Db2 Web Query InfoAssist+ Part1

Release 2.2.1

Contents

Introducing InfoAssist+

InfoAssist+ provides business users with the most advanced, yet simple to use, ad hoc reporting features needed to create intricate reports and perform insightful analysis.

InfoAssist+ provides a robust, user-friendly solution that helps companies overcome traditional ad hoc reporting challenges.

InfoAssist+ is available in the following versions:

❑ **InfoAssist+.** Complete version of this powerful report-generation tool.

❑ **InfoMini.** Applications built from an InfoAssist+ report that contain a subset of InfoAssist+ functionality at run time.

In this chapter:

❑   InfoAssist+ Highlights

❑   Additional InfoAssist+ Types

InfoAssist+ Highlights

With InfoAssist+, you can quickly and easily:

❑ Generate highly complex reports, charts, visualizations, and documents from any enterprise information source without IT intervention.

❑ Complete tasks, such as building a report, with minimal clicks.

❑ Create useful and dynamic visualizations, giving you greater insight into your data.

❑ Create maps to illustrate trends and identify patterns in your data.

❑ Progress to more sophisticated activities, such as publishing and sharing documents.

❑ Convert reports to charts, or charts to reports, in a single click.

❑ Analyze multiple reports and charts simultaneously, using advanced tiling options to view data from multiple perspectives.

❑ Browse enterprise-information sources, including multi-dimensional sources.

❑ Output data in a variety of formats, including HTML, HTML5 (charts only), active reports, PDF, active PDF, Excel®, and PowerPoint®.

InfoAssist+ is a Rich Internet Application (RIA) that uses AJAX (Asynchronous JavaScript and XML) technology. It delivers its cutting-edge functionality using a familiar Microsoft Windows® ribbon interface. This highly intuitive environment shields users from the underlying technical complexities associated with ad hoc reporting features, while providing access to all the functionality needed to address mission-critical information requirements.

This powerful ad hoc reporting tool enables rapid and efficient design and deployment of reports and charts. It uses an interactive and fully-customizable WYSIWYG (What You See Is What You Get) development environment. Users receive instant feedback throughout the development process to ensure that reports and charts are properly built.

InfoAssist+ offers ad hoc reporting in a single, thin-client environment. There is no software to install, no desktop clients to maintain, and no user licenses to track. It is a RIA that makes desktop-style ad hoc applications readily available, using the Web, to business users across your enterprise.

Note: If you manually edit a report created with InfoAssist+, do not delete or modify the internal comments located at the top of the procedure. Modifying these comments, or any content of the procedure, could produce unpredictable results when you open the report with InfoAssist+. In general, we do not recommend that you manually edit a procedure.

Additional InfoAssist+ Types

This section describes additional InfoAssist+ types.

InfoMini

You have the option to activate InfoMini when you create a report. When you run a report with InfoMini activated, an InfoMini application is launched. An InfoMini application contains a subset of the functionality available to a full InfoAssist+ report. You can limit or expand the functionality that is available to the user at run time when you build the report.

An InfoMini application opens in its own browser window if it is running from InfoAssist+.

Chapter 2

Navigating the InfoAssist+ Interface

InfoAssist+ provides an intelligent, flexible layout for creating reports, charts, documents, and visualizations.

The application window provides intuitive menus and toolbars, a versatile ribbon that provides access to specialized groups for different functional areas of report design, a taskbar for selecting output, and a status bar for directing output.

The application window also provides a resources area for selecting and sorting data, and a multi-faceted results area that can display report design, a preview of report output, or actual report output.

In this chapter:

InfoAssist+ Application Window

The components of the InfoAssist+ Application window are shown in the following image.
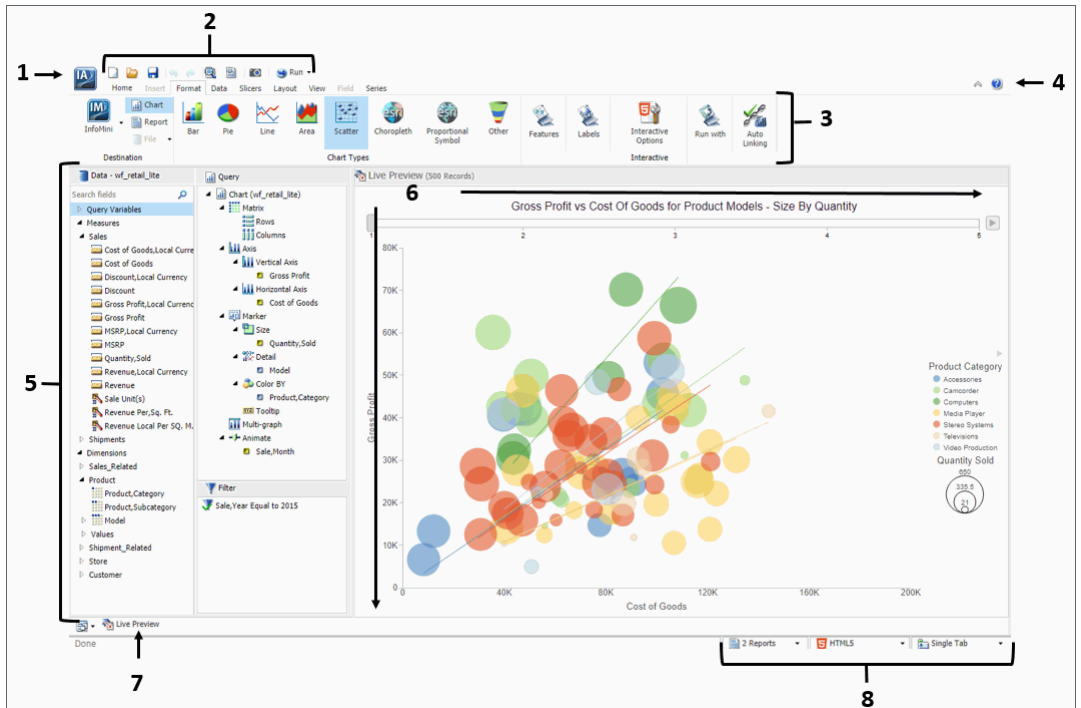
The main interface components are explained as follows:

1. **Application button.** Provides access to the Application menu of procedure-related commands.

2. **Quick Access Toolbar.** Displays frequently-used commands, such as New, Open, Save, Undo, Redo, View code, Run, and Preview, in a toolbar that remains visible. For more information, see *Quick Access Toolbar* on page 23.

3. **Ribbon.** Displays the commands you need to create reports, charts, visualizations, and documents. It also displays the Help menu. For details, see *Ribbon* on page 25.

4. **Help.** Provides access to the online technical content for InfoAssist+ in a new browser window.

5. **Resources panel.** Displays the Data pane, Query pane, and Filter pane.

6. **Canvas.** Displays the results of your report. In Live Preview mode, the canvas displays a preview of the file as it is developed.

Depending on the type of file that you are developing, the canvas may display differently. For example, when creating a document, the canvas includes rulers around the development area. This is to assist you in placing the components on to the document.

7. **Navigation taskbar.** Displays groups and icons that provide different views and quick access to all active reports and report output. For details, see *Using the Navigation Taskbar* on page 66.

8. **Status bar.** Provides an output format button that you click to see the selected format and an output target button that you click to view the selected option for displaying new output windows or tabs. For more information, see *Using the Status Bar* on page 67.

Application Main Menu

In the upper-left corner of the InfoAssist+ interface, click the IA button to open the Application main menu.

You can run the following commands from the Application main menu:

❏ **New.** Opens the InfoAssist+ splash screen, where you can create a new report, chart, document, or visualization. The exact functionality of the New command depends on your current InfoAssist+ session.

If you open a Reporting Object through InfoAssist+, and then click *New*, a new report is generated from the Reporting Object. You are prompted to choose the type of report you want to create from the Reporting Object.

When you open a new session of InfoAssist+ and then click *New*, a new report is created. You are prompted to choose a data source.

❏ **Open.** Opens an existing report, chart, document, or visualization.

❏ **Save.** Saves a report, chart, document, or visualization.

❏ **Save As.** Saves a report, chart, document, or visualization with a new name.

Note: When saving a read-only, non-writable procedure (.fex) in the Save As dialog box, the first writable folder will be selected, by default.

❏ **Run.** Runs a report, chart, document, or visualization.

❏ **Run Deferred.** Submits a report, chart, document, or visualization for processing in the background while you continue to work on other tasks.

❏ **Close.** Closes the currently active report, chart, document, or visualization.

❏ **Recent Items.** Displays recent reports, charts, documents, or visualizations, and those items that have been pinned to the menu. The Recent Items area of the InfoAssist+ Application main menu is shown in the following image.
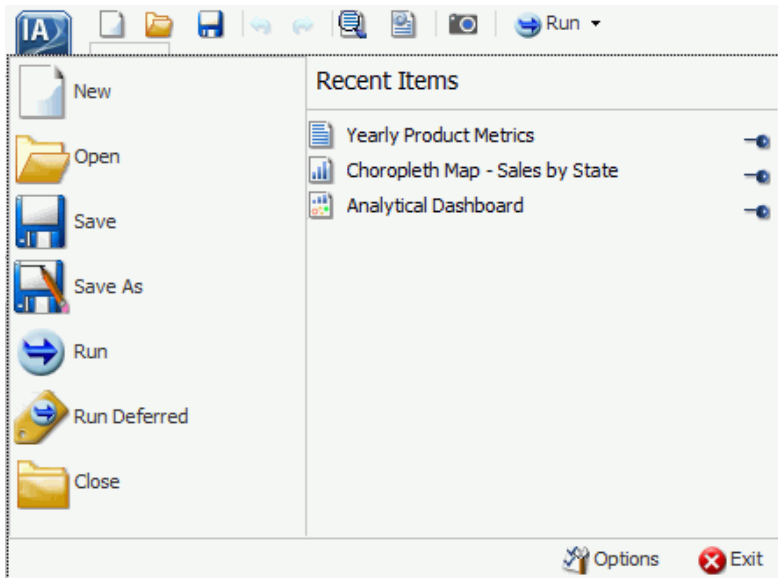
Pinned reports, charts, documents, or visualizations are represented by a blue pin 📌 icon. Pinned items appear at the top of the list in alphabetical order.

Recent reports, charts, documents, and visualizations are represented by a sideways blue

pin 📌 icon. Recent items appear below the separator bar in the order in which they were created, with the most recently created item at the top.

You can pin important reports, charts, documents, and visualizations to the top of the Recent Reports section of the Application main menu for quick and easy access. To promote a recent report to pinned report, click the sideways blue pin icon. The icon turns upright and the report is moved to the pinned report area of the Recent Items window, where it stays until it is unpinned.

To demote a pinned report, click the blue pin icon. The icon turns sideways and the report is moved below the separator bar.

A shortcut menu is available when right-clicking a recent item, as shown in the following image.
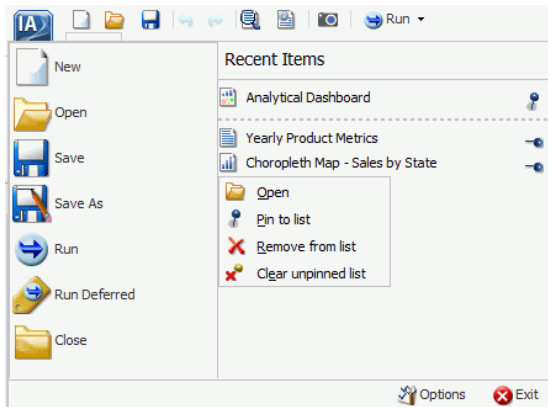
The options in the menu are:

❏ **Open.** Opens the selected report, chart, document, or visualization.

❏ **Pin to list.** Pins or unpins a recent report, chart, document, or visualization to the pinned reports list above the separator bar.

❏ **Remove from list.** Unpins a pinned report, chart, document, or visualization from the pinned reports list.

❏ **Clear unpinned list.** Clears all unpinned reports, charts, documents, or visualization from the Recent Items list.

❏ **Options.** Opens the Options dialog box to customize your user preferences. For more information, see *Changing InfoAssist+ User Preferences* on page 20.

❏ **Exit.** Exits the application.

Reference: Open Dialog Box

The Open dialog box displays when you launch InfoAssist+. It also displays when you join and blend data. You can use this dialog box to do the following:

❏ Select data sources for creating reports, charts, visualizations, and documents.

❏ Select data sources for joining and blending data.

❏ Configure data adapters for connecting to an existing database and creating synonyms.

❏ Upload user data.

The Open dialog box is shown in the following image.
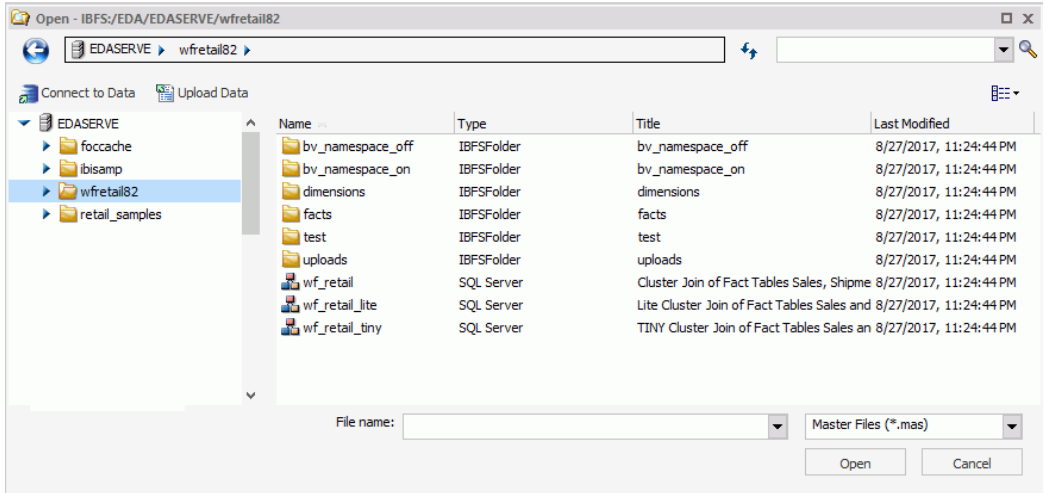
The Open dialog box contains the following options:

Connect to Data

Opens the Metadata tool, where you can configure a Data Adapter to connect to an existing database and create synonyms.

Upload Data

Opens the Upload tool, where you can upload user data from a machine to which you have access. This data can be used with >Report Broker reporting.

Open

Opens the selected Master File.

Accessing InfoAssist+ Options

On the InfoAssist+ application window, click the *Application* button to open the InfoAssist+ Application main menu of procedure-related commands. When you click *New*, a splash screen that contains all available options opens, as shown in the following image.
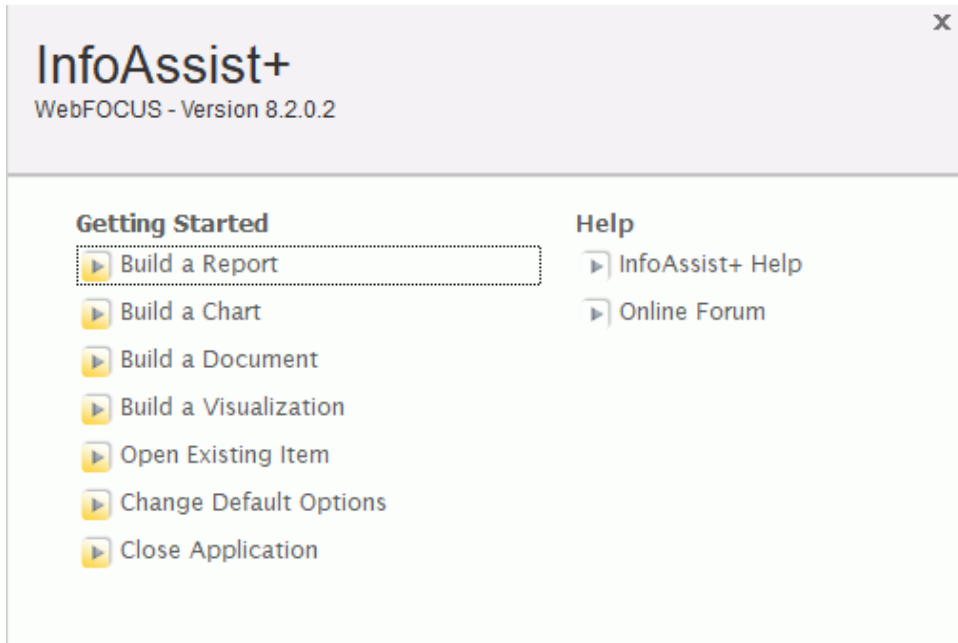
The available options are grouped into Getting Started and Help.

Getting Started

The following Getting Started options are available:

❏ **Build a Report.** Opens the Open dialog box, where you can select a data source for your report.

❏ **Build a Chart.** Opens the Open dialog box, where you can select a data source for your chart.

❏ **Build a Document.** Opens the Open dialog box, where you can select a data source for your document.

❏ **Build a Visualization.** Opens the Open dialog box, where you can select a data source for your visualization.

❑ **Open Existing Item.** Opens the Open dialog box, where you can select an existing item.

❑ **Change Default Options.** Opens the Options window, where you can change the default settings to reflect your preferences.

❑ **Close Application.** Closes and exits the application.

Help

The Help options provide help for the new user. The following Help options are available when you open InfoAssist+.

❑ **InfoAssist+ Help.** Opens the online documentation window for InfoAssist+.

❑ **Online Forum.** Opens the Focal Point website in a new browser window.

Selecting a Data Source

Selecting a data source is the first step when you create a new report or chart. When the Open dialog box appears, select the desired data source and click *OK*, which closes the dialog box. You can also double-click a data source to open it and close the dialog box in one step. If the desired data source is not in the default directory, select a different directory using the Look in drop-down list.

The Open dialog box is shown in the following image.

Open			□ ×
Look in:	Reporting Server		
Name	**Description**	**Type:**	
BROKERS		WebFOCUS	
CAR		WebFOCUS	
CAROLAP		WebFOCUS	
CASHFLOW		WebFOCUS	
COURSE		WebFOCUS	
DMLOCS	Plant Locations	Fixed-format sequential	
EDUCFILE		WebFOCUS	
EMPDATA		WebFOCUS	
EMPLOYE2		WebFOCUS	
EMPLOYEE		WebFOCUS	
FINANCE		WebFOCUS	
GGDEMOG		WebFOCUS	
File name:			
Files of type:	Master Files		
		✓ OK	⊘ Cancel
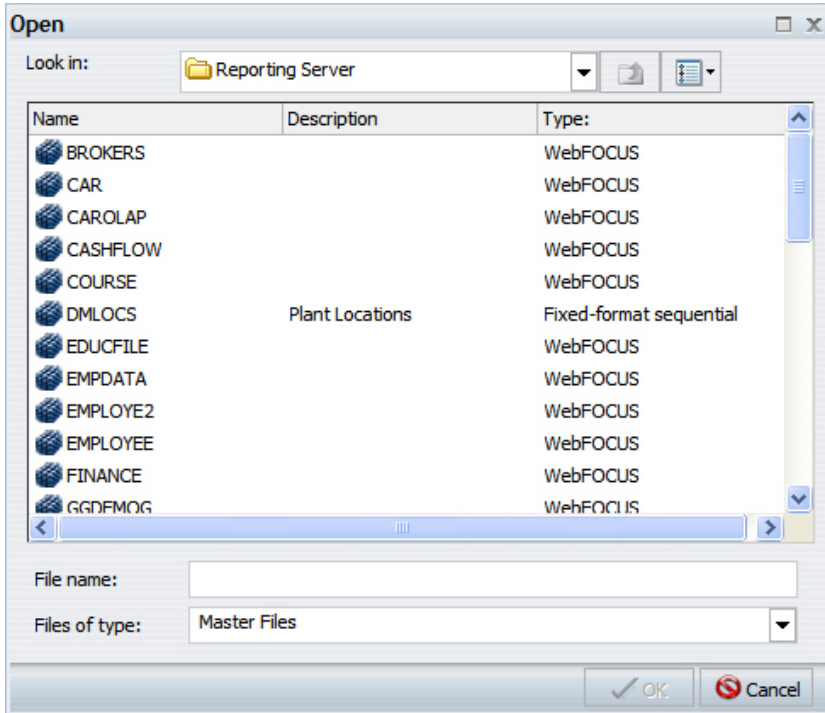
InfoAssist+ also displays the Open dialog box when you save a report, select a drill-down procedure, or open a StyleSheet, theme, or Cascading Style Sheet (CSS) file.

Reference: Opening a New Procedure

When you open a new procedure, you are presented with the splash (start-up) screen. Selecting Build a Report, Build a Chart, or Build a Document displays the Open dialog box for selecting a data source. When you select a data source and click *OK*, the InfoAssist+ application window opens, as shown in the following image.
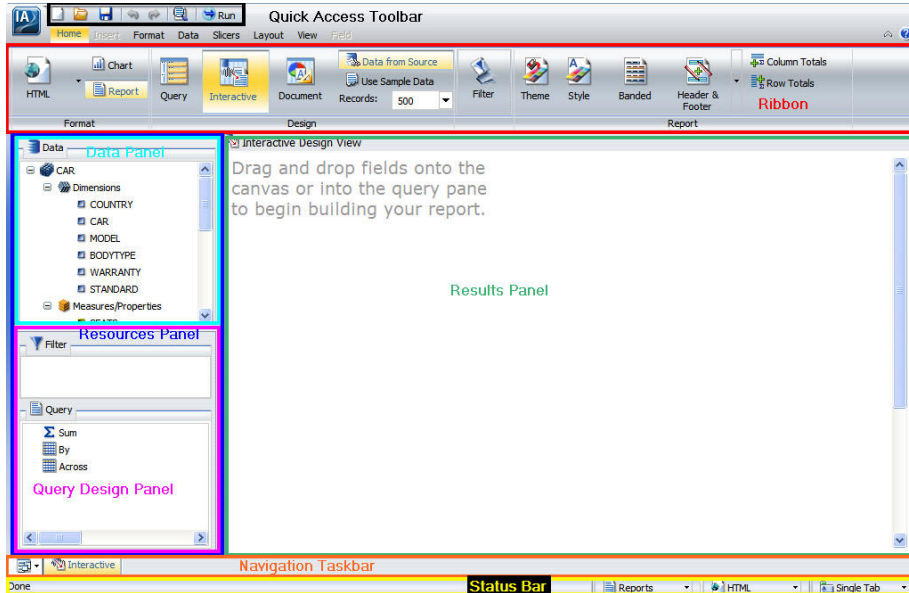
Changing InfoAssist+ User Preferences

You can change the default user preferences to customize the way that InfoAssist+ behaves when you create reports and generate output. The application theme, which is inherited from the BI Portal, customizes the InfoAssist+ interface, including all menus and dialog boxes.

You can style your reports by selecting a document theme independent from the interface. On the InfoAssist+ Application main menu, click *Options*.

The Options dialog box, as shown in the following image, opens to provide you with a user-friendly interface for customizing the InfoAssist+ application.
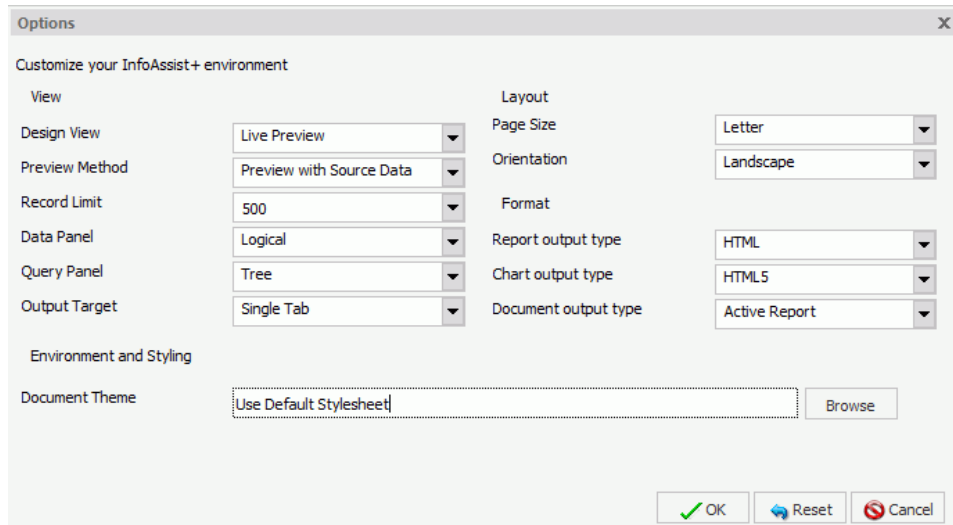
Note: If you make changes to the default selections in the Options dialog box, changes will take effect the next time InfoAssist+ launches.

If any of the options are unavailable, contact your administrator for assistance.

You can also select a document styling theme through the ribbon. Go to the Home tab, then in the Report group, click *Theme*. For more information, see *Home Tab* on page 27.

Startup Options

Note: The Startup Options are disabled because in Web Query 2.x, you can choose the mode of InfoAssist+ directly from the Resource Tree in the BI Portal.

View

The View area provides settings for establishing the design view in which you will work, the type of data you will use when you preview your output, the limit you need to set on your record input, how your data and query panels will look, and the output target that you will use.

❏ **Design View.** Values are Live Preview and Query. Select *Live Preview* to activate the Preview Method drop-down menu. The default value is Live Preview.

❏ **Preview Method.** Values are Preview with Source Data and Preview with Sample Data. This menu becomes active when you select Live Preview from the Design View drop-down menu. The default value is Preview with Source Data.

❏ **Record Limit.** Values are All records, 1, 10, 50, 500, or you can type a numeric value directly in the menu. The default value is 500.

❏ **Data Panel.** Values are Logical, List, and Structured. The default value is Logical.

❏ **Query Panel.** Values are 2x2 (2 columns by 2 rows), 1x4 (1 column by 4 rows), and Tree. The default value is Tree.

❏ **Output Target.** Values are Single Tab, New Tab, Single Window, and New Window. The default value is Single Tab.

Layout

The Layout area provides settings for printing reports and charts.

❏ **Page Size.** Values are A4, A3, A5, Letter, Tabloid, and Legal. The default value is Letter.

❏ **Orientation.** Values are Portrait and Landscape. The default value is Portrait.

Format

The Format area provides settings for the output types for reports, charts, and documents.

❏ **Report output type.** Values are HTML, PDF, PowerPoint (pptx), Excel (xlsx), Excel (xlsx Formula), Excel, Excel (Formula), active report, and active PDF. The default value is HTML.

❏ **Chart output type.** Values are HTML, HTML5, PDF, PowerPoint (pptx), Excel (xlsx), Excel, active report, and active PDF. The default value is HTML5.

❏ **Document output type.** Values are HTML, PDF, PowerPoint (pptx), Excel (xlsx), Excel (xlsx Formula), Excel, Excel (Formula), active report, and active PDF (for documents containing only reports). The default value is active report.

Environment and Styling

The Environment and Styling area provides settings for styling reports and charts through the specification of a Document Theme. Click the *Browse* button to open the Templates - Browse predefined template files dialog box, in which you can search for an existing >Report Broker StyleSheet. The default StyleSheet is Warm.sty, but you can select from the other themes that are available (Dark.sty or Flat.sty).

Note: StyleSheets are stored in the following directory of your >Report Broker installation:

/qibm/proddata/QWEBQRY/base80/ibi_html/ibi_themes

In addition, you can access a repository of additional themes by accessing the Legacy Templates, under Libraries, as shown in the following image.
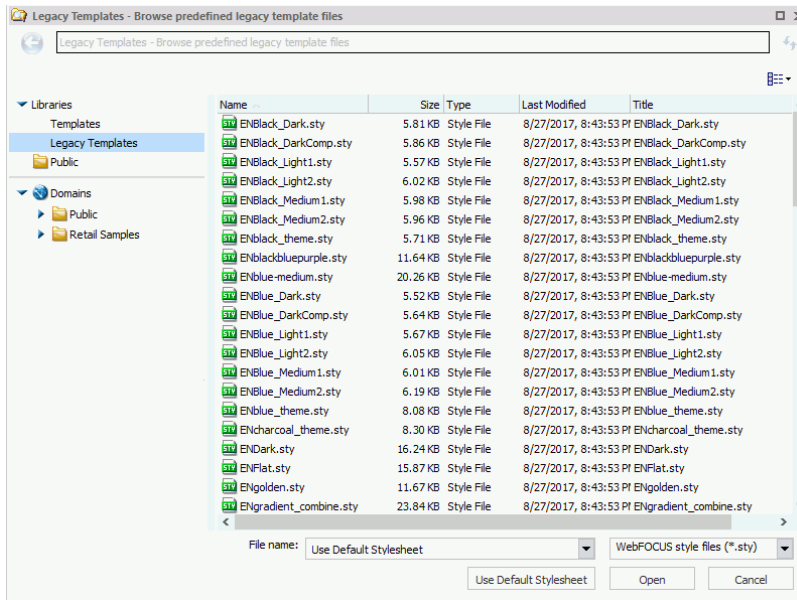
The theme that you select determines the coloring and hues that display within InfoAssist+. The default templates in the Templates section apply to all languages, whereas some of those in the Legacy Templates sections are specific to just one language (for example, EN=English).

Note: If you switch themes when working in Report mode, all custom styling is removed from the procedure.

Changing Global Preferences

You can change global preferences for InfoAssist+ through the Administration Console, which can be accessed from the BI Portal Administration Menu.

Quick Access Toolbar

The Quick Access Toolbar provides access to the most commonly used functions. It is located to the right of the Application main menu button and is always visible no matter which options are selected.

❑ **Create a new report, chart, document, or visualization.** Opens the InfoAssist+ splash screen, where you can create a new report, chart, document, or visualization.

❏ **Open existing item.** Opens the Open dialog box, where you can select an existing item.

❏ **Save.** Saves a report, chart, document, or visualization.

❏ **Undo and Redo.** The Undo icon undoes your last action. The Redo icon repeats your last action.

The Undo icon is enabled (blue) when there is an action to undo. Otherwise, the icon is unavailable (gray). The Redo icon is enabled (blue) when there is an action to redo. Otherwise, the icon is unavailable (gray).

For example, if you add a database field to a report, the Undo icon turns blue. You can now click the Undo icon to remove the database field from the report. The Undo icon turns gray, and the Redo icon turns blue. To restore the field to the report, click the blue Redo icon.

You can also press Ctrl+Z to undo an action, or Ctrl+Y to redo an action.

You can undo and redo up to 25 actions per session. InfoAssist+ maintains the undo and redo list of actions even when you switch between reports.

When a dialog box is open in the application window, you cannot use the Undo and Redo icons. However, when you click *OK* and close the dialog box, the icons become available for use. With a single click of Undo, you can undo all the actions that you performed in the dialog box, and you can reinstate them with a single click of Redo.

❏ **View code.** View the underlying code for the report.

❏ **Procedure Settings.** Click the *Procedure Settings* button to specify and control items for inclusion in a procedure. The Procedure Settings dialog box presents various SET commands which are useful when you need to tailor your report, chart, or document presentation or content to meet your individual needs. For more information, see *Using Procedure Settings* on page 71.

❏ **Run.** Click the Run button to run a report, chart, document, or visualization immediately. Click the down arrow to open the Run menu, which contains the following additional options:

  ❏ **Preview.** Runs the report, chart, document, or visualization in the selected format with the limited number of records as set in the Design group on the Home tab.

  ❏ **Run with Default Parameter Values.** Runs a report or chart using the default parameter values. If you have parameters defined, the default value is the first data field defined for the parameter. If you do not have parameters defined, the report or chart will run, regardless.

❑ **SQL Trace.** Returns the SQL commands for the request.

❑ **SQL Preview Trace.** Returns the SQL commands for the Live Preview run.

Ribbon

The ribbon is a rectangular area of distinct groups of buttons that spans the top of the InfoAssist+ application window.

The ribbon, with the Home tab selected, is shown in the following image.
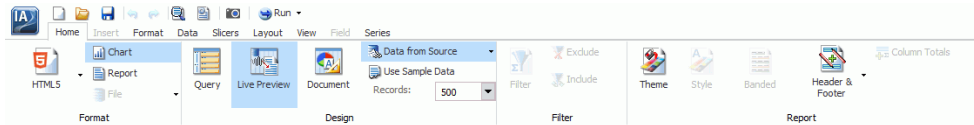
The ribbon is contextual and changes depending on the type of file that you are developing. For example, in Chart mode, the ribbon is made up of nine tabs, whereas when working in Visualization mode, the ribbon consists of five tabs. Each tab contains a subset of InfoAssist+ functionality organized in logically-related groups of controls and commands graphically represented by distinctive icons.

Working With the Ribbon

The ribbon contains two types of arrow-based buttons. The first type of button opens a menu when you click it. The Orientation button is an example of this type of button. Clicking the Orientation button opens a menu of options, as shown in the following image.
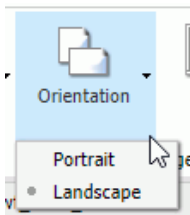
The second type of button is a split button. Clicking the left side of the split button performs a default action. Clicking the down arrow, on the right side of the button, opens a menu of options. The Header & Footer button is an example of a split button. It is shown in the following image.
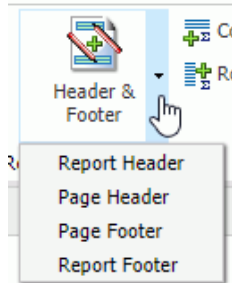
Clicking the Header & Footer button on the left opens the Header & Footer dialog box. Clicking the down arrow on the right opens a menu of options.

Some options open dialog boxes of additional commands and option lists.

The ribbon displays all controls and commands using different sized icons and groups, depending on the size of the monitor and application window.

In the following example, the Features group is fully expanded and all its icons are visible.
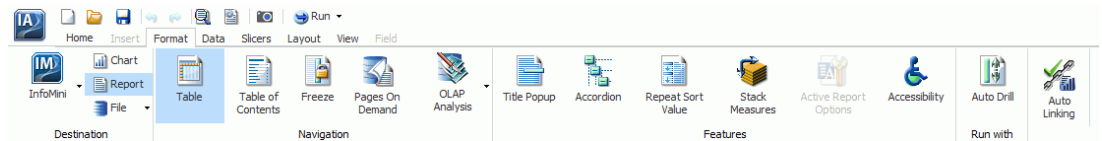
When you reduce the size of the application window, some groups are collapsed into single icons as determined by the amount of available space.

The following image shows the Features group, from the Format tab, collapsed into a single icon.
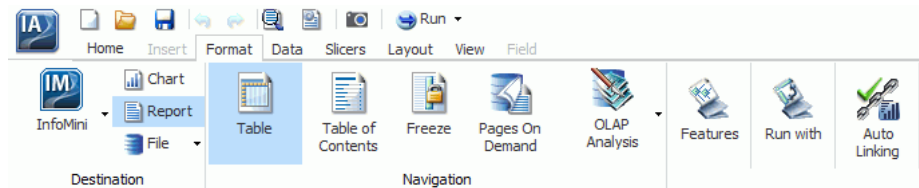
When a group is collapsed into a single icon, the individual icons are removed from view, but are still available. Clicking a collapsed group icon restores the group to its normal full size and displays all of the individual icons.

When expanding a collapsed group, the ribbon collapses a neighboring group to make enough room to expand the selected group.

When an icon, button, or option in a menu or dialog box appears dimmed, that functionality is not available for that report as it currently exists. Some functionality is available for reports only, charts only, visualizations only, or documents only.

In some situations, selecting one or more options makes other options incompatible with the previously selected ones. As a result, the incompatible options are dimmed and unavailable for selection. InfoAssist+ automatically makes incompatible options unavailable as you create and modify a report.

Note: If you do not have access to a particular option, contact your administrator.

Home Tab

The Home tab contains the most commonly used commands and options, which you can use when developing reports, charts, documents, or visualizations. The following list highlights the features on the Home tab for each mode.

❏ For reports, the Format, Design, Filter, and Report groups offer options for changing the output format of your report, as well as styling it.

❏ For charts, the Format Design, Filter, and Report groups enable you to change the theme or your chart or add a header and footer.

❏ For documents, options are enabled in the Format and Design groups only. Available options for documents include changing the data source for the document and changing the output format.

❏ For visualizations, the Clipboard, Data, Visual, and Storyboard groups enable you to perform some of the more basic functions, such as copy and paste. You also use the Home tab to change your visual type.

On the InfoAssist+ Home tab, the File & Printer Format option to direct report output to DB2 has been enhanced to support an append option, as shown in the following image.
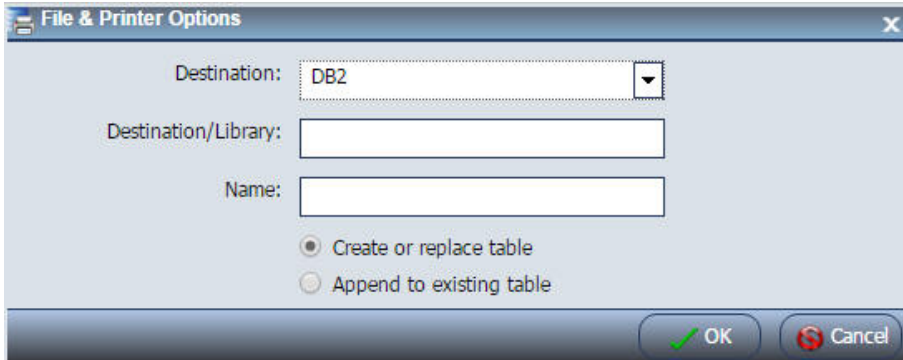
By default, report output to DB2 will create a new table. Select the *Append to existing table* option if you wish to add records to an existing table.

The Home tab is shown in the following image. The options and groups on the Home tab change, depending on what mode of InfoAssist+ you are in.

Related Information for Reports, Charts, and Documents:

❏ *View* on page 21

❏ *Creating Customized Report Outputs* on page 98

❏ *Styling Reports, Charts, and Visualizations* on page 331

❏ *Filtering Data*

Related Information for Visualizations:

❏ *Interacting With Visualizations* on page 263

❏ *Using Storyboards* on page 301

❏ *Manipulating Data*

❏ *Joins*

Insert Tab

The Insert tab contains options to add reports, charts, existing reports, text, images, and active form controls (for active report and active PDF outputs only) to a canvas in Document mode.

It is shown in the following image.
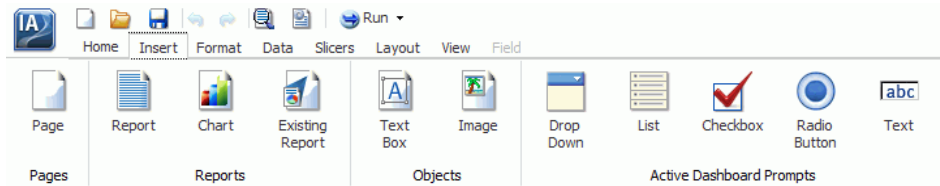
Note: The Insert tab is only available in Document mode.

Related Information for Documents:

❏ *Creating and Customizing Documents* on page 219

❏ *Accessing Document Mode* on page 219

❏ *Building a Document* on page 222

Format Tab

The Format tab provides options for formatting your report, chart, document, or visualization. Depending on the mode you are using, you can perform tasks such as selecting a chart type, enabling Auto Linking, or adding navigational aspects to a report.

The following list highlights the features on the Format tab for each mode.

❏ For reports, the Format tab provides access to the Destination, Navigation, Features, Run with, and Auto Linking groups. These options enable you to perform many functions related to reports, including Auto Drill or any other report navigation feature.

❏ For charts, the Format tab provides access to the Destination, Chart Types, Features, Labels, Interactive, Run with, and Auto Linking groups. These options enable you to perform a variety of charting tasks, including changing the chart type and adding interactive options.

❏ For documents, the Format tab enables you to change to Report or Chart mode. You can also access InfoMini.

❏ For visualizations, the Format tab provides access to the Report, Features, Labels, and Interactive groups. These options enable you to format your visualization. Also included are grid commands, as well as various features and label commands.

The Format tab is shown in the following image. The options and groups on the Format tab change, depending on what mode of InfoAssist+ you are in.
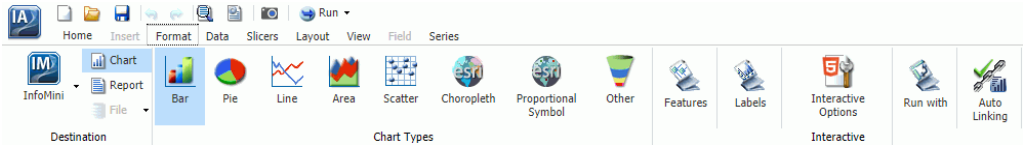
Related Information for Reports, Charts, and Documents:

❏ *Styling Reports* on page 77

❏ *Formatting a Series* on page 138

❏ *Formatting Data Labels* on page 156

❏ *Formatting a Legend* on page 166

❏ *How to Style and Customize a Report* on page 231

❏ *How to Style and Customize a Chart* on page 232

❏ *Using Auto Drill* on page 309

❏ *Using the Auto Linking Feature to Link Content* on page 313

Related Information for Visualizations:

❏ *Interacting With Visualizations* on page 263

❏ *Customizing Visualizations* on page 284

Data Tab

The Data tab contains data manipulation and data display options. For example, you can access Join functionality and work with Defines and Computes. The Data tab is available in the Report, Chart, and Document mode. It is not available in Visualization mode.

The following list highlights the features on the Data tab for each available mode.

❏ For reports, the Data tab provides access to the Calculation, Join, Filter, Display, and Data Source groups. When working with reports, you can join data sources or create Defines and Computes. You can also filter data.

❏ For charts, the Data tab provides access to the Calculation, Join, Filter, Display, and Data Source groups. When working with charts, these options enable you to join data sources, create a Define or Compute, and filter data.

❏ For documents, the Data tab provides access to the Calculation, Join, Filter, Display, and Data Source groups. When working with a document, you can create a define or join data sources. You can also add or switch data sources.

The Data tab is shown in the following image.
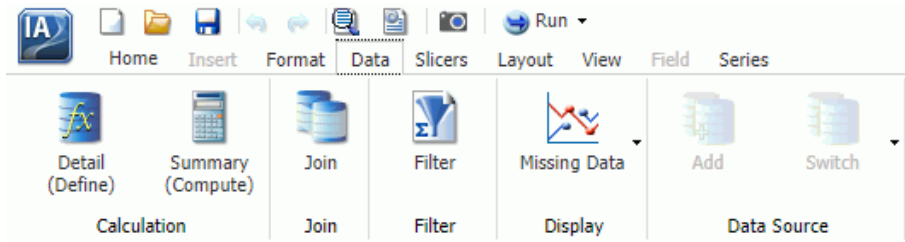
Related Information for Reports, Charts, and Documents:

❏ *Using Define and Compute Fields*

❏ *Joins*

❏ *Filtering Data*

Slicers Tab

The Slicers tab provides the ability to create and edit slicers. Slicers are dynamic filters that you can use with reports, charts, and documents.

Note: The Slicers tab is unavailable in Visualization mode.

The features on the Slicers tab are the same for reports, charts, and documents. You can perform the following functions with the slicer functionality:

❏ Add slicers to your report, chart, or document to create dynamic filters

❏ Set a record limit for the display of your data

❏ Create groups of slicers to filter your data

❏ Add fields to existing slicers

❏ Clear slicers to clear all selected values from existing slicers

The Slicers tab is shown in the following image.
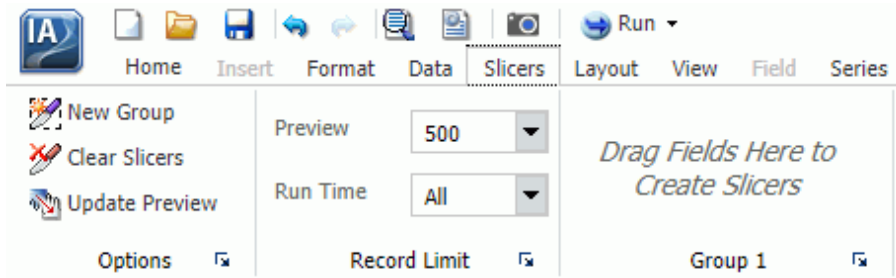
Related Information for Reports, Charts, and Documents:

❏ *Using Slicers*

❏ *Filtering With Slicers*

❏ *Edit Slicers Dialog Box*

Layout Tab

The Layout tab provides access to page display and layout options. These include page orientation and AutoFit, which is a feature that limits the width of columns in a report to be no wider than the largest value in each column.

The Layout tab is available in Report, Chart, and Document mode.

Note: The Layout tab is unavailable in Visualization mode.

The following list highlights the features on the Layout tab for each available mode.

❏ For reports, the Layout tab provides access to the Page Setup and Report groups. These options allow you to change the size or orientation of your report. You can also add page numbers.

❏ For charts, the Layout tab provides access to the Page Setup and Size & Arrange groups. These options allow you to change the orientation or size of your chart. You can also set a height and width for your chart, and enable the AutoFit functionality.

❏ For documents, Layout tab provides access to the Page Setup and Size & Arrange groups. You can change the size of your document and adjust its orientation. You can also lock the height and width aspect ratio of your document.

The Layout tab is shown in the following image. The options and groups on the Layout tab change, depending on what mode of InfoAssist+ you are in.
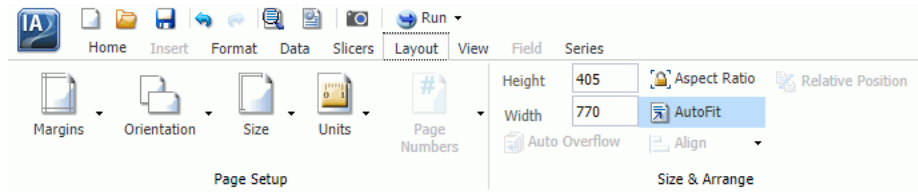
Related Information for Reports, Charts, and Documents:

❏ *Customizing Reports* on page 331

❏ *Customizing Page Setup* on page 343

View Tab

The View tab provides access to reporting options, including design and display options. Some of the options on the View tab control how information is displayed, whether it be in structured view or list view. The View tab is available in all modes of InfoAssist+.

The following list highlights the features on the View tab for each mode.

❏ For reports, the View tab provides access to the Design, Show/Hide, Data Panel, Query panel, Output Window and Report groups. When creating your report, you can change the way your data displays or switch to another mode, such as document.

❏ For charts, the View tab provides access to the Design, Show/Hide, Data Panel, Query panel, Output Window and Report groups. When creating your chart, you can change the output location for the chart or switch to another report or chart.

❏ For documents, the View tab provides access to the Design, Show/Hide, Data Panel, Query panel, Output Window and Report groups. When working with your document, you may want to change the display of data in the Data pane or Query pane.

❏ For visualizations, the View tab provides access to the Show/Hide, Data Panel, and Report groups. When creating your visualization, you can use these options to show or hide the resources panel. You can also change the display of your data to either logical, list or structured.

The View tab is shown in the following image. The options and groups on the View tab change, depending on what mode of InfoAssist+ you are in.
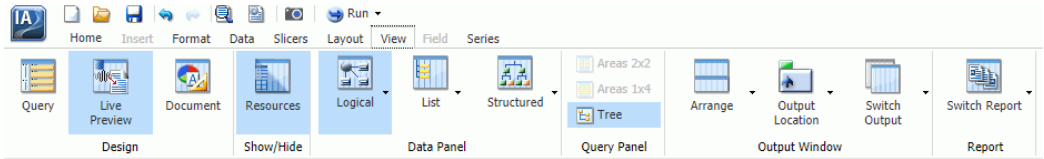
Related Information for Reports, Charts, and Documents:

❏ *Using the Query Pane and Filter Pane on the Canvas* on page 63

Field Tab

The Field tab is enabled in the ribbon when you select a data source field. The options available in the Field tab are specific to the data type that is selected. The options available for numeric fields are different from the options available for non-numeric and date fields. The Field tab provides access to the Filter, Sort, Break, Style, Format, Display, and Links groups.

The following list highlights the features on the Field tab for each mode.

❏ For reports, the Field tab provides options for filtering and styling your report. It also provides you with access to the Traffic Lights and Within functionality, making your reports more robust and customized.

❏ For charts, the Field tab enables you to hide a particular field or group values in your chart. You can also use the filter options to limit the display of information in your chart.

❏ For documents, the Field tab provides options for filtering, as well as Traffic Light functionality. You can also hide fields and add aggregations.

❏ For visualizations, the Field tab provides options for filtering and sorting, as well as access to the Multi Drill feature. You can also hide fields and add aggregations.

The Field tab is shown in the following image.
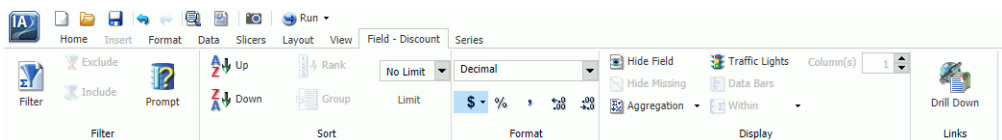
Related Information for Reports, Charts, and Documents:

❏ *How to Apply Traffic Light Conditional Styling to a Report (By Constant)* on page 83

Related Information for Visualizations:

Series Tab

The Series tab provides access to chart options through the Select, Style, Properties, Line, and Pie groups. The Series tab is available in Document, Chart, and Visualization mode. It is not available in Report mode.

The following list highlights the features on the Series tab for each available mode.

❏ For charts, the Series tab enables you to add such features as a trendline or data labels to your chart. If multiple series are specified, you can select a series and specify options specific to that series.

❏ For documents, the Series tab displays once you have specified fields within your document or embedded chart. You can use the options on the Series tab to add markers, smoothlines, or trendlines to your data.

❏ For visualizations, the Series tab enables you to switch between series, style the selected series, or add any other property or line features, as required.

The Series tab is shown in the following image.
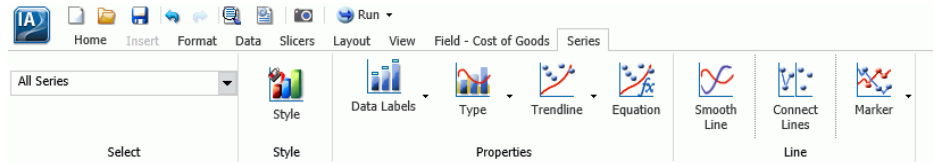
Related Information for Reports, Charts, and Documents:

Related Information for Visualizations:

❑ *Using Handles to Organize Your Visualization* on page 299

Understanding the Resources Panel

The Resources panel is comprised of the Data pane, the Filter pane, and the Query pane. It is located on the left side of the InfoAssist+ interface and is visible by default. You can customize how the Resources panel displays by using the options on the Home tab and View tab. For example, on the *View* tab, in the *Design* group, click *Query* to display only the Query and Filter panes.

The following image shows the default view of the Resources panel, which displays the Data pane next to the Query and Filter panes when you create a chart.
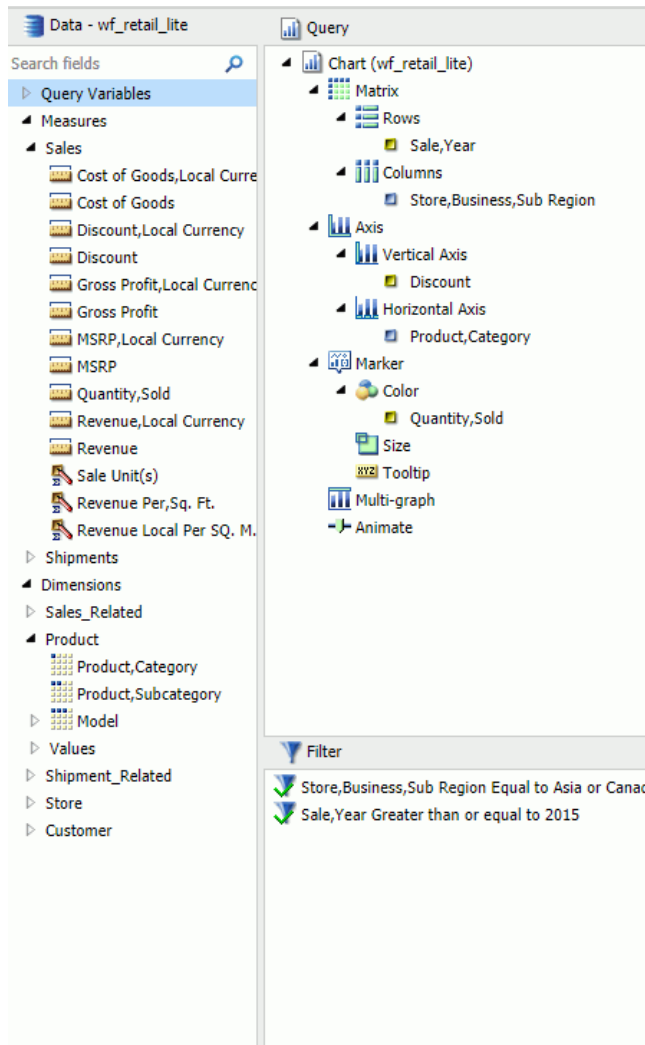
The Data pane, which contains all the fields from the selected data sources, is always displayed.

You can manually adjust the size of the Resources panel. To do so, move the mouse pointer over the border. When the pointer changes to a two-way arrow, drag the border.

Reference: **Field Image List**

In the Resources panel, each field has an image associated with it. The following table displays each image and describes what it represents.

Note: This list of icons changes based on the type of database that is in use.

Icon	Type
	Blob
	Calculated Date Field
	Calculated Numeric Field
	Calculated Other Field
	Calculated Text Field
	Cube Property
	Date or Date and Time Field
	Dimension Field (Standalone or Drillable)
	Dimension Field (Drillable, Second-level)
	Dimension Field (Drillable, Third-level) **Note:** There are 17 dimension field levels. Level 0 is specific to certain databases.
	Geographic Role Dimension Field (Standalone or Drillable)
	Geographic Role Dimension Field (Drillable, Second-level)
	Geographic Role Dimension Field (Drillable, Third-level) **Note:** There are 17 geographic role dimension field levels. Level 0 is specific to certain databases.

Icon	Type
	Funnel (filter)
	Geolocation
	Index Field
	Key Field
	Measure
	Numeric Field
	Text or Alpha Field

Reference: **Filter Pane**

The Filter pane displays all filters that have been created for the selected report.

For more information on filtering, see *Field Tab* on page 34 and *Data Tab* on page 30.

Note: The Filter pane displays all created filters, both active (included) and inactive (excluded).

Using the Data Pane

The Data pane contains the data fields that are used to construct reports, charts, or visualizations. The default structure of data in the Data pane displays your data by field type, for example, measure field or dimension field. You can explore this structure using the sample retail database that is included with InfoAssist+. The structure of this sample database, which is a cube database, includes measure groups, measure fields, dimension hierarchies, dimension fields, and attributes.

The data fields that display in the Data pane may vary. Depending on the underlying structure of your metadata, these fields may be organized and presented differently. For example, you may have just measures and dimensions, or you may have fields that represent multiple drill levels. You can also have any combination of these field types.

The structure of your metadata dictates the order of the fields, as well as the hierarchy that they employ. InfoAssist+ displays this hierarchy based on the structure defined for the master file that you choose. For more information on the specific field types, see *Field Image List* on page 38.

If you are using a Business View Plus (BV+) data source, which is built based on a pre-determined targeted hierarchy or structure, the view of your Data pane will be set to Structured, by default. When using a BV+ data source, Logical view is disabled. These options are available on the View tab, in the Data Panel group.

Note: When you open a BV+ data source, you will have access to common components, such as measures, dimensions, and filters, but values are not supported.

When navigating folders and content in the Data pane, you can double-click a folder to expand or collapse its contents. This applies to folders based on the hierarchy of your data source. It does not apply to fields that have additional fields within them.

Note: You can also use the arrow adjacent to the folder name to expand and collapse folders.

The Expand Data Source Tree check box in the Administration Console controls the initial view of the fields in the Data pane. For example, if you are working with a data source that has numerous fields and you wish to collapse the list to limit their view, contact your administrator to clear this check box. All items in the Data pane will collapse into their highest categorical level.

The fields in the database structure are displayed in Logical view, by default. You can use the commands in the View tab to change how your data fields are organized in the Data pane. These commands display the data fields in a Logical, List, or Structured view. All three views provide options for displaying each data source field as a Title, Description, Field, or Alias. The List view also includes options to show the Alias, Format, and Reference of each field.

Field list search functionality is also available in the Data pane, which you can use to search for specific fields within a tree or list. When conducting a search in the Tree view, the search functionality searches only the attribute that is displayed.

When searching in List view, all attributes are searched at once.

Note: There are additional options on which you can search, including Name, Title, Alias, Format, Segment, Filename, Description, and Reference.

As you enter search criteria, InfoAssist+ begins the search process. When you enter just a few letters, the list of records that is returned is typically long. As your search criteria gets more specific, the list of returned fields narrows.

If you are conducting a search that you wish to cancel, click the X icon in the field list search tool to abort the search.

Note: The X icon displays only when you have search criteria specified in the Search fields box.

The following is an example of the default Logical view, displaying the Title of each field.
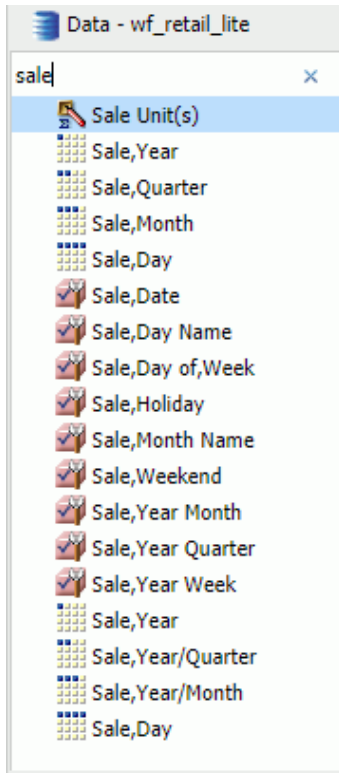
Using the Data Pane to Add Fields to a Report

There are several ways that you can add data source fields to a report. You can drag, double-click, or right-click data source fields in the Data pane to add them to a Query field container or the Filter pane. You can also replace an existing field in the Query pane by dragging the new field from the Data pane so that it is over the data field in the Query pane. You can also drag fields from other field containers in the Query pane over a field in a different field container. A dotted line displays, indicating that this new field will replace the existing field. Release your mouse to confirm placement of the new data field.

Note: When you drag a field from the Data pane to the Query pane, Filter pane, or canvas, a tooltip displays to indicate the name of the field.

When rearranging fields in the Query pane, a solid line is used to indicate placement. A solid line is also used when you are dragging a data field from the Data pane into the Query pane in between existing fields or into an empty field container. You can also use the solid line to drop a field onto a field container directly, which places that data field into that specific field container.

After you add data source fields to a Query field container, you can change the order of the fields by dragging and dropping one field above or below another field.

Drag. This method provides the most control. You can drag data source fields from the Data pane to the appropriate Query field container or Filter pane.

For a larger work area in which to drop data source fields in the appropriate Query field container, make sure that Query Design view is selected, and then, on the *View* tab, in the *Query Panel* group, click *Areas 2x2* or *Areas 1x4*.

You can select Query Design view on the *Home* tab, in the *Design* group, by clicking *Query* or on the *View* tab, in the *Design* group by clicking *Query*. That selection expands the Query and Filter panes.

Multi-Select. You can multi-select data source fields that you want to add to a report in Live Preview, Query Design view, and Document mode. To select multiple data source fields to add to a report, click the appropriate fields while holding the Ctrl key on the keyboard. You can drag fields onto the canvas, or add them to the Query field container.

Double-Click. To automatically add a field to the appropriate Query field container in the Query pane, you can double-click a data source field in the Data pane.

❏ When you double-click a measure field in the Data pane, it is automatically added to the Sum Query field container.

❏ When you double-click a dimension field in the Data pane, it is added to the By (Row Label) Query field container for a report, or to the X-axis Query field container for a chart.

You cannot automatically add a field to the Across (Column Label) Query field container for a report, or to the Legend (Series) and Multi-graph Query field containers for a chart.

Right-Click. You can right-click a field in the Data pane to add it to the Filter area or a Query field container in the Query pane. For reports, the available shortcut menu options are as follows:

❏ **Across.** For dimension fields.

❏ **Add to Query.** Opens a menu of available Query field containers, to which you can add your data.

❑ **Create Group.** Allows you to create a group of elements based on the field data type that you select.

❑ **Include as Category Axis.** For dimension fields.

❑ **Include as Coordinated.** Only available in Document mode.

❑ **Include as Legends Series.** For dimension fields.

❑ **Filter.** For all types of fields.

❑ **Slicers.** For all types of fields.

❑ **Sort.** Adds the field to the Sort field container. This is for all types of fields.

❑ **Sum.** For measure fields.

❑ **Create Bins.** Allows you to create a bin for the selected measure. Bins are used with the Binning functionality. For more information, see *Binning* on page 128.

A measure is a numeric value, such as Gross Profit or Cost of Goods Sold, that you may want to aggregate. All numeric values that can be summed are measures. Numeric fields that cannot be summed, such as product number and miles per gallon, are not treated as measures. Instead, they may be used in the same way as dimension fields to analyze measures. It is up to you to understand your data and determine whether each numeric field can be summed. Related measures can be organized into measure groups. For example, Gross Profit and Cost of Goods Sold can be part of a Sales measure group.

A dimension is a way to categorize data. You can use a dimension to analyze and compare measures. Generally, any field that is not a measure, usually an alphanumeric field such as product, is a dimension. Dimensions can be organized into hierarchies to define the relationships between the fields in the hierarchies. For example, a Geography hierarchy can contain the Continent, Country, State, and City dimensions. You can also define dimension fields that are not part of a dimension hierarchy.

Using the Query Pane and Filter Pane

The Query and Filter panes appear to the right of the Data pane, except when you select Query Design view, which expands the size of the Query and Filter panes. There are different Query field containers for reports and charts.

Note: If you have more than one item in either Sum, By, or Across Query field containers (for reports) or Measure (Sum) or X-axis Query field containers (for charts), you can drag them up or down in the Query pane to rearrange the order in which they display in your report or chart. When you drag fields to rearrange them, an indicator line displays, providing guidance as to where the field will be placed. The color of this line is determined by the theme. Once you have performed the rearrangement, the Live Preview refreshes based on the newly indicated order.

Reports. For all reports, the Query field containers in the Query pane include Sum, By, and Across.

❏ Use the Sum Σ field container to aggregate or display numeric measure fields. Its context menu provides options to Sum (default), Print, Count, or List the fields in the report.

❏ Use the By Query field container to vertically sort dimension fields to produce row labels in the report output. Dimension fields are normally non-numeric or date fields.

❏ Use the Across Query field container to horizontally sort dimension fields to produce column labels in the report output.

Charts. For most charts, the Query field containers in the Query pane include Measure (Sum), X Axis, Legend (Series), Multi-graph and Coordinated. More complex charts that require additional dimension fields have alternative Query field containers.

❏ **Measure (Sum).** Use this Query field container to aggregate or display numeric measure field values.

❏ **Location.** Use this Query field container to display a location field. This Query field container displays for maps only.

❏ **X Axis.** Use this Query field container to sort dimension fields in the chart output.

❏ **Legend (Series).** Use this Query field container to display dimension fields as color-coded values (lines, bars, areas, scatter plots) that match the color-coded dimension values displayed in the legend below the chart. Legend (Series) provides functionality that is similar to an Across field in a report.

❏ **Multi-graph.** Use this Query field container to create outermost sort fields and to serve as a page break for working with multiple charts. The sort field added to this Multi-graph Query field container is not plotted on the chart, but each unique sort field value is listed for every chart.

❏ **Coordinated.** Use this Query field container to collectively sort and collate by a common sort group (for documents only).

For pie charts, the Query field containers in the Query pane include Measure (Sum), Slices, Category, Multi-graph, and Coordinated.

❏ **Measure (Sum).** Use this Query field container to aggregate or display numeric measure field values in the pie.

❏ **Pie slices.** Use this Query field container to display dimension fields as color-coded pie slices that match the color-coded dimension values displayed in the legend below the chart. The Pie slices Query field container is equivalent to the Legend (Series) Query field container used for other chart types.

❏ **Multi-graph.** Use this Query field container to create outermost sort fields and to serve as a page break for working with multiple charts. The sort field added to this Multi-graph Query field container is not plotted on the chart, but each unique sort field value is listed for every chart.

❏ **Category.** Use this Query field container to sort dimension fields in the chart output. Category is equivalent to the X-axis Query field container used for other chart types.

❏ **Coordinated.** Use this Query field container to collectively sort and collate by a common sort group (for documents only).

Using Field Containers

Field containers are used to hold fields that you select based on the function that you want it to perform. For example, in Chart and Visualization mode, you can add a field to the Color field container, which will color your data based on the selected field.

For reports, the available field containers are different than those presented for charts and visualizations. This section reviews all of the field containers, providing you with a reference point when working with field containers.

Field Containers for Reports

The following field containers display when creating reports.

Across

Enables you to display column headings across the top of the report for the measure or dimension that is placed in this field container.

By

Enables you to specify sort fields for your report.

Note: You can rearrange the display order of your By sorts by dragging them into the desired order in the Query pane.

Sum

Displays numeric totals for numeric (measure) fields that are added to this field container.

Field Containers for Charts and Visualizations

The following field containers display when creating charts and visualizations.

Animate

Enables you to animate time progression using a slider control. As you move the control along the slider bar, an animation effect results. The slider control has a Play button that allows you to play and pause the animation. When you click Play, the Pause option is activated, enabling you to pause the progression and analyze your data. Slider controls are limited to one sort field and should be time or sequence related, such as month or year. This field container displays for many different chart types.

By

Use this field container to differentiate data types in a field that contains multiple categorical values. For example, when creating a gauge chart, the field that you specify in this field container becomes a By field, by which all values are displayed as a separate chart.

Category

Enables you to display data categorically in a chart. This field container displays for Tag Cloud charts, which are available in the Other charts category.

Category Axis

Use this field container to specify a field that contains categorical data. These categories display on the categorical portion of a 3D bar chart. The other axis, Series Axis, is plotted against the categorical data.

Close

Enables you to specify a numeric field to indicate the closing value of a stock. Other required values include: Open, High, and Low. This field container displays for Stock charts, which are available in the Other charts category.

Color

Enables the application of different colors based on the underlying data set for the field in this field container. When you place a numeric field in the Color field container, the legend displays as a heat scale. When you place an alphanumeric or a date field (non-measure) in the Color field container, the legend displays as colored markers. To change how the legend displays, right-click the Color field container and click *Color BY*.

Columns

Enables you to specify a field to display column data in a matrix chart in a visual. The use of measure fields is supported. Column data is displayed at the top of the visual, along the X axis. This field container is available for charts and visualizations.

Detail

Use this field container to add detail to your visual by adding a data field to it. For example, if you add Sale,Quarter to the Detail field container in your Scatter plot, the points on the plot are quadrupled, one for each quarter. In addition, the field that you specify in the Detail field container also displays on the hover menu for each point in the plot.

Geolocation

Enables you to specify a Geolocation field for use in a map.

Note: Geolocation fields are listed in the Data pane with a Geolocation icon ⬚.

Grouping

Enables you to specify a field by which to present your data in categories or groups. For example, this data field controls how a treemap is grouped.

High

Enables you to specify a numeric field to indicate the high value of a stock. Other required values include: Open, Low, and Close. This field container displays for Stock charts, which are available in the Other charts category.

Horizontal Axis

Displays the data for the selected along the X axis. This field container is available for charts and visualizations.

Note: You can specify up to three fields on the horizontal axis.

Latitude

Enables you to specify a geolocation field that contains latitudinal data. This field container displays for Leaflet bubble maps.

Longitude

Enables you to specify a geolocation field that contains longitudinal data. This field container displays for Leaflet bubble maps maps.

Legend (Series)

Enables you to add a field to specify for the legend of the chart. This field container displays for a number of charts that are available in the Other chart category.

Low

Enables you to specify a numeric field to indicate the low value of a stock. Other required values include: Open, High, and Close. This field container displays for Stock charts, which are available in the Other charts category.

Lower Limit

Enables you to specify a numeric (measure) field by which to establish a lower limit. This field container displays for Vertical Box Plot charts, which are available in the Other chart category.

Lower quartile

Enables you to specify a numeric (measure) field by which to establish a lower quartile. This field container displays for Vertical Box Plot charts, which are available in the Other chart category.

Measure

Use this field container to specify a measure that will serve as the basis for a pie chart. The Measure metric is used with the Color field container for pie charts to create sections based on your field selections. It is also used with Gauge charts.

Measure (Sum)

Enables you to specify a numeric (measure field) by which to sum data. This field container displays for a number of charts that are available in the Other chart category.

Median

Enables you to specify a numeric (measure) field by which to establish an median. This field container displays for Vertical Box Plot charts, which are available in the Other chart category.

Multi-graph

Enables the creation of multiple graphs based on the field that you place in this field container. This field container displays for many different chart types, including Spectral Heatmaps, which are available from the Other dialog box.

Open

Enables you to specify a numeric field to indicate the opening value of a stock. Other required values include: High, Low, and Close. This field container displays for Stock charts, which are available in the Other charts category.

Rows

Enables you to specify a field to display row data in a matrix chart in a visual. The use of measure fields is supported. Row data is displayed on the left side of the visual, along the Y axis. This field container is available for charts and visualizations.

Series Axis

Use this field container to specify a series to plot against the data presented on the Categorical Axis. This field container displays for 3D bar charts.

Size

Controls the size of markers or other data points.

Size (Sum)

Enables you to specify a numeric (measure) field, which will control the size of the data presented in a chart. This field container displays for Tag Cloud charts, which are available in the Other charts category.

Slices

Enables you to specify a field whose data values will dictate the size of the slices in a chart. This field container is available for Funnel charts, which are available in the Other chart category.

Tooltip

When you place a field in this field container, InfoAssist+ enables you to view additional information in the tooltip for a chart or visual.

Upper limit

Enables you to specify a numeric (measure) field by which to establish an upper limit. This field container displays for Vertical Box Plot charts, which are available in the Other chart category.

Upper quartile

Enables you to specify a numeric (measure) field by which to establish an upper quartile. This field container displays for Vertical Box Plot charts, which are available in the Other chart category.

Vertical Axis

Displays the data for the selected field along the Y axis. This field container is available for charts and visualizations.

X Axis

Enables the specification of a field on the X Axis of certain chart types. For example, XY Polar. This field container displays for a number of charts that are available in the Other chart category.

Y1 Measure (Sum)

Enables you to specify a measure (numeric) field for the Y Axis in a Pareto and certain line charts, which can be accessed from the Other chart category.

Y2 Measure

Use this field container to indicate a measure to serve as the basis for second Y axis. This field is used in various line charts, which can be accessed from the Other chart category.

Adding Parameters for Data Selection at Run Time

You can add new parameters to your report or chart to create parameter options for selection at run time. This enables you to dynamically select and review different scenarios with your data, offering you on-demand, dynamic report or chart creation at run time.

When you add a parameter, it becomes a field container into which you can add one or more measures and dimensions. You create a new parameter by right-clicking on a field container in the Query pane and clicking *New Parameter*. This creates a numbered parameter (for example, Parameter 1). In cases where you have multiple parameters defined, the numbering is applied sequentially.

Once you add a parameter, you can define the parameter prompt by right-clicking the *Parameter-n* field container and clicking *Parameter Prompt*, where *n* is the number of the parameter that was added. The new parameter prompt will display in the Query pane and at run time. This allows you to easily identify the parameters while categorizing the data fields that you want each to contain. For example, if you add a number of Sales-related fields to a parameter, you can rename the parameter with a title of Sales to encapsulate the data fields that you selected. Parameters should be renamed before you run the report or chart so that they are easy to identify.

In order to populate parameters in your report or chart, data fields must be placed in the parameter field container. You can do this by selecting fields from the Data pane and dragging them into the relevant parameter field containers that you create.

Note: Double-clicking the data fields in the Data pane places the data field in the default field containers in the Query pane, not the parameter field container. For example, in a report, if you double-click *Discount*, the data field is placed in the Sum container (outside of the parameter field container that you created). You can always drag a data field into a parameter container from another field container in the Query pane if you wish to consider it a parameter.

You can also reorder the data fields that you have placed in a given parameter field container by dragging them into the order that you wish to display them at run time.

Parameters can be specified in any field container, with the exception of Multi-graph. Once you have defined your parameters and selected the relevant data fields, run the report or chart. Using the drop-down lists for each parameter, you can select different options from the parameter lists to view the data in your report or chart dynamically. To load different scenarios, select the values and then click *Run*.

The following image shows the Query pane with a number of parameters and data fields specified.
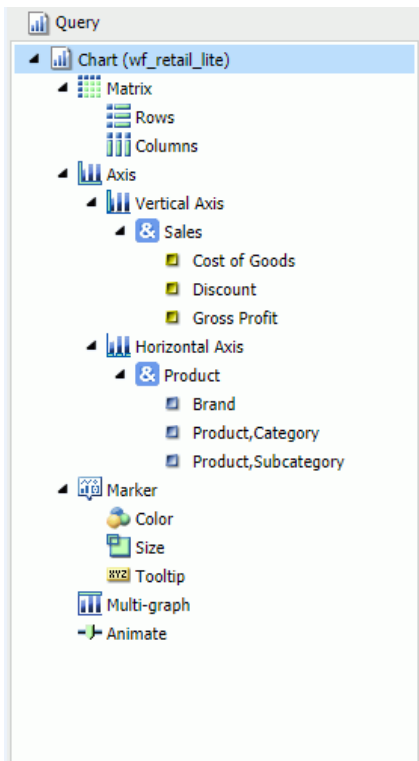
Procedure: **How to Add a Parameter**

1. Create a new report or chart or open an existing one.

2. Add a new parameter by right-clicking a field container and clicking *New Parameter*, as shown in the following image.
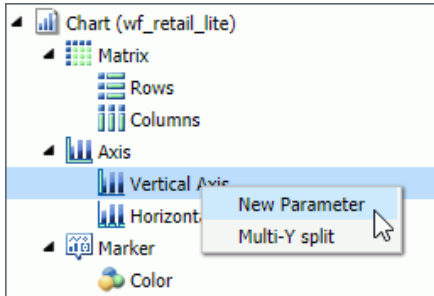
A new parameter field container is added.

3. Add the data fields that you would like to display in a parameter list at run time to the new parameter field container.

4. Optionally, rename the parameter by right-clicking the parameter and clicking *Parameter Prompt*.

This is not required, but it does help in differentiating the various numbered parameters that display, depending on how many you define.

5. Optionally, add one or more additional parameters, and relevant data fields, into the field containers for which you would like to select data values at run time.

6. On the Quick Access toolbar, click *Run*.

You can use the Parameter drop-down lists that display at run-time to create different views of your data, as shown in the following image.
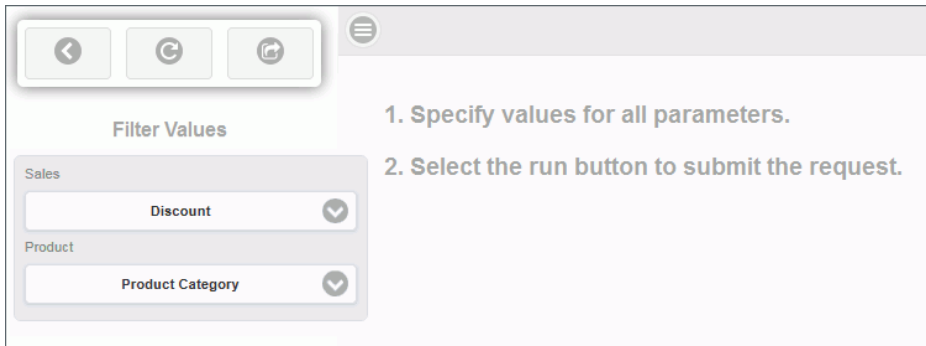
Note: You can optionally run your report or chart using the default parameters without making a selection. Click the down arrow on the Run button in the Quick Access toolbar and select *Run with Default Parameter Values*.

The following navigational icons display at run time:

Icon	Description
	Close Filter Panel. Click this option to collapse the filter panel, displaying more of the report or chart in the right pane.
	Reset filter values. Click this option to reset the filter values to their default values, as indicated when the parameter was initially set up.
	Run with filter values. Click this option to run the report or chart based on your selections.
	Show filter panel. Click this option to show the filter panel when viewing a report or chart. When viewing the filter panel, you can close it by clicking *Close Filter panel*.

Using Shortcut Menu Options in the Query Pane

In the Query pane, you can right-click any field and select from a list of available options that are displayed in the menu that appears. The options that you can select vary, depending on the type of Query field container in which the field is located and the type of report that you are creating.

You can also rename the content type in the Query pane. You can right-click the component and click *Rename* to change the title, as shown in the following image
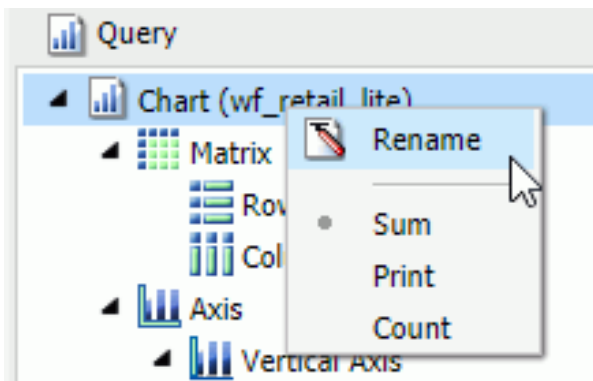
This allows you to customize the title in the Query pane. In addition, when working in Excel format, the name that you provide is used as the worksheet name in the workbook that is generated at run-time.

Note:

❏ If you are working with a report or chart in HTML format, you can also access Sum, Print, List, and Count aggregations from the shortcut menu on the report or chart component.

Related Information:

❏ *Using Field Containers* on page 45

❏ *Right-Click Field Options in the Query and Filter Panes* on page 54

Reference: Right-Click Field Options in the Query and Filter Panes

The following table lists and describes all the right-click field options available in the Query and Filter panes for a selected field.

Option	Description
# of Columns	Opens the Number of Columns dialog box, where you can indicate the number of columns in which you wish to display multiple graphs. This is only available for the Multi-graph field container.
Aggregation Functions	Provides a menu for selecting options to assign an aggregation type value to a selected numeric or dimension (non-numeric) field in a report or chart.
Break	Provides a menu of options to enable page breaks and subtotals, and resetting page numbers. This option is available for any measure or dimension field used in a report.
Color BY	Changes the Color field container to Color BY. The field container also changes to Color BY when you place a field into the Color field container. You can disable Color BY, which changes a dimension field into a measure field. This option is only available for charts and visualizations.

Option	Description
Create Group	Allows you to create a group of elements based on the field data type that you select. Once you define a new group, a higher-level field is created that contains the selected elements. This option is available for dimension fields of non-numeric format or attribute. For more information, see *How to Create a Dynamic Group* on page 59.
Change Title	Opens the Edit Title dialog box, where you can change the title of the selected field by typing the new title in the Enter Title field. This option is available for all fields. **Note:** When changing the title of a column heading, you can place a comma between words in the Enter Title field to create a multi-line header.
Data Bars	Provides a menu for enabling the data bar representation functionality. Selecting *On* adds a data visualization column to the right of a selected numeric field. The column displays values in each row using horizontal bars that extend from left to right in varying lengths, depending on the corresponding data values. This option is available for fields within the Sum field container in a report.
Delete	Deletes the selected field. This option is available for all fields in every field container. **Note:** In the Query and Filter panes, you can select and delete multiple data fields at one time. Using the CTRL key, select two or more data fields, right-mouse click, and then click *Delete*.
Drill Down	Opens the Drill Down dialog box, where you can create multiple drilldown links on a data field to external procedures or websites. This option is available for any measure or dimension field in a report or chart.

Option	Description
Edit Format	Opens the Field Format Options dialog box, where you can edit the field type and display options. This option is available for fields within the Sum field container in a report, as well as measure fields in a chart or visualization. **Note:** Any changes to the format of a field will be reflected in the tooltip for charts at run time, as well as for visualizations at design and run time.
Filter Values	Opens the Filter dialog box for creating WHERE statements, which enable you to select only the data that you want and to exclude all unwanted data. This option is available for all fields, except for a field in the Multi-graph field container.
Geographic Role	Opens the Location Type dialog box, from which you can make a location selection. **Note:** This option is only available when working with Leaflet maps.
Multi-Y split	Allows you to display individual charts for each measure field where multiple measures are specified. Located on the Vertical Axis, this option is available for charts and visualizations.
New Parameter	Allows you to add new parameters to your report or chart, which creates parameter options for selection at run time. You can create a new parameter in a report or chart in any field container. **Note:** When working with charts, a new parameter can only be added for charts that use the new attribute syntax.
Missing	Allows you to show or hide fields with no value. This option is available for fields in the Sum and By field containers in reports. For charts, the option appears but is disabled.

Option	Description
Sort	Provides access to the Sort, Rank, and Limit menus. The Sort menu allows you to sort your data either in ascending or descending order. The Limit menu allows you to specify the number of unique values displayed for a sort group that has been added. The Rank menu allows you to insert a rank column immediately to the left if a Sort By field is selected and adds a rank column to the left of the Sort By field if a Measure field is selected. Ranking a Measure field results in two copies of the field, the original Measure field and the Sort By field that is created during ranking. This option is available for any measure or dimension field used in a report or chart.
Sub Footer	Opens the Sub Header & Sub Footer dialog box, where you can edit and style your footers. This option is available for fields within the By field container in a report.
Sub Header	Opens the Sub Header & Sub Footer dialog box, where you can edit and style your headers. This option is available for fields within the By field container in a report.
Suppress Empty Group	Suppresses any part of your chart that is empty. You can deselect this option, which is enabled, by default. This option is available on the Horizontal axis in both Chart and Visualization mode.

Option	Description
Sort by Total Value	Enables you to sort the output in a chart or visualization using the values from the y-axis (Horizontal axis) of a stacked bar chart. While this feature was implemented specifically for Stacked Bar charts, it also applies to regular bar charts, as well as line and area charts. This enables you to view your data as ranked, or sorted, from highest value to lowest value. Accordingly, this option sorts the output by the bar (or other) with the highest total. This option is set to Off by default, but you can select Ascending or Descending to sort your data. This option is available on the Horizontal axis in both Chart and Visualization mode. **Note:** If you rotate your chart horizontally, the Sort By Total Value menu option displays on the Vertical Axis. For more information, see *How to Sort a Chart by Total Value* on page 213.
Traffic Light Conditions	Opens the Traffic Light Condition dialog box, where you can add new conditional styling or modify existing conditional styling by applying traffic light (and other) colors to a selected field in the report output when the field meets specified criteria. This option is available for both measure and dimension fields in reports and measure fields in charts.
Visibility	Provides a menu for controlling the visibility of the selected field. Clicking *Hide* removes the selected field from the report output. Clicking *Show* (default) displays the selected field in the report output. This option is available for all fields, except for the Multi-graph field container or parameters.

All of the shortcut menu options that are available in the Query and Filter panes are also available in the Field tab. For more information, see *Field Tab* on page 34.

Dynamic Grouping

Dynamic grouping allows you to create groups of elements based on the field data type that you select. For example, in the wf_retail_lite database, there are a number of brands of televisions. Using the dynamic grouping functionality, you can create groups based on the popularity of a particular brand. The first group might include top sellers such as LG and Sony. The second group might contain the remaining brands (Panasonic, GPX, Supersonic, Tivax, and Audiovox). This would allow you to group top sellers into one group, and the remaining brands into another group.

Note: The Create Group option is only available for dimension fields of non-numeric format or attribute.

You can also specify multiple, unique groupings in the same session. For example, you might want to group the data to indicate groups or products, or specific regions.

Note: If you want to exclude a specific data element from your analysis, you can use the filter functionality.

The grouping that you specify is applied and this new group then replaces the original field that you selected in the Query pane. The name that you specify when creating the group is reflected in the Query pane.

The process of dynamic grouping creates a Define field, which can then be used in other reports or charts in the same session. Dynamic grouping also supports Auto Drill, enabling you to drill through the hierarchy of your data just like any other data field. For more information, see *Using Auto Drill* on page 309.

Note:

❏ You can edit the group once it has been created by right-clicking on the higher-level field and clicking *Edit Group*.

❏ When working with Reporting Objects, Dynamic Grouping is not supported.

Procedure: **How to Create a Dynamic Group**

1. From the Data pane, add one or more data fields to your report or chart.

   Note: You can use the dynamic grouping functionality on non-numeric dimension fields only.

2. In the Query pane, right-click the data field for which you want to apply dynamic grouping.

   Note: The Create Group option is also available in the Data pane shortcut menu.

3. Click *Create Group*.

   The Create a Group dialog box displays.

4. In the Field text box, optionally type a name for the new group.

   Note: The fully qualified field name is displayed in the Field Origin text field. This field is enabled and has a read-only attribute. The display of the fully qualified field name is particularly useful when renaming or editing a group, as it identifies the data source followed by the hierarchical location of the field within a data set. For example, WF_RETAIL_LITE.WF_RETAIL_PRODUCT.BRAND.

5. Select the data values that you want to group. Use CTRL + click to select more than one value, as shown in the following image.
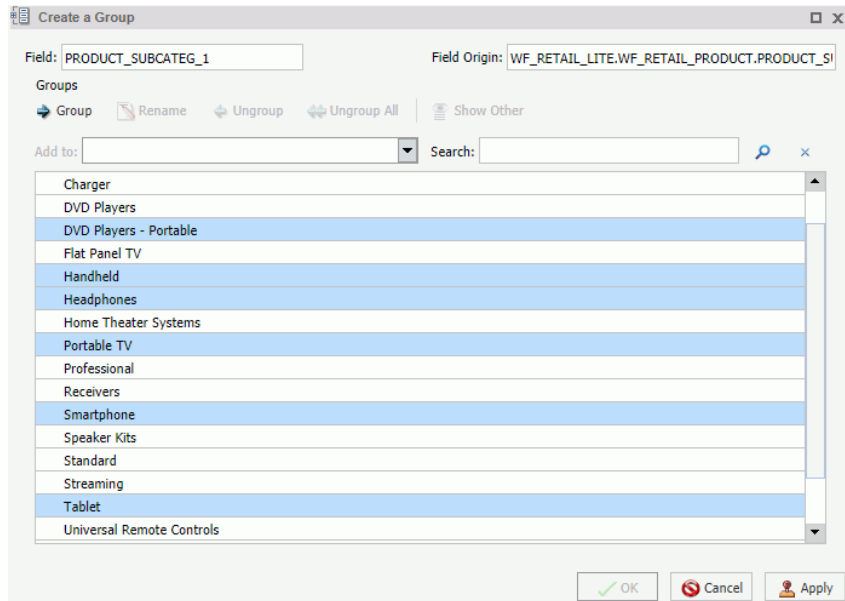
6. Click *Group*.

   Note: To ungroup values, click a group and then click *Ungroup*.

7. Optionally, create additional groups, as shown in the following image.
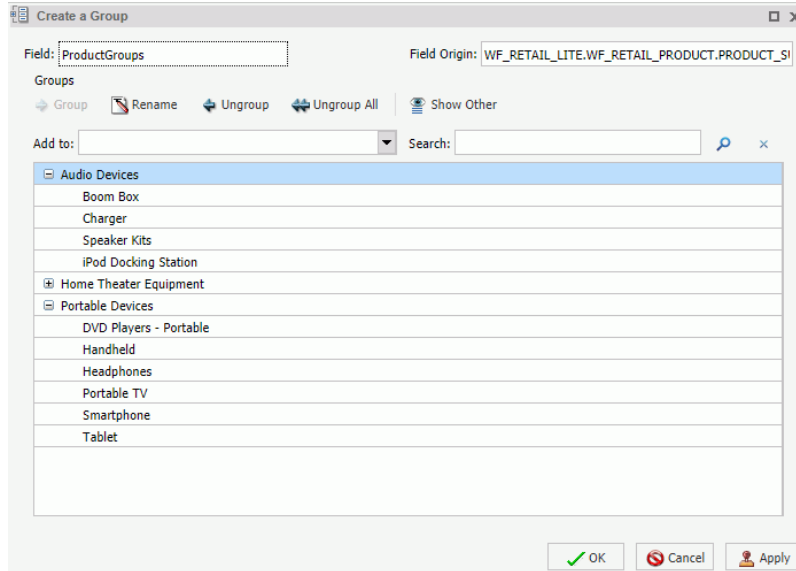
8. Click *OK*.

Your grouped data will display in the Data pane when your report, chart, or visualization refreshes, as shown in the following image.
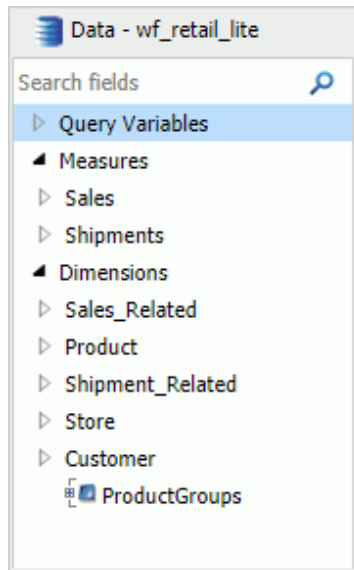
Understanding the Canvas

The canvas displays a preview of the report being created or modified on the canvas when you are in the default Live Preview. To select Live Preview, go to *Home* tab, and in the *Design* group, click *Live Preview*, or on the *View* tab, in the *Design* group, click *Live Preview*. The canvas is always fully maximized and cannot be minimized, cascaded, or tiled. However, a blank canvas opens when there is no report.

The canvas displays either live data or sample data.

❏ To display live data, on the *Home* tab, in the *Design* group, click *Data from Source* (default).

When you select Data from Source, a live preview of the report being built is refreshed on the canvas as you add, remove, and style data source fields in the report.

❏ To display sample data, on the *Home* tab, in the *Design* group, click *Use Sample Data*.

When you select Use Sample Data, the canvas displays sample data based on the field type, with the same formatting and styling used to display live data.

When you execute a report, the canvas displays the Output window. If the Output is minimized, or if there is no report to preview, the canvas is blank. To change the canvas view, you can select Query Design view or Live Preview from the Design group of the View tab or Home tab.

The following image shows the canvas, which displays a chart preview when you first launch InfoAssist+ to create a chart. The Resources panel appears to the left of the canvas.
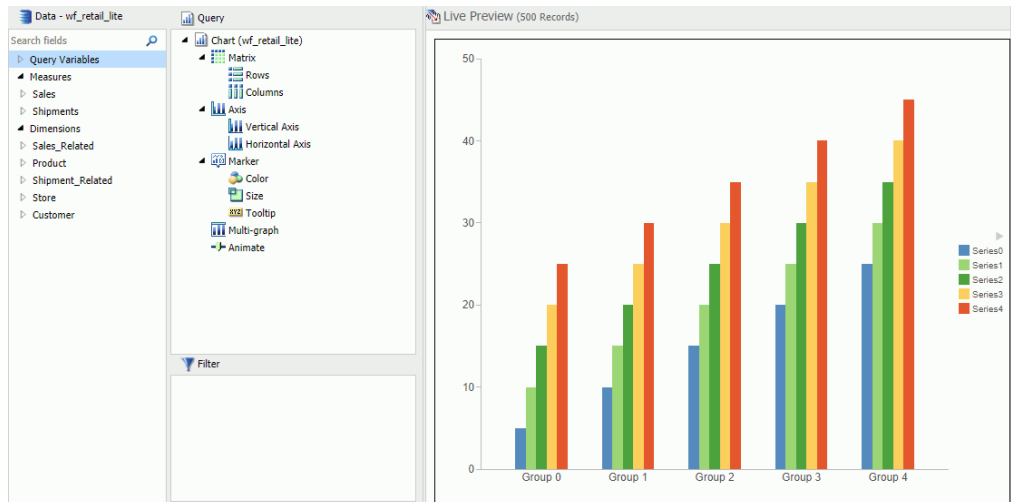
When working with a report in Live Preview, you can rearrange the columns of the report by dragging them to the left or right, depending on your display preference. If the column is numeric, you are presented with the option to Drop as Sum or Drop as Sort, as shown in the following image.

Note: If you select *Drop as Sort*, the values are listed individually and they are sorted. If you select *Drop as Sum*, the values are summed for that particular row. The default is Drop as Sum.

When placing the column in a new location, an indicator bar displays, indicating the location of placement for the moved column. This allows you to see where the column will be placed before you actually perform the operation.

Note: Column sort order can also be rearranged by dragging the fields in the Query field containers of the Query pane to reorder them. For more information, see *Using the Query Pane and Filter Pane* on page 43.

If you create a filter, then the filter appears in the Filter pane.

Using the Query Pane and Filter Pane on the Canvas

If you click *Query* on the *Home* tab, in the *Design* group, the Query and Filter panes expand in to the canvas.

This provides a larger area for displaying the Query and Filter panes. This feature is useful when you are designing a report with multiple filters or numerous fields.

Depending on whether you are creating a report or a chart, the Query pane displays selected data source fields using different types of Query field containers.

Related Information:

❏ *Using Filters to Customize the Display of Data*

❏ *Using Field Containers* on page 45

Understanding Output Options

When you run a report, the output appears, either in a tab on the canvas, or in a new browser window. You can create and display output in several different ways, depending on the following options. You can select these options on the *View* tab, in the *Output Window* group:

❏ Cascade

❏ Tile Horizontally

❏ Tile Vertically

❏ Single Tab

❏ New Tab

❏ Single Window

❏ New Window

❏ Switch Output

Output window and tab options are also available in the status bar, and output window display options are also available in the Navigation taskbar.

Note: When you run a report, tab focus is not on the output window and pressing the Tab key does not move the selection. To move the Tab focus out of the output window, press F6.

Reference: **Output Target Options**

The following are output target options that you can select.

❏ **Single Tab.** When you click *Single Tab* and run a report, a new output window is created on the canvas, a report instance is created, and an output tab is placed on the Navigation taskbar. As you modify a report, the same output window is refreshed each time the report is run. This option, which is the default, is ideal when you are working with just one report.

❏ **New Tab.** When you click *New Tab*, each time you run a report, a new output window is created on the canvas. A new report instance is also created and preserved by the addition of a new output tab on the Navigation taskbar. Each output tab maintains the output of the report that generated the corresponding output window. Selecting an output tab on the Navigation taskbar loads the associated output instance into the output window.

❑ **Single Window.** When you click *Single Window* and run a report, a new browser window is opened and populated with the report output. As you modify the report, the same browser window is refreshed each time the report is run. If the browser window is closed and the report is run, a new browser window is opened again and is refreshed for each subsequent run. The output is not displayed on the canvas, and an output tab is not added to the Navigation taskbar.

❑ **New Window.** When you click *New Window*, each time you run a report, a new browser window is opened and populated with the report output. The output is not displayed on the canvas, and an output tab is not added to the Navigation Taskbar.

Reference: Output View Options

The following are output view options (Arrange) that you can select.

❑ **Cascade.** When you click *Cascade*, if multiple output windows exist, they are cascaded diagonally across the canvas. This option does not affect open browser windows when you select New Window or Single Window.

❑ **Tile Horizontally.** When you click *Tile Horizontally*, if multiple output windows exist, they are tiled horizontally, one above another, across the canvas. This option does not affect open browser windows when you select New Window or Single Window.

❑ **Tile Vertically.** When you click *Tile Vertically*, if multiple output windows exist, they are tiled vertically, side by side, across the canvas. This option does not affect open browser windows when you select New Window or Single Window.

❑ **Switch Output.** When you click *Switch Output*, a drop-down menu opens, where you can select any active report to view the output. The selected report is loaded into the output window or browser window, depending on the selected output window or tab option.

Reference: Output Format Options

The Output window can display report output in the following formats: HTML, HTML5, active report, PDF, and active PDF.

Note: Excel and PowerPoint formats open in their native programs in a window external to InfoAssist+.

Using the Navigation Taskbar

The Navigation taskbar provides quick access to all active output windows and to the report design that generated the output. You can return to the last report that you edited in the Query pane by clicking *Display Design View* on the taskbar. The Navigation taskbar is always visible. It is located near the bottom of the application window, just above the status bar.

Each of the active output windows displays a tab on the Navigation taskbar. Selecting the tab displays that output window on the canvas. If you save a report with a unique name each time you modify it, when the report is executed and a new output window is generated, the unique name appears as a tab on the taskbar. If you continue to modify and execute a report without saving it with a unique name, a number in parentheses is appended to the original, saved report name to differentiate it among the multiple output windows.

The ability to select report output from the Navigation taskbar depends on the output window option selected from the status bar or from the Output Window group of the View tab. For more information, see *Using the Status Bar* on page 67, or *Understanding Output Options* on page 64.

Each report tab on the Navigation taskbar has a shortcut menu with the following options:

❑ Restore

❑ Minimize

❑ Maximize

❑ Close

❑ Auto Resize

Restore, Minimize, Maximize, and Close are standard options available in any browser window or software application. Minimize, Maximize (if the window is not maximized), or Restore (if the window is maximized), and Close can also be found in the top-right corner of the output window.

The Auto Resize option enables automatic resizing of an output window as needed when you add or remove fields.

The Window Options menu at the far left of the Navigation taskbar provides options for displaying all active output windows on the canvas. The display options that you can select are Cascade, Tile Horizontally, Tile Vertically, Restore All, Minimize All, Maximize All, or Close All. The name of each active output window appears at the bottom of the menu.

The Window Options menu options are directly linked to the options available in the Output Window group of the View tab.

Using the Status Bar

The status bar displays the status of the last selected action, a reports button that shows the number of open reports, an output format button that shows the selected format, as well as a list of the available formats, and an output target button that shows the selected option for displaying new output windows or tabs.

The status bar is shown in the following image.

When you click the reports button, a menu opens, with options for selecting any of the open reports. Each report is listed by name and an icon which represents the report type (report, chart, visualization, document). The report you select becomes active.

When you click the output format button, a menu opens, with options for selecting a different output format. For a complete list of options, see *Understanding Output Options* on page 64.

When you click the output target button, a menu opens, with options for Single Tab (default), New Tab, Single Window, and New Window. For more information, see *Understanding Output Options* on page 64.

Chapter **3**

Creating and Customizing Reports

You can apply styling to specific areas of a report to customize its appearance and functionality. You can also use the many optional reporting features to add custom functionality and output formats to reports.

In this chapter:

❏ Creating Reports

❏ Styling Reports

❏ Changing a Field Format

❏ Using Custom Reporting Features

❏ Creating Customized Report Outputs

Creating Reports

You can use the following procedures to create a basic report in the BI Portal and InfoAssist+.

Procedure: **How to Create a Report**

After you have signed in to >Report Broker, you can work with an existing folder, or create a new folder in the BI Portal to store your reports.

1. Open InfoAssist+ in Report mode.

2. Drag fields onto the canvas or into the Query pane to begin building your report.

A basic report is shown in the following image.

Product Category	Quantity Sold	Revenue
Accessories	511,667	$129,608,338.53
Camcorder	455,244	$154,465,702.24
Computers	351,777	$103,316,482.12
Media Player	771,934	$246,073,059.36
Stereo Systems	1,114,332	$291,294,933.52
Televisions	105,188	$78,381,132.81
Video Production	199,749	$58,053,276.62

Procedure: **How to Create a Report From the Application Main Menu**

1. In the upper-left corner of the InfoAssist+ interface, click the *IA* button to open the Application Main Menu.

2. From the Application Main Menu, click *New*.

    The InfoAssist+ splash screen opens.

3. On the InfoAssist+ splash screen, select *Build a Report*.

    The Open dialog box opens.

4. From the Open dialog box, select the data source that you want to use, and click *Open*.

    The data source that you selected appears in the Data pane of the Resources panel.

5. Drag fields onto the canvas or into the Query pane to begin building your report.

Procedure: **How to Create a Report From the Quick Access Toolbar**

1. On the Quick Access Toolbar, click the *New* icon.

    The InfoAssist+ splash screen opens.

2. On the InfoAssist+ splash screen, select *Build a Report*.

    The Open dialog box opens.

3. From the Open dialog box, select the data source that you want to use, and click *Open*.

    The data source that you selected appears in the Data pane of the Resources panel.

4. Drag fields onto the canvas or into the Query pane to begin building your report.

Procedure: **How to Create a Report From an Existing Chart**

1. Open the chart that contains the data that you want to present in a report.

2. On the *Home* tab, in the *Format* group, click *Report*.

    The data is presented as a report.

Choosing a Report Output

The following output types are available for reports:

❏ HTML

❏ active report

❏ PDF

❏ active PDF

❏ Excel

❏ PowerPoint

Note: When you create a report in Document mode, you have access to Excel only.

When you create a report in Live Preview or Query Design view, you have access to the following Excel output types:

❏ **Excel (xlsx).** Outputs the report in Excel 2007 (and higher) format.

❏ **Excel.** Outputs the report in Excel format.

❏ **Excel Formula (xlsx).** Outputs the report, using Excel formulas that calculate and display the results of any type of summed information, such as column totals, row totals, and subtotals. This format is for Excel 2007 (and higher).

❏ **Excel Formula.** Outputs the report, using native Excel formulas for totals and computed values.

Note: Additional output types can be enabled in the >Report Broker Administration Console, including Excel Pivot.

Using Procedure Settings

Procedure Settings, also known as SET commands, enable you to specify and control items for inclusion in a procedure. If you want to include a Procedure Setting in a procedure (.fex), select the relevant check box to include that setting in the procedure (.fex). Procedure Settings are available in Report, Chart, and Document mode.

You can access Procedure Settings from the Quick Access toolbar. When you click *Procedure Settings*, the Procedure Settings dialog box displays, allowing you to select the options to apply to your procedure, as shown in the following image.
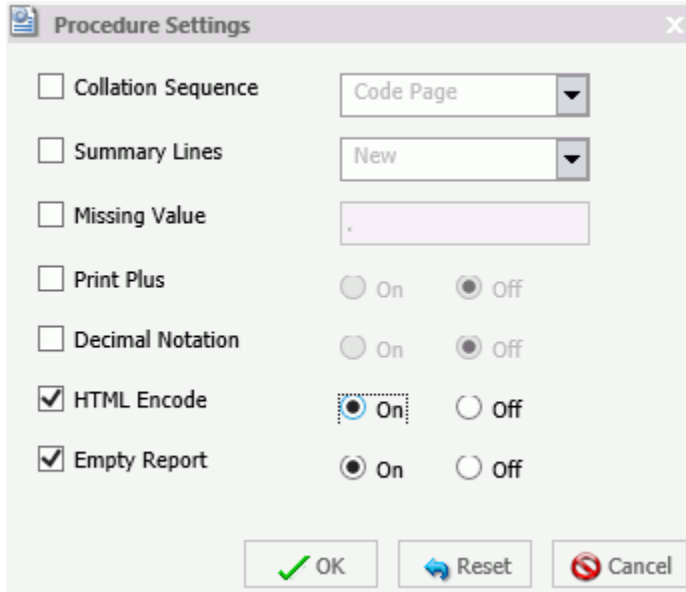
Options include:

❏ **Collation Sequence (COLLATION).** Establishes a binary or case-insensitive collation sequence. Options include Code Page (default), Binary, Case-Sensitive, and Case-Insensitive. This value will not be written into the procedure (.fex), by default. Therefore, you must select the check box to prompt this action.

❏ **Summary Lines (SUMMARY LINES).** Allows you to combine fields with and without prefix operators on summary lines in one request. Options include New (default value), Old, and Explicit. This value will not be written into the procedure (.fex), by default. Therefore, you must select the check box to prompt this action.

❏ **Missing Value (NODATA).** Specifies the missing data characters to be printed in a report. This is a text box with a default value of period (.). Common entries include N/A or NONE. In addition, this field has a limit of six characters. This value will not be written into the procedure (.fex), by default. Therefore, you must select the check box to prompt this action.

Note: You can use amper (&) variables in the Missing Data field to allow the entry of values at run-time. In general, valid values include any string or amper (&) variable, which will print automatically. You can use &xx to activate autoprompt. For example, you can use &NONE to specify a value at run-time. In Live Preview, this value is set to _FOC_NULL or as many characters that will fit in the width as defined by the existing values in a column. Global variables (&&x) should not be entered as they do not activate autoprompt. Mixing strings with amper (&) variable can result in Focus error messages. For example, &&&&N& or &nn&n&).

❑ **Print Plus (PRINTPLUS).** Introduces printing enhancements. Radio buttons include On (default value) and Off. This value will not be written into the procedure (.fex) by default. Therefore, you must select the check box to prompt this action.

❑ **Decimal Notation (CDN).** Ensures the correct display of currency for the target language. Radio buttons include On and Off (default value).

❑ **HTML Encode (HTMLENCODE).** Controls whether HTML tags are encoded when these tags are stored within the actual data or when they are created using a DEFINE or COMPUTE command. Radio buttons include On (default value) and Off. This option is selected for inclusion in the procedure (.fex), by default (the check box is selected), as it is not a default setting of the Reporting Server.

❑ **Empty Report (EMPTY REPORT).** Controls the output generated when a TABLE request retrieves zero records. Radio buttons include On (default value) and Off. When set to On, an empty report (column headings with no content) is generated. When set to Off, no report is generated. This option is selected for inclusion in the procedure (.fex), by default (the check box is selected), as it is not a default setting of the Reporting Server.

Note: In Report mode, all settings apply. In Chart mode, only Collation Sequence (COLLATION), Decimal Notation (CDN), and Empty Report (EMPTYREPORT) settings are applicable. In Document mode, Procedure Settings apply to the whole document. These settings are currently unavailable in Visualization mode.

Procedure: **How to Create a Procedure Using the Missing Value Option**

1. Create a report with a dimension, a measure, and an across sort field that shows missing values, as shown in the following image.

Product Category	Product Subcategory	Month	3		4		
		Shipment Unit(s)	Sale Unit(s)	Revenue Per Sq. Ft.	Shipment Unit(s)	Sale Unit(s)	Revenue Per Sq. Ft.
Accessories	Charger	1,973	6,204	$63.63	1,747	5,650	$57.78
	Headphones	4,245	13,463	$1,190.61	3,843	12,178	$1,111.56
	Universal Remote Controls	3,340	10,639	$790.19	2,985	9,581	$717.55
Camcorder	Handheld	4,575	14,636	$648.54	4,256	13,490	$607.10
	Professional	242	756	$682.19	216	748	$688.30
	Standard	3,610	11,263	$1,049.08	3,291	10,409	$988.71
Computers	Smartphone	3,622	11,413	$734.86	3,178	10,281	$658.53
	Tablet	3,102	8,134	$619.59	3,368	8,858	$619.43
Media Player	Blu Ray	12,623	40,707	$3,762.71	11,421	36,130	$3,315.39
	DVD Players	.	.	.	.	.	.
	Streaming	1,364	4,167	$111.40	1,314	3,696	$95.89
Stereo Systems	Home Theater Systems	7,485	23,315	$1,300.07	6,599	21,120	$1,200.77
	Receivers	2,767	8,730	$857.80	2,477	8,085	$825.00
	Speaker Kits	4,542	14,332	$1,691.64	4,020	13,117	$1,554.90
	iPod Docking Station	5,863	18,348	$659.46	5,147	16,636	$597.27
Televisions	Flat Panel TV	1,709	5,427	$1,166.90	1,561	4,982	$1,048.34
Video Production	Video Editing	3,744	11,881	$920.18	3,317	10,774	$837.75

Note: The highlighted area indicates the default (.) for missing values.

2. On the Quick Access toolbar, click *Procedure Settings*.

3. Click the Missing Value check box.

4. In the Missing Value text box, enter the characters to be used to represent missing values in your report. For example, NONE.

Note: By default, this is set to (.). However, common examples include N/A or NONE.

5. Click *OK*.

Fields with missing values are indicated by the word NONE, in this case, as that is what was specified. This value is shown in the following image.

Product Category	Product Subcategory	Month	3			4		
			Shipment Unit(s)	Sale Unit(s)	Revenue Per Sq. Ft.	Shipment Unit(s)	Sale Unit(s)	Revenue Per Sq. Ft.
Accessories	Charger		1,973	6,204	$63.63	1,747	5,650	$57.78
	Headphones		4,245	13,463	$1,190.61	3,843	12,178	$1,111.56
	Universal Remote Controls		3,340	10,639	$790.19	2,985	9,581	$717.55
Camcorder	Handheld		4,575	14,636	$648.54	4,256	13,490	$607.10
	Professional		242	756	$682.19	216	748	$688.30
	Standard		3,610	11,263	$1,049.08	3,291	10,409	$988.71
Computers	Smartphone		3,622	11,413	$734.86	3,178	10,281	$658.53
	Tablet		3,102	8,134	$619.59	3,368	8,858	$619.43
Media Player	Blu Ray		12,623	40,707	$3,762.71	11,421	36,130	$3,315.39
	DVD Players		NONE	NONE	NONE	NONE	NONE	NONE
	Streaming		1,364	4,167	$111.40	1,314	3,696	$95.89
Stereo Systems	Home Theater Systems		7,485	23,315	$1,300.07	6,599	21,120	$1,200.77
	Receivers		2,767	8,730	$857.80	2,477	8,085	$825.00
	Speaker Kits		4,542	14,332	$1,691.64	4,020	13,117	$1,554.90
	iPod Docking Station		5,863	18,348	$659.46	5,147	16,636	$597.27
Televisions	Flat Panel TV		1,709	5,427	$1,166.90	1,561	4,982	$1,048.34
Video Production	Video Editing		3,744	11,881	$920.18	3,317	10,774	$837.75

6. Save the procedure.

Procedure: How to Create a Procedure Using the Empty Report Option

1. Create a report with one or more measures and two dimensions.

2. Add a filter to create an empty report by filtering on a value that does not exist in the dimension that you select.

   Note: The addition of a filter condition causes your report to have no records, and the default behavior (EMPTYREPORT=ON) displays the heading and column titles.

The following image shows an empty report.
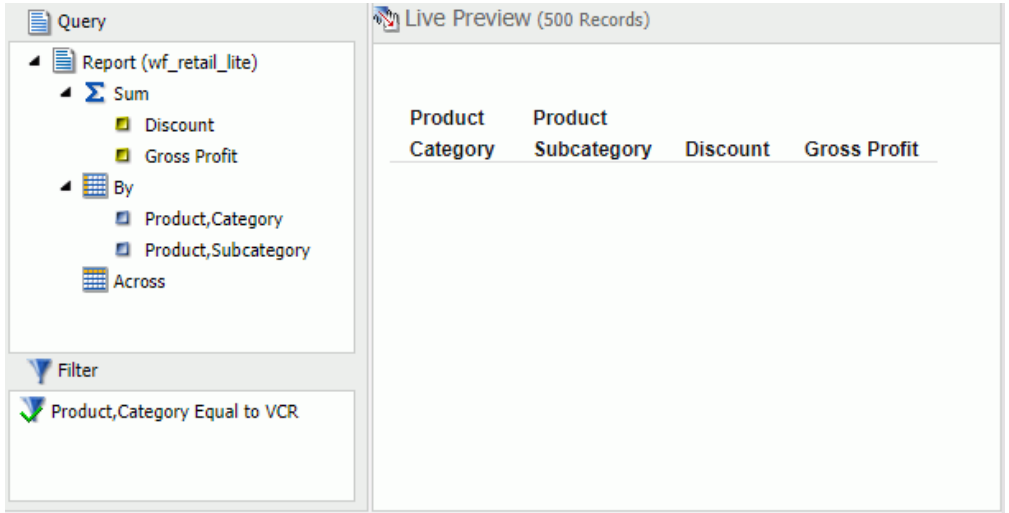
3. On the Quick Access toolbar, click *Procedure Settings*.

4. Clear the Empty Report check box.

   Note: This option is selected, by default. Notice that Empty Report can be set to On or Off. When enabled and set to On, the shell of the report (headings and titles) will be displayed. If the setting is turned off, the environment default will be used.

5. Click *OK*.
   When the Empty Report check box is cleared, no report is generated, as shown in the following image.
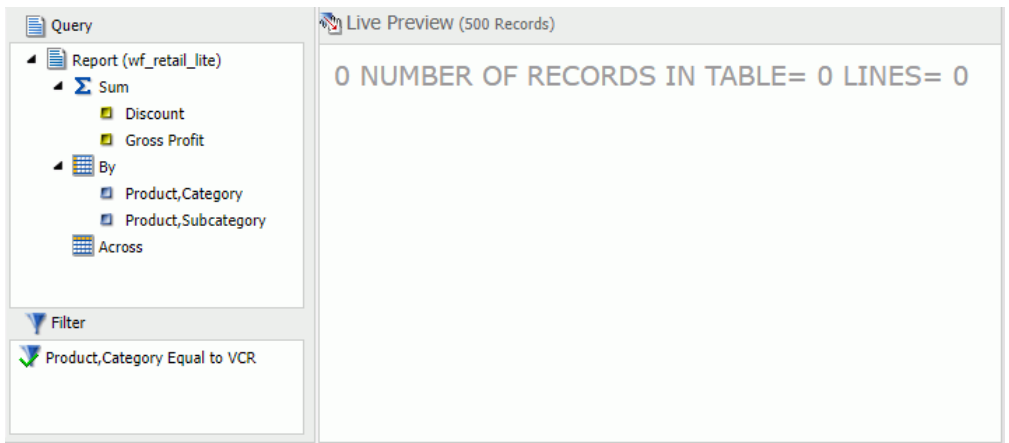
6. Save the procedure.

Styling Reports

You can apply custom styling to specific areas of a report. When creating a report, you can perform the following styling customization.

❏ Global styling for the entire report. For more information, see *How to Apply Styling to an Entire Report* on page 77.

❏ Style data and column titles. For more information, see *How to Perform Field-Level Styling in a Report* on page 78.

❏ Style headings and footings. For more information, see *How to Style Headings and Footings in a Report* on page 81.

❏ Style the rows of data with alternating colors. For more information, see *How to Style Rows of Data With Alternating Colors in a Report* on page 82.

❏ Apply traffic light conditional styling to data. For more information, see *How to Apply Traffic Light Conditional Styling to a Report (By Constant)* on page 83 and *How to Apply Traffic Light Conditional Styling to a Report (By Field)* on page 84.

❏ Increase or decrease the amount of space inserted between rows and columns. For more information, see *How to Use Cell Padding in a Report* on page 86.

Procedure: **How to Apply Styling to an Entire Report**

1. Create a report, or open an existing report.

2. On the *Home* tab, in the *Report* group, click *Style*.

    The Report Style dialog box opens.

3. Select any of the following styling options that are available in the Style group.

    ❏ **Font.** Opens a drop-down list, which you can use to change the font.

    ❏ **Font size.** Opens a drop-down list, which you can use to change the font size value.

    ❏ **Bold.** Applies bold font formatting to the selected text.

    ❏ **Italic.** Applies italic font formatting to the selected text.

    ❏ **Underline.** Underlines the selected text.

    ❏ **Justify Left.** Aligns the text to the left of the canvas.

❏ **Justify Center.** Aligns the text to the center of the canvas.

❏ **Justify Right.** Aligns the text to the right of the canvas.

❏ **Font Color.** Opens the Color dialog box, where you can select the font color.

❏ **Background Color.** Opens the Color dialog box, where you can select the background color for the report.

Note: If you have chosen to specify a color, you must click OK to return to the Report Style dialog box.

❏ **Currency Symbol.** Opens a drop-down menu, from which you can choose a currency symbol. Options are US dollar, British Pound, Japanese Yen, Euro, New Israeli Shekel.

❏ **Reset to Quick Styles from Template.** Resets all settings to the default settings from the template.

Note: Reset only works while the Report Style dialog box is open. Once you click *OK*, all changes are committed. To undo global styling after it has been committed, you must use the Undo command on the Quick Access Toolbar.

Preview. Displays the text as you have formatted it.

4. Click *OK*. The report is styled accordingly.

Procedure: How to Perform Field-Level Styling in a Report

You can style data, column titles, or both, in the report output for the selected data source field.

1. Create a report.

2. In the Query pane, select a data source field.

   The Field tab appears on the ribbon.

3. In the Style group, click one of the following:

   ❏ **Data Style.** Styles only the data for the selected data source field.

   ❏ **Title Style.** Styles only the column title for the selected data source field.

   ❏ **Data + Title.** Styles both the data and the column title for the selected data source field.

4. Select any of the following styling options that are available in the Style group.

   ❏ **Font.** Opens a drop-down list, which you can use to change the font.

❏ **Font size.** Opens a drop-down list, which you can use to change the font size value.

❏ **Font Color.** Opens the Color dialog box, where you can select the font color.

❏ **Reset styling to default style.** Resets any styling changes to the default style.

❏ **Bold.** Applies bold font formatting to the selected text.

❏ **Italic.** Applies italic font formatting to the selected text

❏ **Underline.** Underlines the selected text.

❏ **Justify Left.** Aligns the text to the left of the canvas.

❏ **Justify Center.** Aligns the text to the center of the canvas.

❏ **Justify Right.** Aligns the text to the right of the canvas.

❏ **Background Color.** Click the button to open the Color dialog box, where you can select the background color for the report.

Note: When working with font or background colors, you must click OK on the Color dialog box to return to the Report Style dialog box.

5. Click *OK*. The report is styled accordingly.

Procedure: **How to Add Headings and Footings to a Report**

You can make a report more meaningful by adding headings and footings. Headings and footings supply context and key information about a report, such as its purpose and audience. Headings and footings also provide structure, helping you navigate to the detail sought. They enhance visual appeal.

In this procedure, you will add and style a report heading and page heading. The procedure uses sample values, but you can supply values that apply to your own reports.

Headings and Footings are available in Query Design view, Live Preview, and Document mode.

1. Create a report.

2. On the *Home* tab, in the *Report* group, click the *Header & Footer* button.

   The Header & Footer dialog box opens.

3. Click the tab for the heading or footing element that you want to add.

   For a report, you can add a report heading, page heading, page footing, or report footing. By default, the Report Header tab is selected. In this procedure, accept the default.

4. Click inside the design area of the dialog box, and type the text for the heading.

   For example, the text for a sample report heading might be Quantity Sold by Product.

5. Using the styling ribbon, apply styling to the report heading text.

   For example, click *HELVETICA* from the Font drop-down list. From the Font size drop-down list, click *12*.

   The sample report heading with the selected styling values is shown in the following image.
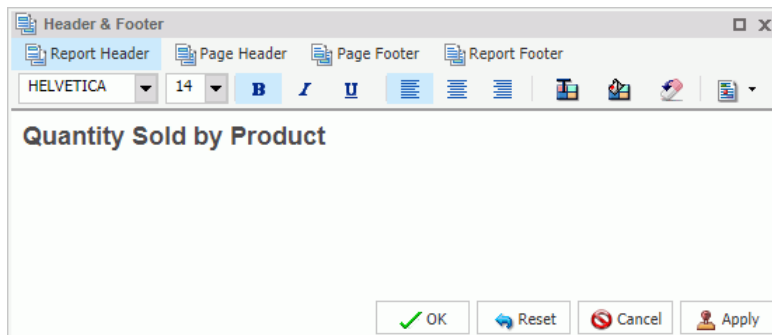
6. Click *Apply* to save the changes you have made so far, without closing the dialog box.

7. To add a page heading, click the *Page Header* tab.

   In this procedure, you are going to add one of the supplied quick text options.

8. Click the last icon ![icon] *(Insert preformatted text content for headers/footers)* on the right of the styling ribbon, and click *Confidential* in the list.

9. Change the font and font size. For example, change the font to *HELVETICA* and the size to *10*.

   You can add your own text before or after the supplied text, for example, For Regional Managers Only.
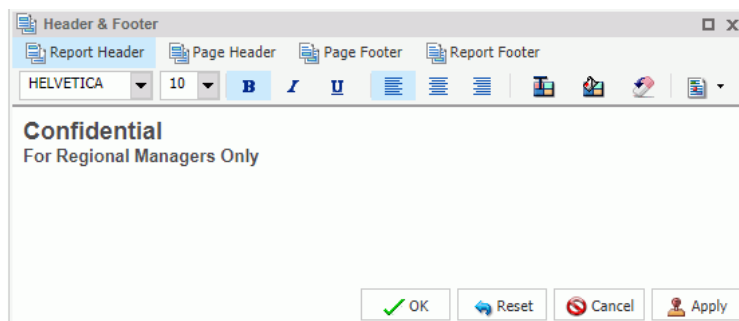
10. Click *OK* to save the report heading and page heading and close the Header & Footer dialog box.

    The report heading and page heading that you added and styled are shown in Live Preview in the following image.

11. To make changes to either the report or page heading, right-click the heading and click *Edit*. You can also double-click on the header to open the Header & Footer dialog box.

Procedure: **How to Style Headings and Footings in a Report**

You can style headings and footings in the report output for the selected heading or footing field.

1. Create a report.

2. With the report opened in Live Preview, select the heading or footing text that you want to style.

3. On the *Home* tab, in the *Report* group, click *Header & Footer*.

    The Header & Footer dialog box opens.

4. Select any of the following styling options that are available in the Style dialog box.

    ❏ **Font.** Opens a drop-down list, which you can use to change the font.

    ❏ **Font size.** Opens a drop-down list, which you can use to change the font size value.

❏ **Bold.** Applies bold font formatting to the selected text.

❏ **Italic.** Applies italic font formatting to the selected text.

❏ **Underline.** Underlines the selected text.

❏ **Justify Left.** Aligns the text to the left of the canvas.

❏ **Justify Center.** Aligns the text to the center of the canvas.

❏ **Justify Right.** Aligns the text to the right of the canvas.

❏ **Font Color.** Opens the Color dialog box, where you can select the font color.

❏ **Background Color.** Opens the Color dialog box, where you can select the background color for the report.

❏ **Reset to Quick Styles from Template.** Resets all settings to the default settings from the template.

Note: Reset only works while the Report Style dialog box is open. Once you click *OK*, all changes are committed. To undo global styling after it has been committed, you must use the Undo command on the Quick Access Toolbar.

5. Click *OK*. The report is styled accordingly.

Procedure: **How to Style Rows of Data With Alternating Colors in a Report**

You can style rows of data in a report with alternating colors.

1. Create a report.
2. Open the report in Live Preview.
3. On the *Home* tab, in the *Report* group, click *Banded*.

   The Color dialog box opens.

4. Select a color.
5. Click *OK*.

The selected color provides an alternating color scheme for the report. The report output displays alternating rows of data, using a white background for one row and a background of the selected color for the next row. This pattern continues throughout the report, as shown in the following image of Banded report output.

Product Category	Quantity Sold
Accessories	511,667
Camcorder	455,244
Computers	351,777
Media Player	771,934
Stereo Systems	1,114,332
Televisions	105,188
Video Production	199,749

Procedure: **How to Apply Traffic Light Conditional Styling to a Report (By Constant)**

You can apply traffic light conditional styling to data for a selected measure field. By default the report displays the values that satisfy the first condition in green, and the values that satisfy the second condition in red.

1. Open a report in Live Preview.

2. Open the Traffic Light Condition dialog box in one of the following ways:

   ❏ **Ribbon:** Select a field on the report, and then on the *Field* tab, in the *Display* group, click *Traffic Lights*.

   ❏ **Shortcut Menu:** Right-click a field on the report, point to *More*, and then click *Traffic Light Conditions*.

   The Traffic Light Condition dialog box opens.

3. From the Relational Operators drop-down menu below the field name, click a relational operator. For example, Equal to.

4. In the field to the right of the Relational Operators drop-down menu, click the down arrow for the Type drop-down menu.

   The Type menu opens.

5. In the Type drop-down list, click *Constant*.

6. Enter a value in the Value field.

or

    a. From the Get Values drop-down menu, select one of the following values: All, First, Last, Minimum, Maximum, or From File. The value that you select appears in the Get Values field.

    b. Select the value in the Get Values field. The value that you selected appears in the Value field.

7. Click *OK*.

The value that you selected appears in the field to the right of the Relational Operators drop-down menu.

8. Click the Style button.

The Style menu opens.

9. From the Style menu, click the *Font Color* or *Background Color* button.

The Color dialog box opens.

10. Select a color.

11. Click *OK*.

The color appears in the Preview box.

12. Click *Apply* to apply the colors to the report.

13. Click the *Drill Down* button.

The Drill Down dialog box opens.

14. In the Drill Down dialog box, use the radio buttons to specify the action you wish to perform. For example, drill down to a report or webpage, create an auto link target, or refresh a BI portal.

15. Click *OK* to close the dialog box.

16. In the Traffic Light Condition dialog box, click the *New* button to set traffic light conditions for additional fields.

Procedure: How to Apply Traffic Light Conditional Styling to a Report (By Field)

You can apply traffic light conditional styling to data for a selected measure field. By default, the report displays the values that satisfy the first condition in green, and the values that satisfy the second condition in red.

1. Open a report in Live Preview.

2. Open the Traffic Light Condition dialog box in one of the following ways:

   ❑ **Ribbon:** Select a field on the report, and then on the *Field* tab, in the *Display* group, click *Traffic Lights*.

   ❑ **Shortcut Menu:** Right-click a field on the report, point to *More*, and then click *Traffic Light Conditions*.

   The Traffic Light Condition dialog box opens.

3. From the drop-down menu below the field name, select a relational operator. For example, Equal to.

4. In the field to the right of the Relational Operators drop-down menu, click the arrow for the Type drop-down menu.

   The Type dialog box opens.

5. In the Type drop-down list, select *Field*.

   The Type dialog box displays a list of the data fields that you can choose from.

6. Select a data field from the list.

7. Click *OK*.

   The field that you selected appears in the field to the right of the Relational Operators drop-down menu.

8. Click the Style button.

   The Style menu opens.

9. From the Style menu, click the *Color* button.

   The Color dialog box opens.

10. Select a color.

    The color appears in the Preview box.

11. Click *OK*.

12. Click the *Drill Down* button.

    The Drill Down dialog opens.

13. In the Drill Down dialog, specify each of the following:

    ❑ Drill down to a report or a webpage

    ❑ URL of the webpage

    ❑ An alternate comment

❏ Target (New Window, Same Window)

❏ Parameters that you want to use (Name, Value)

14. Click *OK*.

15. Click the *New* button to set traffic light conditions for additional fields.

Procedure: **How to Use Cell Padding in a Report**

You can customize the amount of space inserted between rows and columns in a report.

1. Open a report in Live Preview.

2. On the *Layout* tab, in the *Report* group, click *Cell Padding*, and then click *Custom*.

   The Cell Padding dialog box opens.

3. Type the cell padding values that you want in the Top, Bottom, Left, and Right fields.

4. Click *OK*.

   The report reflects the cell padding that you set.

The following image shows a report with custom cell padding.

Changing a Field Format

You can change the format of any field except a Sort field. You can change the format of measure fields, as well as any calculated fields. For more information, see *Binning* on page 128.

You can access the Field Format Options dialog box from the following locations:

❏ Define and Compute dialog boxes.

❏ Edit Format option when you right-click a measure in the Query pane (all modes), right-click a column in a chart, or a measure column in a report.

❏ Format group on the Field tab.

The following image shows the Field Format Options dialog box.
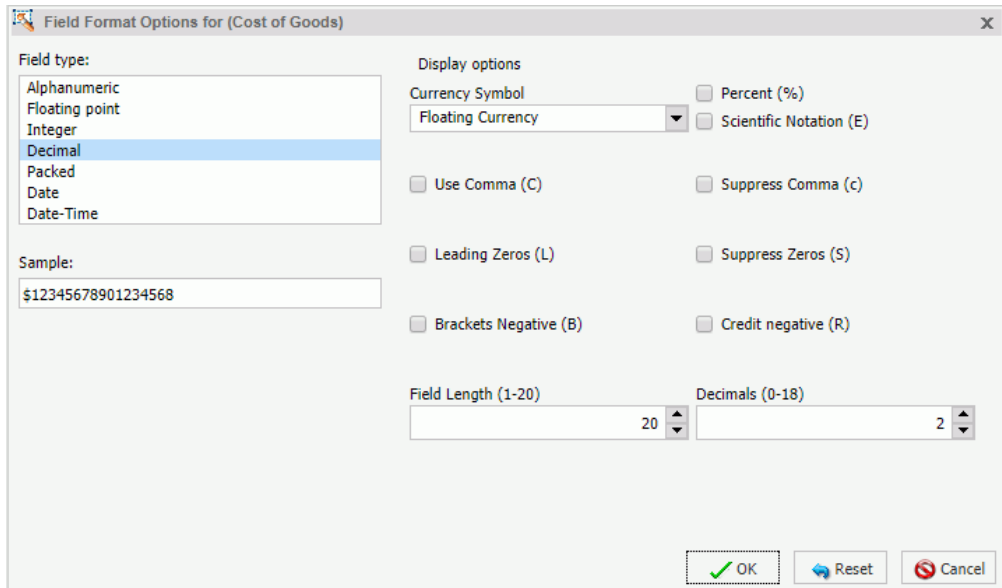
The Field Format Options dialog box enables you to choose from a variety of Field types. Display options are enabled based on the Field type you select. For example, the default Field type selection is Decimal. The first Display option, Currency Symbol, provides the following list of currency symbol options:

❏ None

❏ Floating Currency

❏ Non-floating Currency

❏ Fixed Euro symbol

❏ Floating Euro symbol

❏ Euro symbol on the right

❏ Fixed pound sterling sign

❏ Floating pound sterling sign

❏ Fixed Japanese yen symbol

❏ Floating Japanese yen symbol

❏ Fixed dollar sign

❏ Floating dollar sign

❏ Dollar sign on the right

❏ Dollar sign on the left

The default value for Currency Symbol is set to None, unless the Field Format dialog box was invoked when changing the format of a field that already contains a currency symbol from the Master File. Accordingly, the currency symbol will default to that which is defined in the Master File.

Charts work with floating currency symbols to allow the placement of the currency symbol to work within the different elements of the chart. In a chart, any fixed currency designations will automatically be presented with a floating currency symbol. Floating and fixed currency formats are supported for Reports only.

When working with charts, the axis label formats are defined separately from the field format. To set the format of the axis label, use the option in the *Labels* group on the *Format* tab. Click *Axes,* point to *Vertical Axis,* and click *More Vertical Axis Options.* In the Format Vertical Axis dialog box, click *Labels*, open the Format Labels drop-down menu, and select a currency format.

The following procedures show how to change a field format from the Field Format Options dialog box. For more information on how to use the Format group options, see *Field Tab* on page 34.

Procedure: **How to Assign an Alphanumeric Format**

1. With a report open in Live Preview, right-click a virtual field or column measure field, and select *Edit Format*.

    The Field Format Options dialog box opens.

2. From the Field type list, select *Alphanumeric*.

3. To assign a different length, specify a number between 1 and 4095 in the *Total length* field. The default value is 20.

4. Click *OK* to close the Field Format Options dialog box and return to the canvas.

    The new format appears in the previously selected column.

Procedure: **How to Assign a Numeric Format**

1. With a report open in Live Preview, right-click a virtual or column measure field, and click *Edit Format*.

    The Field Format Options dialog box opens.

2. From the Field type list, click one of the following options:

    ❏ *Floating Point* (default length 7.2)

    ❏ *Integer* (default length 5)

    ❏ *Decimal* (default length 12.2)

    ❏ *Packed* (default length 12.2)

    If the selected field matches the selected format type, its current length appears in the Field Length field. Otherwise, the default length appears in the Field Length field. The Decimals field shows the numbers of decimal places for Floating Point, Decimal, and Packed.

    ❏ To assign a different length, specify it in the *Field Length* field for format types as follows: 1-9 for Floating Point, 1-11 for Integer, 1-20 for Decimal, and 1-33 for Packed.

    ❏ To assign a different number of decimal places for Floating Point, Decimal, or Packed, specify the number in the *Decimals* field.

3. Click *OK* to close the Field Format Options dialog box and return to the canvas.

    The new format appears in the previously selected column.

Procedure: How to Assign a Date Format

1. With a report open in Live Preview, right-click a virtual or column measure field, and select *Edit Format*.

    The Field Format Options dialog box opens.

2. From the Field type list, click *Date*.

3. To assign a different date display format, select a date format from the *Display options* list.

    The default date display format is MDY.

4. Click *OK* to close the Field Format Options dialog box and return to the canvas.

    The new format appears in the previously selected column.

Procedure: How to Assign a Date-Time Format

1. With a report open in Live Preview, right-click a virtual or column measure field, and select *Edit Format*.

    The Field Format Options dialog box opens.

2. From the Field type list, click *Date-Time*.

3. To assign a different date-time format, select the date format you want to use from the Date Format list. Expand *Year First*, *Month First*, or *Day First* to see the available options.

4. Select a time format (if applicable) from the Time Format list.

   If you select the *Time Only* check box then you can only set a time format. Expand *Hour First*, *Minute First*, or *Seconds First* to see the available options.

   Note: These expansion options are only visible when you select Time Only.

5. Optionally select a separator for the date format.

   The default is /, but you can select . (period), - (hyphen), (space) or *None*.

6. Click the *Use AM/PM* check box if you are indicating a time format.

   The format of the time selection displays in the text box at the bottom of the dialog box. A preview displays in the Sample text box in the left pane, showing you the exact format of your time-based selection.

7. Click *OK* to close the Field Format Options dialog box and return to the canvas.

   The new format appears in the previously selected column.

Procedure: **How to Add a Percent Sign to a Numeric Field**

You can add a percent sign to the end of a numeric value (Decimal, Integer, Packed, and Floating Point formats). This numeric display option includes a percent sign along with the numeric data, but does not calculate the percent.

1. With a report open in Live Preview, right-click a virtual or column measure field, and select *Edit Format*.

   The Field Format Options dialog box opens.

2. From the Field type list, click a numeric value format (Floating point, Integer, Decimal, or Packed), and then select the *Percent (%)* check box.

3. Click *OK* to close the Field Format Options dialog box and return to the canvas.

   The new format appears in the previously selected column.

Using Custom Reporting Features

You can use the following custom features when creating reports.

❏ **Rank.** Inserts a ranking column for dimension and measure fields in a report. For more information, see *How to Rank Fields in a Report* on page 93.

❏ **Limit.** Limits the number of unique variables in a column. For more information, see *How to Limit the Values of a Column in a Report* on page 94.

❏ **Page Breaks.** Starts a new page in the output when the primary sort field changes. For more information, see *How to Add Page and Line Breaks to a Report* on page 94.

❏ **Line Breaks.** Inserts a line in the report output when the primary sort field changes. For more information, see *How to Add Page and Line Breaks to a Report* on page 94.

❏ **Subtotal.** Inserts subtotals in the output for all numeric fields when the primary sort field changes. For more information, see *How to Add Subtotals to a Report* on page 94.

❏ **Column Totals.** Inserts a grand total row at the bottom of the report to sum numeric data in each column. For more information, see *How to Add Column Totals to a Report* on page 95.

❏ **Row Totals.** Inserts a grand total column to the right side of the report to sum numeric data in each row. For more information, see *How to Add Row Totals to a Report* on page 95.

❏ **Sub Header.** Adds a subheading just below the column titles in the report output when the primary sort field changes. For more information, see *How to Add Subheadings and Subfootings to a Report* on page 95.

❏ **Sub Footer.** Adds a subfooting at the end of the data on each page of the report output when the primary sort field changes. For more information, see *How to Add Subheadings and Subfootings to a Report* on page 95.

❏ **Pop-up Titles.** Adds pop-up titles to report output when the mouse pointer hovers over a column title. For more information, see *How to Add Pop-Up Titles to a Report* on page 95.

❏ **Data Bars.** Adds data visualization bars to numeric data. For more information, see *How to Add Data Visualization Bars to a Report* on page 96.

❏ **Aggregation.** Displays numeric measure data or non-numeric dimension data using aggregation options other than the default of Sum for measures or Count for non-numeric measures. For more information, see *How to Display Numeric Measure Data Using Aggregation Options in a Report* on page 96 or *How to Display Aggregations on Dimension (Non-Numeric) Data* on page 152.

❏ **Repeat Sort Values.** Displays all repeated sort values instead of blanks after the first instance of a new sort value appears in the report. The default behavior is to display blanks after the first instance of a new sort value. For more information, see *How to Display Repeated Sort Values in a Report* on page 97.

❏ **Recompute.** Recalculates the result of a Compute command. Recompute is similar to Subtotal in that it recalculates only at the specified sort break. For more information, see *How to Recalculate the Result of a Compute Command* on page 98.

Procedure: **How to Rank Fields in a Report**

You can add rank columns to the dimension and measure fields in a report by clicking the *Rank* button. You access the Rank button, on the *Field* tab, in the *Sort* group.

❏ Adding a rank column to a dimension field inserts a rank column immediately to the left of the field.

❏ Adding a rank column to a measure field creates a copy of the column as a dimension field and adds a rank column to the left of the new dimension field.

Note: The rank option can also be accessed by right-clicking a dimension or measure field and accessing the Rank option through the shortcut menu by clicking Sort and then Rank.

1. With a report open, in the Query pane, select a dimension or a measure field.

   The Field tab appears on the ribbon.

2. In the Sort group, click *Rank*.

   A rank column appears, as shown in the following image.

RANK	Product Category	Gross Profit	Quantity Sold
1	Accessories	$39,854,440.53	511,667.00%
2	Camcorder	$49,598,845.24	455,244.00%
3	Computers	$33,508,818.12	351,777.00%
4	Media Player	$55,832,578.36	771,934.00%
5	Stereo Systems	$86,181,070.52	1,114,332.00%
6	Televisions	$16,830,023.81	105,188.00%
7	Video Production	$17,947,619.62	199,749.00%

Note: The rank column can now be edited and formatted like any other column, with the following exceptions:

❏ The only formatting that can be applied is Traffic Light Conditions.

❏ It cannot be hidden.

❑ You cannot insert breaks or a filter on the RANK column.

❑ No column can be moved in between the rank column and the column it is ranking.

Procedure: **How to Limit the Values of a Column in a Report**

You can limit the number of unique values that appear in a column through the Limit menu. First, you must select a column, then the Limit menu becomes available on the *Field* tab, in the *Sort* group.

Note: You can also access the Limit option by right-clicking a column, pointing to Sort, and then selecting *Limit*.

1. With a report open, in the Query pane, select a dimension or measure field.

   The Field tab appears on the ribbon.

2. In the Sort group, enter a value in the Limit field, or select a value from the list. The number of unique values that appear in the column is now limited to the value that you set.

Procedure: **How to Add Page and Line Breaks to a Report**

You can add page breaks and line breaks to report output for the primary sort field.

1. With a report open, in the Query pane, select a dimension (sort) field.

   The Field tab appears on the ribbon.

2. From the Break group, click *Page Break* or *Line Break*.

Procedure: **How to Add Subtotals to a Report**

1. With a report open, in the Query pane, select a dimension (sort) field.

   The Field tab appears on the ribbon.

2. From the Break group, click *Subtotal*.

   If you select Page Break, a new page is created every time the value of the primary sort field changes. Each page includes a new set of column titles.

   If you select Line Break, a new divider line is inserted in the report output every time the value of the primary sort field changes.

Clicking *Subtotal* turns Subtotal on for all fields as a RECOMPUTE and inserts a line of descriptive text (*Subtotal *FIELD Value*). Clicking the down arrow launches a menu of options. From this menu, you can choose between Simple and Recomputed. Selecting *More Options* opens a dialog box from which you can choose which fields to subtotal, as well as what type of aggregation to do for those fields. You can also change the Subtotal text.

Procedure: **How to Add Column Totals to a Report**

On the *Home* tab, in the *Report* group, click *Column Totals*.

Clicking *Column Totals* adds a grand total row at the bottom of the report that sums numeric data in each column. Clicking the down arrow launches a menu of options. From this menu, you can choose between Simple and Recomputed. Selecting *More Options* opens a dialog box from which you can choose which fields to total, as well as what type of aggregation to do for those fields. You can also change the Current Total text.

Procedure: **How to Add Row Totals to a Report**

On the Home tab, in the Report group, click *Row Totals*.

Clicking *Row Totals* adds a grand TOTAL column to the right side of the report that sums numeric data in each row.

Procedure: **How to Add Subheadings and Subfootings to a Report**

You can add subheadings and subfootings to report output for the sort field.

1. With a report open, in the Query pane, select a dimension (sort) field.

    The Field tab appears on the ribbon.

2. From the Break group, click *Sub Header* or *Sub Footer*.

    The Sub Header & Sub Footer dialog box opens.

3. In the Sub Header & Sub Footer dialog box, type and style the text, and click *OK*.

    Subheadings appear just below the column titles in the report output every time the value of the primary sort field changes. Subfootings appear at the end of the data on each page of the report output every time the value of the primary sort field changes.

Procedure: **How to Add Pop-Up Titles to a Report**

On the *Format* tab, in the *Features* group, click *Title Popup*.

Clicking Title Popup displays a pop-up title when the mouse pointer hovers over any column title in the report, at run-time.

Procedure: **How to Add Data Visualization Bars to a Report**

You can add data visualization bars to the report output for a selected numeric data source field.

1. With a report open, in the Query pane, select a measure field.

    The Field tab appears on the ribbon.

2. In the Display group, click *Data Bars*.

    A data visualization column appears to the right of the selected numeric data source field to display values in each row. The column uses horizontal bars that extend from left to right and vary in length, depending on the corresponding data values.

Procedure: **How to Display Numeric Measure Data Using Aggregation Options in a Report**

You can display numeric measure data using a variety of aggregation type values other than the default of Sum.

1. With a report open, in the Query pane, select a measure field.

    The Field tab appears on the ribbon.

2. Access the Aggregation Functions menu by doing one of the following:

    ❏ From the Display group, click *Aggregation*.

       or

    ❏ Right-click the selected measure field, point to *More*, then *Aggregation Functions*, and choose one of the options. For example, First Value.

    If you change the Measure Query field container from Sum to Print, Count, or List, it overrides all assigned aggregation type values.

Procedure: **How to Access the Within Functionality**

You can use the Within functionality to apply specific aggregation tasks at different report levels.

1. With a report open, in the Query pane, select a numeric measure field.

    The Field tab appears on the ribbon.

2. On the *Field* tab, in the *Display* group, click *Within*.
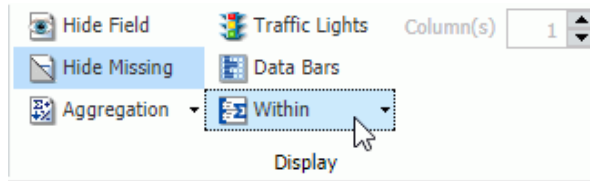
Note: Depending on how your data is set up, you can apply the Within phrase on a By or Across field.

Optionally, you can access the Within functionality from the shortcut menus on the column level. You can also access these menus when you right-click a measure field in the Query pane.
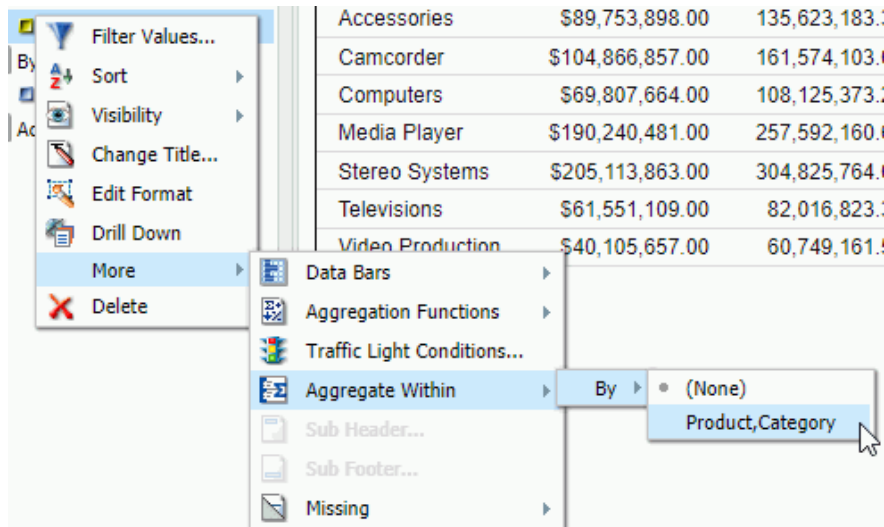
3. On the Within menu, click the down arrow to select the Within phrase for the By or Across field.

4. Select a By field from the list of available fields.

   The report automatically generates based on your selection.

Procedure: How to Display Repeated Sort Values in a Report

Run this procedure when the output format, Excel, for example, does not sort properly.

On the *Format* tab, in the *Features* group, click *Repeat Sort Value*.

When you click *Repeat Sort Value*, all repeated sort values appear in the report output. This option overrides the default behavior, which displays blanks after the first instance of each new sort value that appears in the report.

Procedure: **How to Recalculate the Result of a Compute Command**

For more information on the compute command, see *Using Define and Compute Fields*.

1. With a report open, in the Query pane, select a By (sort) field.

   The Field tab appears on the ribbon.

2. You can recalculate the result of a Compute command in one of the following ways:

   ❏ **Ribbon:** On the *Field* tab, in the *Break* group, open the Subtotal menu. On the menu, click *Recomputed*.

   ❏ **Shortcut Menu:** Right-click a sort field, point to *Break*, then *Subtotal*, and then click *Recomputed*.

   Note: Recompute is not available for Across fields.

Creating Customized Report Outputs

You can create customized report outputs in InfoAssist+. The standard output formats, which are found in the Format group on the Home tab, include: HTML, active report, PDF, active PDF, Excel, and PowerPoint. For charts, HTML5 is the default output format. For reports, you can also create the following custom report output formats from the Navigation group on the Format tab, including: Table, Table of Contents, Freeze, Pages on Demand, and OLAP.

❏ **Table.** Generates standard browser output. This is the default.

❏ **Table of Contents.** Generates output by displaying a table of contents icon in the upper-left corner where report output typically appears. Clicking *Table of Contents* opens a menu that enables you to select (view) individual values of the first Sort By (By) field, one value at a time.

You can also select options to view the entire report or remove the table of contents. For more information, see *How to Create Table of Contents Reports* on page 99.

Note:

❏ The Table of Contents option is activated only when HTML, active report, Excel, or PowerPoint output format is selected.

❏ You cannot use the Table of Contents option with the Accordion feature. For more information, see *How to Create Accordion Reports* on page 104.

❏ **Freeze.** Generates output with column titles that freeze (remain in view) when you scroll through pages of the report output. For more information, see *How to Freeze Column Titles in Reports* on page 101.

❏ **Pages On Demand.** Provides access to two distinct features depending upon the output type that you have selected.

   ❏ **HTML.** If you select this output type, and click *Pages On Demand*, then the report opens in the WebFOCUS Viewer.

   The WebFOCUS Viewer saves the bulk of your report to your web server and delivers one page of report output at a time, decreasing the amount of time that you wait for the report to process.

   The bulk of your report remains on the web server until you request it or close the WebFOCUS Viewer.

   The WebFOCUS Viewer menu bar, at the bottom of the Viewer, contains options for navigating through the pages. For more information on these options, see *How to Create Pages On Demand Reports* on page 102.

   ❏ **active reports.** If you select this output type, and click *Pages On Demand*, then active cache is enabled. For more information on active cache, see *Active Cache Option*.

❏ **OLAP.** To view output with OLAP functionality. For more information, see *How to Create OLAP Reports* on page 103.

Note: This functionality is disabled by default. It can be enabled in the >Report Broker Administration Console. Contact your administrator for assistance.

Procedure: **How to Create Table of Contents Reports**

Note: You cannot use the Table of Contents with the Accordion feature.

1. Create a report.

2. On the *Format* tab, in the *Navigation* group, click *Table of Contents*.

   When you run the report, a table of contents button appears in the top-left corner of the report output, as shown in the following image.

Product Category	Product Subcategory	Quantity Sold
Accessories	Charger	105,257
	Headphones	228,349
	Universal Remote Controls	178,061

3. Double-click the button to display the Table of Contents menu. The Table of Contents menu enables you to select and view individual values of the first sort (By) field, one value at a time.

    Drag the Table of Contents menu in any direction to view the report output, which appears behind the menu by default.

Product Category	Product Subcategory	Quantity Sold
Accessories	Charger	105,257
	Headphones	228,349
	Universal Remote Controls	178,061

Table of Contents

⊞ Accessories
⊞ Camcorder
⊞ Computers
⊞ Media Player
⊞ Stereo Systems
⊞ Televisions
⊞ Video Production
☐ View Entire Report (On/O
☐ Remove Table of Content
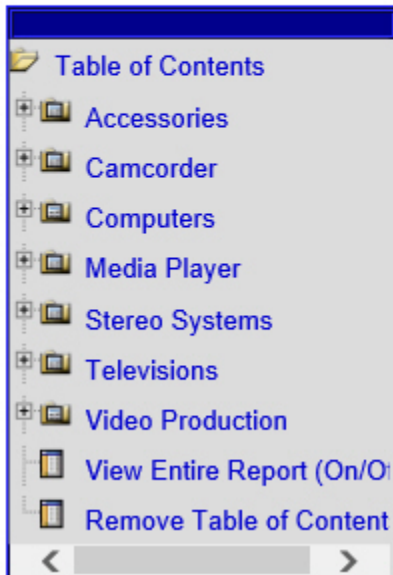
Select a sort field to view values for that field.

In the following example, clicking *Stereo Systems* displays the corresponding report output.

Product Category	Product Subcategory	Quantity Sold
Stereo Systems	Boom Box	9,370
	Home Theater Systems	399,092
	Receivers	150,568
	Speaker Kits	244,199
	iPod Docking Station	311,103

- Table of Contents
- ⊞ 🗔 Accessories
- ⊞ 🗔 Camcorder
- ⊞ 🗔 Computers
- ⊞ 🗔 Media Player
- ⊞ 🗔 Stereo Systems
- ⊞ 🗔 Televisions
- ⊞ 🗔 Video Production
- 🗔 View Entire Report (On/O⁀
- 🗔 Remove Table of Content
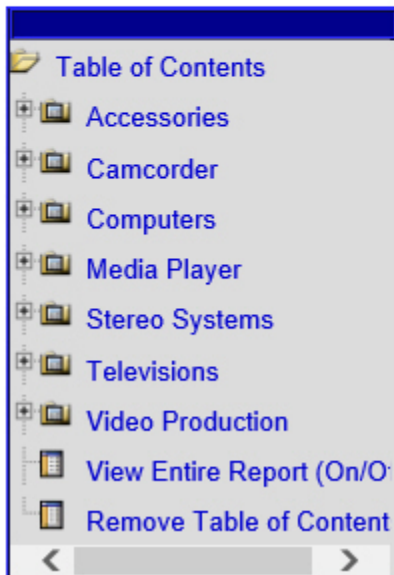
You can also select options to view the entire report or remove the table of contents.

Procedure: **How to Freeze Column Titles in Reports**

On the *Format* tab, in the *Navigation* group, click *Freeze*.

Column titles freeze (remain in view) when you scroll through pages of the report output.

Note: You must run the report in order to see the frozen column titles.

The following image shows the scroll bar that appears when you freeze column titles.

Store Business Region	Product Category	Quantity Sold	Revenue
Subtotal: EMEA		**1,404,540**	**$422,745,677.92**
North America	Accessories	293,461	$74,326,669.37
	Camcorder	259,953	$88,243,858.49
	Computers	214,049	$64,415,033.70
	Media Player	435,684	$139,282,702.54
	Stereo Systems	636,612	$166,530,524.29
	Televisions	56,161	$43,837,977.12
	Video Production	114,260	$33,280,088.15
Subtotal: North America		**2,010,180**	**$609,916,853.66**
Oceania	Accessories	592	$153,375.30
	Camcorder	554	$155,222.60
	Computers	526	$168,481.59
	Media Player	984	$304,677.82
	Stereo Systems	1,265	$337,054.74
	Televisions	94	$81,026.50
	Video Production	227	$60,468.74
Subtotal: Oceania		**4,242**	**$1,260,307.29**

Procedure: **How to Create Pages On Demand Reports**

This procedure describes using the Pages On Demand feature to create an HTML report.

1. Create a report.

   The default output is HTML.

2. On the *Format* tab, in the *Navigation* group, click *Pages On Demand*.

3. Run the report.

   The report opens in the WebFOCUS Viewer.

4. Navigate through the report using the navigation options available on the WebFOCUS Viewer menu bar. For example, Go to the first page.

Procedure: **How to Create OLAP Reports**

1. On the *Format* tab, in the *Navigation* group, click the *OLAP Analysis* button, which enables the OLAP Analysis functionality.

2. On the OLAP Analysis button, click the down arrow.

   The OLAP Analysis menu displays. It contains the following options:

   ❏ **OLAP panel accessible.** Select this option to access the OLAP panel in the output of the report at run-time. You can access the OLAP panel by clicking on one of the categories that displays at the top of the report.

   ❏ **OLAP panel not accessible.** Select this option to only display sorting options in the column titles. The OCP (OLAP ribbon) cannot be accessed from the title options.

   ❏ **Dimension filtering enabled.** Select this option to display dimension filters at the top of the report. You customize the filter placement within the Navigation dialog box. You access the dialog box by clicking *More options*.

   ❏ **Dimensions grouped in tabs.** Select this option to group dimension filters in tabs based on hierarchy within statements in the metadata.

   ❏ **More options.** Select this option to open the OLAP Analysis dialog box.

   In addition to the options discussed previously, the OLAP Analysis dialog box allows the following additional configuration and customization options for OLAP output:

   ❏ **No OLAP.** Select this option to disable OLAP Analysis.

   ❏ **OLAP panel is accessible.** Select this option to make the OLAP panel accessible. This option is selected by default.

   ❏ **OLAP panel is not accessible.** Select this option to make the OLAP panel inaccessible.

   ❏ **Hide access to the OLAP Panel.** Select this option to hide access to the OLAP panel.

   ❏ **Dimension filtering enabled.** This option provides a secondary positioning option allowing placement of the filters on the Top (default) or Bottom of the report.

   Note: If the Dimension filtering enabled option is cleared at any time, the position option resets to Top.

   ❏ **Auto drill options.** The auto drill options are:

      ❏ **Dimensions.** Select this option to automatically drill down on dimensions in both reports and graphs.

❏ **Dimensions and Measures.** (Default). Select this option to automatically drill down on dimensions in both reports and graphs and on measure fields in reports.

❏ **None.** Select this option to disable automatic drill downs.

3. Select an option.

Selecting an option from the OLAP options group, such as *OLAP panel accessible*, generates output that invokes OLAP processing. The OLAP button displays below the report. When clicked, the OLAP Control Panel is launched.

Product Category	Discount	Quantity Sold
Computers	$4,808,910.10	351,777
Stereo Systems	$13,530,873.57	1,114,332
Televisions	$3,635,693.38	105,188
Video Production	$2,695,890.76	199,749

OLAP

Procedure: **How to Create Accordion Reports**

Note: You cannot use the Table of Contents in conjunction with the Accordion feature.

1. Create a report.

The following image shows a report before the accordion option is applied.

Product Category	Store Business Region	Quantity Sold
Media Player	EMEA	314,737
	North America	435,684
	Oceania	984
	South America	20,529
Stereo Systems	EMEA	447,733
	North America	636,612
	Oceania	1,265
	South America	28,722
Televisions	ΞMEA	45,714
	North America	56,161
	Oceania	94
	South America	3,219

2. On the *Format* tab, in the *Features* group, click *Accordion* and then click *Run*.

Plus signs indicate that there are expandable views of data for each vertical sort field.

	Quantity Sold
⊞ Media Player	771,934
⊞ Stereo Systems	1,114,332
⊞ Televisions	105,188

You can manually expand your view to expose the data.

Procedure: **How to Implement Stack Measures**

1. Create a report with at least two measure fields.

2. On the *Format* tab, in the *Features* group, click *Stack Measures*.

All measure fields in the report are stacked.

Creating and Customizing Charts

InfoAssist+ enables you to easily create different types of simple and complex charts. You can select from a variety of chart types and output formats, and add custom features to a chart.

You can also create a chart from any existing report.

In this chapter:

❏ Visualizing Your Data With Charts

❏ Selecting a Chart Type

❏ Creating Charts

❏ Binning

❏ Accessing Chart Formatting Tools

❏ Formatting a Series

❏ Formatting Data Labels

❏ Formatting a Legend

❏ Formatting Gridlines

❏ Formatting Axis Labels

❏ Formatting a Frame and a Background

❏ Formatting a Gauge Chart

❏ Formatting Page Headings and Page Footings

❏ Using Additional Formatting Features

Visualizing Your Data With Charts

A chart often conveys meaning more clearly and effectively than data displayed in tabular form. A chart enables you to visually communicate quantitative information. On a chart, you can give data a shape and form, and reveal patterns and relationships among many data values. A chart can highlight anomalies that require further investigation. These are some things to consider when deciding between a report and a chart for your data.

Selecting a Chart Type

InfoAssist+ provides a complete chart library of both basic and advanced charts. You can choose from a wide variety of charts to best represent the data that you want to display.

It is important that you choose a chart that is appropriate for your data. When working with chart types in the Other category, which is available in the Chart Types group on the Format tab in Chart mode, you can quickly access a description for each chart, simply by hovering over the chart type with your mouse in the Select a chart dialog box. This facilitates quick identification of the relevant chart type, making it easy to create the right type of chart based on your data.

Note:

❏ To change the chart type of a migrated chart procedure that contains bar, line, or area charts, click the *Type* button on the Series tab, instead of the Format tab.

❏ The new chart attribute syntax has been applied to the following chart types: Dual Bar and Line, Tag Cloud, Streamgraph, Mekko, Funnel, and Pyramid. In InfoAssist+, specific field containers display for each chart type. For information on the field containers for charts, see *Field Containers for Charts and Visualizations* on page 46.

Bar Charts

Bar charts plot numerical data by displaying rectangular blocks against a scale (numbers or variable measure fields that appear along the axis). The length of a bar corresponds to a value or amount. You can clearly compare data series (fields) by the relative heights of the bars. Use a bar chart to display the distribution of numerical data. You can create horizontal and vertical bar charts.

Note:

❏ If you are working with a large dataset, you can enable the display of a scroll bar under your chart, allowing you to easily scroll through your data from left to right. If you want to enable, disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box.

❏ When working with stacked bar charts in either Chart or Visualization mode, borders can be enabled to show each series or measure in the chart. When enabled, the borders outline each measure in a stacked bar chart. This allows you to differentiate between the measures when they are displayed using the same color on a riser.

You can specify a border for all series in the Style dialog box, which is accessible from the Series tab.

When to use: Use a bar chart when individual values are important. For example, a basic *vertical bar chart* can compare the individual products sold to the total amount in sales for each product. A retailer would find it important to know which pieces of inventory are selling and how much revenue each item is generating for the company.

The following image is an example of a bar chart showing gross profit and quantity sold by product category.
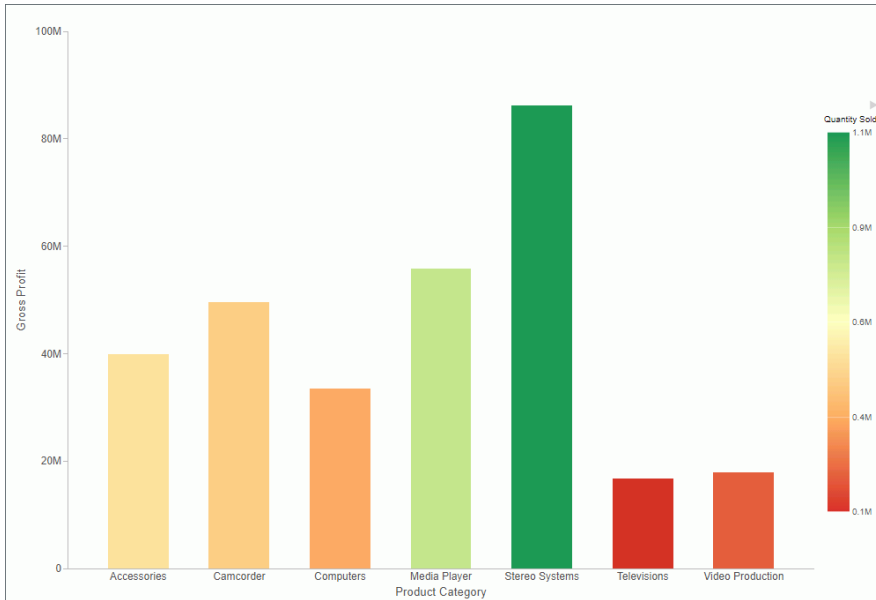
A *horizontal bar chart* becomes useful when you want to emphasize a ranking relationship in descending order, or the X-axis labels are too long to fit legibly side-by-side. For example, a basic horizontal bar chart can rank in descending order which products are generating the most revenue for the retailer.

Bar Chart Types

The following table lists the available bar chart types.

Available Bar Chart Types

Vertical Clustered Bar	Horizontal Clustered Bar
Vertical Stacked Bar	Horizontal Stacked Bar
Vertical Dual-Axis Clustered Bar	Horizontal Dual-Axis Clustered Bar
Vertical Dual-Axis Stacked Bar	Horizontal Dual-Axis Stacked Bar
Vertical Bi-Polar Clustered Bar (Not in HTML5)	Horizontal Bi-Polar Clustered Bar (Not in HTML5)

Available Bar Chart Types	
Vertical Bi-Polar Stacked Bar (Not in HTML5)	Horizontal Bi-Polar Stacked Bar (Not in HTML5)
Vertical Percent Bar	Horizontal Percent Bar
Vertical Histogram	Horizontal Histogram
Vertical Waterfall	Horizontal Waterfall
Vertical Multi-3Y Bar (Not in HTML5)	Vertical Multi-5Y Bar (Not in HTML5)
Vertical Multi-4Y Bar (Not in HTML5)	Error Bar

Pie Charts

A pie chart is a circular chart that represents parts of a whole. A pie chart emphasizes where your data fits, in relation to a larger whole. Pie charts work best when the data consists of several large segments. As a best practice, limit your pie chart to five measure fields. Too many measure fields can divide a pie into many thin components that could become difficult to see. Use color on individual segments to create visual contrast.

In addition, you can add one or more measures to the Measure field container. Each measure will be used to create a separate, unique pie chart, to which you can add a measure or dimension to the Color field container to add color to your chart.

Note:

❑ When working with pie charts, you can add one measure field to the Color field container. This adds the measure as a By field, and determines how the pie chart is colored. Depending on your measure data, this may result in a large number of pie segments.

❑ You cannot plot negative data on a pie chart.

When to use: Use a pie chart when you have several large segments of data that you want to display as a whole.

For example, the following image is a pie chart showing the product revenue by sale quarter.
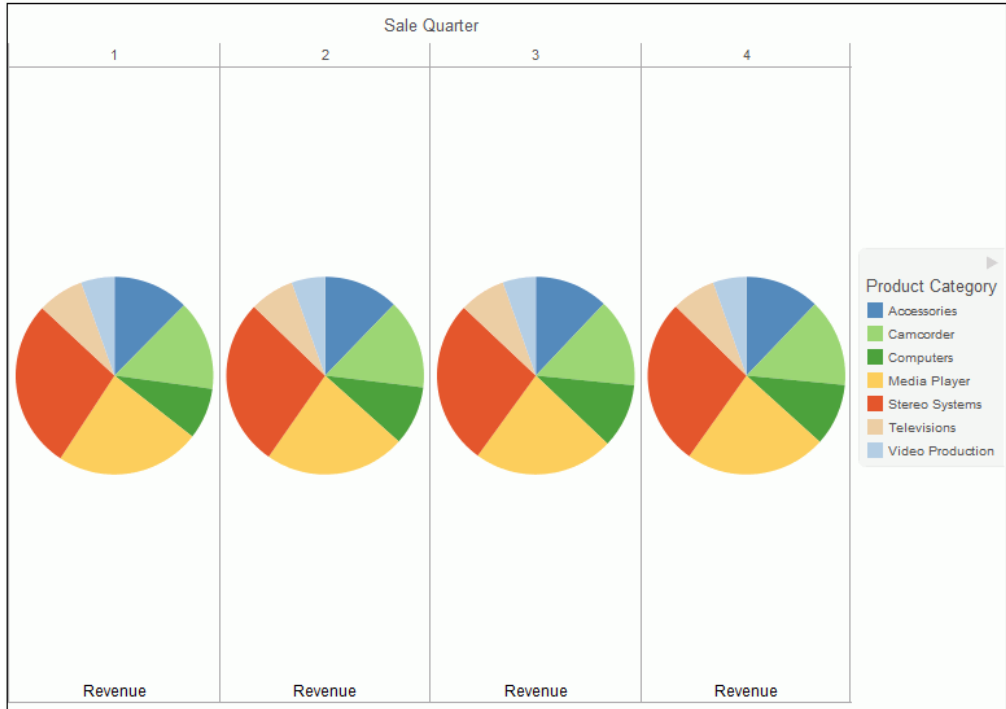
Pie Chart Types

The following table lists the available pie chart types.

Available Pie Chart Types	
Multi Pie	Multi Ring Pie
Multi Proportional Pie (Not in HTML5)	Multi Proportional Ring Pie (Not in HTML5)
Single Pie	Single Ring Pie
Pie-Bar (Not in HTML5)	Ring Pie-Bar (Not in HTML5)

Line Charts

Line charts are useful for emphasizing the movement or trend of numerical data over time. They allow you to trace the evolution of a data point by working backwards or interpolating. Highs and lows, rapid or slow movement, or a tendency towards stability are all types of trends well suited to a line chart.

You can also plot line charts with two or more scales to present a comparison of the same value, or set of values, in different time periods.

Note: If you are working with a large dataset, you can enable the display of a scroll bar under your chart, allowing you to easily scroll through your data from left to right. If you want to enable, disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box.

When to use: Use a line chart when you want to trend data over time. For example, monthly changes in employment figures, or yearly sales of an item in your inventory.

For example, the following image is a line chart that traces product revenue over a four-year period.
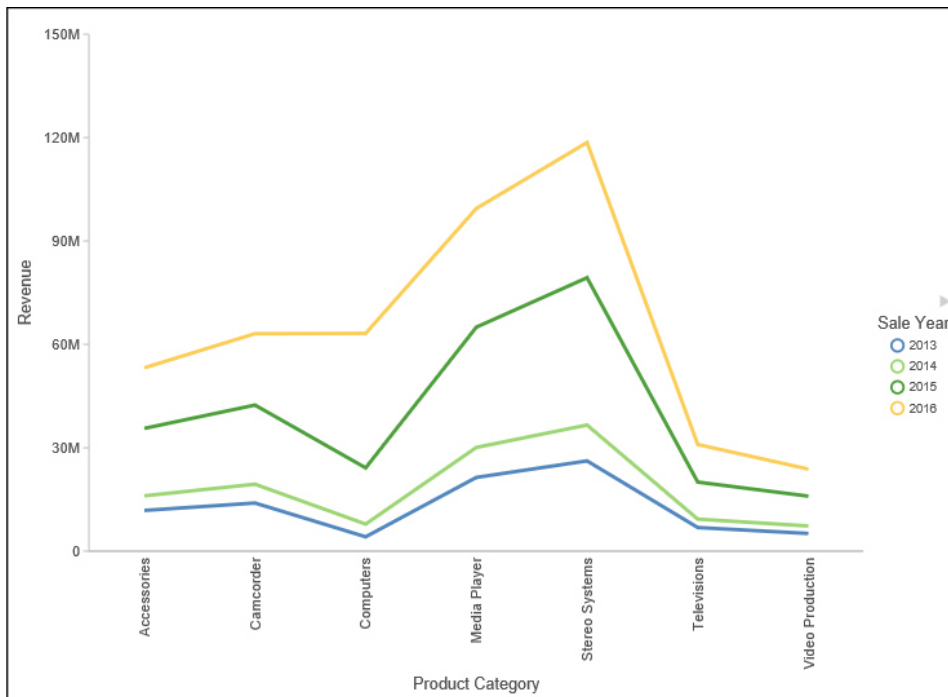
Radar charts are essentially analogous to line charts, except that the scale wraps around. Radar charts compare two or more data sets. They work well with data that is cyclical, such as the months of a year. A radar line chart is available in the line chart category, and a radar area chart is available in the area chart category. You can use axes or polygons to represent values in a star or spider configuration.

Line Chart Types

The following table lists the available line chart types.

Available Line Chart Types

Vertical Absolute Line	Horizontal Absolute Line
Vertical Stacked Line	Horizontal Stacked Line
Vertical Dual-Axis Absolute Line	Horizontal Dual-Axis Absolute Line
Vertical Dual-Axis Stacked Line	Horizontal Dual-Axis Stacked Line
Vertical Bi-Polar Absolute Line (Not in HTML5)	Horizontal Bi-Polar Absolute Line (Not in HTML5)
Vertical Bi-Polar Stacked Line (Not in HTML5)	Horizontal Bi-Polar Stacked Line (Not in HTML5)
Vertical Percent Line	Horizontal Percent Line
Radar Line	

Area Charts

Area charts are similar to line charts except that the area between the data line and zero line (or axis) is usually filled with color. Area charts allow you to stack data on top of each other. Stacking allows you to highlight the relationship between data series, showing how some data series approach a second series.

Note: If you are working with a large dataset, you can enable the display of a scroll bar under your chart, allowing you to easily scroll through your data from left to right. If you want to enable, disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box.

When to Use: Use an area chart when you want to distinguish the data more dramatically by highlighting volume with color. For example, the following image is a stacked area chart depicting the gross profit, revenue, and quantities sold for products over a three-year time period.
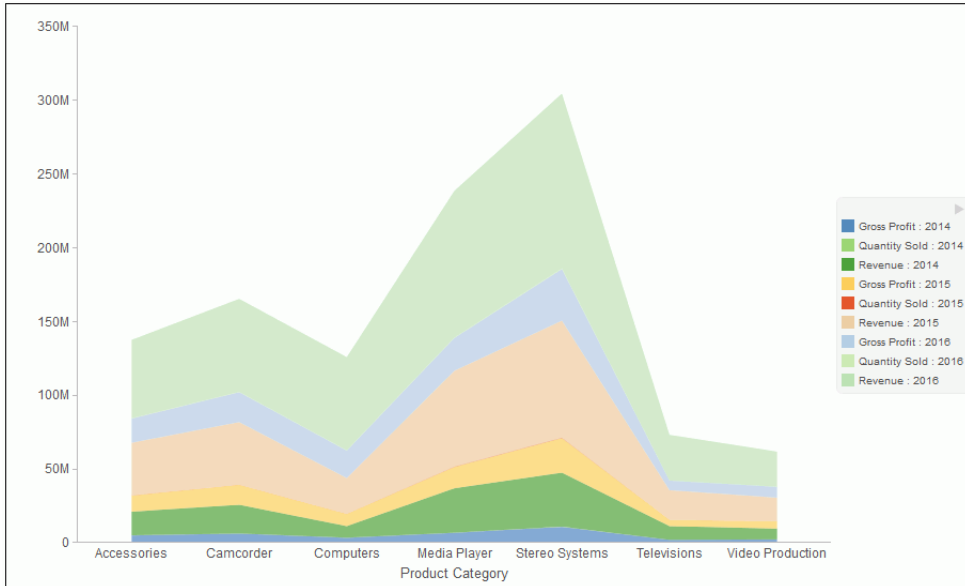
Area Chart Types

The following table lists the available area chart types.

Available Area Chart Types	
Vertical Absolute Area	Horizontal Absolute Area
Vertical Stacked Area	Horizontal Stacked Area
Vertical Bi-Polar Absolute Area (Not in HTML5)	Horizontal Bi-Polar Absolute Area (Not in HTML5)
Vertical Bi-Polar Stacked Area (Not in HTML5)	Horizontal Bi-Polar Stacked Area (Not in HTML5)
Vertical Percent Area	Horizontal Percent Area

Available Area Chart Types	
Radar Area	

Scatter Charts

Scatter charts enable you to plot data using variable scales on both axes. When you use a scatter chart, the data is plotted with a hollow marker, so that you can visualize the density of individual data values around particular points, or discern patterns in the data. A numeric X axis, or sort field, always yields a scatter chart, by default, however you can optionally specify a non-measure (dimension) field on either the vertical or horizontal axis. You can also specify a non-measure field on both axes, which results in a vertical display of your dimension data.

If your chart reveals clouds of points, there is a strong relationship between X and Y values. If data points are scattered, there is a weak relationship, or no relationship.

When to use: Use a scatter chart when you want to determine patterns in your data.

The following image is a scatter chart that shows gross profit and MSRP data for product categories.
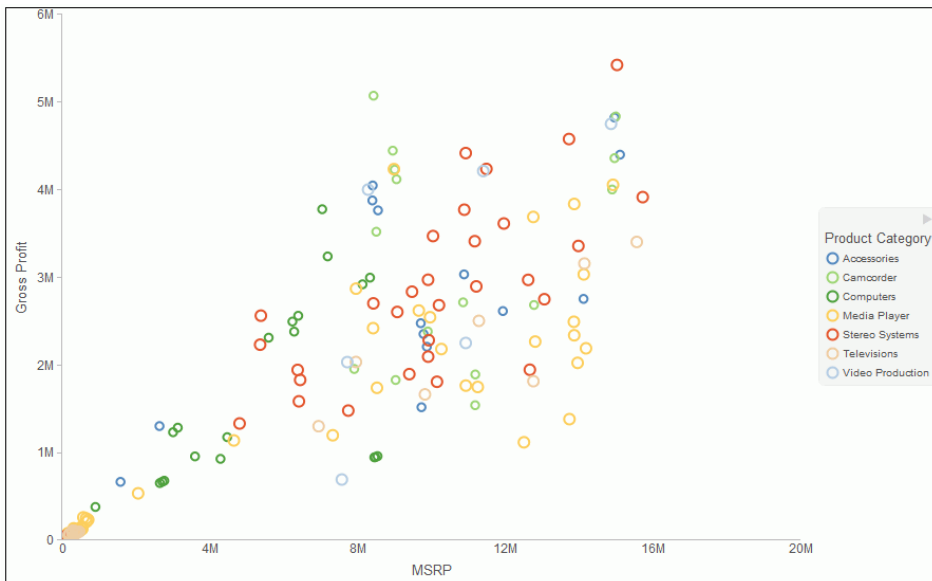
Multi-Axis Charts

Bar, line, and area chart types have multi-axis options, such as dual-axis charts and multi-Y charts, where you can compare one X-axis value to several Y-axis measure fields.

InfoAssist+ allows you to assign each individual series to the Y1 through Y5 axis. For more information, see *How to Create a Dual-Axis Chart* on page 127.

When to use: Use a multi-axis chart when you want to plot values on an additional axis, or multiple axes, to compare multiple sets of data that are on different scales.

For example, the following image is a dual-axis bar chart that shows the revenue and MSRP by store type over a four-year time period.
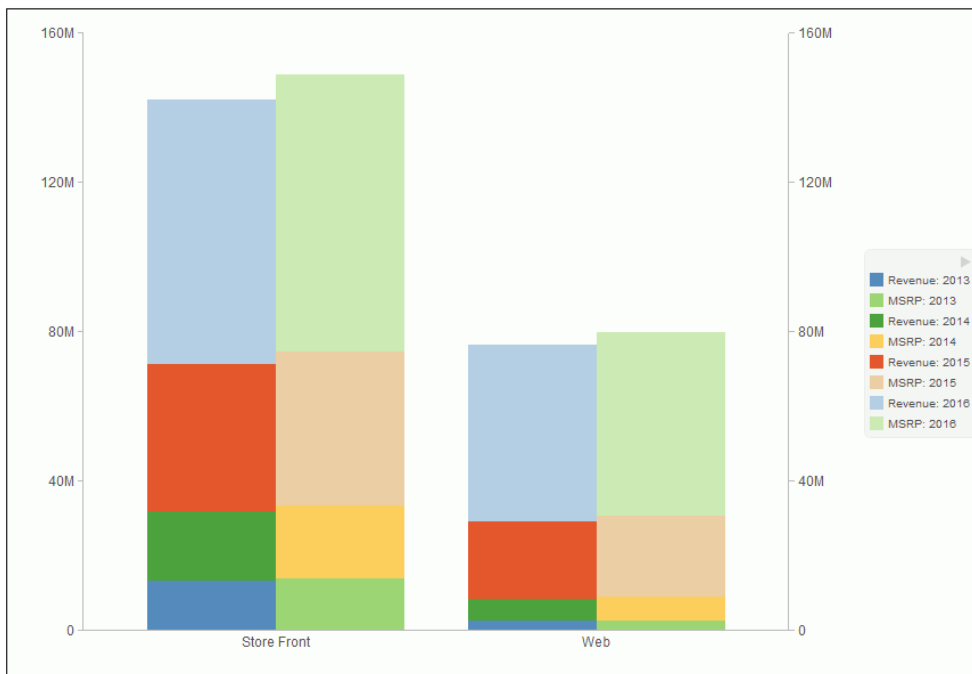
XY Plot Charts

An XY plot chart depicts the relationships among the numeric values in several data series. It plots two groups of numbers, where for every X value, there is a corresponding Y value. This results in a single point of XY coordinate.

When to use: Use XY plot charts when you have two sets of numbers to compare and want to perform trend analysis.

❏ **Scatter.** Scatter charts show a relationship between X and Y values. They compare two sets of numbers at once, possibly revealing patterns and trends.

You can plot data using variable scales on both axes. When you use a scatter chart, the data is plotted with a basic line pattern so that you can visualize the density of individual data values around particular points, or discern patterns in the data. A numeric X axis, or sort field, always yields a scatter chart by default.

If your chart reveals clouds of points, there is a strong relationship between X and Y values. If data points are scattered, there is a weak or no relationship.

Scatter charts share many of the characteristics of basic line charts. Scatter charts and line charts are distinguishable from one another only by virtue of their X-axis format. Line charts can appear without connecting lines, making them look like scatter charts, and scatter charts can appear with connecting lines, making them look like line charts.

❏ **Polar.** A polar chart is a circular chart. Data is displayed on a polar chart in terms of values and angles. Polar charts share characteristics with scatter charts. Only one column field is allowed, in the following order: X (degree) for the column field, and Y (distance from the center) for the Across or By field.

❏ **Bubble.** A bubble chart is a chart in which the data points are represented by bubbles. Bubble charts can have two column fields representing X and Y data values, or have three column fields representing X, Y, and Z data values, in that order. The third variable (Z) represents size. The size of each bubble is used to show the relative importance of the data.

Note: You can specify a non-measure (dimension) data field on the horizontal or vertical axis, or both.

XY Plot Chart Types

The following table lists the available XY plot chart types.

Available XY Plot Chart Types	
XY Scatter	XY Polar
Bubble	

3D Charts

A 3D chart uses three axes, X, Y, and Z to display data from two or more data sets so that trends are most apparent.

When to use: Use a 3D bar chart when you want to look at the general shape of the data, but add visual depth to a chart presentation. A 3D chart would not be a good choice for presenting exact values, since it is difficult to determine values in a 3D chart.

Note: When working with charts in HTML5 format, the 3D Effect option is not supported.

The following image is a 3D chart that shows the revenue for products categories over a four-year time period.
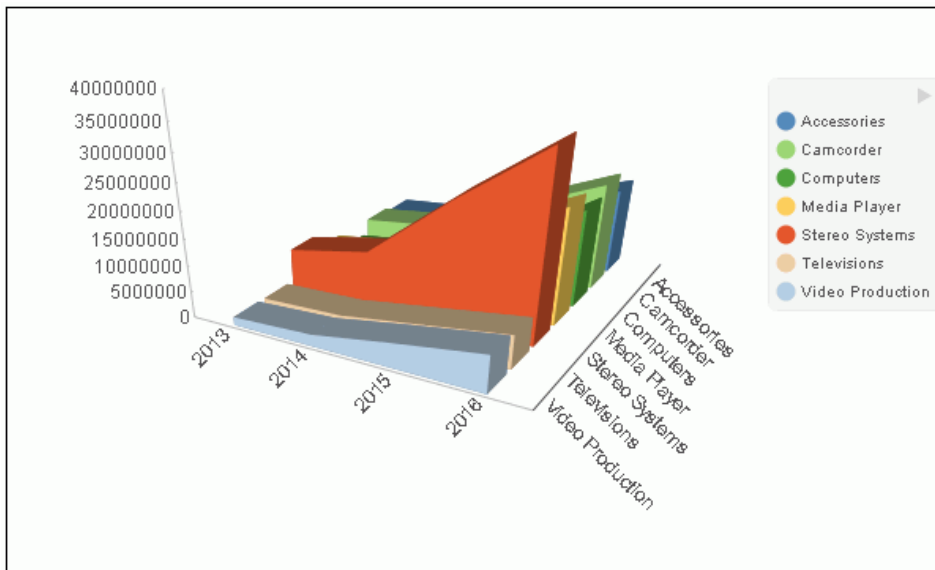
3D Chart Types

The following table lists the available 3D chart types.

Available 3D Chart Types	
3D Bar	3D Pyramid (Not in HTML5)
3D Octagon (Not in HTML5)	3D Cylinder (Not in HTML5)
3D Floating Cubes (Not in HTML5)	3D Floating Pyramids (Not in HTML5)

Available 3D Chart Types

3D Connected Series Area	3D Connected Series Ribbon
3D Connected Group Area	3D Connected Group Ribbon
3D Cone (Not in HTML5)	3D Sphere (Not in HTML5)
3D Surface	3D Surface with Sides (Not in HTML5)
3D Smooth Surface (Not in HTML5)	3D Smooth Surface with Sides (Not in HTML5)
3D Honeycomb Surface (Not in HTML5)	

Stock Charts

Stock charts track the trend of a particular stock. They show the trading volume of the stock, its opening and closing values, and its high and low values over a specific time period. The data is represented by sets of bars or lines.
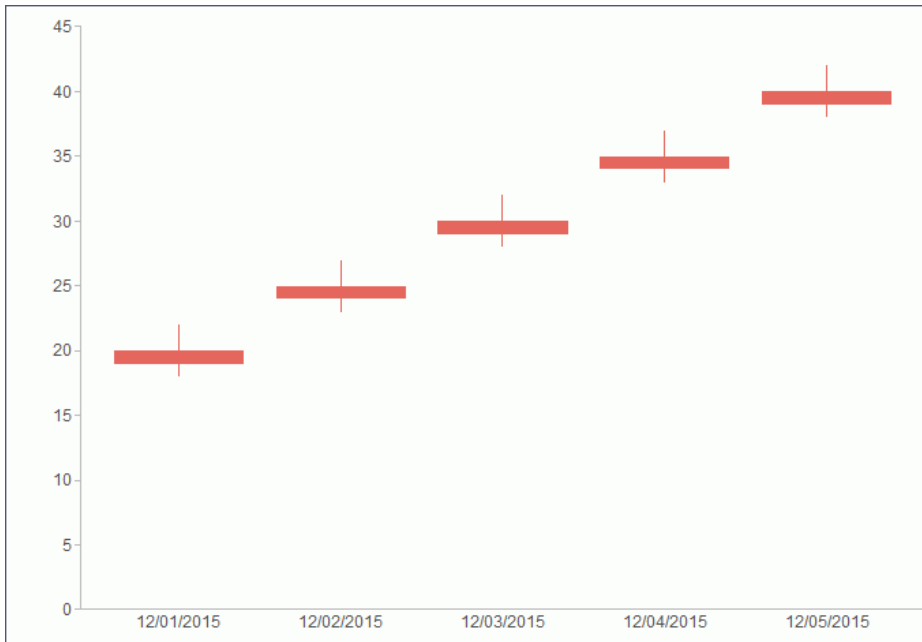
Stock Chart Types

The following table lists the available stock chart types.

Available Stock Chart Types	
Stock Hi-Lo (Not in HTML5)	Stock Hi-Lo with Volume (Not in HTML5)
Stock Hi-Lo Open-Close (Not in HTML5)	Stock Hi-Lo Open-Close with Volume (Not in HTML5)
Open-Hi-Lo-Close Candle Stock	Open-Hi-Lo-Close Candle Stock with Volume (Not in HTML5)

Special Charts

Special charts include a variety of additional chart types.

❏ **Gauge.** A gauge chart indicates the current position of a single data value within a given spectrum. This chart has a circular shape.

❏ **Gauge Thermometer.** A gauge thermometer chart indicates the current position of a single data value within a given scale. This chart has the shape of a thermometer. It is not available in HTML5.

❏ **Pareto.** A Pareto chart uses the X axis to show group members, and the Y axis to show the percent of the total of all groups that each group represents. This chart highlights the differences between groups of data.

❏ **Vertical Box Plot.** A vertical box plot is oriented vertically, and shows the distribution of data through five-number summaries: Upper limit, Upper Quartile, Median, Lower Quartile, and Lower Limit. This chart can be represented with or without outliers, also known as whiskers.

❏ **Horizontal Box Plot.** A horizontal box plot is oriented horizontally, and shows the distribution of data through five-number summaries: Upper limit, Upper Quartile, Median, Lower Quartile, and Lower Limit. This chart can be represented with or without outliers, also known as whiskers.

❏ **Funnel.** A funnel chart is essentially a pie chart, displaying only one group of data at a time, from the first series to the last series at the bottom of the funnel.

❏ **Pyramid.** A pyramid chart is essentially a pie chart, displaying only one group of data at a time, from the first series to the last series at the top of the pyramid.

❑ **Spectral Map.** A spectral map contains a row or column matrix of markers that are displayed in different colors, according to the data values.

HTML5 Charts

The following HTML5 charts are available:

❑ **Parabox.** Parabox charts are used to visualize and analyze multivariate data. In a typical scenario, hundreds of possible outcomes can be compared by filtering along any dimension.

❑ **Mekko Chart.** Mekko charts compare two related variables by percent of total and magnitude. They are popular in business and marketing.

❑ **Streamgraph.** Streamgraph charts are typically used to illustrate how data has changed over time. They resemble a stacked area chart. However, the x-axis is not fixed. Streamgraphs are commonly used to illustrate trends in the Social Media arena.

❑ **Tag Cloud.** Tag Cloud charts display the most prominent terms in a visual representation for text data. They are noted for their quick display of relevant information, allowing you to make quick decisions and narrow your search for terminology. Tag Cloud charts are typically used to depict keywords on websites or to visualize free form text.

❑ **Treemap.** Treemap charts are used to display large amounts of hierarchically structured data. In a sectioned format, each rectangle represents an aspect of the selected measure. When a second measure is indicated, color coding is applied, emphasizing the unique sections of the treemap.

❑ **Grid.** Grids present data in tabular form. For example, in Chart mode, you can use the Grid chart type to create a table that summarizes your data. This option is also available in Visualization mode.

Combination Charts

A combination chart displays multiple series using two or more different types of data graphics from a bar, line, or an area chart. Combining these charts improves clarity in the presentation of your data, and highlights the relationship between various data sets on one graph. This combination chart is referred to as a mixed, composite, or overlay graph.

When to use: For example, a retailer might want to combine a vertical bar chart that shows revenue and discount with an area chart that shows cost of goods.
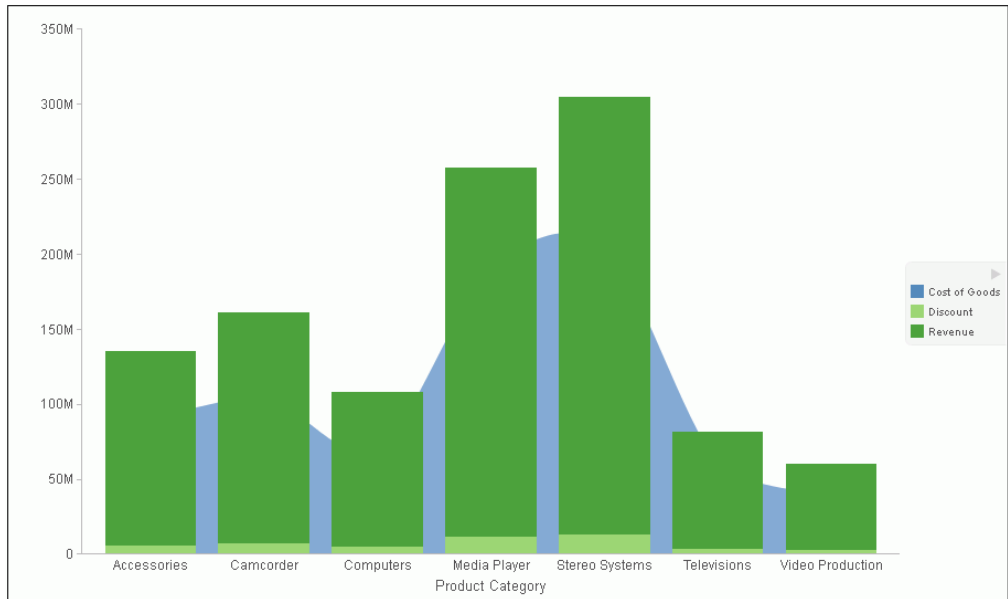
Maps

InfoAssist+ maps use Geographic Information System (GIS) capabilities to convert data values into maps that can be used for visualizing patterns or trends. This allows you to display your underlying data regionally. More specifically, data that is bound to a geo-location, such as State, Country, and ZIP Code, can be viewed as symbol layers integrated into a powerful map viewer.

InfoAssist+ maps also utilize the robust mapping capabilities of Esri, a mapping engine that enables the display of layered maps with extensive detail and topography.

The mapping functionality supports a variety of popular formats, such as bubble markers and heat-filled polygons (also known as choropleths). These map formats are described below.

❏ **Choropleth.** A geographically-based heat map. It is useful for visualizing location-based data, trends, and distributions across a geographic area.

❏ **Proportional Symbol (Bubble).** A technique that uses symbols of different sizes to represent data associated with different areas or locations within the map.

When to use: The mapping functionality enables business users to make informed decisions. They can also visualize patterns, trends, and relationships related to the location information in their data.

For information on maps, see *Creating Maps to Illustrate Trends* on page 345.

Creating Charts

On the *Format* tab, the *Chart Types* group provides buttons for each of the five most commonly-used chart types. These include Bar (default), Pie, Line, Area, and Scatter. You also have access to Esri Choropleth and Proportional Symbol maps. A button labeled Other gives you access to the complete chart library of advanced charts, including Lightweight (Leaflet) maps. For more information, see *Creating and Customizing Maps in InfoAssist+* on page 352.

The Chart Types group is shown in the following image.
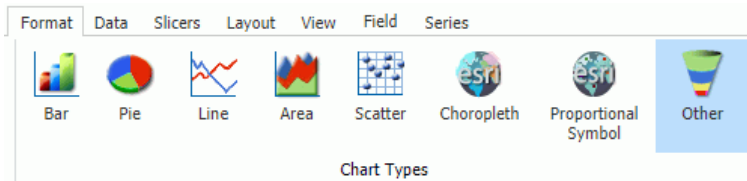
Note: For more information on how to invoke the version of InfoAssist+ that you are using, please see *Introducing InfoAssist+* on page 9.

When switching between chart formats that use a different syntax, you are prompted with a message that allows you to proceed with the change, or cancel your request. This message is shown in the following image.
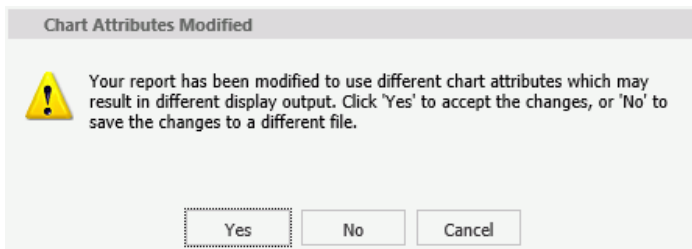
On the Chart Attributes Modified dialog box, you can click *Yes* to accept the changes or click *No* to save the changes to a different file and preserve the originating procedure (.fex).

Procedure: **How to Create a Basic Chart**

You can run this procedure in Query Design view or Live Preview.

1. On the *Format* tab, in the *Chart Types* group, click the button of the chart that you want to create. Bar chart is the default.

   The chart appears on the canvas.

2. Populate the chart with your data in one of the following ways:

   ❏ Drag the dimension fields and measure fields onto the chart.

   ❏ Drag the dimension fields and measure fields into the appropriate Query field containers in the Query pane.

Procedure: **How to Create an Advanced Chart**

You can run this procedure in Query Design view or Live Preview.

1. On the *Format* tab, in the *Chart Types* group, click *Other*.

   The Select a chart dialog box opens. The chart types, depicted by icons, display on the left side of the dialog box.

2. To display the name of a chart type, hover over the chart type with the mouse.

   From top to bottom, the chart type categories are Bar, Line, Area, Pie, XY Plots, 3D, Stock, Special, HTML5, Map, and HTML5 Extension.

   Note:

   ❏ For streamgraphs, which are in the HTML5 category, the tooltip has been enhanced to display specific information, by data point, depending on the underlying data source.

   ❏ HTML5 Extensions are chart types developed outside of Web Query and made available to InfoAssist+.

3. In the left pane, click a chart type.

   All supported variations of the chart type appear as thumbnail images in the dialog box.

4. Click an image to display a detailed description of that chart type.

   If you are not familiar with a chart type, be sure to read the description carefully before finalizing your selection. Some chart types require a certain number of data values, or a certain type of data values. If your data does not satisfy the requirements, the chart will not accurately represent the data.

In the following image, the Pie chart type is selected. To the right, the dialog box displays thumbnail images of the chart variations that are supported. Once a selection is made, a description for that chart appears underneath.
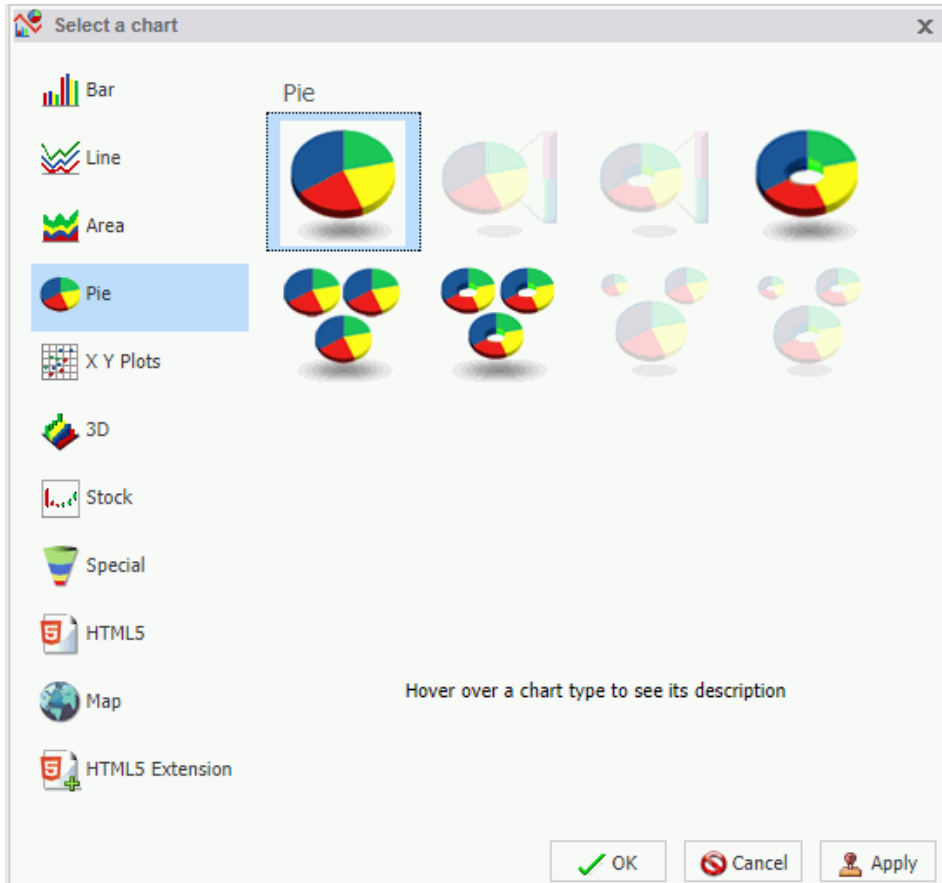
You can also hover over an image with your mouse to display the chart type name.

5. In the Select a chart dialog box, click *OK* to finalize your selection and close the dialog box.

6. Populate the chart with your data in one of the following ways:

    ❏ Drag the dimension fields and measure fields onto the chart.

    ❏ Drag the dimension fields and measure fields into the appropriate Query field containers in the Query pane.

Procedure: **How to Create a Combination Chart**

You can run this procedure in Query Design view or Live Preview.

1. On the *Format* tab, in the *Chart Types* group, click the button of the chart that you want to create. Bar chart is the default.

   The chart appears on the canvas.

2. Populate the chart with your data in one of the following ways:

   ❏ Drag the dimension fields and measure fields onto the chart.

   ❏ Drag the dimension fields and measure fields into the appropriate Query field containers in the Query pane.

3. Change a series type in one of the following ways:

   ❏ **Ribbon:** On the *Series* tab, in the *Select* group, select the series that you want to display in a different chart type. Then, in the Properties group, from the Type drop-down menu, select the chart type.

   ❏ **Shortcut Menu:** On the canvas, right-click the series that you want to display in a different chart type, point to *Series Type*, and click the chart type.

   The series appears in the new chart type.

Procedure: **How to Create a Dual-Axis Chart**

When you create a dual-axis chart, you assign one data series to the Y1 axis and another data series to the Y2 axis.

Note: This applies to charts in HTML format. If you are creating a dual-axis chart in HTML5 format, the field containers are labeled Vertical Axis 1 and Vertical Axis 2. If your chart is horizontal, the field containers are labeled Horizontal 1 and Horizontal 2.

1. Create a chart.

2. On the *Format* tab, in the *Chart Types* group, click *Other*.

   The Select a chart dialog box opens.

3. Select a dual-axis chart, such as dual-axis bar, and then click *OK*.

4. Drag one field onto the Y1 field, and then drag another field onto the Y2 field.

Procedure: **How to Create a Multi-Axis Chart**

When you create a multi-axis chart, you assign one data series to the Y1 axis and another data series to the Y2, Y3, Y4, and Y5 axes (as needed).

Note: This procedure is specific to HTML format.

1. Create a chart.
2. On the *Format* tab, in the *Chart Types* group, click *Other*.

   The Select a chart dialog box opens.
3. Select a multi-axis chart, and then click *OK*.
4. Drag fields into the Y1, Y2, Y3, Y4, and Y5 fields, as needed.

Chart Outputs

You can create charts using one of the following output formats:

❏ HTML

❏ HTML5 (default)

❏ active report

❏ PDF

❏ active PDF

❏ Excel

❏ PowerPoint

The HTML5 output format allows you to render a chart in the browser using a built-in JavaScript engine. Charts with this output format utilize the very latest capabilities of the HTML5 Web standard, including animation, high-quality vector output, and attractive alpha-channel and gradient effects.

Note: Not every chart type can be output in every format listed here. To make sure that the chart that you are creating can be output in the format that you want, please see the topic for that particular chart type.

Binning

Binning is a powerful tool for analyzing your data using ranges that you define.

Binning enables you to determine the frequency of values across the entire range of values. It is used for analyzing a frequency distribution. With binning, you can create discrete buckets of continuous data that control how groups of your data display. In addition, binning gives you the ability to review trends and spot outliers.

For example, you can review the range of expenses incurred by households. In the following example, these ranges are represented by bins that are grouped by $1000. In this case, you can see that the largest number of households had the smallest expense (16) while the trend declines as the bin size gets larger. With binning, you can see the frequency of how often values in a range appear across the different groupings, as shown in the following image.
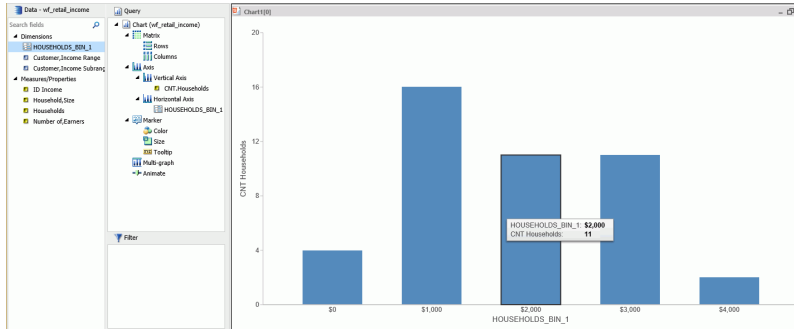
In InfoAssist+, bins are automatically created for Histograms. You can change the size of your bins to meet the requirements of your data. For example, if your data has very large values (for example, in billions) you might want to create larger bins. You can also create bins manually in Vertical bar charts and reports.

Note: When creating a bin, the format of the bin and the value set for the Width of Bins must be compatible. If the Width of Bins is a large decimal value, define the field format to match the format of the field being converted so that the bins can be successfully generated with the appropriate numeric precision.

Binning is available for the different output types, including reports, charts, and visualizations, depending on how you choose to display and analyze your data.

Procedure: How to Use Binning in a Vertical Bar Chart

1. Open InfoAssist+ in Chart mode.

2. In the Query pane, right-click the chart component and change Sum to Count, as shown in the following image.
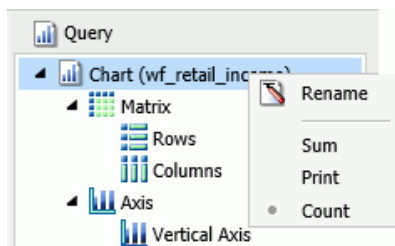
3. Add a measure, such as Households, to the Vertical Axis field container.

4. From the Data Pane, right-click the same measure and click *Create Bins*.

5. In the Create Bins dialog box, accept the default bin value and click *OK*.

6. From the Data pane, drag the bin into the Horizontal Axis field container.
   The chart displays showing the bins along the x-axis, as shown in the following image.
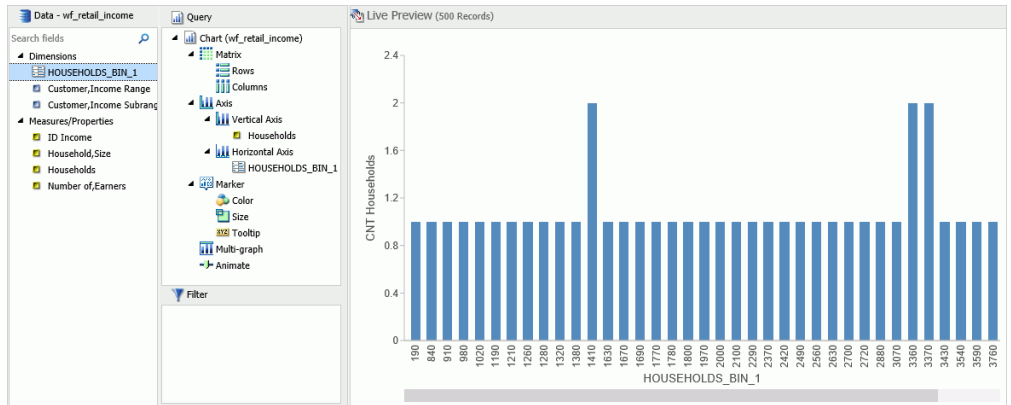
7. Save the chart.
   You can edit the bin size to meet your requirements for grouping and display.

Procedure: **How to Edit an Existing Bin**

1. Open a report, chart, or visualization that contains a bin.

2. From the Dimensions group, in the Data pane, right-click the existing bin and click *Edit Bins*.
   The Edit Bins dialog box opens, as shown in the following image.
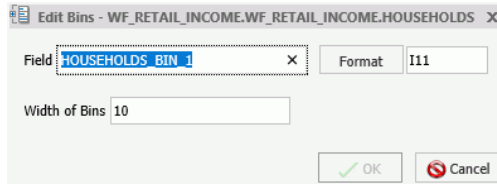
Note: If you are working with a report, chart, or visualization where the bin is specified and therefore displays in the Query pane, the position of the Edit Bins field in the shortcut menu appears in a different location.

3. Optionally, change the name of the field for the bin, and click *Format* to edit the formatting that you want to change (for example, currency).

4. In the Width of Bins field, specify a value that meets your display requirements.

5. Click *OK*.

Procedure: **How to Create Bins for Reporting**

You can create bins in reports, which lets you view the detail behind a chart or histogram. You can optionally switch between report and chart as you perform your analysis. This allows you to review the actual values that fall into each bin.

1. Create a report.

2. In the Query pane, on the Report component, change Sum to Print, as shown in the following image.
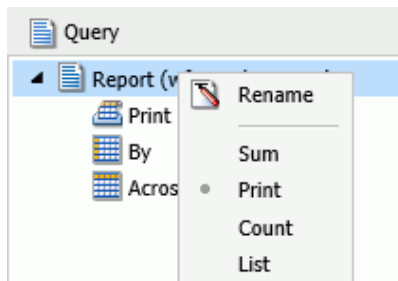
3. Right-click the measure on which to bin, and click *Create Bins*.

4. In the Create Bins dialog box, set the width of the bins and change any formatting options (for example, currency).

5. Click *OK*.

6. In the Data pane, double-click the bin to add it to your report.

The report displays showing the bin assignments per value, as shown in the following image.

7. Optionally, you can change the Print and By field assignments to view the Households values by bin, as shown in the following image.

Binning Values in a Histogram

Histograms graphically represent the distribution of numeric data. They facilitate the identification and discovery of the underlying frequency distribution within a set of continuous data. You can use histograms to identify trends and illustrate categorizations, or groupings, also known as bins. For more information, see *Binning* on page 128.

Histograms use bins to group data. Bins allow you to establish a range of values for your data. For example, you can review how the bins are designated when you consider the age of everyone in your company. In the first table, you can review the bins (using the default value of 10) and counts for each bin.

AGE	COUNT
0-9	0
10-19	5

AGE	COUNT
20-29	26
30-39	351
40-49	460
50-59	310
60-69	285
70-79	22
80-89	3
Total	**1462**

In the second table, you can review the same data for the bins (with a bin width of 15) and counts for each bin. Notice that as the bin size gets larger, more employees fall into these different ranges.

AGE	COUNT
0-14	0
15-29	31
30-44	611
45-59	510
60-74	296
75-89	14
Total	**1462**

When you create a histogram in either Chart or Visualization mode, a bin is created automatically for the measure you select. When working with bins, you can change the width of the bin by editing it. In the Query or Data pane, right-click a bin field and click *Edit Bins* to change the value that dictates the width or format of the contents of the bin.

The bin value is designated as a dimension field, since it is a limited field with a discrete set of possible values that was created from a field with an unlimited, continuous range of values. The measure displays as a count (.CNT) field and the related bin is created in the Query pane. It is also placed in the Data Pane for future use.

Procedure: **How to Create a Histogram with Automatic Binning in Chart Mode**

1. Open InfoAssist+ in Chart mode.

2. On the *Format* tab in the *Chart Types* group, click *Other*.

3. In the Bar group of charts, click *Vertical Histogram*.

4. Click *OK*.

5. From the Data pane, drag a measure into the Measure field container in the Query pane. A histogram is automatically created using the measure you selected along with a generated bin, as shown in the following image.
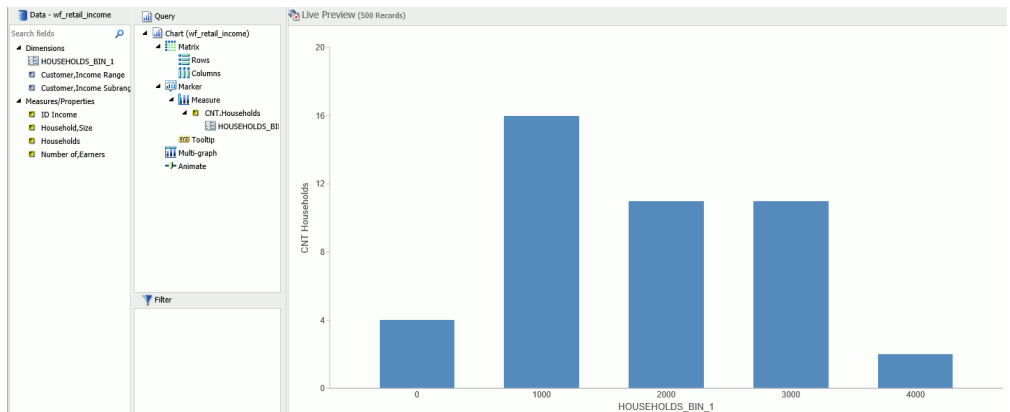
Note: This process produces the same results as if you had created the histogram manually, however it automatically converts the measure to a count (.CNT) field. It also creates the bin for you, placing it on the x-axis, accordingly.

Procedure: **How to Create a Histogram with Automatic Binning in Visualization Mode**

1. Open InfoAssist+ in Visualization mode.

2. On the *Home* tab, in the *Visual* group, click *Change*.

3. In the Select a Visual dialog box, click *Histogram*.

4. From the Data pane, drag a measure into the Measure field container in the Query pane.

A histogram is automatically created using the measure you selected along with a generated bin, as shown in the following image.
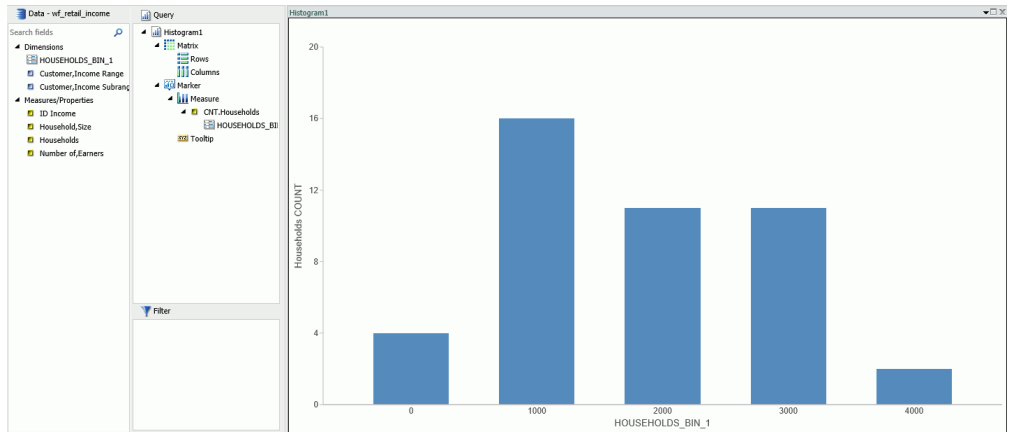
You can optionally edit the bin to change its width or format. For information on building a histogram manually, in Chart mode, see *Binning* on page 128.

Accessing Chart Formatting Tools

Your presentation of data on a chart is successful when it communicates to your audience the message that you intend. InfoAssist+ helps you meet the needs of your audience and convey your message by providing numerous chart features. For example, you can adjust the appearance of a chart, add layers of information, or customize the labels that identify the data on the chart.

Using Live Preview

In Live Preview, the canvas on the right of the window provides a preview of the report or chart content that you can interact with. Live Preview enables you to see your changes as you make them. You can access more detail by running your report or chart.

In the following image, the legend displays on the right side of the canvas.
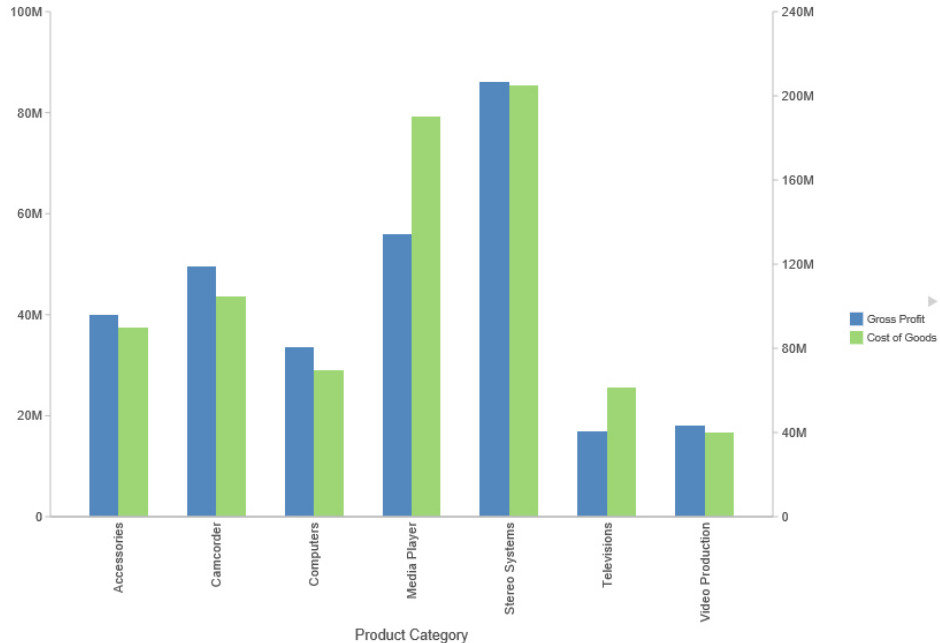
In Live Preview, when you select a graph element (for example, legend, axis label, title), the bounding area is highlighted with a solid line.

Once you select a chart element, you can access all available design options on the ribbon, or you can right-click an element to open a shortcut menu of frequently-used design options. Once you have selected your design option from the ribbon or the menu, InfoAssist+ instantly applies it to the chart element, so that you see the result immediately.

Shortcut menus are enabled for charts that are generated with either sample data, or live data from your data source.

The following sections describe the chart elements and the ribbon options that you can work with to design your charts in Live Preview.

Related Information:

❏ *Using Shortcut Menu Options in the Query Pane* on page 53

❏ *Using Field Containers* on page 45

Formatting a Series

A series is a measure field that is included in a chart. You can format a series in a variety of ways. For example, you can change the color of a series, add a trendline to a series, or change the appearance of markers on a series.

You can access the full set of formatting options on the Series tab and Field tab. For more information, see *Series Tab* on page 35 and *Field Tab* on page 34.

You can also access a subset of frequently-used options by right-clicking a series element on a chart to open a menu of those options.

Tip: The options that you see on the menu depend on the type of chart that you are creating. For example, the Series Type option would not appear on the menu for a pie chart, but it would appear for a bar, line, and area chart.

Associated Dialog Boxes

Whether you access series options from the ribbon or the shortcut menu, you are presented with a dialog box of options. The following dialog boxes are commonly used for formatting a series:

❑ Format Series

❑ Edit Title

❑ Traffic Light Condition

For Instructions on how to open these dialog boxes, see the procedures in *Using Series Properties* on page 146.

Format Series Dialog Box

The Format Series dialog box contains options to format the fill and border of each series on a chart. To access this dialog box, on the *Series* tab, in the *Style* group, click *Style*.

The Format Series dialog box contains the following tabs:

❑ Fill

❑ Border

❑ Effect (for HTML5 charts only)

Use the Fill tab to modify the color of a chart series.

The Fill tab is shown in the following image.
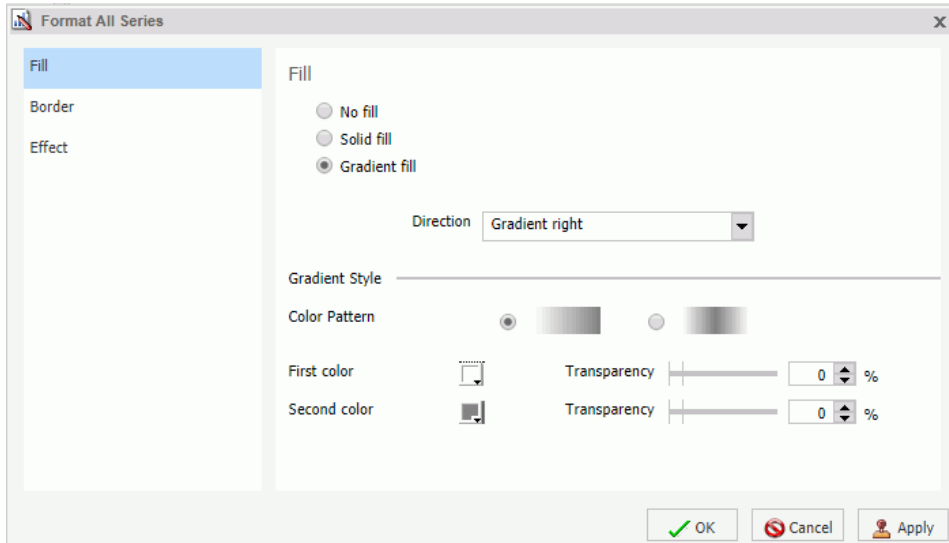
The Fill tab contains the following options:

❏ **No fill.** Select this option to remove the color from the series.

❏ **Solid fill.** Select this option to display the Color and Transparency options.

❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the series.

❏ **Transparency.** Move the slider to make the bands opaque (0%) or transparent (100%). The default is 0%.

❏ **Gradient fill.** Select this option to display the direction of the gradient, the color pattern of the gradient, and the degrees of transparency for the two colors that make up the gradient. A gradient is a smooth color transition or blending of one color to another. The number of colors to use in a gradient is defined by the *stop* or *pin* elements.

❏ **Direction.** Select from this drop-down menu to set the direction of the gradient fill. For example, Gradient right or Gradient left.

Use the Border tab to specify a border for a chart series.

The Border tab is shown in the following image.
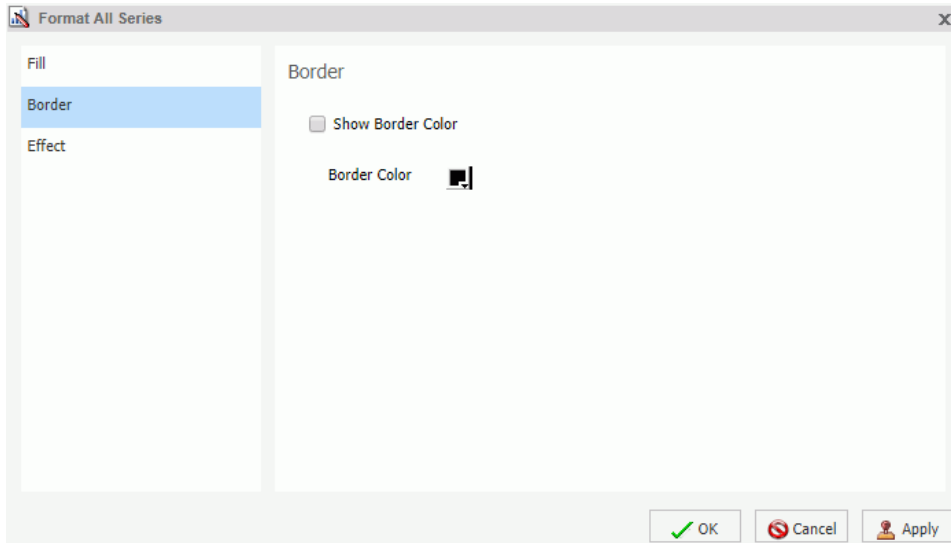
The Border tab contains the following options:

❑ **Show Border Color.** Select this option to show a border color around each series.

❑ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border.

Use the Effect tab to specify styling and shadowing options for HTML5 charts.

The Effect tab is shown in the following image.
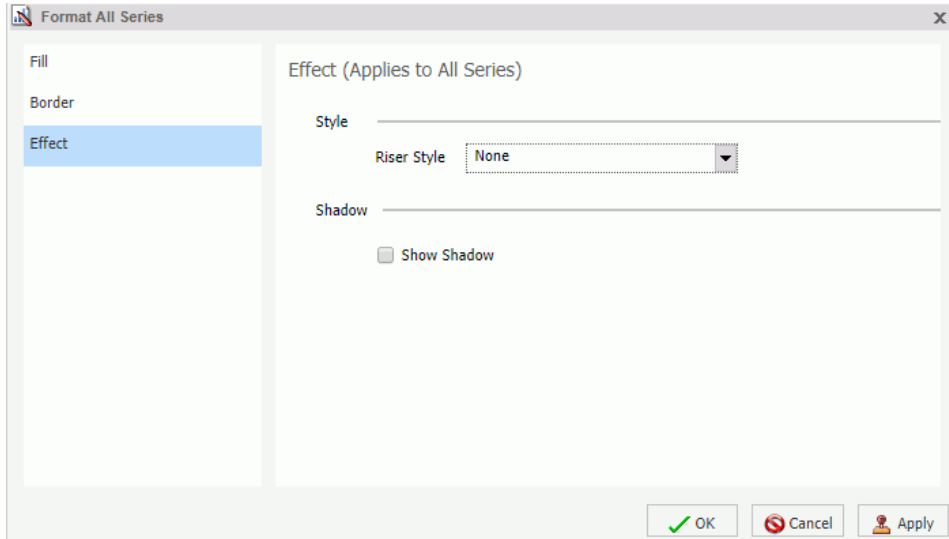
Note: This tab only displays when working with HTML5 charts.

The Effect tab contains the following options:

❑ **Riser Style.** Use this drop-down menu to select a riser style. Options include: None, Bevel, Cylinder, Darken, Inverted Darken, Lighten, and Inverted Lighten.

❑ **Show Shadow.** Select this option to set a shadow.

Edit Title Dialog Box

To edit the title of a series, right-click a series on the canvas, and click *Change Title*. The Edit Title dialog box contains a text field in which you can type the title for a series on a chart. Click *OK* and the title appears on the chart.

If you have specified an amper (&) variable in your title while working in Live Preview, _FOC_NULL displays to indicate that an amper variable that has not been evaluated. It indicates that the value will be evaluated at run time.

Traffic Light Condition Dialog Box

The Traffic Light Condition dialog box contains fields for adding new conditional styling or modifying existing conditional styling by applying a traffic light color to the selected field.

The Traffic Light Condition dialog box is shown in the following image.
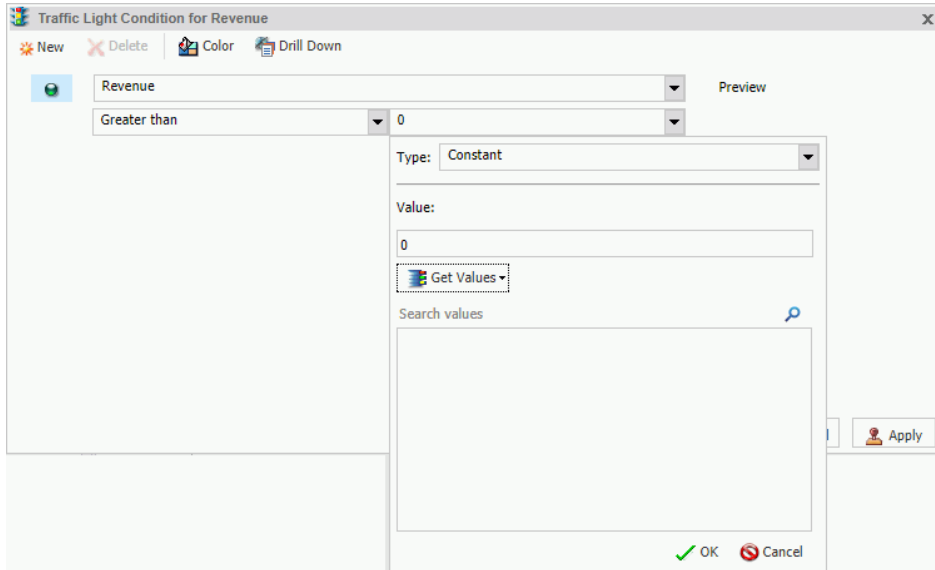
The Traffic Light Condition dialog box contains the following fields.

❑ **Relational Operators.** Select from this drop-down menu to set the relational operator. For example, Equal to.

❑ **Type/Value.** Click this unlabeled field to open a dialog box that contains the following fields:

   ❑ **Type.** Opens a drop-down menu of the following values Constant and Field. Select *Constant* to enter a constant value. Select *Field* to open a visual display of the fields in your data source.

   ❑ **Value:** Enables you to specify a value based on the Type that you select.

   Note: If you are creating a Traffic Light condition on a full date field, the Value field will have a calendar icon adjacent to it. You can use this icon to select a date using a calendar control.

   ❑ **Get Values.** Select a value option from this drop-down list. For example, All or First.

The Traffic Light Condition dialog box contains the following buttons:

❑ **Selected Condition.** Click this icon to select a condition to work on.

❑ **New.** Creates a new rule.

❑ **Delete.** Deletes a rule.

❑ **Color.** Opens the Color dialog box.

❑ **Drill Down.** Opens the Drill Down dialog box, where you can drill down to a webpage or a URL using Multi Drill functionality. Specify the following:

 ❑ URL of the webpage or location of the report

 ❑ An alternate comment

 ❑ Target (New Window, Same Window, a value that you enter)

 ❑ Parameters that you want to use (Name, Value)

Note: In InfoAssist+, when the output destination is set to Single Tab or New Tab, the drilldown target cannot be displayed in the Same Window so a new window will be generated. When the report is run outside of InfoAssist+ the Same Window setting will be respected.

Series Elements Shortcut Menu

When you right-click a series, a menu of options opens. The menu contains options that are available on the Field and Series tabs.

The menu options are described in the following table. The table provides links to the sections of this document in which those options are also discussed.

Option	Description
Filter Values	Enables you to create or modify a WHERE statement, using the Filter dialog box. With a WHERE statement, you select only the data that you want to display, and exclude unwanted data. For information on filtering your data, see *Data Tab* on page 30 and *Field Tab* on page 34.
Sort	Enables you to sort the series in either ascending or descending order.

Option	Description
Visibility	Controls the display of the selected series (field) on a chart. The value Hide suppresses the display of the series, and the default value Show displays the series.

For instructions, see *How to Hide a Field in a Series* on page 151. |
| Change Title | Enables you to edit the title of the selected series. In the Edit Title dialog box, type the new title in the Enter Title field, and click *OK*.

For instructions, see *How to Change the Title of a Series* on page 155. |
| Edit Format | Enables you to change the format of a field. This includes field type, display options, field length, and the specification of applicable decimal points. For more information, see *Changing a Field Format* on page 87.

Note: Any changes to the format of a field will be reflected in the tooltip for charts at run time, as well as for visualizations at design and run time. |
| Series Type | Changes the chart type of the selected series to bar, line, or area. The option None (default) returns the series to the chart type that was in effect before you changed it. This option applies to bar, line, and area chart types only.

For instructions, see *How to Change the Type of a Series* on page 147. |
| Series Color | Enables you to specify the color of the selected series, using the Color dialog box. For more information, see *Using the Color Dialog Box* on page 335. |
| More Style Options | Opens the Format Series dialog box. For more information, see *Format Series Dialog Box* on page 138. |

Option	Description
Data Labels	Controls the display of data labels (values) on the selected series. The default value Hide suppresses the display of labels, and the value Show displays labels. This option does not apply to the gauge chart type. For instructions, see *How to Show and Hide Data Labels* on page 165.
Color Mode	Controls how color is applied to a series (measure field) on a chart. The possible settings are By Series (default) and By Group. For example, assume that there is only one series on a sample bar chart. The By Series setting applies the same color to all the bars in the series. The By Group setting applies a different color to each bar. For instructions, see *How to Control the Color Mode* on page 156.
Add Trendline	Draws a line on a chart to indicate a statistical trend. This option does not apply to the pie, funnel, 3D, gauge, or stock chart type. For an example of a chart with a trendline, see *How to Add a Trendline* on page 147.
Drill Down	Opens the Drill Down dialog box, where you can configure a hyperlink or a drill-down procedure for the selected field. Clicking that field in the report output, at run-time, redirects you to the URL you specified or executes the indicated procedure.

Option	Description
More	Contains the Aggregation Functions, Traffic Light Conditions, and Missing options.
	Aggregation Functions assign an aggregation value to a numeric measure field in a report. For instructions, see *How to Display Aggregations on Measure Data* on page 152.
	Traffic Light Conditions enables you to specify the color of numeric measure fields in the output, depending on conditions that you set. You can use the Traffic Light Condition dialog box to specify the conditions and colors.
	For instructions, see *How to Apply Traffic Light Conditions With Drill-Down to a Numeric Measure Field (By Constant)* on page 153 and *How to Apply Traffic Light Conditions With Drill-Down to a Numeric Measure Field (By Field)* on page 154.
	The Missing option allows you to show or hide fields with no value.
Delete	Removes the selected series from the report and updates the Live Preview accordingly.

Using Series Properties

The following sections contain procedures for customizing a series.

Procedure: **How to Select a Series**

1. Create a chart.

2. On the *Series* tab, in the *Select* group drop-down menu, select the Series that you want to customize.

   The Series appears in the drop-down menu field.

Procedure: **How to Format the Fill and Border of a Series**

1. Create a chart.

2. Open the Format Series dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Series* tab, in the *Style* group, click *Style*.

❏ **Shortcut Menu:** Right-click a series on the chart, and click *More Style Options*.

The Format Series dialog box opens.

3. Use the fill and border options to format the series.

For more information, see *Format Series Dialog Box* on page 138.

4. Click *OK* to close the dialog box.

The Format Series dialog box closes. The series fill and border are formatted accordingly.

5. Click *Run* to generate the report.

Enhancing Series Using the Series Tab

The Properties group contains commands for enhancing charts, such as changing the type or adding a trendline, for the selected series.

Procedure: **How to Change the Type of a Series**

1. Create a bar, line, or area chart.

2. Access the list of series types in one of the following ways:

❏ **Ribbon:** On the *Series* tab, in the *Properties* group, open the *Type* drop-down menu.

❏ **Shortcut Menu:** Right-click a series on the chart, and point to *Series Type*.

3. Select the type that you want the series to become.

The chart contains the new series type.

Procedure: **How to Add a Trendline**

A trendline is a line that is drawn over the plot area of a chart or visual to show the pattern of data points. The pattern reveals a statistical trend. In particular, the slope of the trendline, which is calculated by subtracting and dividing two different x, y coordinate values, is a value that indicates the rate at which the y value of a line rise or falls as the x value increases. Once the slope of your chart or visual is determined, you can further extrapolate your results and gain further insight into your data.

Note: The mathematical equation for the selected trendline option is only available in Chart mode. It is not available in Visualization mode.

1. Create a chart or visual.

2. Access the menu of trendline types in one of the following ways:

❏ **Ribbon:** On the *Series* tab, in the *Properties* group, open the *Trendline* drop-down menu.

❏ **Shortcut Menu:** Right-click a series on the chart or visual, and point to *Add Trendline*.

3. Select the type of trendline that you want to display.

The trendline appears on the canvas.

4. Optionally, to display the mathematical equation for the selected trendline option, on the *Series* tab, in the *Properties* group, click *Equation*.

The following image shows a trendline that appears with the Linear option.
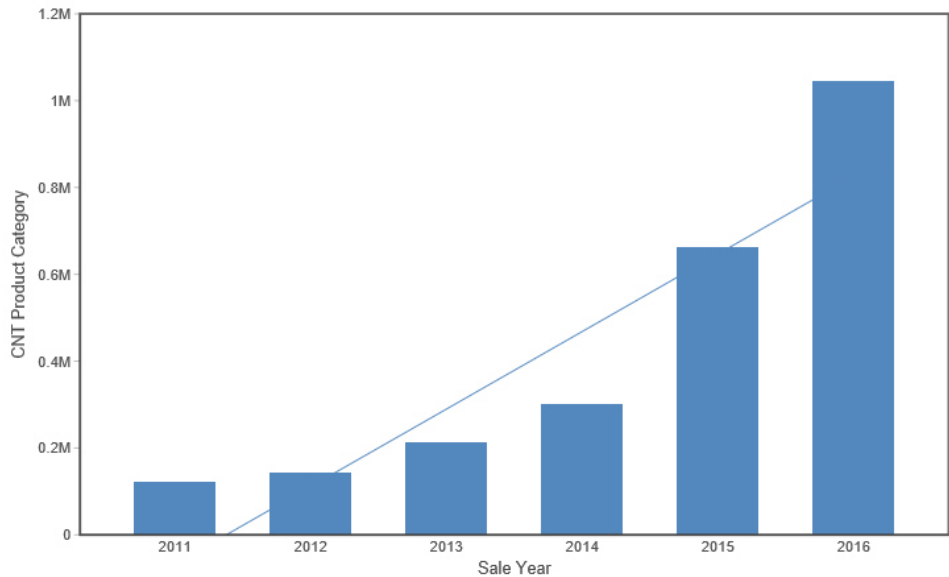
Formatting Charts Using the Series Tab

The Series tab contains options for formatting charts.

Procedure: **How to Apply Smooth Line Effect to a Line Chart**

1. Create a line chart.

2. Select a series on the line chart.

3. On the *Series* tab, in the *Line* group, click *Smooth Line*.

The Smooth Line effect is applied to the series.

Procedure: **How to Hide a Series Line Between Markers**

Lines appear between markers by default.

To hide a series line between a marker:

1. Create a line chart.

2. Select a series on the line chart.

3. On the *Series* tab, in the *Series* group drop-down menu, select the series that you want to hide.

4. In the Line Group, click *Connect Lines*.

    The series line between the markers disappears.

    To make the series line reappear, click *Connect Lines* again.

Procedure: **How to Change the Appearance of a Marker**

Markers are used to display points of data on a line chart. They are also used in the legend to identify the data that is on the chart. The different marker shapes distinguish one series from another.

1. Create a line chart.

2. Select a series on the line chart.

3. On the *Series* tab, in the *Line* group, click *Marker* to open a drop-down menu of options.

4. From the Marker drop-down menu, select the marker shape. For example, Diamond or Hourglass.

    The markers are formatted.

The following image shows a triangle marker for gross profit data and a star marker for revenue data.
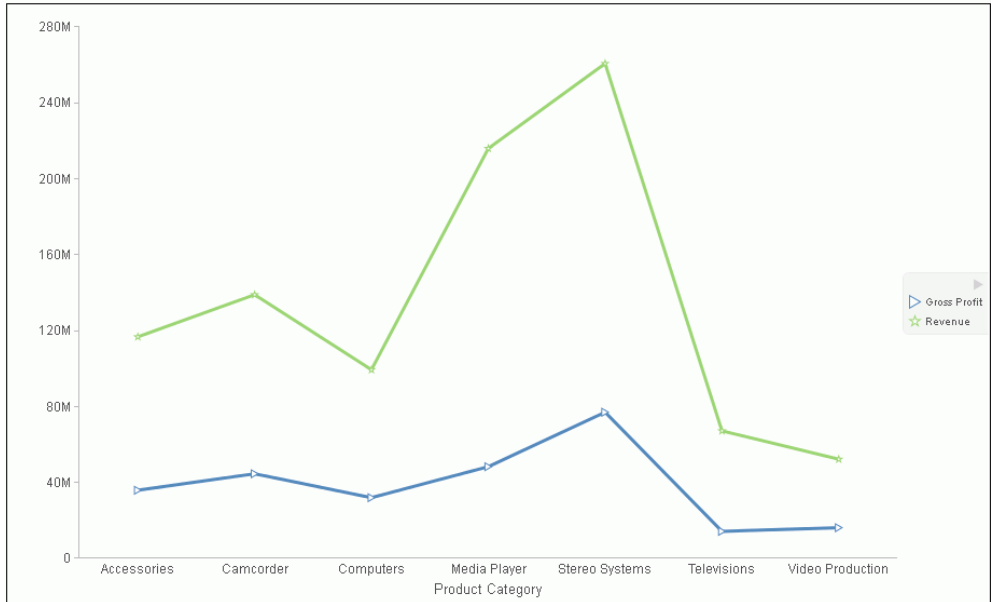
Procedure: How to Expand Pie Slices

1. Create a pie chart.

2. On the *Series* tab, in the *Select* group, from the drop-down menu, select one of the following:

   ❏ *All Series* expands all slices out from the center of the pie.

   ❏ A specific series expands that particular slice out from the center of the pie.

3. In the Pie group, click *Expand*.

   The pie expands accordingly.

Procedure: How to Hide a Pie Slice

1. Create a pie chart.

2. On the *Series* tab, in the *Select* group, from the drop-down menu, select the series that you want to hide. Then, in the Pie group, click *Hide*.

   The slice is hidden.

Procedure: **How to Filter Values in a Series**

1. Create a chart.

2. Select a series on the chart.

3. Open the Filter dialog box in one of the following ways:

    ❏ **Ribbon:** On the *Field* tab, in the *Filter* group, click *Filter*.

    ❏ **Shortcut Menu:** Right-click a series, and click *Filter Values*.

    The Filter dialog box opens.

4. Select values for values and prompts.

5. Click *OK* to close the dialog box.

    The series values are filtered.

Procedure: **How to Sort the Fields in a Series**

1. Create a chart.

2. Select a series.

3. Sort the series in one of the following ways:

    ❏ **Ribbon:** On the *Field* tab, in the *Sort* group, click *Up* to sort the series values from smallest to largest, or click *Down* to sort the series values from largest to smallest.

    ❏ **Shortcut Menu:** Right-click a series on the chart, and point to *Sort,* and then *Sort* again. Click *Ascending* to sort the series values from smallest to largest, or click *Descending* to sort the series values from largest to smallest. Select *Limit* to open a list of values to display for a sort group.

    The chart appears with the series sorted accordingly.

Procedure: **How to Hide a Field in a Series**

1. Create a chart.

2. Hide a field in a series in one of the following ways:

    ❏ Select the field in the Query pane.

    ❏ Right-click the field in the chart.

    ❏ **Ribbon:** Select the field in the Query pane or by right-clicking it in the chart. On the *Field* tab, in the *Display* group, click *Hide Field*. Click *Hide Field* again to make the series reappear.

❏ **Shortcut Menu:** Right-click a series in the Query pane, or in the chart, point to *Visibility*, and then click *Hide*. Right-click the same series, point to *Visibility*, and then click *Show* to make the series reappear.

The field is hidden.

Procedure: **How to Display Aggregations on Measure Data**

You can display numeric measure data using a variety of aggregation values.

For more information, see *Missing Data in a Chart*.

1. Create a chart.

2. Open the list of Aggregation options in one of the following ways:

   ❏ **Ribbon:** On the *Field* tab, in the *Display* group, click *Aggregation*.

   ❏ **Shortcut Menu:** Right-click a series, point to *More*, and then *Aggregation Functions*.

3. Select an aggregation function.

   The aggregation function is applied to the series.

   Note: If you change the Measure (Sum) Query field container in the Query pane from Sum to Print, Count, or List, the change overrides all assigned aggregation values.

Procedure: **How to Display Aggregations on Dimension (Non-Numeric) Data**

You can use various aggregations when working with dimension (non-numeric) fields in a chart, including Count, Count Distinct, and Percent of Count. The Count aggregation counts the number of occurrences of a field. Count Distinct counts the number of distinct values within a field. Percent of Count computes a field percentage, based on the number of instances found. When a dimension (non-numeric) field is placed in the Vertical Axis field container, it is converted to a Count field. You can subsequently change the aggregation to Count Distinct or Percent of Count.

1. Create a chart.

2. Convert a dimension (non-numeric) field into a Count field by placing it in the Vertical Axis field container.

3. Select the series on which to perform an aggregation.

4. Open the list of Aggregation options in one of the following ways:

   ❏ **Ribbon:** On the *Field* tab, in the *Display* group, click *Aggregation*.

   ❏ **Shortcut Menu:** Right-click a series, point to *More*, and then click *Aggregation Functions*.

4. Creating and Customizing Charts

5. Select an aggregation function.

   The aggregation is applied to the series.

Procedure: **How to Apply Traffic Light Conditions With Drill-Down to a Numeric Measure Field (By Constant)**

1. Create a chart.

2. Open the Traffic Light Condition dialog box in one of the following ways:

   ❏ **Ribbon:** In the Query pane, select a field, and then on the *Field* tab, in the *Display* group, click *Traffic Lights*.

   ❏ **Shortcut Menu:** Right-click a series on the chart, point to *More*, and then click *Traffic Light Conditions*.

   The Traffic Light Condition dialog box opens. For more information, see *Traffic Light Condition Dialog Box* on page 141.

3. From the Relational Operators drop-down menu below the field name, select a relational operator. For example, Equal to.

4. In the field to the right of the Relational Operators drop-down menu, click the down arrow for the Type drop-down menu.

   The Type dialog box opens.

5. In the Type dialog box, select *Constant*.

6. Enter a value in the Value field, or

   a. From the Get Values drop-down menu, select one of the following values All, First, Last, Minimum, Maximum, From File. The value that you select appears in the Get Values field.

   b. Select the value in the Get Values field. The value that you selected appears in the Value field.

7. Click *OK*.

   The value that you selected appears in the field to the right of the operator drop-down menu.

8. Click the *Color* button.

   The Color dialog box opens.

9. Select a color.

10. Click *OK*.

    The color appears in the Preview box.

11. Click the *Drill Down* button.

    The Drill Down dialog box opens.

12. In the Drill Down dialog box, specify each of the following:

    ❑ Drill down to a report or a webpage

    ❑ URL of the webpage

    ❑ An alternate comment

    ❑ Target (New Window, Same Window)

    ❑ Parameters that you want to use (Name, Value)

13. Click *OK* to close the dialog box.

14. Click the *New* button to set traffic light conditions for additional fields.

Procedure: **How to Apply Traffic Light Conditions With Drill-Down to a Numeric Measure Field (By Field)**

1. Create a chart.

2. Open the Traffic Light Condition dialog box in one of the following ways:

   ❑ **Ribbon:** In the Query pane, select a field, and then on the *Field* tab, in the *Display* group, click *Traffic Lights*.

   ❑ **Shortcut Menu:** Right-click a series on your chart, point to *More*, and then click *Traffic Light Conditions*.

   The Traffic Light Condition dialog box opens. For more information, see *Traffic Light Condition Dialog Box* on page 141.

3. From the Relational Operators drop-down menu below the field name, select a relational operator. For example, Greater than.

4. In the field to the right of the operator drop-down menu, click the arrow for the Type drop-down menu.

   The Type dialog box opens.

5. In the Type dialog box, select *Field*.

   The Type dialog box displays the Dimensions, Measures, and Properties of your data. You can display the data in the following ways:

   ❑ View fields in business order. Select from the following options: Title, Description, Name, or Alias.

❏ View fields in a sortable grid. Select from the following options: Name, Title, Alias, Format, Segment, Filename, Description, or Reference.

❏ View the hierarchical structure of the data. Select from the following options: Title, Description, Name, or Alias.

6. Select a field.

7. Click *OK*.

   The field that you selected appears in the field to the right of the operator drop-down menu.

8. Click the *Color* button.

   The Color dialog box opens.

9. Select a color.

   The color appears in the Preview box.

10. Click *OK*.

11. Click the Drill Down button.

    The Drill Down dialog box opens.

12. In the Drill Down dialog box, specify a value for each of the following:

    ❏ Drill down to a report or a webpage

    ❏ URL of the webpage

    ❏ An alternate comment

    ❏ Target (New Window, Same Window)

    ❏ Parameters that you want to use (Name, Value)

13. Click *OK* to close the dialog box.

14. Click the *New* button to set traffic light conditions for additional fields.

Procedure: **How to Change the Title of a Series**

1. Create a chart.

2. Open the Edit Title dialog box in one of the following ways:

   ❏ **Shortcut Menu:** Right-click a series on the chart, and click *Change Title*.

   ❏ **Query Pane:** Right-click a series, and click *Change Title*.

   The Edit Title dialog box opens.

3. In the Enter Title field, type the new name for the series.

4. Click *OK* to close the dialog box.

    The series has a new title.

Procedure: **How to Control the Color Mode**

When you create a single-series chart, all series groups appear in the same color. To use a different color for each group, set the color mode to *By Group*.

1. Create a chart.

2. Right-click a series on the chart, point to *Color Mode*, and then click *By Group*.

    A different color is applied to each group in the series. To return to the default display of the series in one color, right-click the series, point to *Color Mode*, and then click *By Series*.

3. Click *Run* to generate the report.

Procedure: **How to Delete a Series**

1. Create a chart.

2. Right-click a series on the chart, and click *Delete*.

    The series is deleted.

Formatting Data Labels

Data labels highlight important data points on a chart. They identify exact numbers. You can customize data labels in a variety of ways to make them stand out more clearly on the chart. For example, you can change the position, angle, color, or size of data labels.

Associated Dialog Boxes

Whether you access data label options from the ribbon or the shortcut menu, you are presented with a dialog box of options. The following dialog boxes are commonly used for formatting data labels:

❑ Format Labels

❑ Style

❑ Line Style

For instructions on how to open these dialog boxes, see the procedures in *Using Data Labels Properties* on page 164.

Format Labels Dialog Box

The Format Labels dialog box contains options for editing data labels. The Format Labels dialog box offers different options depending on the chart type that you are using. Bar, line, and area charts share the same tabs.

The Format Labels dialog box contains the following tabs:

❑ General Options

❑ Advanced

❑ Pie Title (for pie charts only)

❑ Pie Labels (for pie charts only)

❑ Funnel Labels (for funnel and pyramid charts)

General Options Tab

Use the General Options tab to add data labels to a chart and set their position, angle, and radius.

The General Options tab is shown in the following image.
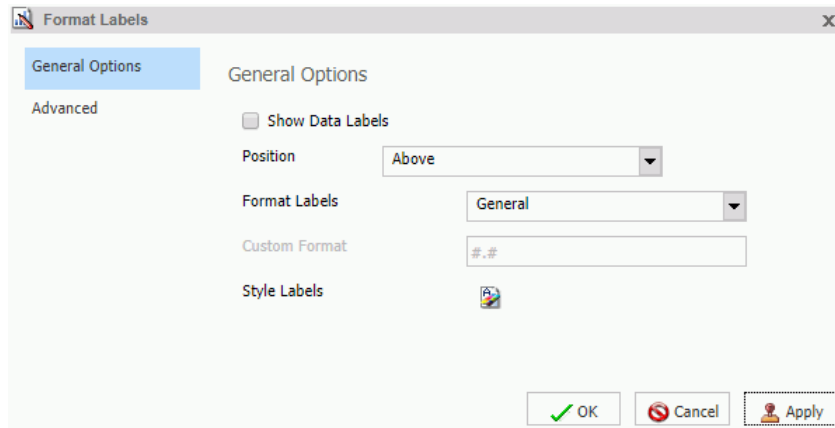
The General Options tab contains the following options:

❑ **Show Data Labels.** Select this option to show data labels on a chart. Clear this option to suppress data labels.

❑ **Position.** Select an option from this drop-down menu to determine where the data label will be positioned. The options are:

❑ Above

❑ Below top edge

❑ Center

❑ Base

❑ Center back

❑ **Format Labels.** Select from this drop-down menu of preset formats that can be applied to the labels. Some of the options include Use Pattern, Currency General, and Date Full.

❑ **Custom Format.** Enter a standard number format pattern for the data label. This option is only available when you select the *Use Pattern* option from the Format Labels drop-down menu.

The following table describes the characters that you can use in a custom format.

Character	Description
#	Is a digit.
0 (zero)	Shows as absent.
. (period)	Is a placeholder for decimal separator.
, (comma)	Is a placeholder for grouping separator.
; (semicolon)	Separates formats.
- (dash)	Is the default negative prefix.
% (percent)	Divides by 100 and shows as a percentage.
x	Determines that any other characters can be used in the prefix or suffix.
' (apostrophe)	Is used to quote special characters in a prefix or suffix.

❑ **Style Labels.** Click this icon to open the Style dialog box, where you can style text. For more information, see *Style Dialog Box* on page 163.

❏ **Show Cumulative Sums.** Select this option to have the data text labels show cumulative sums. Clear this option to have data text labels show individual sums. This option is available for stacked charts.

❏ **Show Stacked Total.** Select this option to display stacked totals. Data position should be set to *Center* to display a stacked total. This option is available for stacked charts.

Advanced Tab

Use the Advanced tab to modify additional data labels properties.

The Advanced tab is shown in the following image.
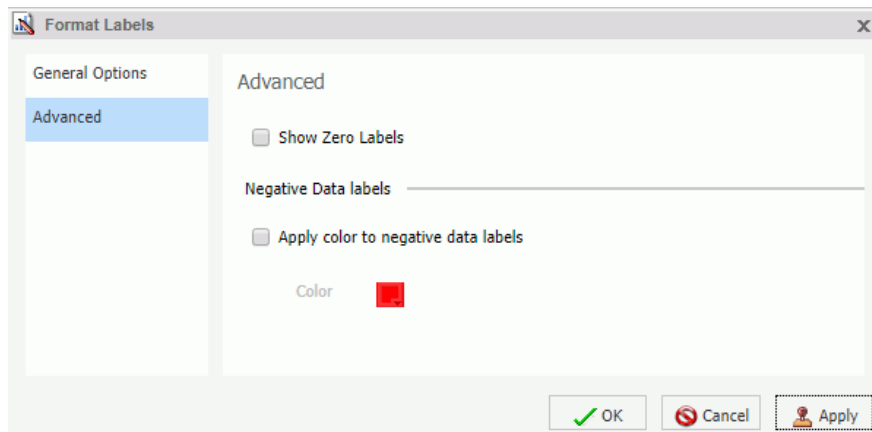
The Advanced tab contains the following options:

❏ **Show Zero Labels.** Select this option to display zero values in a chart. Clear this option to display all data values except zero.

❏ **Apply color to negative data labels.** Select this option to style negative data labels separately from positive data labels.

❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the negative number.

Pie Labels Tab

Use the Pie Labels tab to customize your pie data labels.

The Pie Labels tab is shown in the following image.
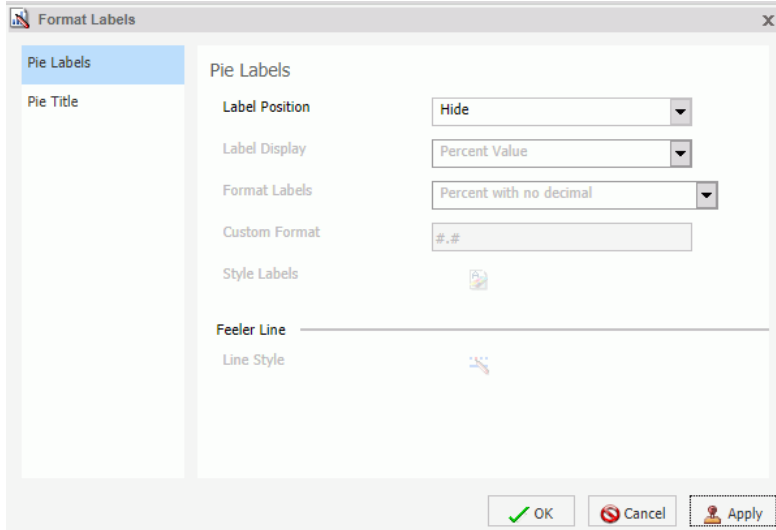
The Pie Labels tab contains the following options:

❏ **Label Position.** Select from this drop-down menu an option to control the display of feeler lines and labels on a pie chart.

❏ **Label Display.** Select from this drop-down menu an option to control the format of labels displayed next to feelers on a pie chart.

❏ **Format Labels.** Select from this drop-down menu of preset formats that can be applied to labels.

❏ **Custom Format.** Select this option to use a custom format from a list of preset formats. See the following table for a list and description of the characters that you can use in a custom format.

❏ **Style Labels.** Click this button to open the Style dialog box, where you can style text.

Ring Label

❏ **Show Ring Label.** Select this option to control the display of the total label on a pie ring chart.

❏ **Format Labels.** Select from this drop-down menu of preset formats that can be applied to labels.

❏ **Custom Format.** Enter a standard number format pattern for the data label. This option is only available when you select the *Use Pattern* option from the Format Labels drop-down menu.

❏ **Style Labels.** Click this button to open the Style dialog box, where you can style text.

Feeler Line

❏ **Line Style.** Click this button to open the Line Style dialog box, where you can edit the color, weight, and style of the feeler line.

Pie Title Tab

Use the Pie Title tab to create and style a pie title.

The Pie Title tab is shown in the following image.
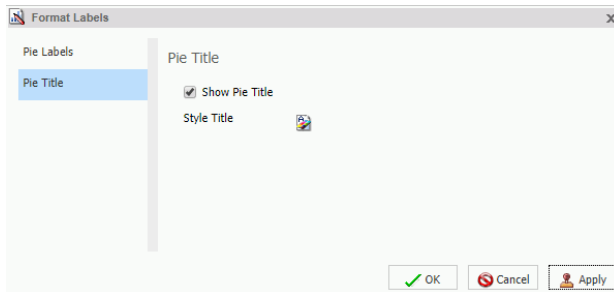
The Pie Title tab contains the following options:

❏ **Show Pie Title.** Clear this option to suppress a pie title. Select this option to display a pie title. This is the default option.

❏ **Style Title.** Click this icon to open the Style dialog box, where you can style pie title text.

Funnel Labels Tab

Use the Funnel Labels tab to customize the labels on a funnel or a pyramid chart.

The Funnel Labels tab is shown in the following image.
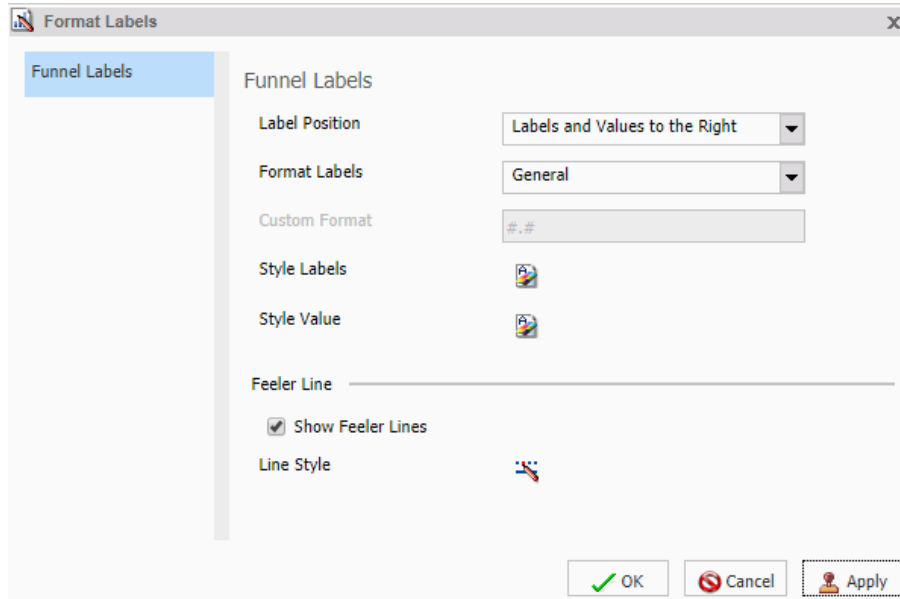
The Funnel Labels tab contains the following options:

❏ **Label Position.** Select an option from this drop-down menu to control the display of feeler lines and labels on a funnel chart.

❏ **Format Labels.** Select from this drop-down menu of preset formats that can be applied to labels.

❏ **Custom Format.** Select this option to use a custom format. See the table in the previous section for a list and description of the characters that you can use in a custom format.

❏ **Style Labels.** Click this button to open the Style dialog box, where you can style text.

❏ **Style Value.** Opens the Style dialog box, where you can style the value.

Feeler Line

❏ **Show Feeler Lines.** (Default) Clear this option to suppress feeler lines. Select this option to display feeler lines.

❏ **Line Style.** Click this button to open the Line Style dialog box, where you can edit the color, weight, and style of the feeler line.

Note: While some style options, such as Show Pie Title and Show Feeler Lines, are enabled by default, a stylesheet applied to the chart may contain different settings that will override these default settings.

Style Dialog Box

The Style dialog box contains options to style the data labels.

The Style dialog box is shown in the following image.
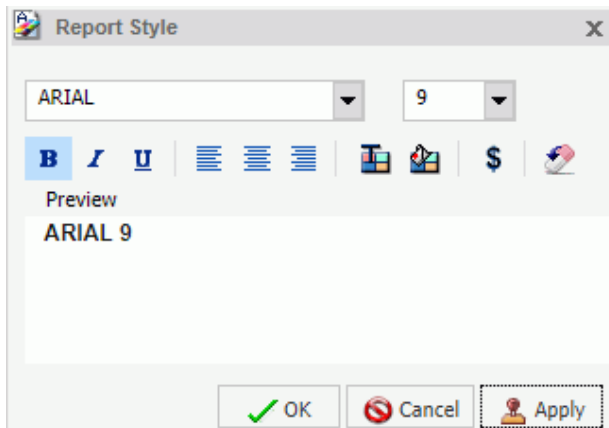
The Style dialog box contains the following options:

❏ **Font.** Use the drop-down menu to change the font.

❏ **Font size.** Use the drop-down menu to change the numeric value for the font size.

❏ **Font style.** Click the appropriate button (bold, italic, underline) to style the selected text.

❏ **Text alignment.** Click the appropriate button (left, center, right) to align the selected text.

❏ **Font color.** Click the button to open the Color dialog box, where you can select the font color.

❏ **Reset to Quick Styles from Template.** Click the button to reset all settings to the default settings from the template.

Note: Reset only works while the Style dialog box is open. Once you click *OK*, all changes are committed. To undo global styling after it has been committed, you must use the *Undo* command on the Quick Access Toolbar.

Line Style Dialog Box

The Line Style dialog box contains options to style lines on a chart.

The Line Style dialog box is shown in the following image.
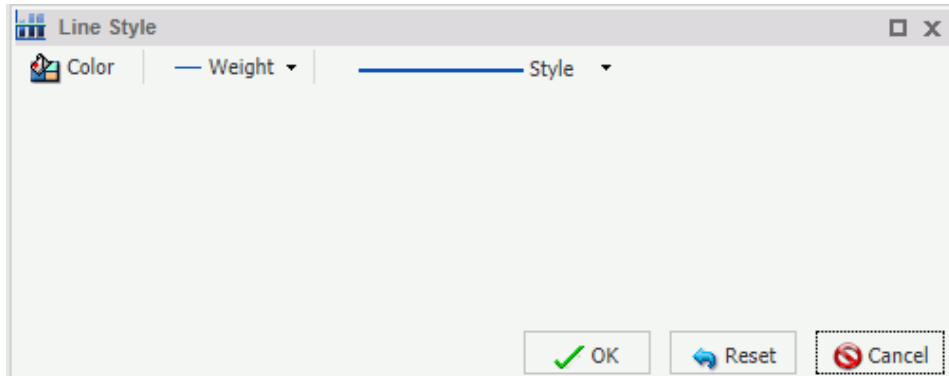
The Line Style dialog box contains the following options:

❏ **Color.** Click this button to open the Color dialog box, where you can select the color for the line.

❏ **Weight.** Click this button to open a drop-down menu of line weight options.

❏ **Style.** Click this button to open a drop-down menu of line style options.

❏ **Reset.** Click this button to reset the line to the default options.

Data Labels Elements Shortcut Menu

When you right-click a data label on a bar, line, or area chart, a menu of the following options opens:

❏ **Data Labels.** Point to this option to toggle between Show and Hide.

❏ **More Label Options.** Click this option to open the Format Labels dialog box.

The shortcut menu contains options that are available on the Series tab.

Using Data Labels Properties

The following sections contain procedures for customizing data labels.

Procedure: **How to Show and Hide Data Labels**

1. Create a chart.

2. You can access the option to show data labels in one of the following ways:

   ❏ **Ribbon:** On the *Series* tab, in the *Properties* group, click *Data Labels*, and from the drop-down menu, click *More Data Label Options*. The Format Labels dialog box opens. On the General Options tab, select the *Show Data Labels* check box, and click *OK* to close the dialog box. You can use this dialog box to format and style the data labels. For more information, see *Format Labels Dialog Box* on page 157. To hide data labels, clear this option.

   ❏ **Shortcut Menu:** Right-click a series on the chart, point to *Data Labels*, and then click *Show*. To hide data labels, right-click a series on the chart, point to *Data Labels*, and then click *Hide*.

The data labels appear, and are formatted and styled accordingly.

The following image shows a chart with data labels.
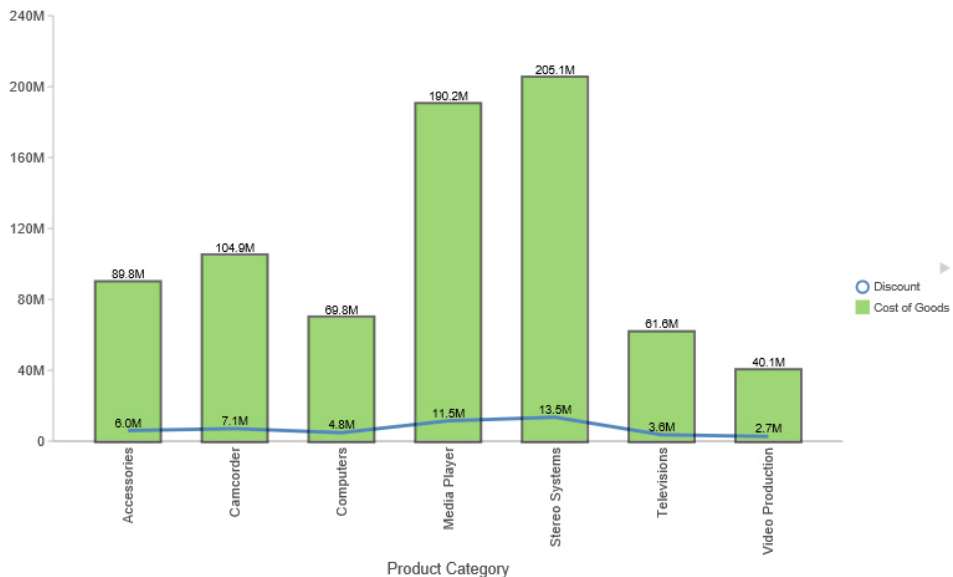
Procedure: **How to Change the Position of Data Labels**

1. On the *Series* tab, in the *Properties* group, click *Data Labels*.

2. On the menu, select the position for the data labels.

The data labels are positioned accordingly.

Formatting a Legend

A legend contains information that is necessary to accurately interpret the data on a chart. By default, a chart displays either a vertical axis title if there is a single measure field, or a legend if there are multiple measure fields.

Format Legend Dialog Box

Whether you access legend options from the ribbon or the shortcut menu, you are presented with the Format Legend dialog box of options. For instructions on how to open this dialog box, see *Using Legend Properties* on page 169.

The Format Legend dialog box contains options for formatting a legend on a chart or visualization. It contains the following tabs:

❏ Legend Options

❏ Markers & Labels

❏ Fill

❏ Border Styles

For instructions on how to open this dialog box, see the procedures in *Using Legend Properties* on page 169.

Use the Legend Options tab to customize the appearance of a legend on a chart or visualization.

The Legend Options tab is shown in the following image.
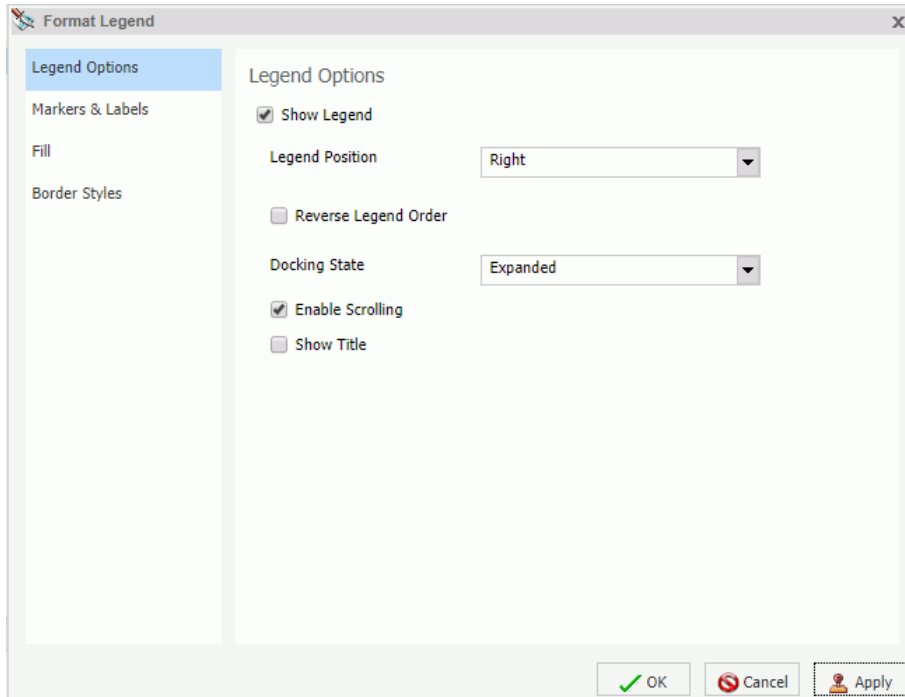
The Legend Options tab contains the following options.

❏ **Show Legend.** When selected, a legend displays on a chart or visualization. Clear this option to suppress a legend on a chart or visualization.

❏ **Legend Position.** Opens a drop-down menu of options to position the legend. For example, top or left.

❏ **Reverse Legend Order.** Specifies that the legend be drawn in reverse order. Clear this option to specify that the legend be drawn in normal order.

❏ **Docking State.** This option dictates how the legend is docked. It is set to Expanded by default, but you can set it to Collapsed, which will show that the legend is available (using the grey arrow). This option saves real estate in your chart by collapsing the categorical text labels in the legend while preserving the legend label colors. This is particularly useful when items in your legend have long labels and you wish to truncate them for the purposes of display. If you set this option to None, the ability to expand or collapse the legend is removed and the grey arrow no longer displays.

❑ **Enable Scrolling.** Select this check box to enable scrolling in your legend. This is particularly useful when you have numerous entries in your legend. This check box is selected by default. To disable scrolling in your legend, clear the Enable Scrolling check box. All legend options display in columns, and a scroll bar does not display.

❑ **Show Title.** Select this check box to display the legend title.

Use the Markers & Labels tab to customize the appearance of markers and labels on legends.

The Markers & Labels tab contains the following options:

❑ **Style Labels.** Opens the Style dialog box, where you can style text.

❑ **Marker Position.** Opens a drop-down menu of options to set the position of text relative to the legend marker. For example, Left of Text or Above Text.

Use the Fill tab to modify the color of the legend area. For more information, see *Format Series Dialog Box* on page 138.

Use the Border Styles tab to place a border around a legend. For more information, see *Format Series Dialog Box* on page 138.

The Border Styles tab contains the following options:

❑ **Show Border.** Select this option to place a border around a legend.

❑ **Color.** With the Show Border option selected, you can click this button to open the Color dialog box, where you can select a color for the border.

Legend Elements Shortcut Menu

When you right-click a legend on a chart, a menu of options opens. The menu contains options that are available on the Format tab.

The shortcut menu options are described in the following table. The table provides links to the sections of this document in which those options are also discussed.

Option	Description
Show legend	Controls the display of the legend. InfoAssist+ displays the legend by default. When you clear this option, InfoAssist+ suppresses the legend. For instructions, see *Using Legend Properties* on page 169. The background shortcut menu has an option to restore the legend after it has been suppressed.
Legend Position	Controls the placement of the legend on the chart. For instructions see, *Using Legend Properties* on page 169.
Legend Area Color	Enables you to specify the color of the legend background area using the Color dialog box. This option is available only when you right-click the area around the legend. For instructions see, *Using Legend Properties* on page 169.
Legend Border Color	Enables you to specify the color of the border around the legend background area using the Color dialog box. This option is available only when you right-click the area around the legend. For instructions see, *Using Legend Properties* on page 169.
More Legend Options	Opens the Format Legend dialog box.

Using Legend Properties

The following sections contain procedures for customizing legends. The procedures are organized by the tab and group in which their associated options appear on the ribbon.

Procedure: **How to Hide a Legend**

1. Create a chart with multiple measure fields.

2. Clear the *Show legend* option in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, click *Legend*, then click *Show legend* to clear the option.

   ❏ **Shortcut Menu:** Right-click the legend, and clear the *Show legend* option.

The legend is hidden.

Procedure: **How to Position a Legend**

1. Create a chart with multiple measure fields.

2. Open the menu of label position options in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, click *Legend*, then point to Legend Position.

   ❏ **Shortcut Menu:** Right-click the legend, and point to *Legend Position*.

3. Select a position for the legend. For example, Auto or Right.

Procedure: **How to Specify the Color of a Legend Border**

1. Create a chart with multiple measure fields.

2. Open the Format Legends dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, click *Legend*, then click *More Legend Options*.

   ❏ **Shortcut Menu:** Right-click the legend, and click *More Legend Options*.

   The Format Legend dialog box opens. For more information, see *Format Legend Dialog Box* on page 166.

3. On the Border Styles tab, select the option to *Show Border*.

4. Click the *Color* icon to open the Color dialog box, where you can specify the color of the legend border.

5. Click *OK* to close the Color dialog box.

6. Click *OK* to close the Format Legend dialog box.

   The legend border is formatted accordingly.

The following image is an example of a chart with a styled legend.
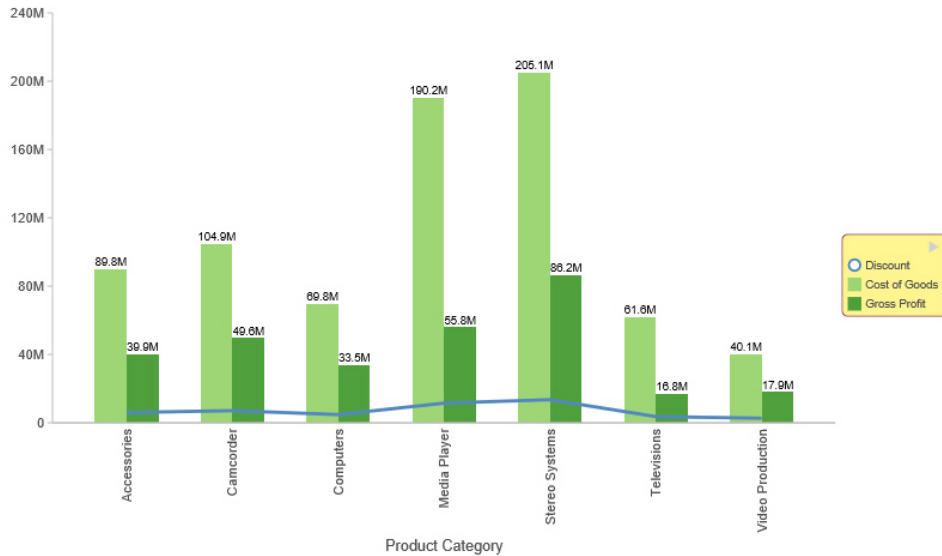
Formatting Gridlines

Gridlines are used on a chart as a reference to help you understand the quantities and values of your data and decode information on the axis. There are four types of gridlines that you can display and edit on your chart. They are:

❏ Horizontal major gridlines

❏ Horizontal minor gridlines

❏ Vertical major gridlines

❏ Vertical minor gridlines

Major gridlines enhance the display of values, while minor gridlines supplement major gridlines. If a plot point falls in between major gridlines, you can use minor gridlines for more precise interpretation of the data.

❏ Vertical gridlines in a vertical chart run on the X axis.

❏ Horizontal gridlines in a vertical chart run on the Y axis.

❏ Horizontal major gridlines enhance the display of values, compared to the Y-axis scale alone. They are enabled by default on many charts. They do not apply to the pie, 3D, gauge, spectral map, or funnel chart type.

❑ Horizontal minor gridlines are disabled by default. They do not apply to the pie, 3D, gauge, spectral map, or funnel chart type.

❑ Vertical major gridlines enhance the display of values, compared to the X-axis scale alone. They are enabled by default. They do not apply to the pie, 3D, gauge, spectral map, or funnel chart type.

❑ Vertical minor gridlines are disabled by default. They apply only to scatter and bubble chart types, where the X axis is numeric. They do not apply to the pie, 3D, gauge, spectral map, or funnel chart type.

Note: The orientation of a chart determines the available gridline options.

Format Grid Lines Dialog Box

You can format horizontal and vertical gridlines, color bands, and frames on a chart using the options in the Format Grid Lines dialog box. For instructions on how to open this dialog box, see the procedures in *Using Gridline Properties* on page 175.

Color bands come in a pair, with each band uniquely colored. They appear in a continually repeating pattern behind a series on a chart. The contrast of colors is designed to make the chart easier to read.

Alternate formatting can be used to apply different colors to sections, called regions, of an axis.

The Format Grid Lines dialog box contains the following tabs:

❑ Major Grid Lines

❑ Minor Grid Lines

❑ Color Bands

❑ Frames

Use the Major Grid Lines tab to format the major gridlines on the chart.

The Major Grid Lines tab contains the following options:

❑ **Show Grid Lines.** Select this option to display major gridlines on a chart if minor gridlines are the default for the chart.

❑ **Line Style.** Click this icon to open the Line Style dialog box, where you can edit the color, weight, and style of the gridline.

❑ **Show Ticks.** Select this check box to enable or disable the tick mark functionality.

❏ **Tick Style.** Select from this drop-down menu of tick styles (Inside, Outside, Spanning).

❏ **Line Style.** Click this icon to open the Line Style dialog box, where you can edit the color, weight, and style of the gridline.

Use the Minor Grid Lines tab to format the minor gridlines on your chart.

The Minor Grid Lines tab contains the following options:

❏ **Show Grid Lines.** Select this option to display minor gridlines on a chart. By default, this option is enabled.

❏ **Line Style.** Click this icon to open the Line Style dialog box, where you can edit the color, weight, and style of the gridline.

❏ **Grid count.** Set the number of minor gridlines that will appear between major gridlines.

❏ **Show Ticks.** Select this check box to enable or disable the tick mark functionality.

❏ **Tick Style.** Select from this drop-down menu of tick styles (Inside, Outside, Spanning).

❏ **Line Style.** Click this icon to open the Line Style dialog box, where you can edit the color, weight, and style of the gridline.

Use the Color Bands tab to format the color bands on your chart.

The Color Bands tab contains the following options:

❏ **Band 1.** Select this option to add Band 1 to a chart.

    ❏ **Color.** Click this icon to open the Color dialog box, where you can edit the color of Band 1.

    ❏ **Transparency.** Move the slider to make Band 1 opaque (0%) or transparent (100%). The default is 0%.

    ❏ **%.** Enter or select the percentage of the transparency of Band 1.

❏ **Band 2.** Select this option to add Band 2 to a chart.

    ❏ **Color.** Click this icon to open the Color dialog box, where you can edit the color of Band 2.

    ❏ **Transparency.** Move the slider to make the Band 2 opaque (0%) or transparent (100%). The default is 0%.

    ❏ **%.** Enter or select the percentage of the transparency of Band 2.

Use the Frames tab to enable or disable frame regions, and to set the location and style of the frame text.

The Frames tab contains the following options:

❏ **Show Frame Regions.** Select this option to show a frame region. Clear this option to suppress a frame region.

    ❏ **Region.** Select from this drop-down list, the region that you want to format.

    ❏ **Add.** Click this button to add a region.

    ❏ **Remove.** Click this button to remove a region.

❏ **Location.** Enter the location of the region.

❏ **Color.** Click this icon to open the Color dialog box, where you can edit the color of the frame.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can edit the color of the frame border.

❏ **Text.** Enter the text that you want to appear on the frame.

❏ **Style Text.** Click this icon to style the frame text.

For instructions on how to open this dialog box, see the procedures in *Using Gridline Properties* on page 175.

Gridline Elements Shortcut Menu

When you right-click a gridline on a chart, a menu of options opens. The options for the gridline elements are described in the following table.

Element	Option	Description
Horizontal Major Gridlines Horizontal Minor Gridlines Vertical Major Gridlines Vertical Minor Gridlines	Delete	Removes the gridline from the chart and updates the Live Preview accordingly.
	Set Line Color	Enables you to specify the color of the gridline, using the Color dialog box. For more information, see *Using the Color Dialog Box* on page 335.
	More Grid Lines Options	Opens the Format Gridlines dialog box. For more information, see *Format Grid Lines Dialog Box* on page 172.

Using Gridline Properties

The following sections contain procedures for customizing gridlines.

Procedure: **How to Display Horizontal Major Gridlines**

If your chart does not display gridlines by default, use this procedure to generate gridlines.

1. Create a chart.

2. On the *Format* tab, in the *Features* group, open the *Grid* drop-down menu, point to *Horizontal Gridlines*, and then click *Major Gridlines*.

   Horizontal major gridlines are added to the chart.

Procedure: **How to Display Horizontal Minor Gridlines**

1. Create a chart.

2. Access the option to show gridlines in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the *Grid* drop-down menu. On the Grid drop-down menu, point to *Horizontal Gridlines*, and then click *Minor Gridlines*.

   ❏ **Shortcut Menu:** Right-click the gridlines on the chart, and click *More Grid Lines Options*. The Format Horizontal Grid Lines dialog box opens. On the Minor Grid Lines tab, select *Show Grid Lines*.

Horizontal minor gridlines are added to the chart.

Procedure: **How to Display Vertical Major Gridlines**

1. Create a chart.

2. Access the option to show gridlines in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the *Grid* drop-down menu. On the Grid drop-down menu, point to *Vertical Gridlines*, and then click *Major Gridlines*.

    ❏ **Shortcut Menu:** Right-click the gridlines on the chart, and click *More Grid Lines Options*. The Format Vertical Grid Lines dialog box opens. On the Major Grid Lines tab, select *Show Grid Lines*.

    Vertical major gridlines are added to the chart.

Procedure: **How to Display Vertical Minor Gridlines**

1. Create a chart.

2. Access the option to show gridlines in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the *Grid* drop-down menu. On the Grid drop-down menu, point to *Vertical Gridlines*, and then click *Minor Gridlines*.

    ❏ **Shortcut Menu:** Right-click the gridlines on the chart, and click *More Grid Lines Options*. The Format Vertical Grid Lines dialog box opens. On the Minor Grid Lines tab, select *Show Grid Lines*.

    Vertical minor gridlines are added to the chart.

Procedure: **How to Set the Color, Weight, and Style of a Gridline**

1. Open the Format Grid Lines dialog box in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the Grid drop-down menu, point to the gridline type that you want to format, and click *More Grid Lines Options*.

    ❏ **Shortcut Menu:** Right-click a gridline, and click *More Grid Lines Options*.

    The Format Grid Lines dialog box opens.

2. Click the Line Style icon.

    The Line Style dialog box opens.

3. Set the color, weight, and style of the gridline.

4. Click *OK* to close the Line Style dialog box.

5. Click *OK* again to close the Format Grid Lines dialog box.

   The gridline is formatted accordingly.

   The following image shows a line chart with styling applied to the gridlines.
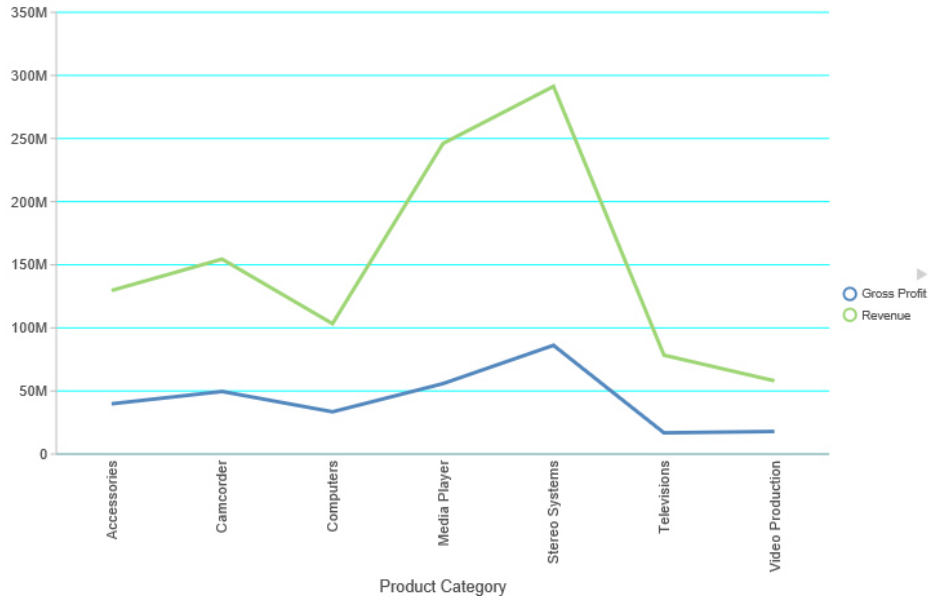
Procedure: **How to Set Ticks**

Ticks are short lines which are perpendicular to a gridline. They are used to tick off specific increments along the gridline.
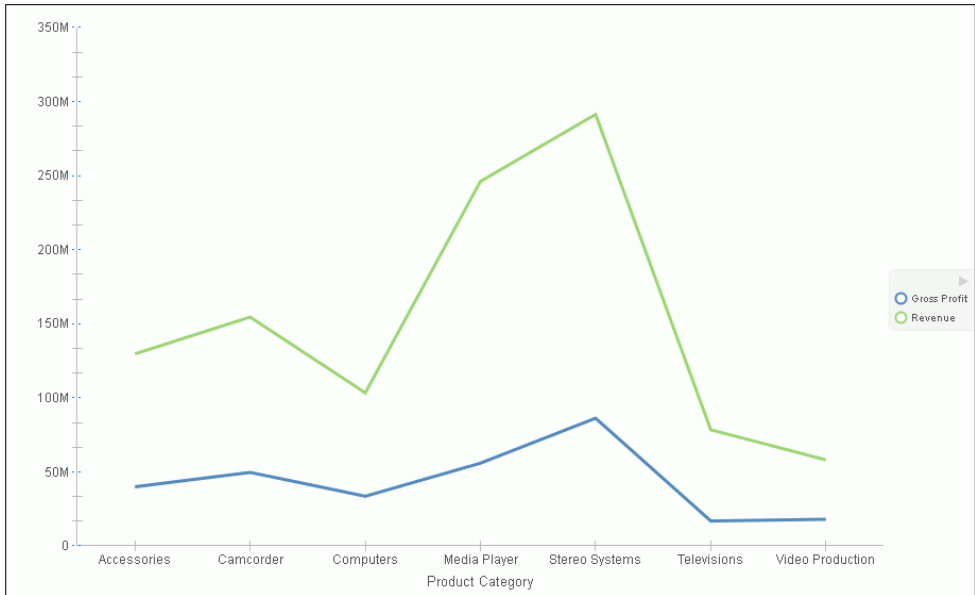
1. Create a chart with gridlines.

2. Open the Format Grid Lines dialog box in one of the following ways:

   ❑ **Ribbon:** On the *Format* tab, in the *Features* group, open the Grid drop-down menu, point to the gridline type that you want to format, and click *More Grid Lines Options*.

   ❑ **Shortcut Menu:** Right-click a gridline, and click *More Grid Lines Options*.

   The Format Grid Lines dialog box opens.

3. From the Tick Style drop-down menu, select a tick style option. The options are:

   ❑ Inside

❏ Outside

❏ Spanning

4. Click the *Line Style* icon to open the Line Style dialog box, where you can edit the color, weight, and style of the gridline.

5. Click *OK* to close the Line Style dialog box.

6. Click *OK* again to close the Format Grid Lines dialog box.

The tick marks are formatted accordingly.

The following image shows a chart with tick marks spanning both the vertical axis and horizontal axis.

Procedure: How to Set Color Bands

1. Create a chart with gridlines.

2. Open the Format Grid Lines dialog box in one of the following ways:

❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the Grid drop-down menu, point to gridlines that you want to format, and click *More Grid Lines Options*.

❏ **Shortcut Menu:** Right-click a gridline, and click *More Grid Lines Options*.

The Format Grid Lines dialog box opens.

3. On the Color Bands tab, click the *Color* icon to open the Color dialog box, where you can set the color of the color bands.

4. Use the transparency slider, or the percentage box, to type or select the percentage of the transparency that you want to apply to the color.

5. Click *OK* to close the Color dialog box.

6. Click *OK* again to close the Format Grid Lines dialog box.

   The following image shows a chart with color bands along the horizontal gridline.
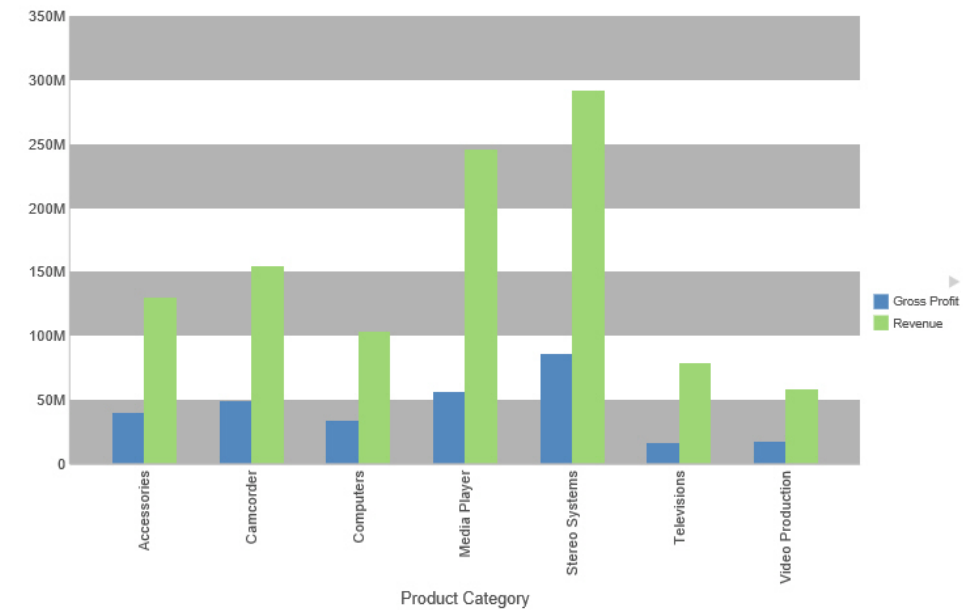
Procedure: How to Delete a Gridline

1. Create a chart with gridlines.

2. Select a gridline.

3. Delete the gridline in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, open the *Grid* drop-down menu. From the menu, point to the gridline that you want to format, and click *More Grid Lines* to open the Format Grid Lines dialog box. On the tab for the gridline that you want to delete, clear the *Show Grid Lines* option, and click *OK*.

   ❏ **Shortcut Menu:** Right-click the gridline, and from the menu, select *Delete*.

The gridline is deleted from the chart.

Procedure: **How to Add Frames to Regions on a Chart**

1. Create a chart.

2. On the *Format* tab, in the *Features* group, click *Grid*.

3. On the drop-down menu, point to either Horizontal Gridlines or Vertical Gridlines, and then click *More Grid Lines Options*.

   The Format Grid Lines dialog box opens.

4. On the Frames tab, select the *Show Frame Regions* check box.

5. Click *Apply*.

   Colored frames are added to the chart, using the default styling options. Optionally, you may use the color and border color options to change these.

   The following image shows a bar chart with colored frames around each region.
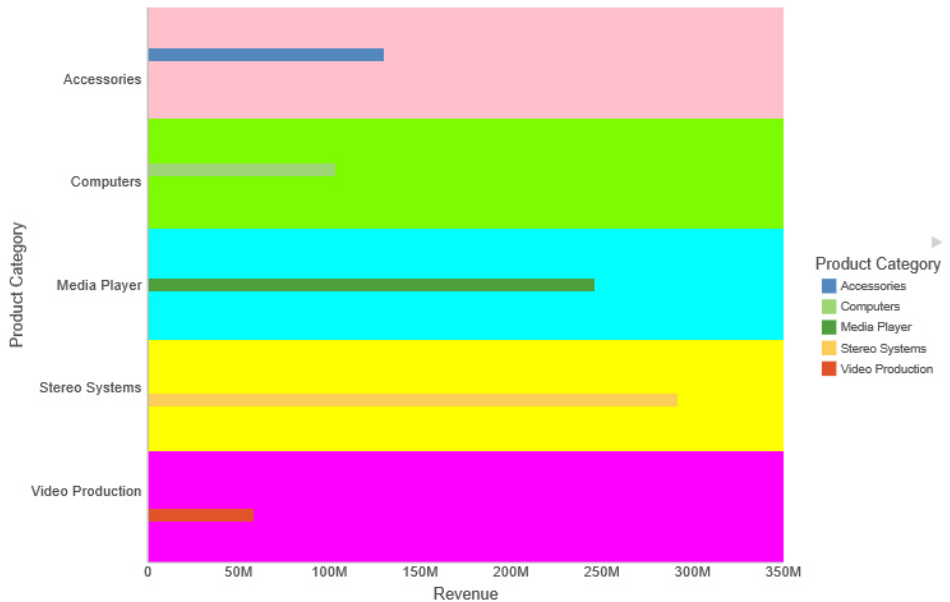
Formatting Axis Labels

Vertical and horizontal axes are based on the orientation of the graph. For example, in a vertical graph, the horizontal axis refers to the X axis and the vertical axis refers to the Y axis. In a horizontal graph, the horizontal axis refers to the Y axis and the vertical axis refers to the X axis. This is important to consider, since options could change depending on the orientation of the graph.

A chart can contain the following types of axis labels:

❏ Horizontal axis labels represent the X axis. They do not apply to pie, funnel, or gauge charts.

❏ Vertical axis labels represent the Y1 axis in a single axis chart. They represent a numeric scale, usually located on the left side of a vertical chart.

❏ Secondary horizontal and vertical labels can only be used when dual axes charts are selected.

Format Axis Dialog Box

Whether you access axis options from the ribbon, or the shortcut menu, you are presented with the Format Axis dialog box of options for formatting for both vertical and horizontal axes. The Format Axis dialog box contains the following tabs:
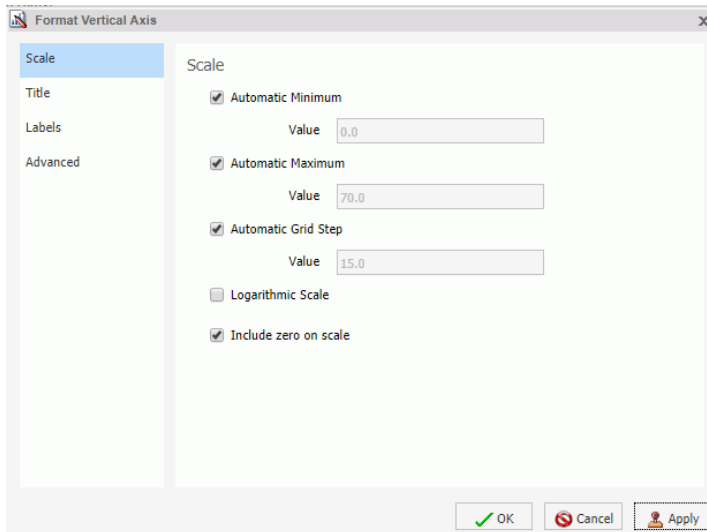
❏ General (for horizontal axes)

❏ Scale (for vertical axes)

❏ Title

❏ Labels

❏ Advanced

Reference: Format Vertical Axis Dialog Box

You use the Format Vertical Axis dialog box to specify formatting options for the vertical axis in your chart.

Use the Scale tab to modify scale properties.

The Scale tab is shown in the following image.

The Scale tab contains the following options:

❑ **Automatic Minimum.** Supplies the minimum value on the Y-axis scale automatically. To use manual scaling, clear this option. You can then set the minimum value by entering a number into the Value text box.

   ❑ **Value.** Type the minimum value in this text box if you have not selected Automatic Minimum.

❑ **Automatic Maximum.** Supplies the maximum value on the Y-axis scale automatically. To use manual scaling, clear this option. You can then set the maximum value by entering a number into the Value text box.

   ❑ **Value.** Type the maximum value in this text box if you have not selected Automatic Maximum.

❑ **Automatic Grid Step.** Calculates the number of major grid steps automatically. To use manual scaling, clear this option. You can then set the value by typing the number into the Value text box.

   ❑ **Value.** Type the value in this text box if you have not selected Automatic Grid Step.

❑ **Logarithmic Scale.** Controls whether or not the Y-axis scale progresses logarithmically instead of linearly. This option is disabled by default. When selected, the logarithmic base is set to 10.0.

❑ **Include zero on scale.** Controls whether or not a zero (0) value appears on the scale. This option is enabled by default.

Use the Title tab to show or hide the axis title, and create and style the title for the axis.

The Title tab contains the following options:

❑ **Show title.** Select this check box to show the axis title (default) or clear the check box to hide the axis title.

❑ **Text.** Type a title for the axis in the Text field.

❑ **Style text.** Opens the Style dialog box, where you can style the text.

Use the Labels tab to format the layout of the axis labels.

The Labels tab contains the following options:

❑ **Show Labels.** Displays labels next to the axis. This is enabled by default. Clear this option to suppress labels.

    ❑ **Axis side.** Contains a list of position options for the labels on the axis. The options are Left (default), Right, or Both.

    ❑ **Style labels.** Opens the Style dialog box, where you can style text.

    ❑ **Format Labels.** Contains a list of preset formats that can be applied to the labels.

    ❑ **Custom Format.** Allows you to use a custom format. This option is activated when *Use Pattern /100* and *Use Pattern* are selected as the format labels.

The Format Labels drop-down menu provides a list of preset formats that you can apply to labels. When you select a custom format, it must be defined using a custom format pattern. See the following table for a list and description of the characters that you can use in a custom format.

Character	Description
#	Is a digit.
0 (zero)	Shows as absent.
. (period)	Is a placeholder for a decimal separator.
, (comma)	Is a placeholder for a grouping separator.

Character	Description
; (semicolon)	Separates formats.
- (dash)	Is the default negative prefix.
% (percent)	Divides by 100 and shows as a percentage.
x	Determines that any other characters can be used in the prefix or suffix.
' (apostrophe)	Is used to quote special characters in a prefix or suffix.

Use the Advanced tab to modify additional axis properties.

The Advanced tab contains the following options:

❏ **Exclude Minimum Label.** Excludes the label with the lowest axis value from the chart.

❏ **Exclude Maximum Label.** Excludes the label with the highest axis value from the chart.

❏ **Descending Axis.** Draws the axis in descending order.

❏ **Show axis line.** Controls the display of the axis baseline.

   ❏ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the axis line.

❏ **Show zero line.** Controls the display of the zero line.

   ❏ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the zero line.

❏ **Custom Baseline.** Controls the display of the custom baseline.

   ❏ **Value.** Type a value for the custom baseline.

   ❏ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the custom baseline.

For instructions on how to open this dialog box, see the procedures in *Using Axis Properties* on page 188.

Reference: Format Horizontal Axis Dialog Box

You use the Format Horizontal Axis dialog box to specify formatting options for the horizontal axis in your chart.

The General tab contains the Show axis line check box, which controls the display of the axis line. When this check box is selected, you can style the axis line.

The General tab is shown in the following image.

The General tab contains the following options:

❏ **Show axis line.** Enables the display of the axis line.

   ❏ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the axis line.

Use the Title tab to create and style the title for the axis.

The Title tab contains the following options:

❏ **Text.** Type a title for the axis in the Text field.

❏ **Style.** Opens the Style dialog box, where you can style the text.

Use the Labels tab to format the layout of the axis labels.

The Labels tab contains the following options:

❏ **Show Labels.** Displays labels next to the axis. This is enabled by default. Clear this option to suppress labels.

   ❏ **Axis side.** Contains a list of position options for the labels on the axis. The options are Left (default), Right, or Both.

   ❏ **Style labels.** Opens the Style dialog box, where you can style text.

❏ **Stagger Labels.** Sets the labels to appear staggered.

❏ **Concatenate Labels.** Concatenates the labels in your chart. This is enabled by default.

Use the Advanced tab to modify additional axis properties.

The Advanced tab contains the following options:

❏ **Exclude Minimum Label.** Excludes the label with the lowest axis value from the chart.

❏ **Exclude Maximum Label.** Excludes the label with the highest axis value from the chart.

❏ **Reverse Groups.** Reverses the order of the display of the groups on the horizontal axis.

For instructions on how to open this dialog box, see the procedures in *Using Axis Properties* on page 188.

Secondary Axes Options

Formatting options are available for secondary axes in dual-axis charts. For example, in a vertical dual-axis chart, the secondary vertical axis refers to the Y2 axis.

The Format Secondary Axis dialog box contains the following tabs for both vertical and horizontal axes:

❏ **General.** For more information, see the Scale tab options in *Format Axis Dialog Box* on page 181.

❏ **Title.** For more information, see the equivalent tab in *Format Axis Dialog Box* on page 181.

❏ **Labels.** For more information, see the equivalent tab in *Format Axis Dialog Box* on page 181.

❏ **Advanced.** For more information, see the equivalent tab in *Format Axis Dialog Box* on page 181.

Axis Elements Shortcut Menu

When you right-click an axis label or title in a chart in Live Preview, a menu of options opens. The options for the right-click axis label elements are described in the following table.

Element	Option	Description
Axis Title	Delete	Deletes the axis title from the chart and updates the Live Preview accordingly.
	Change Title	Enables you to change the axis title.
	Style Title	Enables you to apply styling to the axis title, using the Style dialog box. For more information, see *Style Dialog Box* on page 163.
Horizontal Labels	Delete	Deletes labels from the chart and updates the Live Preview accordingly.
	Stagger	Controls the positioning of the labels. The On value positions the labels in a zigzag pattern. The Off default value positions the labels in a straight row.
	Rotate	Rotates the labels a specified number of degrees.
	Style Labels	Enables you to apply styling to the labels, using the Style dialog box. For more information, see *Style Dialog Box* on page 163.
	More Axis Options	Opens the Format Axis dialog box. For more information, see *Formatting Axis Labels* on page 181.
Vertical Labels	Delete	Deletes labels from the chart and updates the Live Preview accordingly.
	Rotate	Rotates the labels a specified number of degrees.
	Format Labels	Formats the labels according to the value that you specify.
	Style Labels	Enables you to apply styling to the labels, using the Style dialog box. For more information, see *Style Dialog Box* on page 163.
	More Axis Options	Opens the Format Axis dialog box. For more information, see *Formatting Axis Labels* on page 181.

Using Axis Properties

The following sections contain procedures for customizing an axis. The procedures are organized by the tab and group in which their associated options appear on the ribbon.

Axis labels appear by default.

Procedure: How to Delete Axis Labels

1. Create a chart.

2. You can delete axis labels in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the *Axes* drop-down menu, point to the axis that you are working with, and clear the *Show Labels* option.

   ❏ **Shortcut Menu:** Right-click an axis label on the chart, and click *Delete*.

   The axis labels are deleted from the chart.

Procedure: How to Stagger Axis Labels

Note: You can only apply a staggered effect to horizontal axis labels.

1. Create a chart with at least one axis label on display.

2. Access the Stagger option in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the *Axes* drop-down menu, point to *Horizontal Axis*, and click *Stagger Labels*.

   ❏ **Shortcut Menu:** Right-click an axis label on the chart, point to *Stagger* and select *On*.

   The axis labels are staggered.

Procedure: How to Rotate Axis Labels

1. Create a chart with axis labels.

2. Access the Rotate option in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the *Axes* drop-down menu, point to the axis that you are working with, point to *Rotate Labels*, and then click the degree to which you want to rotate the axis labels.

   ❏ **Shortcut Menu:** Right-click an axis label on the chart, point to *Rotate*, and then click the degree to which you want to rotate the axis labels.

   The axis labels are rotated.

Procedure: **How to Format Axis Labels**

1. Create a chart with an axis label.

2. Access the list of axis label options in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the Axes drop-down menu, point to the axis that you are working with, and click *More Axis Options* to open the Format Axis dialog box. Open the Labels tab, and from the Labels option drop-down menu, select the formatting option that you want.

    ❏ **Shortcut Menu:** Right-click an axis label, point to Format Labels, and click the formatting option that you want.

    The axis labels are formatted accordingly.

Procedure: **How to Manually Set the Scale of an Axis**

1. Create a chart.

2. Open the Format Axis dialog box in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the Axes drop-down menu, point to the axis that you are working with, and click *More Axis Options*.

    ❏ **Shortcut Menu:** Right-click an axis value on the chart, and click *More Axis Options*.

    The Format Axis dialog box opens.

3. On the Scale tab, clear the *Automatic Minimum* option and enter your own minimum value in the *Value* text box.

4. Clear the *Automatic Maximum* option, and enter your own maximum value in the *Value* text box.

5. Clear the *Automatic Grid Step* option, and enter your own grid step value in the *Value* text box.

6. Optionally, you can select the *Logarithmic Scale* option. You can also clear the *Include zero on scale* option if you do not want zero to appear on the axis.

7. Click *OK* to close the dialog box.

    The axis scale is set accordingly.

Procedure: **How to Add an Axis Title**

1. Create a chart with an axis label.

2. Open the Format Axis dialog box in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the Axes drop-down menu, point to the axis that you are working with, and click *More Axis Options*.

    ❏ **Shortcut Menu:** Right-click an axis label, and click *More Axis Options*.

    The Format Axis dialog box opens.

3. On the Title tab, type the axis title in the *Text* field.

4. Click the *Style text* icon to open the Style dialog box, where you can style the text.

    The axis title is styled accordingly.

    Note: Right-click the axis title to delete, change, or style the axis title.

Procedure: How to Set Advanced Axis Properties

1. Create a chart with an axis label.

2. Open the Format Axis dialog box in one of the following ways:

    ❏ **Ribbon:** On the *Format* tab, in the *Labels* group, open the Axes drop-down menu, point to the axis that you are working with, and click *More Axis Options*.

    ❏ **Shortcut Menu:** Right-click an axis label, and click *More Axis Options*.

    The Format Axis dialog box opens.

3. On the Advanced tab, set the following options:

    ❏ Exclude Minimum Label

    ❏ Exclude Maximum Label

    ❏ Descending Axis

    ❏ Show axis line

    ❏ Show zero line

    ❏ Custom Baseline (Value)

    You can edit the color, weight, and style of all the lines that you set in the Line Style dialog box.

4. Click *OK*.

    The axis advanced options are set accordingly.

Formatting a Frame and a Background

The frame of a chart is the area that contains the plot points. It is also the area in which horizontal and vertical gridlines are drawn.

The background of a chart is the area around the frame.

You can adjust the appearance of the frame and background to achieve different visual effects for your charts. For example, you can change the appearance of the chart frame line, or you can change the color of the background of your chart, as shown in the following image.
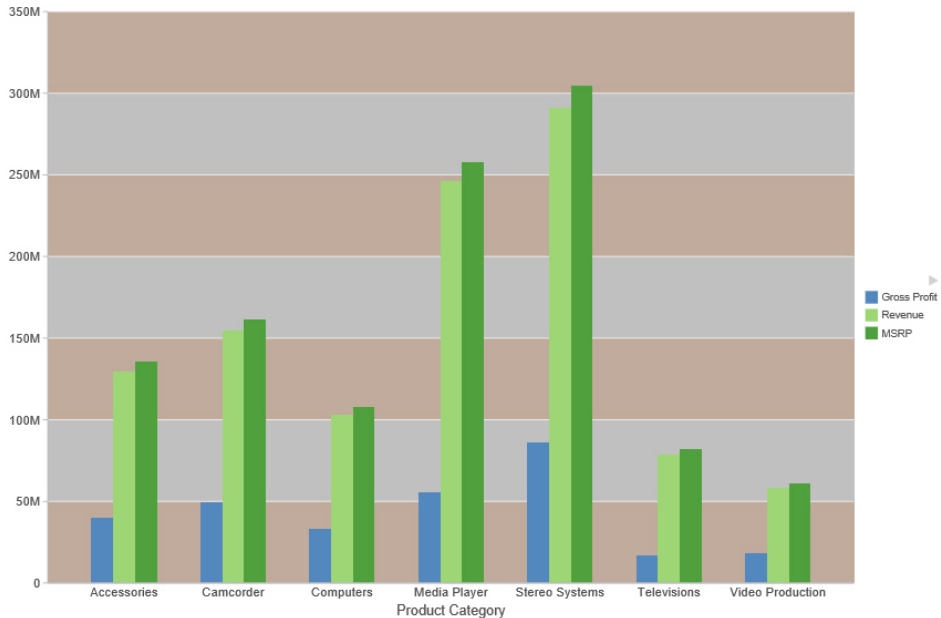
Frame & Background Dialog Box

Whether you access frame and background options from the ribbon, or the shortcut menu, you are presented with the Frame & Background dialog box of options for formatting the frame and background of a chart. The Frame & Background dialog contains the following tabs:

❑ Frame

❑ Frame Edge

❑ Background

The Frame & Background dialog box and pertinent tabs are discussed in this section for the following types of charts:

❏ 2D Charts and 2D Charts with 3D Effects (Frame and Frame Edge tabs)

❏ Pie Charts (Frame and Frame Edge tabs)

❏ 3D Charts (Left Wall, Right Wall, Floor, and Advanced tabs)

Note: The options in the Frame tab vary based on the chart type selected.

Use the Frame tab for 2D charts and 2D charts with 3D effects to set a frame depth angle and depth radius, select a fill for a frame, and set a shadow for a frame for these types of charts.

The Frame tab for 2D charts and 2D charts with 3D effects contains the following options:

❏ **Depth Angle.** Enter the angle from the front of the chart to the back where the chart risers and frames are drawn. You can set the depth angle from zero to 180 degrees, but it must be used along with Depth Radius.

❏ **Depth Radius.** Enter how far out the extruded frame will be extended. Small values, such as zero, produce very narrow charts. Large values, the maximum being 100, produce thicker charts.

Fill

❏ **No fill.** (Default). Select this option to keep the legend colorless.

❏ **Solid fill.** Select this option to display the Color and Transparency options.

   ❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for a frame.

   ❏ **Transparency.** Move the slider to make the frame opaque (0%) or transparent (100%). The default is 0%.

❏ **Gradient fill.** Select this option to display the direction of the gradient, the color pattern of the gradient, and the degrees of transparency for the two colors that make up the gradient. A gradient is a smooth color transition or blending of one color to another. The number of colors to use in a gradient is defined by the *stop* or *pin* elements.

   ❏ **Direction.** Select from this drop-down menu to set the direction of the gradient fill. For example, Gradient right or Gradient left.

Gradient style

❑ **Color Pattern.** Select the color pattern for the data series. The color pattern option on the left is an AB wash that uses two colors in the pattern color1 - color2, for example, red-green. The color pattern option on the right is an ABA wash that uses two colors in the pattern color1 - color2 - color1, for example, red-green-red.

❑ **First Color.** Click this icon to open the Color dialog box, where you can select a color for the first color.

❑ **Second Color.** Click this icon to open the Color dialog box, where you can select a color for the second color.

Shadow

❑ **Show Shadow.** Select this option to set a shadow.

Use the Frame Edge tab for 2D charts and 2D charts with 3D effects to set a frame depth angle and depth radius, select a fill for a frame, and set a shadow for a frame for these types of charts.

The Frame Edge tab for 2D charts and 2D charts with 3D effects contains the following options:

❑ **Automatically Shade Frame Edge.** Select this option to automatically shade the frame edge. Clear this option to enable the Side Frame and Bottom Frame options.

Side Frame

❑ **Show Color.** Select this option to show the color of the side frame.

❑ **Color.** Click this icon to open the Color dialog box, where you can select a color for the side frame.

❑ **Show Border Color.** Select this option to show the color of the border of the side frame.

❑ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border of the side frame.
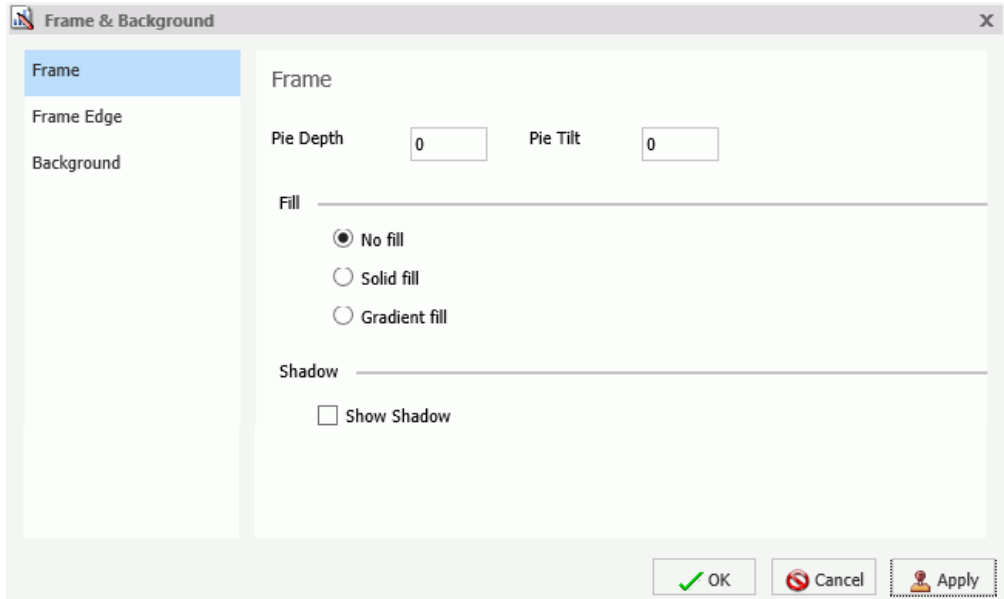
Bottom Frame

❑ **Show Color.** Select this option to show the color of the bottom frame.

❑ **Color.** Click this icon to open the Color dialog box, where you can select a color for the bottom frame.

❑ **Show Border Color.** Select this option to show the color of the bottom frame.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border of the bottom frame.

Use the Frame tab for pie charts to set pie depth and tilt, select a fill and color for a pie frame, and set a shadow for the frame.

Note: This is only available for pie charts in HTML format.

The Frame tab is shown in the following image.

The Frame tab for pie charts contains the following options:

❏ **Pie Depth.** Set the depth of the edge of a pie chart. You can select a value from zero to 100 to set the thickness of an edge.

❏ **Pie Tilt.** Set the tilt of the pie chart. The smaller the value you add, the flatter the pie chart appears. The larger the value you add, more of the pie edge appears.

Fill

❏ **No fill.** (Default). Results in no color added to the edge of the pie.

❏ **Solid fill.** Select this option to display the Color and Transparency options.

  ❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the frame.

❏ **Transparency.** Move the slider to make the fill opaque (0%) or transparent (100%). The default is 0%.

❏ **Gradient fill.** Select this option to display the direction of the gradient, the color pattern of the gradient, and the degrees of transparency for the two colors that make up the gradient. A gradient is a smooth color transition or blending of one color to another. The number of colors to use in a gradient is defined by the *stop* or *pin* elements.

❏ **Direction.** Select from this drop-down menu to set the direction of the gradient fill. For example, Gradient right or Gradient left.

❏ **Gradient Style**

❏ **Color Pattern.** Select the color pattern for the data series. The color pattern option on the left is an AB wash that uses two colors in the pattern color1 - color2, for example, red-green. The color pattern option on the right is an ABA wash that uses two colors in the pattern color1 - color2 - color1, for example, red-green-red.

❏ **First Color.** Click this icon to open the Color dialog box, where you can select a color for the first color.

❏ **Second Color.** Click this icon to open the Color dialog box, where you can select a color for the second color.

Shadow

❏ **Show Shadow.** Select this option to set a shadow around the frame.

Use the Frame Edge tab for pie charts to set the edge of a pie frame.

The Frame Edge tab for pie charts contains the following options:

❏ **Automatically Shade Frame Edge.** Select this option to automatically shade the frame edge. Clear this option to enable the Side Frame and Bottom Frame options.

❏ **Show Color.** Select this option to show the color of the side frame.

❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for side frame.

❏ **Show Border Color.** Select this option to show the color of the border of the side frame.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border of the side frame.

Bottom Frame

❏ **Show Color.** Select this option to show the color of the bottom frame.

❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the bottom frame.

❏ **Show Border Color.** Select this option to show the color of the bottom frame.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border of the bottom frame.

Use Wall and Floor tabs to set the walls and floor of a 3D chart.

The Left Wall tab is shown in the following image.
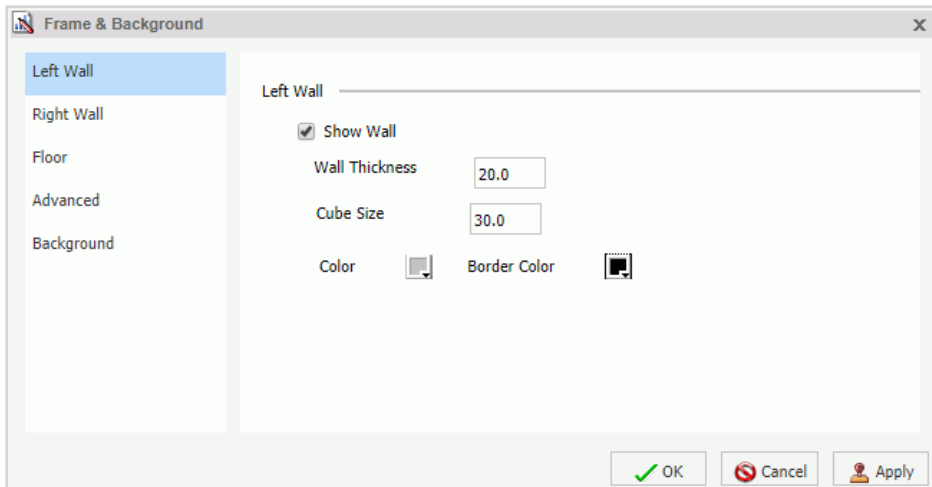
These Wall and Floor tabs contain the following options:

❏ **Show Wall** or **Show Floor.** Select this option to show the wall or floor (depending on the tab) of the 3D chart.

❏ **Wall Thickness.** Specify the thickness of the wall or floor.

❏ **Cube Size.** Specify the cube size of the wall or floor.

❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the wall or floor.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border of the wall or floor.

❏ **Show Wall (Left Wall).** Select this option to show the left wall.

❏ **Show Wall (Right Wall).** Select this option to show the right wall.

❏ **Show Floor.** Select this option to show the floor.

Use the Advanced tab for 3D charts to modify additional properties for 3D frames.

The Advanced tab contains the following options:

❏ **Viewing Angles.** Select from a drop-down menu of viewing angles for three-dimensional charts. For example, Standard or Group View.

❏ **Isometric Projection.** Select this option to ignore perspective distortion in a project graph cube from an isometric view.

❏ **Proportional Cube.** Select this option to define the axis size proportional to the number of series or groups.

❏ **Automatic shading of walls.** Select this option to shade chart walls.

❏ **Automatically Shade Frame Edge.** Select this option to automatically shade the frame edge.

   ❏ **3D Zoom Factor.** Enter a value in the text box to set the global scaling factor for zooming in and out in a 3D chart. Smaller values zoom out and produce a smaller display of the chart within a frame. Larger values zoom in and produce a larger display of the chart within a frame.

   ❏ **Pan Horizontally.** Enter a value in the text box to pan a 3D chart in the horizontal direction. Smaller values move the frame of the chart to the left. Larger values move the frame of the chart to the right.

   ❏ **Pan Vertically.** Enter a value in the text box to pan a 3D chart in the vertical direction. Smaller values move the frame of the chart upward. Larger values move the frame of the chart downward.

Use the Background tab to set and customize a border for a chart.

The Background tab contains the following options:

❏ **Show Border Color.** Select this option to show the color of the border.

❏ **Border Color.** Click this icon to open the Color dialog box, where you can select a color for the border.

❏ **Solid fill.** Select this option to display the Color and Transparency options.

   ❏ **Color.** Click this icon to open the Color dialog box, where you can select a color for the frame.

   ❏ **Transparency.** Move the slider to make the background opaque (0%) or transparent (100%). The default is 0%.

❏ **Gradient fill.** Select this option to display the direction of the gradient, the color pattern of the gradient, and the degrees of transparency for the two colors that make up the gradient. A gradient is a smooth color transition or blending of one color to another. The number of colors to use in a gradient is defined by the *stop* or *pin* elements.

   ❏ **Direction.** Select from this drop-down menu to set the direction of the gradient fill. For example, Gradient right or Radial.

Gradient Style

❏ **Color Pattern.** Select the color pattern for the data series. The color pattern option on the left is an AB wash that uses two colors in the pattern color1 - color2, for example, red-green. The color pattern option on the right is an ABA wash that uses two colors in the pattern color1 - color2 - color1, for example, red-green-red.

❏ **First Color.** Click this icon to open the Color dialog box, where you can select a color for the first color.

❏ **Second Color.** Click this icon to open the Color dialog box, where you can select a color for the second color.

For instructions on how to open this dialog box, see the procedures in *Using Frame and Background Properties* on page 199.

Frame and Background Shortcut Menu

When you right-click a chart background, a menu of options opens. The options for the background and frame elements are described in the following table.

Element	Option	Description
Background	Background Color	Enables you to specify the color of the background, using the Color dialog box. For instructions, *How to Change the Color of the Background* on page 200.
	Show legend	Controls the display of the legend on the background. When selected, it displays the legend. When cleared, it suppresses the display of the legend.
	More Frame and Background Options	Opens the Frame & Background dialog box. For more information, see *Frame & Background Dialog Box* on page 191.
Frame	Frame Color	Enables you to specify the color of the frame, using the Color dialog box. For more information, see *Using the Color Dialog Box* on page 335.
	Show 3D	Controls the depth of the frame. The value On renders the frame in 3D depth. The value Off renders the frame in one dimension. For instructions, see *How to Set 3D Depth on a Bar Chart* on page 212.
	More Frame & Background Options	Opens the Frame & Background dialog box. For more information, see *Frame & Background Dialog Box* on page 191.

Using Frame and Background Properties

The following sections contain procedures for customizing frame and background properties. The options for the following procedures are found in the Features group of the Format tab.

Procedure: **How to Change the Color of the Frame**

The default color of the frame in a chart is determined by the Document Theme selected in the Options dialog box. For more information, see *Changing InfoAssist+ User Preferences* on page 20.

This procedure describes how to change the color of the frame.

1. Create a chart.

2. Access the Frame & Background dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Frame & Background*.

   ❏ **Shortcut Menu:** Right-click the chart, and click *More Frame & Background Options*.

   The Frame & Background dialog box opens.

3. On the Frame tab, in the Fill section, click *Solid fill*, and then click the *Color* icon.

   The Color dialog box opens. Select a new color for the frame. For more information on the Color dialog box, see *Using the Color Dialog Box* on page 335. You can also set the depth angle and depth radius for the frame, as well as set a shadow for the frame.

4. Click *OK*.

   The chart displays the new frame color.

Procedure: **How to Change the Color of the Background**

The default color of the background of a chart is determined by the Document Theme selected in the Options dialog box. For more information, see *Changing InfoAssist+ User Preferences* on page 20.

1. Create a chart.

2. Open the Frame & Background dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Frame & Background*.

   ❏ **Shortcut Menu:** Right-click the background of the chart, and click *More Frame & Background Options*.

   The Frame & Background dialog box opens.

3. On the Background tab, in the Background Fill section, click the *Color* icon.

   The Color dialog box opens. Select a new color for the background. For more information on the Color dialog box, see *Using the Color Dialog Box* on page 335.

4. Click *OK*.

The chart displays the new background color.

Formatting a Gauge Chart

A gauge chart is a circular chart that indicates the current position of a single data value within a given spectrum.

A gauge chart is shown in the following image.
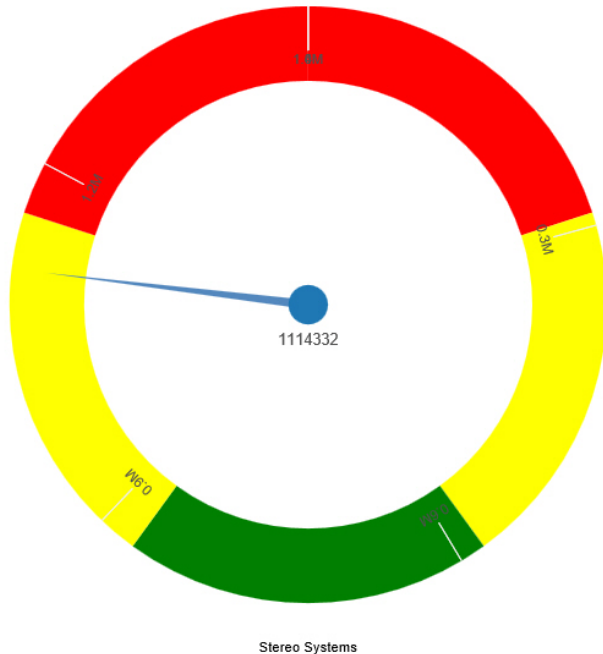
You can change the appearance of a gauge chart by using the gauge chart options found on the Format Gauge dialog box. To access the Format Gauge dialog box, on the *Format* tab, in the *Features* group, click *Gauges*.

Format Gauge Dialog Box

Whether you access gauge options from the ribbon, or the shortcut menu, you are presented with the Format Gauge dialog box of options for formatting a gauge chart. Such options include setting and styling a title for the gauge chart, setting tick marks, enabling and styling color bands, as well as setting advanced options, such as the gauge start and stop angle.

The Format Gauge dialog box contains the following tabs:

❑ General Options

❏ Axis Scale & Labels

❏ Tick Marks

❏ Bands

❏ Advanced

Use the General Options tab to set general gauge options.

The General Options tab contains the following options:

❏ **Gauges per row.** Enter or select how many gauges appear on each row. The default setting displays two gauge charts. A maximum of 32 gauge charts can appear on each row.

Note: The number of charts displayed per row can differ, based on the output format selected. For example, HTML format will display two charts per row, and HTML5 will display four.

Gauge Title

❏ **Show title.** (Default) Displays a gauge title appear for each gauge. Clear this option to suppress the title.

❏ **Position.** Select a position for the gauge title. Above is the default value.

❏ **Style.** Click this icon to open the Style dialog box, where you can style text.

Gauge value

❏ **Show value.** (Default) Clear this option to suppress the gauge value.

❏ **Style.** Click this icon to open the Style dialog box, where you can style text.

❏ **Format Value.** Contains a list of preset formats that can be applied.

❏ **Custom Format.** Allows you to use a custom format. This option is activated when *Use Pattern /100* and *Use Pattern* are selected as the format labels.

Use the Axis Scale & Labels tab to set the axis scale and label properties for the gauge needle.

The Axis Scale & Labels tab contains the following options:

Scale

❏ **Automatic Minimum.** (Default) Sets the engine to automatically supply the minimum value on the scale. Clear this option to manually set the minimum value by entering a number into the Value text box.

❑ **Value.** Enter the minimum value in this text box if you have not selected Automatic Minimum.

❑ **Automatic Maximum.** (Default) Sets the engine to automatically supply the maximum value on the scale. Clear this option to manually set the maximum value by entering a number into the Value text box.

❑ **Value.** Enter the maximum value in this text box if you have not selected Automatic Maximum.

Labels

❑ **Show Labels.** (Default) Displays labels next to the axis. Clear this option to suppress labels.

❑ **Style Labels.** Click this icon to opens the Style dialog box, where you can style text.

❑ **Format Labels.** Select from a drop-down menu of present formats that can be applied to the labels. When a custom format is selected, the format must be defined using a custom format pattern. For a list and description of the characters that you can use in a custom format, see the table in *Formatting Data Labels* on page 156.

❑ **Custom Format.** Text field to enter the custom format that you want to use.

The Tick Marks tab contains options to format tick marks on a gauge chart.

The Tick Marks tab contains the following options for both major and minor ticks:

❑ **Automatic Grid Step.** (Default) Automatically calculates the number of major grid steps in a gauge chart. Clear this option to manually set the value by entering a number in the Value text box.

❑ **Value.** Enter the value in this text box if you have not selected Automatic Grid Step.

❑ **Tick Color.** Click this icon to open the Color dialog box, where you can select a color for the tick marks.

❑ **Tick Mark Length.** Enter a value for the relative length of major tick marks in a gauge chart. The valid range is from 0.0 to 0.5. If you set the smallest value, major tick marks do not appear.

The Bands tab contains options to format the color of the scale background on a gauge chart.

The Bands tab contains the following options:

❏ **Band 1.** Opens a drop-down menu of available bands.

    ❏ **Add.** Adds the band selected from the drop-down menu of bands to the gauge chart. You can create up to five bands for a gauge chart.

    ❏ **Remove.** Removes the band selected from the drop-down menu of bands to the gauge chart.

❏ **Minimum Value.** Enter a minimum value to a quality band in the gauge chart.

❏ **Maximum Value.** Enter a maximum value to a quality band in the gauge chart.

❏ **Border Color.** Opens the Color dialog box, where you can edit the color of the gauge band border.

Fill

❏ **No fill.** Removes fill from the quality band.

❏ **Solid fill.** (Default) Applies a solid color to the quality band.

❏ **Color.** Click this option to open the Color dialog box, where you can select the color for the quality band.

❏ **Transparency.** Move the slider to make the band opaque (0%) or transparent (100%). The default is 0%.

The Advanced tab contains options to set additional properties for the gauge needle.

The Advanced tab contains the following options:

❏ **Descending Axis.** Select this option to draw the gauge scale in descending order. When this option is cleared (default), the gauge scale is drawn in ascending order.

❏ **Show Zero Label.** Displays the zero label on the axis scale. Clear this option to start the gauge at another value. This is the default.

❏ **Gauge Center by Quality.** Select this option to have the center of the gauge needle appear in the same the color as the band to which it is pointing. This option is available for HTML charts only.

❏ **Gauge Start Angle.** Enter a value to rotate the gauge start angle to a specified number of degrees. Values can range from 0 to 359 degrees. The default is 220 degrees.

❏ **Gauge Stop Angle.** Enter a value to rotate the gauge stop angle to a specified number of degrees. Values can range from 0 to 359 degrees. The default is 320 degrees. Setting a start angle to 0, and a stop angle to 180, creates a semi-circle.

❏ **Relative Inner Radius.** Enter a value to define the inner radius of the gauge bands and labels relative to the outer background of the gauge. Smaller values, such as 0.0, place the inner radius closer to the center of the gauge. A maximum value of 1.0, places the inner radius close to the gauge outline.

❏ **Relative Thickness.** Enter a value to define the relative thickness of the gauge bands. Values can range from 0.0 to 1.0.

❏ **Same Size Gauges.** This option applies to multi-category gauge charts. If you are working with three or more gauges per row, you can select this option to have the gauges display in the same size.

Gauge Elements Shortcut Menu

When you right-click a gauge chart, a menu containing the More Gauge Options becomes available. Select this option to open the Format Gauge dialog box. This is only available when using the HTML output format.

Using Gauge Properties

The following sections contain procedures for gauge properties. The Gauges option can be found on the *Format* tab, in the *Features* group.

Note: This option is only available when you are working with a gauge chart.

Procedure: **How to Set the Number of Gauges Per Row**

If you have multiple gauges on a chart, you might want to specify how many gauges appear on each row.

1. Create a gauge chart that has multiple values.

2. Open the Format Gauge dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges*.

   ❏ **Shortcut Menu:** Right-click the gauge chart and select *More Gauge Options*.

   The Format Gauge dialog box opens.

3. On the General options tab, in the Gauges per row field, enter or select the number of gauges that you want to appear on one row.

4. Click *OK*.

The gauges now appear on one row.

After changing the setting from the default of 2 gauges per row to 3 gauges per row, all the charts now appear on one row.

Procedure: **How to Set the Minimum and Maximum Axis Scale Values**

1. Create a gauge chart.

2. Open the Format Gauge dialog box in one of the following ways:

❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges*.

❏ **Shortcut Menu:** Right-click the gauge chart, and click *More Gauge Options*.

The Format Gauge dialog box opens.

3. On the Axis Scale & Labels tab, in the Scale area, either accept the minimum and maximum values for the scale automatically supplied by the chart engine, or enter your own in the *Value* fields.

4. Click *Apply*.

The gauge scale reflects the selections that you have made.

Procedure: **How to Style Axis Labels**

1. Create a gauge chart.

2. Open the Style dialog box in one of the following ways:

❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges* to open the Format Gauge dialog box. In the Format Gauge dialog box, open the Axis Scale & Labels tab. In the Labels area, click the *Style Labels* icon.

❏ **Shortcut Menu:** Right-click an axis label, and click *Style*.

The Style dialog box opens.

3. Select your styling options.

4. Click *OK*.

The scale labels reflect the style selections that you have made.

Procedure: **How to Format Axis Labels**

1. Create a gauge chart.

2. Access the menu of available format options for axis labels in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges* to open the Format Gauge dialog box. In the Format Gauge dialog box, open the Axis Scale & Labels tab. In the Labels area, open the *Format Labels* drop-down menu.

   ❏ **Shortcut Menu:** Right-click an axis label, and point to *Format*.

   The menu of available format options opens.

3. Select your format option.

   Note: If you select a custom format (for example, Use Pattern, or Use Pattern /100), from the Format Labels menu on the Format Gauge dialog box, the Custom Format menu becomes available. When you select a custom format, it must be defined using a custom format pattern. For a list and description of the characters that you can use in a custom format, see the table in *Formatting Data Labels* on page 156.

4. Click *OK*.

   The scale labels reflect the format selection that you have made.

Procedure: **How to Rotate Axis Labels**

1. Create a gauge chart.

2. Right-click an axis label.

3. On the shortcut menu, point to *Rotate*, then select the degree to which you want the labels rotated.

Procedure: **How to Set Gauge Tick Marks**

This procedure describes how to set the grid step, tick color, and tick length for the major and minor tick marks.

1. Create a gauge chart.

2. Open the Format Gauge dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges*.

   ❏ **Shortcut Menu:** Right-click the gauge chart and select *More Gauge Options*.

   The Format Gauge dialog box opens.

3. On the Tick Marks tab, for the *Automatic Grid Step*, either accept the value automatically supplied by the chart engine, or enter your own, in the Value fields.

4. Click the *Tick Color* icon, to open the Color dialog box, where you can select a color for the tick mark.

5. For the *Tick Mark Length*, either accept the value automatically supplied by the chart engine, or enter your own, in the *Value* fields.

Procedure: How to Set Gauge Color Bands

1. Create a gauge chart.

2. Open the Format Gauge dialog box in one of the following ways:

   ❑ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges*.

   ❑ **Shortcut Menu:** Right-click the gauge chart, and click *More Gauge Options*.

   The Format Gauge dialog box opens.

3. On the Bands tab, set the minimum and maximum value for each band that you want to appear on the gauge chart.

4. Set the color of the fill and border for each color band.

   Note: The gradient fill option is not available for color bands.

5. Click *OK* to close the Format Gauge dialog box.

   The bands are formatted accordingly.

Procedure: How to Match Needle Center Color to Band Color (Gauge Center by Quality)

This option matches the needle center color to the color of the band that the needle is pointing to.

1. Create a gauge chart.

2. On the *Format* tab, in the *Features* group, click *Gauges*.

   The Format Gauge dialog box opens.

3. On the Bands tab, set the minimum and maximum value for each band that you want to appear on the gauge chart

4. Set the color of the fill and border for each color band.

   Note: The gradient fill and transparency options are not available for gauge needles.

5. On the Advanced tab, select *Gauge Center by Quality*.

   Note: This option displays in HTML, but not in HTML5.

6. Click *OK* to close the Format Gauge dialog box.

   The color of the center of the gauge needle now matches the color of the band.

Procedure: **How to Style a Gauge Needle**

This procedure explains how to change the gauge needle from the Normal style to the Pencil style.

1. Create a gauge chart.

2. Open the Format Gauge dialog box in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *Gauges*.

   ❏ **Shortcut Menu:** Right-click the gauge chart, and click *More Gauge Options*.

3. The Format Gauge dialog box opens.

4. In the General Options tab, in the Gauge Needle section, from the Style drop-down menu, select *Pencil*.

5. Click *OK*.

   The gauge needle changes to a pencil.

Procedure: **How to Set Gauge Needle Colors in a Multi Series Gauge Chart**

You cannot change the fill color and border color of the needles in a multi-series gauge chart through the General Options tab of the Format Gauge dialog box. You can do so through the Format Series dialog box. However, you can still use the General Options tab to change the style of the needle.

1. Create a gauge chart with more than one measure field.

2. On the *Series* tab, from the Series drop-down menu, select the series that you want to style.

3. In the Style group, click *Style*.

   The Format Series dialog box opens.

4. On the Fill tab, select the fill and color options for the gauge needle for the selected series.

5. On the Border tab, select the *Show Border Color* option, if you want the gauge needle to have a border. You can select the color for the border, as well.

6. Click *Apply*.

7. Repeat steps 2 through 5 for each series gauge needle that you want to style.

8. When you are finished, click *OK* to close the Format Series dialog box.

   The color of the gauge needles and their borders changes accordingly.

Formatting Page Headings and Page Footings

Page headings and page footings supply context and key information about a chart, such as its purpose, audience, and author. Page headings and page footings also enhance visual appeal.

Procedure: **How to Add a Page Heading and Page Footing to a Chart**

The procedure uses sample values, but you can supply values that apply to your own charts.

This feature is available in Query Design view, Live Preview, and Document mode.

1. Create a chart.

2. On the *Home* tab, in the *Report* group, click *Header & Footer*.

    The Header & Footer dialog box opens.

    Tip: Another way to access the Heading & Footing dialog box is to click the arrow next to the Header & Footer button. Doing so opens a drop-down menu from which you can select the heading or footing that you want to work with. After you make your selection, the Header & Footer dialog box opens, and the heading or footing that you selected is active.

3. Click the tab for the page heading or page footing, depending on which you want to add.

    By default, the Page Heading tab is selected. In this procedure, accept the default to add a page heading first.

4. Click inside the design area of the dialog box, and type the text for the page heading.

    For example, the text for a sample page heading might be Customers By Occupation.

5. Using the styling options, apply styling to the page heading text.

    For example, 14 pt. bold Helvetica with center alignment.

6. Click *Apply* to save the changes that you have made, without closing the dialog box.

7. To add a page footing, click the *Page Footer* tab.

    For this procedure, you are going to add one of the supplied quick text options, followed by some text of your own.

8. Click the down arrow next to the preformatted text button, and click *Created by* from the drop-down list.

9. Complete the text by typing the applicable value within the supplied text, for example, Sales Manager.

10. Change the styling as you want.

11. Click *OK* to save the page heading and page footing and close the Header & Footer dialog box.

    The chart contains the page heading and page footing that you added and styled.

The following image shows a chart with a styled header and footer.
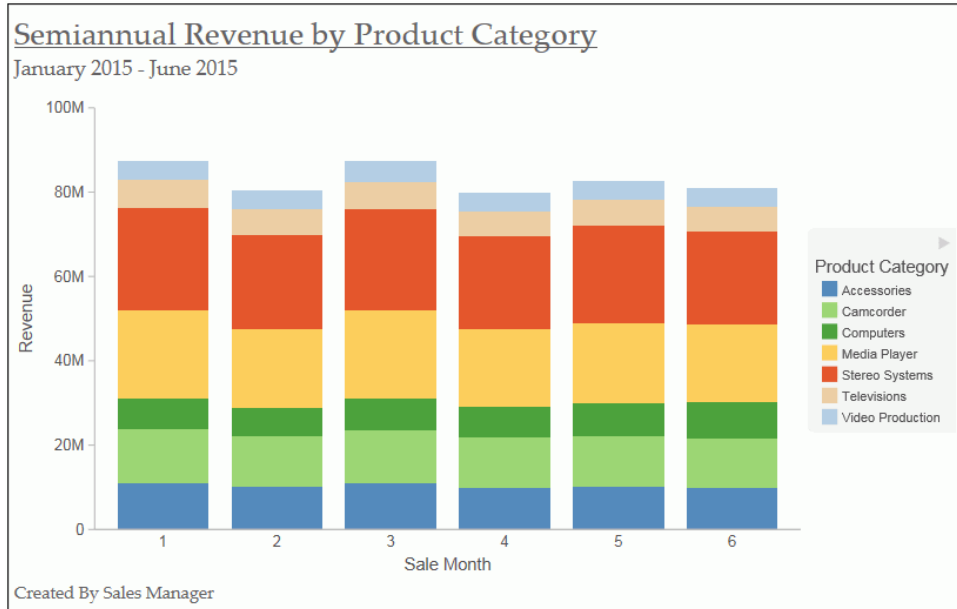
12. To make changes to either the page heading or page footing, return to Design view. Right-click the header or footer, and click *Edit* from the drop-down menu.

Procedure: **How to Control the Rendering of a Page Heading and Page Footing**

You can control the way in which a page heading and page footing are rendered on a chart at run time.

1. Create a chart.

2. Open the Header & Footer dialog box, as described in *How to Add a Page Heading and Page Footing to a Chart* on page 210.

3. Click the *Text options for chart* button 📊 ▾.

   A drop-down menu, with two options for rendering the page heading and page footing, opens.

   Tip: Your selection for a page heading also applies to a page footing, and vice versa.

   ❏ Create Header and Footer as text renders the heading and footing as text elements that are separate from the chart image.

   ❏ Embed Header and Footer in the chart renders the heading and footing text as part of the chart image. This is the default value.

4. Click *OK* to save your selection and close the Heading & Footing dialog box.

Using Additional Formatting Features

This section describes additional formatting features that are available for charts.

Procedure: **How to Set 3D Depth on a Bar Chart**

You can apply a 3D-effect to a 2D-chart.

Note: If you find that the depth of the 3D effect makes it difficult to distinguish the values on the Y-axis scale, then you can turn this option off. This procedure explains how to set the 3D effect for a default vertical bar chart.

The following image shows a bar chart before the 3D effect is applied.
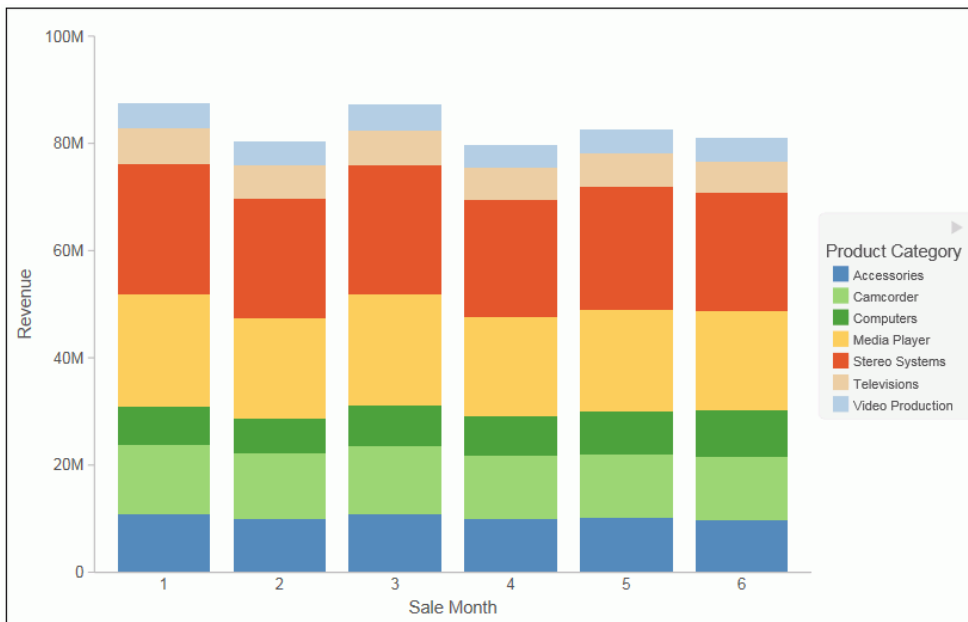
1. Create a 2D chart.
2. In Live Preview, apply the 3D effect in one of the following ways:

   ❏ **Ribbon:** On the *Format* tab, in the *Features* group, click *3D Effect*.

   ❏ **Shortcut Menu:** Right-click the frame of the chart, point to *Show 3D*, and click *On*.

The 3D effect is applied to the chart, as shown in the following image.
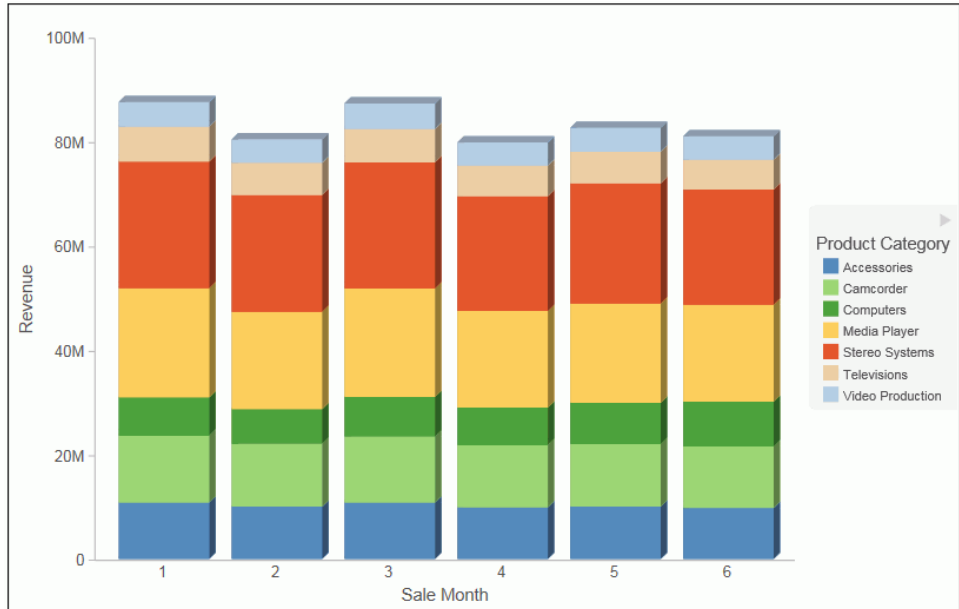
Procedure: How to Rotate a Chart

You can rotate bar, line, and area charts to change the orientation of the data.

1. Create a chart.

2. On the *Format* tab, in the *Features* group, click *Rotate*.

   The chart is rotated 90 degrees clockwise.

Procedure: How to Sort a Chart by Total Value

Once you create a bar, line, or area chart, you can sort the results in ascending or descending order. While this feature was implemented specifically for Stacked Bar charts, it also applies to other chart types, as previously mentioned. This feature enables you to view your data in numerical order, allowing you to identify trends and determine what data points are priorities.

Note: This feature is available in Chart and Visualization mode.

1. Create a bar, line, or area chart with at least one measure and one dimension.

2. In the Query pane, right-click on the *Horizontal Axis* and select *Sort by Total Value*.

3. From the cascading menu, select *Ascending* to sort the chart from the lowest value to the highest value, as shown in the following image.
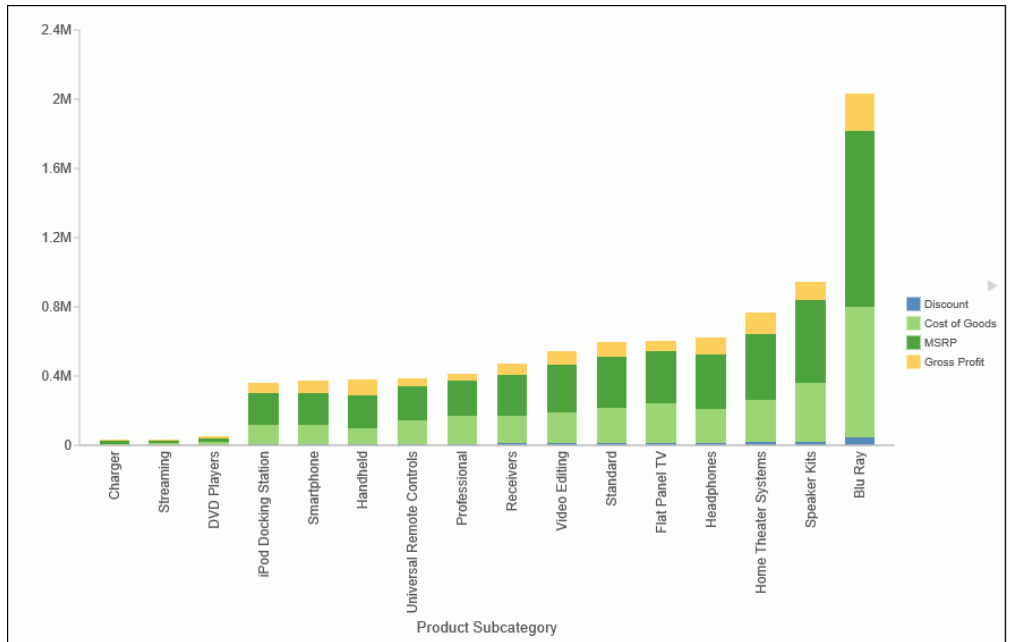
4. Select *Descending* to sort the chart from the largest value to the lowest value.

Procedure: How to Display a Static Reference Line

Reference lines draw attention to specific data locations on a chart. You can add up to three horizontal (X axis) and three vertical (Y axis) reference lines to a chart.

Reference lines can be created using either a constant or a computed field.

Field values allow a property to be dynamic, so that the reference line can change position dynamically on the chart depending on the value of the field that is assigned to it.

Note: A reference line value should be a single value, such as 10K, for example. In the Reference line dialog box, if you select a field with multiple values, (Quantity Sold, for example), then InfoAssist+ plots the last value on the chart.

1. Create a chart.

2. On the *Format* tab, in the *Features* group, click *Reference*.

3. In the drop-down menu that opens, select one of the following:

   ❏ Add Reference Line to Y-Axis

❑ Add Reference Line to X-Axis

The Reference Line dialog box opens, as shown in the following image.

4. Create the reference line with a static value that you set.

    a. Select the Value option.

    b. In the Value text field, type the value that you want to distinguish with the reference line.

5. In the Text field, type the text for the reference line.

6. In the Position drop-down menu, select the position for the reference line on the chart. For example, Above Center.

7. Click the *Style* button to set the style for the reference line. For example, Solid.

8. Click the *Color* button to open the Color dialog box, where you can select a color for the reference line and the text.

9. Click the *Weight* button to select the weight of the reference line. For example, 1px - Light.

10. Click *OK* to save the options that you have selected, and close the Reference Line dialog box.

    The reference line is added to the chart.

    The following image shows a bar chart for accessories and camcorders, revenue for which exceeds 15 million dollars.
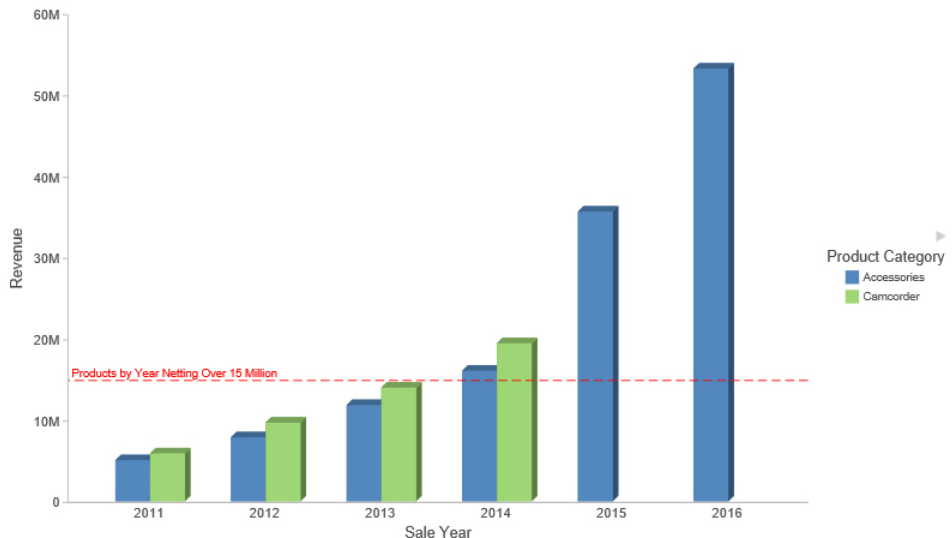
Procedure: **How to Display a Dynamic Reference Line**

Reference lines can be created using either a constant or a computed field.

Field values allows a property to be dynamic, so that the reference line can change position dynamically on the chart depending on the value of the field that is assigned to it.

Note: A reference line value should be a single value, such as 10K, for example. In the Reference line dialog box, if you select a field with multiple values, (Quantity Sold, for example), then InfoAssist+ plots the last value on the chart.

The following procedure provides an example of how to create a dynamic reference line, where the value changes based on the date. In this example, you can track the number of estimated delivery days per shipping company, where the number of days estimated for delivery are based on whether or not the sale date is a holiday.

1. Create a COMPUTE field to calculate the Reference Line.

    a. On the *Data* tab, in the *Calculation* group, click *Summary (Compute)*.

       The Summary Field (COMPUTE) dialog box opens.

    b. In the Field text box, enter *Reference*.

    c. Set the format to *D12.2*.

    d. Enter *IF WF_RETAIL_LITE.WF_RETAIL_TIME_SALES.TIME_HOL EQ 'Y' THEN 5 ELSE 2* into the expression.

    e. Click *OK* to close the dialog box.

2. Hide the *Reference* field from the chart.

3. Add a dynamic reference line.

    a. On the *Format* tab, in the *Features* group, click *Reference*.

    b. From the drop-down menu, select *Add Reference Line to Y-Axis*.

       The Reference Line dialog box opens.

    c. Select the *Field* option.

    d. From the Field drop-down menu, select *Reference*.

    e. In the Text field, enter *Acceptable*.

    f. From the Weight drop-down menu, select *2px - Medium*.

    g. From the Position drop-down menu, select *Above Left*.

    h. Optionally, you can change the color and style of the Reference line.

    i. Click *OK* to close the Reference Line dialog box.

4. Run the chart.

   The reference line displays.

Procedure: **How to Display Annotations**

Annotations are explanatory notes or comments. You can add up to eight annotations on a chart.

1. Create a chart.

2. On the *Format* tab, in the *Features* group, click *Annotate*.

3. In the drop-down menu that opens, click *Add an annotation*.

   The Annotation dialog box opens.

4. In the text input field, type the text for the annotation.

5. In the Position drop-down menu, select the position for the annotation on the chart. For example, Top Left.

6. Click *OK* to save the options that you selected, and close the Annotation dialog box.

   The annotation is added to the chart.

7. Click *Run* to generate the report.

   The following image shows a chart with an annotation in the middle right position.
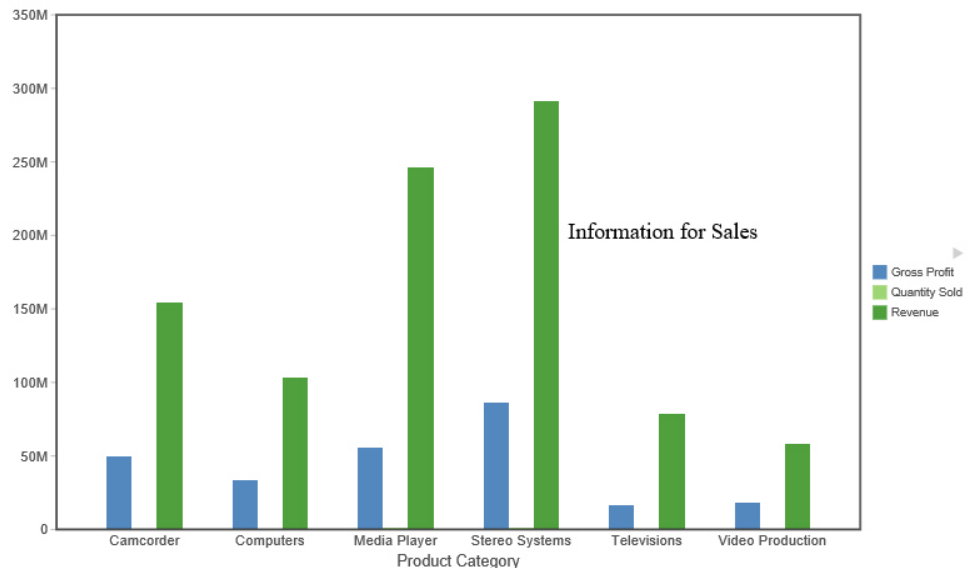
Creating and Customizing Documents

Designing documents in Document mode allows you to add text, images, active form controls, reports, and charts to create documents that can be used to generate presentation-ready reports based on your data.

Document mode combines the features of report building with the ability to style and present customized documents.

In this chapter:

❏ Accessing Document Mode

❏ Building a Document

Accessing Document Mode

In Document mode, you can:

❏ Build a new document.

❏ Open an existing document.

❏ Generate a new document from an existing single report.

A blank InfoAssist+ canvas in Document mode is shown in the following image.
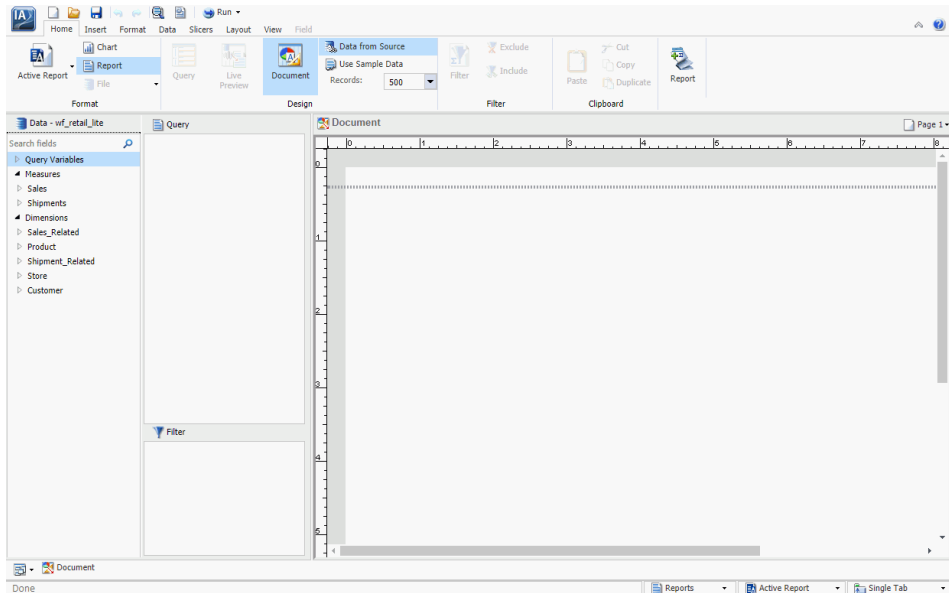
Procedure: **How to Access Document Mode to Build a New Document**

You can build new documents by accessing Document mode from the InfoAssist+ splash screen.

1. Click *Build a Document*.

   The Open dialog box opens.

2. Select a data source to begin building your document.

   Note: Documents can be built using more than one data source. The source you select here is the one you will begin with, but you can add more at any time. For more information on adding additional data sources, see *Data Tab* on page 30.

3. Click *Open*.

   InfoAssist+ opens a new canvas in Document mode.

Procedure: **How to Access Document Mode by Opening an Item From the Splash Screen**

You can access existing documents in Document mode from the InfoAssist+ splash screen.

1. Click *Build a Document*.

   The Open dialog box opens.

2. On the Quick Access toolbar, click *Create new report, chart, document or visualization*.

   The splash screen displays.

3. Click *Open Existing Item*.

   The Open dialog box opens.

4. Select one of the documents. Documents are represented by the Document icon.

5. Click *Open*.

   InfoAssist+ opens the document in Document mode.

   Note: If you select a single report in step 3, InfoAssist+ opens the report in either Query Design view or Live Preview. To view a copy of the report in Document mode, see *How to Access Document Mode From the Document Button on the Home and View Tabs* on page 222.

Procedure: **How to Access Document Mode by Opening a Report From the Quick Access Toolbar**

You can access documents in Document mode from the InfoAssist+ Quick Access Toolbar.

1. With InfoAssist+ open, click *Open existing item* from the Quick Access Toolbar.

   An Open dialog box appears.

2. Select one of the documents, which are represented by the Document icon.

3. Click *Open*.

   InfoAssist+ opens the document in Document mode.

   Note: If you select a single report in step 2, InfoAssist+ opens the report, in either Query Design view, or Live Preview. To view a copy of the report in Document mode, see *How to Access Document Mode From the Document Button on the Home and View Tabs* on page 222.

Procedure: **How to Access Document Mode From the Document Button on the Home and View Tabs**

With InfoAssist+ open in Live Preview or Query Design view, you can access Document mode by clicking the *Document* button in the Design group. The Design group appears on both the Home and View tabs.

Accessing Document mode by clicking the Document button creates a copy of the current single report as a document. You can use this method to promote the content of a report to a document.

You can also access Document mode in Reporting Objects by following this procedure.

Note: When a Reporting Object is promoted to Document mode, any reports and charts that the Reporting Object has are added to the canvas.

1. With an InfoAssist+ report open, click either the *Home* tab, or the *View* tab.

2. In the *Design* group, click *Document*.

    InfoAssist+ enters Document mode.

    Note: The single report you started with still exists in the original mode. Selecting Document mode while a single report is open does not convert the report to a document. It makes a copy of the report, with the copy becoming a document and the original remaining unchanged.

    You can switch between the new document and the original report using the *Switch Report* button. The Switch button is found on the *View* tab, in the *Report* group. You can also switch between the document and the report using the Reports button on the status bar. For more information on switching between reports, see *View Tab* on page 33.

Building a Document

Document mode allows you to build multiple reports and charts on the same canvas. The styling, design, and report building functionality of Live Preview and Query Design view is available in Document mode.

In addition, there are many other features that simplify building documents. You can build and insert multiple reports in the form of reports and charts into documents. You can also insert images and text for presentation and organizational purposes.

Inserting Reports From Multiple Data Sources

With InfoAssist+ opened in Document mode, you can insert multiple charts and reports onto the canvas. These reports can be from different data sources. With documents, you have the option to add additional data sources to the document.

In order to insert reports from different data sources, the document must have multiple data sources loaded. For more information on adding and switching between data sources, see *Data Tab* on page 30.

Note: You cannot use multiple data sources when working with a Reporting Object.

Procedure: How to Insert Two Reports From Two Different Data Sources

A document can display multiple reports from multiple data sources in the same document.

1. With InfoAssist+ open in Document mode, click the *Insert* tab and select *Chart* or *Report*.

2. If your document has only one data source, insert additional data sources.

   For more detailed instructions on inserting multiple data sources, see *Data Tab* on page 30.

3. Switch to a data source different than the one used in step 1.

   For more detailed instructions on switching to a different data source, see *Data Tab* on page 30.

4. Insert a chart or report using this new data source, following the instructions given in *Inserting a New Report* on page 223.

   Your document is now populated with reports that have data from different data sources. You can add as many data sources as you need.

Inserting a New Report

With InfoAssist+ opened in Document mode, you can insert multiple charts and reports onto the canvas. The procedures in the following sections detail how to insert reports into documents.

In Document mode, you can insert a report in the following ways.

❏ Use the Insert tab.

❏ Double-click a data source field.

❏ Drag a data source field onto the canvas.

Note: When you use the Insert tab or double-click a data source field, a report placeholder is added to the canvas.

Dragging a data source field onto the canvas inserts the place holder at the location you dropped it.

The following procedures describe how to insert new reports. For more information on how to edit existing reports, see *How to Style and Customize a Report* on page 231.

Procedure: **How to Insert a Report**

Do one of the following, while in Document mode:

❏ On the *Insert* tab, in the *Reports* group, click *Report*. Add fields to the placeholder report.

❏ On the *Home* tab, in the *Format* group, click *Report*. Double-click a data source to automatically create a report with that data.

❏ On the *Home* tab, in the *Format* group, click *Report*. Drag a field to the canvas to create a report.

Inserting a New Chart

With InfoAssist+ opened in Document mode, you can bring multiple charts and reports onto the canvas. The procedures in the following sections describe how to insert charts into documents.

In Document mode, you can insert a chart in the following ways:

❏ Use the Insert tab.

❏ Double-click a data source field.

❏ Drag a data source field onto the canvas.

Note: When you use the Insert tab or double-click a data source field, a chart placeholder is added to the canvas.

Dragging a data source field onto the canvas inserts the place holder at the location you dropped it.

The following procedures describe how to insert new charts. For more information on how to edit existing charts, see *How to Style and Customize a Chart* on page 232.

Procedure: **How to Insert a Chart**

1. Do one of the following, while in Document mode:

❏ On the *Insert* tab, in the *Reports* group, click *Chart*. Add fields to the placeholder chart.

❑ On the *Home* tab, in the *Format* group, click *Chart*. Double-click a data source to automatically create a chart with that data.

❑ On the *Home* tab, in the *Format* group, click *Chart*. Drag a field to the canvas to create a chart.

2. Optionally, change the chart format using the options on the *Format* tab, in the *Chart Types* group.

Inserting an Existing Report

With InfoAssist+ opened in Document mode, you can insert existing charts and reports onto the canvas from the Insert tab. When inserted, these components are referenced but remain independent, supporting modular development with reusable content. Modifications must be made in the individual components separately. These updates will then be reflected in the document during generation.

Note:

❑ When working in Document mode, you cannot insert an existing report that has a HOLD.

❑ When you insert an existing report, which has already been created and is referenced via INCLUDE syntax, and then select it on the Document canvas, the data fields do not display in the Query pane.

❑ When you insert an existing report that contains a field specified for multi-graph, the field will be placed in the Coordinated field container, by default. If you override this field with another and save the document, this change is not written back to the existing included report. The settings in the original report will be restored when the document is restored.

The following procedure describes how you can insert reports into new documents and documents that are already populated with reports, text, and images.

Procedure: How to Insert an Existing Report With the Insert Tab

You can create a document in the Custom Reports section of the domain and use Standard Reports items as Existing Report components. You cannot use other Custom Report items as components.

1. With InfoAssist+ open in Document mode, click the *Insert* tab.

2. In the *Reports* group, click *Existing Report*.

   An Open dialog box appears.

3. Browse to the report that you want to insert and click *Open*.

   The report placeholder is added to the canvas.

> **Note:** You cannot edit an existing report that is inserted into a document.

Creating a Document From a Single Report

You can take a single report created in Live Preview or Query Design view and convert it into a document, displaying it in Document mode.

When you convert a single report into a document, the original report is preserved and a copy of that report is opened as a document in Document mode. You can then add additional reports, charts, images, and text.

Inserting Text and Images

With InfoAssist+ opened in Document mode, you can bring text and images onto the canvas. The following procedures describe how you can insert text and images into new documents and documents that are already populated with reports, text, and images.

Note: You can only do this in Document mode.

The following procedures detail how to insert text and images. For more information on how to edit existing text and images, see *Editing Components in a Document* on page 227.

Procedure: **How to Insert Text**

1. With InfoAssist+ open in Document mode, click the *Insert* tab.

2. In the *Objects* group, click *Text Box*.

   A text component is added to the canvas, containing default text.

3. Double-click, or right-click, the text component to edit the text.

   For more information on editing and styling the text, see *How to Edit Text* on page 232.

Procedure: **How to Insert an Image**

1. With InfoAssist+ open in Document mode, click the *Insert* tab.

2. In the *Objects* group, click *Image*.

   An Open dialog box appears.

   Note: By default, the Open dialog box displays image files in the current >Report Broker Content folder.

3. Browse to the desired image and click *Open*.

   The selected image is added to the canvas.

Editing Components in a Document

The reports, controls, and text in a document can be edited, moved, resized, and deleted. Each of these components has a context menu which can be accessed by right-clicking the component.

Images can be moved, resized, and deleted, but they have no context menu and cannot be edited. Right-clicking an image brings up the option to delete it.

Procedure: How to Resize a Component

You can resize a component in the following ways:

❏ Using the component sizing handles.

❏ Changing the height and width on the *Layout* tab, in the *Size & Arrange* group.

❏ Accessing the options on the Size tab in the Size and Position dialog box.

The resize feature is available for all components that can be added to a document.

1. Open or create a document with at least one report, text component, control, or image.

2. Resize the component in one of the following ways:

❏ **Sizing Handles:** Select the component and drag the sizing handles that appear around it. As you manually increase the height and width of the component, the new values appear in the corresponding text boxes in the Size & Arrange group of the Layout tab.

❏ **Ribbon:** You can use the ribbon in one of the following ways:

   ❏ Select the component in the document. On the *Layout* tab, in the *Size & Arrange* group, enter values in the Height and Width fields.

   ❏ On the *Layout* tab, in the *Size & Arrange* group, click the dialog box launcher to open the Size and Position dialog box, as shown in the following image.
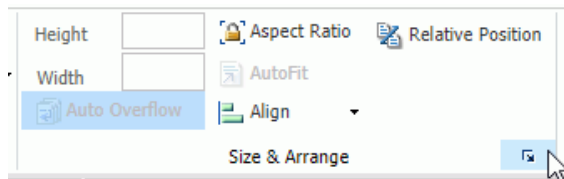
❏ **Shortcut Menu:** Right-click the component and select *Size and Position*. The Size and Position dialog box opens.

   Note: You must right-click the corner of the component. For charts, if you click on any other point in the chart, the Size and Position option will not display.

From the Size and Position dialog box, open the Size tab, as shown in the following image.
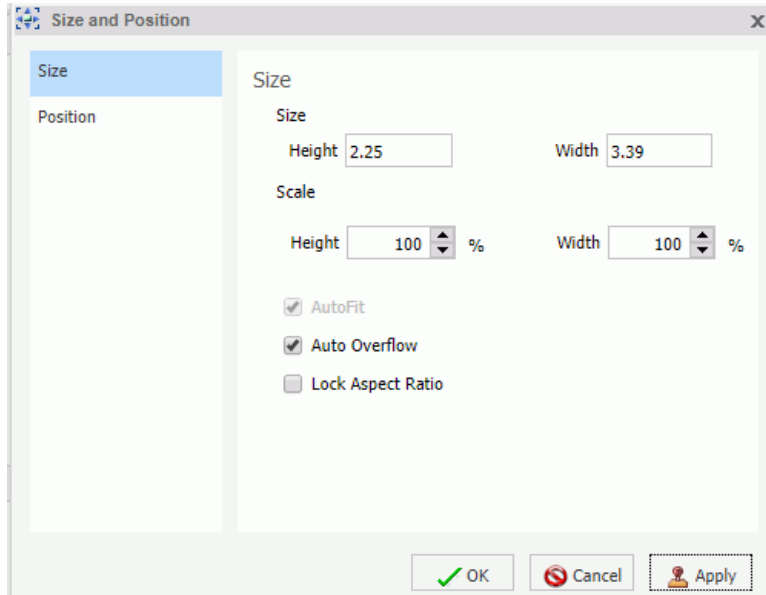
Use the Height and Width options to change the position of the selected component. You can adjust the pixel size of the object with the Size options or the scale percentage of the object with the Scale options.

You can lock the aspect ratio using the Aspect Ratio button, which is available when working with charts, images, and text boxes while working in Document mode. With the aspect ratio locked, changing the width automatically changes the height to keep the component to scale, and changing the height automatically changes the width.

Note: The Auto Overflow option is only available while working with reports in Document mode through the Size & Arrange group. With Auto Overflow set, you cannot manually set the height and width of a report. The area of the report expands automatically to show all data.

When two objects are selected, the *Relative Position* button sets the bottom-left corner of the component that is higher on the page to the upper-left corner of the one that is lower. Once a relationship is created, arrows appear to show that relationship while both items are still selected.

Procedure: **How to Move a Component**

You can move a component by clicking it, or by accessing the Position section of the Size and Position dialog box. This feature is available for all components that can be added to a document.

You can also align components with each other so that their horizontal or vertical position matches. For more information, see *How to Align Components* on page 229.

1. Open or create a document with at least one report, text component, control, or image.

2. Select the component and move it by using one of the following methods:

   ❏ Drag the component anywhere on the canvas.

      or

   ❏ Right-click the component and click *Size and Position*.

      ❏ On the Size and Position dialog box, click the *Position* tab.

      ❏ Use the Horizontal and Vertical options to change the position of the selected component.

Procedure: **How to Align Components**

You can align components with each other so that their horizontal or vertical positions match. You must have multiple components selected to use the align options.

The alignment is anchored by the component that is in the farthest position of the selected alignment. For example, if you select two components and click *Align Left*, the components align horizontally with the component farthest to the left.

1. Open or create a document with at least two components.

2. Select a component.

3. Select a second component by holding the Ctrl key and clicking a component.

   Note: You can select multiple components simultaneously by holding the Ctrl key and with the left mouse dragging a selection box around the components. When you release the mouse, sizing handles appear around each component that you selected. If the components display with light-grey coloring, this indicates that the components are selected.

Sizing handles appear around the components, as shown in the following image.
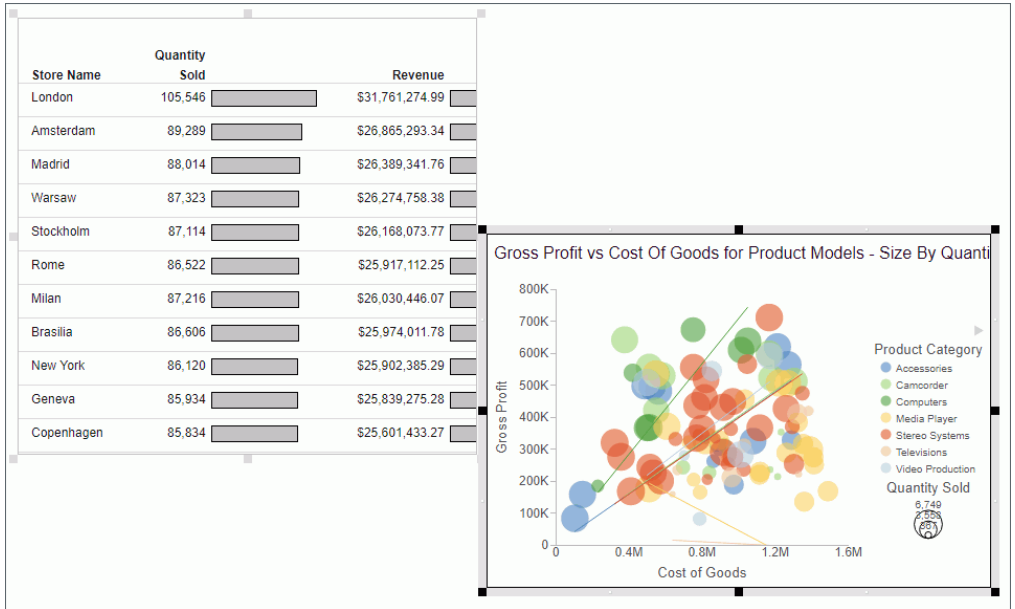
4. Align the components using one of the following methods:

❑ Right-click one of the selected components and select an alignment option from the Align drop-down menu, as shown in the following image.
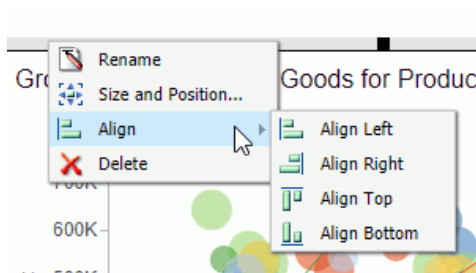
or

❑ Access the alignment options from the Align drop-down menu. The menu is available on the *Layout* tab, in the *Size & Arrange* group.

The selected components align, as shown in the following image.
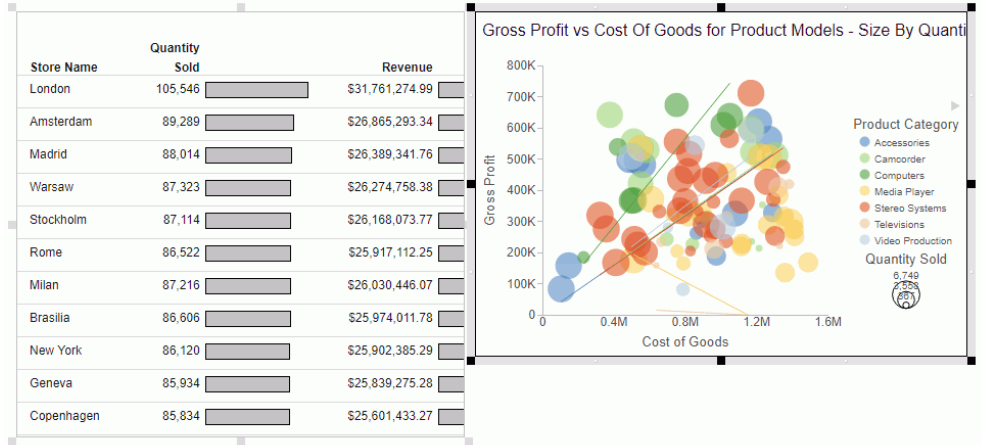
5. Click anywhere in the canvas to deselect the components.

Procedure: **How to Style and Customize a Report**

When you select a component, you can perform various functions on the component, such as moving and resizing it, as explained in *How to Move a Component* on page 229. After clicking a component, you can use the ribbon to affect all settings of the selected component, except for fields. You can right-click a component to select individual fields to edit through the context menu.

In addition to reports, you can style and customize charts and text. For more information on charts, see *How to Style and Customize a Chart* on page 232. For more information on text, see *How to Edit Text* on page 232.

Note: Images cannot be edited.

1. Open or create a document with at least one report.

2. Click the report.

   The Query pane becomes active and you can now select fields within the report. Select a field by clicking it in the canvas or in the Query pane.

   For more information on styling and customizing reports, see *Creating and Customizing Reports* on page 69.

Procedure: **How to Style and Customize a Chart**

When you select a component, you can perform various functions on the component, such as moving and resizing it, as explained in *How to Move a Component* on page 229. After clicking a component, you can use the ribbon to affect all settings of the selected component, except for fields. You can double-click or right-click a component to select individual fields to edit through the context menu or Field tab.

In addition to charts, you can style and customize reports and text. For more information on reports, see *How to Style and Customize a Report* on page 231. For more information on text, see *How to Edit Text* on page 232.

Note: Images cannot be edited.

1. Open or create a document with at least one chart.

2. Click the chart.

   The Query pane becomes active and you can now select fields within the chart. Select a field by clicking it in the canvas or in the Query pane.

   You can now edit the selected chart using commands available through the context menu or the ribbon.

   For more information on styling and customizing charts, see *Creating and Customizing Charts* on page 107.

Procedure: **How to Edit Text**

When you select a component, you can perform various functions on the component, such as moving and resizing it, as explained in *How to Move a Component* on page 229. After clicking a component, you can use the ribbon to affect all settings of the selected component, except for fields. You can right-click a component to select individual fields to edit through the context menu.

In addition to editing text, you can style and customize reports and charts. For more information on reports, see *How to Style and Customize a Report* on page 231. For more information on charts, see *How to Style and Customize a Chart* on page 232.

Note: Images cannot be edited.

1. Open or create a document with at least one text component.

2. Click the text box.

   Sizing handles appear around the border and the text box toolbar becomes active.

3. Click anywhere in the text box and begin entering text.

4. Highlight the text you would like to edit, and right-click it. A menu of options appears, as shown in the following image.
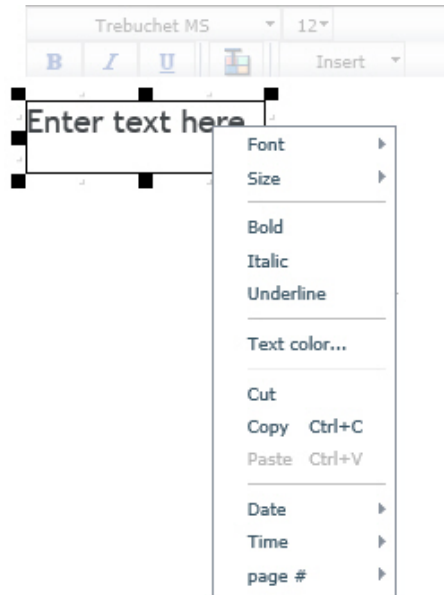
5. Using the menu options, you can style the text and insert quick text.

   The text component menu options are as follows:

   ❏ **Font.** Opens a list of available fonts for the selected text.

   ❏ **Size.** Opens a list of available text sizes for the selected text.

   ❏ **Bold.** Formats the selected text in bold.

   ❏ **Italic.** Formats the selected text in italics.

   ❏ **Underline.** Underlines the selected text.

   ❏ **Text color.** Opens the Color dialog box where you can select a color for the selected text.

   ❏ **Cut.** Cuts the selected text.

   ❏ **Copy.** Copies the selected text to the clipboard.

   ❏ **Paste.** Pastes the selected text from the clipboard.

   ❏ **Date.** Opens a list of date quick text in various formats.

❏ **Time.** Opens a list of time quick text in various formats.

❏ **page #.** Opens a list of page number quick text in various formats.

Procedure: How to Delete a Component

The following procedure applies to all components in Document mode.

1. Open or create a document with at least one component.

2. Right-click the component and click *Delete*.

The component is deleted from the canvas.

Note: You can also delete a component by clicking it and pressing the Delete key.

Creating and Customizing Visualizations

Visualizations centralize information by providing different views of data that are pertinent to a particular objective. For example, reviewing trends or fluctuations in data over a period of time or within a region. A visualization provides you with a quick glance of information on a single screen.

Visualizations support the use of different types of charts, maps, and grids. For example, you may want to use a bar, pie, and line chart to show different views of the same data. Alternatively, you may want to offset a particular visual by showing other types of related data that employ a different type of visual. You can also add a text cell to your visualization to provide explanatory text or information that other users can reference.

Visualizations allow you to monitor changes in data. They also serve to provide information in real-time, based on changes in underlying data or other components. A visualization can be updated, changed, or revised at any time to account for shifts in data needs.

In this chapter:

Creating a Visual

You can create charts, maps, and grids to visually represent your data. You can add multiple visuals to the canvas to create a complete visualization.

The default visual is a bar stacked chart. You can use the Change option in the Visual group on the Home tab to change the visual type.

The following visual is a matrix marker chart that shows sales data for a range of electronic products.

Procedure: How to Create a Visualization from Within Web Query

You use this procedure to create a visualization within >Report Broker.

1. Open InfoAssist+ in Visualization mode.

2. In the Open dialog box, select a data source and click *Open*.

3. Select fields for your visualization.

Procedure: How to Create a Visualization From InfoAssist+

You can have multiple file types opened at once. To create a visualization:

1. On the Quick Access toolbar, click *New*.

   or

   Click the Application Main Menu button, and click *New*.

   The InfoAssist+ splash screen displays.

2. Click *Build a Visualization*.

3. In the Open dialog box, select a data source and click *Open*.

   InfoAssist+ switches to Visualization mode.

Changing the Visual Type

You can create a visual using the default chart type, which is a stacked bar chart. You can add your data to this chart and then change the chart type, or you can change the chart type prior to making your data selections.

Once you have started exploring your data, you can switch between the different types to obtain the graphical image that you wish to display.

You change the visual type from the Home tab.

Procedure: How to Change the Visual Type

1. On the *Home* tab, in the *Visual* group, click *Change*, as shown in the following image.

   Note: The *Change* icon updates depending on the chart, map, or grid that you select from the Select a Visual menu. By default, the *Change* icon displays a stacked bar chart.

   The Select a Visual menu displays.

2. On the Select a Visual menu, click the type of visual that you want to use.

   Your canvas refreshes and displays the visual that you selected.

   Note: Depending on the type of visual that you select, you may need to select additional or different data fields.

Selecting a Visual

It is important that you select a chart, grid, or map that appropriately displays a meaningful view of your data. InfoAssist+ provides a library of visuals.

You can select a visual type from the Select a Visual menu, on the *Home* tab, in the *Visual* group. The following table describes the types of charts available.

Icon	Visual Type	Description
	Grid	Grids provide a tabular view of data. They allow you to review data in a row and column format, similar to a printed report.
	Bar chart	Bar charts plot numerical data by displaying rectangular blocks against a scale (numbers or variable measure fields that appear along the axis).
	Stacked bar chart	A stacked bar chart is the default visual.
	Histogram	Histograms graphically represent the distribution of numeric data. They facilitate the identification and discovery of the underlying frequency distribution within a set of continuous data. You can use histograms to identify trends and illustrate categorizations, or groupings, also known as bins. For more information, see *Binning* on page 128.
	Absolute line chart	Line charts allow you to trace the evolution of a data point by working backwards or interpolating. Highs and lows, rapid or slow movement, or a tendency towards stability are all types of trends well suited for a line chart.
	Area chart	Area charts analyze trends over time and look for differences in values.
	Stacked area chart	Stacked area charts allow you to stack data on top of each other.
	Pie chart	Pie charts are circular charts that represent parts of a whole. A pie chart emphasizes where your data fits, in relation to the other components in the pie.

Icon	Visual Type	Description
	Ring pie chart	Ring pie charts are useful when you want to review the value of each segment, which represents the measure value for the selected dimension, as it relates to the total for the selected measure.
	Scatter Plot	Scatter charts enable you to plot data using variable scales on both axes. When you use a scatter chart, the data is plotted with a hollow marker, so that you can visualize the density of individual data values around particular points, or discern patterns in the data.
	Bubble chart	Bubble charts can have two column fields representing X and Y data values, or have three column fields representing X, Y, and Z data values. The third variable (Z) represents size. The size of each bubble is used to show the relative importance of the data.
	Matrix Marker chart	Matrix marker charts are useful for analyzing one or two measures against a crosstab of two categorical dimensions. The result is a color-scaled matrix chart that shows categorized trends.
	Treemap	Treemaps are used to display large amounts of hierarchically structured data. Using a set of nested rectangles to illustrate data relationships, sections of a treemap represent branches of a tree.

Icon	Visual Type	Description
	Gauge	Gauges are used to display the value of a measure. In particular, circular gauges are used to represent a single data value within a given spectrum. You can create a single circular gauge for a measure or a matrix circular gauge, which shows the value of the selected measure across different dimensions, such as product category or yearly sales.
	Choropleth map	A geographically-based heat map. It is useful for visualizing location-based data, trends, and distributions across a geographic area.
	Proportional symbol map	A technique that uses symbols of different sizes to represent data associated with different areas or locations within the map.
	Heatmap	A heatmap is a graphical representation of data where the individual values that comprise a matrix are represented as colors. Using radiant hues, you can track the intensity of a data relationship using the colors defined in the legend.
	Leaflet map	Part of the Lightweight Mapping functionality, Leaflet maps enable you to visualize trends in your data. Choropleth and Proportional symbol maps are available. **Note:** Esri functionality is not integrated into Leaflet maps.

Note:

❑ When new data is added to a bar, line, area, pie, scatter, bubble, gauge, or treemap chart, the chart will morph and rebuild, revealing the new values in a smooth transition.

❑ In addition to the standard visual types, your administrator can enable any number of chart extensions for you. These are downloaded and installed into your >Report Broker installation. For more information, contact your administrator.

❑ Microsoft Analysis Services are supported. However, in Visualization mode, parent-child hierarchies do not display in the Data pane.

Use the topics in this section to select and create your visuals.

Grids

Grids provide a tabular view of data. They allow you to review data in a row and column format, similar to a printed report.

In the following example, we review the product category and subcategory data for the following measure fields:

❑ Revenue

❑ Gross Profit

Sale Year	Product Category	Revenue	Gross Profit
2014	Accessories	$16,060,415.69	$4,945,779.69
	Computers	$7,857,928.55	$3,376,380.55
	Media Player	$30,105,200.05	$6,730,870.05
	Televisions	$9,295,726.31	$1,964,927.31
	Video Production	$7,313,170.38	$2,286,521.38
2015	Accessories	$35,619,872.81	$10,953,840.81
	Computers	$24,176,475.33	$8,277,897.33
	Media Player	$65,002,426.97	$14,480,370.97
	Televisions	$20,042,855.67	$4,262,155.67
	Video Production	$15,959,696.26	$4,938,902.26
2016	Accessories	$53,208,007.57	$16,362,313.57
	Computers	$63,190,001.88	$18,677,664.88
	Media Player	$99,448,235.40	$22,237,625.40
	Televisions	$30,964,700.29	$6,560,087.29
	Video Production	$23,810,094.17	$7,330,486.17

When working with grids, you can lasso or select a range of values at one time, enabling you to filter the grid or exclude values from it.

Note: If you have a large number of fields specified in a grid in Visualization mode, the server may be slow to respond.

Procedure: **How to Create a Grid**

1. Change the visual to a grid, or insert a new grid.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Rows or Columns - one or more data fields

   ❏ Measure - one or more data fields

   As you add, edit, or rearrange the fields in your Query field containers, your canvas refreshes.

Bar Charts

Bar charts plot numerical data by displaying rectangular blocks against a scale (numbers or variable measure fields that appear along the axis). The length of a bar corresponds to a value or amount. You can clearly compare data series (fields) by the relative heights of the bars. Use a bar chart to display the distribution of numerical data. You can create horizontal and vertical bar charts.

Note: If you are working with a large dataset, a scroll bar displays under your chart, enabling you to easily scroll through your data from left to right. In Visualization mode, scroll bars are automatically enabled, but if you want to disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box. If you are working in any other mode, you must enable this functionality.

Use a bar chart when individual values are important. For example, the following image is a basic vertical bar chart that compares the individual products sold to the total amount in sales for each product. A retailer would find it important to know which pieces of inventory are selling and how much revenue each item is generating for the company.
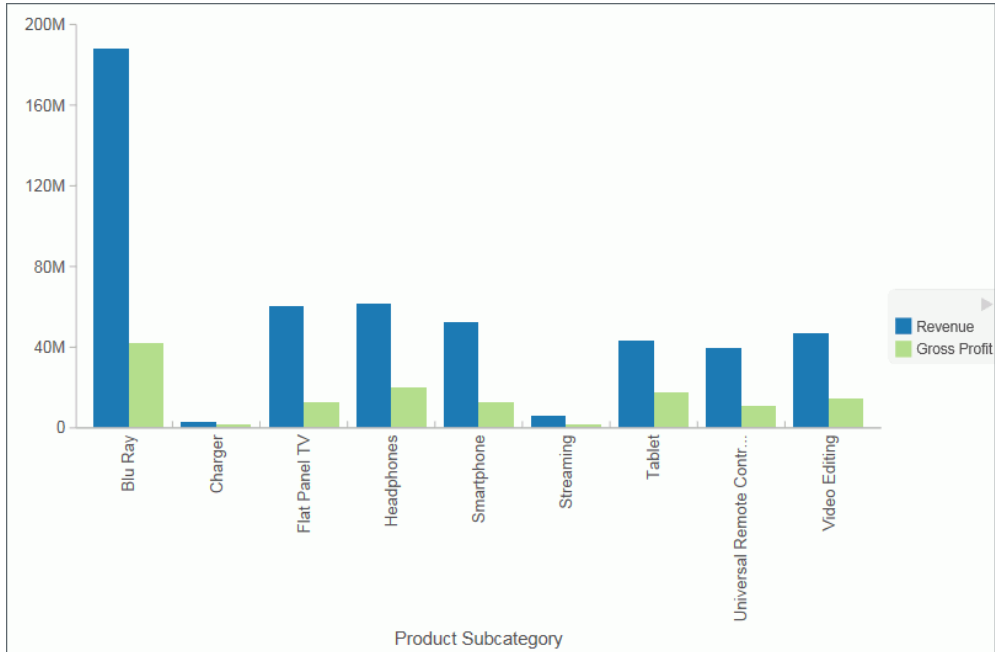
A horizontal bar chart becomes useful when you want to emphasize a ranking relationship in descending order, or the X-axis labels are too long to fit legibly side-by-side. For example, the following image is a basic horizontal bar chart that ranks which products are generating the most revenue for the retailer.
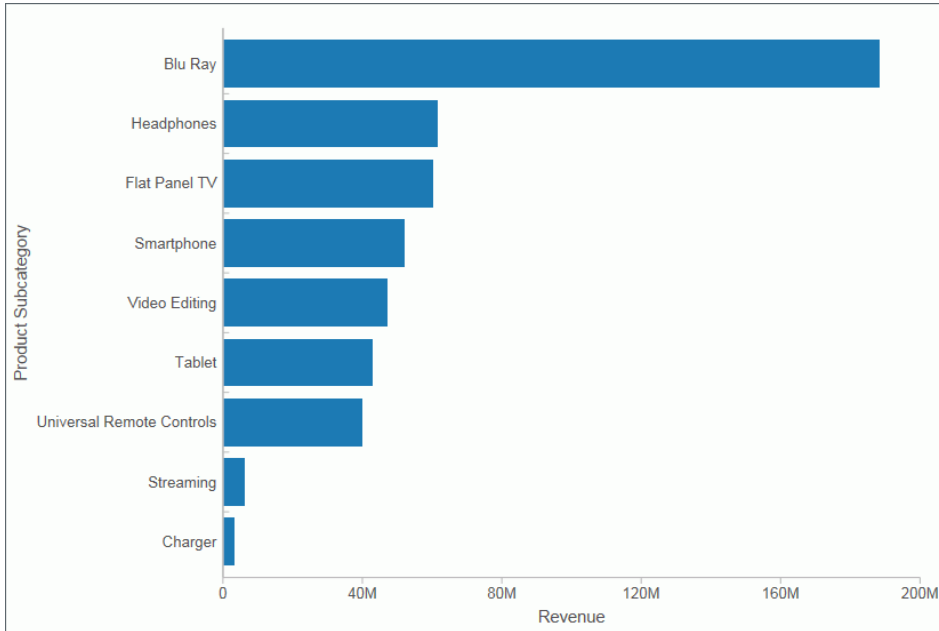
Note: You can swap the orientation of your data in a bar chart. To do so, on the *Home* tab, in the *Visual* group, click *Swap*.

Procedure: How to Insert a New Bar Chart

1. Change the visual to a bar chart or insert a new bar chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

    ❑ Vertical Axis - one or more data fields

    ❑ Horizontal Axis - one data field

    Note: You can also double-click a data field to add it to your Query field containers.

    The bar chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the bar chart.

Procedure: **How to Create a Stacked Bar Chart**

The bar stacked visual is the default visual.

1. Change the visual to a stacked bar chart or insert a new stacked bar chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

❏ Vertical Axis - one or more data fields

❏ Horizontal Axis - one or more data fields

❏ Color - one data field

Note: You can also double-click a data field to add it to your Query field containers.

The stacked bar chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the stacked bar chart.

Procedure: **How to Create a Matrix Bar Chart**

1. Change the visual to a bar chart or insert a new bar chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

❏ Vertical Axis - one or more data fields

❏ Horizontal Axis - one data field

❏ Matrix Rows - one data field

❏ Matrix Columns - one data field

Note: You can also double-click a data field to add it to your Query field containers.
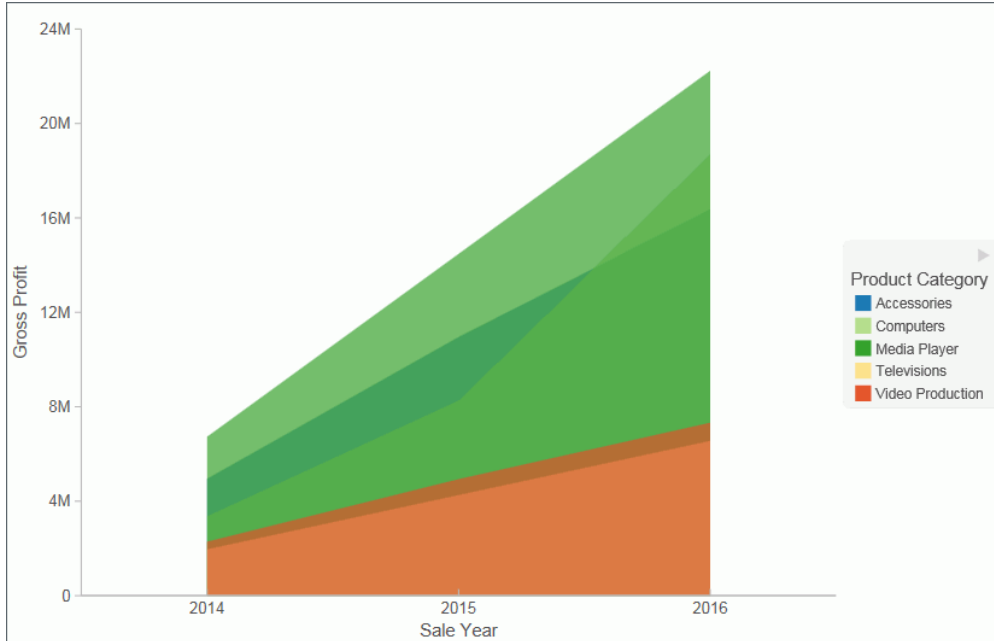
The matrix bar chart displays on the canvas. You can add additional fields for comparative purposes. You can also view underlying data by hovering over any particular point on the matrix bar chart.

Line Charts

Line charts allow you to trace the evolution of a data point by working backwards or interpolating. Highs and lows, rapid or slow movement, or a tendency towards stability are all types of trends well suited for a line chart.

You can also plot line charts with two or more scales to present a comparison of the same value, or set of values, in different time periods.

Note: If you are working with a large dataset, a scroll bar displays under your chart, enabling you to easily scroll through your data from left to right. In Visualization mode, scroll bars are automatically enabled, but if you want to disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box. If you are working in any other mode, you must enable this functionality.

Use a line chart when you want to trend data over time, for example, monthly changes in employment figures, or yearly sales of an item in your inventory. The following image is a line visual that shows the gross profit in monthly sales for products.
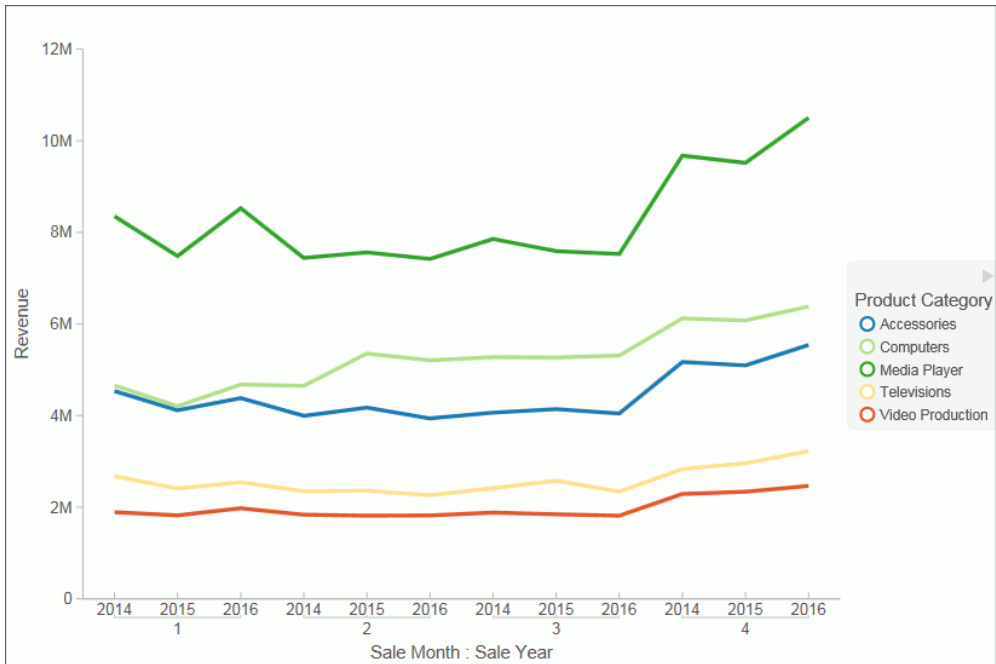
Procedure: ## How to Create a Line Chart

1. Change the visual type to a line chart or insert a new line chart.
2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❑ Vertical Axis - one or more data fields

   ❑ Horizontal Axis - one data field

   ❑ Color - one data field (optional)

   Note: You can also double-click a data field to add it to your Query field containers.

To add insight, you can drag a data field to the color Query field container. This displays the values for this field using color.

The line chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the line chart.

Procedure: **How to Create a Matrix Line Chart**

1. Change the visual type to a line chart or insert a new line chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one or more data fields

   ❏ Horizontal Axis - one data field

   ❏ Matrix Rows - one data field

   ❏ Matrix Columns - one data field

   Note: You can also double-click a data field to add it to your Query field containers.

   The matrix line chart displays on the canvas. You can add additional fields for comparative purposes. You can also view underlying data by hovering over any particular point on the matrix line chart.

Area Charts

Area charts analyze trends over time and look for differences in values by using the *see-thru* nature of the area fills. Stacked area charts allow you to stack data on top of each other. Stacking allows you to highlight the relationship between data series, showing how some data series approach a second series.

Note: If you are working with a large dataset, a scroll bar displays under your chart, enabling you to easily scroll through your data from left to right. In Visualization mode, scroll bars are automatically enabled, but if you want to disable or re-enable scroll bars, click the Format tab and then click *Interactive Options*. In the Interactive Options dialog box, select the *Auto Enable X-Axis Scrolling* check box. If you are working in any other mode, you must enable this functionality.

Use an area chart when you want to distinguish the data more dramatically by highlighting volume with color. For example, the following image is a basic area chart that depicts the yearly gross profit for various electronic products.

Procedure: How to Create an Area Chart

1. Change the visual type to an area chart or insert a new area chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❑ Vertical Axis - one or more data fields

   ❑ Horizontal Axis - one data field

   ❑ Color - one data field (optional)

   Note: You can also double-click a data field to add it to your Query field containers.

   The area chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the area chart.

Procedure: **How to Create a Stacked Area Chart**

1. Change the visual type to a stacked area chart or insert a new stacked area chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one or more data fields

   ❏ Horizontal Axis - one data field

   ❏ Color - one data field (optional)

   Note: You can also double-click a data field to add it to your Query field containers.

   The stacked area chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the stacked area chart.

Procedure: **How to Create a Matrix Area Chart**

1. Change the visual type to an area chart or insert a new area chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one or more data fields

   ❏ Horizontal Axis - one data field

   ❏ Matrix Rows - one data field

   ❏ Matrix Columns - one data field

   Note: You can also double-click a data field to add it to your Query field containers.

   A matrix area chart displays on the canvas. You can add additional data fields for comparative purposes. You can also view underlying data by hovering over any particular point on the matrix area chart.

Pie Charts

Pie charts are circular charts that represent parts of a whole. A pie chart emphasizes where your data fits, in relation to the other components in the pie. Pie charts work best when there are a limited number of slices (for example, less than 10) and the slices are all of a sufficient value as to reveal their fill color inside their wedge.

Use a pie chart when you have segments of data that you want to display as a whole. For example, the following image is a pie chart that shows the proportions of various electronic products based on the quarterly revenue.
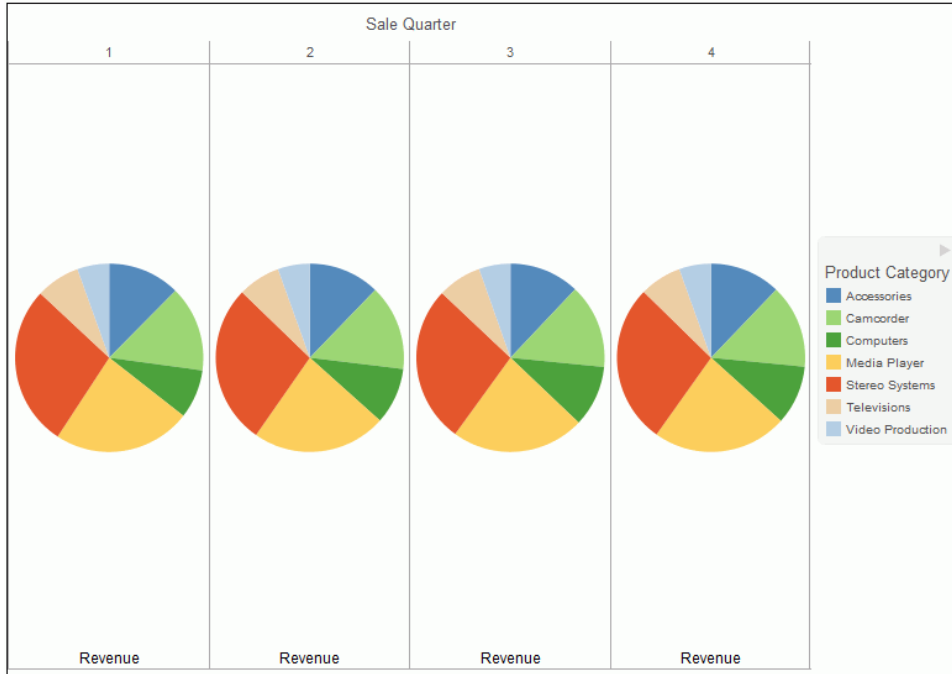
You can add one or more measures to the Measure field container. Each measure will be used to create a separate, unique pie chart, to which you can add a measure or dimension to the Color field container to add color to your chart.

Note: When working with pie charts, you can add one measure field to the Color field container. This adds the measure as a By field, and determines how the pie chart is colored. Depending on your measure data, this may result in a large number of pie segments.

Procedure: **How to Create a Pie Chart**

1. Change the visual type to a pie chart or insert a new pie chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Measure - one data field. Data in this category is used to indicate the size of the pie slice for the relevant category.

   ❏ Color - one data field. Data in this category indicates the colors in your pie chart.

Note: You can also double-click a data field to add it to your Query field containers.

The pie chart displays on the canvas. You can add additional data fields for comparative purposes, or to create another pie chart on the same canvas. You can also view underlying data by hovering over any particular point on the pie chart.

Procedure: **How to Create a Matrix Pie Chart**

1. Change the visual type to a pie chart or insert a new pie chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Measure - one data field

   Note: Each unique measure field is represented by a separate pie chart.

   ❏ Color - one data field

   ❏ Matrix Rows - one data field

   ❏ Matrix Columns - one data field

   Note: You can also double-click a data field to add it to your Query field containers.

   The matrix pie chart displays on the canvas. You can add additional data fields for comparative purposes, or to create another pie chart unique to the additional measure fields you select. You can also view underlying data by hovering over any particular point on the matrix pie chart.

Ring Pie Charts

Ring pie charts are circular charts that display the total for the selected measure, as well as the individual segments that comprise the ring pie chart. You can hover over each segment to review the underlying data values. This is useful when comparing the measure value for an individual segment against the total for the measure, which displays in the center of the ring pie.

You can add one or more measures to the Measure field container. Each measure will be used to create a separate, unique ring pie chart, to which you can add a measure or dimension to the Color field container to add color to your chart.

Note: The font size of the value label in the middle of the ring is automatically set by the chart engine.

Use a ring pie chart when you want to review the value of each segment, which represents the measure value for the selected dimension, as it relates to the total for the selected measure. The following image is an example of a ring pie chart.
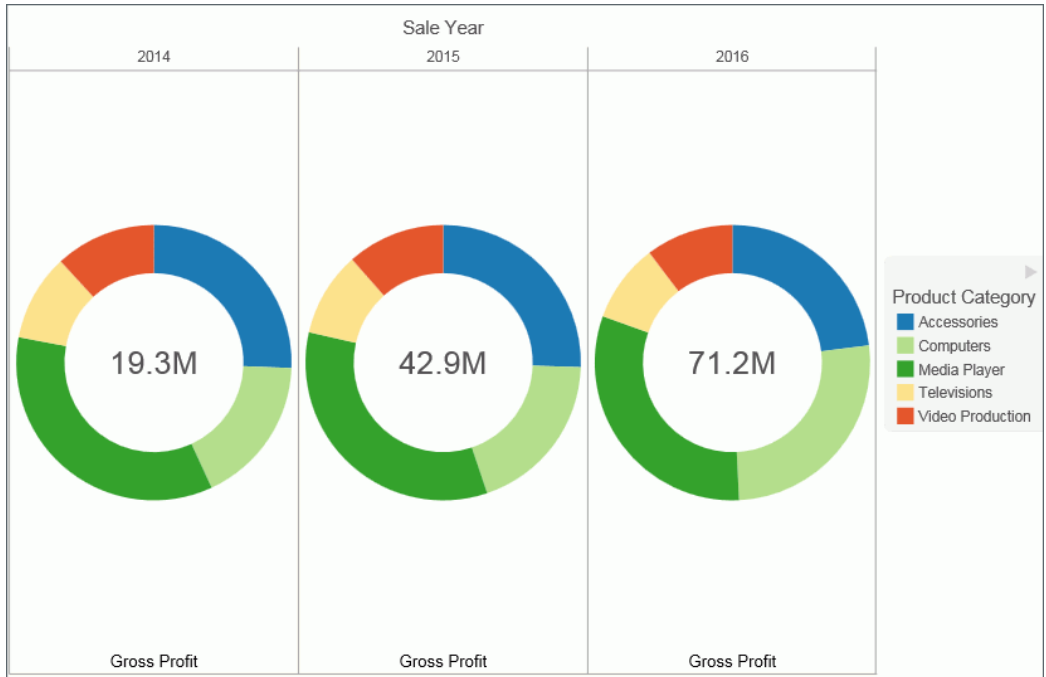
Procedure: **How to Create a Ring Pie Chart**

1. Change the visual type to a ring pie chart or insert a new ring pie chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Measure - one data field. Data in this category is used to indicate the size of the ring pie segment for the relevant category.

   ❏ Color - one data field. Data in this category indicates the colors in your ring pie chart.

   Note: You can also double-click a data field to add it to your Query field containers.

   The ring pie chart displays on the canvas. The total for the selected measure displays in the center of the ring pie chart. You can view underlying data by hovering over any of the ring pie chart segments.
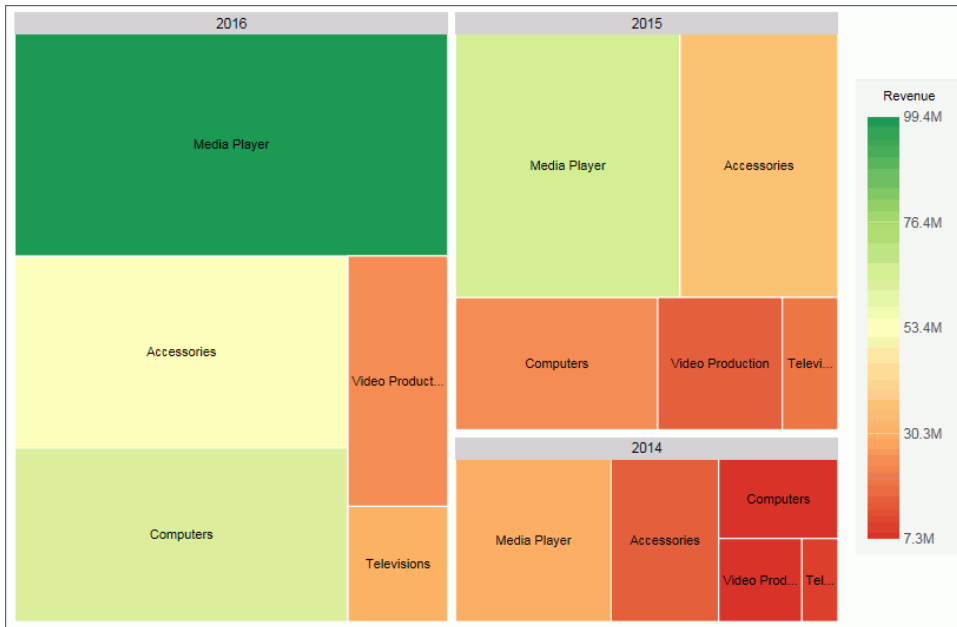
Procedure: **How to Create a Matrix Ring Pie Chart**

1. Change the visual type to a ring pie chart or insert a new ring pie chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Measure - one data field

      Note: Each unique measure field is represented by a separate ring pie chart.

   ❏ Color - one data field

   ❏ Matrix Rows - one data field

   ❏ Matrix Columns - one data field

   Note: You can also double-click a data field to add it to your Query field containers.

   The matrix ring pie chart displays on the canvas. You can add additional fields for comparative purposes, or to create another pie chart unique to the additional measure fields you select. You can also view underlying data by hovering over any particular point on the matrix ring pie chart.

Scatter Charts

Scatter charts enable you to plot data using variable scales on both axes. When you use a scatter chart, the data is plotted with a hollow marker, so that you can visualize the density of individual data values around particular points, or discern patterns in the data. A numeric X axis, or sort field, always yields a scatter chart, by default.

Note: You can specify a non-measure (dimension) data field on the horizontal or vertical axis, or both.

If your chart reveals clouds of points, there is a strong relationship between X and Y values. If data points are scattered, there is a weak relationship, or no relationship.

Adding data fields to the Detail Query field container creates additional BY fields on the scatter chart. For example, the following image shows the results when adding the Product,SubCategory and Model dimension fields to Detail Query field container in a scatter chart which showed gross profit and MSRP data.
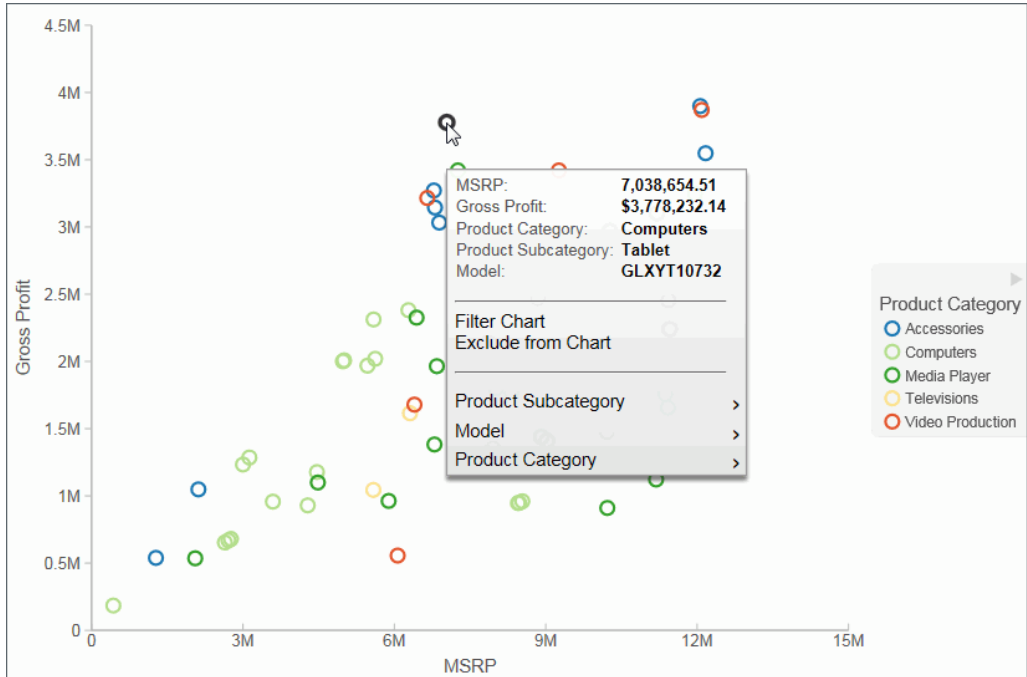
Procedure: **How to Create a Scatter Chart**

1. Change the visual type to a scatter chart or insert a new scatter chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one data field

   ❏ Horizontal Axis - one data field

   ❏ Detail - one or more data fields

   ❏ Color - one data field

   Note: You can also double-click a data field to add it to your Query field containers.

   The scatter chart displays on the canvas. You can also view underlying data by hovering over any particular point on the scatter chart.

Bubble Charts

A bubble chart is a chart in which the data points are represented by bubbles. Bubble charts can have two column fields representing X and Y data values, or have three column fields representing X, Y, and Z data values, in that order. The Z variable represents size. The size of each bubble is used to show the relative importance of the data.

When you add a data field to the Size field container, this value is represented as the Z Axis Title in the legend. It displays as an empty Z Axis Title when a size data field is not specified. If you choose to indicate a Z, or size, data value, the data label displays in the legend. A Size Legend also displays, showing the estimated data value for a range of circle sizes. This allows you to estimate the value of the data based on the size of the circle.

Note:

❏ You can hover over the circles in the visual to obtain exact data values for any given point.

❏ You can specify a non-measure (dimension) data field on the horizontal or vertical axis, or both.

❏ In Visualization mode and for HTML5 charts, if you select the No fill option for your Series style when creating a Bubble chart, the series displays in shades of black. For active charts, you must enable the Show Border Color option in order to view the bubbles in your chart at run time, otherwise the bubbles are invisible.

In the following image, a bubble chart is used to show the Manufacturer's Suggested Retail Price (MSRP) plotted against Revenue for a variety of electronics products. It also shows the values for Gross Profit, which was specified in the Size field container in the Query pane.
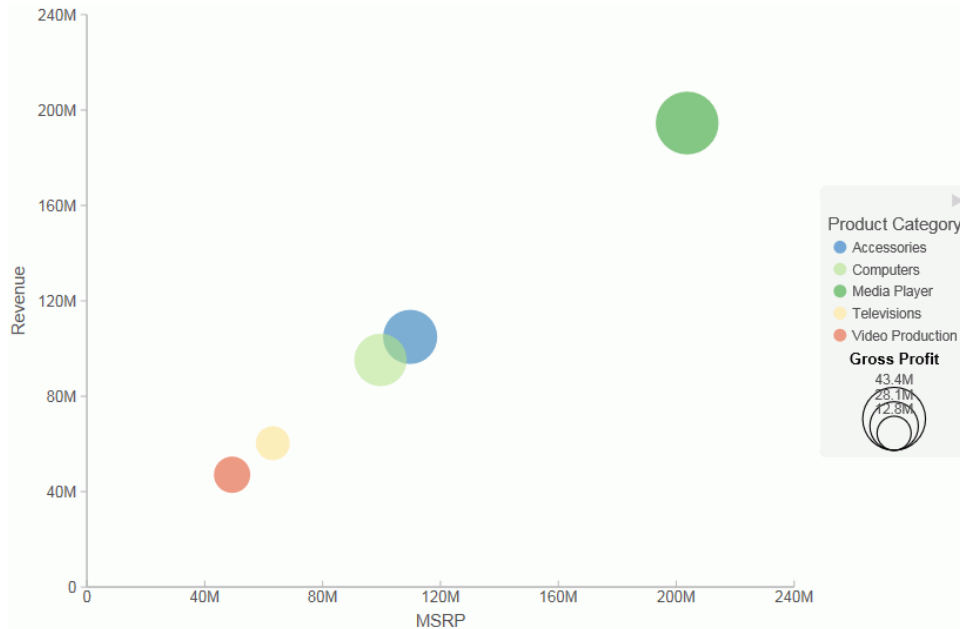
Procedure: **How to Create a Bubble Chart**

1. Change the visual to a bubble chart or insert a new bubble chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one data field

   ❏ Horizontal Axis - one data field

   ❏ Detail - one or more data fields

   ❏ Size - one data field

   ❏ Color - one data field (optional). Labels for the values in this data field will comprise the legend.

   **Note:** You can also double-click a data field to add it to your Query field containers.

   The bubble chart displays on the canvas. You can also view underlying data by hovering over any particular point on the bar chart.

Matrix Marker

Matrix marker charts are useful for analyzing one or two measures against a crosstab of two categorical dimensions. You can use the Size Query field container for one measure and the Color Query field container for a second measure. The result is a color-scaled matrix chart that shows categorized trends, as shown in the following image.

Procedure: How to Create a Matrix Marker Chart

1. Change the visual to a matrix marker chart or insert a new matrix marker chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

    ❏ Matrix Rows - one data field

    ❏ Matrix Columns - one data field

    ❏ Size - one data field. The data for this field determines the size of the marker.

    ❏ Color - one data field. The data in this field determines the color of the marker.

    The matrix marker chart displays.

Treemaps

Treemaps are used to display large amounts of hierarchically structured data. Using a set of nested rectangles to illustrate data relationships, sections of a treemap represent branches of a tree. Each branch is given a rectangle, to which any number of smaller sub-branches can be assigned. The size of each branch is proportional to the summed values of the elements inside the branch.

The following treemap shows the categories of the selected dimension fields, using two data fields to determine the size and color of the treemap segments.

Procedure: How to Create a Treemap

1. Change the visual to a treemap or insert a new treemap.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Grouping - one or more data fields, which establishes the hierarchy of the Treemap grouping.

   ❏ Size - one data field. This data controls the size of the branches that display.

   ❏ Color - one data field. This data controls the colors that display based on the accompanying gradient.

The treemap displays.

Gauges

Gauges are used to display the value of a measure. In particular, circular gauges are used to represent a single data value within a given spectrum. These gauges have a circular shape. You can create a single circular gauge for a measure or a matrix circular gauge, which shows the value of the selected measure across different dimensions, such as product category or yearly sales. The value of the measure that displays in a circular gauge is determined by the underlying data stored for that measure in the database.

The circular gauge functionality uses only one measure in its presentation. The legend reflects the color of the measure within the circular gauge.

In the following example, we review revenue data for each product category by quarterly sales in a matrix circular gauge chart.

Sale Quarter	Product Category				
	Accessories	Computers	Media Player	Televisions	Video Production
1	25.7M	19.7M	47.8M	14.9M	11.4M
2	24.1M	22.0M	44.5M	13.6M	10.9M
3	24.5M	24.6M	45.4M	14.4M	11.0M
4	30.7M	29.0M	56.8M	17.4M	13.8M
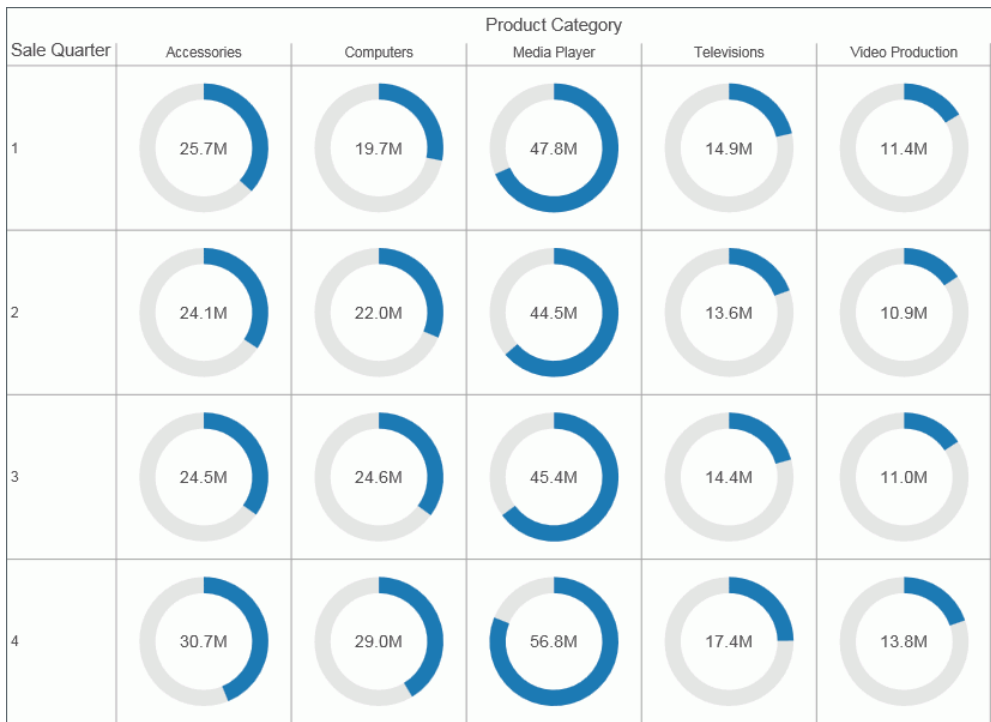
Procedure: How to Create a Circular Gauge

1. Change the visual type to a gauge or insert a new gauge.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following query field containers must be populated for this visual:

❏ Measure - one data field. Data in this category is used to indicate the value of the selected measure, which displays within the gauge.

❏ Tooltip - one or more data fields. The fields that you add provide you with the ability to review additional related, underlying data for different measures. Tooltips are optional.

Note: You can also double-click a data field to add it to your Query field containers.

The circular gauge displays on the canvas. You can select additional measure fields for which to include in the tooltip.

Procedure: **How to Create a Matrix Circular Gauge**

1. Change the visual type to a gauge or insert a new gauge.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following query field containers must be populated for this visual:

❏ Measure - one data field. Data in this category is used to indicate the value of the selected measure, which displays within the gauge.

Note: Since the gauge relies on a constant (measure field), each intersection of the matrix chart is calculated using that measure along with the various matrix rows and columns in the matrix chart.

❏ Matrix Rows - one data field.

❏ Matrix Columns - one data field.

❏ Tooltip - one or more data fields. The fields that you add provide you with the ability to review additional related, underlying data for different measures. Tooltips are optional.

Note: You can also double-click a data field to add it to your Query field containers.

The matrix circular gauge displays on the canvas. You can select additional measure fields for which to include in the tooltip.

Heatmaps

A heatmap is a graphical representation of data where the individual values that comprise a matrix are represented as colors. Using radiant hues, you can track the intensity of a data relationship using the colors defined in the legend.

Heatmaps are useful when you are looking for hot spots in your data, or areas of focus or interest, as shown in the following image.
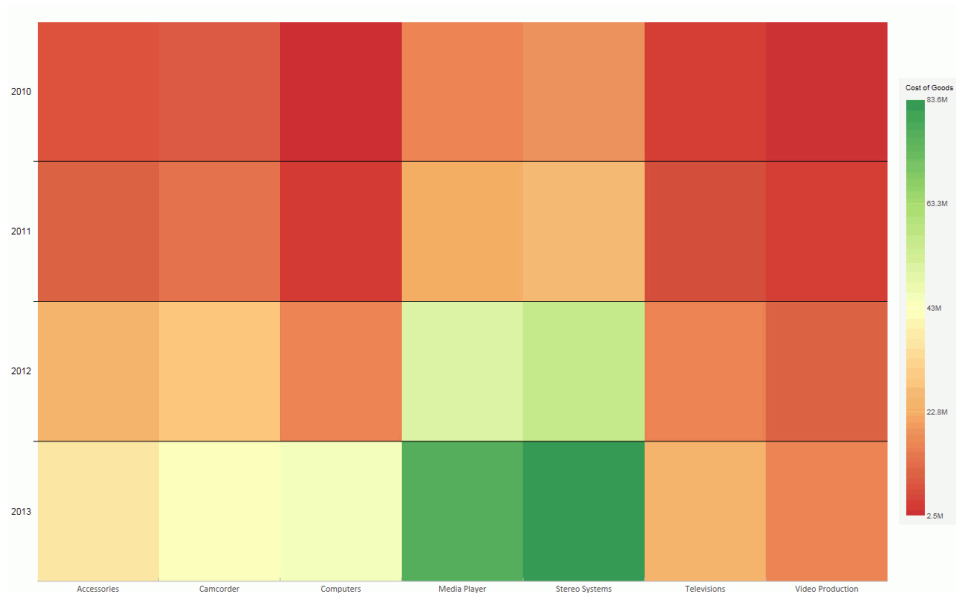
Procedure: **How to Create a Heatmap**

1. Change the visual to a heatmap or insert a new heatmap.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Color - one data field. This data controls the colors that display based on the accompanying gradient.

   ❏ Horizontal field container - one data field.

   ❏ Vertical field container - one data field

   Note: You can optionally populate the Matrix Rows and Columns fields to increase the segmentation of your heatmap.

   The heatmap displays.

Matrix Charts

Matrix charts are powerful, comparative tools. They provide enough detail to show a trend and they organize information in a categorical fashion.

Matrix charts display data in a grid, showing the comparative values on either axis. They provide you with a quick glance at trends over time, giving you a succinct synopsis of a situation (for example, sales or investment trends).

You can use various formats in your matrix chart (for example, pie or line chart).

In the following example, we review quarterly revenue data, by product category, for a range of years (2014 - 2016, specifically). Using a bar chart for the matrix, we are able to review how gross profit for each product category shifts over time.
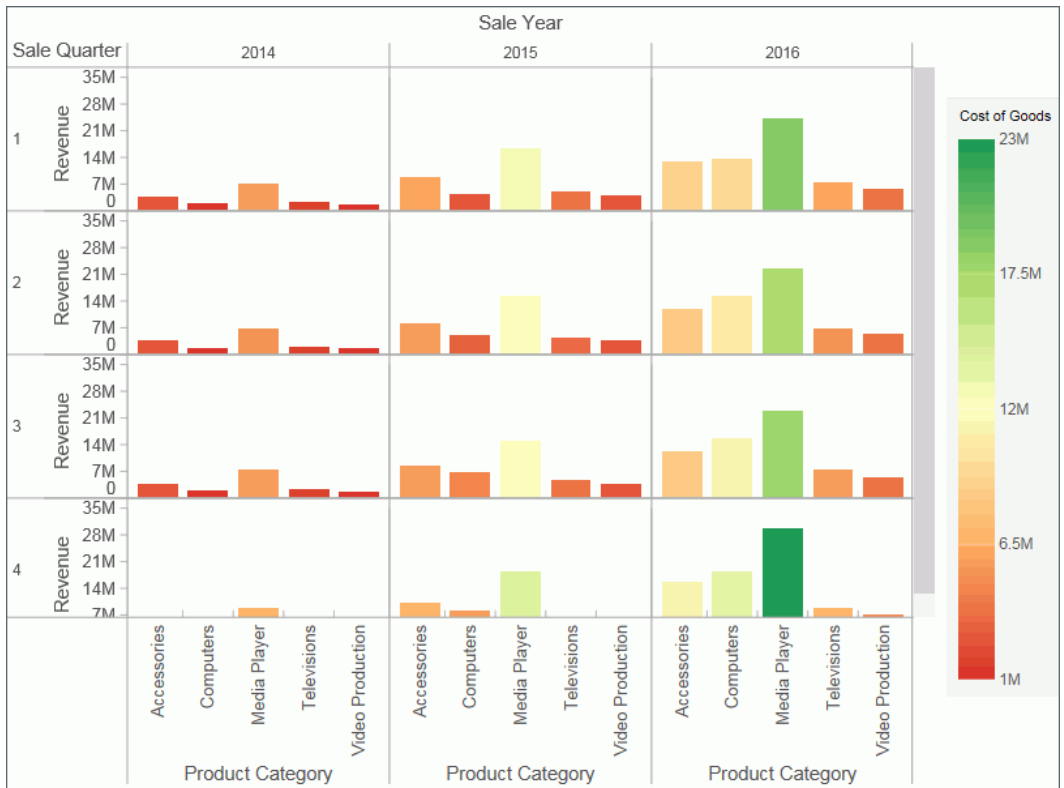
You can plot one value on the X axis and one value on the Y axis. For example, sales against region. You can also plot just one value for the rows or columns in the matrix chart.

Procedure: How to Create a Matrix Chart

1. Change the visual type to bar chart or insert a new bar chart.

2. Drag data fields to the canvas or to the Query field containers to add them to your visual. The following Query field containers must be populated for this visual:

   ❏ Vertical Axis - one data field

   ❏ Horizontal Axis - one data field

   ❏ Matrix Row - one data field

   The matrix chart displays on the canvas. You can view underlying data by hovering over any particular point on the chart.

   Note: You can change the bar matrix chart to a line, area, or pie matrix chart by changing the type of visual in the *Visual* group on the *Home* tab.

Interacting With Visualizations

A visualization is comprised of one or more visuals, such as charts, maps, or grids and text. You can create different views of your data in a single visualization, and share that visualization with others in your enterprise.

The following image shows a sample visualization. This visualization includes a map, a matrix grid, and a stacked area chart.
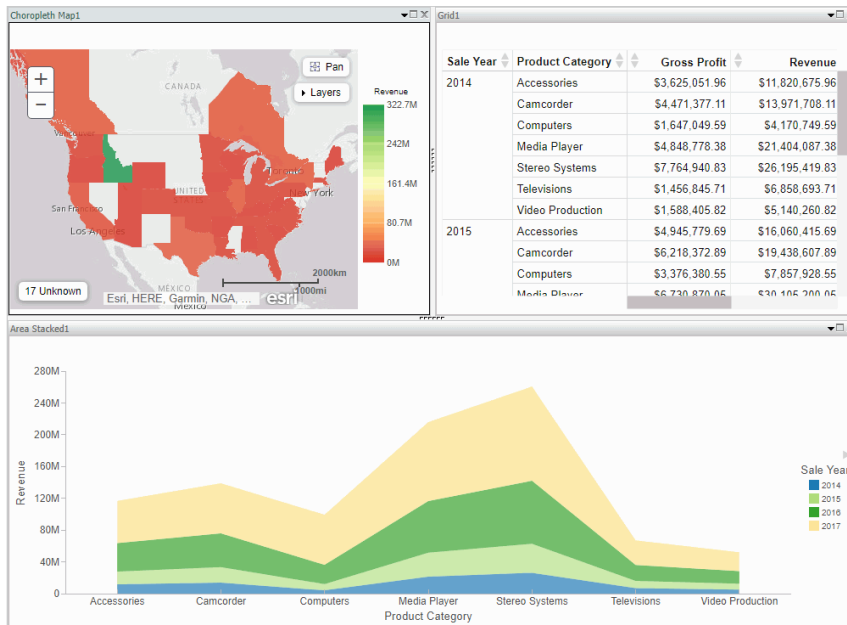
This section summarizes the tasks that are available to you when working with visuals. It provides centralized instructional information on performing each task and offers links to the most common topics when working with visuals.

| Task	How To
Change visual	On the *Home* tab, in the *Visual* group, click *Change*. **Note:** The *Change* icon updates depending on the chart, map, or grid that you select from the Select a Visual menu. By default, the *Change* icon displays a stacked bar chart. Select a chart, map, or grid from the Select a Visual menu.
Insert new visual	On the *Home* tab, in the *Visual* group, click *Insert*. Use the default stacked bar chart or click *Change* to select a different chart, map, or grid from the Select a Visual menu. **Note:** You can also add additional charts, maps, or grids to a visualization by dragging a data field onto the canvas and placing it using the handles that are available.
Rearrange visuals	Drag a visual on top of another visual to activate a shaded area that contains handles, which can be used to indicate placement.
Copying a visual	On the canvas, select a visual. On the *Home* tab, in the *Clipboard* group, click *Copy*. **Note:** You can also press CTRL+C to copy a selected visual.
Pasting a visual	Copy a visual. On the *Home* tab, in the *Clipboard* group, click *Paste*. **Note:** You can also press CTRL+V to paste a copied visual on the canvas.

Task	How To
Duplicating a visual	On the canvas, select a visual. On the *Home* tab in the *Clipboard* group, click *Duplicate*. A duplicate visual is created and a sequential number is assigned based on the type of visual.
Delete visual	Select a visual. On the *Home* tab, in the *Clipboard* group, click *Cut*. You can click the *Close* button in the upper-right corner of the current visual. From the Query pane, right-click a visual and click *Delete*. You can also press the Delete key when a visual is selected.
Apply Filter	Drag a dimension field or measure field into the Filter pane to access the filter options that are available. To add filter options for a field that is already in the Query pane, select the field and on the *Field* tab, in the *Filter* group, click *Filter*.
Add visuals to the storyboard	Create a visual. On the *Home* tab, in the *Storyboard* group, click *Add*.

Procedure: **How to Insert a New Visual**

1. On the *Home* tab, in the *Visual* group, click the down arrow next to *Insert*.

2. On the menu, click one of the following options:

   ❏ **Chart.** Inserts a stacked bar chart visual.

   ❏ **Grid.** Inserts a grid visual.

   ❏ **Text.** Inserts a blank text cell.

3. Populate your visual with data or add text to the text cell.

   Note:

   ❏ By default, when you click *Insert*, a stacked bar chart visual is inserted.

❏ You can also drag a data field from the Data pane to the canvas to insert a new visual. This inserts the default visual, a stacked bar chart. You can use the placement handles to position your new visual on the canvas, for example, above an existing visual or to the side of an existing visual.

Procedure: How to Add Text to Your Visualization

1. On the *Home* Tab, in the *Visual* group, click the down arrow on next to *Insert*.

2. On the menu, click *Text*.

   A text cell opens on the canvas.

3. Add text to your visualization.

   Note: You can resize the text cell and use the text formatting options to customize the display of any text that you add, as shown in the following image.
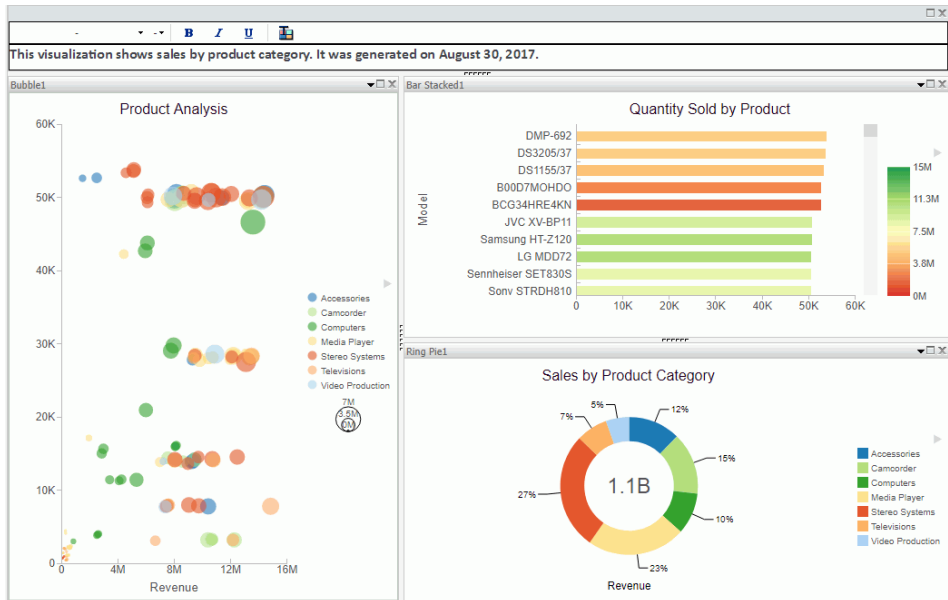
You can also position the text cell in your visualization by dragging the text cell on top of a visual. Use the placement handles to indicate placement of the text cell.

Procedure: How to Create a Visualization

1. Begin with the default canvas, which consists of a stacked bar chart template.

2. Insert a new visual in one of the following ways:

   a. Drag a data field from the Data pane onto the canvas. Handles display, which allow you to select the location for the new visual, for example, top (above) or left of the current visual, as shown in the following image.
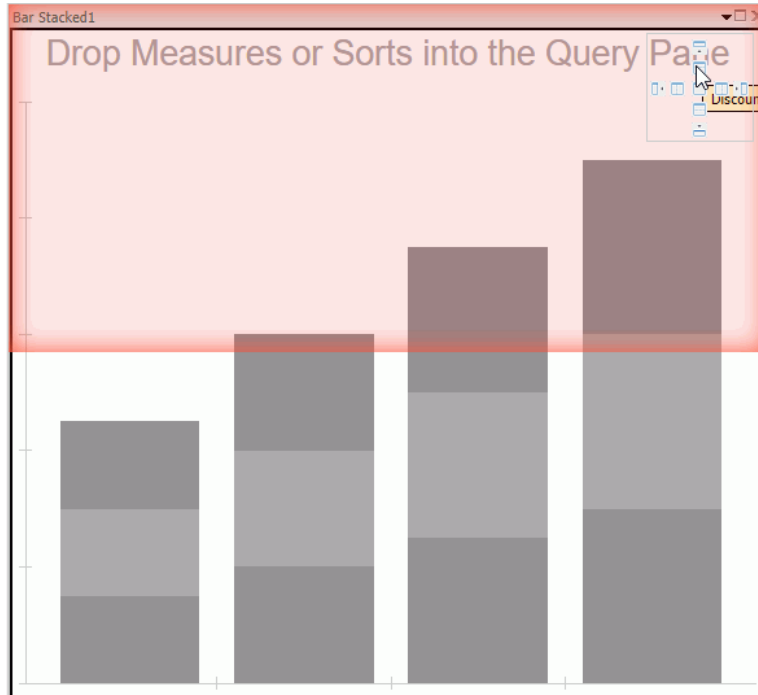
   b. On the *Home* tab, in the *Visual* group, click *Insert*.

      Note: You can optionally click the down arrow on the Insert button to specify the addition of a chart, grid, or text.

3. Add another visual.

   Now, three visual cells display side-by-side.

4. Click a visual to select it.

   Note: You can click a visual to activate it, or double-click on the visual number or name in the Query pane.

5. Reorganize your visuals using the handles.

6. Once you have organized the placement of your visuals, select one and specify the visual type.

   a. On the *Home* tab, in the *Visual* group, click *Change*.

Note: The *Change* icon updates depending on the chart, map, or grid that you select from the Select a Visual menu. By default, the *Change* icon displays a stacked bar chart.

b. In the Select a Visual menu, click the type of visual you want to use. For example, Line, Area, or Map.

c. Repeat these steps for all three visuals on your canvas.

7. Populate each visual with your data.

You can change the type of visual that you previously selected at any time. You can also resize or reorganize the position of each visual as you add data.

For example, move the lower-left visual to the top of the visualization.
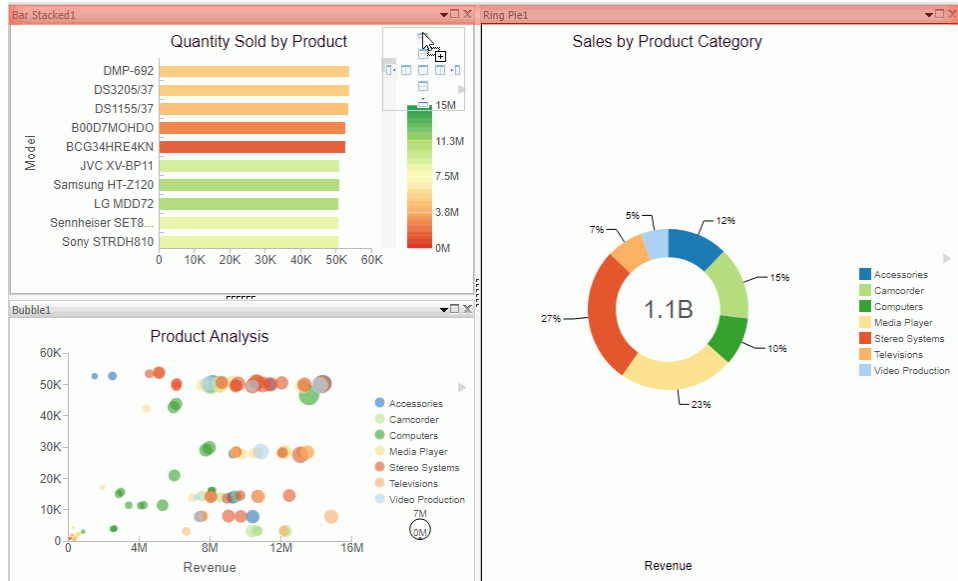
The bubble chart now runs across the top of the visualization.
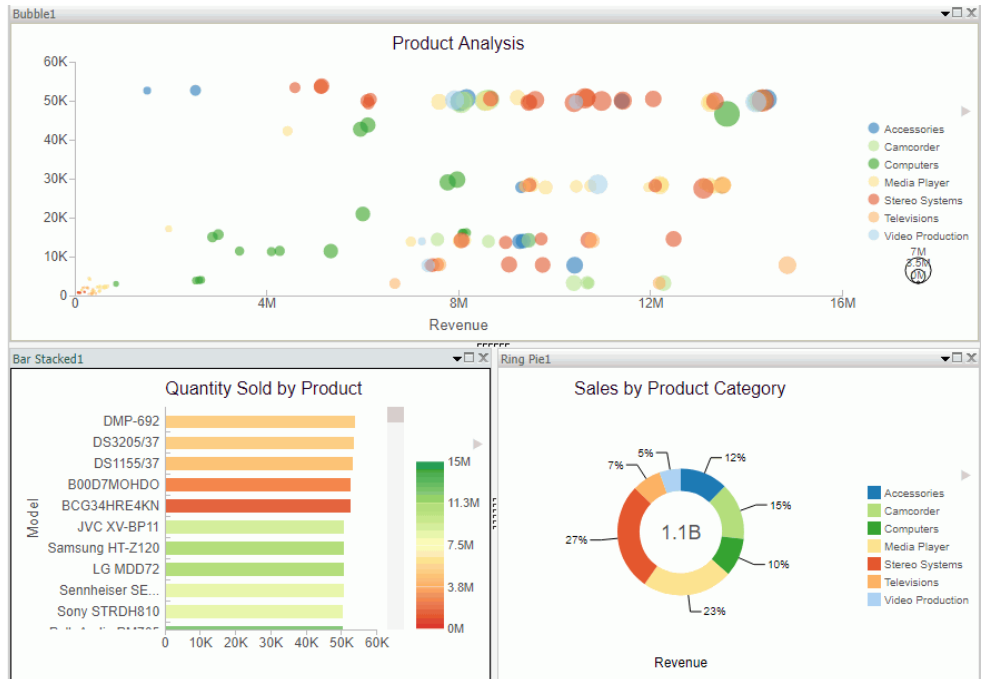
8. Click *Save* to save your visualization.

Minimizing or Maximizing a Visual

When working on a visualization with more than one chart, map, or grid, you can maximize and minimize individual visuals. This allows you to focus on one visual at a time, and then minimize it to view it alongside the other visuals.

The maximize and minimize icons are located in the top-right corner of each visual, next to the Close button. When you click the *Maximize* icon, the current visual moves to the foreground and is the only visual that displays on the canvas. You can work on this visual, and then minimize it to view the other visuals.

Note: You can view other visuals in the maximized mode by selecting a different visual in the Query pane.

Procedure: **How to Minimize or Maximize a Visual**

1. Create a visualization with two or more visuals.

2. Perform the following actions to minimize or maximize your visual:

❏ Click the maximize icon or double-click on the Title bar to maximize your visual.

❏ Click the minimize icon or double-click on the Title bar to minimize your visual.

You can maximize one visual at a time, and you can switch between visuals in this mode by double-clicking a different visual in the Query pane.

Procedure: **How to Delete a Visual**

1. In your visualization, select the chart, map, or grid that you want to delete.
2. Perform one of the following tasks to delete the visual:

❏ Press the Delete key.

❏ On the *Home* tab, in the *Clipboard* group, click *Cut*.

❏ Click the *Close* button in the upper-right corner of the current visual.

❏ From the Query pane, right-click on a visual, and click *Delete*.

Note: You can use the Undo and Redo options on the Quick Access Toolbar to reverse or redo any prior actions.

Renaming a Visual

You can rename a visual on the canvas or within your visualization. You may want to do this for presentation and organizational purposes, as each visual has a default label (for example, Bar 1, Bar 2, and Bar 3). You can change these labels by renaming the visual in the Query pane.

Once new labels are in place, it is easier to recognize which visual you want to select at any given time.

Using the shortcut menu for a visual in the Query pane, you can also rename your visual.

Procedure: **How to Rename a Visual**

1. Create a visualization with one or more chart, map, or grid.
2. In the Query pane, right-click the visual number for which you want to modify the title.
3. Click *Rename*.
4. In the Edit Title dialog box, enter a new name for the visual.
5. Click *OK*.
   The visual is renamed in the Query pane and the new title is reflected at the top of the selected visual.

Using Paper-Clipping to Group Values in a Visual

Paper-clipping gives you the advantage of lassoing values in a visual to create logical groups within your selected dimension. Paper-clipping uses the core functionality of dynamic grouping, giving you access to grouping capabilities that meet your business needs. You can also add additional groupings or fields to an existing group, and rename the groups and values, giving you control over how the information displays.

When you paper-clip values together, a new group is created using the naming convention of dimensiongroup_1. You can add values to this group by lassoing this grouped component, along with any additional components you want to add. These new values become part of that existing group.

Note: If you group two values and then add another value to that grouping, you must manually rename the group in order to update its display.

If you lasso other values in your visualization, and you do not capture or include a previously defined grouping, a new grouping is created for the selected fields in the current dimension. It is labeled using the original dimension label (dimensiongroup_1), but a new, unique grouping is created for these values. You can see the groupings by right-clicking the group in the Query pane and selecting *Edit Group*. If you want to add new values to an existing group, you must lasso the existing group, in addition to the fields that you want to add to it, in order to combine the additional fields into the existing grouping.

To enable paper-clipping, lasso the values that you want to group, release the mouse, and from the menu that displays, select *Group n Selection*, where *n* is the dimension associated with the values you select. This menu is shown in the following image.
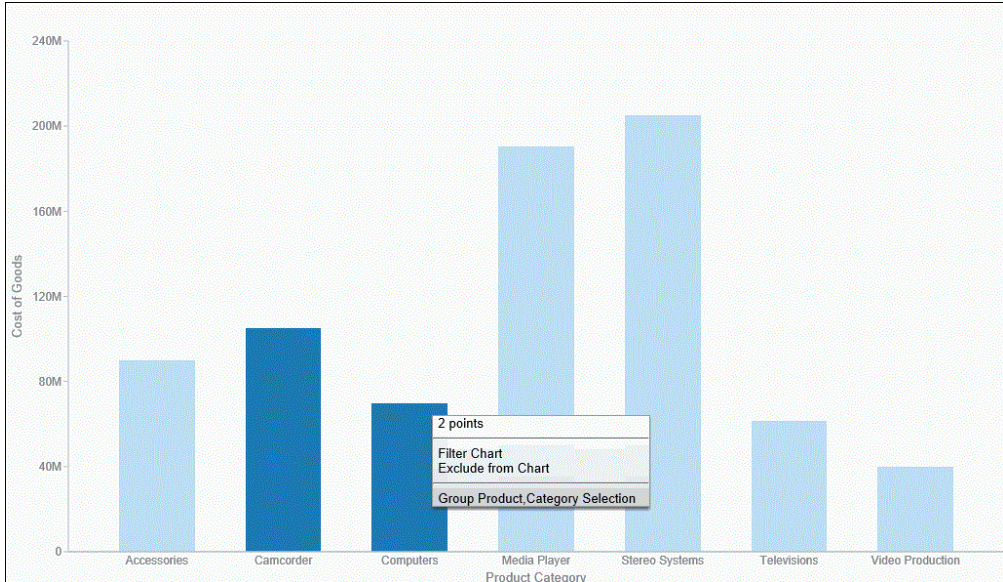
Note: Paper-clipping allows you to group on the first BY field only. In this example, the first BY field is Product Category. If you are working with a matrix chart and you apply this rule, you are only able to group on the first BY field. In addition, you cannot group on a numeric field (for example, Sales_Year). In this case, if the numeric field was the first BY field, grouping is not available.

Once you group the values, they display in a unique group on the relevant axis. The group label is based on the original values stored for those components. For example, in the previous image, we grouped Camcorder and Computers in the PRODUCT_CATEGORY_1 group, as shown in the following image.
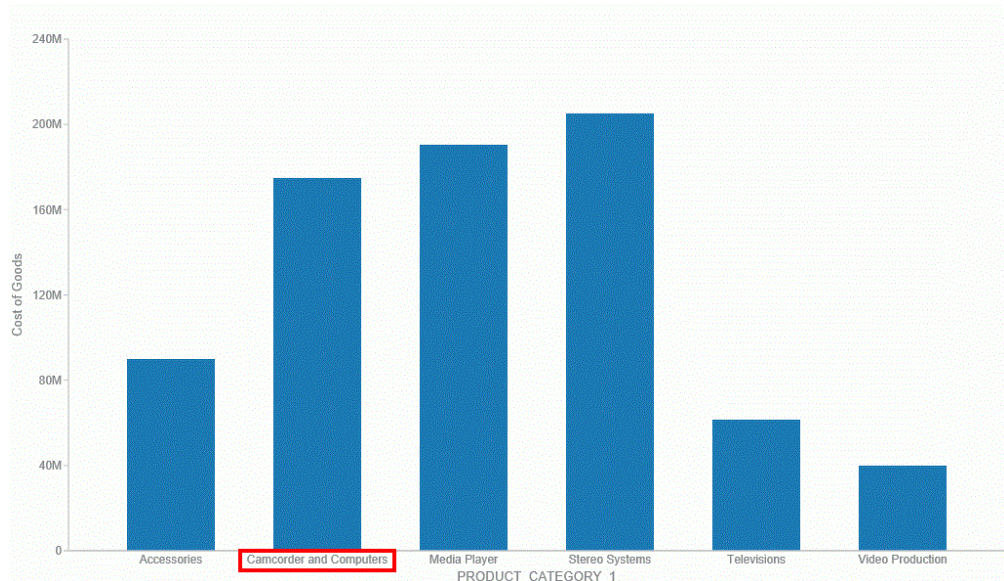
Once you create a group, you can easily perform the following functions:

❏ **Edit group.** Opens the Edit Group dialog box, where you can edit the values in the current group. For example, you can add additional values into the current group or delete them. For more information on editing an existing group, see *Dynamic Grouping* on page 59.

❏ **Rename group.** Enables you to rename the group using the Rename Group dialog box. The revised name displays along the relevant axis and replaces the existing field name in the Query pane.

❏ **Rename x.** Enables you to rename the group name (x) that is assigned based on your grouping. This is particularly useful in cases where space is an issue in your visualization. This revised value also replaces the original group name in the Edit Group dialog box.

❏ **Ungroup x.** Ungroups the values of the group (x) that were previously grouped.

❏ **Ungroup All.** Ungroups all existing groups, returning the visualization to its original state.

   Note: Upon ungrouping all groups, the original dimension displays as a group in the Query pane, by default. However, no grouping is applied.

These options are shown in the following image.
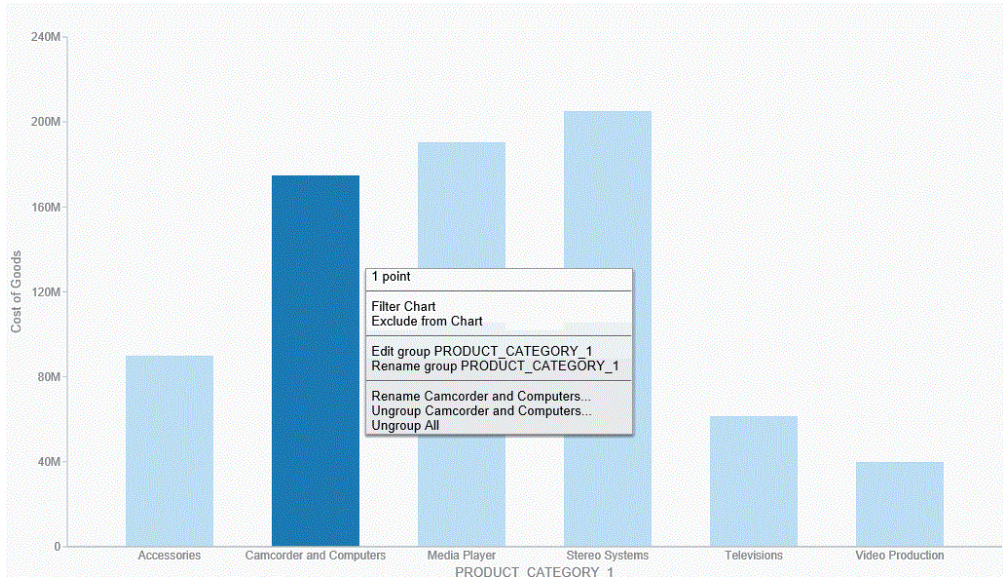
Note: You can also edit an existing group by right-clicking the group in the Query pane and selecting *Edit Group*.

If you want to add another value to an existing group, lasso the existing group and the new value. From the menu, click *Merge with x*, where x is the value of the existing group, as shown in the following image.
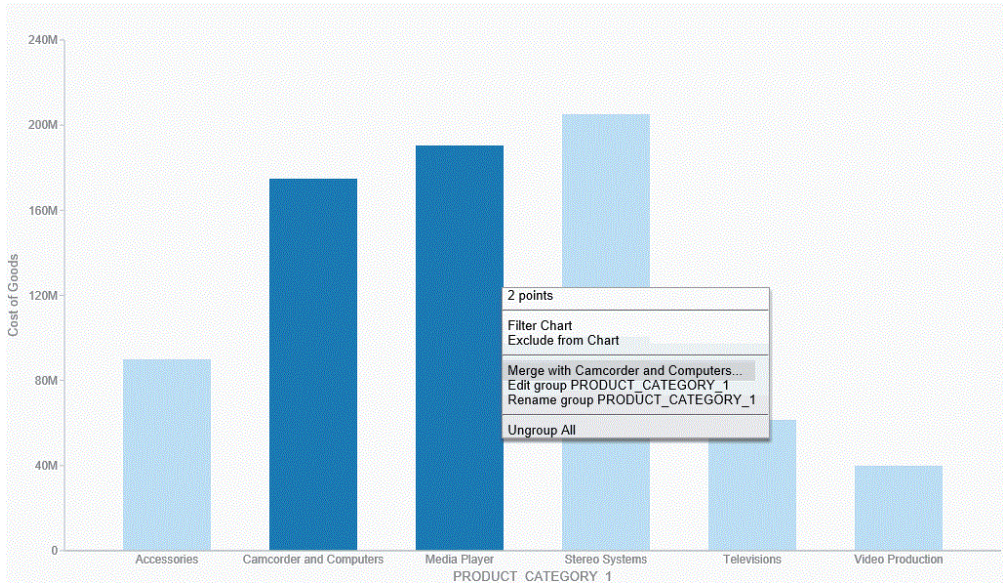
The new value is added to the existing group. You can then rename the group so that its label contains all values in the group. You can optionally label it with a new, unique name. This option is shown in the following image.
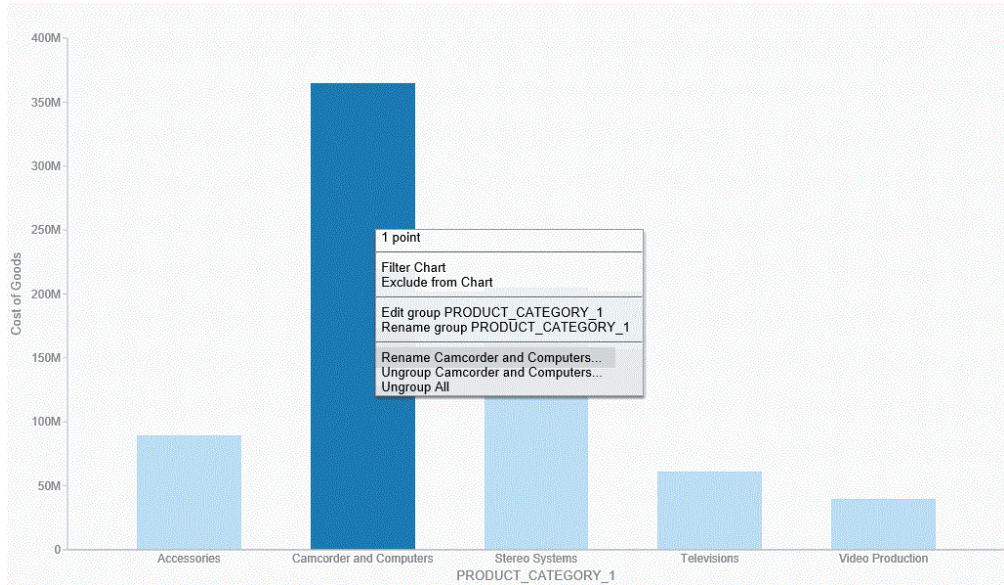
Note: You can also use the Edit Group dialog box to rename groups or groupings. For more information, see *Dynamic Grouping* on page 59.

You can use the following procedures to create and manage your paper-clipped values.

Procedure: **How to Paper-Clip Two or More Values Together**

1. In visualization mode, create a bar chart with one measure and one dimension. The bar chart displays.

2. Lasso two or more columns in the visualization.

3. From the menu that displays, click *Group n Selection*, where n is the name of the dimension in your bar chart.
   The two values are paper-clipped together, or grouped, as indicated on the x-axis.

   Note: If you have swapped the orientation of your visualization, the paper-clipped values display on the y-axis.

Procedure: **How to Merge an Additional Value into an Existing Group**

1. In visualization mode, create a bar chart with one measure and one dimension. The bar chart displays.

2. Lasso two or more columns in the visualization.

3. From the menu that displays, click *Group n Selection*, where n is the name of the dimension in your bar chart.
   The two values are paper-clipped together, or grouped, as indicated on the x-axis.

   Note: If you have swapped the orientation of your visualization, the paper-clipped values will display on the y-axis.

4. Lasso this existing group, as well another column, to merge this additional value into the group.

5. From the menu that displays, click *Merge with x*, where *x* is the name of the group you originally created.
   This value is merged into the existing group.

   Note: The name of the group is not dynamically updated. In order to reflect the contents of the revised group, you must edit the group using the right-click menu option or the Edit Group option that is available in the Query pane.

Procedure: How to Rename an Existing Group

1. In visualization mode, create a bar chart with one measure and one dimension. The bar chart displays.

2. Lasso two or more columns in the visualization.

3. From the menu that displays, click *Group n Selection*, where *n* is the name of the dimension in your bar chart.
   The two values are paper-clipped together, or grouped, as indicated on the relevant axis.

4. Lasso the grouped column and from the menu that displays, click *Rename x*, where *x* is the existing label of the group.

5. In the Rename Value dialog box, enter the new name for the group.

6. Click *OK.*
   The group is renamed, as shown on the relevant axis.

   Note: Optionally, you can rename a group using the Edit Group dialog box. This is available when you right-click on a grouped value in the Query pane and click *Edit Group*. For more information, see *Dynamic Grouping* on page 59.

Viewing Data Behind Visuals

You use InfoAssist+ to analyze your data by creating or building interactive visualizations. As you develop these visualizations, you can create different views of the data, and find patterns or trends.

As you gain insight and spot patterns, you may want to share only the underlying data that comprises a specific visual with others in your enterprise. You can do this using the data options, as shown in the following image.
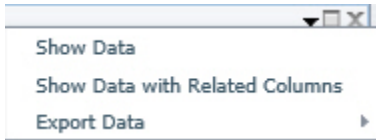
The Show data option provides options for you to view and share this data. The Export data option enables you to export the data specific to your visualization in a summary or detailed format. You can also review related data by using the Show Data with Related Columns option.

The Show Data with Related Columns functionality allows you to review more specific underlying data based on the fields that you have selected. Specifically, it displays data related to other fields that are part of the dimension hierarchy that you select. For example, if you selected the Product,Category dimension field, the related column data would include data from the Product,Subcategory and Model dimension fields, because these data fields are part of that dimension hierarchy.

Similar to the Show data option, the Show Data with Related Columns option provides more detailed data based on the data fields that you select. You can sort and review the data columns, which display in a separate browser window. Depending on the size and breadth of your dimension hierarchy, a multiple page report may be produced.

Note: You can export data in .xls or .csv format.

When you select the option to show data or show data with related columns, a report is generated in a separate browser window. This report is an active report, which you can review, sort, and modify using the drop-down menus that are available. For more information on active reports, see the Information Builders Technical Content Library at: *http:// documentation.ibi.com*.

When you point to the Export Data option, you can:

❏ Export data in summary format, which includes totals for categories based on the data fields that you selected for your visual.

❏ Export more granular data based on the data values that you selected in your visual.

Note:

❏ When exporting data using the Summary or Data Detail options, you can save the resulting data file, which is in Microsoft® Excel® format, to your local machine for further analysis and sharing.

❏ The maximum number of records that can be exported is 100,000.

Procedure: **How to Show the Data Behind Your Visual**

1. Create a visual, such as a chart, map, or grid.

2. In the upper-right corner of the visual cell, click the down arrow.

3. In the menu that appears, click *Show Data*.

   A new browser window opens. This window displays the data for your visual as a >Report Broker active report. You can use this active report to create and share lightweight, browser-based data discovery analytics that are portable, and only require access to a browser.

Procedure: **How to Show Data With Related Columns**

1. Create a visual, such as a chart, map, or grid.

2. In the upper-right corner of the visual cell, click the down arrow.

3. In the menu that appears, click *Show Data with Related Columns*.

   A new browser window opens. This window displays the data for your visual as a >Report Broker active report. You can use this active report to sort and work with the underlying hierarchical data in your visual.

Procedure: **How to Export the Data Behind Your Visual**

1. Create a visual, such as a chart, map, or grid.

2. In the upper-right corner of the visual cell, click the down arrow.

3. In the menu that appears, point to *Export Data*, and then click one of the following:

❏ **Summary.** A prompt appears, asking you to open or save a Microsoft Excel file. This file is a summary of your data from a high level for a general analysis, as shown in the following image.

	A	B	C	D
1	Product Category	Product Name	Revenue	Gross Profit
2	Accessories	Headphones	$9,341,397.65	$2,354,397.65
3		Cycle Energy Quick with Refresh Charger	$1,508,212.41	$666,612.41
4		Denon AH-D5000 Over-Ear Headphones	$9,272,133.77	$2,477,303.77
5		Grado RS1i Reference Series Headphones	$9,452,243.25	$2,208,713.25
6		Universal Remote	$14,419,020.31	$4,401,161.31
7		Control	$9,301,960.89	$1,518,520.89
8		Anywhere! Kit with Tabletop Sensor	$11,401,805.70	$2,616,237.70
9		Anywhere! Kit for Home Theater	$14,276,128.75	$4,825,372.75
10		Headphones	$8,028,218.25	$4,049,178.25
11		Samsung OEM 2.0 Amp Travel Charger	$2,514,622.50	$1,303,511.50

❏ **Data Detail.** Generates a detailed report that provides specific data regarding your data analysis.

Using Multi Drill in Visualization Mode

Similar to the functionality that is available in Chart mode, you can create multiple drill down links on a measure field in a visualization. This enables you to define custom links to other reports or websites, making it easy to link content from internal and external sources. Once defined, these links display on the shortcut menu that displays when you hover over a riser, as shown in the following image.
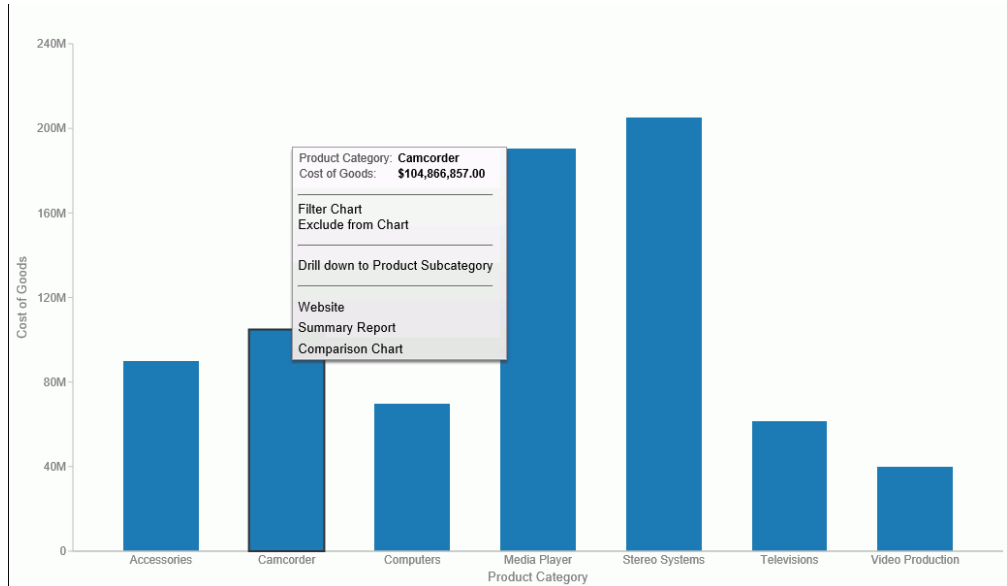
You create multiple drilldowns using the Drill Down dialog box, which you can access from the Links group on the Field tab. In the Query pane, click a measure to enable the Field tab. In the Links group, click *Drill Down*. The Drill Down dialog box displays, as shown in the following image.
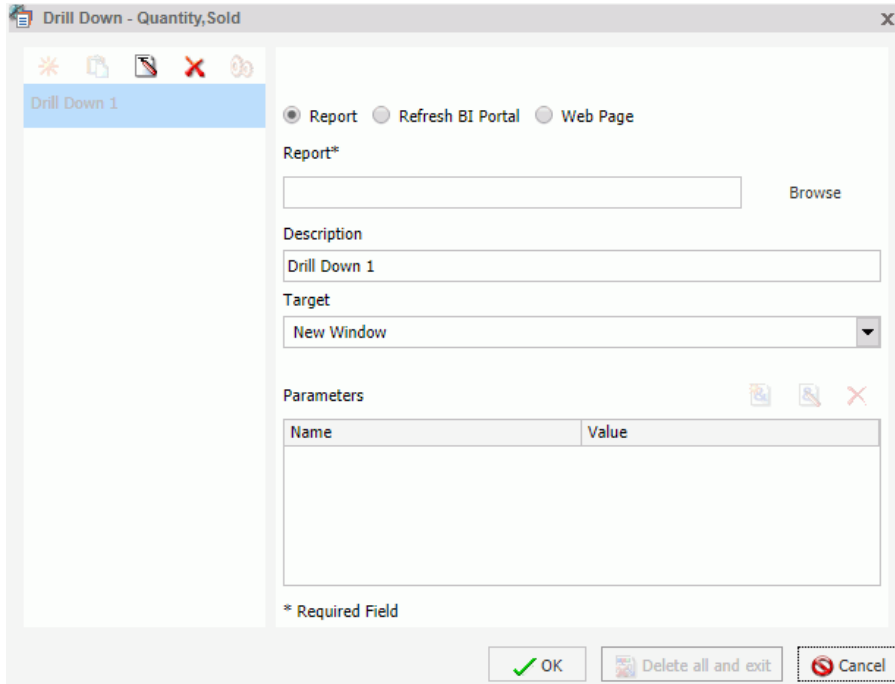
Note: When creating a drill down in Visualization mode, the Auto Link Target option is not available.

For more information and instructional guidance, see *Using Multi Drill* on page 320.

Creating Multi-Y Axis Comparative Visuals

When creating a chart with more than one measure (numeric) field, you can split the Y axis to create multiple charts, based on each unique measure field.

Note: Measure fields are selected from the Data pane and display under the Vertical Axis (Y) in the Query pane.

This functionality is useful when analyzing trends for multiple measure fields, as you can view data for each measure field separately within the same chart, as shown in the following image.
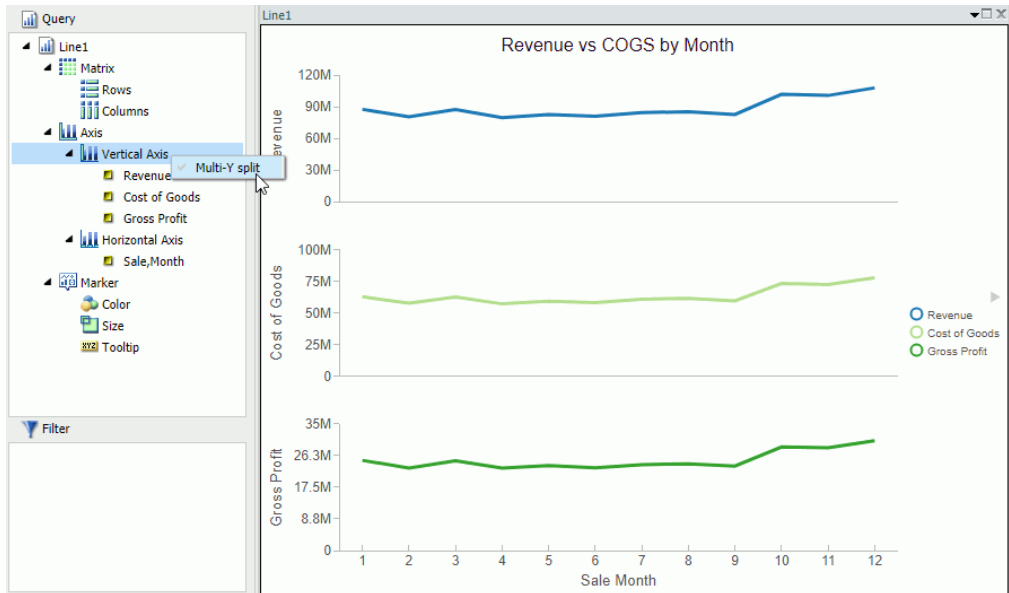
This functionality is available for Bar, Bar Stacked, Line, Area, and Area Stacked charts.

Procedure: **How to Create a Multi-Y Axis Comparative Visual**

1. Launch InfoAssist+ in Visualization mode.

2. On the *Home* tab, in the *Visual* group, click *Change*.

3. Select one of the following visual types: Bar, Bar Stacked, Line, Area, or Area Stacked.

   Note: Bar Stacked is the default visual type.

4. Add multiple measure fields to the visual. For example, Gross Profit and Revenue.

5. Add at least one dimension field to the visual. For example, Product Category.

6. In the Query pane, right-click *Vertical Axis*.

7. Click *Multi-Y split*.

   The chart changes to display individual charts for each measure field.

   Note: You can revert your chart to an integrated display by right-clicking *Vertical Axis* and then clicking *Multi-Y split*.

Customizing Visualizations

Once you have created a visualization, you can customize and style individual visuals within the visualization. For example, you can add axis titles to a bar chart visual or a title or header for a visual within a visualization. For visuals, the customization options vary depending on the type of visual (for example, the formatting options for bar visuals differ from those that are available for pie visuals).

This section addresses the formatting options that are available for all visual types, including:

❏ *Format Axis Dialog Box* on page 284

❏ *Using Axis Properties* on page 289

❏ *Formatting Data Labels* on page 294

❏ *Formatting the Legend* on page 295

❏ *Formatting a Series* on page 295

❏ *Formatting and Display Tools for Data in a Visual* on page 296

Formatting Axis Labels

Vertical and horizontal axes are based on the orientation of the visual. For example, in a vertical visual, the horizontal axis refers to the X axis and the vertical axis refers to the Y axis. In a horizontal visual, the horizontal axis refers to the Y axis and the vertical axis refers to the X axis. This is important to consider, since options could change depending on the orientation of the visual.

A chart can contain the following types of axis labels:

❏ Horizontal axis labels represent the X axis.

❏ Vertical axis labels represent the Y1 axis in a single axis chart. They represent a numeric scale, usually located on the left side of a vertical chart.

❏ Secondary horizontal and vertical labels can only be used when dual axes charts are selected.

Format Axis Dialog Box

The Format Axis dialog box includes options for formatting both vertical and horizontal axes. The Format Axis dialog box contains the following tabs:

❏ General (for horizontal axes)

❏ Scale (for vertical axes)

❏ Title

❏ Labels

❏ Advanced

Reference: **Format Vertical Axis Dialog Box**

You can use the Format Vertical Axis dialog box to specify formatting options for the vertical axis in your chart.

Use the Scale tab to modify scale properties.

The Scale tab contains the following options:

❏ **Automatic Minimum.** Supplies the minimum value on the Y-axis scale automatically. To use manual scaling, clear this option. You can then set the minimum value by entering a number into the Value text box.

   ❏ **Value.** Type the minimum value in this text box if you have not selected Automatic Minimum.

❏ **Automatic Maximum.** Supplies the maximum value on the Y-axis scale automatically. To use manual scaling, clear this option. You can then set the maximum value by entering a number into the Value text box.

   ❏ **Value.** Type the maximum value in this text box if you have not selected Automatic Maximum.

❏ **Automatic Grid Step.** Calculates the number of major grid steps automatically. To use manual scaling, clear this option. You can then set the value by typing the number into the Value text box.

   ❏ **Value.** Type the value in this text box if you have not selected Automatic Grid Step.

❏ **Logarithmic Scale.** Controls whether or not the Y-axis scale progresses logarithmically instead of linearly. This option is disabled by default. When selected, the logarithmic base is set to 10.0, but can be changed by entering another value.

❏ **Include zero on scale.** Controls whether or not a zero (0) value appears on the scale. This option is enabled by default.

When working with vertical axis options in InfoAssist+, the Include zero on scale check box is cleared by default when setScaleMustIncludeZero() is not present in the StyleSheet. When this setting is not present, the value is false. The Reporting Server, however, sets the value to true. This produces inaccurate results at run time.

To resolve this issue, add the setScaleMustIncludeZero() setting to the StyleSheet. For example, setScaleMustIncludeZero(getY1Axis(),true);

You can also select the Include zero on scale check box in the Format Vertical Axis dialog box, which can be accessed from the Axes option in the Labels group on the Format tab, and then clear it. This writes the setting into the FOCEXEC and sets the value to false. Select the check box for this option again to set the value to true.

Use the Title tab to show or hide the axis title, and create and style the title for the axis.

The Title tab contains the following options:

❏ **Show title.** Select this check box to show the axis title (default) or clear the check box to hide the axis title.

❏ **Text.** Enter a title for the axis.

❏ **Style text.** Opens the Style dialog box, where you can style the text.

Use the Labels tab to format the layout of the axis labels.

The Labels tab contains the following options:

❏ **Show Labels.** Displays labels next to the axis. This is enabled by default. Clear this option to suppress labels.

  ❏ **Axis side.** Contains a list of position options for the labels on the axis. The options are Left (default), Right, or Both.

  ❏ **Style labels.** Opens the Style dialog box, where you can style text.

  ❏ **Format Labels.** Contains a list of preset formats that can be applied to the labels.

  ❏ **Custom Format.** Allows you to use a custom format. This option is activated when *Use Pattern /100* and *Use Pattern* are selected as the format labels.

The Format Labels drop-down menu provides a list of preset formats that you can apply to labels. When you select a custom format, it must be defined using a custom format pattern. See the following table for a list and description of the characters that you can use in a custom format.

Character	Description
#	Is a digit.
0 (zero)	Shows as absent.
. (period)	Is a placeholder for a decimal separator.
, (comma)	Is a placeholder for a grouping separator.
; (semicolon)	Separates formats.
- (dash)	Is the default negative prefix.
% (percent)	Divides by 100 and shows as a percentage.
x	Determines that any other characters can be used in the prefix or suffix.
' (apostrophe)	Is used to quote special characters in a prefix or suffix.

Use the Advanced tab to modify additional axis properties.

The Advanced tab contains the following options:

❑ **Exclude Minimum Label.** Excludes the label with the lowest axis value from the chart.

❑ **Exclude Maximum Label.** Excludes the label with the highest axis value from the chart.

❑ **Descending Axis.** Draws the axis in descending order.

❑ **Show axis line.** Controls the display of the axis baseline.

  ❑ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the axis line.

❑ **Show zero line.** Controls the display of the zero line.

  ❑ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the zero line.

❑ **Custom Baseline.** Controls the display of the custom baseline.

  ❑ **Value.** Type a value for the custom baseline.

  ❑ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the custom baseline.

For instructions on how to open this dialog box, see the procedures in *Using Axis Properties* on page 289.

Reference: Format Horizontal Axis Dialog Box

You use the Format Horizontal Axis dialog box to specify formatting options for the horizontal axis in your chart.

The General tab contains the Show axis line check box, which controls the display of the axis line. When this check box is selected, you can style the axis line.

The General tab contains the following options:

❏ **Show axis line.** Enables the display of the axis line.

> ❏ **Line Style.** Opens the Line Style dialog box, where you can edit the color, weight, and style of the axis line.

Use the Title tab to create and style the title for the axis.

The Title tab contains the following options:

❏ **Show title.** Enables the display of the title.

❏ **Text.** Type a title for the axis.

❏ **Style.** Opens the Style dialog box, where you can style the text.

Use the Labels tab to format the layout of the axis labels.

The Labels tab contains the following options:

❏ **Show Labels.** Displays labels next to the axis. This is enabled by default. Clear this option to suppress labels.

> ❏ **Axis side.** Contains a list of position options for the labels on the axis. The options are Left (default), Right, or Both.

> ❏ **Style labels.** Opens the Style dialog box, where you can style text.

❏ **Stagger Labels.** Sets the labels to appear staggered.

❏ **Concatenate Labels.** Concatenates the labels in your visualization. This is enabled by default.

Use the Advanced tab to modify additional axis properties.

The Advanced tab contains the following options:

❏ **Exclude Minimum Label.** Excludes the label with the lowest axis value from the chart.

❏ **Exclude Maximum Label.** Excludes the label with the highest axis value from the chart.

❏ **Reverse Groups.** Reverses the order of the display of the groups on the horizontal axis.

For instructions on how to open this dialog box, see the procedures in Using Axis Properties.

Using Axis Properties

The following sections contain procedures for customizing an axis. The procedures are organized by the tab and group in which their associated options appear on the ribbon.

Axis labels appear by default.

Procedure: **How to Hide Axis Labels**

1. Create a chart.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to the axis that you are working with, and clear the *Show Labels* option.

   The axis labels are hidden from the chart.

Procedure: **How to Stagger Axis Labels**

Note: You can only apply a staggered effect to horizontal axis labels.

1. Create a chart with at least one horizontal axis label on display.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to *Horizontal Axis*, and click *Stagger Horizontal Labels*.

   The axis labels are staggered.

The following image shows a chart with the horizontal axis labels staggered.
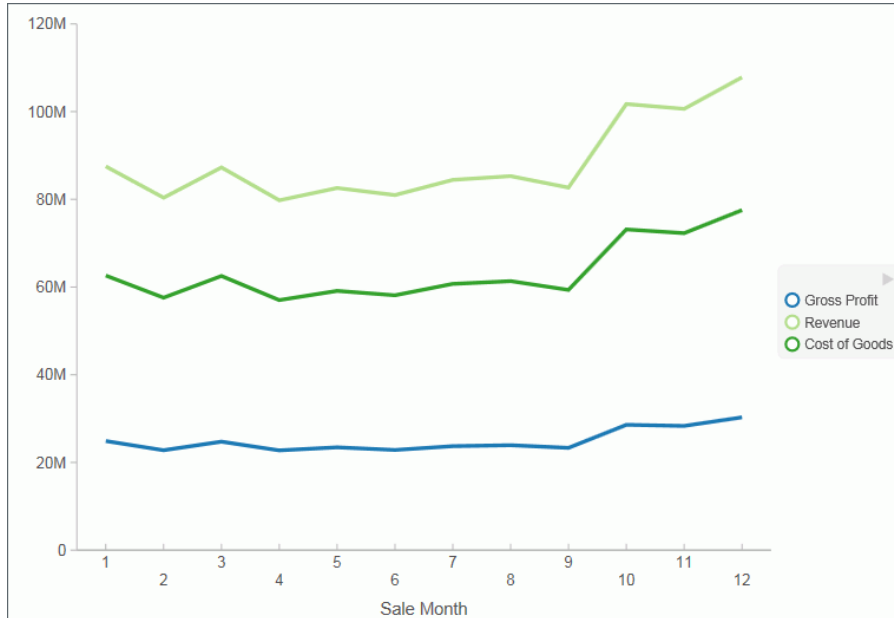
Procedure: How to Rotate Axis Labels

1. Create a chart with axis labels.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to the axis that you are working with, point to *Rotate Labels*, and then select the degree to which you want to rotate the axis labels.

   The axis labels are rotated.

The following image shows a chart with the vertical axis labels rotated 45 degrees.
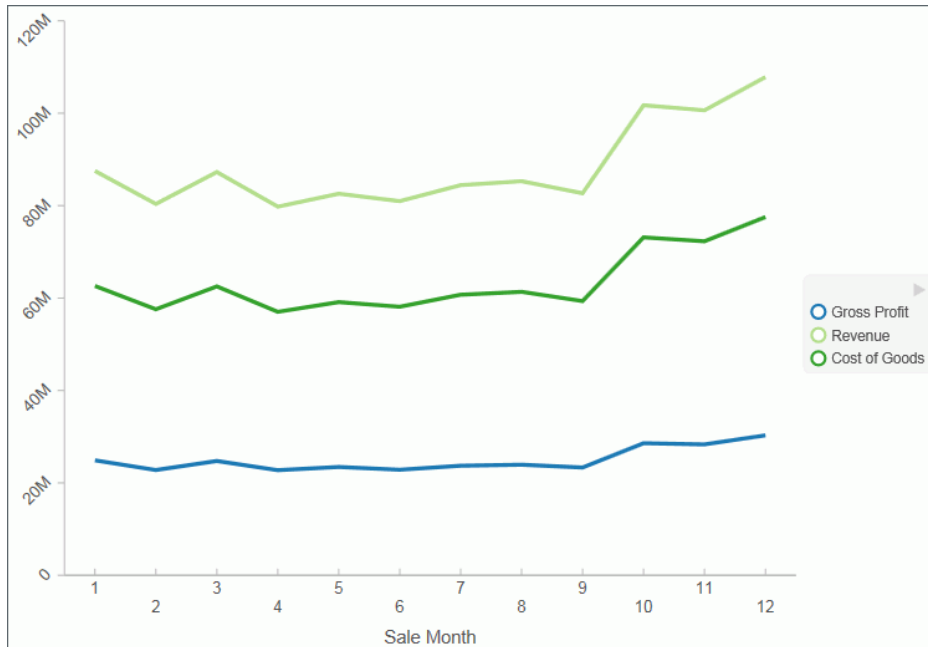
Procedure: How to Format Axis Labels

1. Create a chart with an axis label.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to the axis that you are working with, and click *More Vertical Axis Options*, or *More Horizontal Axis Options*.

   The Format Axis dialog box opens.

3. Click the Labels tab.

4. From the Format Labels list, select the formatting option that you want.

   The axis labels are formatted accordingly.

The following image shows a chart with the vertical axis label styled in blue Arial font.
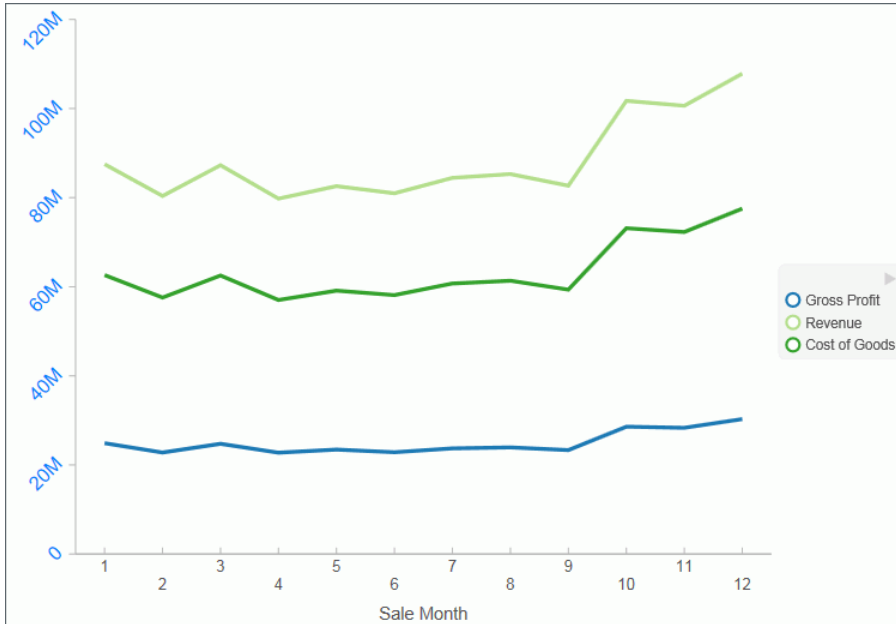
Procedure: How to Manually Set the Scale of an Axis

Note: You can only set axis scale to vertical axis labels.

1. Create a chart.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to *Vertical Axis*, and click *More Vertical Axis Options*.

   The Format Axis dialog box opens.

3. On the Scale tab, clear the *Automatic Minimum* option and enter your own minimum value in the *Value* text box.

4. Clear the *Automatic Maximum* option, and enter your own maximum value in the *Value* text box.

5. Clear the *Automatic Grid Step* option, and enter your own grid step value in the *Value* text box.

6. Optionally, you can select the *Logarithmic Scale* option and enter the log scale base in the text field of that name. You can also clear the *Include zero on scale* option if you do not want zero to appear on the axis.

7. Click *OK* to close the dialog box.

The axis scale is set accordingly.

Procedure: **How to Add an Axis Title**

1. Create a chart with an axis label.

2. On the *Format* tab, in the *Labels* group, click *Axis*, point to the axis that you are working with, and click *More Vertical Axis Options*, or *More Horizontal Axis Options*.

    The Format Axis dialog box opens.

3. On the Title tab, type the axis title in the *Text* field.

4. Click the *Style text* icon to open the Style dialog box, where you can style the text.

    The axis title is styled accordingly.

    The following image shows a chart with titles added to the vertical and horizontal axis labels.
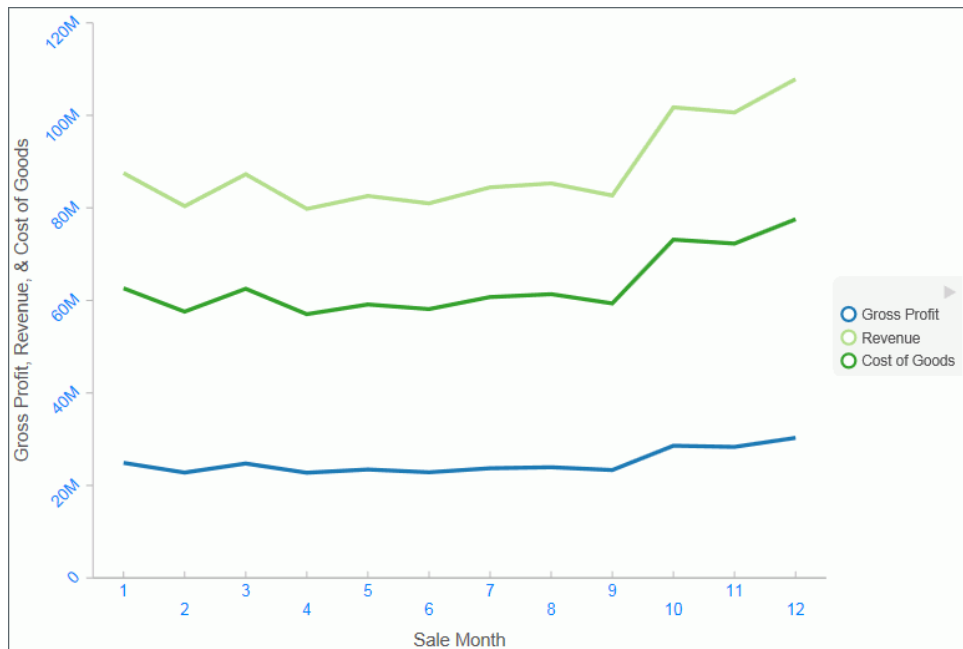
Procedure: **How to Set Advanced Axis Properties**

1. Create a chart with an axis label.

2. On the *Format* tab, in the *Labels* group, click *Axes*, point to the axis that you are working with, and click *More Vertical Axis Options*, or *More Horizontal Axis Options*.

The Format Axis dialog box opens.

3. On the Advanced tab, set the following options, as described in the following table:

Options	Available for Vertical Axis Labels	Available for Horizontal Axis Labels
Exclude Minimum Label	✔	✔
Exclude Maximum Label	✔	✔
Descending Axis	✔	✘
Show axis line	✔	✘
Show zero line	✔	✘
Custom Baseline (Value)	✔	✘
Reverse Groups	✘	✔

You can edit the color, weight, and style of all the lines that you set in the Line Style dialog box.

4. Click *OK*.

The axis advanced options are set accordingly.

Formatting Data Labels

Data labels highlight important data points on a chart. They identify exact numbers. You can customize data labels in a variety of ways to make them stand out more clearly on the chart. For example, using the Format Labels dialog box, you can change the position, angle, color, or size of data labels.

Note: The Format Labels dialog box offers different options depending on the chart type that you are using.

Procedure: **How to Access the Format Legend Dialog Box**

The Format Legend dialog box contains options for formatting a legend on a chart.

1. Create a chart.

2. On the *Format* tab, in the *Labels* group, click *Legend*, and then click *More Legend Options*.

   The Format Legend dialog box displays.

3. Use the following options to modify your legend:

   ❏ **Legend Options.** This allows you to set options for showing or hiding the legend, setting the legend position, and showing the legend in reverse order.

   ❏ **Markers & Labels.** This allows you to set Marker Style and Position. It also lets you stylize labels using a Style editor.

   ❏ **Fill.** Determines how items in the legend will be filled. Options include No Fill, Solid Fill, or Gradient Fill. The default is No Fill.

   ❏ **Border Styles.** Enables you to activate the display of a border for your legend. You can also specify a color.

Formatting the Legend

A legend contains information that is necessary to accurately interpret the data on a chart. By default, a chart displays either a vertical axis title if there is a single measure field, or a legend if there are multiple measure fields.

You can use the Format Legend dialog box to format the legend and customize its appearance on a chart.

Procedure: **How to Access the Format Labels Dialog Box**

1. Create a chart.

2. On the *Series* tab, in the *Properties* Group, click *Data Labels*, and then click *More Data Label Options*.

   The Format Labels dialog box opens.

Formatting a Series

A series is a measure field that is included in a chart. You can format a series in a variety of ways. For example, you can change the color of a series or change the appearance of markers on a series.

Procedure: **How to Change the Appearance of a Marker**

Markers are used to display points of data on a line chart. They are also used in the legend to identify the data that is on the chart. The different marker shapes distinguish one series from another.

1. Create a line chart.

2. Select a series on the line chart.

3. On the *Series* tab, in the *Line* group, click *Marker*, then select the marker shape.

   The markers are formatted.

   The following image shows a diamond marker for Product Category.
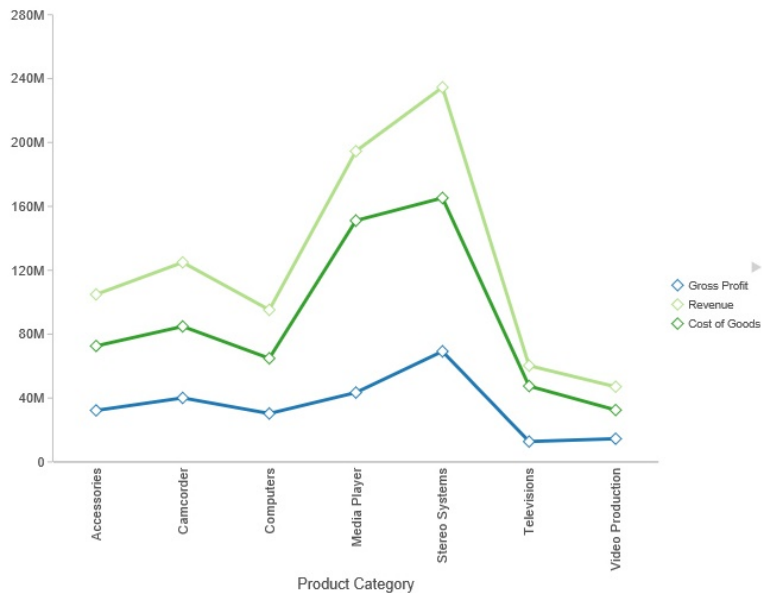
Formatting and Display Tools for Data in a Visual

When working with visualizations, you can use various filtering and editing tools to format the display of measure and dimension data in any given visual. For example, for measures, you can use the Edit Format option to set the display of decimals in the values of your selected measure. For measures and dimensions, you can add filters to limit the display of information. These options, which can be found on the right-click menu of a field, are defined and described in the following table.

Option	Description
Filter Values	Creates a filter for the selected measure or dimension. You can select all values or only the one the data values that you want to display. In this way, you can exclude unwanted data. For visualizations, prompts are created, by default. However, you can clear this option when setting your filter options. This option displays for both measures and dimensions.
Sort	Enables you to set sorting options for the measure or dimension that you select. For example, you can sort your data values in ascending or descending order, or you can set limits for the display of information, the value for which is set to No Limit, by default. This option displays for both measures and dimensions.
Visibility	Controls the display of the selected measure or dimension in a visual. The default value is Show, but if you set the option to Hide, the values are hidden from the visual. This option displays for both measures and dimensions.
Change Title	Enables you to edit the title of the measure or dimension. In the Edit Title dialog box, type the new title in the Enter Title field, and click *OK*. Depending on the axis that you select, the new label will be applied accordingly. This option displays for both measures and dimensions.

Option	Description
Edit Format	Enables you to change the format of a field. This includes field type, display options, field length, and the specification of applicable decimal points. For more information, see *Changing a Field Format* on page 87. This option displays for measure fields only. **Note:** Any changes to the format of a field will be reflected in the tooltip for visualizations at design and run time.
Drill Down	Opens the Drill Down dialog box, where you can create multiple drill down links on a data field to external procedures or websites. This option is available for any measure field in a visualization.
More	Provides access to Aggregation functions, which enables you to apply Aggregation functions (for example, Sum, Average, and Count) to the numeric field that you select. This option is only available for measure fields. This option displays for both measures and dimensions.
Delete	Deletes the selected field. This option is available in every field container. **Note:** In the Query and Filter panes, you can select and delete multiple data fields at one time. Press the Ctrl key, select two or more data fields, right-click, and then click *Delete*.

Option	Description
Create Group	Allows you to create a group of elements based on the field data type that you select. Once you define a new group, a higher-level field is created that contains the selected elements. This option is available for dimension fields of non-numeric format or attribute. For more information, see *Dynamic Grouping* on page 59.

Using Handles to Organize Your Visualization

A typical visualization contains multiple charts, maps, and grids. You begin with the default canvas and insert any number of visuals. You can control the placement of these visuals using the handles that display when you drag a data field onto the canvas or insert a new visual.

You can add a visual in one of two ways:

❏ Drag a data field from the Data pane onto the canvas. Handles display, allowing you to select the location for the new visual, for example, top (above) or left of the current visual.

❏ On the *Home* tab, in the *Visual* group, click *Insert* to add a new visual or text object to the canvas. To set positioning of the new visual, drag the visual on top of another visual and drop the visual on top of the handle that displays the relative position for the new visual.

When you drag a visual on top of another visual, this activates a shaded area. This shaded area provides a preview of where the visual cell will dock if you release the mouse. It also indicates the size of the resulting visual.

The handles display within the shaded area. They allow you to indicate where you would like to place the current visual relative to the others on your canvas. The handles are located in the upper-right corner of the selected visual, as shown in the following image.
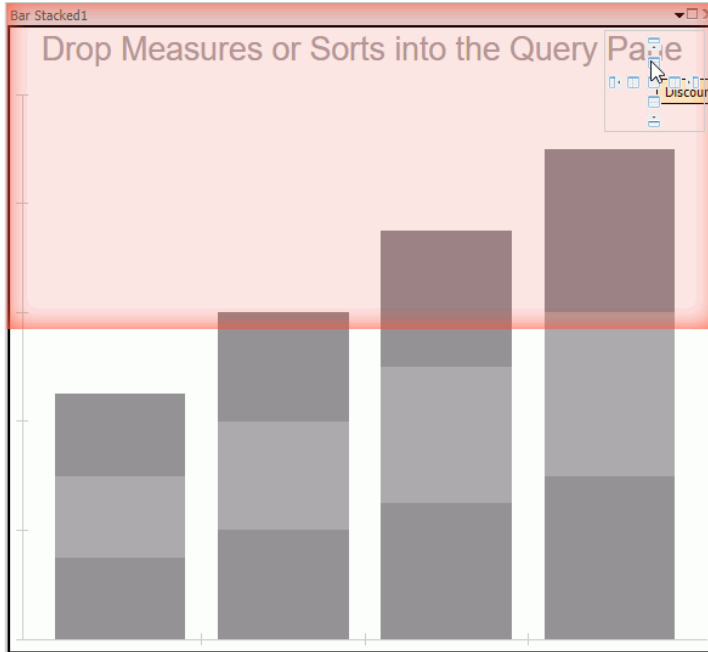
Procedure: How to Place a Visual in a Visualization

You can indicate the placement of a chart, map, grid, or text object in a visualization.

1.   Launch InfoAssist+.

2.   Add and place one or more visuals using one of the following methods:

   a.   Drag a data field from the Data pane onto the canvas.

        Use the handles that display in the upper-right corner of the selected visual to select the location for the new visual, for example, below or to the right.

   b.   On the *Home* tab, in the *Visual* group, click *Insert* to add a new visual or text object to the canvas.

        To set positioning of the new visual or text object, drag it on top of another visual. Use the handles that display in the shaded area to select a position relative to the underlying visual.

Procedure: **How to Move a Visual in a Visualization**

1. Launch InfoAssist+.

2. Add and place multiple visuals in your visualization.

3. Select and drag the visual that you want to reposition on top of an adjacent visual and drop it on top of the handle that indicates the relative position you want to use.

   Use the handles that display in the shaded area to select a position relative to the underlying visualization.

Using Storyboards

The Storyboard feature allows you to capture and preserve snapshots of your visualizations as you create them.

Each time you add something to the storyboard, it is placed onto a unique PowerPoint slide. When you click *Show*, you can open and review your slides in PowerPoint.

Since storyboards give you the ability to turn your visualizations into a PowerPoint presentation, you can modify your storyboard to create a customized demo. For example, you can rearrange or delete slides, or add titles and text.

You can also make your visualization portable by saving the PowerPoint files that you create and sharing the slides through email or other electronic distribution.

Procedure: **How to Create a Storyboard**

1. Create a visual, for example, a bar chart or a grid.

2. On the *Home* tab, in the *Storyboard* group, click *Add*.

   Note: When you receive the *Added to Storyboard* message, click *OK*.

3. Insert another visual. On the *Home* tab, in the *Visual* group, click *Insert*.

   Note: You can also click the down-arrow on the Insert button to insert a chart, grid, or text.

4. On the *Home* tab, in the *Storyboard* group, click *Add*.

   Repeat steps 2 through 4 until you complete your data analysis.

5. On the *Home* tab, in the *Storyboard* group, click *Show*.

   A new browser window opens, and you are prompted to open or save the PowerPoint file that contains your storyboard.

   ❏ If you click *Open*, the storyboard opens in PowerPoint. You can save the file as a PowerPoint presentation on your machine.

❑ If you click *Save*, the storyboard will be saved to a PowerPoint (.pptx) file and placed in the Downloads folder on your machine. Click the down arrow on the right side of the Save button to perform a Save as. This allows you to specify the drive and directory to which the file will be saved.

In PowerPoint, each storyboard frame displays as a PowerPoint slide, as shown in the following image.

Animating Visualizations

You can animate visuals in a visualization. Each individual visual can have different animation settings. The animations for each visual execute when you run the visualization.

Procedure: How to Add Animation to a Visual

1. Create a visualization with one or more visuals.

2. Select the visual that you want to animate.

3. On the *Format* tab, in the *Interactive* group, click *Interactive Options*.

4. On the Interactive Options dialog box, select the *Show Animation* check box.

   This animates the visual.

5. Set the duration for the animation, which determines the speed at which the animation occurs. The default value is 1400ms. Increase the value to make the animation slower, and decrease the value to make it faster.

6. Optionally, clear the *Enable Hover Over Effect* check box.

    This option lightens or adds a border to the segment of the visual that you move your mouse over.

7. Click *OK*.

8. Click *Run*.

    Your visual animates automatically based on the options that you specified.

Using Visualizations at Run-Time

In InfoAssist+, you can run visualizations that are either saved or run dynamically at run time. In this case, the visualization opens in a separate browser window, as shown in the following image.
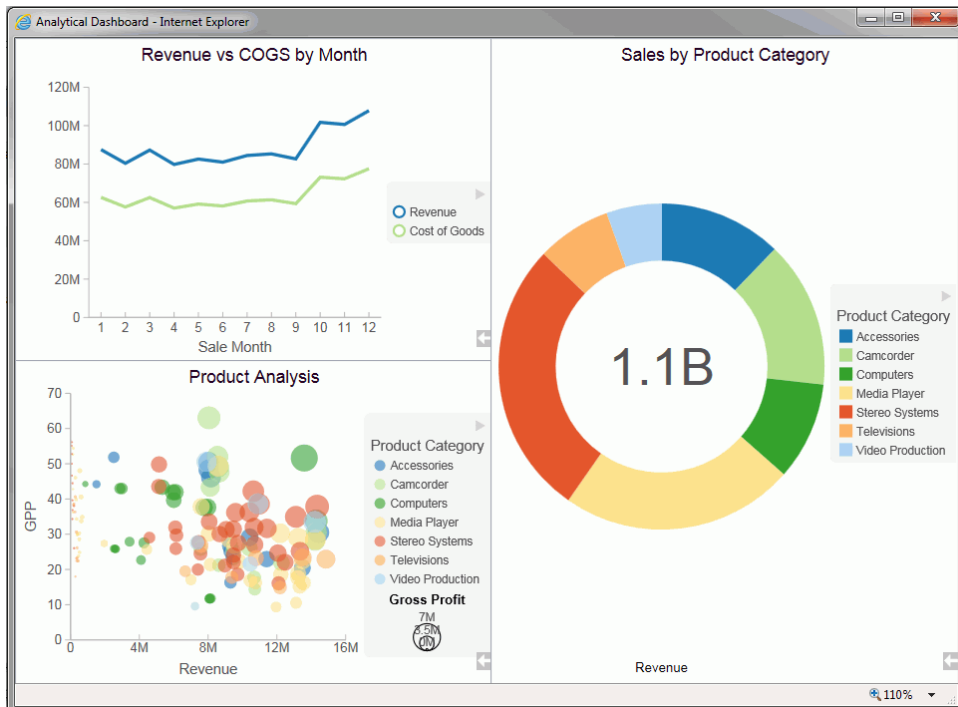
In the BI Portal, all users can run stored visualizations that are available to them. In this case, the visualization opens in a new page.

Working With Filters at Run Time

If you have added a filter to your visualization, you can use the Prompts panel to control the display of information. When you run your visualization, the Prompts panel appears. This enables you to select additional components by which to filter the visualization.

Note: The filters that you apply at run time can be removed using the Remove Filter option in the Run-Time toolbar. This does not apply to filters that were added prior to running the visualization.

The following image shows an example of a visualization with an open Prompts panel.
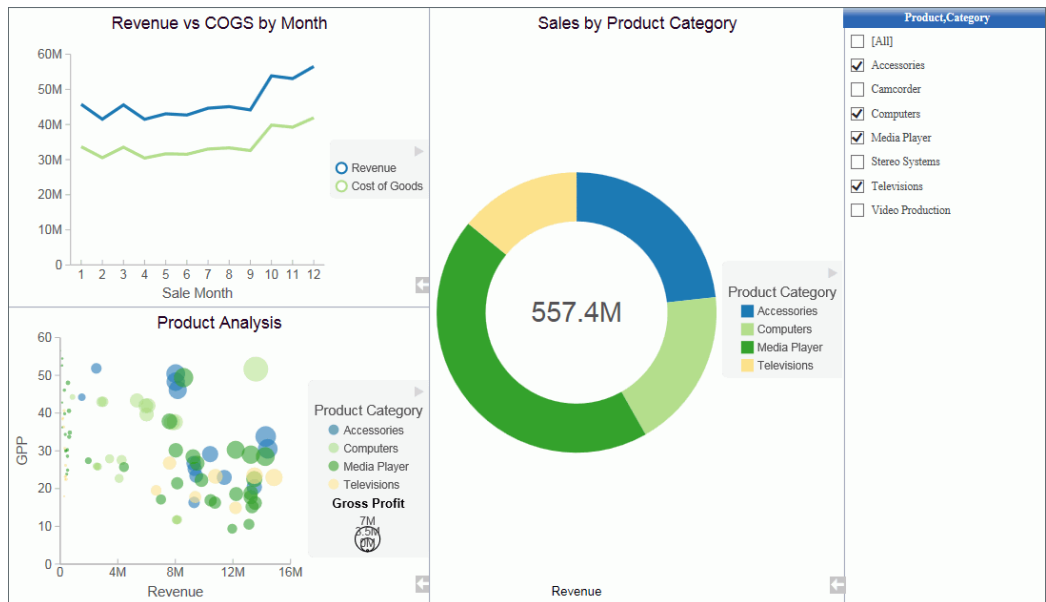
Note: If you select (or lasso) components of your visualization, the Prompts panel does not automatically update to reflect your selections.

Procedure: How to Filter Data With Tooltips at Run Time

1. Run a visualization from one of the following locations:

   ❏ From the BI Portal.

   ❏ From the Application Main Menu or Quick Access Toolbar in InfoAssist+.

2. Click, point to, or lasso data in your visualization.

A tooltip opens, as shown in the following image.
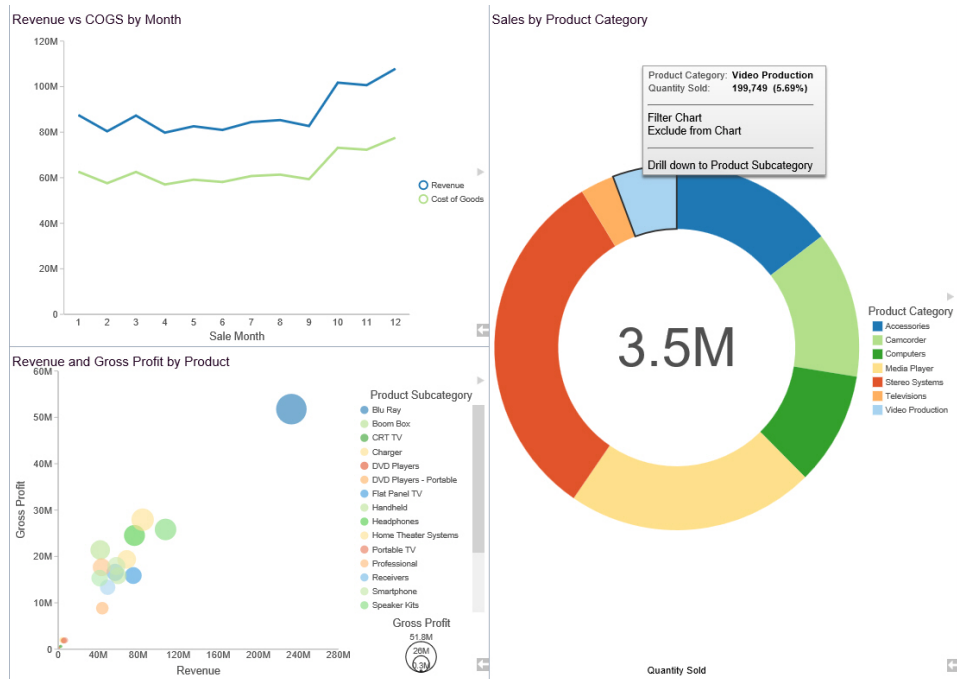
The tooltip includes the following options:

❏ **Filter Chart.** Filters the visualization by the data values that you have selected.

❏ **Exclude from Chart.** Excludes the selected data values from the visualization.

❏ **Remove Filter.** Removes the filter and returns the visualization to its original state.

Note:

❏ The same run-time options are available when you run your visualization on a mobile device.

❏ If you are working with a single bar, line, or other visualization object that displays a single point or value, the Filter Chart and Exclude from Chart options are not available. This applies when working in Live Preview and at run time.

Viewing Data at Run Time

When viewing data at run time, you can access the data behind each visual in your visualization. Using the Show Data option, which is available from the Run-Time toolbar, you can view your data in summary format. This grid display includes totals for the categories in your visual, based on the data fields that you selected. All InfoAssist+ users can use this option with the visualizations that are available to them.

Procedure: ### How to View Data at Run Time

1. Run a visual or visualization from one of the following locations:

   ❑ From the Application Main Menu or Quick Access Toolbar in InfoAssist+.

   ❑ From the BI Portal.

2. In the bottom-right corner of the visual cell, click the arrow.

   The Run-Time toolbar opens.

3. Click the *Show Data* button ▦.

   The visual changes to the grid view, displaying the underlying data for the selected visual.

   Click the *Show Data* button again to return to your visual.

   Note: The same run-time options are available when you run your visualization on a mobile device.

Using the Run-Time Toolbar Options

You can access the Run-Time toolbar by clicking the arrow button, which is located in the bottom-right corner of each visual cell at run time. The Run-Time toolbar is shown in the following image.

The Run-Time toolbar options are described in the following table:

Icon	Name	Description
▦	Show Data	Alternates between the visual and the grid view, which shows the underlying data. To return to the visual view, click the Show Data button again.

Icon	Name	Description
	Reset to Default	Resets all changes and returns the visualization to its original state.
	Remove Filter	Removes the filter and returns the visualization to its original state. This option is only available if a filter is applied at run time.
	Show/Hide	Shows or hides the options on the Run-Time toolbar.

Note: The same run-time options are available when you run your visualization on a mobile device.

Navigating Reports and Charts

Using features like Auto Drill, Auto Linking, and Multi Drill, you can easily navigate your reports and charts. For information on additional report navigation options, see *Creating Customized Report Outputs* on page 98.

In this chapter:

❑ Using Auto Drill

❑ Using the Auto Linking Feature to Link Content

❑ Using Multi Drill

Using Auto Drill

Auto Drill enables you to navigate through different levels within the dimension hierarchy of your data source. This allows you to review underlying data for a particular area, and move through the structure of your data source based on your informational needs.

In order to use Auto Drill, you must enable it by clicking the Auto Drill button on the *Format* tab, in the *Run with* group.

Once you have enabled Auto Drill, you can develop your report or chart and run it to activate the hyperlinks that Auto Drill creates. This enables you to navigate up or down through the related hierarchy of your data source by clicking the links that display.

When you click a hyperlink, the option to drill up or drill down displays, depending on where you are in the hierarchy of your data. You can then select one of these options to begin navigating your data. For example, if you have Product Category in your hierarchy, you would be able to drill down to Product SubCategory. When you drill down, you can subsequently drill back up to the originating dimension sort field. If you have selected a data source that has multiple levels and your report or chart uses a component in the middle of the hierarchy, both the Drill up and Drill down options will display. Once you have started navigating your data using the Drill up and Drill down options, the Restore Original option displays, enabling you to start your data analysis over by re-executing the original Auto Drill request.

The drill up and drill down options are shown in the following image.

At run-time, the Auto Drill functionality displays a breadcrumb header. This defines your current location in the hierarchy of your data source and enables you to navigate back and forth between different levels in your data.

Important:

❏ The Auto Drill functionality is only available for data sources that have a dimension hierarchy.

❏ If you have Auto Drill enabled and you attempt to run your report or chart in deferred mode, the hyperlinks will not display. This is also true for Auto Drill enabled reports that are distributed through ReportCaster.

❏ With the exception of Visualization mode, Auto Drill is available at run-time, but not in Live Preview.

❏ Auto Drill is supported for HTML and active report output format reports.

❏ Auto Drill is automatically enabled in Visualization mode for data sources that have a dimension hierarchy.

❏ Auto Drill is not supported for all HTML output format charts, or for HTML5 output format charts that do not support the new chart attributes syntax.

❏ Auto Drill is not supported on Across fields in active reports.

❏ You must use dimension fields as a sorting field, either BY or ACROSS.

❏ If you are creating a chart that has multiple dimension sort fields in the request and some of these belong to the same dimension hierarchy, you may encounter multiple links with the same label in the drill menu.

❏ When working in Document mode, Auto Drill is unavailable.

❏ Auto Drill functionality is not available in reports distributed by ReportCaster, because Auto Drill uses live data, in an interactive session, for data drilling. Data values and totals may not be the same if the data has changed since the last distribution. Mixing past data with current data could impact data analysis.

❏ When Auto Drill is enabled, Accessibility is disabled. When Accessibility is enabled, Auto Drill is disabled. In Chart mode, Accessibility is disabled, by default.

❏ Auto Drill is not supported with Save Parameters reports.

Procedure: **How to Use Auto Drill to Navigate the Hierarchy of Your Data Source**

1. Select a data source that has a dimension hierarchy. For example, *wf_retail_lite.mas*.

2. Create a report or chart with one or more hierarchical fields (for example, Product,Category), as shown in the following image.
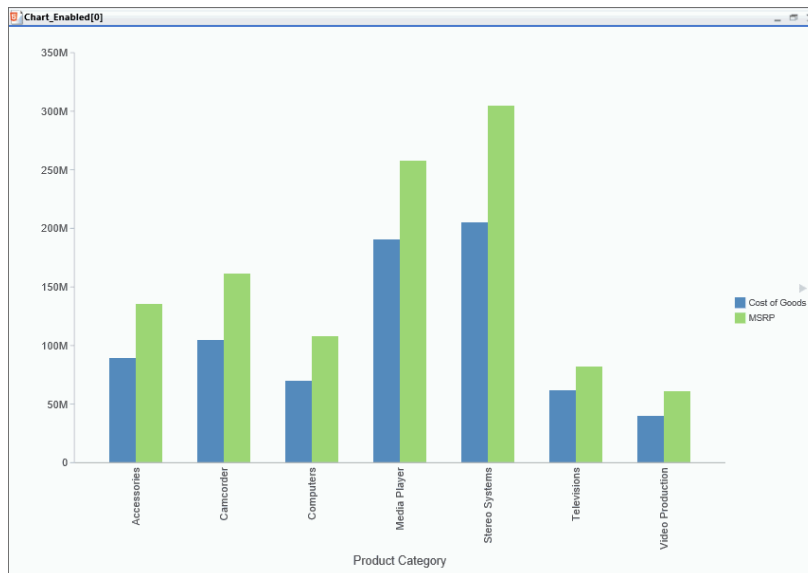
3. On the *Format* tab, in the *Run with* group, click *Auto Drill*.

4. Click *Run*.

   The report or chart displays.

5. For reports, click a hyperlinked field within your report. For charts, hover over a chart aspect (for example, a bar).

   A menu appears, as shown in the following image.
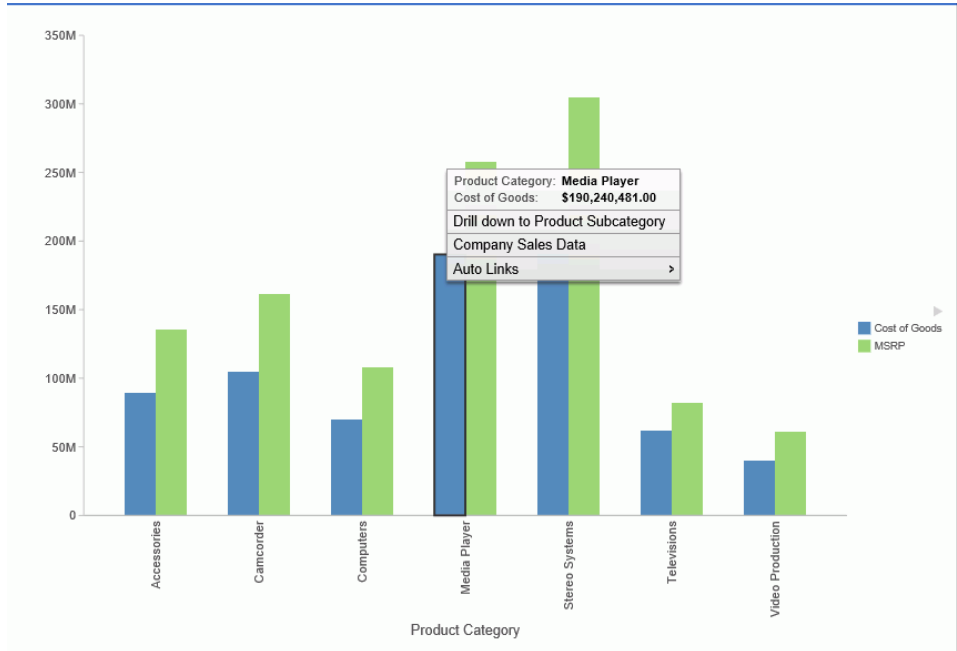
6. Select a hierarchical value to which to drill down to.

   Once you have drilled down on a field, you can subsequently drill up.

7. To return to the default state of the report or chart, click a hyperlink or hover over a chart aspect, and then click *Restore Original*, as shown in the following image.
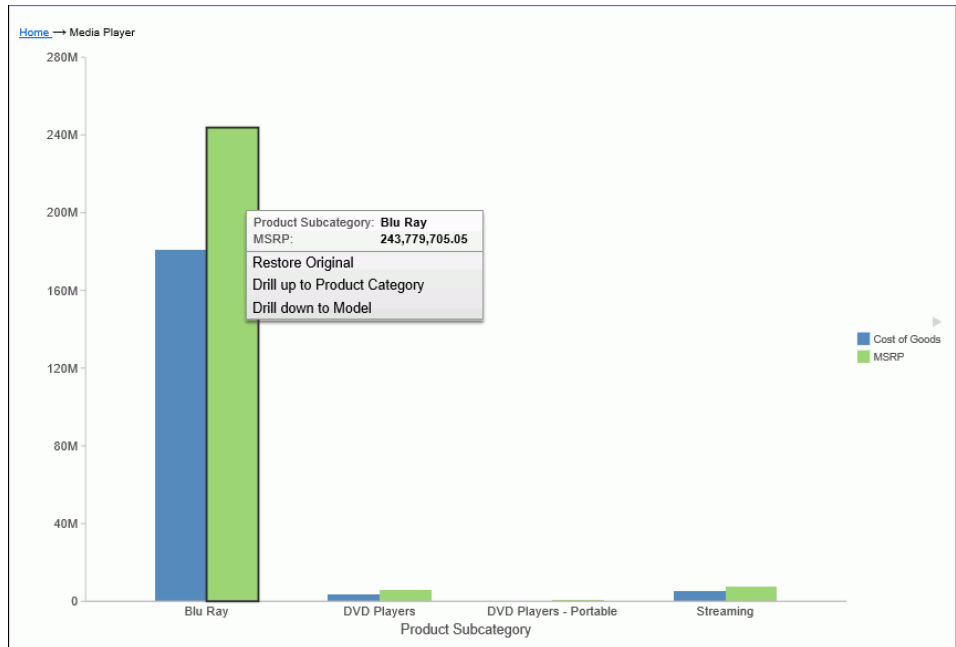
Using the Auto Linking Feature to Link Content

Auto Linking makes it easy to connect reports and charts in your development environment, expanding the reporting capabilities of your organization. Using Auto Linking, you can dynamically link HTML reports, active reports, and HTML5 charts with a single report or chart of any format, based on their common sort (BY) fields and parameters referenced in any filters. It is this commonality that dynamically links content in your >Report Broker repository, allowing you to discover new possibilities in your data, and explore new relationships within your reporting enterprise. In addition, Auto Linking saves development time and effort, because drilldowns do not need to be manually created and maintained.

To use Auto Linking, you must use the Enable Auto Linking option in InfoAssist+ to set the reports or charts that can be auto-linked. In addition, you must also set reports or charts to be Auto Link targets. The options to enable and disable Auto Linking and Auto Link Target functionality are available on the Format tab, in the Auto Linking group, in InfoAssist+.

Note:

❏ The Auto Link Enabled option is activated only when the HTML, HTML5, and active report output format is selected.

❏ You can open an existing report or chart and enable Auto Linking or set the item as an Auto Link target.

When Auto Link functionality is activated, your reports or charts display a link for each sort (BY) field with qualifying target reports or charts at run time. In Auto Link enabled reports, you must add sort (BY) fields in the BY field container. In Auto Link enabled charts, you can add sort (BY) fields to the Horizontal Axis, Vertical Axis, or Color field containers.

To qualify a report or chart as an Auto Link target, you must include filters that contain the parameters that you selected as the sort field or fields in the enabled report or chart. The parameter names defined in these filters must be the same as the sort (BY) field names in the Auto Link enabled report. When you select a report or chart as the Auto Link Target, it specifies that the parameter information should be catalogued, and will be evaluated when an Auto Link enabled report or chart is run.

For an Auto Link enabled report at run time, the qualifying target reports and charts are those that have filters with parameters for the selected sort field and the sort fields that precede it, which appear to the left. For an Auto Link enabled chart at run time, the target reports and charts are those that have filters with parameters for all sort fields. For run time for both reports and charts, the linked sort field values in the Auto Link enabled report or chart are passed to the Auto Link target report so that it can be filtered by the sort (BY) field values.

For example, you may have an Auto Link enabled report that contains sort (BY) fields Product Category and Model, with a measure (Sum) field, Revenue. To qualify as an Auto Link target, other reports or charts in your repository can contain a single filter with a parameter for Product Category, or two filters with parameters for both Product Category and Model. When you run the Auto Link enabled report, the Product Category field will link to target reports or charts that have a filter with a parameter for Product Category and the Model field will link to target reports or charts that have filters for both Product Category and Model.

If you use the same example for an Auto Link enabled chart instead of a report, you can access the target reports or charts from a tooltip option that displays when you point your mouse over an area of the chart, such as a bar that represents Revenue by Product Category and by Model.

Note:

❏ The linked reports displayed are limited to those that you are authorized to run or run deferred.

❏ When running an HTML report with On-demand Paging enabled, the qualifying Auto Link targets appear on the menu in the order that they are specified in the request. This is also true for a chart request that is a legacy graph format (PFJ-based formats, such as PNG and non-bucket HTML5). In reports, horizontal lines appear in the menu to separate user specified drilldowns and Auto Link navigation options.

❏ Consideration should be given to how many reports or charts are indicated as Auto Link targets, as the run time Multi-drill menu for the qualifying target reports may become long in length. In these cases, some browsers may display a script processing warning message.

❏ The Auto Link Enabled and an Auto Link Target options can be set individually or both can be set on the same report or chart if that item meets the Auto Linking requirements.

❏ When creating a request from a HOLD file, you can enable Auto Linking.

Procedure: **How to Set an Existing Report or Chart as Auto Link Enabled**

1. On the BI Portal, select a file from within a folder, right-click, and select *Edit*.

   InfoAssist+ opens in the relevant mode.

2. Verify that there is a sort (BY) field in the report or chart.

   ❏ For reports, sort fields are added to the BY field container.

   ❏ For charts, sort fields are added to the Horizontal, Vertical, or Color field containers.

3. On the *Format* tab, in the Auto Linking group, click *Enable Auto Linking*.

4. Save the report or chart.

   Your existing report or chart is now Auto Link enabled.

Procedure: **How to Set an Existing Report or Chart as an Auto Link Target**

1. On the BI Portal, select a file from within a folder, right-click, and select *Edit*.

   InfoAssist+ opens in the relevant mode.

2. On the *Format* tab, in the Auto Linking group, click *Auto Link Target*.

   Note: Selecting Auto Link Target specifies that the parameter information for this report or chart will be stored, adding it to the repository of reports and charts that will be evaluated when an Auto Link enabled report is run.

3. Verify if the report or chart has an existing filter, as qualifying target reports are those that have filters with parameters for the sort (BY) fields in Auto Link enabled reports or charts. If a filter does not exist, add a filter with a simple parameter to the target report or chart.

   a. From the Data pane, drag a sort (BY) field into the Filter pane.

   b. Using the Create a filtering condition dialog box, select Parameter as the Type and use the default Name value, as shown in the following image. You may also select the *Optional* check box.

   Note: When creating a parameter for a field, the parameter name defaults to the fieldname that you select. In the previous image, the creation of a filter with parameter Product Category is shown. To ensure that the name of the parameter is the same as the sort (BY) field in the Auto Link enabled report or chart, do not change the name of the parameter that is generated by your field selection.

   c. Click *OK*, and then click *OK* again to exit the Create a filtering dialog box.

4. Save the report or chart.

   Your existing report or chart is now set as an Auto Link target.

Procedure: **How to Create a New Auto Link Enabled Report or Chart**

1. Open InfoAssist+ in Report or Chart mode.

2. From the Open dialog box, select a data source.

3. On the *Format* tab, in the Auto Linking group, click *Enable Auto Linking*.

4. Add fields to the report or chart, ensuring that one is a sort (BY) field.

   ❏ For reports, sort fields are added to the BY field container.

   ❏ For charts, sort fields are added to the Horizontal, Vertical, or Color field containers.

5. Save the report or chart.

   Your report or chart is now set as Auto Link Enabled.

Procedure: **How to Create a New Auto Link Target Report or Chart**

1. Open InfoAssist+ in Report or Chart mode.

2. From the Open dialog box, select a data source.

3. On the *Format* tab, in the Auto Linking group, click *Auto Link Target*.

   Note: Selecting Auto Link Target specifies that the parameter information for this report or chart will be stored, adding it to the repository of reports that will be evaluated when an Auto Link enabled report is run.

4. Add fields to the report or chart.

5. Add a filter with a simple parameter to the target report or chart.

   a. From the Data pane, drag a sort (BY) field into the Filter pane.

b. Using the Create a filtering condition dialog box, select Parameter as the Type and use the default Name value, as shown in the following image. You may also select the *Optional* check box.

Note: When creating a parameter for a field, the parameter name defaults to the fieldname that you select. In the previous image, the creation of a filter with parameter Product Category is shown. To ensure that the name of the parameter is the same as the sort (BY) field in the Auto Link enabled report or chart, do not change the name of the parameter that is generated by your field selection.

c. Click *OK*, and then click *OK* again to exit the Create a filtering dialog box.

6. Save the report or chart.

Your report or chart is stored as an Auto Link target.

Procedure: **How to Run an Auto Link Enabled Report or Chart**

You can run an Auto Link enabled report or chart from within InfoAssist+ or from the BI Portal.

1. Open and run an Auto Link enabled report or chart in one of the following ways:

❏ In InfoAssist+, open or create an Auto Link enabled report and on the Quick Access toolbar, click *Run*.

❏ From the BI Portal, right-click a report or chart that is Auto Link enabled and click *Run*.

2. Use the hyperlinks to link to other reports and charts, based on the following information:

❏ **Reports.** Displays with hyperlinks on the sort (BY) fields that have qualifying target reports. Click a hyperlink to display the menu with the Auto Links option, which cascades to list the qualified Auto Link target reports and charts, as shown in the following image.

Product Category	Revenue	Quantity Sold	Cost of Goods	Gross Profit
Accessories		511,667	$89,753,898.00	$39,854,440.53
Camcorder		455,244	$104,866,857.00	$49,598,845.24
Computers	$103,316,482.12	351,777	$69,807,664.00	$33,508,818.12
Media Player	$246,073,059.36	771,934	$190,240,481.00	$55,832,578.36
Stereo Systems	$291,294,933.52	1,114,332	$205,113,863.00	$86,181,070.52
Televisions	$78,381,132.81	105,188	$61,551,109.00	$16,830,023.81
Video Production	$58,053,276.62	199,749	$40,105,657.00	$17,947,619.62

(Auto Links menu: Sales_2015, Sales_2014)

❏ **Charts.** Displays with aspects over which you can hover (for example, a bar) in the chart. A tooltip displays with the Auto Link target reports and charts, as shown in the following image.
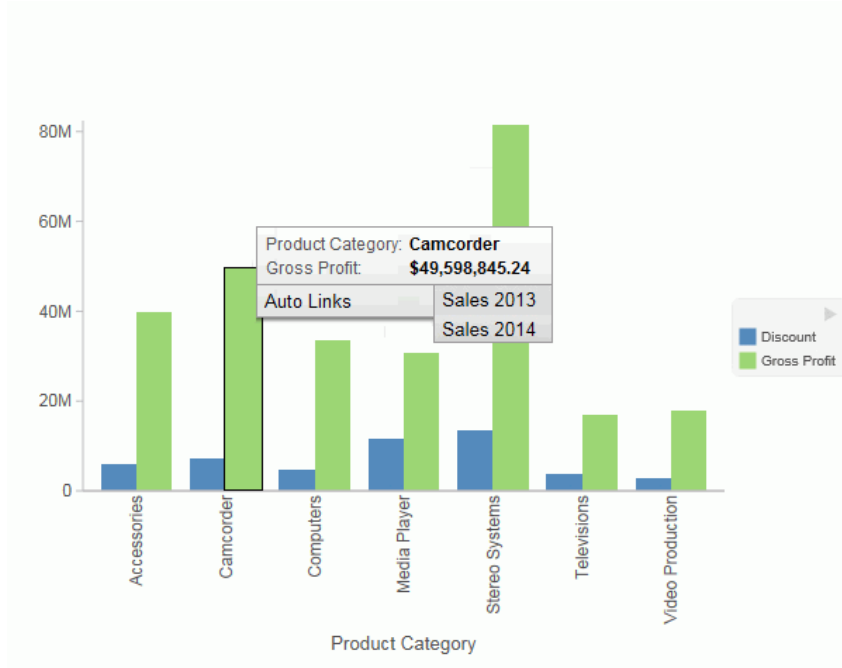
Using Multi Drill

The Multi Drill functionality enables you to create multiple drill down links on a data field in a report or chart. This is useful when you want to define custom links to other visualizations, charts, reports, InfoMini procedures, or external URLs.

Using the Multi Drill functionality, you can define conditions for drilling down or through the data element that you select. Once drill down information is saved and you run the report or chart, the drill down options display when you click or hover over the defined area of a report or chart, respectively.

You can create drill down links by selecting a field in the Query pane. On the *Field* tab, in the *Links* group, click *Drill Down* to open the Drill Down dialog box. You can also right-click a field in the Query pane, and click *Drill Down*. The Drill Down dialog box is shown in the following image.
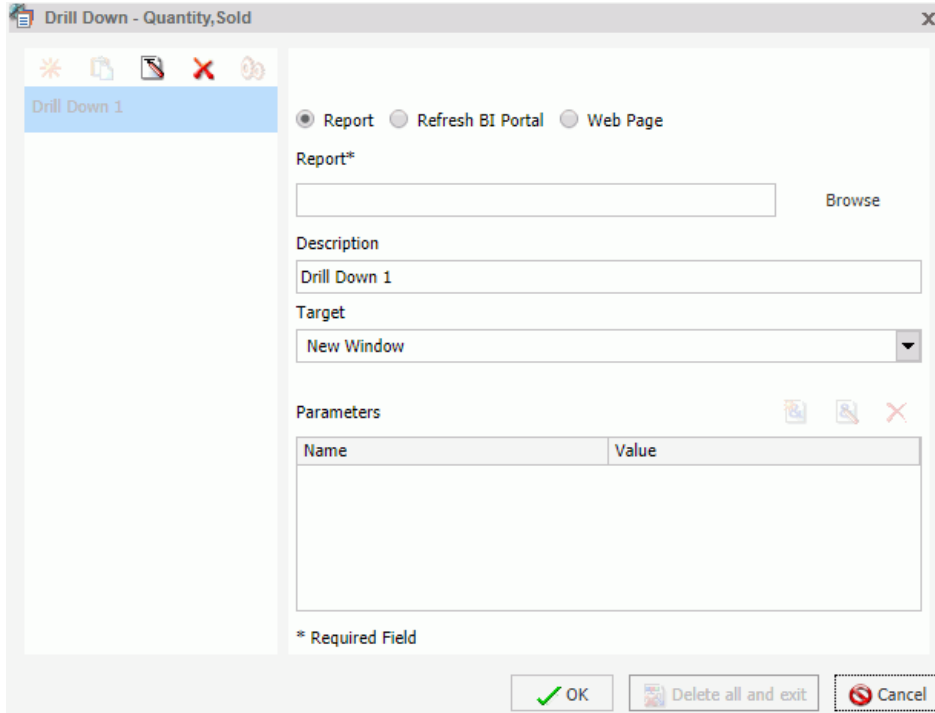
When you access the Drill Down dialog box, the name of the field that you selected displays in the title bar. This enables you to identify the current field and is useful when working with Drill Down parameters.

In the Drill Down dialog box, you can configure a hyperlink or drill-down procedure. When you run the report, you can click the link that is created, which would take you to the specified URL or execute the specified procedure.

You can also create multiple drilldowns for a selected field. The drill down links that you define display as separate entries in the drill down list, also known as the drill menu, at run-time. The display of these entries is based on the naming conventions that you applied when creating the multi-drill scenario.

Once your drilldown options are defined, you must run your report in order to access the drill down links that you have created. For reports, the links display when you click on a hyperlink for the data field that you selected. For charts, they display when you hover over an area of the chart for which the drill down has been defined (that is, the field that you selected when you defined the drill down).

These links enable you to drill directly through to an external procedure or URL.

For example, you can create one drill down link for an existing procedure, and another for a webpage. Both drill downs are stored for the underlying field that you selected. Once you define the first drill down, additional options display on the toolbar, as shown in the following image.
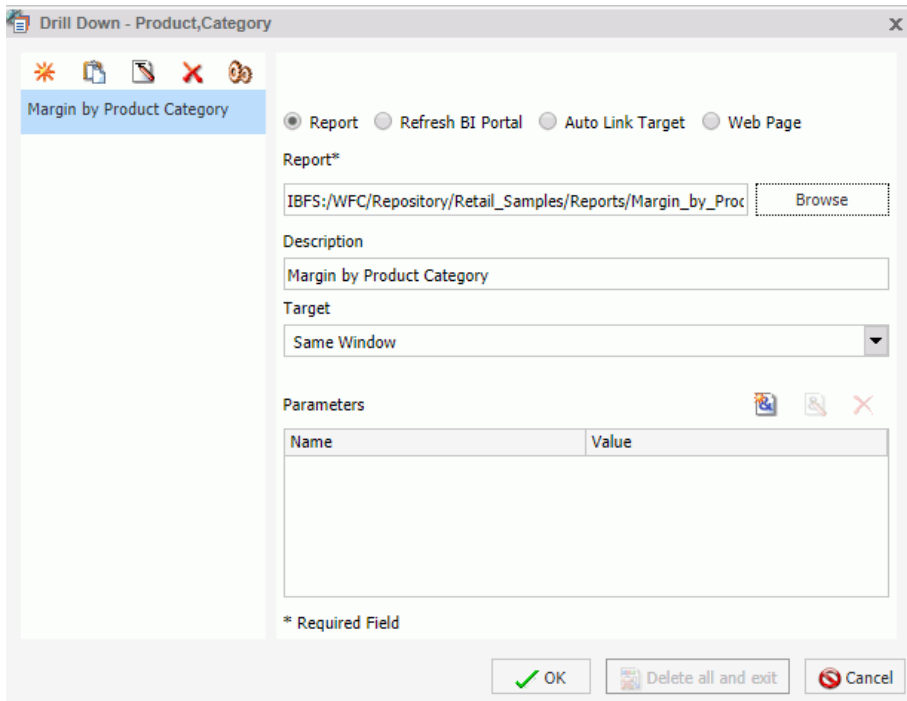
Note: You can rename a drill down using the Description field in the right pane of the Drill Down dialog box.

The following icons are available on the Drill Down dialog box toolbar:

❏ **Create a new drill down.** This option is enabled when all required information is provided for the first drill down. When you click *Create a new drill down*, a new drill down item is created. This switches the drill down functionality from a regular drill down to multi-drill. By default, the name of the drilldown is Drill Down n, where n is a consecutive integer, such as Drill Down 1, Drill Down 2, etc. This option is initially disabled, but is enabled after you have created at least one drill down link.

❏ **Duplicate the selected drill down.** When an existing drill down item is selected, clicking this option duplicates the item. A (Copy n) is appended to the name of the drill down, where n is the consecutive number assigned to the duplicated drill down. Once assigned, the name can subsequently be changed in the Description field. Consecutive copies can also be rearranged by dragging the drill down items into the desired order.

Note: The Duplicate button is only active when sufficient information is available for the selected drill down item.

❏ **Rename the selected drill down.** This option enables you to rename an existing drilldown and is active by default. When this option is selected, the Description field is selected, allowing you to provide a new name for the drill down link. You can enter a description up to 100 characters long. If you remove the description, the drilldown is renamed to the default name.

❏ **Remove the selected drill down.** If you have a drill down item selected, the Remove the selected drill down option is active. When you select this option, the current drilldown is deleted. If a drill down item is removed, the next drill down item is automatically selected. If you remove the last drill down item, the Drill Down dialog box resets to its initial state, restoring Drill Down 1 as the default value.

❏ **Options.** The Options functionality enables you to change the order of your drill down items. This allows you to control the order in which the items are presented in the drill menu when you run your report and click on a hyperlink. You can change the order by selecting a defined drill down in the list that is presented under Edit Order and then clicking the Move Up or Move Down button. You can also remove one or more drill down items from the list by selecting the desired items and then clicking the *Remove from List* button. If you multi-select your drill down items using the CTRL key, the Move Up and Move Down buttons are disabled.

Note: Move Up, Move Down, and Delete are also available as context menu options when you right-click a drill down item in the Edit Order list.

The Drill Down dialog box contains the following options for specifying drill down information for the selected field:

Note: When specifying parameters for your drill down, click *Add Parameter* to add them to your parameters list.

❑ **Report.** Select this option to choose a report for the current drill down. This option is selected by default.

  ❑ **Report.** Enables you to browse to a stored report.

  ❑ **Description.** Provides a field in which to describe the report. If you selected a report by browsing, this field is automatically populated with the title of the procedure or the name where procedure titles are not accessible. This field is also used to rename a specified drill down.

  ❑ **Target.** Allows you to specify a target for the drill down. Options include: New Window, Same Window, or a value that you specify. The default value for report is New Window.

  ❑ **Parameters.** Displays the parameters that you have indicated for the current drill down.

❑ **Refresh BI Portal.** Select this option to refresh the components of the BI Portal and pass parameters to them.

  ❑ **Refresh.** Provides options by which to refresh the page. Options include Current Page and All Pages.

  ❑ **Description.** Provides a field in which to describe the refresh process. This field is also used to rename a specified drill down.

  ❑ **Target.** Reflects the target for the drill down. The only applicable value for Refresh BI Portal is Same Window.

  ❑ **Parameters.** Displays the parameters that you have indicated for the current drill down.

❑ **Auto Link Target.** Select this option to create an explicit list of Auto Link targets. Upon selection, these will be available in the drill down menu at run time.

Note: When working with reports, the Auto Link Target drill down option is only available for a selected dimension (BY) field. For more information, see *Using the Auto Linking Feature to Link Content* on page 313.

  ❑ **Auto Link Target.** Enables you to browse to a stored target report.

  ❑ **Description.** Provides a field in which to describe the target report. If you originally selected a report by browsing, this field is automatically populated with the report title or the name where titles are not accessible. This field is also used to rename a specified drill down.

❑ **Target.** Enables you to specify a target for the drill down. Options include: New Window, Same Window, or a value that you specify. The default value for Auto Link Target is New Window.

❑ **Parameters.** Displays the parameters that meet the column-to-parameter requirement for the selected target report.

For more information, see *Using the Auto Linking Feature to Link Content* on page 313.

❑ **Web Page.** Select this option to indicate that you want to drill through to a webpage. Enter a value in the URL field.

❑ **URL.** Enables you to specify the URL for the webpage to which to drill down. This option is available only when Web Page is selected.

❑ **Description.** Enables you to enter additional comments related to the drill down. This field is also used to rename a specified drill down.

❑ **Target.** Enables you to specify a target for the drill down. Options include: New Window, Same Window, or a value that you specify. The default value is New Window.

❑ **Parameters.** Displays the parameters that you have indicated for the current drill down.

If you are working with a report that has parameters, the parameter names are automatically retrieved and made available from the Name control in the Parameters section of the Drill Down dialog box, as shown in the following image.
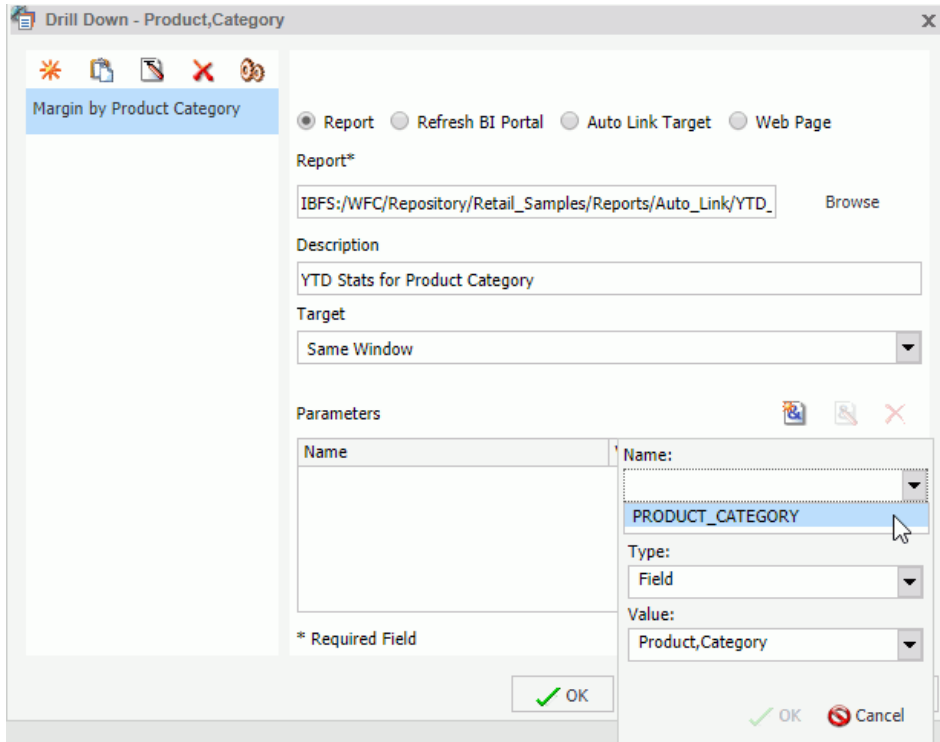
By default, the field is labeled with a value of Name. If there are multiple parameters to choose from, you can use the drop down list to make a selection. You can also manually enter a name to create a new parameter. The parameters that display are populated from the underlying report procedure (.fex) that you selected for your drill down.

The Type field enables you to specify a field or constant value. The options in the Value list are based on the fields that you selected for your report. The item that you select determines the value for the parameter (for example, Discount or Revenue).

Note: If you switch the Type field from Field to Constant or from Constant to Field, the Value field is reset, enabling you to specify a unique value.

Procedure: How to Create a Single Drill Down Link

You can create a single drill down link on a measure field.

1. Create a report or chart with at least one measure field.

2. In the Query pane, do one of the following:

    ❏ Right-click the measure field and click *Drill Down*.

    ❏ Click the measure field and on the *Field* tab, in the *Links* group, click *Drill Down*.

    The Drill Down Dialog box displays.

3. Select one of the following Drill Down options:

    ❏ Report

    ❏ Refresh BI Portal

    ❏ Auto Link Target

    ❏ Web Page

4. Populate the fields based on the drill down option you selected.

    Note: Descriptions for these fields are provided earlier in this topic.

5. Optionally, rename the Drill Down using the Description field. This dictates how the Drill Down will appear in the left pane of the Drill Down dialog box.

6. Click *OK*.

    The drill down link displays when you hover over the defined area of a report or chart, at run time.

Procedure: **How to Create Multi Drill Links**

You can create a multiple drill down links on a single dimension field.

1. Create a report or chart with at least one dimension field.

2. In the Query pane, do one of the following:

    ❏ Right-click the dimension field and click *Drill Down*.

    ❏ Click the dimension field and on the *Field* tab, in the *Links* group, click *Drill Down*.

    The Drill Down Dialog box displays.

3. Select one of the following Drill Down options:

    ❏ Report

    ❏ Refresh BI Portal

    ❏ Auto Link Target

❑ Web Page

4. Populate the fields based on the drill down option you selected.

Note: Descriptions for these fields are provided earlier in this topic.

5. Optionally, rename the Drill Down using the Description field. This dictates how the Drill Down will appear in the left pane of the Drill Down dialog box.

6. Repeat steps 3-5 until you have added all of the drill down links required.

Note: The following image defines three unique drill down links for the selected dimension field.
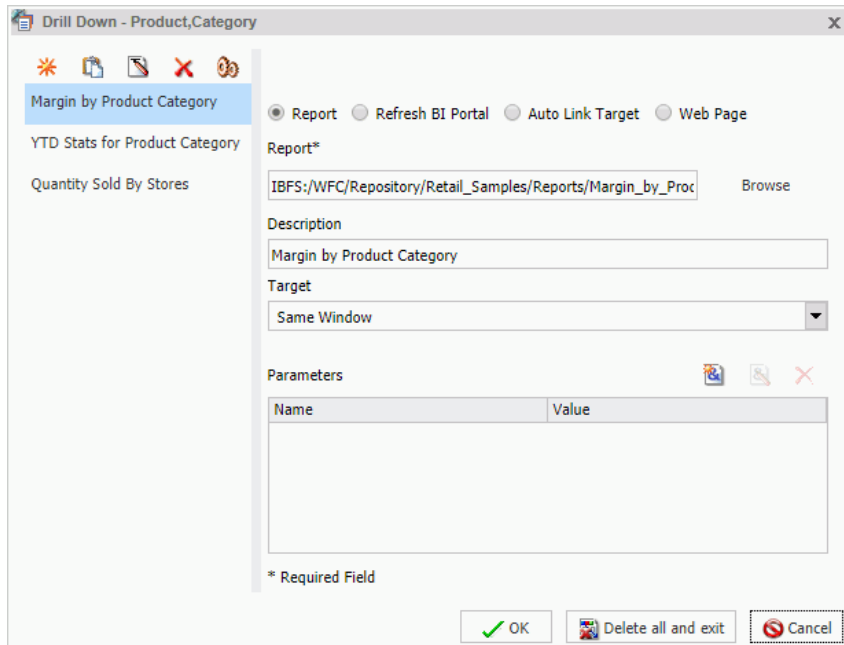
7. Click *OK*.

The links display when you hover over the defined area of a report or chart, at run time, as shown in the following image.

Styling Reports, Charts, and Visualizations

You can style and customize reports, charts, and visualizations using the ribbon.

In this chapter:

Customizing Reports

You can customize reports using the various options on the Layout tab and Field tab.

❏ **Cell Padding.** Opens the Cell Padding dialog box, where you can set specific values to control the amount of space inserted between rows and columns in a report. For more information, see *How to Use Cell Padding in a Report* on page 86.

❏ **AutoFit.** Limits the width of columns in a report to be no wider than the largest value in each column. When additional fields are added, the report automatically grows at design time. AutoFit Column is selected, by default.

❏ **Page Break.** Starts a new page when the primary sort field changes. Clicking the drop-down icon enables you to select *Reset Page Numbers*, which allows you to reset page numbers on a page break to start at 1.

❏ **Line Break.** Inserts a line in the report output when the primary sort field changes.

❏ **Sub Header.** Opens a dialog box where you can type text to add a subheading just below the column titles in the report output when the primary sort field changes.

❏ **Sub Footer.** Opens a dialog box where you can type text to add a subfooting at the end of the data on each page of the report output when the primary sort field changes.

❏ **Subtotal.** Inserts a line, total text (TOTAL FIELD Value), and subtotals for all numeric fields when the primary sort field changes.

The drop-down menu on the *Field* tab, in the *Format* group provides three field-type options for the selected column, which are Alphanumeric, Integer, and Decimal. Selecting the fourth option, More options, opens the Field Format Options dialog box, which provides further formatting options for the selected field. For more information, see *Changing a Field Format* on page 87.

Using the Currency Symbol drop-down list, you can apply options such as floating and non-floating currency. You also apply percent signs and commas using the check boxes on the Field Format Options dialog box.

To turn on the non-floating currency option, open the drop-down menu and select *Non floating Currency*. To turn off the non-floating currency option, click the *Currency Symbol* drop-down list again and make a different selection, or choose *None*.

The following options on the Field tab, in the Display group:

❏ **Hide Field.** Allows you to hide a selected field.

❏ **Hide Missing.** Allows you to hide fields that have no value.

❏ **Aggregation.** Opens a drop-down menu of the following options:

    ❏ None (default)

    ❏ Sum

    ❏ Average

    ❏ Count

    ❏ Count Distinct

    ❏ Percent of Count

    ❏ Distinct Values

    ❏ First Value

❏ Last Value

❏ Maximum

❏ Minimum

❏ Total

❏ Percent

❏ Row Percent

❏ Median

❏ Average Square

Sum is the default aggregation type value for all numeric fields added to the Measure Query field container in the Query pane. Changing the Measure Query field container from Sum to Print, Count, or List overrides all assigned aggregation type values. For more information related to reports, see *How to Display Numeric Measure Data Using Aggregation Options in a Report* on page 96. For more information related to charts, see *How to Display Aggregations on Measure Data* on page 152.

❏ **Traffic Lights.** Opens the Traffic Light Condition dialog box. From this dialog box, you can do the following:

   ❏ add new conditional styling by applying traffic light (and other) colors to a selected field in the output when the field meets specified criteria

   ❏ modify existing conditional styling

   ❏ enable conditional drill-down

   For more information related to reports, see *Styling Reports* on page 77. For more information related to charts, see *Traffic Light Condition Dialog Box* on page 141.

❏ **Data Bars.** (Reports only.) Adds a data visualization column to the right of a selected numeric field. The column displays values in each row using horizontal bars that extend from left to right in varying lengths, depending on the corresponding data values. For more information, see *How to Add Data Visualization Bars to a Report* on page 96.

❏ **Within.** Allows you to use specific aggregation tasks at different report levels. You can use the Within phrase to manipulate display field values as they are aggregated within a sort group rather than a report column. For more information, see *How to Access the Within Functionality* on page 96.

❏ **Column(s).** Allows you to indicate the number of columns in which you wish to display multiple graphs. The value can be between 1 and 512. The default is 1. This option is also available from the Query pane shortcut menu for a Multi-graph component.

Using the Report Style Dialog Box

The Report Style dialog box provides options to style your report, as described below. You can access this dialog box by clicking *Style* on the Home tab, in the Report group.
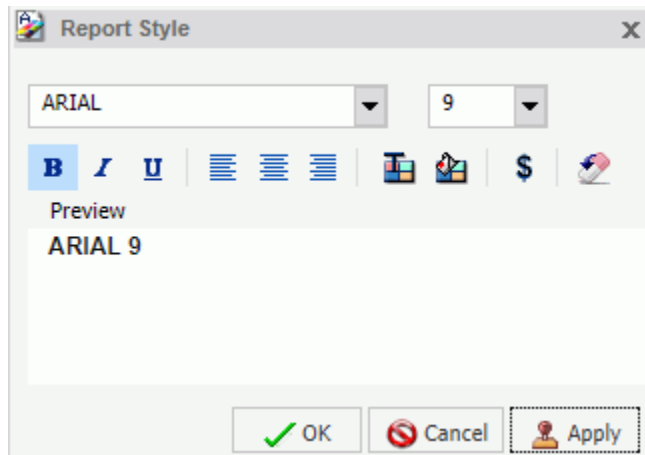
❏ **Font.** Use the drop-down menu to change the font.

❏ **Font size.** Use the drop-down menu to change the numeric value for the font size.

❏ **Font style.** Click the appropriate button (bold, italic, underline) to style the selected text.

❏ **Text alignment.** Click the appropriate button (left, center, right) to align the selected text.

❏ **Font Color.** Click the button to open the Color dialog box, where you can select the font color. For more information, see *Using the Color Dialog Box* on page 335.

❏ **Background Color.** Click the button to open the Color dialog box, where you can select the background color for the report.

❏ **Currency Symbol.** Click the button to access the following currency symbols US Dollar, British Pound, Japanese Yen, Euro, New Israeli Shekel.

Note: The New Israeli Shekel currency symbol can be displayed with the following settings only:

❏ Server codepage = 1255, 65001, 424, or 65002.

❏ Client codepage = 1255 or 65001.

❏ Application server encoding = Cp1255 or UTF8.

❏ Font name = Lucida Sans Unicode or Arial Unicode MS.

❏ **Reset to Quick Styles from Template.** Click the button to reset all settings to the default settings from the template.

Note: Reset only works while the Report Style dialog box is open. Once you click OK, all changes are committed. To undo global styling after it has been committed, you must use the Undo command on the Quick Access Toolbar.

Using the Color Dialog Box

The Color dialog box provides options for working with color in your report.

The Color dialog box options are:

❏ **Standard Color Swatches.** Provides a set of 48 predefined colors from which to choose on the left side of the dialog box. Your selection appears in the Selected Color field.

❏ **Custom Color Palette.** Provides a palette on the right side of the dialog box to define a custom color. Your selection appears in the Selected Color field.

❏ **Luminosity bar.** Drag the slider to change the luminosity (relative lightness or darkness) of a color. The corresponding numerical value appears in Lum.

❏ **Hue.** Indicates the hue value of your selected color. You can enter a value, or increase or decrease the hue value by using the up and down arrows, respectively.

❏ **Sat.** Indicates the saturation value of your selected color. You can enter a value, or increase or decrease the saturation value by using the up and down arrows, respectively.

❏ **Lum.** Indicates the luminosity (lightness or darkness) of your selected color. You can enter a value, or increase or decrease the luminosity value by using the up and down arrows, respectively.

❏ **Red.** Represents the numeric value of red (0 to 255).

❏ **Green.** Represents the numeric value of green (0 to 255).

❏ **Blue.** Represents the numeric value of blue (0 to 255).

❏ **Selected Color.** Displays the color that you selected.

❏ **Transparent.** Makes the color transparent. This is only available for background colors.

Accessing Reporting Options in the Report Group

The Report group contains commands to enhance a report.

❏ **Theme.** Opens a dialog box where you can select a theme to style your report. You can use the default style sheet by clicking the *Use Default Stylesheet* button.

You can also select a document styling theme or an application theme to style all reports created. Use the Environment and Styling section of the Options window, which is accessible by clicking *Options* in the Application main menu.

❏ **Style.** Opens the Report Style dialog box for applying global styling to the entire report. For more information about the Report Style dialog box, see *Using the Report Style Dialog Box* on page 334. For more information about styling reports, see *Styling Reports* on page 77.

❏ **Banded.** Opens a Color dialog box for choosing a color that provides an alternating color scheme for the report. The report output displays alternating rows of data, using a white background for one row and a background of the selected color for the next row. This pattern continues throughout the report. For more information about the Color dialog box, see *Using the Color Dialog Box* on page 335. For more information about banded styling, see *How to Style Rows of Data With Alternating Colors in a Report* on page 82.

❏ **Header & Footer.** Opens the Header & Footer dialog box, from which you can add and style headings and footings.

　❏ For a report, you can add and style report headings, page headings, page footings, and report footings. In the dialog box, the tab for Report Header is active by default.

　❏ For a chart, you can add and style page headings and page footings. Page Header is active by default.

　❏ You can drag fields from the Data pane into the Header & Footer dialog box.

Another way to access the Header & Footer dialog box is to click the down arrow next to the Header & Footer button. It opens a drop-down menu from which you can select the heading or footing that you want to work with (Report Header, Page Header, Page Footer, Report Footer). After you make your selection, the Header & Footer dialog box opens, and the heading or footing that you selected is active.

From the Header & Footer dialog box, you can add and style the active heading or footing, or choose a different heading and footing to work with by selecting the applicable tab. You can switch among tabs, but InfoAssist+ does not save changes made on the tabs until you click Apply or OK. If you click Apply, the Header & Footer dialog box remains open. If you click OK, the dialog box closes.

You can style a selected heading or footing using the options on the styling toolbar. From left to right, you can customize the font type, font size, and font style (bold, italic, or underline). You can justify text (left, center, or right), select the font color and background color, and restore styling settings to their default value from the template.

You can also add page footings to your reports or charts. From the Header & Footer dialog box, select Page Footer. When working with reports, you may use the Additional alignment options icon , to specify whether you want to align the footer relative to the data (default) or relative to the page. The Align Relative to Data option places the footer directly below the data, and the Align Relative to Page option positions the footer at the bottom of the page. When working with charts, only the default page footer alignment option is supported.

Note: The Align Relative to Page option works with reports that use positioned formats (for example, PDF, PS, DHTML, PPT, and PPTX).

You can also insert *quick text* into a heading or footing. Quick text is supplied for you. It includes information that is typically useful in identifying a report or chart. From the preformatted text drop-down menu, you can select:

❏ Draft

❏ Page X of Y

❏ Confidential

❏ Date (multiple formats)

❏ Time (multiple formats)

❏ Created by (followed by a name)

For charts, an icon on the far right of the styling ribbon is enabled. This icon provides two options for controlling the way in which the page heading and page footing are rendered. The default option, Create Header and Footer as text, renders the heading and footing as text elements that are separate from the chart image. The option, Embed Header and Footer in the chart, renders the heading and footing text as part of the chart image.

Once you have added a heading or footing to a report or chart, you can double-click it on the canvas in design mode to reopen the Header & Footer dialog box. You can also right-click an existing heading or footing in design mode and click *Edit* from the menu to open the dialog box.

For more information on adding and styling headings and footings, see *How to Add Headings and Footings to a Report* on page 79 and *Formatting Page Headings and Page Footings* on page 210.

❏ **Column Totals.** (Reports only) Adds a grand total row to the bottom of the report to sum numeric data in each column. For more information, see *How to Add Column Totals to a Report* on page 95.

❏ **Row Totals.** (Reports only) Adds a grand total column to the right side of the report to sum numeric data in each row. For more information, see *How to Add Row Totals to a Report* on page 95.

Enabling Report Features

The options on the Format tab, in the Features group, while in Report mode, allow you to add pop-up titles to columns, stack measures, and more.

❏ **Title Popup.** Displays pop-up titles when the mouse pointer hovers over a column title in the report output. For more information, see *How to Add Pop-Up Titles to a Report* on page 95.

❏ **Accordion.** Creates expandable views of data for each vertical sort field. This option displays data values only for the first vertical sort field when you first view the output. You can manually expand your view to expose the data values of lower-level sort fields. For more information, see *How to Create Accordion Reports* on page 104.

Note: You cannot use the Table of Contents with the Accordion feature.

❏ **Repeat Sort Value.** Displays all repeated sort values instead of blanks in the output after the first instance of a new sort value, which is the default behavior.

❏ **Stack Measures.** Displays all numeric measure field names in a column of the report output with the corresponding numeric data values. For more information, see *How to Implement Stack Measures* on page 105.

❏ **active report options.** Opens the active report options dialog box where you can configure your active report options such as menu items, graph engine, and colors. For more information, see *Creating Active Technologies Components With InfoAssist+*.

❑ **Accessibility.** Allows a title to be added to a report, chart, or document that is Section 508-compliant.

The following table lists the output for which each feature is available. Yes means the output is available for the feature. No means that the output is not available for the feature.

	HTML	HTML5	active report	PDF	active PDF	Excel	PowerPoint
Title Popup	yes	no	no	no	no	no	no
Accordion	yes	no	yes	no	no	no	no
Repeat Sort Values	yes	yes	yes	yes	yes	yes	yes
Stack Measures	yes	no	no	no	no	no	no
active report options	no	no	yes	no	yes	no	no
Accessibility (reports, charts)	yes	no	no	yes	no	no	no
Accessibility (documents)	no	no	no	yes	no	no	no

Enabling Chart Features

The options on the Format tab, in the Features group, when in Chart mode, allow you to add effects and different functionality to your charts.

Note: When working with maps, all options in the Features group are disabled with the exception of Frame & Background and Accessibility.

❑ **3D Effect.** Sets the three-dimensional view to on or off. The 3D Effect feature is disabled for 3D, stock, gauge, gauge thermometer, Pareto, spectral map, and funnel chart types. This is the default.

❑ **Rotate.** Toggles between a vertical display or horizontal display of a chart. For more information, see *How to Rotate a Chart* on page 213. The Rotate feature is disabled for pie, scatter, 3D, stock, gauge, gauge thermometer, Pareto, spectral map, and funnel chart types.

❏ **Reference.** Opens a drop-down menu that provides the Add Reference Line to Y-Axis and Add Reference Line to X-Axis options. Selecting one of these options opens the appropriate Reference Line dialog box, where you can set the specific X-axis or Y-axis value, type the text that you want, and position the reference line on a chart. For more information, see *How to Display a Static Reference Line* on page 214. The Reference feature is disabled for pie, 3D, stock, gauge, gauge thermometer, spectral map, and funnel chart types.

❏ **Annotate.** Opens a drop-down menu that provides the Add an annotation option. Selecting this option opens the Annotation dialog box, where you can type the text that you want and position the annotation on a chart. For more information, see *How to Display Annotations* on page 217.

Note: The annotation option is not available in HTML5.

❏ **Grid.** Opens a drop-down menu allowing you to expand options for Horizontal or Vertical Gridlines. Both selections allow you to enable or disable Major and Minor Gridlines. Clicking *More Options* opens the Format Grid Lines dialog box. For more information, see *Formatting Gridlines* on page 171.

❏ **Frame & Background.** Opens the Frame & Background dialog box where you can edit the background style and frames for charts. The dialog contains different options depending on the chart type selected. For more information, see *Formatting a Frame and a Background* on page 191.

❏ **Gauges.** Opens the Gauge dialog box where you can edit your gauge chart. This button is only available when a gauge chart type is selected. For more information, see *How to Style a Gauge Needle* on page 209.

❏ **active report Options.** Opens the active report options dialog box where you can configure your active report options, such as menu items, graph engine, and colors. This button is available when the output type is set to active report or active PDF.

❏ **Accessibility.** Allows a title to be added to a report, chart, or document that is Section 508 compliant. This option is only available for reports and charts when the output type is HTML or PDF. For documents, the output type must be set to PDF.

Note: The chart features are unavailable when designing a chart that will be output in active report or active PDF formats.

Labeling Charts

You can add labels to charts using the Labels group on the Format tab.

Note: When working with maps, the Axes option is disabled.

❏ **Axes.** Opens a drop-down menu, where you can enable, stagger, and rotate horizontal and vertical axis labels. You can also edit the axis labels by clicking *More Horizontal Axis Options* or *More Vertical Axis Options*. For more information, see *Formatting Axis Labels* on page 181.

❏ **Legend.** Opens a drop-down menu, where you can select the *Show Legend* option to display the legend on the chart, or clear your selection to hide the legend, change the default legend position, and change the default legend orientation. For more information, see *Format Legend Dialog Box* on page 166.

Using Interactive Options

To add interactive options to a chart, on the *Format* tab, in the *Interactive Options* group, click *Interactive Options*.

Note: The Interactive group is enabled only when the HTML5 output format is selected for your chart.

When you click *Interactive Options*, the Interactive Options dialog box displays. The Interactive Options dialog box enables you to specify animation, mouse over, and scrolling effects in your chart.
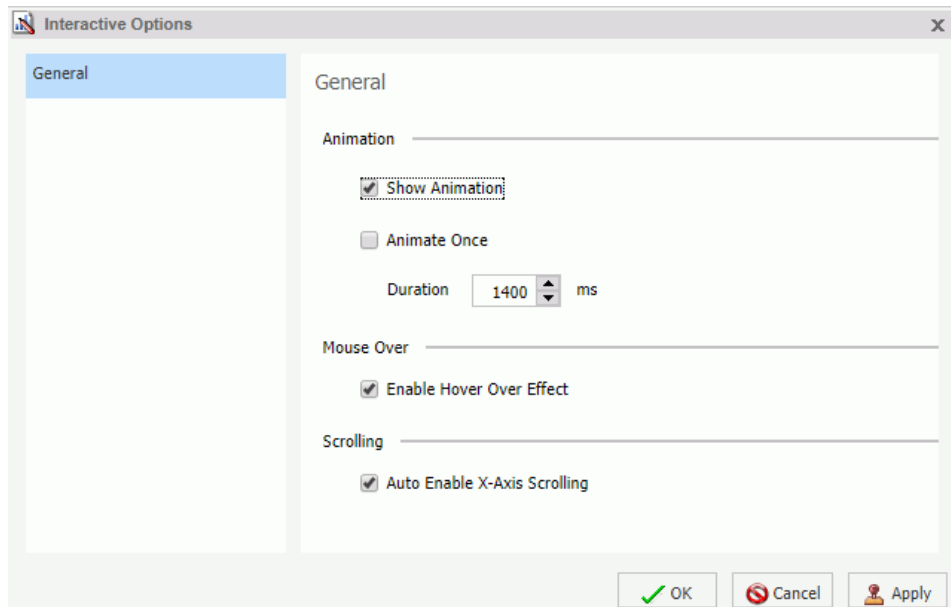
Options on the Interactive Options dialog box include:

Animation section

❑ **Show Animation.** Enables you to specify options for animation in your chart. Clear this check box to disable animation. This option is selected by default.

Note: If the Show Animation check box is cleared, the option to Animate Once is not available.

❑ **Animate Once.** Enables you to specify the frequency of chart animation. Select this check box to indicate that the chart should be drawn the first time a procedure is executed, but not on subsequent executions of that procedure. If this check box is not selected, the chart will animate every time the chart is redrawn.

❑ **Duration.** Defines the duration of the animation in milliseconds. You can manually enter a millisecond value (ms) or use the arrows to adjust the default value, which is 1400. This value may vary depending on the theme that you select.

Note: When specifying a duration for an animation, larger numbers produce slower animation.

Mouse Over section

❑ **Enable Hover Over Effect.** Controls the display of the mouse over indicator, which shows chart component information when you hover your mouse over an object. This option is selected by default. However, settings in your theme may override this setting.

Scrolling section

❑ **Auto Enable X-Axis Scrolling.** Enabled by default in Visualization mode, this option controls the display of scroll bars for bar, line, area, scatter, bubble, and all matrix charts. In all other modes, you must enable the functionality in the Interactive Options dialog box on the Format tab. If you are working with a large dataset, this functionality enables you to use scroll bars to review your data from left to right. If your dataset is smaller, the scroll bar functionality automatically determines if a scroll bar is needed. You can disable and re-enable this option, depending on your display or data viewing requirements.

Customizing Page Setup

You can customize how your pages display when working with reports, charts, documents. These options can be found on the Layout tab, in the Page Setup group.

❏ **Margins.** Enables you to set margin values by choosing Normal (1 inch all around), Narrow (.5 inch all around), Moderate (.5 inch left or right), Wide (1.5 inch left or right), or Custom. Choosing *Custom* opens the Margins dialog box, where you can set specific margins as needed.

❏ **Orientation.** Enables you to set the orientation of your report to portrait or landscape.

❏ **Size.** Enables you to select the size of the paper for printing output. You can choose A3, A4, A5, Letter, Tabloid, Legal, PowerPoint, or Large Size (34 x 44 Inches).

❏ **Units.** Enables you to select the unit of measurement used for customizing the dimension fields of your report or chart. You can choose Inches, Centimeters, or Points.

❏ **Page Numbers.** (Reports only). Enables you to select page numbering options. You can choose one of the following:

❏ No Lead (no space for headers)

❏ On (page numbers only in headers)

❏ Off (space for headers, but no page numbering)

The Page Numbers value is overridden by header and footer text options.

Creating Maps to Illustrate Trends

Using InfoAssist+, you can create maps to identify patterns or trends in your data. By converting data into values that can be displayed on a map, you are able to visualize scenarios, illustrate hot spots, and identify potential problem areas. For example, a law enforcement agency may use mapping functionality to identify areas of higher crime within the locations they cover. You can also use maps to determine how places are related, understand where things are located, and identify the best actions to take. By illustrating trends on a map, a decision maker can identify patterns easily, and reach conclusions sooner.

In this chapter:

A Brief History of Mapping

An early example of how maps can be used to illustrate trends is the case of Dr. John Snow, an epidemiologist who was one of the first to use data to map occurrences of cholera to find the cause of infection. By plotting the cholera data on a map of a town, Dr. Snow was able to visualize a trend that showed higher incidences of cholera closest to water pumps. This example is shown in the following image.
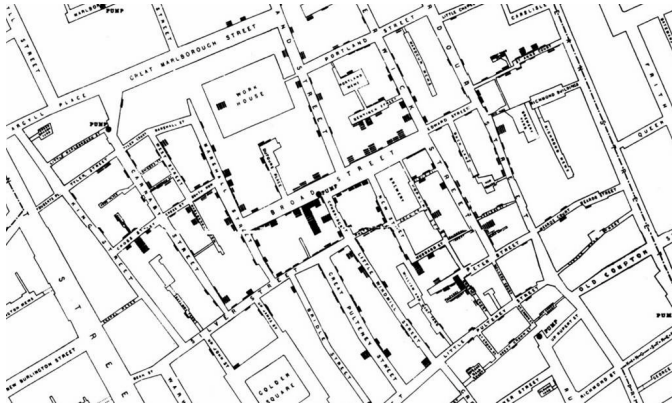
Maps also allow you to measure size, shape, and distribution to detect and quantify patterns, and even perform predictive analytics. An example of how maps can help detect and quantify patterns is the scenario in which a state agency used a >Report Broker mapping application to solve a problem with their food stamp system. Using this application, odd food stamp redemptions, such as rounded numbers transactions, were discovered. By plotting those transactions on a map, the agency discovered that the redemptions appeared in the same geographic location. Upon further investigation, the agency identified that individuals were selling their food stamps at reduced prices, $50 worth of food stamps for $40 in cash, to others instead using them as intended. This map example is shown in the following image.
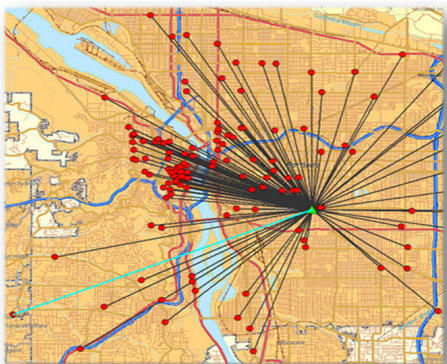
Citizen	Date	Amount
Jane Smith	01/03/2015	35.26
Jane Smith	01/05/2015	44.12
Jane Smith	01/10/2015	12.42
John Wilson	01/02/2015	100.00
John Wilson	01/08/2015	50.00
John Wilson	01/11/2015	75.00
Mary Johnson	01/03/2015	23.24
Mary Johnson	01/06/2015	14.32
Mary Johnson	01/11/2015	34.88

When working with maps, the concepts of location intelligence and business intelligence are important to understand. A Geographic Information System (GIS) captures, stores, analyzes, manages, and presents data linked to a location, while Business Intelligence (BI) relies on the conversion of raw data into meaningful information. Location intelligence is the process of analyzing data to make better business decisions. It combines GIS and BI/Analytics to allow the recognition of patterns in your data, including the visualization and discovery of geospatial outliers, which would not be easily discovered if you use the technology independently and separately.

More specifically, maps use non-intrusive GIS workflows with existing data. You can view symbol layers for data bound to a geo-location, such as state, country, and ZIP code, in an integrated map viewer. Using metrics from your data, you can also visualize geographic roles or dimensions. Geographic roles, or dimensions, can be built directly into your Metadata or assigned to a data field when you create a map.

InfoAssist+ and Esri Integration

Using >Report Broker InfoAssist+ with the Esri integration, you can create maps that help you illustrate or identify trends so you can take action quickly. >Report Broker architecture provides the framework in which this system operates. Using a JavaScript map viewer, you can navigate the interface easily, as shown in the following image.
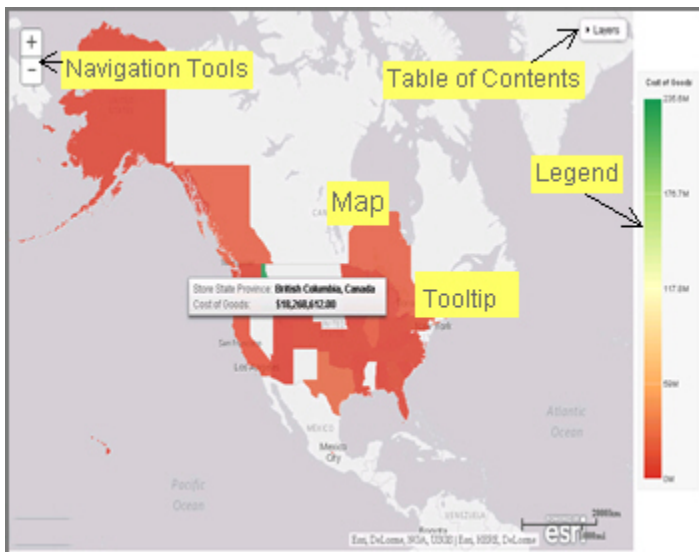
In addition, this integration utilizes the capabilities of Esri by leveraging the ArcGIS JavaScript API and content. Specifically, you can integrate data into maps with published content in ArcGIS Online platform. For more information, see *http://www.esri.com/software/arcgis/ arcgisonline*. Additionally, by using this integration, you can include information about demographics, spending habits, crime, and lifestyle to maps that contain your data. These maps include layers with extensive demographic or reference detail and topography and allow you to view information about people, businesses, climate, and much more.

You can create the following maps in InfoAssist+:

❏ **Choropleth.** A common thematic map that uses geographical measures (for example, states and countries), representing the values aerially while employing a varying intensity of colors. It is useful for visualizing location-based data, trends, and distributions across a geographic area. The color hues for Choropleth maps are dictated by the legend, based on the selected measure, enabling you to determine data concentration across your map.

❏ **Proportional Symbol (Bubble).** A map that represents coordinates, such as an address or intersection, using symbols of different sizes to represent any measure. These maps focus on specific areas, for which data concentrations may vary. When the data concentration is larger, the bubble will be bigger.

Both maps can be created in Chart or Visualization mode. Built-in zooming capabilities allow you to drill down to a specific geographic area of focus easily. This allows you to get a closer look at regional or local data, draw inferences, and make recommendations, without changing the initial view of your data.

In Chart mode, you can also use the Auto Drill and Auto Linking features that are available when you create charts or reports in InfoAssist+. In Visualization mode, you can also drill up and down within different levels in a data hierarchy in a map. Auto Drill allows you to navigate through the geographical hierarchy of your map data at run time. You can use this information to visualize the same measure at different geographical hierarchies, such as Countries to States and States to Cities. Auto Linking allows you to connect to related charts or reports in your environment that share similar data parameters.

Using the Esri integration in InfoAssist+, you can also add the following layers to your map:

❏ **Backgrounds.** Display a layer that positions data as it is located, in context to other geographical features, such as streets, terrain, and imagery. Some standard Background options may combine road, aerial, and topographic data using a variety of symbols. Hosted on ArcGIS, you can change your background at any time, to review your data in a different context.

When you apply a Background to your map, its appearance changes. You can then adjust the view of your data, showing different terrain or geographical views. Backgrounds provide at least 17 levels of zoom. For more information, see *https://developers.arcgis.com/ javascript/jsapi/esri.basemaps-amd.html*.

❏ **Reference Layers.** Display a layer of boundaries and locations that range from a continental scale to country, state, and even local neighborhood. For example, if you are viewing World data on electricity usage, you may want to add a Reference Layer that displays the borders and concentration of your data within each country.

❏ **Demographic Layers.** Display a layer of information about people and businesses in a specific demographic area. This includes the United States and 120 other countries. Demographic Layers are thematic maps that provide additional information about the location, such as spending habits, population, and lifestyles. You can add Demographic Layers to a map about sales data, to identify new locations for stores, based on the spending habits for a specific area.

Both mapextent and the Layers menu functionality are applied to your map when you select a Background, Reference Layer, or Demographic Layer. Mapextent is an automatic view of the map. Layers is a menu that appears on the map and provides access to options that allow you to adjust the information that is being displayed.

The map example in the following image shows the use of layers.
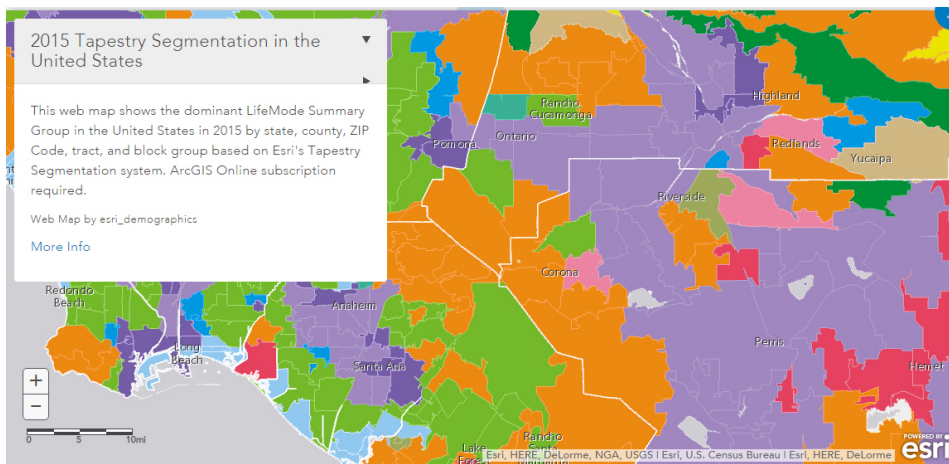
Note: Backgrounds, Demographic Layers, and Reference Layers can be accessed from the Format tab for maps in both chart and Visualization mode. These layers are static, standard options that Esri provides for use with InfoAssist+, and do not change based on the data source that you select.

Configuring an Esri On Premise Environment

The Esri On Premise functionality enables you to download and access mapping files through the use of a local Application Programming Interface (API). Once you download and configure the API, you do not need an internet connection to utilize the robust mapping features that Esri provides. For information on downloading and configuring the API that controls this feature, see *How to Download and Configure the ArcGIS JavaScript API* on page 350.

The Esri On Premise functionality provides you with local access to Esri mapping files. This is particularly useful if you are away from your office or without an internet connection. You may also be using a mobile device, such as an iPad or smartphone with a large screen, without an internet connection. The following mapping components are supported when using the Esri On Premise functionality:

❑ **Offline Basemaps**. Basemaps are an offering from ArcGIS. Standard basemaps are provided for your use offline. For example, there is an Oceans basemap and a Terrain with Labels basemap. In InfoAssist+, these basemaps are also known as backgrounds. In an online setting, there are 10 basemaps available. In order to use offline basemaps you need to use a tiled mapservice published in the ArcGIS Server.

❑ **Offline Geographic Roles**. Geographic Roles are used to visualize measures with commonly known dimensions (for example, Country, State, Cities, and so on). These provide the location information often in the form of (x/y) needed to plot on a map. Geographic roles are pre-defined for online users through ArcGIS Online. In InfoAssist+, a geographic role defines the geographic component that you can select when creating a map (for example, State or Continent). For an offline user, the options that display can be customized in the geoservices.xml file. For more information, see *Adding a Custom Geographic Role* on page 371.

Note: Demographic Layers are not supported in an Esri On Premise environment.

Procedure: How to Download and Configure the ArcGIS JavaScript API

You can use this procedure to download and configure the API that controls the Esri On Premise environment.

1. In your browser, navigate to the following URL to download the API: *https://developers.arcgis.com/downloads*

2. Sign in to access the download options that are available to you.

3. Select *Version 3.15* of the ArcGIS API for JavaScript, as shown in the following image.
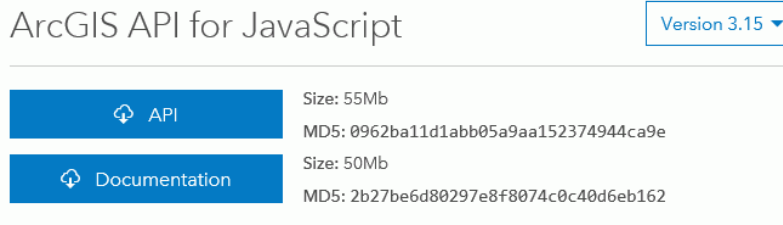
4. Click *API* to download the API.

5. In /qibm/userdata/qwebqry/base80/config/web_resource, create a folder named arcgis_api.

6. Open the arcgis_js_v315_api.zip file downloaded in step 4 and navigate to arcgis_js_v315_api\arcgis_js_api\library\3.15\3.15.

7. Extract the files in that folder to the /qibm/userdata/qwebqry/base80/config/web_resource/arcgis_api folder.

8. Next, verify the path to the API in the >Report Broker Administration Console, as shown in the following image.

   Note: This is the path to which you extracted the API files.
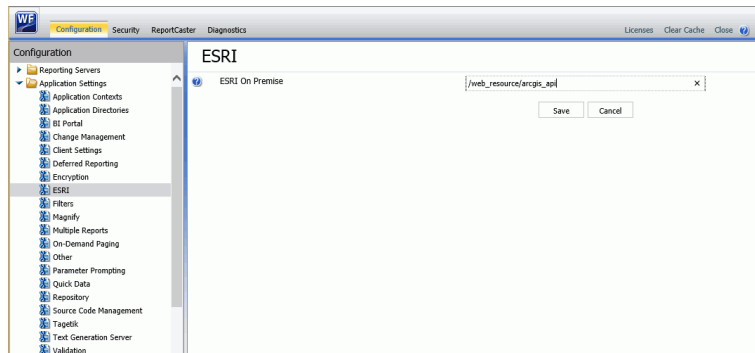
This field identifies the path to the internal ArcGIS Javascript API Source that develops ESRI-based maps. This setting is blank, by default, indicating that the use of the internal API source to develop ESRI maps is not activated. The API that is referenced is *https://js.arcgis.com/3.15/*, by default. To direct >Report Broker to use the internal ArcGIS Javascript API to develop ESRI maps, enter the path to the local API files that you extracted into this setting.

Note: This path should be a relative path that is accessible within the local >Report Broker install.

9. Click *Save*.

10. Next, open the following two local API files:

    ❏ /qibm/userdata/qwebqry/base80/config/web_resource/arcgis_api\init.js

    ❏ /qibm/userdata/qwebqry/base80/config/web_resource/arcgis_api\dojo\dojo.js

    In both files, search for HOSTNAME_AND_PATH_TO_JSAPI. Replace *'//'* +
    "[HOSTNAME_AND_PATH_TO_JSAPI]dojo" with *'//' + HOSTNAME_AND_PATH_TO_JSAPI +*
    "dojo"

11. In the >Report Broker Administration Console, click *Clear Cache* to clear the browser
    cache. Your configuration is complete.

Creating and Customizing Maps in InfoAssist+

The following procedures provide step-by-step instructions on how to create and customize
maps.

As you create your maps, you can use the following built-in map viewer features:

❏ You can use the plus (+) and minus (-) symbols, [+/−], within the map to zoom in and out of
different areas of the map. You can also click your left mouse button to zoom in to a
specific location.

❏ Like all HTML5 visualizations, the highlighted markers and regions on a map support drill,
multi-drill, auto-linking, and informational tooltip features.

❏ When working with maps in Chart mode, you can use the Pan / Selection button to
alternate between the Pan and Selection controls. This option is in the upper-right corner of
the map.

❏ When working with maps in Visualization mode, you can toggle the Pan or Selection button
to make a selection. The Pan control allows you to click, hold, and move the map with your
mouse. The Selection control allows you to lasso a specific area of the map and select
data in the map.

❏ Creating a map chart using the US Zipcode 5 Georole with more than 2000 polygons will
fail to draw.

Procedure: **How to Create an Esri Choropleth Map**

Note: The default option of creating a map utilizes the ArcGIS JavaScript API that Esri provides.

1. Launch InfoAssist+ in Chart or Visualization mode.

   ❏ In Chart mode, on the *Format* tab, in the *Chart Types* group, click *Choropleth*.

   ❏ In Visualization mode, on the *Home* tab, in the *Visual* group, click *Change* and click *Choropleth*.

   A blank map displays and the Layer field container is enabled, as shown in the following image.
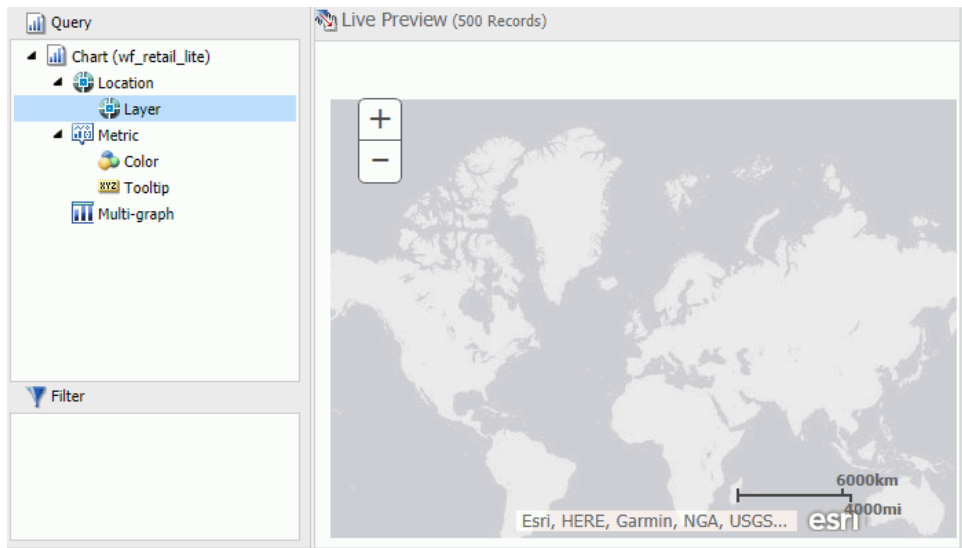
2. Add a Geolocation field to the Layer field container.

This field, which already has a geographic role assigned, is denoted with a Layer icon, , in the Data panel, as shown in the following image. You can also hover over a data field to view the geographic role assignment.
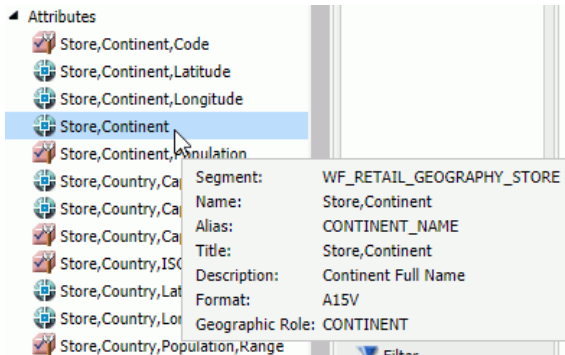
For more information, see *Geographic Roles* on page 367.

The canvas refreshes, and your map displays.

3. Before saving your map, to add insight, you can also do following:

❏ Click *Run*, to preview your map.

❏ Add a measure or dimension to the Color field container, to color your chart by that underlying data value. When you add a measure or dimension field to the Color field container, a legend displays for that data value. If you specify a dimension in the Color field container, the label changes to Color BY.

❏ Add a dimension or measure to the Tooltip field container, which will display tooltip information when you place your mouse over an area of the map.

❏ Add a Background, Demographic Layer, or Reference Layer.

4. Click *Save* to save your map.

Procedure: **How to Create an Esri Proportional Symbol (Bubble) Map**

1. Launch InfoAssist+ in Chart or Visualization mode.

❏ In Chart mode, on the *Format* tab, in the *Chart Types* group, click *Proportional Symbol*.

❏ In Visualization mode, on the *Home* tab, in the *Visual* group, click *Change* and select *Proportional Symbol*.

A blank map displays and the Layer field container is enabled.

2. Place a data field with a defined geographic role in the Layer field container.

This field, which already has a geographic role assigned, is denoted with a Layer icon, 🌐, in the Data panel, as shown in the following image. You can also hover over a data field to view the geographic role assignment.
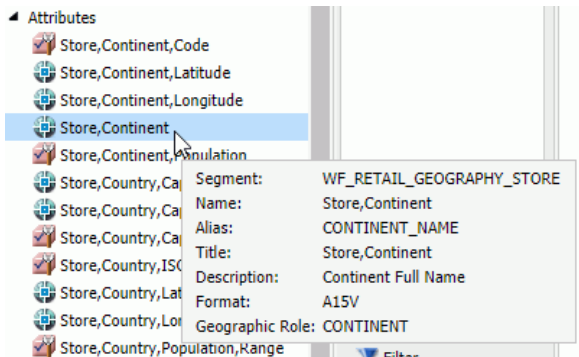
For more information, see *Geographic Roles* on page 367.

A basic bubble map displays, as shown in the following image.
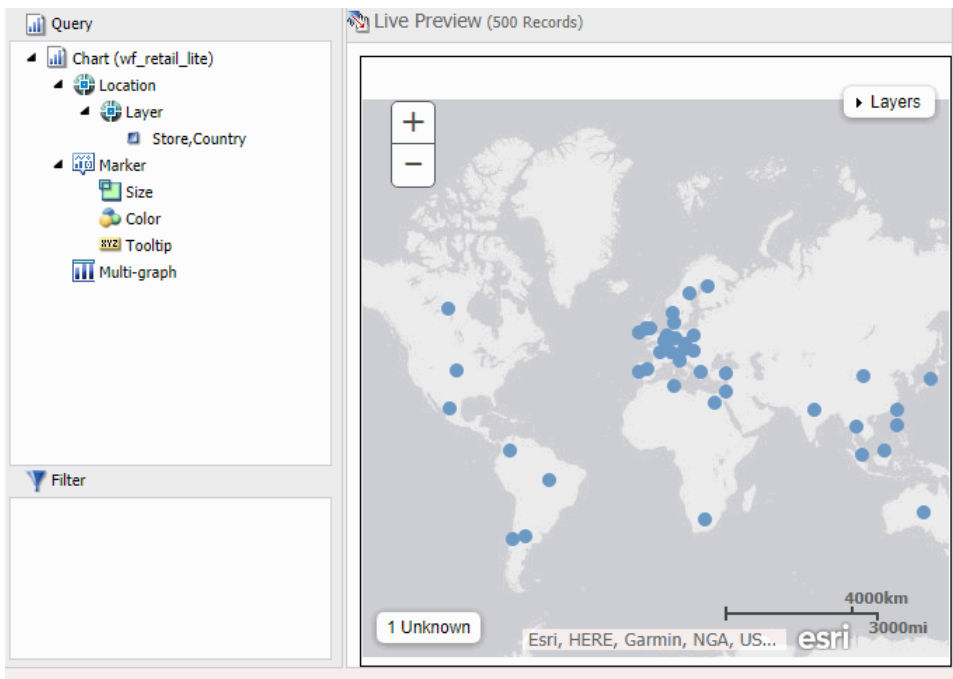
3. Before saving your map, to add insight, you can also do following:

❏ Click *Run*, to preview your map.

❏ Add a measure or dimension to the Color field container, to color your chart by that underlying data value.

❏ Add a measure to the Size field container, to control the size of the bubbles on your map.

❏ Add a measure to the Tooltip field container, to display tooltip information when you place your mouse over an area of the map at run time.

❏ Add a Background, Demographic Layer, or Reference Layer.

4. Click *Save* to save your map.

Procedure: **How to Assign a Geographic Role to a Data Field**

1. Launch InfoAssist+ in Chart or Visualization mode.

❏ In Chart mode, on the *Format* tab, in the *Chart Types* group, click *Choropleth* or *Proportional Symbol*.

❏ In Visualization mode, on the *Home* tab, in the *Visual* group, click *Change* and click *Choropleth* or *Proportional Symbol*.

2. In the Data pane, select a data field without a geolocation assignment.

3. Perform one of the following tasks to open the Map dialog box and assign a geographic role:

❏ Right-click the desired data field, click *Map As* and select a geographic role, as shown in the following image.
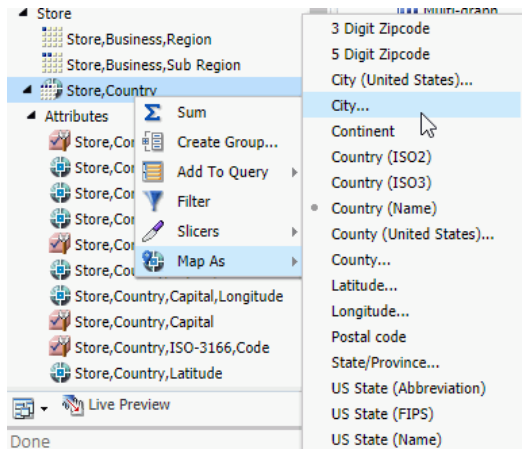
❑ Drag the desired data field into the Layer field container.

The Map dialog box displays, as shown in the following image.
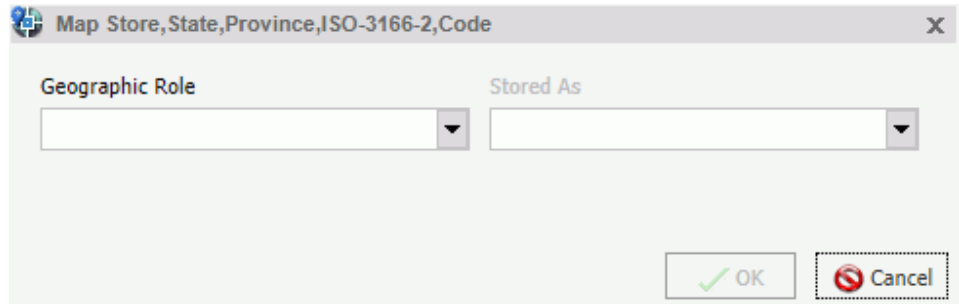
4. In the Map dialog box, select a geographic role. For example, State.

   Note: When specifying a geographic role, you can use Name or an ISO-2 value for countries. The ISO-2 codes are recognized worldwide, as published in *http://www.iso.org/iso/country_codes*.

   The Map dialog box refreshes and shows the Depends on section, as shown in the following image.
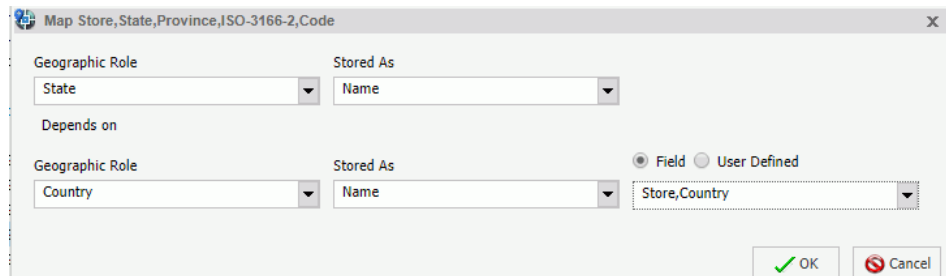
   Note: If you used the Map As option, the Depends on section automatically displays, since a geographic role was selected at that time.

5. In the Depends on section, choose from the following options:

   ❑ **Field.** Identifies a specific field on which the geographic role depends. For example, you can select Country or Continent.

   ❑ **User Defined.** Enables the definition of a specific value from the data source. Selections can be as simple as a specific country. For example, you can select US.

   The Geographic Role field automatically populates based on the hierarchy of your data source. For example, if your primary geographic role was State, and in your metadata hierarchy, State depends on Country, this option displays.

6. Click *OK*.
    If you used the Map As option, you must place the data field with the defined geographic role in the Layer field container. If you placed a data field in the Layer field container and defined a geographic role, the field is automatically added to the Layer field container.

    A basic map displays, as shown in the following image.
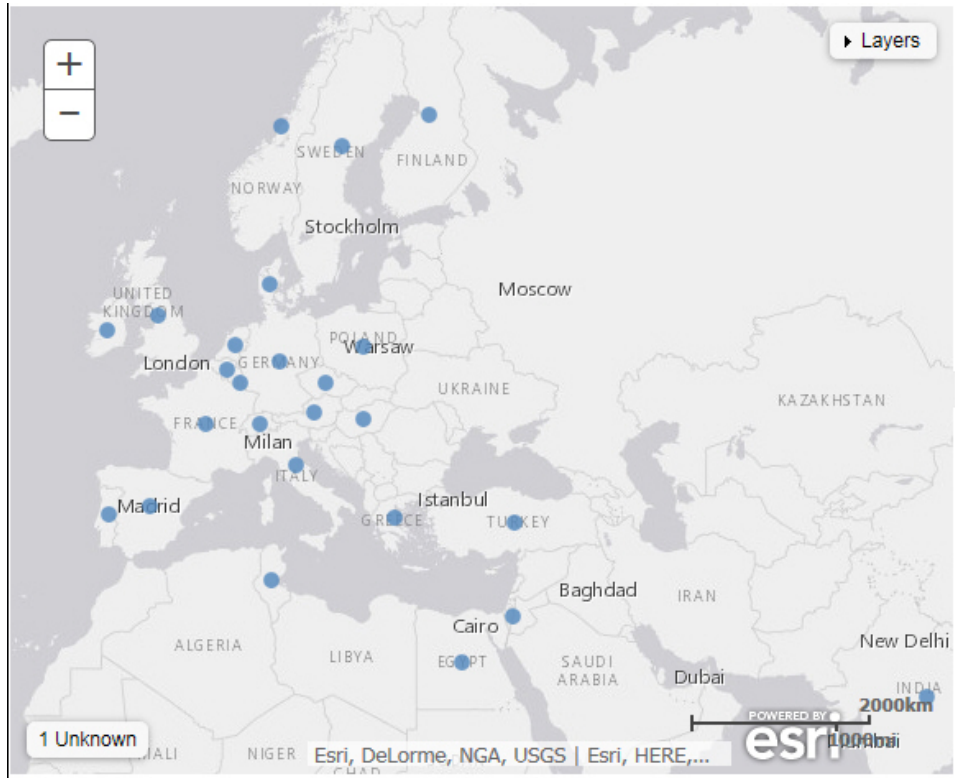
7. Before saving your map, to add insight, you can also do following:

    ❑ Click *Run*, to preview your map.

    ❑ Add a measure or dimension to the Color field container, to color your chart by that underlying data value.

    ❑ Add a measure to the Size field container, to control the size of the bubbles on your map.

    ❑ Add a measure to the Tooltip field container, to display tooltip information when you place your mouse over an area of the map at run time.

❏ Add a Background, Demographic Layer, or Reference Layer.

8. Click *Save* to save your map.

Procedure: **How to Change the Geographic Role of a Geolocation Field**

You can change the geographic role assignment of any geolocation field using the following steps.

1. Launch InfoAssist+ in Chart or Visualization mode.

   ❏ In Chart mode, on the *Format* tab, in the *Chart Types* group, click *Choropleth*.

   ❏ In Visualization mode, on the *Home* tab, in the *Visual* group, click *Change* and click *Choropleth*.

2. From the Data pane, right-click a geolocation field and click *Map As*.

3. Select a geographic role.

   The Map dialog box displays using the selected Geographic Role.

4. In the Map dialog box, optionally select a geographic role from the drop-down list. For example, Country.

   Note: This changes the selection that you made on the Map As list.

5. Accept the default value for Stored As, or choose a new value from the drop-down list, for example, ISO code. Stored As indicates how the data values are represented in the table.

6. Click *OK*.

   The geographic role changes for the selected Geolocation field in the Data pane, and the map refreshes using the new geolocation that you specified.

Procedure: **How to Change the Default Background of a Map**

1. Create a new map or open an existing map in InfoAssist+.

2. On the Format tab, expand the Map group and click *Background*, as shown in the following image.
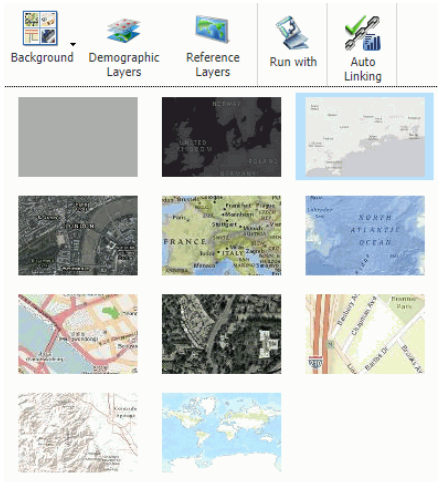
3. Select one of the following options:

    ❑ World Street Map

    ❑ Terrain with Labels

    ❑ Oceans Basemap

    ❑ OpenStreetMap

    ❑ World Imagery

    ❑ Imagery with Labels

    ❑ Light Gray Canvas

    ❑ National Geographic World Map

    ❑ Dark Gray Canvas

    ❑ None

    Note: The Imagery with Labels Background provides the terrain for your map, ranging from land contours to city streets.

    Once you make a selection, the background of the map refreshes. You can continue to change your background until it displays the desired information.

Procedure: **How to Add Demographic Layers to a Map**

1. Create a new map or open an existing map in InfoAssist+.

2. On the Format tab, expand the Map group and click *Demographic Layers*.

3. Select from various population and lifestyle groups, as shown in the following image.
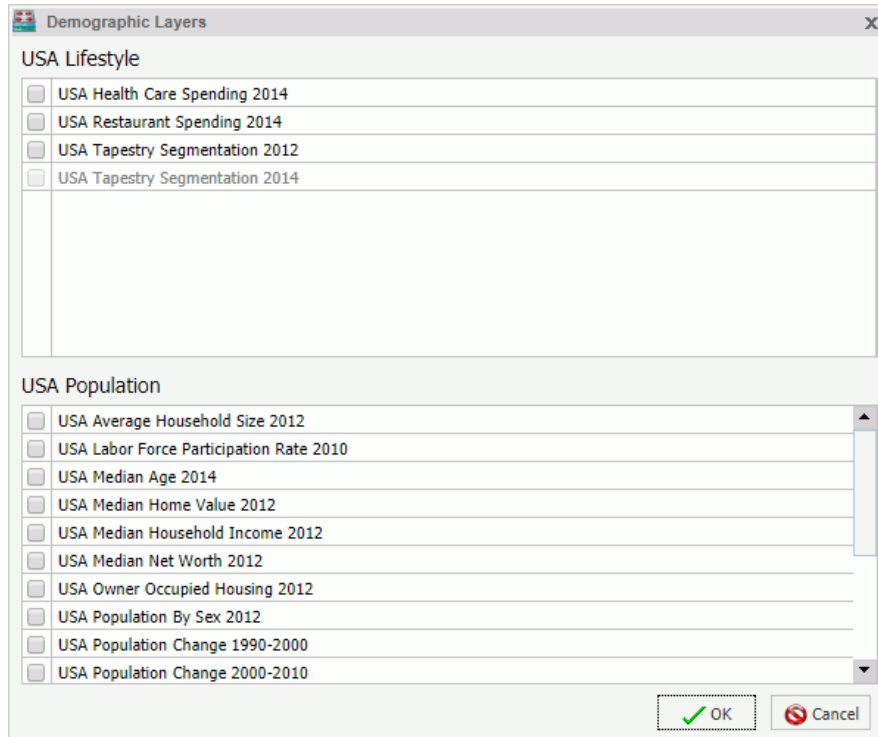
Note: These are pre-defined demographic profiles, provided by ArcGIS. You can select multiple options in either category to gain additional insight into your data. Specifically, each Demographic Layer has its own profile and provides a layering option, when comparing values across different layers or profiles.

4. Click *OK*.

The Demographic Layers that you select are applied to your map. The map engine displays the different groups with unique hues and coloring. You can use the Table of Contents or Layers option, to toggle between the different layers that you have specified. The Layers option is shown in the following image.
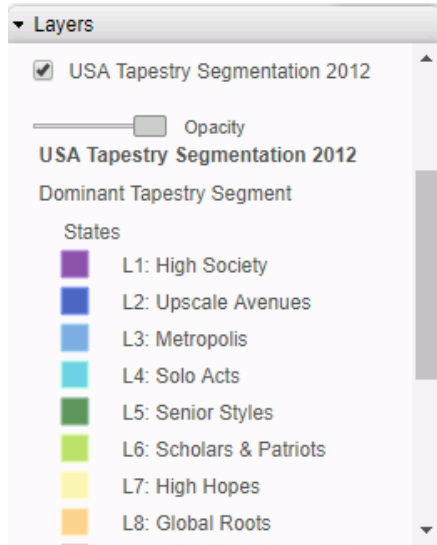
Note: You can select and clear the check boxes to enable the display of one or more Demographic Layers to compare and contrast the different demographic scenarios.

Procedure: How to Add Reference Layers to a Map

1. Create a new map or open an existing map in InfoAssist+.

2. On the Format tab, expand the Map group and click *Reference Layers*.

The Reference Layers dialog box displays, as shown in the following image.
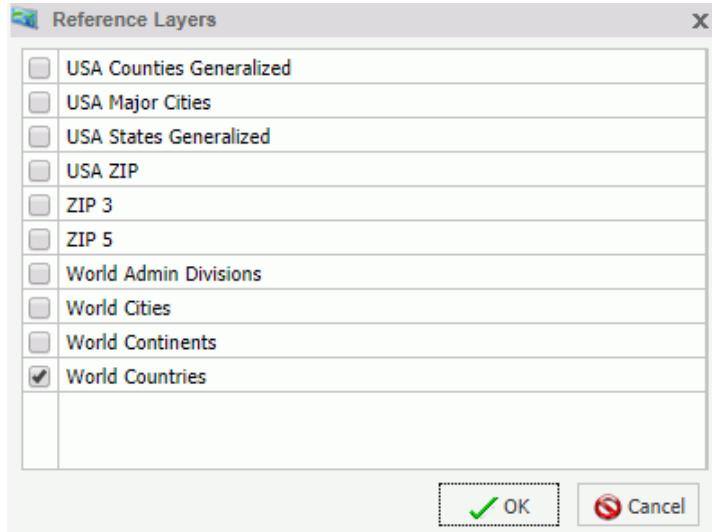
3. Select one or more Reference Layers, such as World Countries, to add to your map, and then click *OK*.

Your map refreshes, and the definitions and borders of the References Layers display on the canvas. You can use the Table of Contents or Layers option, to toggle different Reference Layers in your map. These options are shown in the following image.
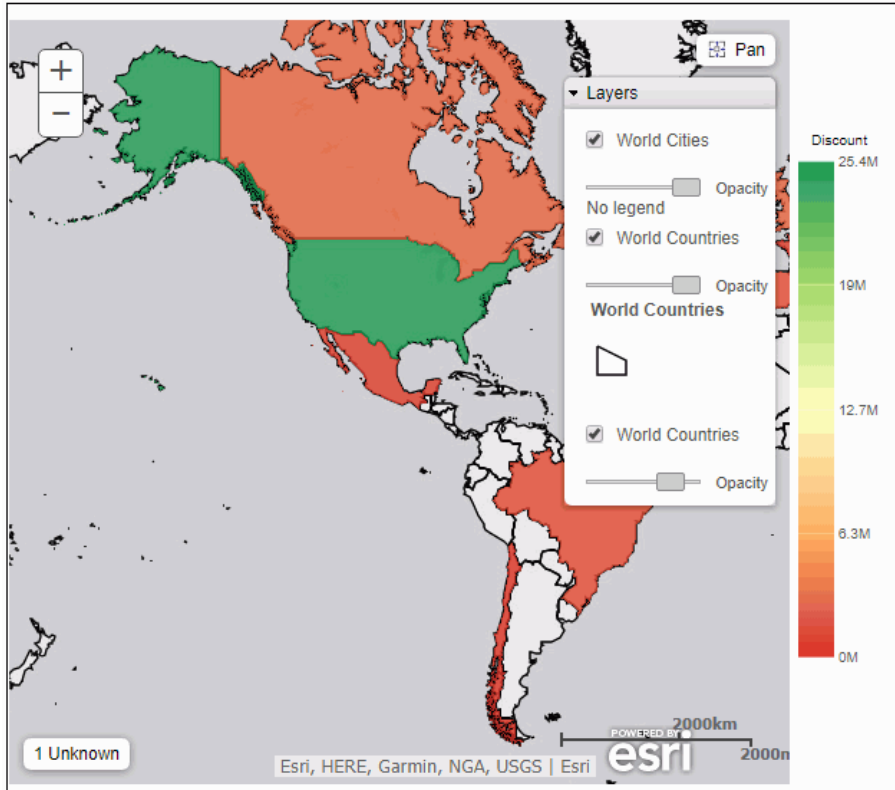
Procedure: How to Create a Leaflet Map

You can use the following procedure to create Leaflet maps, which are part of the Lightweight Mapping functionality.

Note:

❏ For charts, you must use the HTML5 output format to access this functionality.

❏ Data labels display for choropleth Leaflet maps, providing you with information about your underlying data directly on the map.

1. Launch InfoAssist+ in Chart mode or Visualization mode.

2. Create a Leaflet map using one of the following options:

To create a Leaflet map as a chart:

1. On the *Format* tab, in the *Chart Types* group, click *Other*.

2. In the left pane, select *Map*.

   All map options display, including Leaflet maps. Click either *Leaflet Choropleth* or *Leaflet Bubblemap*.

To create a Leaflet map in a visualization:

1. On the *Home* tab, in the *Visual* group, click *Change*.

2. On the Select a visual menu, click *Map*.

   The Select a map dialog box opens.

3. From the Type group, select a map.

3. From the Location group, using the Territory drop-down list, select a territory (for example, United States of America).

   This section allows you to pick geographic locations for which maps are available. You can select a territory option from the drop-down list. Options include: United States of America, World, Europe, Africa, Asia, Australia, Austria, Denmark, Germany, Japan, North America, South America, and Sweden. For more information on adding or enabling additional territories, see *Enabling Additional Territories in a Leaflet Map* on page 379.

4. Click *OK*.

5. From the Data pane, add a data source containing geolocation data to the Layer field container in the Query pane.

   Note: For bubble maps, Layer, Latitude, and Longitude field containers display. You can specify latitudinal and longitudinal data using these fields. The Size field container also displays for bubble maps.

   The Location Type dialog box displays, as shown in the following image.

The Location Type is needed for geocoding, which is a process through which fields are assigned to a specific geographic dimension (for example, Zip Code, State, or Country) so that it can be matched correctly to the geographic coordinates. The geocoding process will occur once you add a geographic field to the Location data container.

6. Select a geographic role from the drop-down list and click *OK*.

The map displays.

Note: You can change the geographic role by right-clicking the location dimension in the Query pane, and clicking *Geographic Role*. The Location Type dialog box opens.

7. Optionally, add a field to the Color field container, or add a field to the Size field container if you are creating a bubble map.

The map displays based on your data and selections for geolocation and optionally, color and size. The legend identifies the data in the map by color, based on the data field specified in the Color field container.

Reference: Query Field Containers by Map Type

This section presents the Query field containers that display for both charts and visualizations, by map type.

Query field container	Chart mode		Visualization mode	
Layer. One data field, specifically a field containing location data (for example, State).	✓	✓	✓	✓
Latitude. One data field, containing latitude data.	✗	✓	✗	✓
Longitude. One data field, containing longitude data.	✗	✓	✗	✓
Color. One data field.	✓	✓	✓	✓
Tooltip. Up to one data field (not required).	✓	✓	✓	✓
Multi-graph. Up to one data field (not required).	✓	✓	✗	✗
Size. One data field.	✗	✓	✗	✓

Reference: **Geographic Roles**

Note: Geographic roles are only available with Esri maps.

This section contains information on the geographic roles that are supported for Esri maps in InfoAssist+.

Geographic Role	Description	Maps Supported
POINT OF INTEREST	Points of Interest	Proportional Symbol
CITY	World Cities	Proportional Symbol
CONTINENT	World Continents	Choropleth, Proportional Symbol
COUNTRY	World Countries	Choropleth, Proportional Symbol
COUNTRY_ISO2	World Countries (ISO2 Code)	Choropleth, Proportional Symbol
COUNTRY_ISO3	World Countries (ISO3 Code)	Choropleth, Proportional Symbol
STATE	World Admin Divisions	Choropleth, Proportional Symbol
STATE_ISO_SUB	World Admin Divisions (by ISO_SUB)	Choropleth, Proportional Symbol
USCITY	USA Major Cities	Proportional Symbol
USCITY_FIPS	USA Major Cities_FIPS	Proportional Symbol
USCOUNTY	USA_Counties	Choropleth, Proportional Symbol
USCOUNTY_FIPS	USA_Counties_FIPS	Choropleth, Proportional Symbol
USSTATE	USA_States	Choropleth, Proportional Symbol

Geographic Role	Description	Maps Supported
USSTATE_FIPS	USA_States_FIPS	Choropleth, Proportional Symbol
USSTATE_ABBR	USA_States (by abbreviation)	Choropleth, Proportional Symbol
ZIP3	USA ZIP3	Choropleth, Proportional Symbol
ZIP5	USA ZIP5	Choropleth, Proportional Symbol

The following table summarizes additional geographic role information.

Note: All of the following roles are geographic roles, with the exception of Latitude and Longitude, which are coordinates.

Role Name	Role Format	Geographic Role
Address	Full	ADDRESS_FULL
	Line	ADDRESS_LINE
City	Name	CITY
Continent	ISO-3166 code	CONTINENT_ISO2
	Name	CONTINENT
Country	FIPS code	COUNTRY_FIPS
	ISO-3166-2 code	COUNTRY_ISO2
	ISO-3166-3 code	COUNTRY_ISO3
	Name	COUNTRY
Country (NUTS level 0)	NUTS code	NUTS0_CC
	Name	NUTS0

Role Name	Role Format	Geographic Role
District (NUTS level 3)	NUTS code	NUTS3_CC
	Name	NUTS3
Geometry area		GEOMETRY_AREA
Geometry line		GEOMETRY_LINE
Geometry point		GEOMETRY_POINT
Latitude		LATITUDE
Longitude		LONGITUDE
Postal code		POSTAL-CODE
Province (NUTS level 2)	NUTS code	NUTS2_CC
	Name	NUTS2
Region (NUTS level 1)	NUTS code	NUTS1_CC
	Name	NUTS1
State	FIPS code	STATE_FIPS
	Name	STATE
US County FIPS	FIPS code	USCOUNTY_FIPS
US city	FIPS code	USCITY_FIPS
	Name	USCITY
US county	Name	USCOUNTY
US Postal code	3 digits	ZIP3
	5 digits	ZIP5
US state	Abbreviation	USSTATE_ABBR

Role Name	Role Format	Geographic Role
	FIPS code	USSTATE_FIPS
	Name	USSTATE
	US ISO subdivision code	STATE_ISO_SUB

The following table illustrates the geographic roles and their dependencies. Level 1 indicates the highest level of hierarchy and level 5 is the lowest level of hierarchy.

Region	Hierarchy Level	Geographic Role
United States	1	COUNTRY, COUNTRY_ISO_CC
	2	USSTATE, USSTATE_ABBR, USSTATE_FIPS
	3	USCOUNTY, USCOUNTY_FIPS
	4	USCITY, USCITY_FIPS
	5	ZIP3, ZIP5
World	1	CONTINENT, CONTINENT_ISO_CC
	2	COUNTRY, COUNTRY_FIPS, COUNTRY_ISO_CC, COUNTRY_ISO2, COUNTRY_ISO3
	3	STATE, STATE_ISO_SUB
	4	CITY
	5	POSTAL CODE

Adding a Custom Geographic Role

Customers with Enterprise Data often have map layers that represent their territories, events, or logistical information. These are published as Map Services to either a subscription based in the Esri Cloud (ArcGIS.com) or on an internal portal. This portal is available with ArcGIS Server 10.3 installations. More information can be found at *http://server.arcgis.com/en/portal/*.

The Reporting Server comes with a configuration file (geo_services.xml) that contains elements that describe all of the geographic roles, geographic hierarchies, URLs to the map services, and base maps available to the Esri map viewer. This file is located in the catalog directory under the server home directory:

/qibm/proddata/QWEBQRY/ibi/srv77/home/catalog

where *nn* is the release of your Reporting Server. For example, 77 for 7.7.

The geographic role selections that you can make while using the InfoAssist+ Map As option are built dynamically using this configuration file. Each role definition in the configuration file, when selected in InfoAssist+, generates Metadata and a request that is sent to Esri in order to download the appropriate map and place the markers or polygons on the map.

A geographic role can be part of a hierarchy. For example, the World geographic role is at the top of a hierarchy that contains continents, countries, states, and cities. These hierarchies are also described in the geo_services.xml file. The default location is:

/qibm/proddata/QWEBQRY/ibi/srv77/home/catalog/geo_services.xml

where *nn* is the release of your Reporting Server. For example, 77 for 7.7.

To add a custom geographic role, you must add the necessary parameters for the geography to this file.

Following standard XML syntax rules, each element is enclosed in element start and end tags (<elementname>, </elementname>), and attribute values are enclosed in double quotation marks (").

Reference: Geographic Role Definitions

A geographic role is stored as *geo_role* element in the geo_roles object of the geo_services.xml file. A geographic role must be defined with:

❑ An ID that will identify the role in the configuration file.

❑ A format and length for the data to be returned.

❑ A role name.

❏ A display title for the role name (to appear as a selection when using the InfoAssist+ Map As option).

❏ An optional role format (if the role can have multiple formats, such as a name and an abbreviation).

❏ A display title for the format.

❏ A role type (GEOGRAPHY for polygons or GEOMETRY for points).

❏ An optional vocabulary rule element containing vocabulary elements for associating the role with a field in the metadata.

The following attributes define a geographic role.

id

Is an alphanumeric uppercase value, up to 50 characters, used to identify the geographic role.

type

Is the data type for the ID. Can be one of the following.

❏ **"alpha".** For alphanumeric data, formats An or In.

❏ **"integer".** For integer numeric data, format In.

❏ **"numeric".** For fractional numeric data, formats Pn.m, Dn.m, or Fn.m.

❏ **"text".** For text data, format TXn.

value_size

Is the optional number of characters in USAGE format length (any, if not set).

role_name

Is the name of the geographic role.

role_name_title

Is the title of the geographic role, which displays when you hover over a data field with a geographic role assigned. You can also assign a geographic role, by title, using the Map As option.

role_format

Is an optional format for the geographic role. This is useful when the role can be referenced using multiple formats, such as a name, an ISO code, and an abbreviation.

role_format_title

Is an optional title for the format of the geographic role. It will be shown in parentheses along with the role title when you use the Map As option. For example, US State (abbreviation).

geo_type

Is one of the following predefined role types.

❏ **"geography".** For geographic objects, such as country or city.

❏ **"geometry".** For geometry objects, such as latitude, longitude, or geometry point and area.

vocabulary_rules

Is an element that consists of a group of vocabulary elements that explicitly describe column names for the geographic role. These rules will be used to select the best geographic data for the role.

Elements in a rule are connected by the Boolean logic operation OR (only one needs to be satisfied). Each vocabulary element contains words enclosed with special characters. Words in the rule element are connected by the Boolean logic operation AND (all need to be satisfied).

A word may be prefixed and/or suffixed with the percent character (%), which is a place holder for any sequence of characters. If an element contains more than one word, each word has to be prefixed by the character plus (+) or minus (-). Plus indicates that the word must be found in the column name. Minus indicates that the word must not be found in the column name.

Example: Sample Geographic Role Definitions

The following defines the State Abbreviation geographic role. The role ID is USSTATE_ABBR. The role name is USSTATE with a role format of ABBR. The titles that show when using the Map As option are US State (Abbreviation). The format is A2, and the vocabulary rules specify that the characters *state* must be present, but the characters *iso*, *capital*, and *population* must not be present. The geo type is geography, indicating that the returned data will be a geographic area.

```
<geo_role
id="USSTATE_ABBR"
 value_size="2"
 type="alpha"
role_name="USSTATE"
role_name_title="US state"
role_format="ABBR"
role_format_title="Abbreviation"
 geo_type="geography">
<vocabulary_rules>
<vocabulary>+%state%-%iso%-%capital%-%population%</vocabulary>
</vocabulary_rules>
</geo_role>
```

The following is a role definition for latitude values. The role ID is LATITUDE. The role name is also LATITUDE. Its format is numeric. The title that displays when you hover over a field with a geographic role assigned (or when using the Map As option) is Latitude. The geo type is geometry, indicating that the returned data will be points or areas described using points. The vocabulary rules specify that the characters *latitude* must be present.

```
<geo_role
 id="LATITUDE"
 type="numeric"
 role_name="LATITUDE"
role_name_title="Latitude"
 geo_type="coordinate">
 <vocabulary_rules>
   <vocabulary>%latitude%</vocabulary>
 </vocabulary_rules>
</geo_role>
```

The following is the definition for the city role. The ID is CITY. The role name is also CITY. Its format is NAME. The title that displays when you hover over a field with a geographic role assigned (or when using the Map As option) is City (Name). The definition has a set of vocabulary elements. Only one of the elements in the list must be true. Therefore, the characters *city*, or *town*, or *country* plus *capital*, or *state* plus *capital* must be present.

```
<geo_role
 id="CITY"
type="alpha"
role_name="CITY"
role_name_title="City"
role_format="NAME"
role_format_title="Name"
 geo_type="geography">
 <vocabulary_rules>
  <vocabulary>+%city%-%population%</vocabulary>
  <vocabulary>+%town%-%population%</vocabulary>
  <vocabulary>+%country%+%capital%-%population%</vocabulary>
  <vocabulary>+%state%+%capital%-%population%</vocabulary>
 </vocabulary_rules>
</geo_role>
```

Reference: **Geographic Hierarchy Definitions**

Some geographic roles exist as part of a hierarchy, and the data for the hierarchical roles are stored at the same map services endpoint (URL). Hierarchical role relationships are stored as *hier* elements in the geo_services.xml file.

Hierarchy definitions provide >Report Broker with the information needed to use Auto Drill from a geographic role at a higher level of the geographic hierarchy to a geographic role at a lower level of the geographic hierarchy.

Each hierarchy has the name of hierarchy (attribute ID) and a group of LEV elements with the attributes level, geo_role, and, optionally, value. Not all defined roles can be used in hierarchies. The same role can be included in more than one hierarchy and may be on different hierarchical levels in each. However, the same role cannot be used more than once in the same hierarchy. Multiple geographic roles can be assigned to the same hierarchical level in a hierarchy.

Geographic hierarchies are defined with the following attributes:

id

Is a name of up to 50 alphanumeric characters used to identify the hierarchy.

level

Is a natural number (integer starting with 1 for the top level) that specifies the level of the role within the hierarchy.

geo_role

Is the ID attribute of a geographic role (geo_role element).

value

Is an alphanumeric value, up to 50 characters, predefined for this geo role in this hierarchy.

Example: Sample Geographic Hierarchy Definition

The following element defines the world hierarchy. The top level is CONTINENT, both the Name role and the ISO code role. Level 2 has four COUNTRY geographic roles, corresponding to four different country formats. Level 3 contains three state formats, level 4 contains the city name, and level 5 contains two address formats and the postal code.

```
<hier id="World">
<lev level="1" geo_role="CONTINENT"/>
 <lev level="1" geo_role="CONTINENT_ISO2"/>
 <lev level="2" geo_role="COUNTRY"/>
 <lev level="2" geo_role="COUNTRY_FIPS"/>
 <lev level="2" geo_role="COUNTRY_ISO2"/>
 <lev level="2" geo_role="COUNTRY_ISO3"/>
 <lev level="3" geo_role="STATE"/>
 <lev level="3" geo_role="STATE_ISO_SUB"/>
 <lev level="3" geo_role="STATE_FIPS"/>
 <lev level="4" geo_role="CITY"/>
 <lev level="5" geo_role="ADDRESS_FULL"/>
 <lev level="5" geo_role="ADDRESS_LINE"/>
 <lev level="5" geo_role="POSTAL_CODE"/>
</hier>
```

Reference: Adding the Federal Reserve Districts Geographic Role

These steps describe how to add the Federal Reserve Districts geographic role to the geo_services.xml file.

1. Open the geo_services.xml file. The default location is:

   /qibm/proddata/QWEBQRY/ibi/srv77/home/catalog/geo_services.xml

   where *nn* is the release of your Reporting Server. For example, 77 for 7.7.

2. Add the role to the end of the GEO_ROLES object:

```
<geo_role id="FED-DIST" value_size="50" type="alpha" role_name="FEDDIST"
role_name_title="FED District" role_format="FR_Distric"
role_format_title="FED District Name" geo_type="geography">
   <vocabulary_rules>
    <vocabulary>+%FR_Distric%</vocabulary>
   </vocabulary_rules>
  </geo_role>
```

3. The ID is FED-DIST. The role name is also FED-DIST. Its format is FR_Distric. The title that displays when you hover over a field with a geographic role assigned (or when using the Map As option) is FED District. The definition has a vocabulary rule. The characters *FR_Distric* must be present.

4. Add this role to the US Hierarchy:

```
<hier id="US">
    <lev level="1" value="United States" geo_role="COUNTRY"/>
    <lev level="1" value="US" geo_role="COUNTRY_ISO2"/>
    <lev level="1" value="USA" geo_role="COUNTRY_ISO3"/>
    <lev level="2" geo_role="USSTATE"/>
    <lev level="2" geo_role="USSTATE_ABBR"/>
    <lev level="2" geo_role="USSTATE_FIPS"/>
    <lev level="3" geo_role="USCOUNTY"/>
    <lev level="3" geo_role="USCOUNTY_FIPS"/>
    <lev level="4" geo_role="USCITY"/>
    <lev level="4" geo_role="USCITY_FIPS"/>
    <lev level="5" geo_role="ADDRESS_FULL"/>
    <lev level="5" geo_role="ADDRESS_LINE"/>
    <lev level="5" geo_role="ZIP3"/>
    <lev level="5" geo_role="ZIP5"/>
    <lev level="6" geo_role="FED-DIST"/>
</hier>
```

5. Add the URI to the map server layer for this role at the end of the URIS object:

```
<uri description="FedReserve Districts">
    <returned_geometry>GEOMETRY_AREA </returned_geometry>
    <returned_georole>FED-DIST</returned_georole>
    <url type="esri" authorization="none" synonym="">
http://services7.arcgis.com/L95Wwv9OjRQ0tjAs/arcgis/rest/services/
FRDISTRICTS/FeatureServer/0</url>
    <parameters>
     <parm order="1" parm_name="FR_Distric" parm_georole="FED-DIST"/>
    </parameters>
   </uri>
```

You will now be able to select this role when using the Map As option the next time you start InfoAssist+, as shown in the following image.
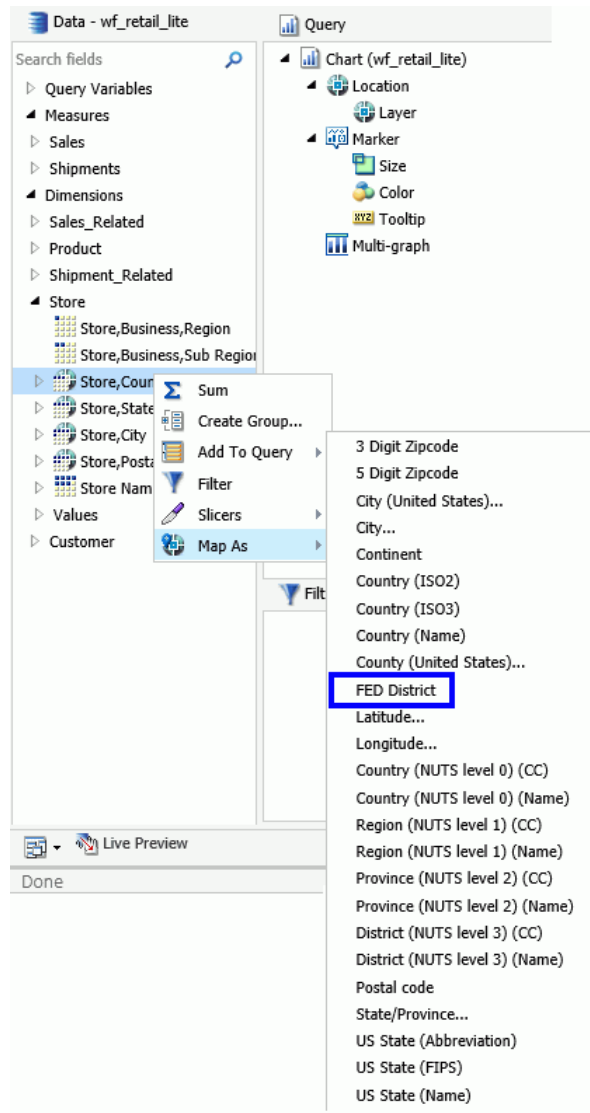
Enabling Additional Territories in a Leaflet Map

InfoAssist+ provides a number of territories, out of the box, for Leaflet maps, which are provided through Leaflet Open Source API. These pre-packaged territories are listed in *Default Territories* on page 381 and are contained in JavaScript Object Notations (.json) files.

Note: This functionality is only available for maps built with the Leaflet API.

In addition to the out of the box territories that are available, you can also enable other territories for use in creating custom maps. These additional territories are contained in .json or .csv files.

Note: Files in .csv format can be used for latitude and longitude data values. This could be for an exact point or for the centroid of a location. When using .csv files, there is a csvfields field class that is used to specify latitude and longitude values. For example, csvfields='country,lat,lng'. The .csv must have at least latitude and longitude specified. In addition, all fields require the use of quotes and a comma-delimited format.

You can also use GeoJSON files if you have access to location files in GeoJSON format. For more information, see the following webpages:

❏ *http://geojson.org*

❏ *http://converter.mygeodata.eu/vector* (Convert Shape Files to GeoJSON)

❏ *http://eric.clst.org/Stuff/USGeoJSON* (US Census Data converted to GeoJSON)

In order to enable a new territory, you must copy the .json, .csv, or .geojson file to the appropriate directory and then modify the CustomUIMaps.xml file to reference it, as described in the following procedure.

Procedure: **How to Enable Additional Territories in a Leaflet Map**

Note: This functionality is only available for maps built with the Leaflet API.

1. To enable one of the location files installed with >Report Broker, identify the pre-packaged .json file that you want to enable in the following directory:

   /qibm/ProdData/QWEBQRY/base80/webapps/webfocus/tdg/jschart/distribution/map

2. Copy the selected .json file to the following directory:

/qibm/ProdData/QWEBQRY/base80/config/web_resource/map

Note:

❏ If you want to use a .geojson or .csv file, copy it to this directory.

❏ If you are using a .json file, a layer must be defined, as .json files can contain multiple layers. The specification of layers is not required for .geojson files.

❏ In this example, the primary layer = regions must be set in the .json file. You can verify this by opening the .json file in a standard text editor, such as Notepad or Textpad.

3. In the /qibm/ProdData/QWEBQRY/base80/config/web_resource/map directory, open the CustomUIMaps.xml file using a standard text editor.

4. Remove the commenting characters from the line that you wish to create. Specifically, remove <!-- from the beginning of the line of code and remove --> from the end. This activates the .json file that you are including.

5. Specify the following criteria within the <Json> tag for each territory that you want to enable:

❏ **Map file:** This is the .json or .csv file name. For example, uszip3.json.

❏ **Name:** The label, or identifying name, that displays in the Territory drop-down list when using the Lightweight Mapping functionality. For example, Zip 3.

❏ **Layer:** Files may have multiple layers in them, such as landmarks and the actual item you want to symbolize. If they do, you must specify which layer to use. In the following example, regions is used.

```
1    <?xml version="1.0" encoding="UTF-8"?>
2    <!-- Copyright 1996-2013 Information Builders, Inc. All rights reserved. -->
3    <!--$Revision: 1.7 $:-->
4    <Maps>
5        <Json>
6    <!--     <Map file="zip-Wyoming.json" name="zip-Wyoming" layer='regions'>    </Map>-->
7    <!--     <Map file="us-state-centroids.csv" name="us-state-centroids"
     csvfields='fred,lat,lng'></Map>-->
8    <!--     <Map file="sample_ggsales_regions.geojson"  name="GGSales Sample Regions">
     </Map> -->
9    <Map file="sample_wfretail_regions.geojson" name="WFRetail Sample Regions"> </Map>
10   <Map file="uszip3.json" layer='regions' name="Zip 3"></Map>
11       </Json>
12   <!--
```

6. Save the CustomUIMaps.xml file.

7. Restart your application server.

The name of the territory that you enabled displays in the Territory drop-down list when you create a map chart.

Default Territories

InfoAssist+ comes pre-packaged with a number of default territories. These include:

❏ United States of America

❏ World

❏ Europe

❏ Africa

❏ Asia

❏ Australia

❏ Austria

❏ Denmark

❏ Germany

❏ Japan

❏ North America

❏ South America

❏ Sweden

Note: A full list of maps is available in your local installation directory:
/qibm/ProdData/QWEBQRY/base80/webapps/webfocus/tdg/jschart/distribution/map

Index

3D chart types *119*

3D charts *119*

3D depth

    removing from a bar chart *212*

A

accessing Document mode

    from document button *222*

    opening an existing item *221*

accordion reports *104*

active report *279*

adding to reports *79*

aggregation options in reports *96*

aggregation values *152*

    dimension *152*

annotations

    displaying *217*

application button *12*

application main menu *13*

application window *12*

area chart types *115*

area charts *114*, *247*

Auto Drill *309*

Auto Linking *313*

axis labels

    custom format characters *183*, *286*

    deleting *188*

    formatting *181*, *189*, *284*, *291*

axis labels

    hiding *289*

    horizontal axis labels *181*, *284*

    rotating *188*, *290*

    secondary axis labels *181*, *284*

    staggering *188*, *289*

    vertical axis labels *181*, *284*

axis titles

    adding *189*, *293*

axis

    manually setting *189*, *292*

    setting advanced properties *190*, *293*

    shortcut menu *186*

    using properties *188*, *289*

B

bar chart types *110*

bar charts *109*, *242*

Binning *128*

bubble charts *118*, *255*

bubble maps *345*

C

canvas *12*, *62*

cell padding in reports *86*

change *237*

chart frame and background

    formatting *191*