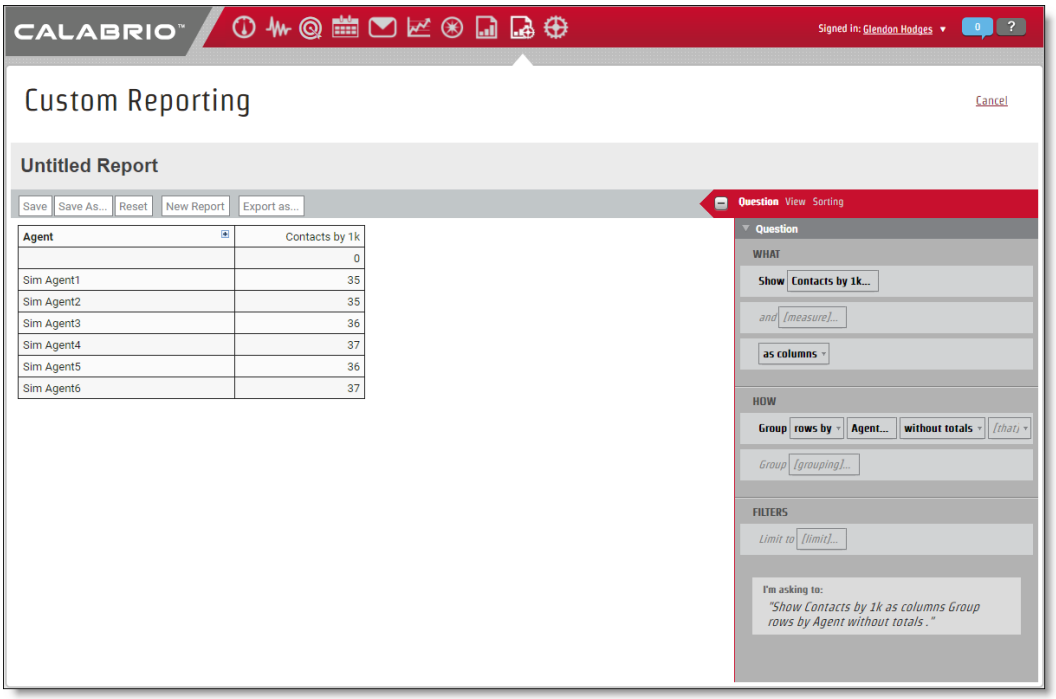
6. To replace `<val1 : NUMBER>` with the measure for the number of contacts, highlight **<val1 : NUMBER>** in the Formula pane.
7. Click the **Data Elements/Functions** toggle to display lists of data elements.
8. Click **Measures** in the Data Elements Filter pane, and then double-click **Contacts** in the Selection pane. The Contacts text appears in the Formula pane in place of **<val1 : NUMBER>**.

9. Delete **<val2 : NUMBER>**, and type 1,000 in its place. The Results pane will display "NO DATA."



10. To make the results display as a whole number in the Measure Configuration section, select a format from the Format drop-down list that does not include any decimal places.

11. Click **Add**. Your new custom measure appears in the Question panel, and the new column in the table displays the number of contacts divided by 1,000.



NOTE As previously mentioned, the Create Measure dialog box includes several options for creating formulas. As an alternative to selecting a Function and editing the placeholder text, you can create a custom measure to divide the number of contacts by 1,000 by selecting the elements individually or manually entering the following formula in the Formula pane.

```
[CountOfCallId]/1000
```

Formula Operators

The following table describes the operators available for creating formulas.

OPERATOR	DESCRIPTION	EXAMPLE
!	Unary logical NOT	

OPERATOR	DESCRIPTION	EXAMPLE
- (minus sign)	Unary minus (negative number literal)	-1
* (asterisk)	Product (multiply)	2*2
/ (forward slash)	Division	2/2
+ (plus sign)	Addition	2+2
- (minus sign)	Subtraction	2-1
& (ampersand)	Joins two text values to produce one continuous text value	“Sales”&”force”
<=	Less than or equal to	[Sales2015]<=[Sales2016]
<	Less than	[Sales2015]<[Sales2016]
>=	Greater than or equal to	[Sales2015]>=[Sales2016]
>	Greater than	[Sales2015]>[Sales2016]
=	Equal to	[Sales2015]=[Sales2016]
<>	Not equal to	[Sales2015]<>[Sales2016]
&&	Logical AND, indicates whether both operands are true	IF [Customer]=“Jones” && [City]=“New York”
||	Logical OR, indicates whether either operand is true	IF [Customer]=“Jones” || [Customer]=“Smith”

Create a View

Click **View** in the Question Panel to configure the visualization of the custom report.

Use View Types to display your data in various constructions of ten different tables, graphs, and charts. When you select a view type, your report is displayed in the default version of that chart. Each of the graphs and charts contains a variety of configuration settings that you can tailor to suit your needs. The exact number and nature of these configuration settings varies, however, depending on the type of graph or chart you select.

In the View Type section, select the type of data visualization for the report. The configuration options change based on the type of view you choose.

Carefully consider which type of chart will work best with your report. Some charts are best at showing the relationship between several pieces of information, while others can accurately display trends over time. Some reports can include up to four axes to show the relative scaling of different values. However some charts, like bar charts, which show their measures horizontally (on the X-axis), do not allow multiple axes. The following table describes the name and icon for each view type, what type of measure they display, and how best to use them.

ICON	CHART	MEASURE	USE
	Table	Multiple	Tables display the most basic version of the report. Using columns, rows, and headings, information is displayed as a number. Once you have information in a table, you can sort the table by a particular column. **To sort a table by a column:** 1. Hover over the column header until the sort tool appears in the upper left corner.  2. Click on the sort arrow, and select the sort direction from the drop-down list.
	Column	Multiple	With Column charts, the groups are usually plotted on the horizontal category (X) axis and are most effective when working with up to seven different groups of data. Column charts are often used to show the following information: ■ The distribution of data, like trends, ranges, and the normal tendency ■ A comparison of value sets ■ A trend that develops over time

ICON	CHART	MEASURE	USE
	Bar	Multiple	Bar charts often show groups the vertical value (Y) axis and are used when working with a larger number of groups. Bar charts are often used to show the following information: ■ The distribution of data, like trends, ranges, and the normal tendency ■ A comparison of value sets ■ A trend that develops over time
	Line	Multiple	Line charts show data in a series and are often used to show trends over time. This is the only chart type that can include a trendline. Line charts are often used to show the following information: ■ The distribution of data, like trends, ranges, outliers, and tendencies ■ A comparison of value sets ■ A trend over time when using multiple axes ■ The relationship between one measure and another

ICON	CHART	MEASURE	USE
	Area	Multiple	Area charts show data similar to a line chart, but with the area below the line filled. Area charts are often used to show the following information: ■ The composition of a number and which parts add up to the whole ■ The magnitude of change ■ The difference between two or more trends
	Compound	Multiple	Compound charts include both columns and lines. Compound charts are useful for comparing two sets of values, like predictions and actual values.
	Pie	Single	Pie charts display the sum of the measures as a complete circle. Pie charts show composition of a whole. They are most effective for a limited number of data categories that are part of a single group.
	Gauge	Single	Gauge charts show a single measure as a needle that rotates from left to right like a speedometer. Gauge charts are often used to show the following information: ■ A single important measure ■ A trend that develops over time

ICON	CHART	MEASURE	USE
	Headline	Single	Headline charts can be used to display an important measure. It shows a single number without details or distractions. Headline charts can be used to interpret new data, and they are often grouped with other reports on a dashboard.
	Scatter	Multiple	Scatter charts show correlations between sets of values that cannot be represented in a series or interval. Scatter charts are useful for displaying the following types of information: ■ A comparison of value sets ■ The distribution of trends, tendencies, ranges of information, and outliers ■ The relationship between two measures
	Word Cloud	Single	Word Cloud charts show the frequency of certain words by making the size of the word proportional to its frequency of use. These visualizations are simple, can be understood easily, and provide specific information at a glance. However, word clouds should not be used for analysis that requires precise accuracy. Often, physical elements (for example, ascenders, descenders, and number of letters) cause some words to attract more attention than others. Word clouds are useful for displaying the relative frequency of word or tag usage.

Configuring a View

The following sections describe the fields in each of the configuration sections on the View page.

Axis Display

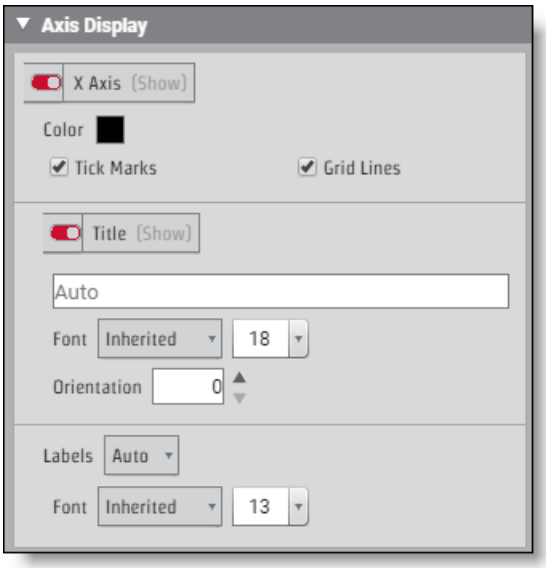
The Axis Display section includes tools for configuring the X- and Y-axes. You can configure multiple axes.

This section applies to the following view types:

- Bar
- Column
- Line
- Area
- Scatter

The following table describes the fields in the Axis Display section of the View tab. Not all fields are available on each view type.

X-axis

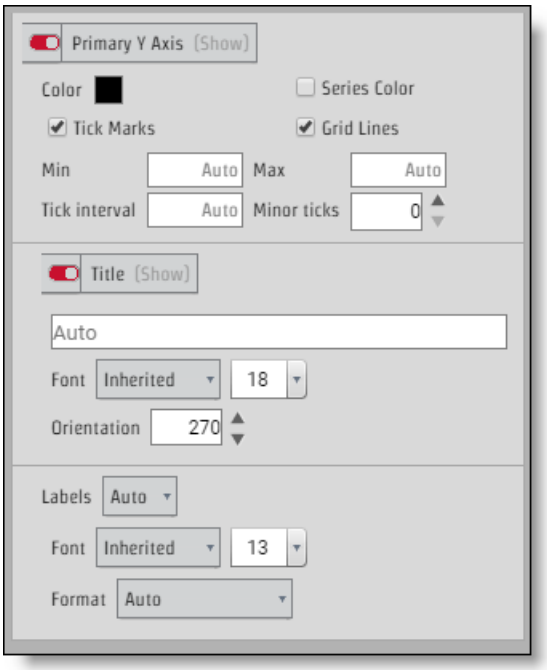


FIELD	DESCRIPTION
X Axis	Toggles the display of X-axis configuration fields.
Color	Opens the color palette for the X-axis.
Tick Marks	Toggles the display of tick marks beside axis labels.
Grid Lines	Toggles the display of grid lines within the chart.
Title	Toggles the display of the X-axis title, font, text size, and orientation.
Text Box	Sets a custom title for the axis.
Font	Overwrites the title font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the font size.
Orientation	Sets the angle of the title on the X-axis.
Labels	Determines if the labels on the X-axis are displayed.
Font	Overwrites the label font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the font size for the label.
Layout	Determines if labels are straight or angled.
Orientation	Determines the angle of the text if Layout is set to **Angled**.

Y-axis

Some charts can have multiple Y-axes. If the chart supports multiple Y-axes, there will be multiple Y-axis toggles. Each toggle indicates which Y-axis with which it is associated.

The fields to configure the axis are the same for each Y-axis section.



FIELD	DESCRIPTION
Y Axis (Primary, Secondary, 3, and 4)	Toggles the display of Y-axis configuration fields.
Color	Opens the color palette for items on the axis.

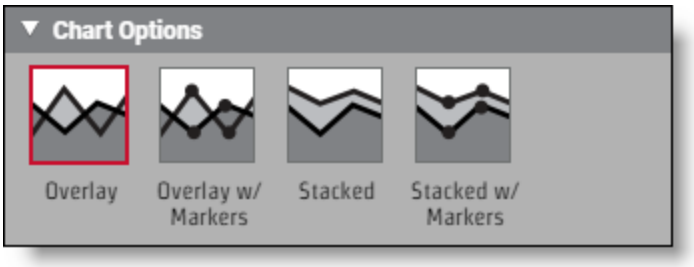
FIELD	DESCRIPTION
Series Color	Opens the color palette for the series on the y-axis.
Tick Marks	Toggles the display of tick marks beside axis labels.
Grid Lines	Toggles the display of grid marks within the chart.
Min	Sets the minimum value for the axis.
Max	Sets the maximum value for the axis.
Tick Interval	Sets the value for the increments to be used on the axis.
Minor Ticks	Sets the value for the minor ticks to be used on the axis.
Title	Toggles the display of the Y-axis title, font, text size, and orientation.
Text Box	Sets a custom title for the axis.
Font	Overwrites the title font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the font size for the title.
Orientation	Sets the angle of the title on the Y-axis.
Labels	Toggles the display of the labels on the Y-axis.
Font	Overwrites the label font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the font size for the label.
Format	Sets the format of the labels on the axis.

FIELD	DESCRIPTION
Layout	Determines if labels are straight or angled.
Orientation	Determines the angle of the text if Layout is set to **Angled**.

Chart Options

The Chart Options section allows you to more clearly define the view. The Chart Options are specific to the following View Types.

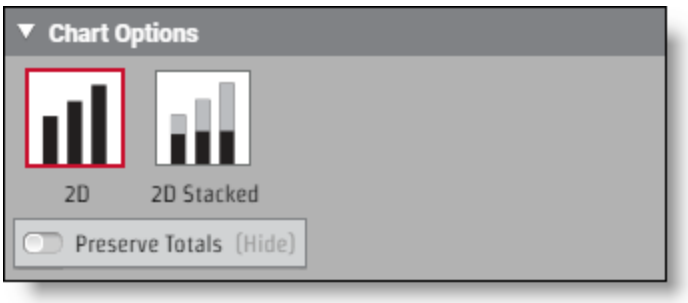
Area



The following table describes the Chart Options for Area charts.

OPTION	DESCRIPTION
Overlay	Displays the area of multiple lines on a graph. Shows relationship across categories.
Overlay w/ Markers	Overlay display with indicators for individual data points on the lines.
Stacked	Displays the area of multiple lines one on top of the other. Shows a comparison across categories.
Stacked w/ Markers	Stacked display with indicators for individual data points on the line.

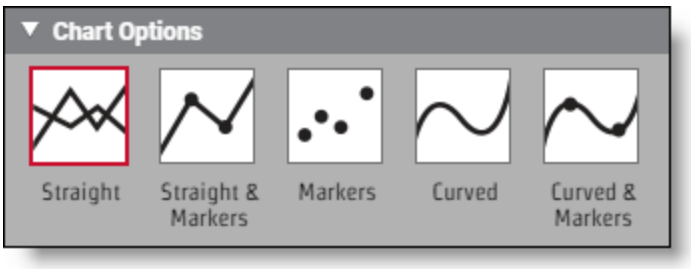
Column or Bar



The following table describes the Chart Options for Column charts and Bar charts.

OPTION	DESCRIPTION
2D	Standard column or bar chart.
2D Stacked	Column or bar chart with multiple measures stacked to show the relationship of individual items to the whole, providing a comparison across categories.
Preserve Totals	Displays the total value on the chart as an additional column. **NOTE** To display the total value as an additional column, select **with totals** in the Group section of the Question panel, and select **Preserve Totals**.

Line

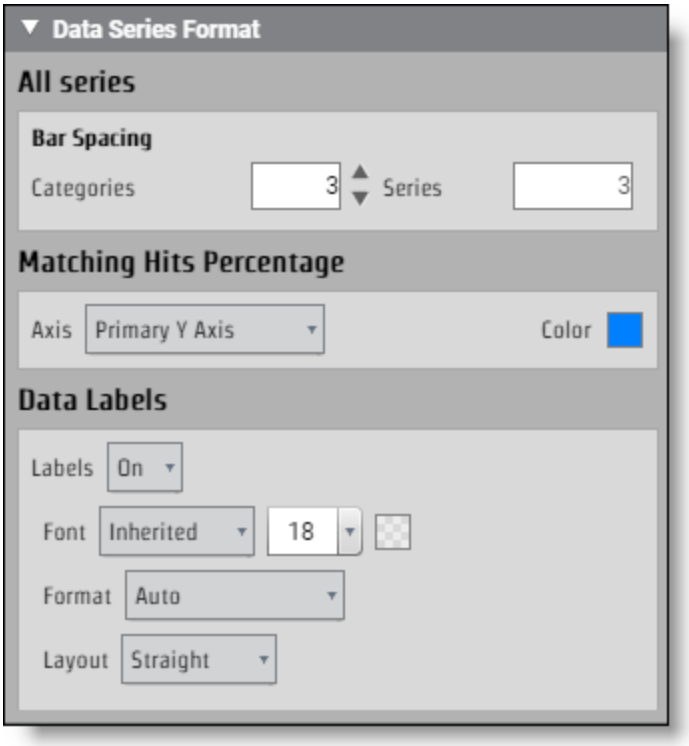


The following table describes the Chart Options for Line graphs:

OPTION	DESCRIPTION
Straight	Straight line from one point to the next.
Straight & Markers	Straight line from one point to the next with markers representing the points.
Markers	Markers at each point.
Curved	Arcing line from one point to the next.
Curved & Markers	Arcing line from one point to the next with markers representing the points.

Data Series Format

The Data Series Format section of the View tab allows you to customize the color and spacing of categories and series.



This section is available for the following view types:

- Bar
- Column
- Line
- Area
- Scatter

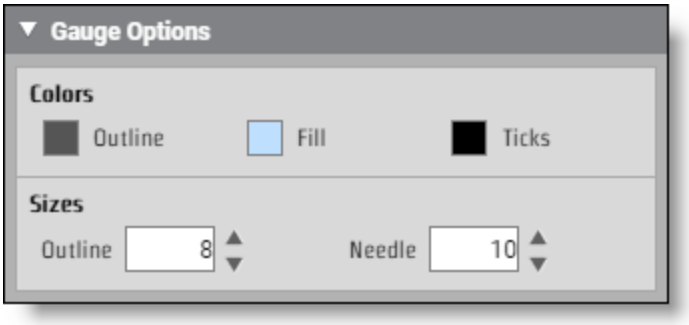
The following table describes the fields that appear in the Data Series Format. This table includes all fields that could appear in this section. Fields vary depending on view types.

FIELD	DESCRIPTION
Bar Spacing: Categories	Determines the amount of space between categories on the chart.
Bar Spacing: Series	Determines the amount of space between series on the chart.
Axis	The axis to format.
Color	The color to display the data for the specified axis.
Type	Displays options of Column, Line, and Curved Line.
Markers	If type is Line or Curved Line, the style of marker to indicate each individual data point.
Line Width	If type is Line or Curved Line, the width of line that appears in the chart.
Marker Size	If type is Line or Curved Line, the size of the marker.
Marker Line Width	If type is Line or Curved Line and a non-filled marker is selected, select the width of the marker outline.
Trendline	Toggles between Show and Hide.
Line	Toggles between Line and Curve. Select trendline color and trendline width.

FIELD	DESCRIPTION
Color	Opens the color palette for the trendline.
Width	Determines trendline width.
Labels	Toggles the display of the data labels.
Font	Overwrites the label font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the font size for the label.
Format	Sets the format of the labels.
Layout	Determines if labels are straight, wrapped, truncated, or angled.

Gauge Options

The Gauge Options section allows you to customize the gauge chart.



This section applies to only the Gauge view.

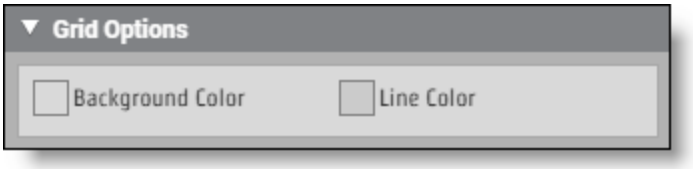
The following table describes the fields that appear in the Gauge Options section:

FIELD	DESCRIPTION
Colors: Outline	Opens the color palette for the gauge outline. This applies to

FIELD	DESCRIPTION
	the needle as well.
Colors: Fill	Opens the color palette for the face of the gauge.
Colors: Ticks	Opens the color palette for the tick marks.
Sizes: Outline	Determines the width of the gauge outline.
Sizes: Needle	Determines the size of the needle.

Grid Options

The Grid Options section allows you to customize the color of the grid.



This section applies to the following view types:

- Bar
- Column
- Line
- Area
- Scatter

The following table describes the fields that appear in the Grid Options section:

FIELD	DESCRIPTION
Background Color	Opens the color palette for the chart background.
Line Color	Opens the color palette for the line.

Headline Options

The Headline Options section allows you to customize the headline font, to show limits, and to customize the limits font.

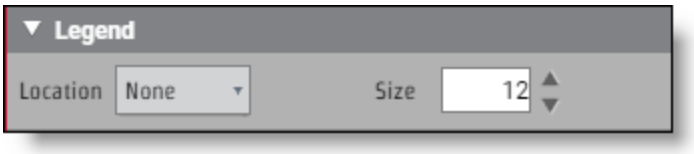
This section applies to only the headline view type.

The following table describes the field that appear in the Headline Options section:

FIELD	DESCRIPTION
Font	Overwrites the headline font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Style	Overwrites the headline font style with a custom font style. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the headline font size.
Color	Opens the color palette for the headline font.
Maximum Size	The upper size limit for headline text.
Show Limits	Toggles the display of the limits.
Font	Overwrites the limit font with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Style	Overwrites the limit font style with a custom font. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Size	Sets the limit font size.
Color	Opens the color palette for the limit font.

Legend

The Legend Section allows you to customize the location and size of the chart's legend.



This section applies to the following view types:

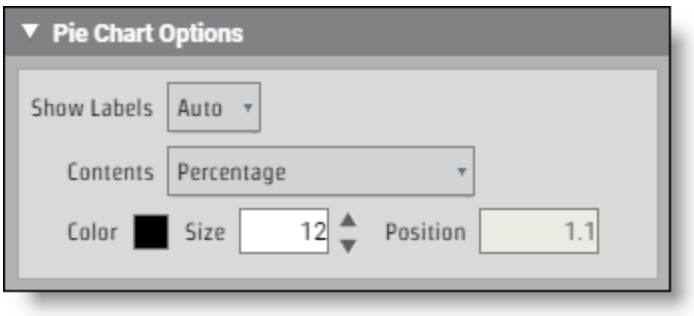
- Bar
- Column
- Line
- Area
- Pie
- Scatter

The following table describes the fields that appear in this section:

FIELD	DESCRIPTION
Location	Determines if and where the legend is displayed.
Size	Sets the legend font size.

Pie Chart Options

The Pie Chart Options section allows you to customize the labels applied to the pie chart.



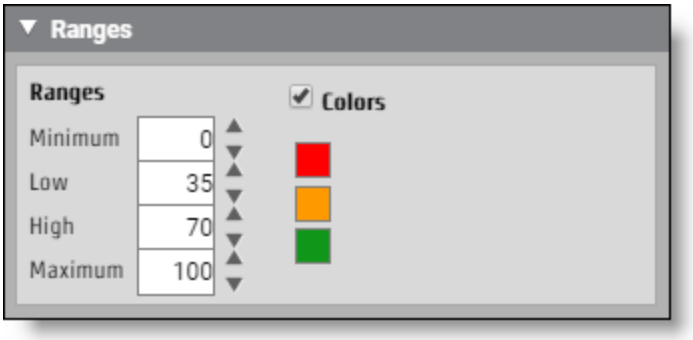
This section applies to only the pie chart view type.

The following table describes the fields that appear in this section.

FIELD	DESCRIPTION
Show Labels	Determines whether or not to show labels. Options are Auto, On, and Off.
Contents	Determines the information that the label displays.
Color	Opens the color palette for the label font.
Size	Sets the label font size.
Position	The position of the label text. Values greater than one appear outside the chart. Values less than one appear inside the chart.

Ranges

The Ranges section allows you to customize the values and colors used for ranges.



This section applies to the following view types:

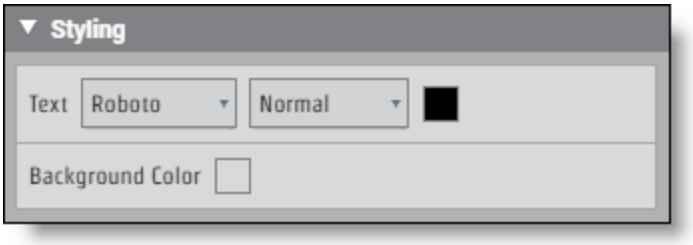
- Gauge
- Headline

The following table describes the fields that appear in the Ranges section:

FIELD	DESCRIPTION
Minimum	The lowest value to include in the chart.
Low	The value that separates the low range from the medium range.
High	The value that separates the medium range from the high range.
Maximum	The highest value to include in the chart.
Colors	Toggles to allow the colors to be customized.
Min:Low Color	Opens the color palette for the low range.
Low:High Color	Opens the color palette for the middle range.
High:Max Color	Opens the color palette for the high range.

Styling

The Styling section allows you to customize the default font that is used throughout the chart.



This section applies to all view types.

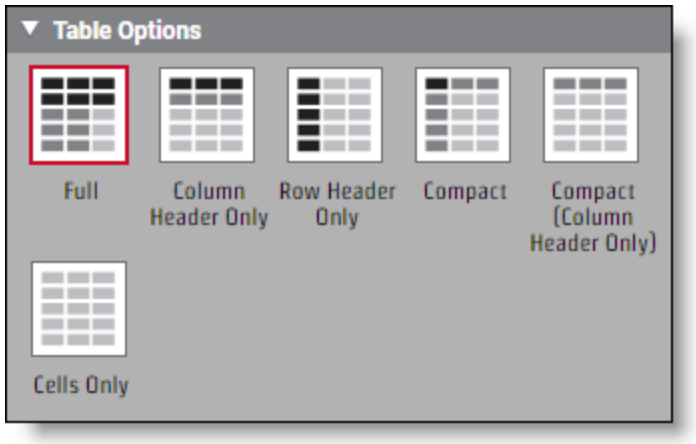
The following table describes the fields that appear in the Styling section:

FIELD	DESCRIPTION
Text	The default font to be used throughout the chart.

FIELD	DESCRIPTION
Style	The default font style to be used throughout the chart.
Color	Opens the color palette for the default font color to be used throughout the chart.
Background Color	Opens the color palette for the default background color to be used throughout the chart.

Table Options

The Table Options section allows you to customize the visualization for a table.



This section applies to only the Table view type.

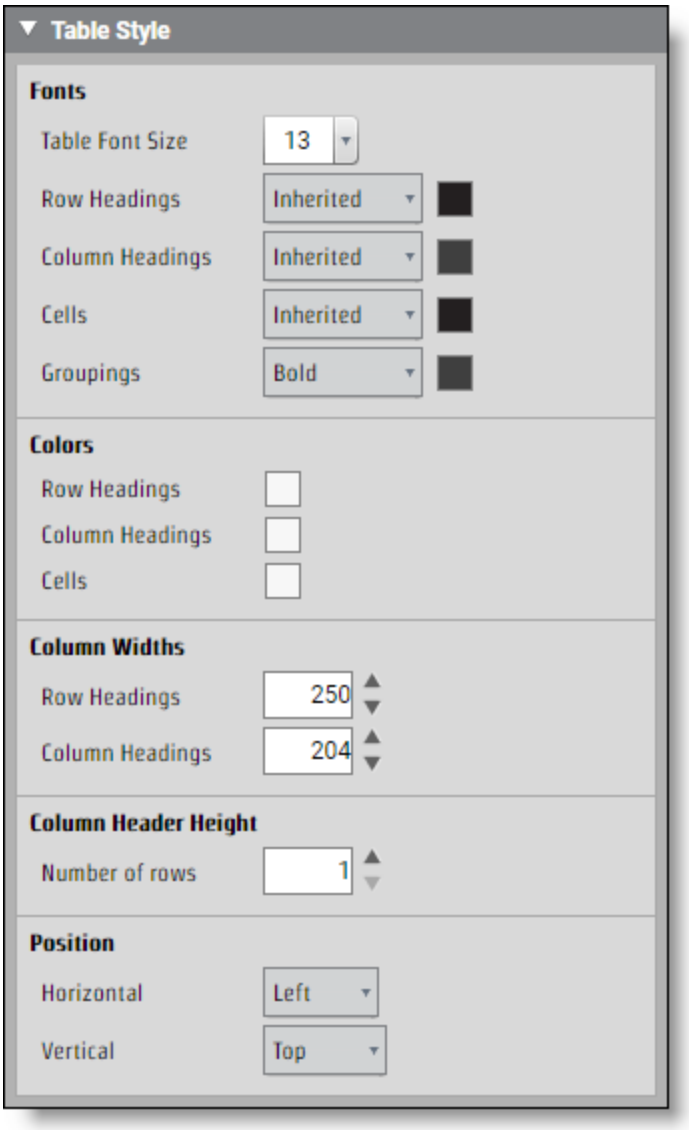
The following table describes the table display options that appear in the Table Options section:

OPTION	DESCRIPTION
Full	Displays table with formatted header column and row headers.
Column Header Only	Displays table with formatted column headers only.

OPTION	DESCRIPTION
Row Header Only	Displays table with formatted row headers only.
Compact	Displays table with both column and row headers formatted, in the smallest possible area.
Compact (Column Header Only)	Displays table with column headers formatted, in the smallest possible area.
Cells Only	Displays data without column or row headers.

Table Style

The Table Style section allows you to customize the table headers and cells.



This section applies to only the Table view type.

The following table describes the table display options that appear in the Table Style section:

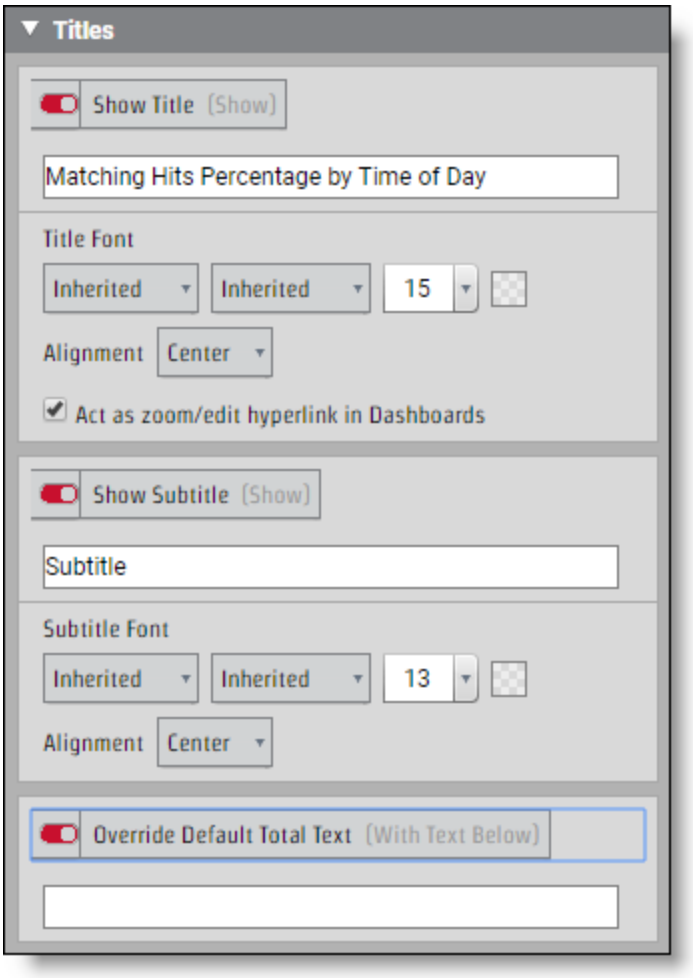
FIELD	DESCRIPTION
Table Font Size	Sets a custom font size for the table.

FIELD	DESCRIPTION
Row Headings	Overwrites the row headings font style with a custom font style. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Color	Opens the color palette for the row headings font.
Column Headings	Overwrites the column headings font style with a custom font style. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Color	Opens the color palette for the column headings font.
Cells	Overwrites the cells font style with a custom font style. If you select **Inherited**, the system uses the font settings you configure in the Styling section..
Color	Opens the color palette for the cells font.
Groupings	Overwrites the groupings font style with a custom font style. If you select **Inherited**, the system uses the font settings you configure in the Styling section.
Color	Opens the color palette for the groupings font.
Colors: Row Headings	Opens the color palette for the row headings background fill.
Colors: Column Headings	Opens the color palette for the column headings background fill.
Colors: Cells	Opens the color palette for the cells background fill.
Column Widths: Row Headings	Sets the width for the row headings. **NOTE** All row heading sizes are set together. Row heading sizes cannot be set individually.

FIELD	DESCRIPTION
Column Widths: Column Headings	Sets the width for the column headings. **NOTE** All column heading sizes are set together. Column heading sizes cannot be set individually.
Column Header Height: Number of rows	Sets the height of the top header row. Measured in row-height increments.
Position: Horizontal	Determines the horizontal position of the table in the report viewer window.
Position: Vertical	Determines the vertical position of the table in the report viewer window.

Titles

The Titles section allows you to customize the report title, the report subtitle, and the total text.



This section appears in all view types.

The following table describes the fields that appear in the Titles section:

FIELD	DESCRIPTION
Show Title	Toggles the display of the title.
Text Box	Sets the title text.
Title Font	Sets the title font.
Style	Sets the title style.

FIELD	DESCRIPTION
Size	Sets the title font size.
Color	Opens the color palette to choose the title font color.
Alignment	Sets the title location.
Act as zoom/edit hyperlink in Dashboards	Toggles to make the chart title a link that opens the chart for detailed view.
Show Subtitle	Toggles the subtitle display.
Text Box	Sets the subtitle text.
Subtitle Font	Sets the subtitle font.
Style	Sets the subtitle style.
Size	Sets the subtitle font size.
Color	Opens the color palette to choose the subtitle font color.
Alignment	Sets the subtitle location.
Override Default Total Text	Determines whether to display the text to override the default total text.
Text Box	Sets the text that will override the default total text.

Create a Report

Reports are the building blocks of Advanced Reporting that help you visualize trends in your data. You create a report by defining the question you want to answer and configuring the output so the answer is presented in a meaningful way. To start the process, you break the question down into its individual parts:

- What—The measures or metrics you want to understand
- How—The subjects you want to group your measure by
- Filters—The boundaries that you want the information to fall within

These three simple pieces can make up the structure of incredibly complex and useful reports.

Advanced Reporting allows you to create reports that provide the specific information that you need. You can decide which type of chart or table best displays your report and customize that chart to show only the measures that you want to see.

> **NOTE** All time data available for reporting in Data Explorer is in UTC format. Time values can be expressed on reports using other time formats by adding a time subject as a custom measure and applying the Time Zone content attribute. See Customize a Measure's Appearance for more information.

To create a custom report, click **New Report**. The custom report design page opens.

Understanding Measures

Measures are the numeric values that you include in a report. They are the numbers you measure your business with.

There is a list of measures that you can choose from, or you can create your own custom measures. Multiple measures are often used in reports. A report showing contact duration in hours may also show the average contact duration.

CUSTOMIZE A MEASURE'S APPEARANCE

Content attributes apply static or conditional changes to specific measures in a report. They can control the formatting, display details, and behavior of measures. This section will help you define the text to enter in the Content Attribute field in the Select Measure or Custom Measure dialog box.

You can use content attributes to change the way a measure displays or to set a condition that applies only when the value meets certain criteria. This means that you can make a measure always bold or set a condition that makes negative numbers in a report appear in red.

NOTE Not all content attributes are appropriate for all types of data. For example, the Maximum Decimal Places attribute, which specifies the maximum number of decimal places to display in a value, has no effect on a report that returns only integers.

Attributes

Use the descriptions in the following table to choose the attribute for your measure.

ATTRIBUTE	DESCRIPTION	EXAMPLE
Backcolor	Uses the specified color to fill the text background. Advanced Reporting supports the following common color values: ■ Aqua ■ Black ■ Blue ■ Fuchsia ■ Gray ■ Green ■ Lime ■ Maroon ■ Navy ■ Olive ■ Orange ■ Purple ■ Red ■ Silver ■ Teal ■ White ■ Yellow Also, you can specify any RGB, RGBa, X11, or hex color value by using the color () function in a formula.	<BACKCOLOR green> <BACKCOLOR color (0,255,0)> <BACKCOLOR color ("#00FF00")> <BACKCOLOR color ("aquamarine")>

ATTRIBUTE	DESCRIPTION	EXAMPLE
Bold	Sets the text in bold.	<BOLD>
Currency code	Adds a currency code to the numeric value. Specify the ISO 4217 currency code, such as USD or EUR, to use for formatting. If the Currency Symbol attribute is also applied, then the Currency Symbol attribute will take precedence.	<CURRENCY_CODE "EUR">
Currency symbol	Adds a currency symbol to the numeric value. Specify the symbol to use when formatting, for example $, £, or €. For the symbol to appear, you must also select **<no formatting>** in the Format selection list of the Select Measure or Custom Measure dialog box.	<CURRENCY_SYMBOL "$">
Date style	Specifies the date formatting style to apply. Advanced Reporting uses International Components for Unicode (ICU) formatting for dates based on the specified text.	<DATE_STYLE "full">
Display non-totals	Displays the values that are not the total.	<DISPLAY_NON_TOTALS>
Display totals	Displays the total of the query values.	<DISPLAY_TOTALS>

ATTRIBUTE	DESCRIPTION	EXAMPLE
Drop heading prefix	Trims the display of the specified characters from the left side of the value. This attribute can be specified as a value or using a control character, such as "-", which specifies that everything to the left of and including the "-" should not be displayed. Drop heading Prefix is useful for preventing the display of prefixes that may have been added to control sort orders for text values in cohorts.	<DROP_HEADING_PREFIX 4> <DROP_HEADING_PREFIX "-">
Duration	Formats the numeric value as time. Specify the value that should be displayed as a time duration. This attribute uses mm:ss pattern by default, however you can combine with the PATTERN attribute to specify alternate forms.	<DURATION> <DURATION; PATTERN "h:mm:ss">
Font face	Uses the specified font for the text. **NOTE** Advanced Reporting supports common font face styles, using common web-safe CSS font stacks. If an unrecognized font style is specified, then the content will be drawn following the CSS font stack rules, often using a basic serif font face.	<FONT_FACE "Arial">

ATTRIBUTE	DESCRIPTION	EXAMPLE
Fixed	Specifies the number of decimal places to display for a value. If necessary, the value will be rounded to the specified number of decimal places.	<FIXED 4>

ATTRIBUTE	DESCRIPTION	EXAMPLE
Forecolor	Uses the specified color for the text. Advanced Reporting supports the following common color values: ■ Aqua ■ Black ■ Blue ■ Fuchsia ■ Gray ■ Green ■ Lime ■ Maroon ■ Navy ■ Olive ■ Orange ■ Purple ■ Red ■ Silver ■ Teal ■ White ■ Yellow Also, you can specify any RGB, RGBa, X11, or hex color value by using the color () function in a formula.	<FORECOLOR red> <FORECOLOR color (255,0,0)> <FORECOLOR color ("#FF0000")> <FORECOLOR color ("aquamarine")>

ATTRIBUTE	DESCRIPTION	EXAMPLE
Heading	Uses the specified text to replace the name of the measure for headings. This attribute is similar to the Display Name attribute, however this attribute may not include filter text and other variable content.	<HEADING "Maximum Sale Value">
Integer	Formats the value as an integer, rounding to the nearest whole number.	<INTEGER>
Italic	Sets the text in italics.	<ITALIC>
Link	Adds a hyperlink to the specified URL. When this attribute is specified on a measure, it adds a link to the measure heading.	<LINK "https://www.example.com">
Locale	Configures the name of a locale from which default format settings can be derived. The specific locale must be in the form of a two-digit language code or a two-digit language code and a two digit country code. (For example, en or fr_CA) **NOTE** Advanced Reporting uses ISO-639 language codes and ISO-3166 country codes.	<LOCALE "en">

ATTRIBUTE	DESCRIPTION	EXAMPLE
Maximum decimal places	Specifies the maximum number of decimal place digits to be included in the fraction part of formatted number. If the number of digits specified exceeds the number of digits in the fraction value, all available digits are displayed. This value will be ignored if the Fixed attribute is specified.	<MAX_DP 2>
Minimum decimal places	Specifies the minimum number of decimal place digits to be included in the fraction part of formatted number. If the number of digits specified exceeds the number of digits in the fraction value, all available digits are displayed followed by zeros to achieve the specified number of digits. This value will be ignored if the Fixed attribute is specified.	<MIN_DP 3>
Minimum integer digits	Specifies the minimum number of integer digits to be included in the whole number part of a formatted number. If the number of digits specified exceeds the number of digits in the integer value, all available digits are preceded by zeros to achieve the specified number of digits.	<MIN_INT_DIGITS 3>

ATTRIBUTE	DESCRIPTION	EXAMPLE
Note	Attaches a note with the specified text to the current measure. The specified note text will appear in the tooltip, which is shown when hovering over the measure heading or any value for that measure.	<NOTE "Ask accounts payable for more details.">
Null text	Specifies the text to be displayed for null values.	<NULL_TEXT "No data available.">
Pattern	Specifies the formatting pattern to use. For the attribute to apply correctly, you must also select <no formatting> in the Format field of the select measure dialog.	<PATTERN "#,###.00">
Percent	Formats the value as a percentage, displaying a percent (%) symbol and scaled by 100. Most useful for displaying fractional values.	<PERCENT>
Prefix	Prepends the specified text to the value. The prefix text will be added after other formatting has been applied. A prefix may be added to formatted values of any type. Prefixes are not added to null values, error values, or values assigned using the Replace attribute.	<PREFIX "Mr.">

ATTRIBUTE	DESCRIPTION	EXAMPLE
Radix character	Specifies the character to use for the decimal mark (separator) in numbers. Must be a single-character, string value.	<RADIX_CHAR ",">
Replace	Replaces the value with the specified text, even if the value is null or error. No other text formatting attributes (including Prefix or Suffix) will be applied if a value is specified for the Replace attribute.	<REPLACE "PRIVATE. For VIP eyes only.">
Strikethrough	Sets the text with a strikethrough.	<STRIKETHROUGH>
Suffix	Appends the specified text to the value. The suffix text will be added after other formatting has been applied. A suffix may be added to formatted values of any type. Suffixes are not added to null values, error values, or values assigned using the Replace attribute.	<SUFFIX " dollars">
Time style	Specifies the formatting style to apply to the time portion of a date and time value. Advanced Reporting uses International Components for Unicode (ICU) formatting for time based on the specified text.	<TIME_STYLE "short">
Time zone	Specifies the time zone to use for interpreting date and time values.	<TIME_ZONE "America/Vancouver ">

ATTRIBUTE	DESCRIPTION	EXAMPLE
Triple character	Specifies the character to use for the grouping separator (typically thousands) in numbers. The specified text must be a single-character, string value. To prevent any character from appearing, specify an empty string to suppress it.	<TRIPLE_CHAR ".">
Underline	Sets the text with an underline.	<UNDERLINE>

Syntax

Use the syntax rules described in the following table to format content attribute references.

RULE	EXAMPLE
Specify the name of the attribute in uppercase surrounded by angle brackets.	<BOLD>
Separate multiple attributes within a single set of angle brackets with a semicolon followed by a space.	<BOLD; ITALIC>
For attributes that require a value assignment, the static value declaration follows the attribute within the angle brackets. The name of the attribute and attribute value can be separated by a space or by an equal sign.	<FORECOLOR red> <FORECOLOR=red>
For Boolean attributes, you can specify true or false. If no value is specified, then true is implied.	<BOLD> <BOLD true>

RULE	EXAMPLE
	<BOLD false>
Enclose text values in straight quotation marks.	<FONT_FACE "Arial">
Use the prefix NO to unset the value of an attribute and to force the use of the default format. This will override any custom format styles that have been specified elsewhere.	<NO FONT_FACE>

Keywords

Advanced Reporting uses the following three keywords to amend content attributes.

- Error—Identifies if a problem occurs with the measure. (For example, when a formula indicates that a number should be divided by zero.)
- Null—Identifies a measure that returns no value.
- Range—Identifies measures between two specified bounds.

Use keywords to set conditions for the content attributes. The following syntax rules apply when working with keywords.

RULES	EXAMPLE
When assigning one or more attributes to a single keyword condition, enter the keyword in all caps followed by a space and then one or more attributes nested within angle brackets and separated by a semicolon.	<RANGE 0:100 <BOLD; ITALIC>>
When assigning a single attribute for multiple keyword conditions, separate the conditions using a comma.	<NULL, RANGE 1:100 <ITALIC>>
When assigning different attributes for multiple keyword conditions, separate the conditions using a semicolon.	<NULL <UNDERLINE>; RANGE 1:100<ITALIC>>

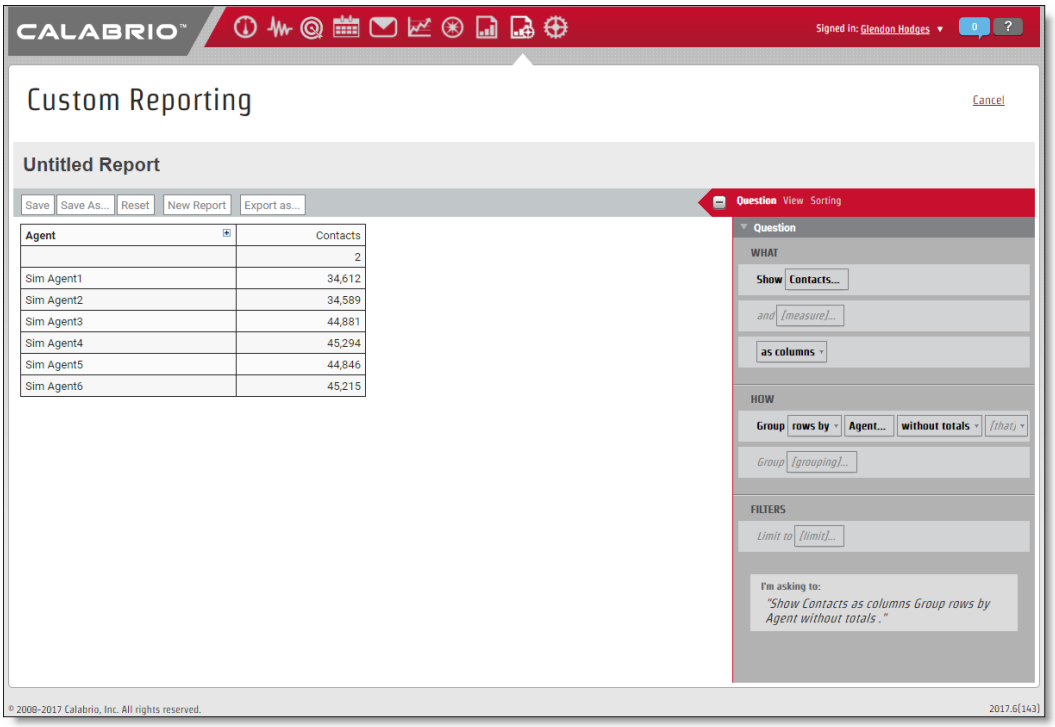
RULES	EXAMPLE
When nesting multiple keyword conditions, the specified attributes will apply if any of the conditions are met.	<NULL <UNDERLINE>; RANGE 0+: <ITALIC>; RANGE 0:100 <FORECOLOR red>; RANGE 101:200 <FORECOLOR yellow>; RANGE 201: <FORECOLOR green>; RANGE 201: <BOLD>>
To test if values fall within a range, use the Range keyword in all caps followed by a space; the upper and lower bounds of the range separated by a colon; and then one or more attributes nested within angle brackets and separated by a semicolon.	<RANGE 0:100 <BOLD>>
When testing using RANGE, omission of either bound in the range, indicates that it is not bounded on that end.	<RANGE 0: <UNDERLINE>>
When testing using RANGE, use "+" after the lower bound to indicate that the bound is not inclusive.	<RANGE 0+: <UNDERLINE>>
When testing using RANGE, "-" after the upper bound to indicate that the bound is not inclusive.	<RANGE :0- <UNDERLINE>>

Example of a Content Attribute

You can use content attributes to solve problems that are specific to your business. The following example explains one way to use a content attribute.

Problem

In this example, the report shows the number of contacts for each agent. Each agent has a different number of contacts. The report needs to identify the agents who have between 35,000 and 45,000 contacts.



Solution

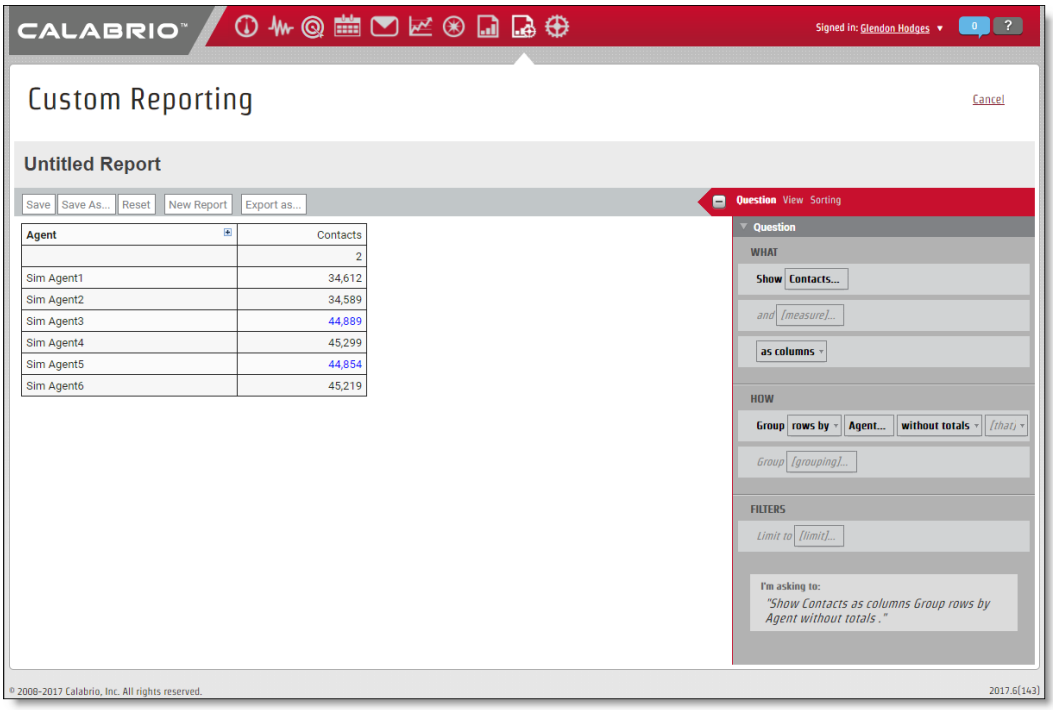
In this situation, you can use the Range keyword to configure the content attribute and change the color of all contacts that fall within the specified range.

To add a content attribute that will change the Contacts font color for Agents with 35,000–45,000 contacts:

1. In the Question tab on the Question panel next to Show, click **Contacts**. The Measure: Contacts window opens.
2. In the Content Attributes field, type the following text.

   ```
   RANGE 35000:45000 <FORECOLOR blue>
   ```

3. Click Apply. When the attribute is processed, the numbers in the Contacts column of the table for agents who fall in the specified range appears blue.



FUNCTIONS

Advanced Reporting allows you to use predefined functions in formulas and in the Content Attributes field. These functions can be used to alter measures when creating a report, or they can be used in formulas when creating a custom measure.

All of the available functions are described in the Custom Measure dialog box. (See Creating a Custom Measure.) The Data Element/Function Description pane in the Custom Measure dialog box includes a description of the function, an example of the syntax, and an example of the result of the function.

CREATE A DASHBOARD

A dashboard is a collection of reports that share a common theme or focus. Use the Advanced Reporting dashboards to provide a high-level picture of a business situation. Dashboards are generally created to track business changes, watch for warning signs, or monitor progress.

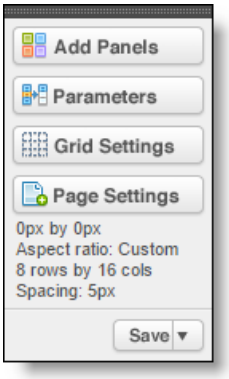
A dashboard consists of panels that can include any of the following elements:

- Charts or tables from a report
- Parameter controls for a chart or table
- Webpages
- Lists
- Text
- Images
- WFM or QM widgets

Creating a Dashboard

To create a dashboard, click the **New Dashboard** button on the Advanced Reporting page. The dashboard designer opens.

The dashboard designer includes a grid that allows you to design and configure the layout of your dashboard, a button that toggles the display between Preview Dashboard and Edit Dashboard, and the Dashboard Control dialog box as seen in the following image.



BUTTON	DESCRIPTION
Add Panels	Includes a selection of panels that display reports, text, images, widgets, and parameter controls.
Parameters	Links panels with parameter controls to panels displaying report visualization so the reports can be filtered on the

BUTTON	DESCRIPTION
	dashboard.
Grid Settings	Controls the display and configuration of the dashboard grid.
Page Settings	Creates a title for the dashboard and configures the dashboard display.
Cancel	This button is not used at this time. To cancel the creation of a dashboard, click **Cancel** in the upper right corner of the dashboard designer.
Save/Save As	Save dashboard as the title configured in Page Settings or save as a different name.

Add a Panel

Panels are containers that are placed in the grid of a dashboard. There are several types of panels. Webpage, List, Text, and Image panels display information from outside the Advanced Reporting feature, while Report, Parameter, and Widget panels configure and display information generated by Advanced Reporting.

A report panel displays the chart or table that was configured in the report designer. A parameter panel displays specific filters for reports. You can link a parameter panel to a report panel and use the parameter panel to filter the information that is displayed in the report panel. For example, a report that displays information for a group could be linked to a Member Picker parameter panel. From the Member Picker panel, you can filter the information in the chart to display the information for each member of the team.

To add a report panel to the dashboard:

1. Click **Add Panels** in the Dashboard Control dialog box.
2. Click the **Add Report** button, and then click in the grid and drag to draw a box and set the position and size of the panel.
3. Click **Edit**, and then select **Properties** from the drop-down list in the panel to

configure the panel properties. The Report Properties dialog box opens.

4. On the **Selection** tab, and choose a report to display in the panel.

BEST PRACTICE To create a parameter for a report panel, it is advised that you create both the report panel and the parameter panel before setting the parameter.

To add a parameter panel to the dashboard:

1. Click **Add Panels** in the Dashboard Control dialog box.
2. Select the parameter type from the Parameter Controls section.
3. Click inside the grid and drag to draw the outline of the parameter panel.

Add a Parameter

A parameter links (binds) values between a parameter panel and a report panel on a dashboard. When these two elements are linked, you can select or enter values that will dynamically filter the information displayed in the report panel. You can use a parameter to control one or multiple reports.

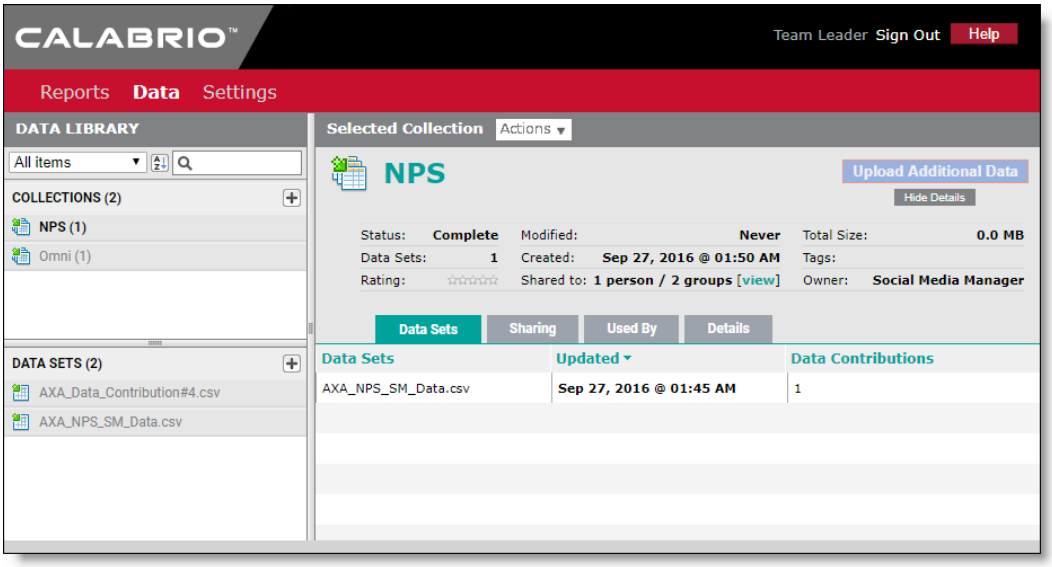
To bind a parameter panel to a report panel:

1. Click **Parameters** in the Dashboard Control dialog box. The Parameter Bindings dialog box opens.
2. Click the **Add a New Parameter** button in the bottom left corner of the Parameter Bindings dialog box. A new parameter is added to the list.
3. Click the **Bindings** field and select the data category to bind the report panel to the parameter.
4. Click **Add** to add a Binding field.
5. In the new Binding field, select the parameter panel to filter the report by.
6. Click **Apply** to create the parameter binding.

When the parameter panel is bound to the Report panel, you can control what information the report panel displays. For example, to display information for a single member of the group, clear the All Values check box in the parameter panel, and select the check box for the member you want to see.

Data

The Data tab opens the Data Library Manager. Only Advanced Reporting users with permissions to use the Data Library Manager can see the Data tab. These users are in charge of uploading, managing, sharing, and modeling data. The Data Library Manager can be seen in the following image:



The Data Library Manager allows you to interact with your data collections, data sets, and data set contributions. The controls in the Data Library Manager allow you to take the following actions:

- Upload a data file to create a data set or add contributions to a data set
- Browse, manage, and delete data sets and data set contributions
- Create, manage, delete, and share data collections
- Launch the Data Modeler to start a data modeling session
- Assign tags to data collections and data sets
- Configure tasks to run data connectors

DATA LIBRARY

The panels on the left side of the Data Library Manager display your data library. All source data in Advanced Reporting is contained in a data library.

A data library contains all the data that has been uploaded into Advanced Reporting. To help organize, update, and share that data, the library contains the following components.

- Data collections
- Data sets
- Data set contributions

> **NOTE** Most organizations work from a shared data library that is centrally managed by a single Advanced Reporting account designated as the Advanced Reporting administrator, however Advanced Reporting does support multiple data libraries.

Collections

In the Data Library Manager, collections display as part of the data library. A collection is a group of data sets that can be shared with users.

Configuring multiple data collections is often done to control access to information. You can have multiple data collections, each configured to use data from a specific combination of data sets.

> **NOTE** In addition to the data, a data collection also includes all data model components associated with the Data Sets that have been added into the data collection.

When a data collection is shared with groups of users, group members have access to the data and data model components available in the included data sets. These users will be able to view reports and dashboards that are based on data contained in that shared data collection. Depending on their user role, they may also be able to create their own reports and dashboards based on this data collection.

> **NOTE** For a group to have data appear in a shared report, the data collections used in those reports must be shared to with that group.

When you select a data collection from the Collections panel on the Data Library Manager, details about the collection appear in the Selection panel to the right.

Create a Collection

To create a Collection:

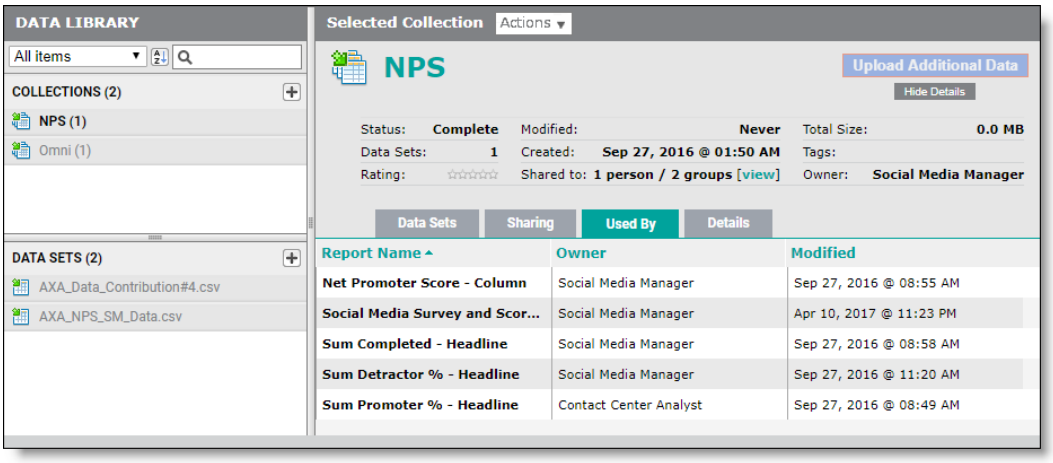
1. Click **Data** to open the Data Library Manager.
2. Click the plus sign in the upper right corner of the Collections panel. The Create Data Collection dialog box opens.
3. Complete the fields for the collection.

FIELD	DESCRIPTION
Name	The name of the collection.
Description	The details that determine the need for this collection.
Tags	The identifying words or phrases attached to the collection to help sort, group, and locate the collection.
Data Sets	The data sets that are added to the collection. **NOTE** Any data set with a check in the check box will be added to the collection, and any data set with a cleared check box is excluded from the collection.

4. Click **Save**.

Working with Collections in the Selected Collection Panel

When you click a collection in the Collections panel, information about that collection appears in the Selection panel. The Selection panel for a collection, as seen in the following image, includes actions that you can take to manage, share, and edit the collection.



The Selection panel for a collection includes the following interactive elements:

- Actions Drop-Down List
- Collection List Links
- Upload Additional Data

The following sections describe these Collection panel elements.

Actions Drop-Down List

The Actions drop-down list includes the actions you can take on the Selection panel for the selected collection. The following table describes the options in the Actions drop-down list.

ACTION	DESCRIPTION
New Report	Create a report. Select this option to open the custom report design page. See Create a Report for more information.
Upload Additional Data	Upload a file of data to Advanced Reporting. When you select this option, the Upload Data page opens. This page includes details about the type, size, and format of data files you can upload. This option is the same as clicking

ACTION	DESCRIPTION
	the Upload Additional Data button. See Upload Additional Data for more information.
Sharing	Opens the Sharing tab in the Selection panel. The Sharing tab includes the list of all groups and the permission each group has to the selected collection.
Edit Collection Info	Opens the Edit Data Collection dialog box. The Edit Data Collection dialog box has the same fields as the Create Data Collection dialog box. See Create a Collection for more information.
Delete Collection	Deletes the collection. A confirmation dialog box opens to confirm your intention to delete the collection.

Collection List Links

When you select a collection, the Selection panel includes a list section with four links. The following table describes these links.

LINKS	DESCRIPTION
Data Sets	A list of the data sets included in the selected collection as well as the time the collection was last updated and the number of contributions.
Sharing	the list of all groups and the permission each group has to the selected collection.
Used By	A list of the Reports that use information from this data collection, as well as the owner of the report and the time the report was last modified.

LINKS	DESCRIPTION
Details	A collection of fields to add details to the selected collection. The fields on the Details tab are similar to the fields in the Create Data Collection dialog box. See Create a Collection for more information.

Upload Additional Data

The Upload Additional Data button opens the Upload Data page. This page includes several suggestions for formatting and uploading data.

Data Upload Prerequisites

Before you upload a data file, review the following table of considerations to ensure that your import will be successful.

CONSIDERATION	DESCRIPTION
Raw data	Before you upload new data to Advanced Reporting, make sure the data is as raw as possible. For example, transactional data or product tables are more advisable data sources. Avoid data that has already been consolidated into multidimensional data, such as a Microsoft® Excel pivot table, because this data will not work well for upload. Consolidated data is a representation of similar types of data that have already been processed. An example is a rollup of transactions over a year without the detailed data behind it. Essentially, consolidated data is already a report. It is not the raw data that Advanced Reporting needs to give you the most reporting flexibility.
File types	Advanced Reporting supports upload of the following file types. ■ Text files (CSV) with comma, tab, or bar/pipe delimiters

CONSIDERATION	DESCRIPTION
	■ Microsoft® Excel files (XLSX) **NOTE** Consider using tab or bar/pipe delimiters rather than commas. Commas are often present in source data and this can complicate data import if they are also used as delimiters.
File format	Before uploading a file, make sure your file is formatted in the following manner. ■ Data is organized into rows and columns ■ Each row represents a a complete record of a single transaction, entity, or object ■ Data of similar types is arranged in columns ■ The first row includes column headers where each header is unique and not blank ■ Does not contain groupings or sub-totals
Data Set	When you upload data to Advanced Reporting, you are making a Data Set Contribution. Your data will be added to the Data Library as part of a Data Set. If similar data has been uploaded in the past, you will be able to add it to an existing Data Set. If this is new data, your contribution will become the basis for a new Data Set and you will need to complete a data modeling session to make your new data available for reporting.

Uploading Data

To upload data:

1. Click **Upload Additional Data**. The Data Upload page will open.
2. Select the file type from the Choose file type drop-down list.

3. Click **choose file**, and select the file to upload.
4. Click **Open**. The data file is uploaded, and the upload will be listed as a contribution to the matching data set.

   If this is new data, the Design Data Set tool will launch automatically to help you model your new data.

Data Sets

In the Data Library Manager, data sets display as part of the data library. A data set is a container that holds data as well as the structure, layout, and format of that data.

When you select a data set from the Data Sets panel on the Data Library Manager, details about the data set appear in the Selection panel to the right.

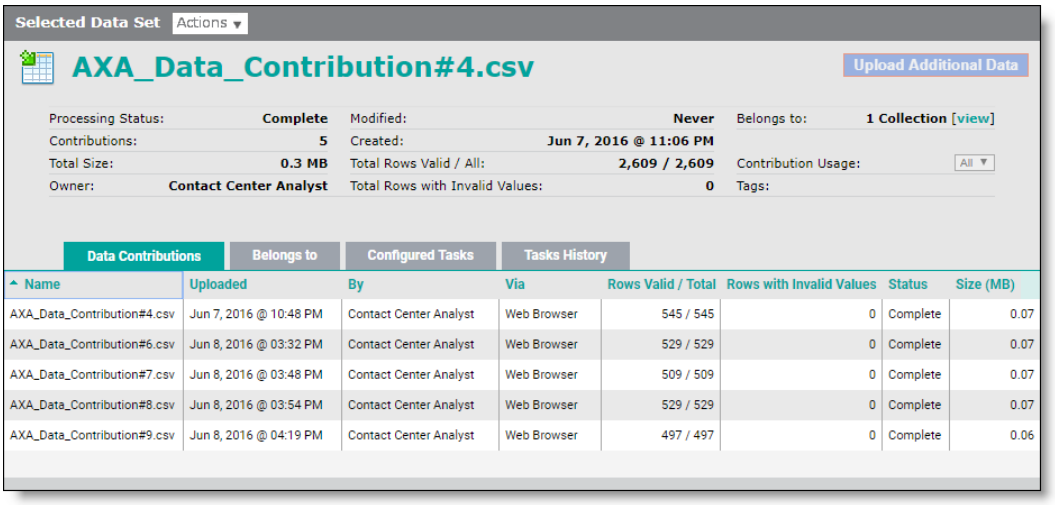
Create a Data Set

To create a Data Set:

1. Click the Data tab to open the Data Library Manager.
2. Click the plus sign in the upper, right corner of the Data Sets panel. The New Data Set dialog box opens.
3. Click Next. The Data Upload dialog box opens. See Upload Additional Data for more information and the steps to upload the data file.
4. Click Finish to create the data set.

Working with Data Sets in the Selection Panel

When you click a data set in the Data Sets panel, information about that data set appears in the Selection panel. The Selection panel for a data set, as seen in the following image, includes actions that you can take to manage, share, and edit the collection.



The Selection panel for a data set includes the following interactive elements:

- Actions Drop-Down List
- Data Set List tabs
- Upload Additional Data

The following sections describe these Data Set panel elements.

Actions Drop-Down List

The Actions drop-down list contains the actions you can take on the Selected Collection panel for the data set. The following table describes these actions.

ACTION	DESCRIPTION
Upload Additional Data	Upload a file of data to Advanced Reporting. When you select this option, the Upload Data page opens. This page includes details about the type, size, and format of data files you can upload. This option is the same as clicking **Upload Additional Data**. See Upload Additional Data for more information.
Add to Collection	Opens the Edit Data Set dialog box so you can add the

ACTION	DESCRIPTION
	selected data set to a collection.
Design Data Set	Opens the Data Modeler to begin the data modeling process.
Edit Data Set Info	Opens the Edit Data Set dialog box so you can change the information about the data set.
Delete Data Set	Deletes the data set. A confirmation dialog box opens to verify that you want to permanently delete the data set.
Create New Task	Sets up and schedules a new task.

Data Set List tabs

When you select a data set, the Selection panel includes a list section with four tabs. The tabs each display a list with columns that can be sorted in ascending or descending order by clicking the column header. The following table describes these tabs.

TAB	DESCRIPTION
Data Contributions	A list of files that have been contributed to the data set.
Belongs to	A list of the collections associated with the data set.
Configured Tasks	The tasks that have been configured for the data set.
Tasks History	The status and time of tasks associated with the data set.

Settings

The Settings link in the Advanced Reporting toolbar allows you to make administrative changes to your Advanced Reporting account. On the Settings page, you can take the following actions.

- View a summary of the account
- Change your password and profile information
- View and configure application configuration
- View current space information and add spaces
- Retrieve report group deliveries

Glossary

When working with Advanced Reporting to visualize your data, you will come across some important terms that have specific meanings. The following list explains some of these terms.

TERM	DEFINITION
Ad hoc report	A report used for a single analysis session. This type of report is often used to investigate, analyze, and obtain an answer to a report question. Ad hoc reports generally are not saved or shared.
Auto-group	A feature of Advanced Reporting that creates a group out of child accounts. **EXAMPLE** If auto-group is enabled, all child accounts of Account A will be combined into a group called "Account A's Group."
Content attribute	Information that is attached to fields and terms to apply static or conditional formatting to a report. They can control the formatting of cell values, headings and colors. You can apply content attributes to measures within individual reports, or configure them as part of your data model. When content attributes are included as part of your data model, they are available to every report built on that data model.
Content panel	A container that is placed in the body of a dashboard. Dashboards are essentially collections of content panels. Content panels can contain reports, formatting elements, pickers (sometimes called parameter controls) or images.
Dashboard	A collection of reports related around a theme or focus, designed to provide a high-level picture of a business situation.

TERM	DEFINITION
	Dashboards are generally created to be shared with a group and revisited to track business changes and progress. Content and reports can also be exported from dashboards to share with others, or to conduct further analysis. Dashboards are created using a set of content, styling and control panels. These panels allow the dashboard author to: ■ Select which reports to include. ■ Provide controls that allow users to modify report content. ■ Configure layout. ■ Add styling options. ■ Connect a series dashboards to provide a structured path for exploring related information.
Data Collection	A logical group of organized data sets together to facilitate the sharing of data, and allow the creation of reports against that shared data. Data sets are added to a Data Collection, which is then shared to groups of users. Data sets can be added to multiple Data Collections.
Data Library	All of the data a user has access to. Each user has their own data library.
Data Model	An encyclopedia of custom metadata that uniquely describes a company's data. The data model defines the data that is available for reporting. These metadata abstractions allow Advanced Reporting users to create reports by asking questions of their data instead of writing queries. A company's data model is created through the process of data modeling.

TERM	DEFINITION
Data Modeling	The process creating a relationship between your source data and Advanced Reporting. Advanced Reporting uses a descriptive data design process, starting with your data and then describing it for use in reporting. This is inverse to the usual data modeling approach where the data structure is first built and then populated with data. By data modeling, you create the encyclopedia of metadata abstractions that Advanced Reporting needs to support reporting. Because of this unique approach to data, Advanced Reporting breaks the process of data modeling into the following set of steps to help you organize, describe, and share your data for reporting. 1. Define the data set 2. Map the fields 3. Organize the data 4. Add data set details
Data Properties	The detailed information related to a subject that can be configured as part of your company's data model. The Product subject might be configured to include data property values capturing Product Color or Base Price. When you create a report, these properties are not displayed by default, but can be selected for display. Showing these additional details is much like hiding or showing columns in a spreadsheet. Data properties can also be used for filtering a report.
Data Set	A container that holds data as well as the structure, layout, and format of that data. It is a single store of related information added to the data

TERM	DEFINITION
	library from an outside source. Each individual addition of data to the library is called a data set contribution. Data sets receive data set contributions. You cannot create an empty data set. A new data set can only be created from a data contribution, generally when a new set of data is added to the library. When a new, undefined set of data is initially added to the library, Advanced Reporting creates a description of the data structure and characteristics, called a signature. This signature is part of the data set, and allows Advanced Reporting to recognize and organize future contributions of data that have the same signature. **NOTE** Data set signatures can be extended based on contributions of new, expanded data. Data sets, like other data library elements, are managed using the Data Library Manager. It is common to have multiple data sets in a library. Some data sets may have the same or similar signatures, therefore it is important when you make a data set contribution, that you select the correct data set. **NOTE** You can delete all the constituent data set contributions in a data set and the data set will remain.
Data Set Contribution	A data set Contribution is a single, distinct addition of data to your data library. Contributions essentially add rows of data to a corresponding data set, where each row is a finite and distinct transaction or entity, such as information about a single order. **IMPORTANT** Data set contributions must use the same file format already defined in the target data set, including delimiters, column headers and data types.

TERM	DEFINITION
	Individual data set Contributions can be deleted without affecting other contributions.
Field Aggregators	Field aggregators specify how Advanced Reporting will interpret the data to apply a default mathematical operation to consolidate the data. This is helpful when the data in a field will frequently be processed in the same manner, such as calculating sums of Sales. The available aggregators for a field depend on the type of data it contains, such as text or numbers. Advanced Reporting applies an aggregator to each data type, using Latest for text and date, and Sum for number fields. You can change the default aggregator when mapping or editing your fields. Advanced Reporting includes the following aggregators: ■ Avg—(Number) The average or arithmetic mean of all the values. Null values are not included in the calculation. ■ Count—(Number, text, date) The count of all the available data. Null values are not included in the count. ■ DistinctCount—(Number, text, date) The count of all the unique values. ■ DistinctValues—(Number, text, date) The list of unique values. ■ Latest—(Number, text, date) The last recorded value. This is the default aggregator used for text and date fields. ■ Max—(Number, text, date) The largest value. **NOTE** Max can apply to number, text, or date. The definition changes depending on the type of data it is describing. For numbers, it indicates the highest numerical value. With text, it indicates the lexicographically sorted

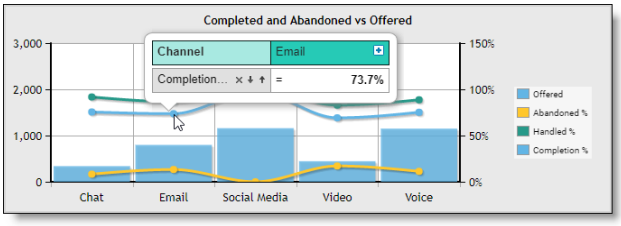
TERM	DEFINITION
	last value. With dates, it indicates the latest time. ■ Median—(Number) The arithmetic middle of all the values. ■ Min—(Number, text, date) The smallest value. **NOTE** Min can apply to number, text, or date. The definition changes depending on the type of data it is describing. When used with numbers, it indicates the highest numerical value; when used with text, it indicates the lexicographically sorted last value; and when used with dates, it indicates the latest time. ■ StdDev—(Number) The measure of the extent of variation or dispersion within the data, or how spread out numbers are within the data. ■ Sum—(Number) The sum of the values. This is the default aggregator used for number fields.
Information Space	An encyclopedia of all associated Advanced Reporting data, data model information, and content such as reports and dashboards. Think of the Information Space as a folder that includes the following elements: ■ Data Library ■ Data Sets ■ Data Set Contributions ■ Data Collections ■ Reports ■ Dashboards An Information Space contains all the data, content, and modeling information for a Advanced Reporting implementation. When modeling

TERM	DEFINITION
	data, you can create multiple Information Spaces to use for staging of data, data models and content which then be deployed in part or in whole to users.
Measure	The numeric values you include in a report. Measures are the values that you want to measure and calculate, such as the total value of sales this year or the number of new customers. Measures are a type of Question Term, and you add them to a report under the WHAT section of the Question Panel.
Parameters (Also known as report parameters or dashboard parameters)	Used to carry values from pickers to update reports and other content within a dashboard. Dashboard designers can include content panels called pickers or parameter controls. When included on a dashboard, pickers allow users to select or enter values that dynamically filter the dashboard's reports. To achieve this, the picker uses a parameter to carry the selected values and update the report on-the-fly. Parameters can be used to control one report or multiple reports in a dashboard. **NOTE** Parameters must be connected or bound to both the picker and to the desired reports. This is known as setting up parameter bindings. Additionally, reports must be configured to work with parameters. Parameters can be used within dashboards to dynamically control other content, such as URLs and Text panels.
Picker (Parameter control)	The tools on dashboards used to select or type values to change and control what you see in reports. **EXAMPLE** Use a picker to select from a list of companies and

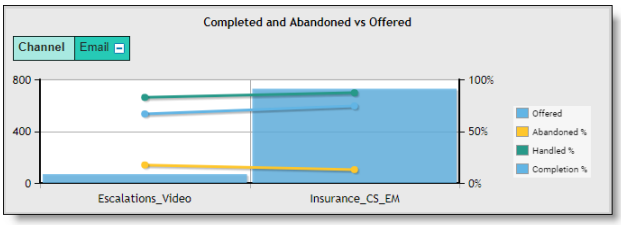
TERM	DEFINITION
	pick which specific companies to include in your report. Dashboard authors can include the following types of pickers: ■ Member—Allows you to pick from a list the values you want to include on your report. Member pickers come in regular and compact sizes. ■ Time period—Allows you to select date and time periods to display on your report. ■ Number entry—Allows you to type a value to filter the report results. ■ Text entry—Allows you to type a value to control report results. This kind of picker is less common, because the value typed must be exact for it to work correctly.
Subject	The organizations of people, places, things, and time frames that are organized in the HOW section of the Question Panel. Often called groupings, subjects provide the real-world circumstances for reports. They include context for your report, specifying the way you want to categorize or organize your measures. For example, you might want to group your report by the type of product, or organize your values by country or sales year. It is common to have multiple subjects in a report. **NOTE** Subjects are defined in your company's data model and can include properties you can use to further categorize the information in your report.
Tooltip	The pop-up dialog box that provides detail about the data in your report. A tooltip appears when you hover over certain sections of your

TERM	DEFINITION

table or chart.



You can sort using the arrows and use the **X** in the tooltip to remove the sorting selection. When enabled in the model, you can drill down by clicking the plus sign that appears in the tooltip.



NOTE Click outside the tooltip to close it.