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Dashboard for Desktop

[Dashboard for Desktop](#)

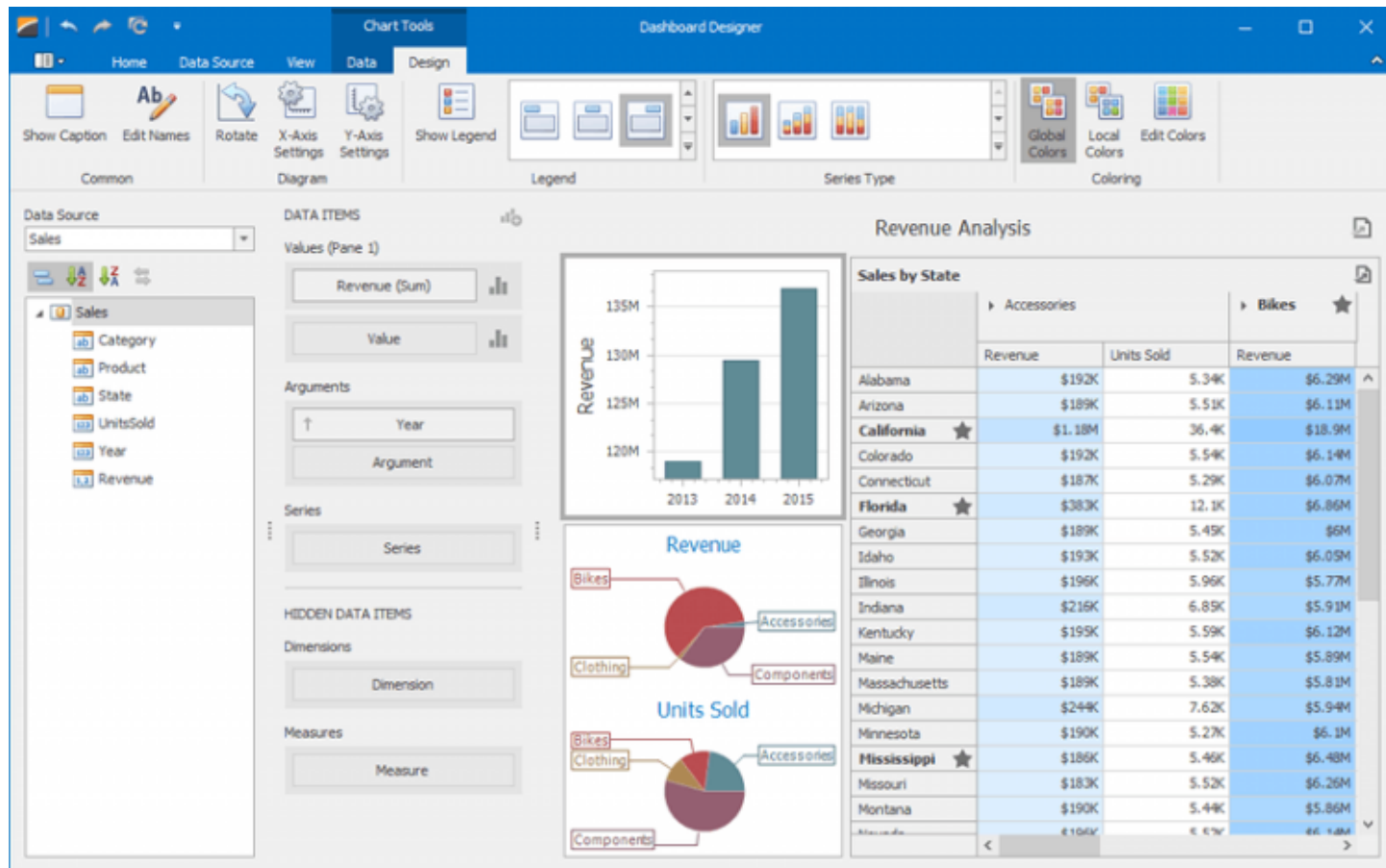
The **DevExpress Dashboard** is an interactive data visualization tool optimized for real-time data consumption and analysis. It includes the following components:

- [Dashboard Designer](#) - provides a comprehensive UI for designing dashboards from scratch.
- [Dashboard Viewer](#) - enables you to display dashboards in Windows Forms applications.

Dashboard Designer

[Dashboard for Desktop](#) > [Dashboard Designer](#)

The **Dashboard Designer** provides an intuitive UI that facilitates data binding and shaping, and layout design. Many of these normally complex tasks can be accomplished with a simple drag-and-drop operation, allowing you to start creating dashboards immediately.



Creating Dashboards

The following topics will guide you through the process of creating a dashboard.

- [Creating a Dashboard](#)
- [Providing Data](#)
- [Working with Data](#)
- [Adding Dashboard Items](#)
- [Binding Dashboard Items to Data](#)
- [Designing Dashboard Items](#)
- [Data Shaping](#)
- [Interactivity](#)
- [Appearance Customization](#)
- [Data Analysis](#)
- [Converting Dashboard Items](#)
- [Dashboard Layout](#)
- [Undo and Redo Operations](#)
- [Automatic and Manual Updates](#)

- [Saving a Dashboard](#)

Printing and Exporting

The Dashboard Designer provides the capability to print or export the individual items of a dashboard, as well as the entire dashboard.

- [Printing and Exporting](#)

UI Elements

The topics in this section describe the main elements of a Dashboard Designer application.

- [UI Elements](#)

Creating a Dashboard

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Creating a Dashboard](#)

When you run an application containing the Dashboard Designer, it already contains an empty dashboard. To create a new dashboard, click the **New** button in the ribbon **Home** tab.



Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#)

The topics in this section describe how to provide data to be visualized in the dashboard.

This section contains the following topics.

- [Supported Data Sources](#)
- [Connecting to SQL Databases](#)
- [Connecting to OLAP cubes](#)
- [Binding to Microsoft Excel Workbooks](#)
- [Binding to CSV Files](#)
- [Binding to Extract Data Sources](#)
- [Data Processing Modes](#)

Supported Data Sources

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Supported Data Sources](#)

The Dashboard Designer allows you to establish a connection to various data sources such as SQL databases, Microsoft Excel workbooks, XML/CSV data files or OLAP cubes.

The following data source types are supported.

- [SQL Data Source](#)
- [OLAP Data Source](#)
- [Microsoft Excel Workbooks/CSV Files](#)

SQL Data Source

To connect to various SQL databases, the Dashboard Designer requires corresponding providers to be installed on the client machine. The table below lists the supported data sources and the required data providers.

SQL Data Source	Supported Versions	Provider	Database Provider Assembly	Download link
Microsoft SQL Server	2005, 2008, 2008R2, 2012, 2014, 2016, 2005 Express Edition, 2008 R2 Express, 2012 Express, 2014 Express, 2016 Express, Azure SQL Database	.NET Framework Data Provider for SQL Server	System.Data.dll	Included in .NET Framework
Microsoft Access	2000 or higher	Microsoft Jet OLE DB Provider / Microsoft Access Database Engine (ACE)	System.Data.dll	Microsoft Access 2000-2003 - Microsoft Jet 4.0 Database Engine / Microsoft Access 2007 and later - Access Database Engine
Microsoft SQL Server CE	3.5, 4.0	.NET Framework Data Provider for SQL Server Compact	System.Data.SqlServerCe.dll	Included in .NET Framework
Oracle Database	9i or higher	Oracle Data Provider for .NET / .NET Framework Data Provider for Oracle	Oracle.DataAccess.dll, Oracle.ManagedDataAccess.dll, System.Data.OracleClient.dll	Download link (Included in .NET Framework)
Amazon Redshift	n/a	.NET data provider for PostgreSQL	Npgsql.dll	Download link
Google BigQuery	n/a	DevExpress.DataAccess.BigQuery ADO.NET provider	DevExpress.DataAccess.BigQuery.dll	Download link
Teradata	13.0 or higher	.NET Data Provider for Teradata	Teradata.Client.Provider.dll	Download link
SAP Sybase Advantage	Advantage Database Server 9.1 or higher	Advantage .NET Data Provider	Advantage.Data.Provider.dll	Download link

SAP Sybase ASE	Sybase Adaptive Server 12.0 or higher	SAP Sybase ASE Database Client	Sybase.Data.AseClient.dll	Download link
SAP SQL Anywhere	11 or higher	SAP SQL Anywhere Database Client	iAnywhere.Data.SQLAnywhere.dll	Download link
IBM DB2	9.5 or higher	ADO.Net client from IBM	IBM.Data.DB2.dll	Download link
Firebird	1.5 or higher, Dialect 3	Firebird ADO.NET Data Provider	FirebirdSql.Data.Firebird.dll, FirebirdSql.Data.FirebirdClient.dll	Download link
MySQL	4.1 or higher	ADO.NET driver for MySQL	MySql.Data.dll	Download link
Pervasive PSQL	9.x or higher	PSQL ADO.NET Data Provider	Pervasive.Data.SqlClient.dll	Download link
PostgreSQL	7.x or higher	.NET data provider for PostgreSQL	Npgsql.dll	Download link
VistaDB	4, 5	VistaDB ADO.NET Provider	VistaDB.5.NET40.dll	Download link
SQLite	3.x	ADO.NET provider for SQLite	System.Data.SQLite.dll	Download link
XML file	n/a	n/a	n/a	n/a

OLAP Data Source

To use the OLAP data source, the Dashboard Designer requires Microsoft Analysis Services OLE DB and Microsoft ADOMD.NET providers to be installed on the client machine. To learn more, see [Data providers used for Analysis Services connections](#).

The following OLAP servers are supported.

- Microsoft SQL Server 2000 Analysis Services
- Microsoft SQL Server 2005 Analysis Services
- Microsoft SQL Server 2008 Analysis Services
- Microsoft SQL Server 2008 R2 Analysis Services
- Microsoft SQL Server 2012 Analysis Services (Multi-dimensional mode)
- Microsoft SQL Server 2014 Analysis Services (Multi-dimensional mode)
- Microsoft SQL Server 2016 Analysis Services (Multi-dimensional mode)

Microsoft Excel Workbooks/CSV Files

The following Microsoft Excel/text formats are supported.

- XLS
- XLSX
- XLSM
- CSV

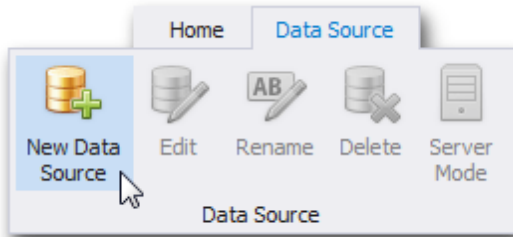
Connecting to SQL Databases

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Connecting to SQL Databases](#)

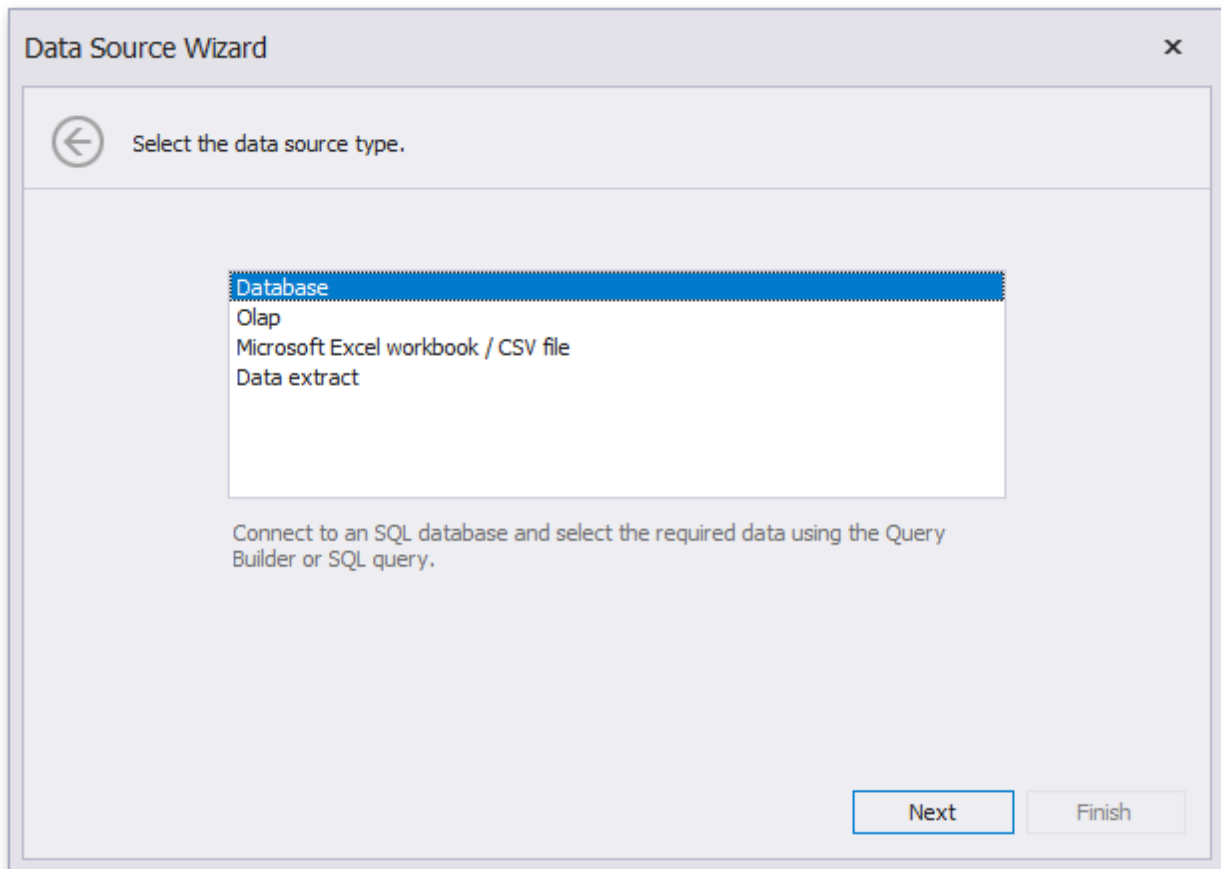
The Dashboard Designer provides the capability to connect to multiple types of SQL databases using the **Data Source** wizard. This tutorial describes how to establish a connection to any supported database and select the required data.

To connect to an SQL database in the Dashboard Designer, follow the steps below.

1. Click the **New Data Source** button in the **Data Source** ribbon tab.



2. On the first page of the invoked **Data Source Wizard** dialog, select **Database** and click **Next**.



3. On the next page, select the required data provider and specify the required connection parameters.

Data Source Wizard

Select the data provider and specify the connection properties.

Provider: Microsoft SQL Server

Server name: localhost

Authentication type: Windows authentication

User name:

Password:

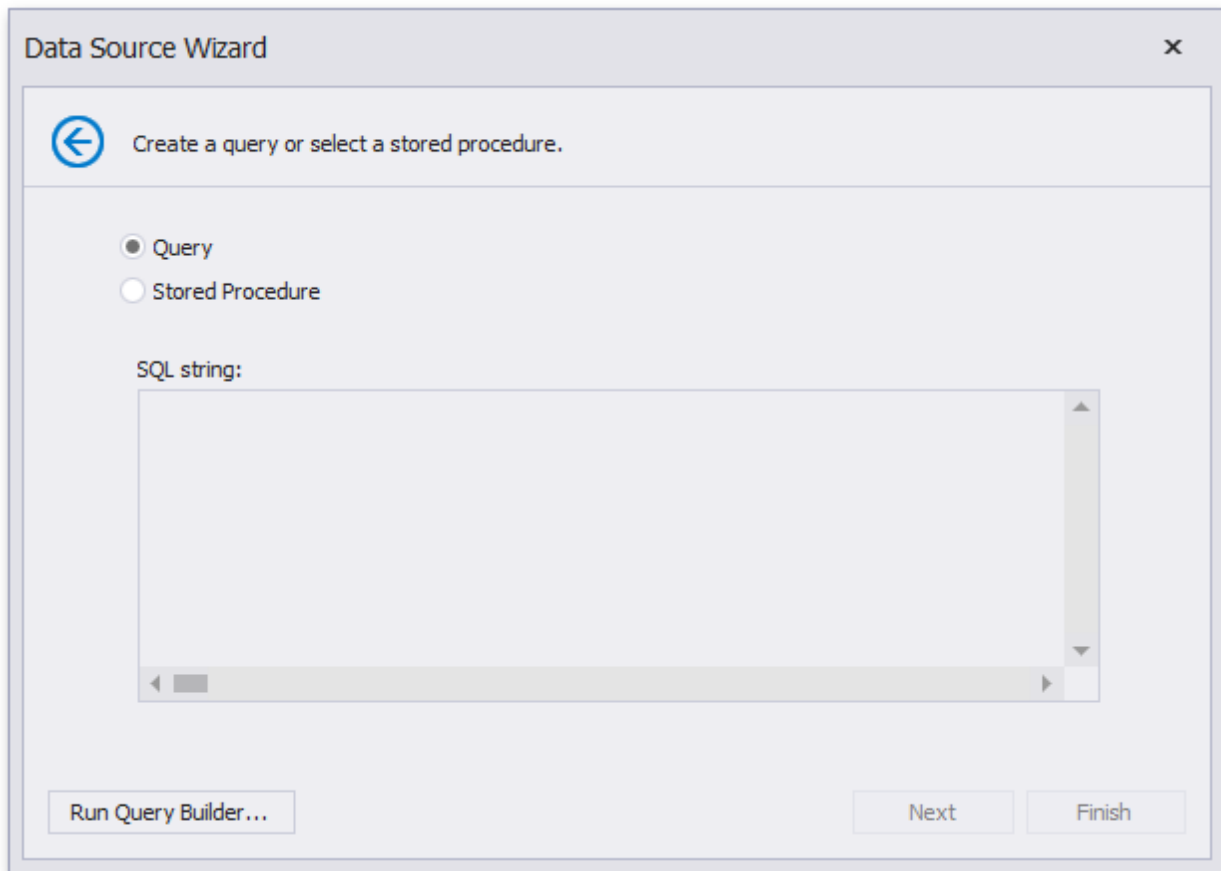
Database: Northwind

Next Finish

For instance, if you selected the **Microsoft SQL Server** data provider, the following options should be specified.

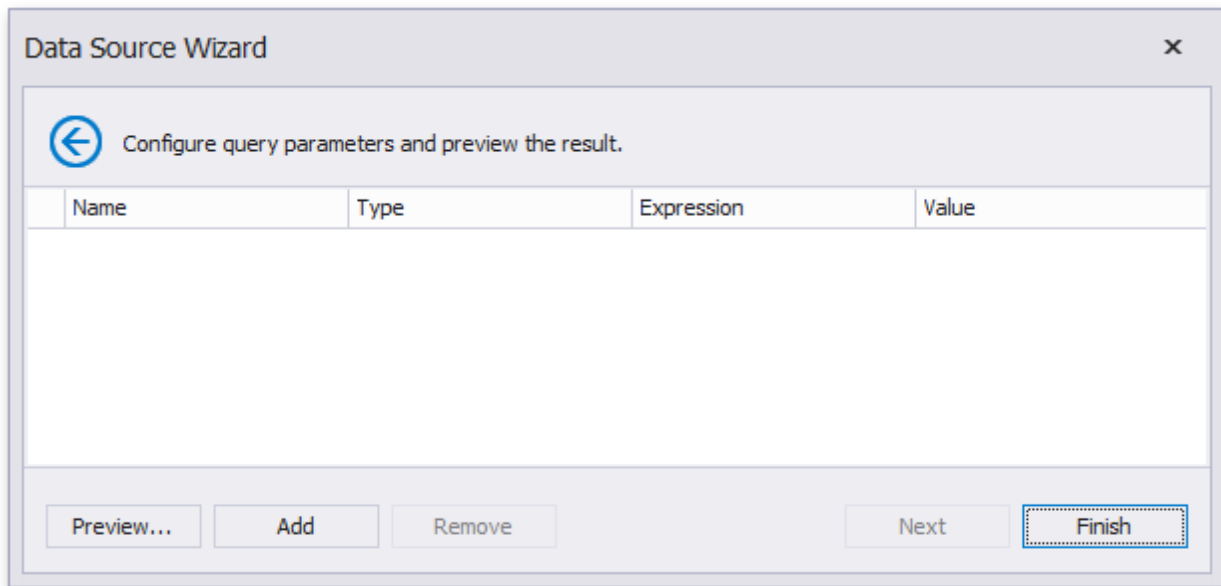
- **Server name**
Specify the name of the MS SQL server to which the connection should be established.
- **Authentication type**
Specify the authentication mode of the MS SQL Server. You can choose whether to use *Windows authentication* or *Server authentication*.
- **User name**
Specify the user name used to authenticate to the MS SQL server.
- **Password**
Specify the password used to authenticate to the MS SQL server.
- **Database**
Select the database that contains required data.

4. After you have specified the required connection parameters, click **Next** and specify how to select data from the database.



- Select the **Query** option and run the [Query Builder](#) by clicking the **Run Query Builder...** button. The Query Builder allows you to choose the required tables/columns visually and passes the resulting SQL query to the **SQL String** editor. Click **Finish** to create the data source.
- Select the **Stored Procedure** option to select one of the [stored procedures](#) from the database. Click **Next**.

5. On the final page, you can optionally add [query parameters](#) and [preview](#) data.



Click **Finish** to create the data source.

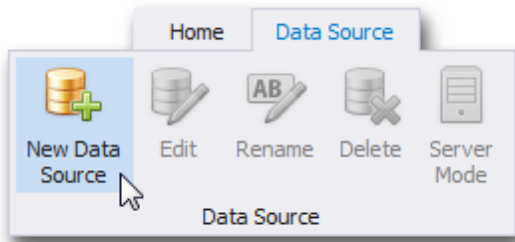
Connecting to OLAP cubes

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Connecting to OLAP cubes](#)

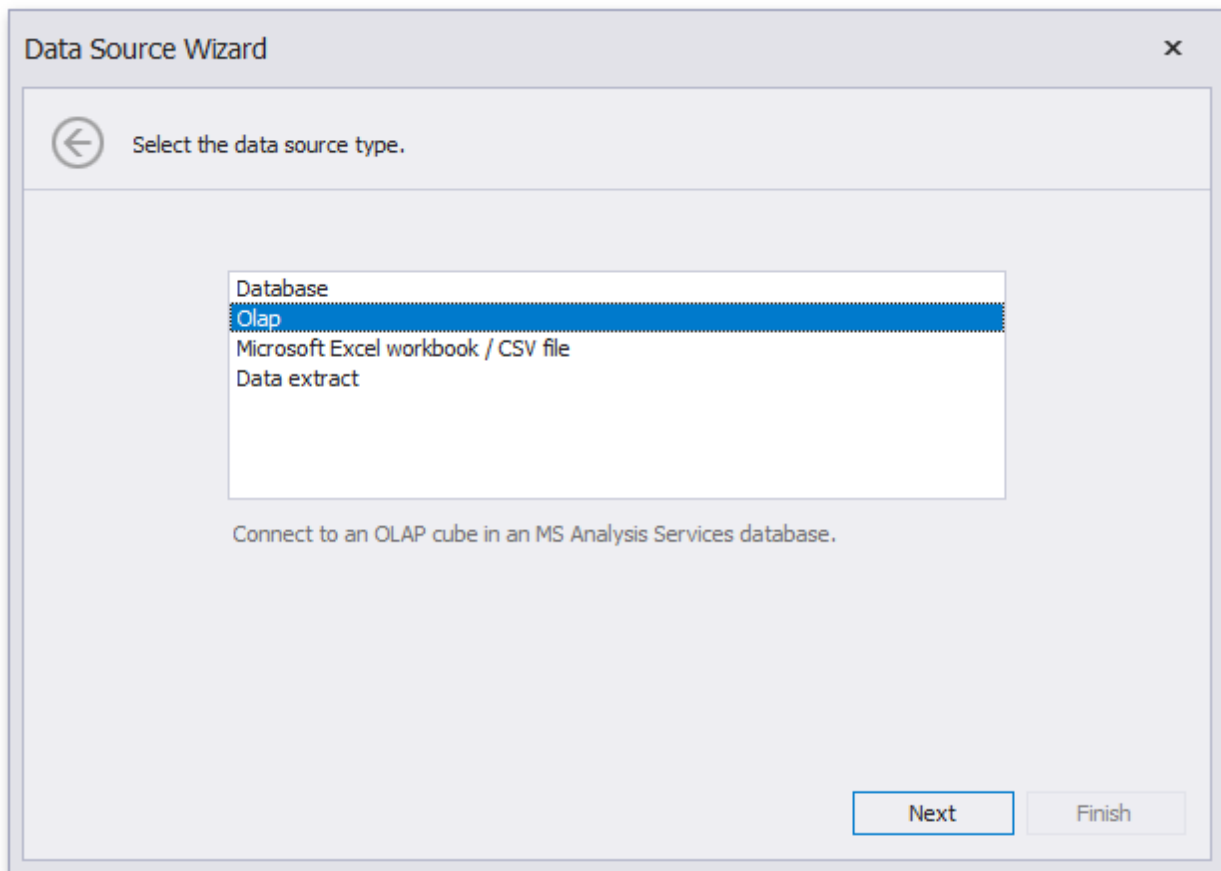
The Dashboard Designer provides the capability to connect to an OLAP cube in the Microsoft Analysis Services database using the **Data Source** wizard.

To connect to an OLAP cube in the Dashboard Designer, do the following steps.

1. Click the **New Data Source** button in the **Data Source** ribbon tab.



2. On the first page of the invoked **Data Source Wizard** dialog, select **Olap** and click **Next**.



3. On the next page, choose the required **Connection type**. The following types are available.

- [Server](#)
- [Local cube file](#)
- [Custom connection string](#)

Server

If you selected **Server**, the following options are available.

Data Source Wizard

Specify the connection properties.

Connection type: Server

Server name: local

UserId: TestUser

Password: ●●●●●●●●●●

Catalog: Adventure Works DW Standard Edition

Cube Name: Adventure Works

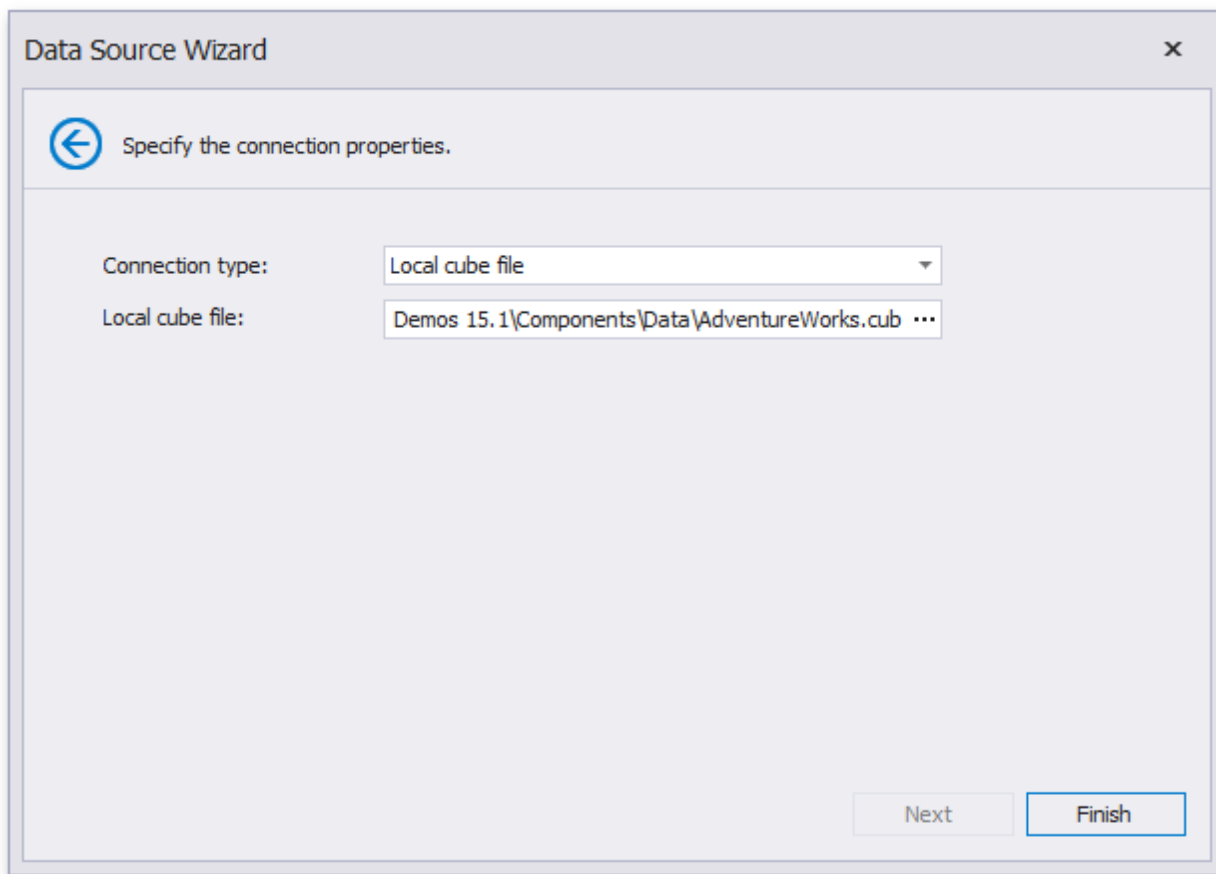
Next Finish

- **Server name**
Specify the name of the OLAP server to which the connection should be established.
- **UserId**
Specify the user name used to authenticate to the OLAP server.
- **Password**
Specify the password used to authenticate to the OLAP server.
- **Catalog**
Select a data catalog that contains cubes.
- **Cube Name**
Select a cube that provides OLAP data.

Click **Finish** to create a data source.

Local Cube File

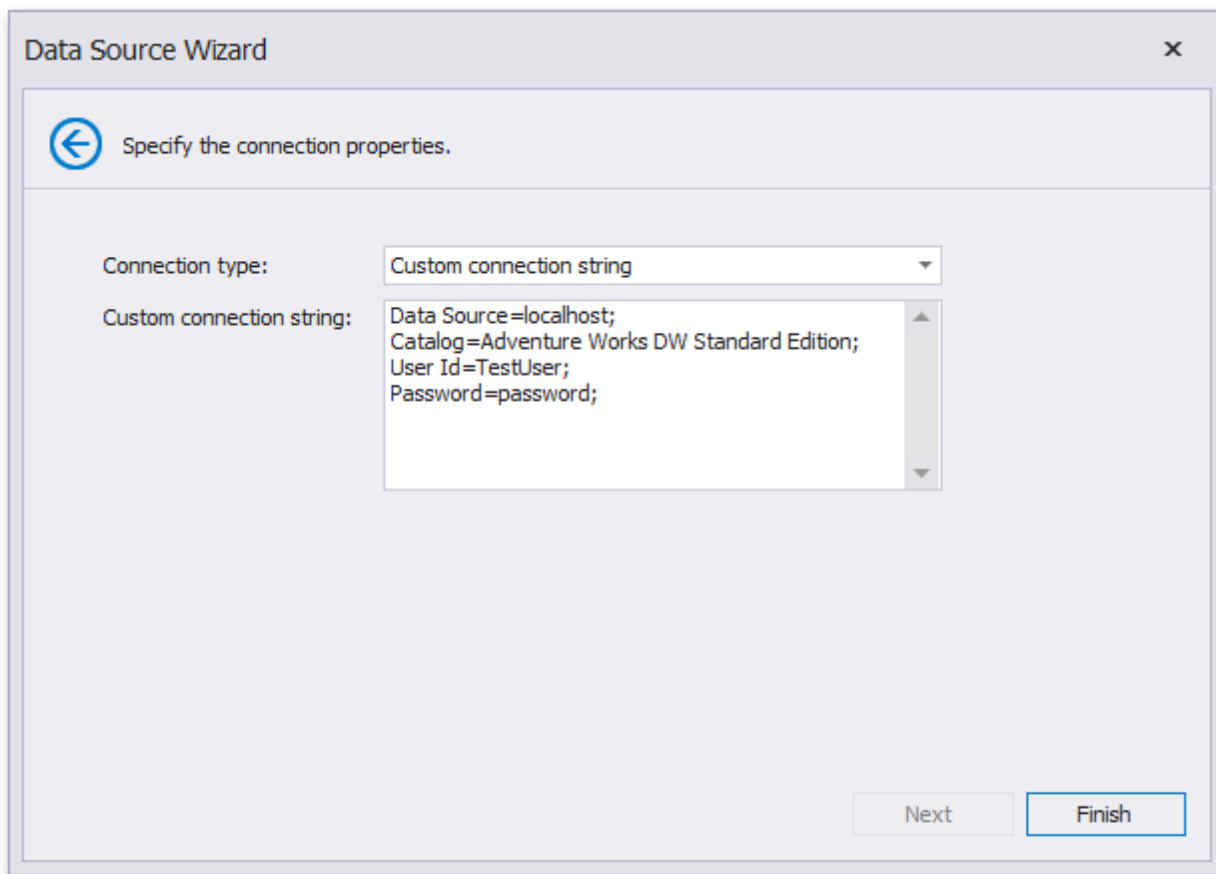
If you selected **Local cube file**, specify the path to the required OLAP cube. To locate the cube, click the ellipsis button next to the Database field.



Click **Finish** to create a data source.

Custom Connection String

If you selected **Custom connection string**, specify a connection string in the **Custom connection string** editor.



Click **Finish** to create a data source.

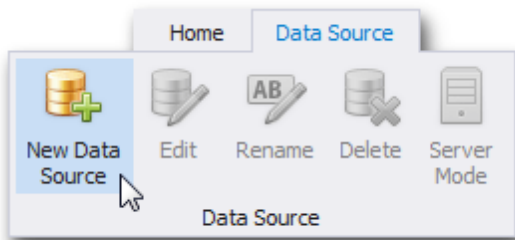
Binding to Microsoft Excel Workbooks

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Binding to Microsoft Excel Workbooks](#)

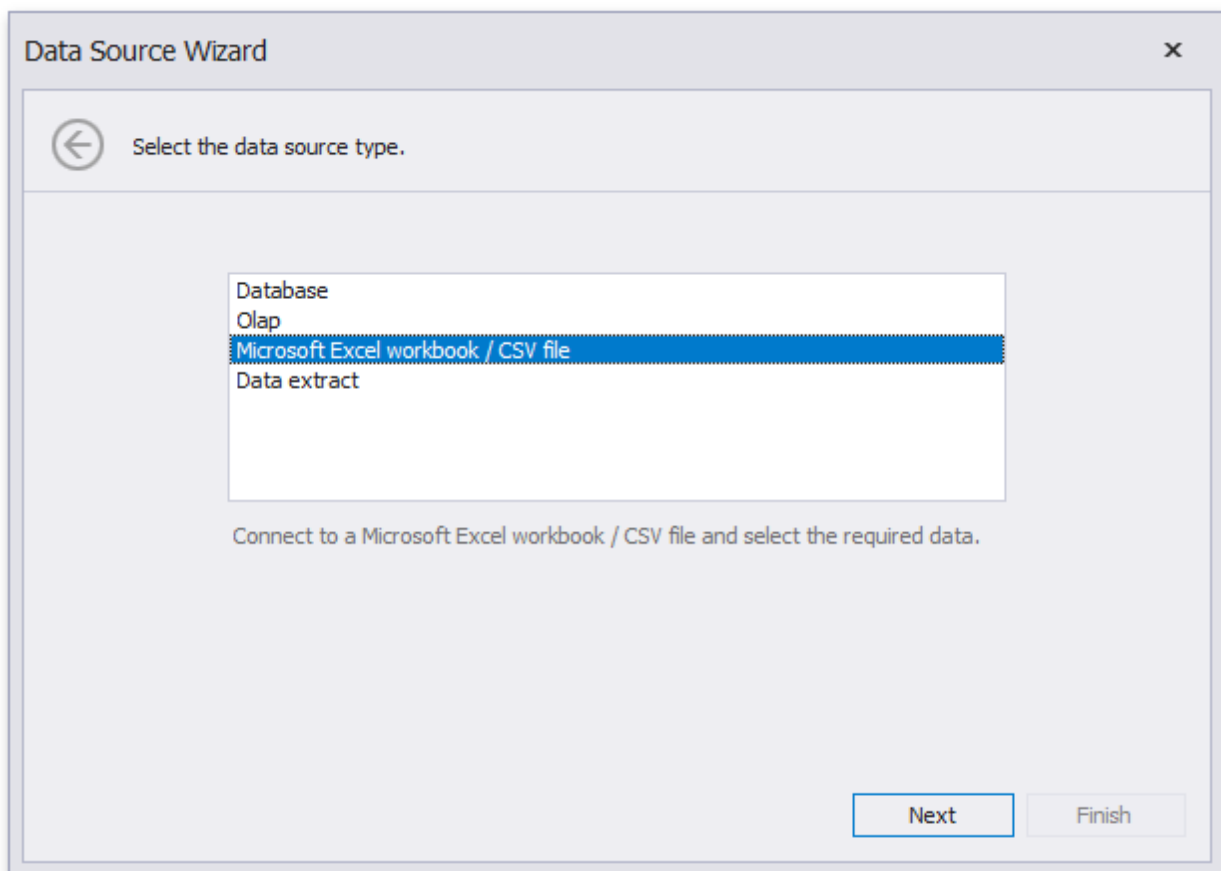
The Dashboard Designer allows you to select required data from Microsoft Excel workbooks (XLS, XLSX or XLSM). You can select all data from the specified worksheet or you can select the cell range referenced by the specified defined/table name.

To bind a dashboard to a Microsoft Excel workbook, do the following.

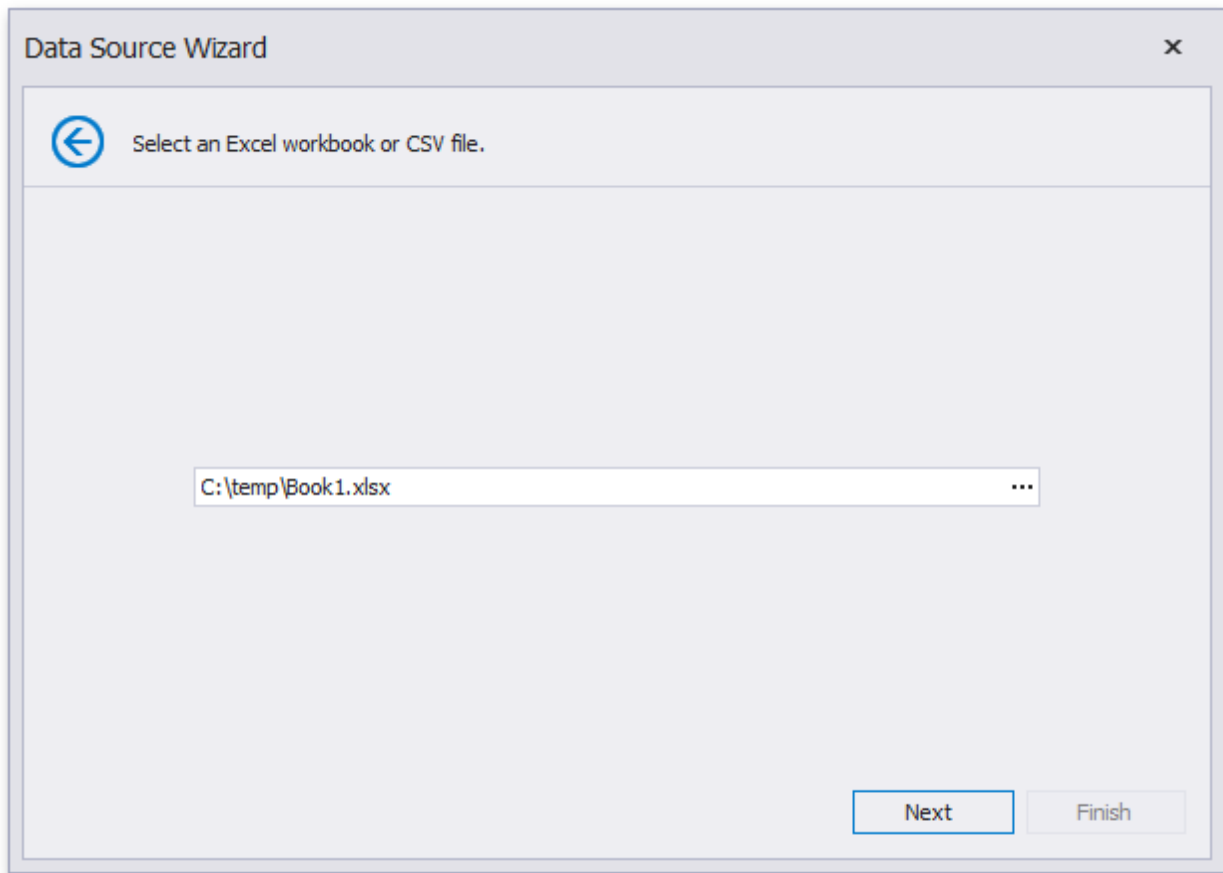
1. Click the **New Data Source** button in the **Data Source** ribbon tab.



2. On the first page of the invoked **Data Source Wizard** dialog, select **Microsoft Excel workbook / CSV file** and click **Next**.



3. On the next page, locate the required workbook by clicking an ellipsis button and selecting the file.



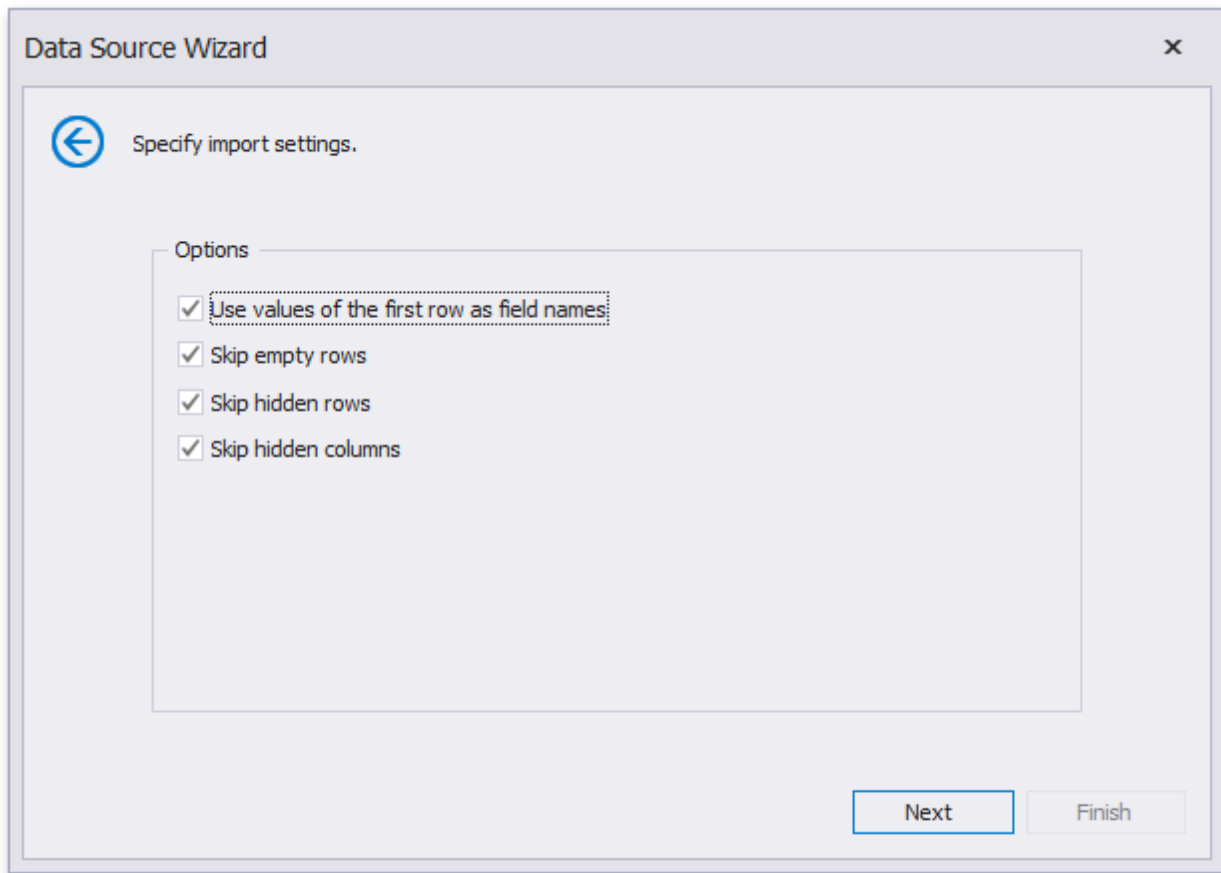
Click **Next**.

Note

If the workbook is protected by a password, the following window will be invoked.

Specify a password in the **Password** field and click **OK**. Note that if you enable the **Save password** flag, the password will be saved to a [dashboard definition](#) as plain text.

4. Then, specify import settings used to extract data from the workbook.

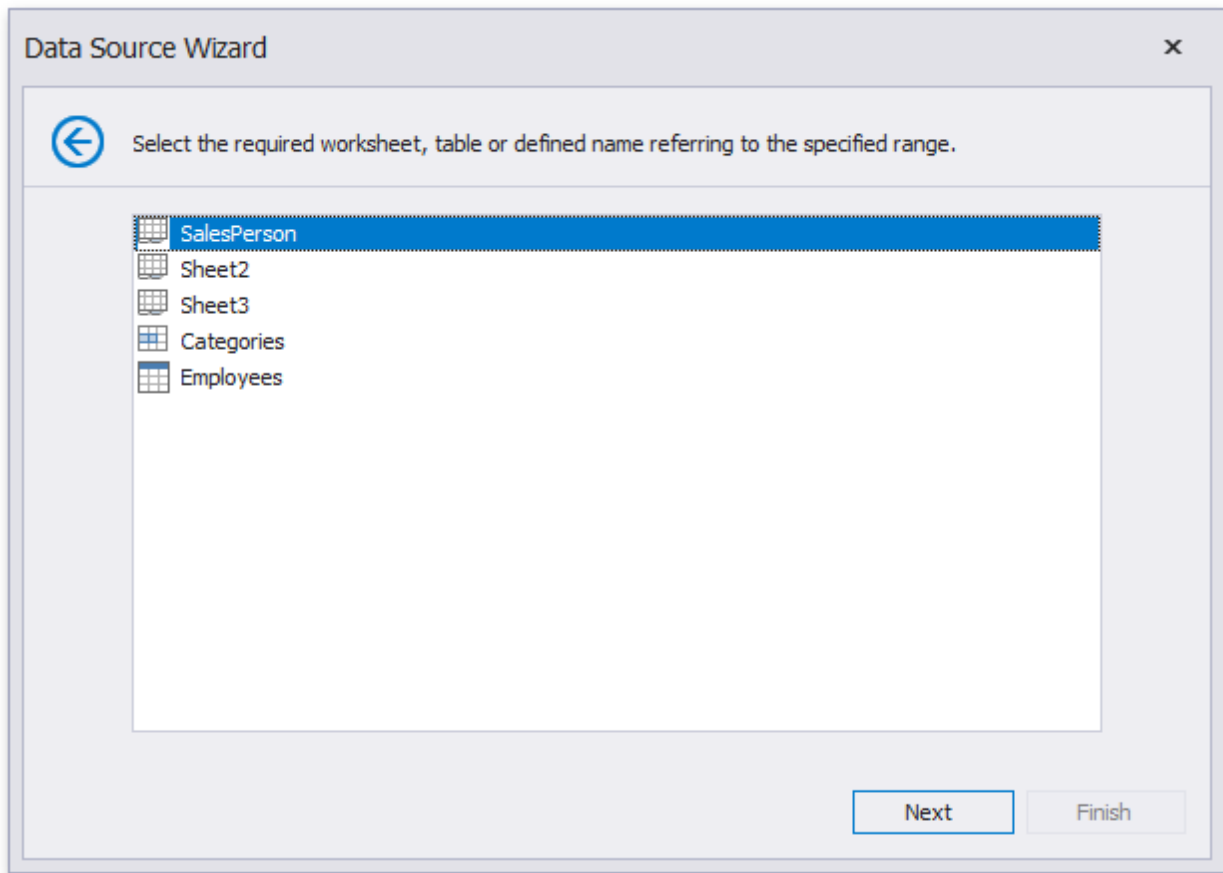


The following options can be specified.

- **Use values of the first row as field names** - Specifies whether to use the values of the first row as field names. If you disable this option, field names will be generated automatically.
- **Skip empty rows** - Specifies whether or not to include the empty rows into the resulting data source.
- **Skip hidden rows** - Specifies whether to ignore hidden rows when importing data to a data source.
- **Skip hidden columns** - Specifies whether to ignore hidden columns when importing data to a data source.

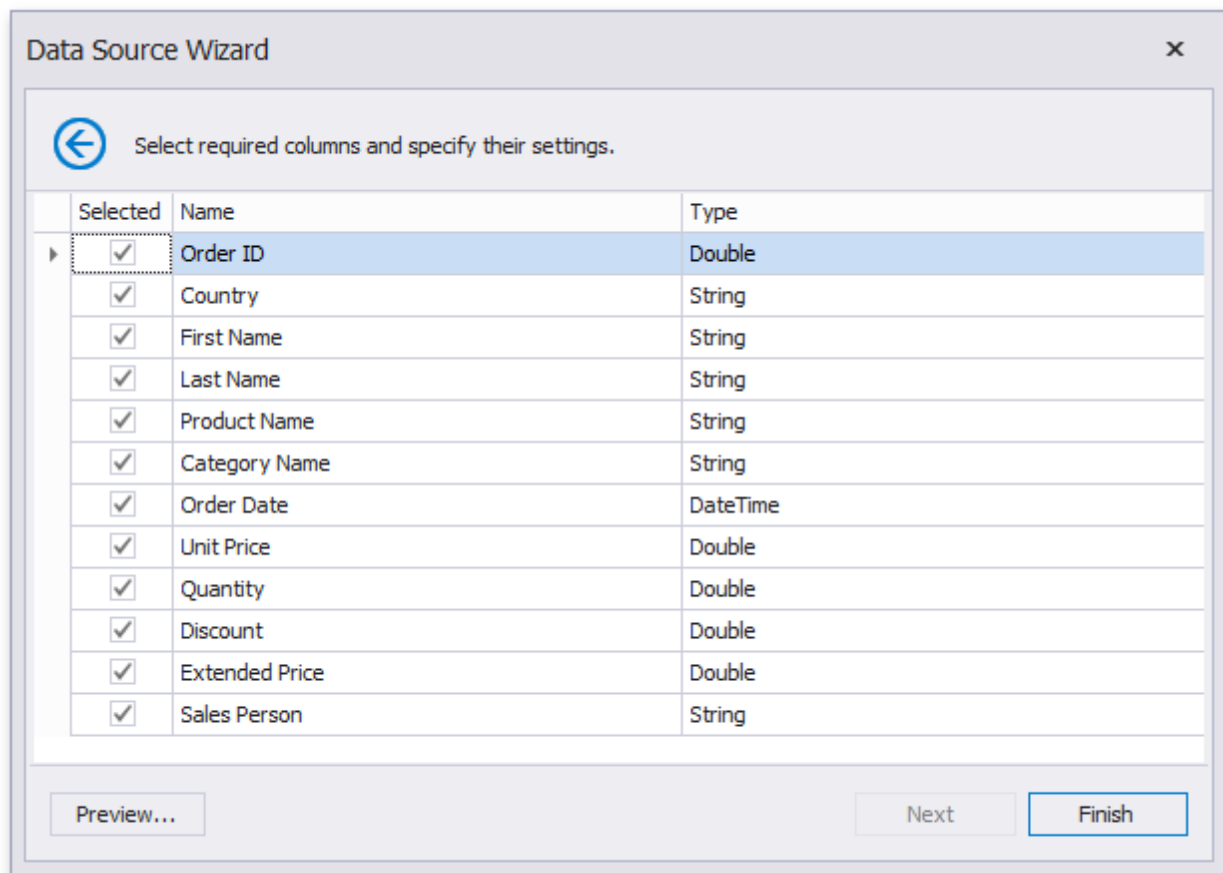
Click **Next**.

5. On the next page, you can select the worksheet containing the required data, the table or the defined name referring to the specified cell range.



Click **Next**.

6. On the final page, you can select columns to be included to a data source and specify their settings. The **Name** column allows you to specify the column name while **Type** allows you to specify its type.



Click **Finish** to create a data source. This creates the data source and displays its fields in the [Data Source Browser](#).

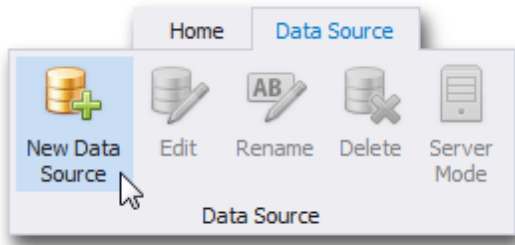
Binding to CSV Files

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Binding to CSV Files](#)

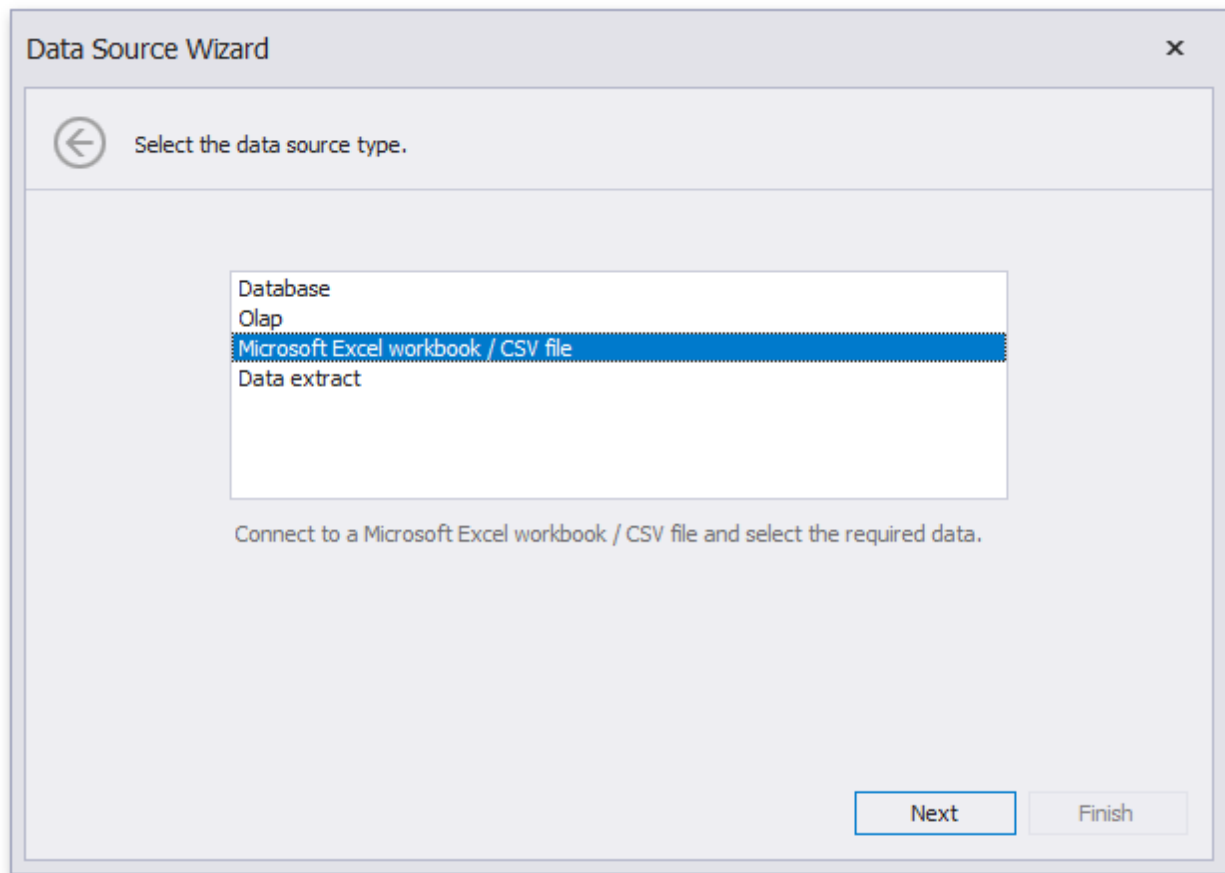
The Dashboard Designer allows you to select data from CSV files.

To bind a dashboard to a CSV file, do the following.

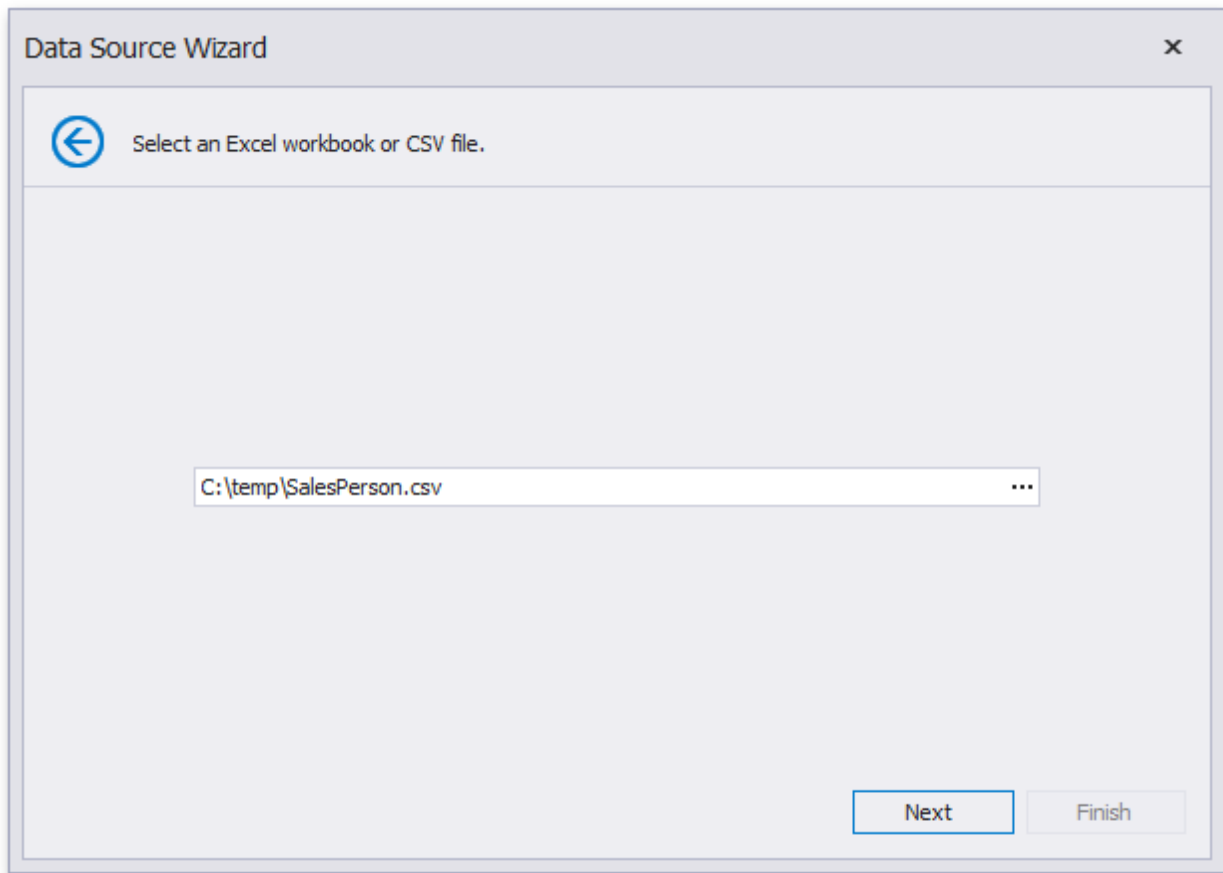
1. Click the **New Data Source** button in the **Data Source** ribbon tab.



2. On the first page of the invoked **Data Source Wizard** dialog, select the **Microsoft Excel workbook / CSV file** and click **Next**.

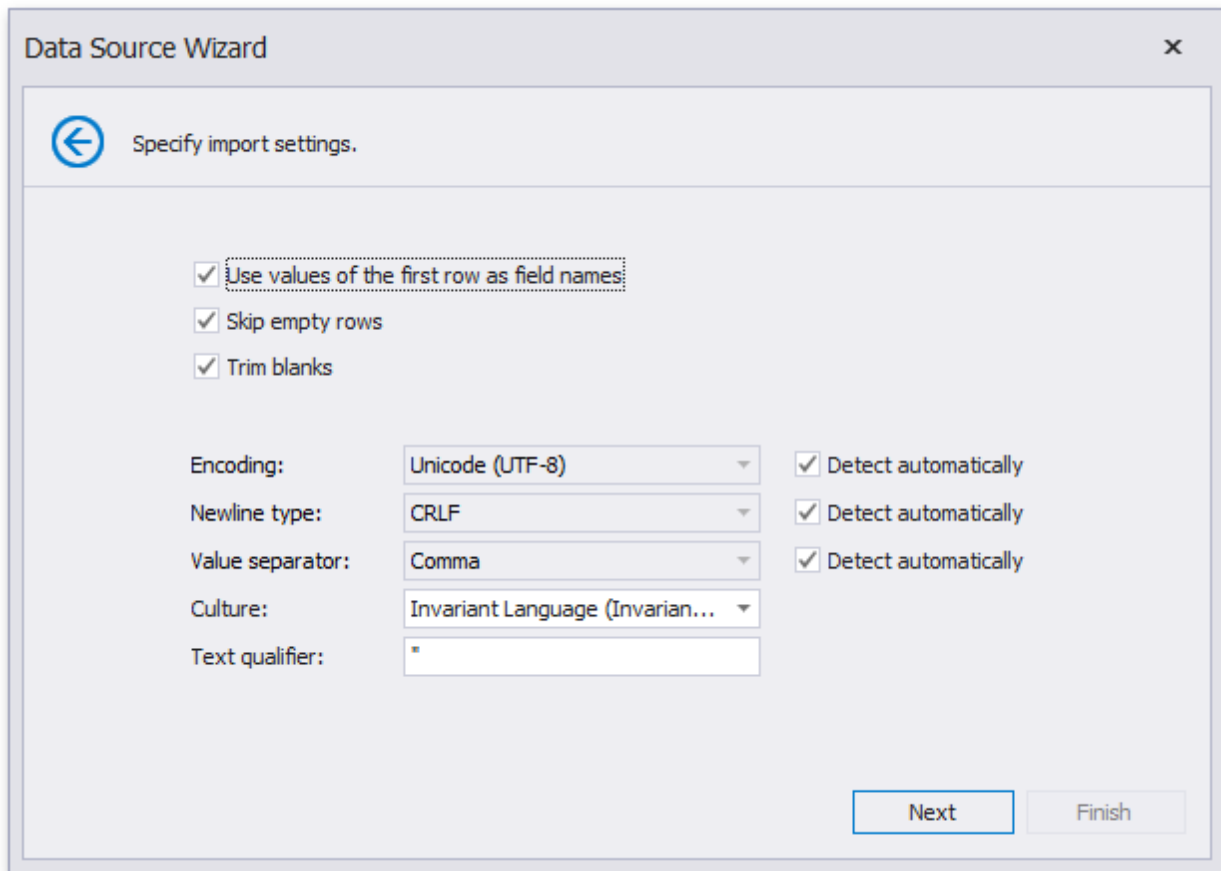


3. On the next page, locate the required CSV file by clicking the ellipsis button and selecting the file.



Click **Next**.

4. Then, specify import settings used to extract data from the CSV file.

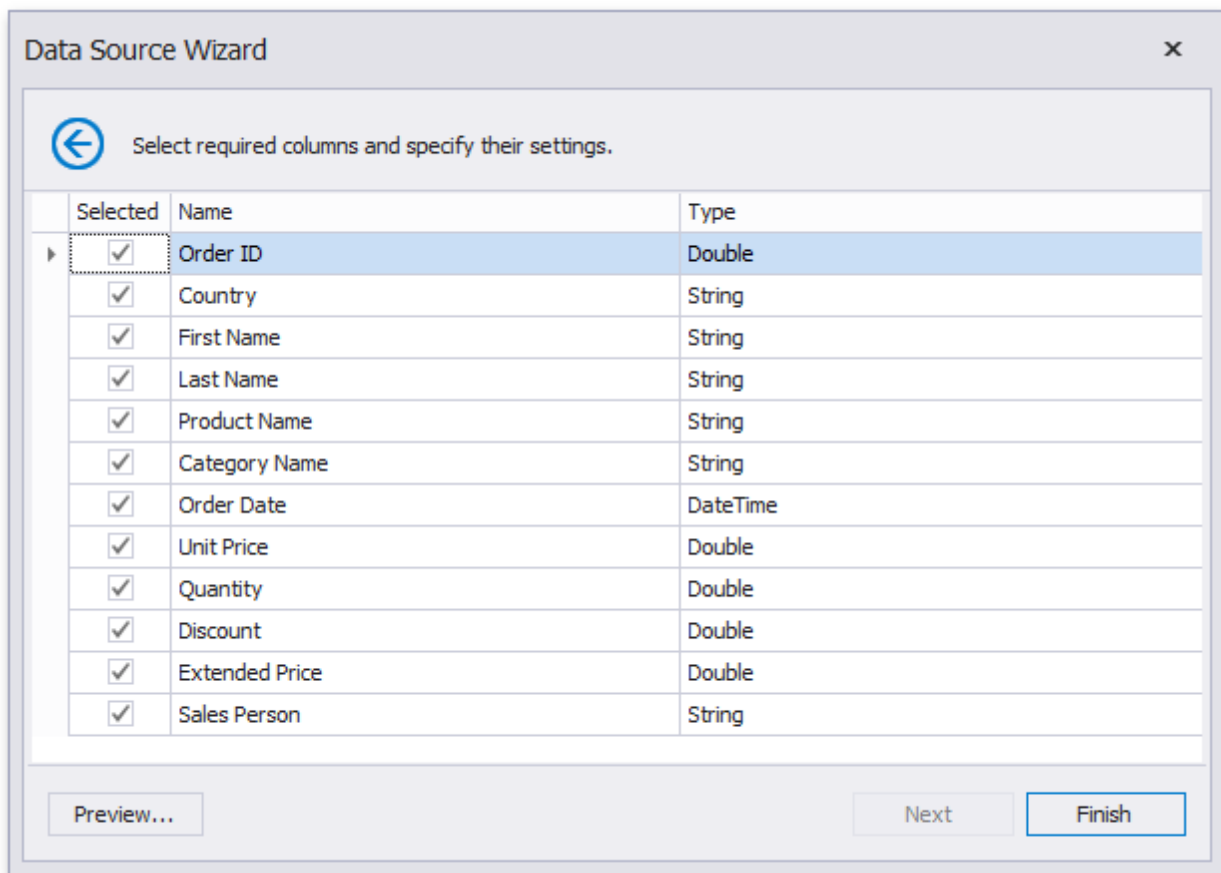


The following options can be specified.

- **Use values of the first row as field names** - Specifies whether to use the values of the first row as field names. If you disable this option, field names will be generated automatically.
- **Skip empty rows** - Specifies whether or not to include the empty rows into the resulting data source.
- **Trim Blanks** - Specifies whether to remove all leading and trailing white-space characters from each value in the CSV document.
- **Encoding** - Specifies the character encoding of the CSV document. You can use the **Detect automatically** option to specify whether character encoding is automatically determined.
- **Newline type** - Specifies the character used to identify a new line in a CSV document. You can use the **Detect automatically** option to specify whether the character used to identify a new line is automatically determined.
- **Value separator** - Specifies a character used to separate values in a CSV document. You can use the **Detect automatically** option to specify whether the character used to separate values in a CSV document is determined automatically.
- **Culture** - Specifies the culture information used to parse the data being imported.
- **Text Qualifier** - Specifies the character that encloses values in the CSV document.

Click **Next**.

5. On the final page, you can select columns to be included to a data source and specify their settings. The **Name** column allows you to specify the column name while **Type** allows you to specify its type.



Click **Finish** to create a data source. This creates the data source and displays its fields in the [Data Source Browser](#).

Binding to Extract Data Sources

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Binding to Extract Data Sources](#)

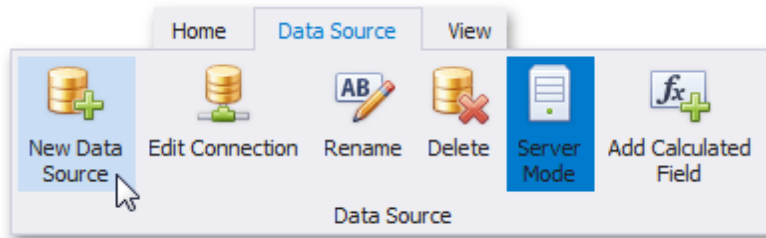
The Dashboard Designer allows you to create a *data extract* that is a compressed snapshot of data obtained from the existing data source. This data is saved to a local file and can be updated from the original data source at any time.

Note

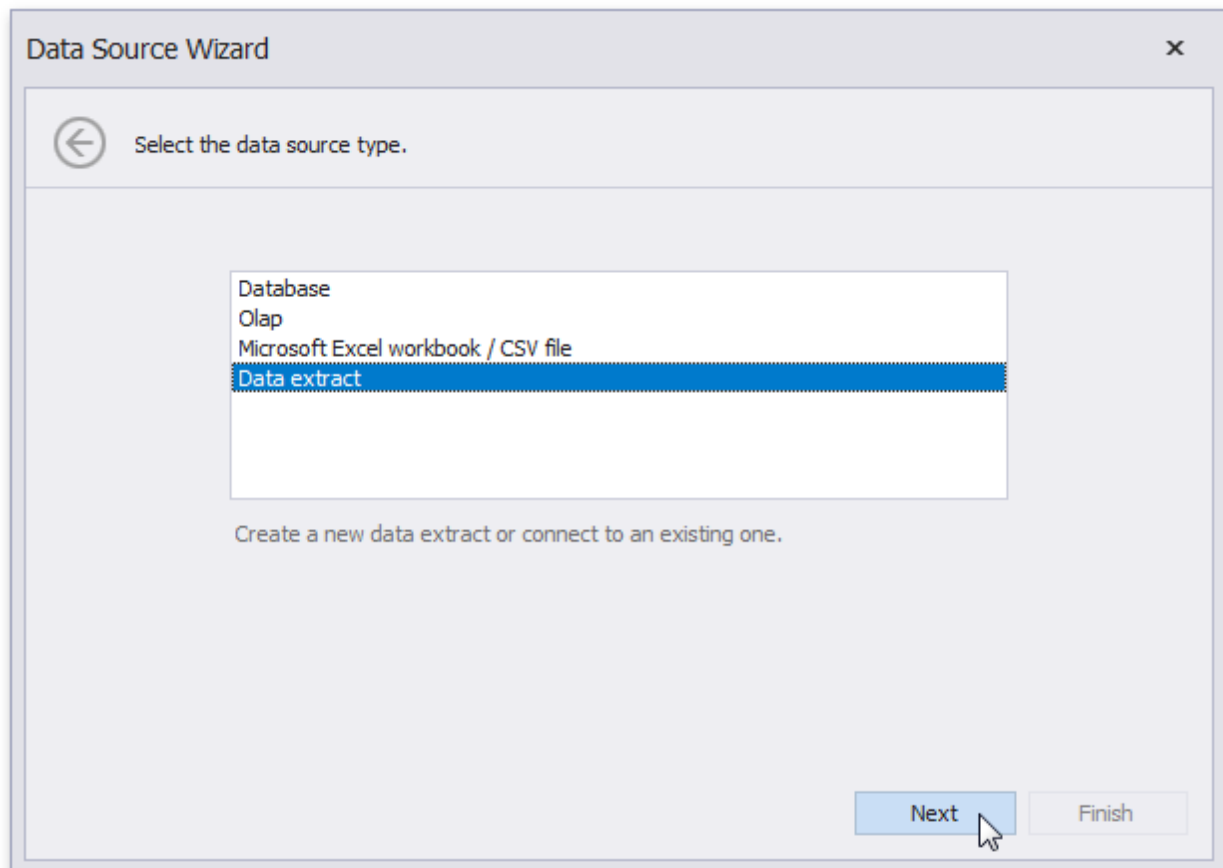
Note that data extracts cannot be created for the [OLAP data sources](#).

To create a new data extract from the existing data source, perform the following steps.

1. Click the **New Data Source** button in the **Data Source** ribbon tab.



2. On the first page of the invoked **Data Source Wizard** dialog, select **Data extract** and click **Next**.



3. On the next page, select whether to create a new data extract or establish a connection to an existing one.

Data Source Wizard

← Create a new data extract or connect to an existing one

Create a new data extract from the existing data source

Note that the data source copy will be stored along with the created extract.

Data Source: SQL Data Source 1

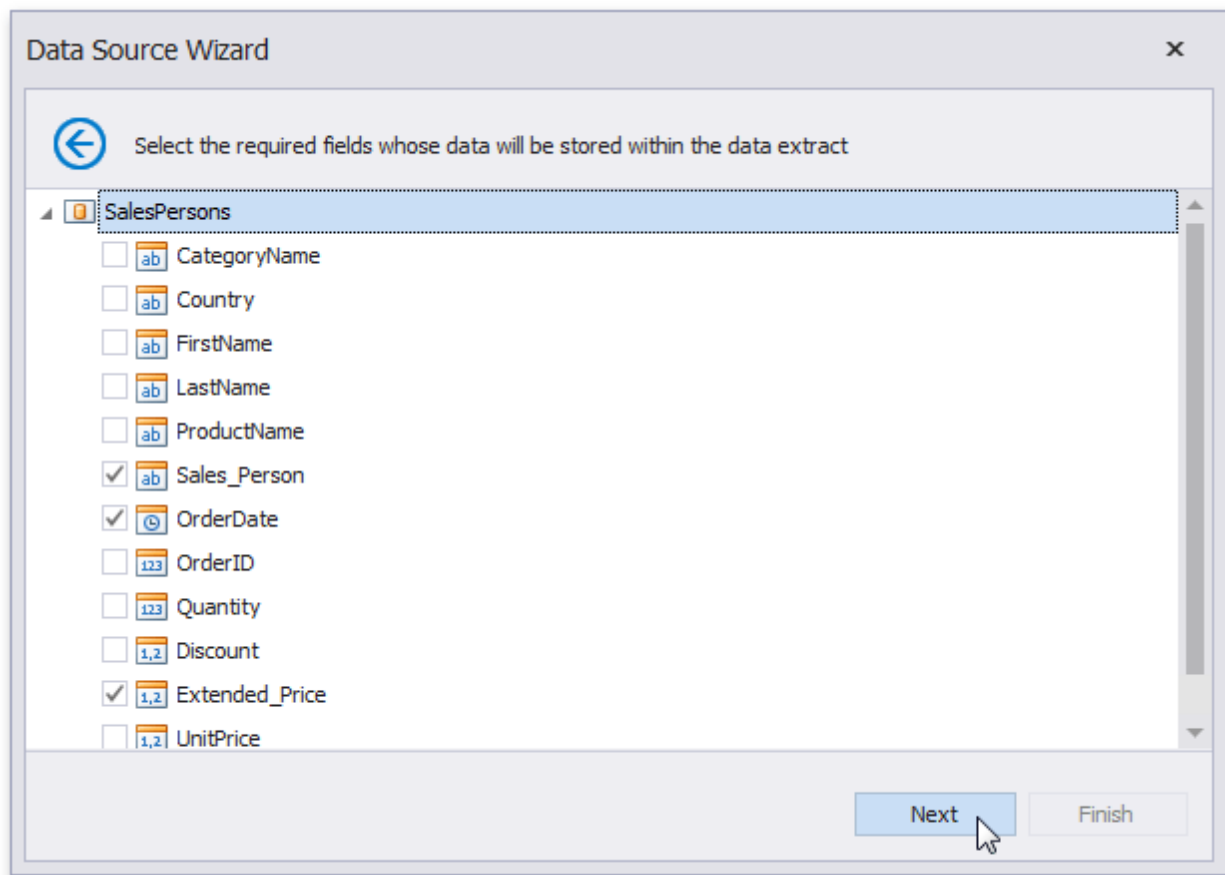
Data Member: SalesPerson

Load an existing data extract from a file

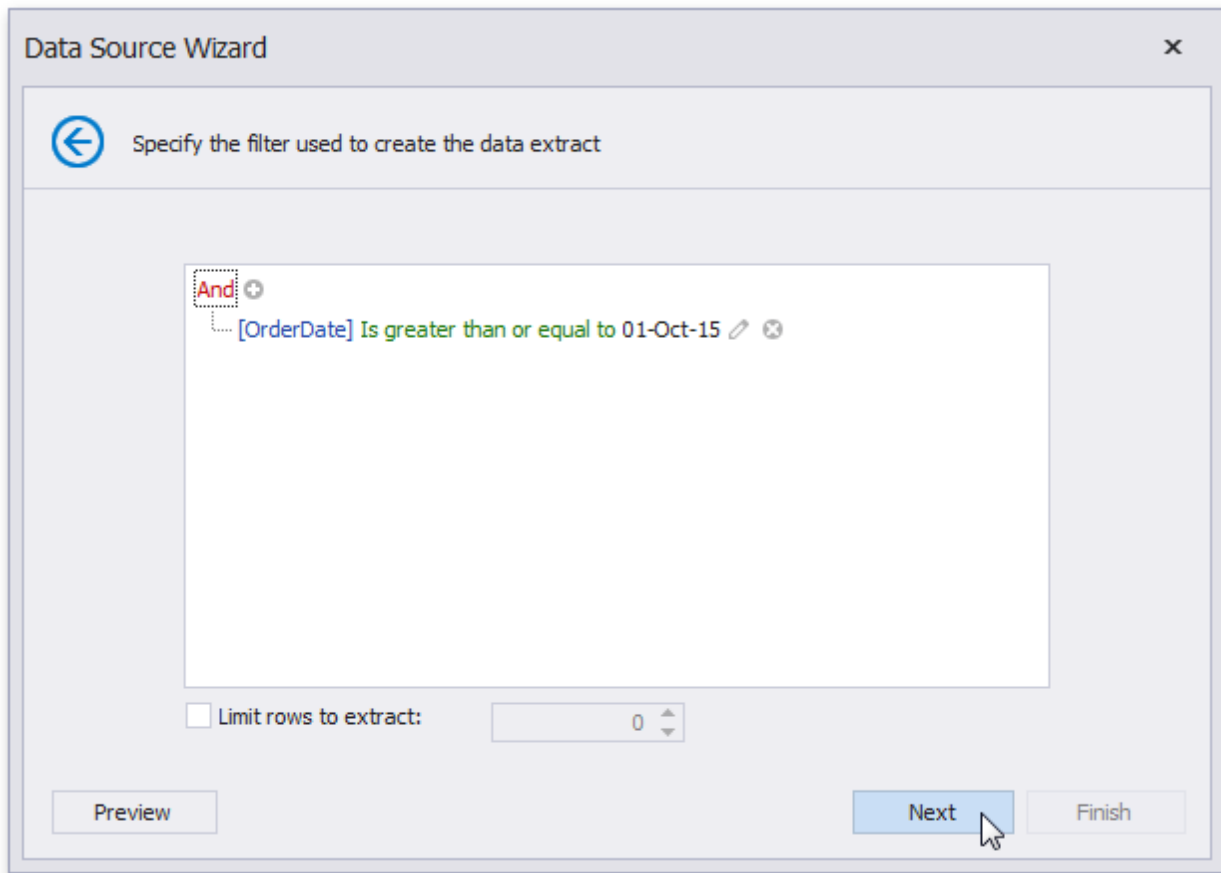
File Name:

Next Finish

- To create a new data extract, select **Create a new data extract from the existing data source** and specify the required **Data Source** and **Data Member**. Click **Next**.
 - To establish a connection to an existing data extract, select **Load an existing data extract from a file** and locate the required ***.dat** file. Click **Finish**.
4. **(Conditional)** The next page only appears if you are creating the data extract based on the Entity Framework or Object data sources, and allows you to select the required fields.



5. On the next page, you can specify the filter used to extract data. To learn how to specify the filter criteria, see [Filter Data via the Filter Editor](#).



You can also limit the number of extracted rows by enabling the **Limit rows to extract** option and specifying the required number of rows. Click **Next**.

Note

Use the **Preview** button to see the data that will be placed into the resulting data extract.

6. **(Conditional)** The next page only appears if the original data source contains [parameters](#) (for instance, the [SQL query is filtered](#) using a dashboard parameter).

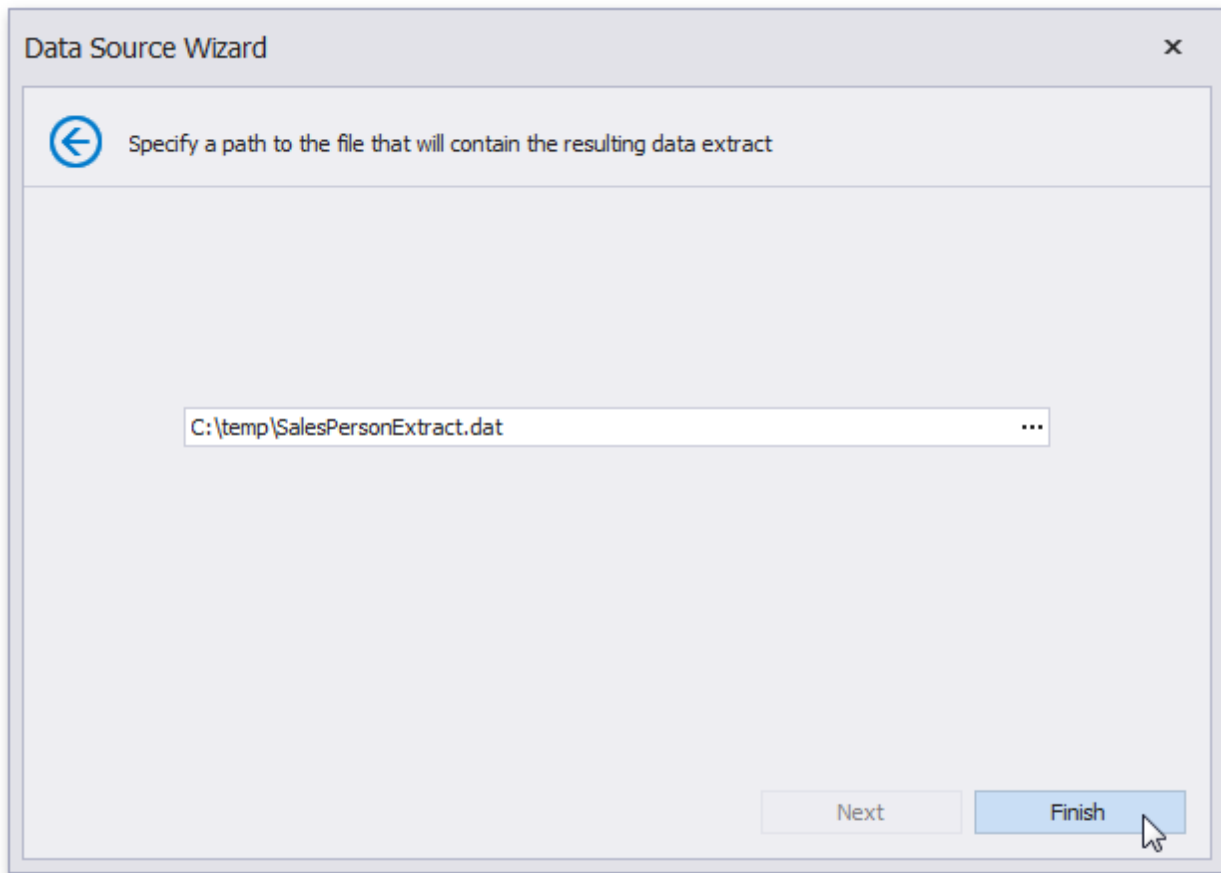
Data Source Wizard

Specify the parameter value(s) used to create a data extract

Parameter Name	Value
Select a category:	Beverages

Preview Next Finish

7. On the final page, specify a path to the file that will contain the resulting data extract.



Click **Finish**. This creates the data extract and displays its fields in the [Data Source Browser](#). You can use this data extract as a regular data source.

Data Processing Modes

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Providing Data](#) > [Data Processing Modes](#)

DevExpress Dashboard supports two data processing modes that are used to perform data-related operations (such as grouping, filtering, etc.).

- In **server mode**, data-related operations are performed on the database server side. For instance, when you apply [filtering](#) to a dashboard item, the Dashboard Designer requests the required data automatically by sending a query containing a corresponding SELECT statement with the specified WHERE clause.
- In **client mode**, data-related operations are performed on the workstation side. In this mode, a compressed snapshot of aggregated data is loaded into a workstation memory. This reduces memory consumption and improves the speed of client-side data shaping operations using several techniques: data compression, various data grouping and multi-threading algorithms, etc.

Tip

Note that performance in **server/client** modes depends on multiple factors such as database structure, server workload, etc. To decide which mode to use, test both.

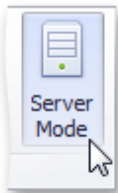
Note

In [OLAP](#) mode, data processing is performed using the *server mode* specified for the Analysis Services instance. To learn more, see [Determine the Server Mode of an Analysis Services Instance](#).

Change Data Processing Mode

Different data source types allow you to manage the current data processing mode in different ways.

- For [SQL data sources](#), you can switch between data processing modes manually. To enable or disable **server mode** for the [selected](#) data source, use the **Server Mode** button located on the **Data Source** ribbon tab.



Server mode is supported for the SQL data sources created using the Data Source wizard and supplied with data using the [Query Builder](#).

- [Excel Data Source](#) supports **client mode** only.
- [Extract Data Source](#) works in **client mode**.

Server Mode Limitations

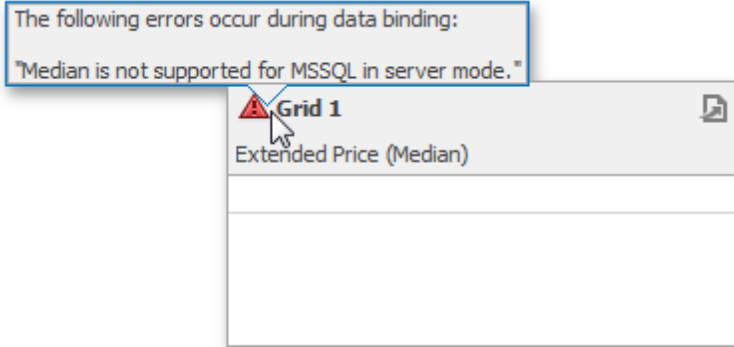
In **server mode**, the Dashboard does not have simultaneous access to bound data in its entirety. This imposes some limitations.


- [Stored procedures](#) are not supported in server mode.
- Stored procedures executed using custom SQL are not supported in server mode.
- Some [calculated fields](#) cannot be evaluated in server mode.
- The [Count Distinct](#) summary function is not supported for the following database engines:
 - Microsoft Access
 - Microsoft SQL Server CE
- The [Median](#) summary function is supported for the Oracle data provider only.
- The [Bound Image](#) and [Grid](#) dashboard items cannot display images from the following types of databases:
 - Microsoft SQL Server
 - MySQL

- PostgreSQL

Data Processing Errors

The Dashboard Designer provides the capability to display errors that occurred during data processing operations (such as changing measure [summary types](#), [calculation](#) errors, etc.). For instance, the [Grid](#) below shows an error when the summary type of the *Extended Price* measure is set to [Median](#) in server mode.



To see the error message, hover the mouse pointer over the  icon.

Working with Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#)

The topics in this section describe how to work with data in a [connected](#) data source.

This section contains the following topics.

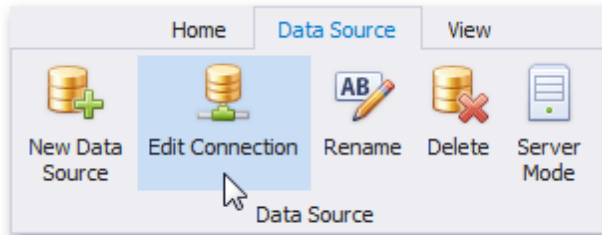
- [Edit Connection Parameters](#)
- [Using the Query Builder](#)
- [Using the Query Editor](#)
- [Manage SQL Queries](#)
- [Filter Queries](#)
- [Pass Query Parameters](#)
- [Stored Procedures](#)
- [Preview Data](#)
- [Creating Calculated Fields](#)

Edit Connection Parameters

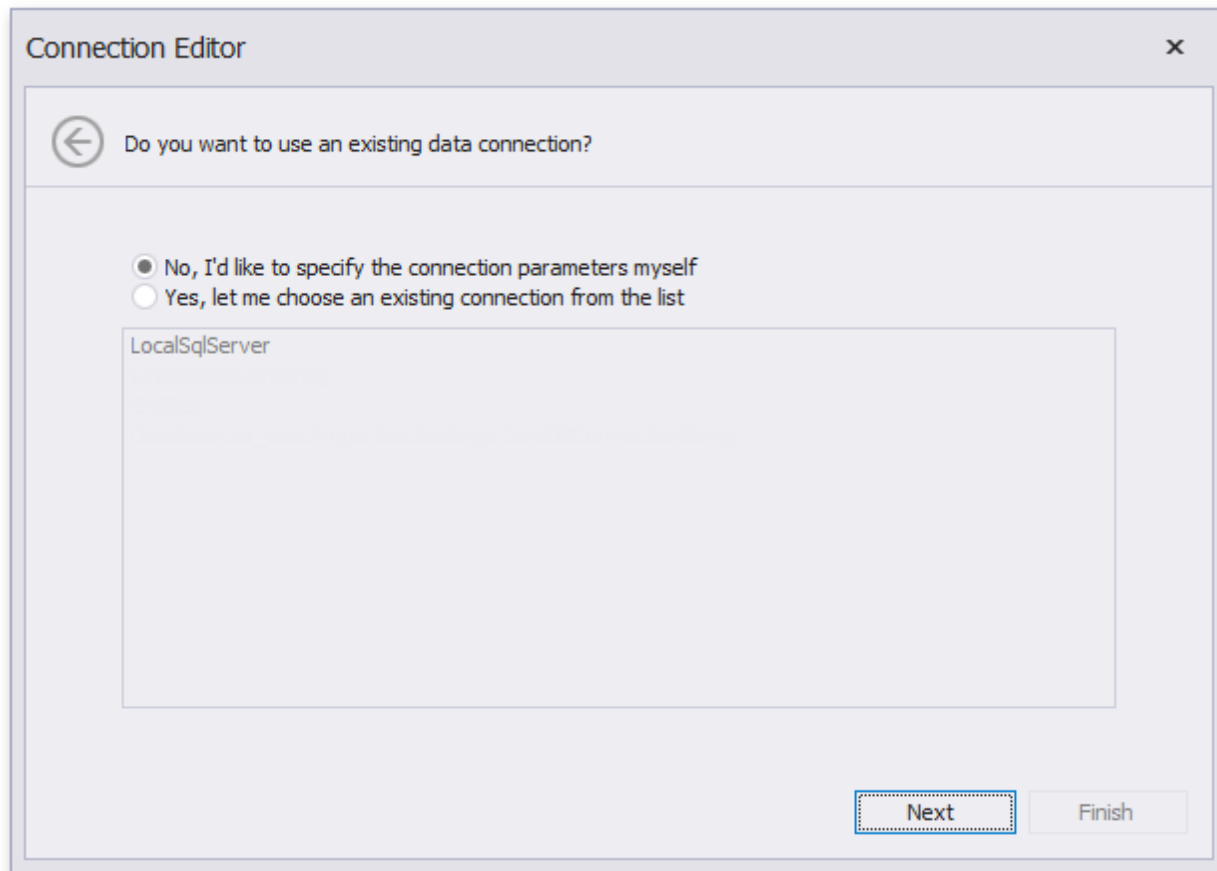
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Edit Connection Parameters](#)

After you [connected](#) to the data store and selected the required data, you can edit the connection parameters used to establish a connection.

To edit connection parameters for the selected data source, click the **Edit Connection** button in the **Data Source** ribbon tab.




In the invoked **Connection Editor** dialog, click **Next**.



On the next page, you can specify new connection parameters.

Connection Editor ×

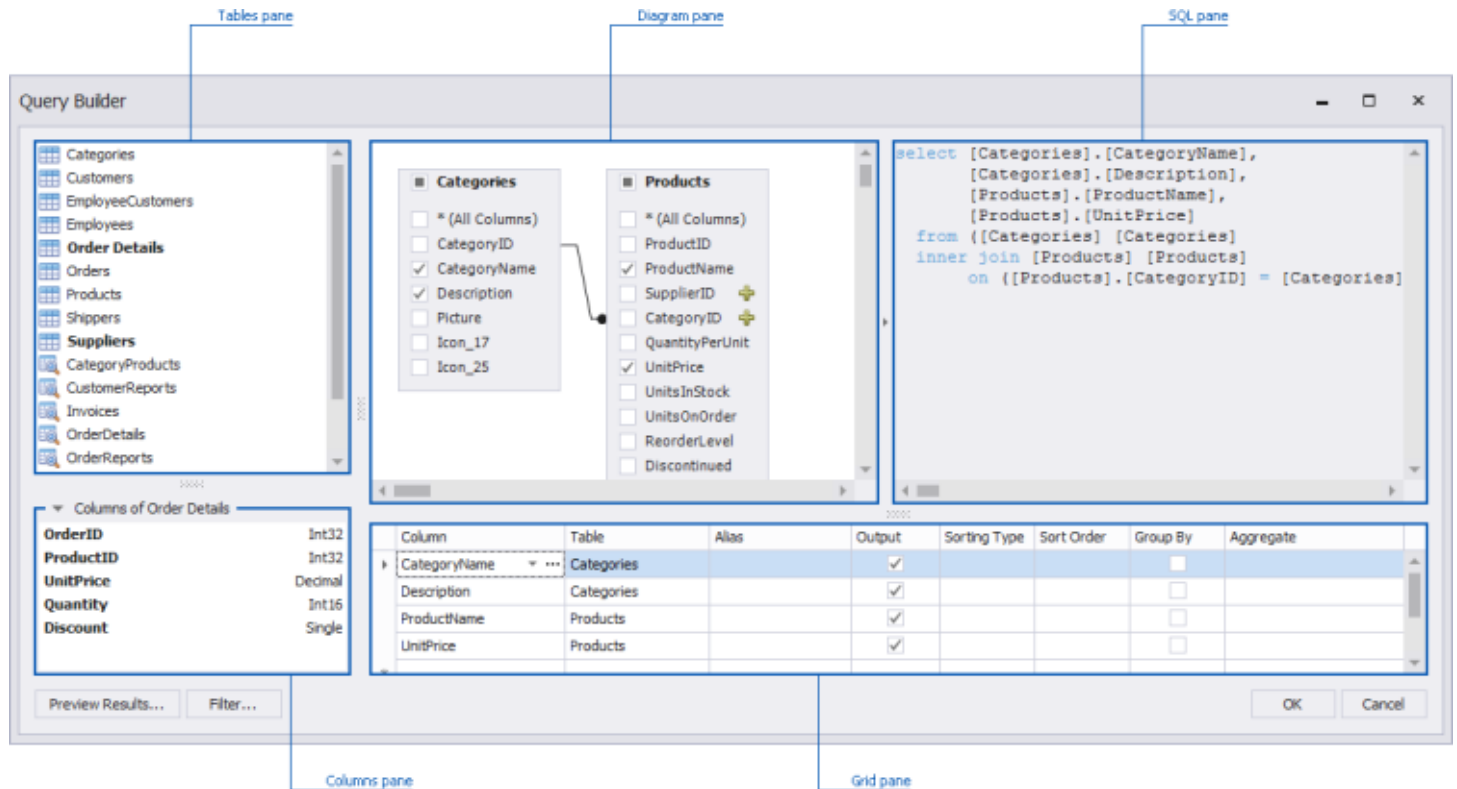
 Select the data provider and specify the connection properties.

Provider:	Microsoft SQL Server
Server name:	localhost
Authentication type:	Windows authentication
User name:	
Password:	
Database:	Northwind

Using the Query Builder

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Using the Query Builder](#)

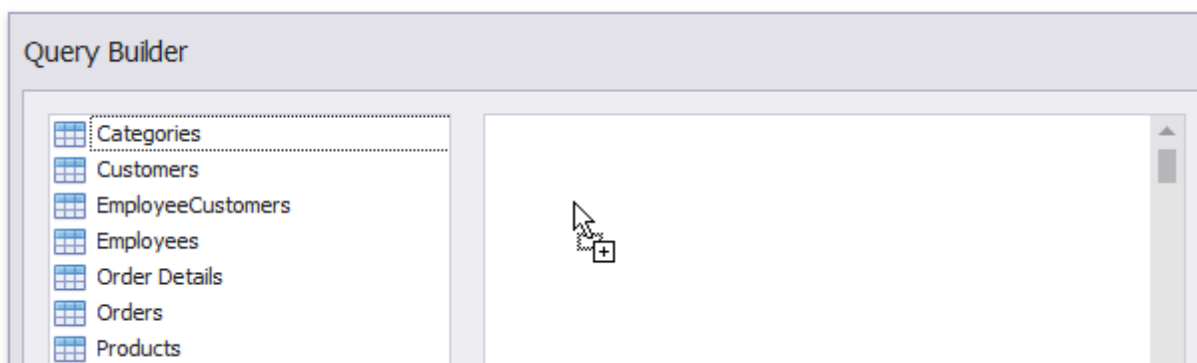
In the **Query Builder** dialog, you can add data tables and views to the data source, and select which columns to include. The Query Builder automatically joins the related tables, so all you need to do is drag-and-drop.



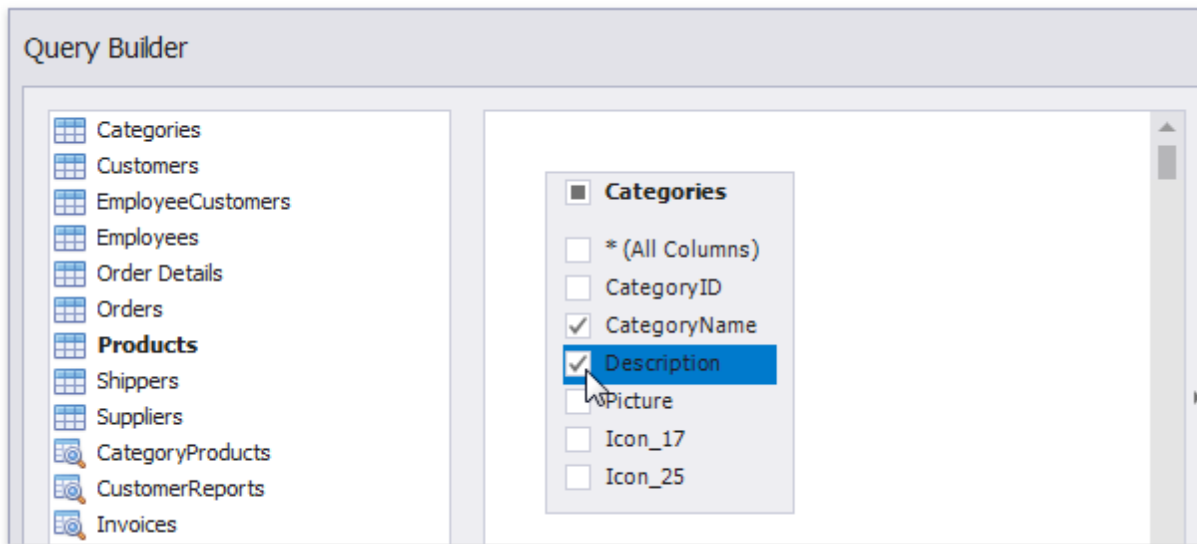
- [Add Tables](#)
- [Join Tables](#)
- [Edit Column Settings](#)
- [Filter Data](#)
- [Customize SQL Query](#)
- [Preview Data](#)

Add Tables

To add the required tables/views to a data source, double-click the table (or view) or drag-and-drop it from the **Tables** pane onto the **Diagram** pane.

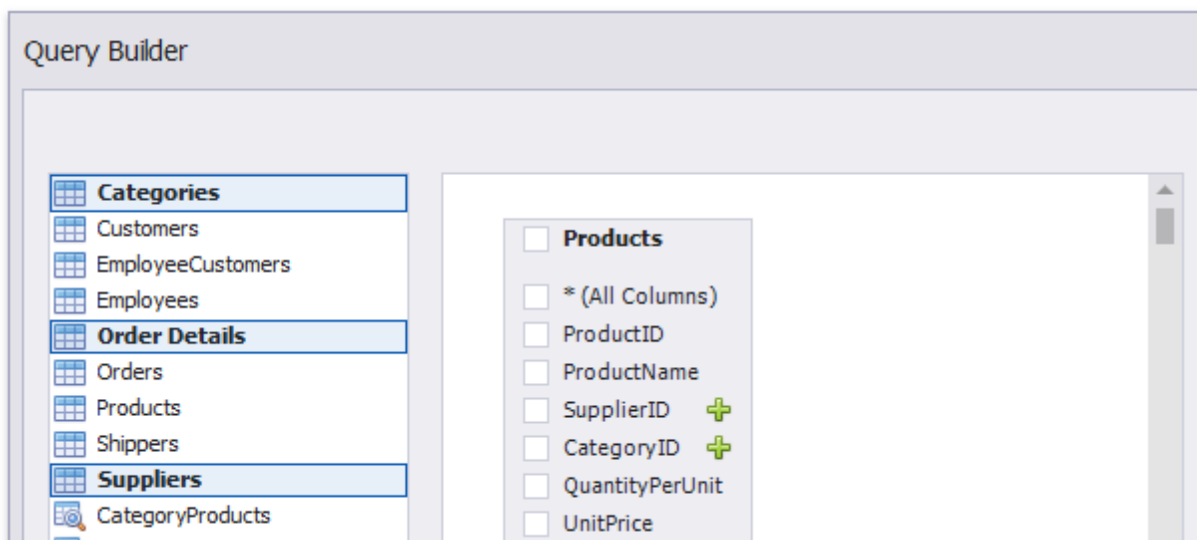


Then, select the required columns.



Join Tables

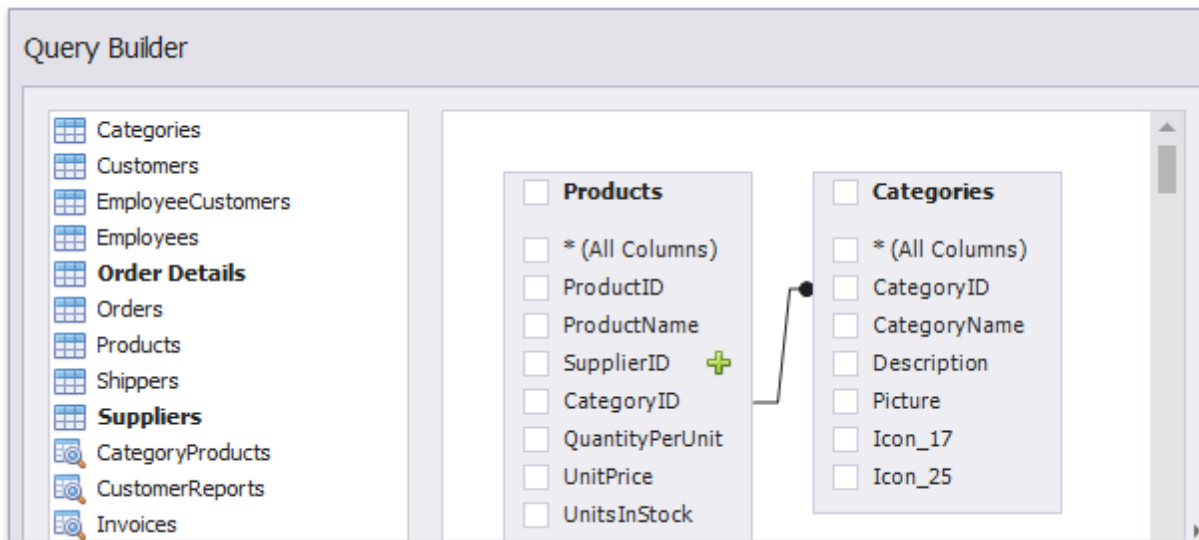
Note that if at least one table has been added to the **Diagram** pane, the **Tables** pane highlights tables that have a relationship with any of the recently added tables.



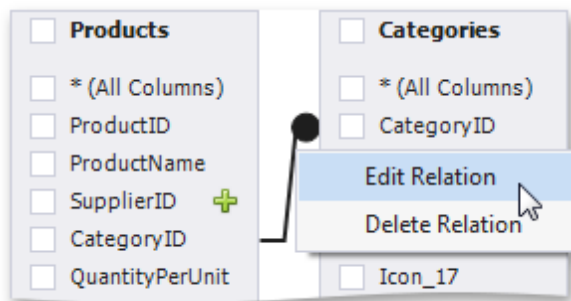
To join the already added table with an another table, do one of the following.

- Click the **+** button next to the foreign key column (*SupplierID* and *CategoryID* in the image above).
- Drag and drop the highlighted table from the **Tables** pane to **Diagram** pane.

The Query Builder will display a relationship between tables.

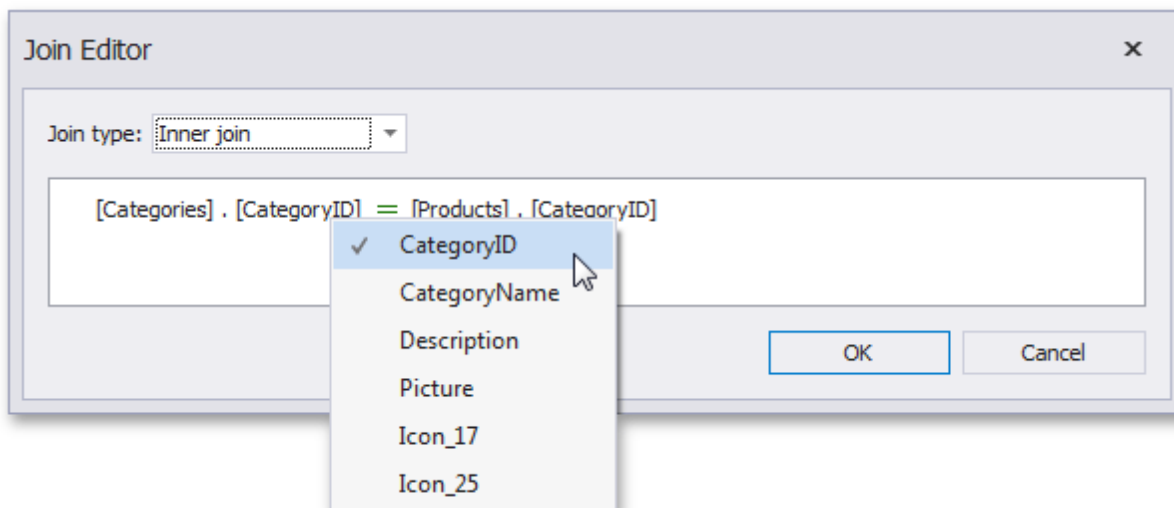


To edit this relation, select it and use its context menu.



The following commands are available.

- **Edit Relation** - Allows you to edit the selected relation. Clicking this menu item invokes the **Join Editor** dialog.



First, check the join type. You can specify it in the **Join type** combo box (*Inner join* or *Left outer join*). To edit column and table names in the existing condition, click the name you wish to replace and choose a different name from the popup menu.

Note

Note that the **Join Editor** dialog will be invoked automatically if you join tables that do not have a relationship at the database level.

- **Delete Relation** - Removes the selected relation. Note that this action removes the joined table(s).

Edit Column Settings

After you have added the tables and selected the required columns, you can change settings for each column in the **Grid** pane.

Column	Table	Alias	Output	Sorting Type	Sort Order	Group By	Aggregate
Sales Person ▾ ...	SalesPerson		<input checked="" type="checkbox"/>	Descending	1	<input checked="" type="checkbox"/>	
Extended Price	SalesPerson	Price	<input checked="" type="checkbox"/>			<input type="checkbox"/>	Sum
Discount	SalesPerson	Avg_Discount	<input checked="" type="checkbox"/>			<input type="checkbox"/>	Avg
OrderDate	SalesPerson		<input type="checkbox"/>			<input type="checkbox"/>	

The following settings are available for each column.

- Use **Column** to select the required column from the combo box or add a new column. If necessary, you can customize a column expression. To do this, click the ellipsis button for the required column and specify the expression in the invoked Expression Editor dialog.
- The **Table** column displays corresponding table names.
- The **Alias** column allows you to specify the column alias.

Note

Note that aggregated columns should always have an alias.

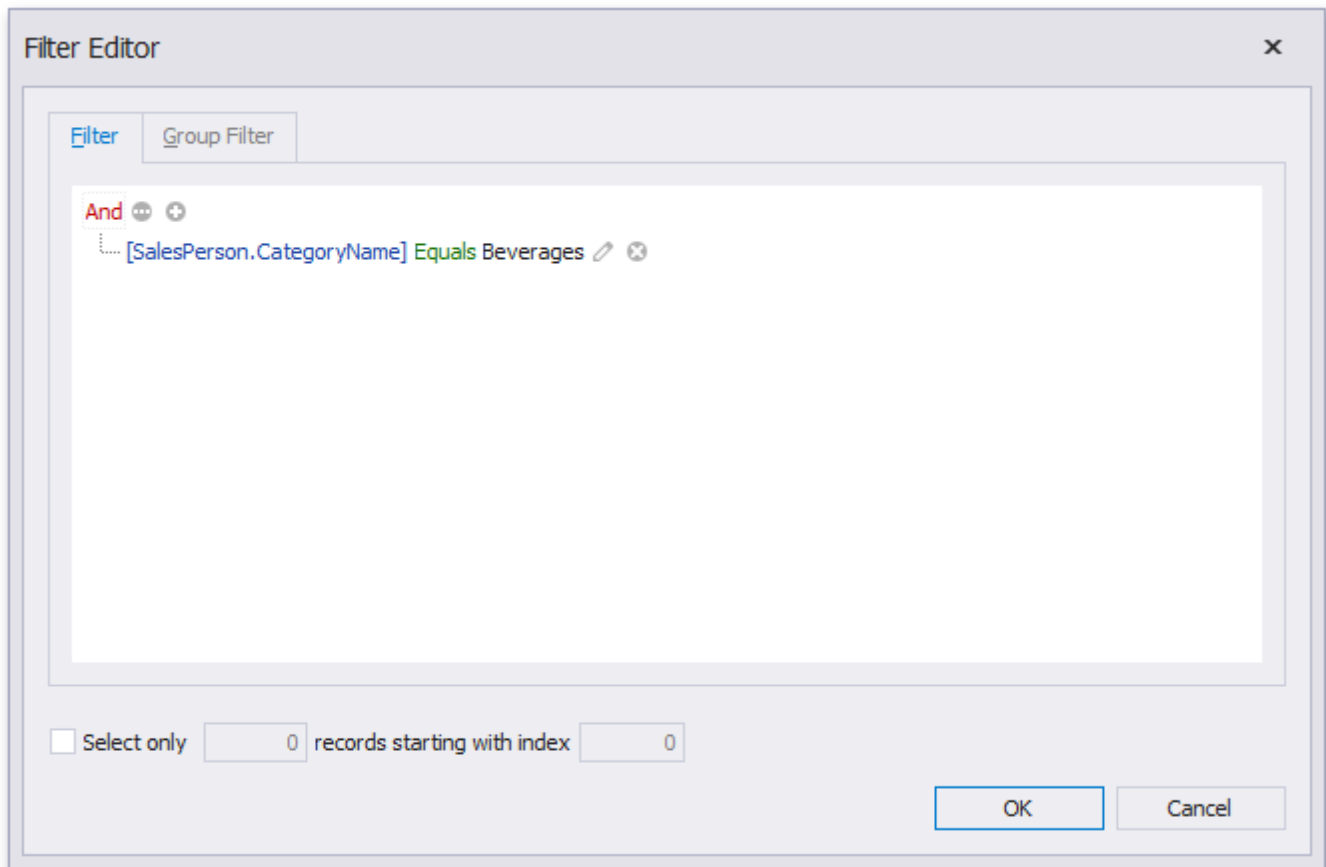
- The **Output** column allows you to choose whether to include specific columns to the query.
- Use the **Sorting type** combo box to specify the sort order of column values. The **Sort order** column allows you to specify the order in which several columns are sorted.
- The **Group By** statement is used in conjunction with the aggregate functions to group the result-set by one or more columns.
- The **Aggregate** option allows you to specify the aggregate function used to aggregate column values.

Note

Note that you should apply aggregation/grouping either to all columns or to none of them.

Filter Data

To filter data in the Query Builder, click the **Filter...** button. This will invoke the **Filter Editor** dialog, which allows you to build filter criteria.



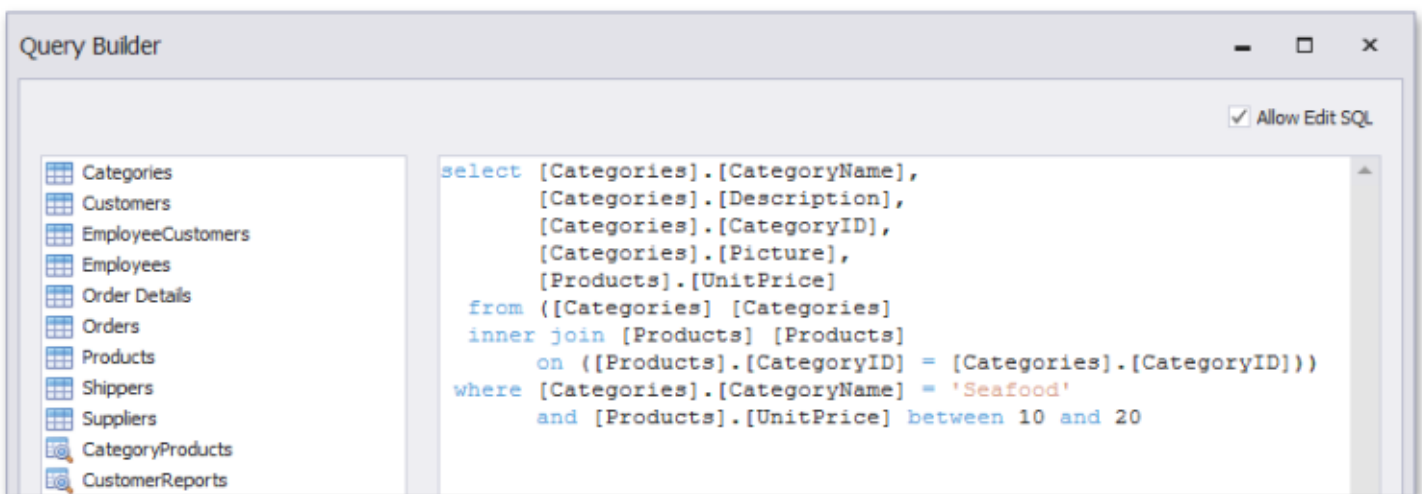
To learn more, see [Filter Queries](#).

Customize SQL Query

Important

Note that the Query Builder does not allow you to use custom SQL queries by default.

After you add the required tables, you can customize the automatically generated SQL query. To do this, enable the **Allow Edit SQL** check box and edit the SQL query displayed in the **SQL** pane.



For instance, you can add a WHERE clause to the SQL expression.

Note

Note that if you edit the automatically generated query and uncheck the **Allow Edit SQL** check box, your changes will be discarded, and the generated query will be restored.

Preview Data

The Query Builder allows you to preview data for the created SQL query. To do this, click the **Preview Results...** button.

This invokes the [Data Preview](#) window containing data returned after executing the query.

See Also

[Connecting to SQL Databases](#)

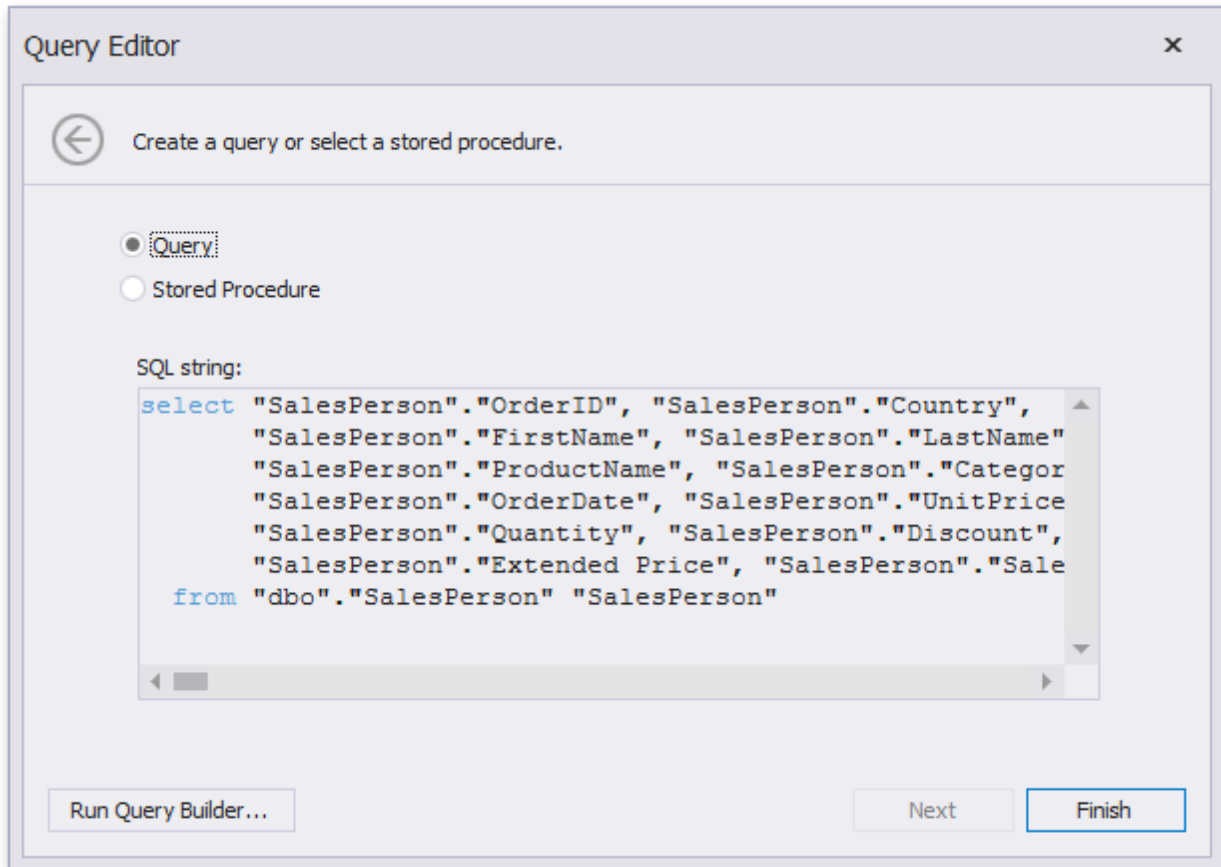
Using the Query Editor

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Using the Query Editor](#)

The **Query Editor** dialog allows you to create new SQL queries or edit the existing queries created using the [Data Source](#) wizard. Optionally, you can add [query parameters](#).

The Query Editor can contain two pages depending on the current query.

1. The first page allows you to specify the query or select the [stored procedure](#).




You can choose the following options to create/modify a query.

- Select the **Query** option and run the [Query Builder](#) by clicking the **Run Query Builder...** button. The Query Builder allows you to choose the required tables/columns visually and displays the resulting SQL query within the **SQL String** editor.
- If available, select the **Stored Procedure** option to select one of the [stored procedures](#) from the database.

2. The second page of the Query Editor allows you to add or modify [query parameters](#).

Query Editor x

 Configure query parameters and preview the result.

Name	Type	Expression	Value
Parameter 1	String	<input type="checkbox"/>	Beverages

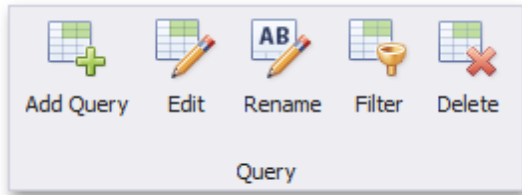
Preview... Add Remove Next **Finish**

Manage SQL Queries

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Manage SQL Queries](#)

After you [connect](#) to the data store and select the required data, you can edit the resulting query/[stored procedure](#) or add another query/stored procedure to the data source.

To manage queries for the current data source, use buttons from the **Query** group in the **Data Source** ribbon tab.



You can perform the following actions.

- **Add Query** - Adds a new query to the data source. Clicking this button invokes the [Query Editor](#) dialog that allows you to create a new query by invoking the [Query Builder](#) or to select the existing [stored procedure](#).
- **Edit** - Modifies the selected query/stored procedure using the [Query Editor](#).
- **Rename** - Renames the selected query.
- **Filter** - Filters the selected query. To learn more, see the [Filter Queries](#) topic.
- **Delete** - Removes the selected query.

Filter Queries

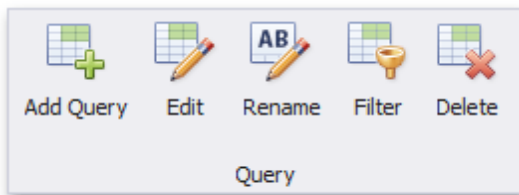
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Filter Queries](#)

SQL queries constructed in the [Query Builder](#) can be filtered by including WHERE clauses to the query. Filtering can be applied to either underlying or aggregated data. You can also limit the number of returned records when filtering data.

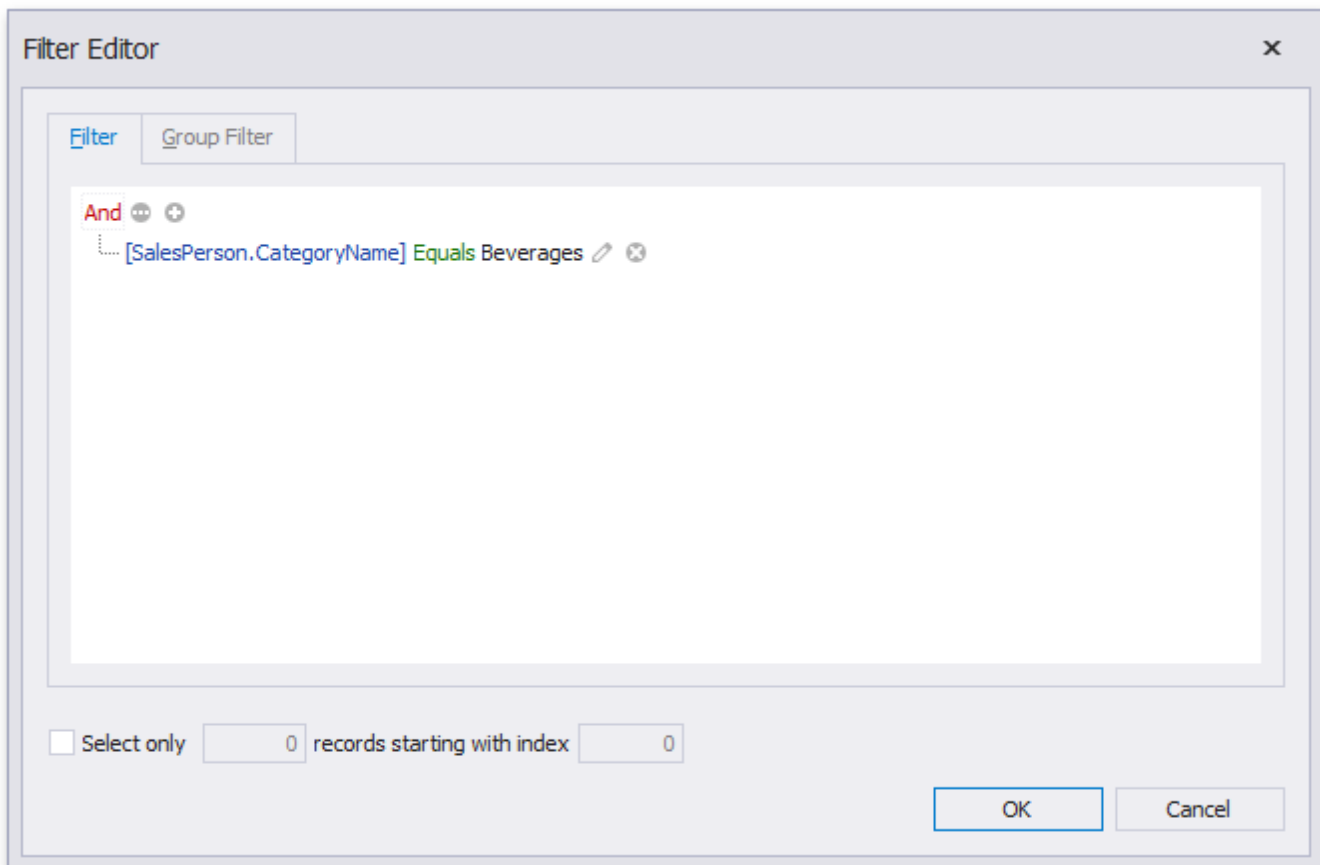
- [Invoke the Filter Editor](#)
- [Filter Data](#)
- [Add Limits](#)

Invoke the Filter Editor

To filter data in the Query Builder, click the **Filter...** button... in the **Data Source** ribbon tab...






... or use a corresponding button within the [Query Builder](#). This will invoke the Filter Editor dialog, which allows you to build filter criteria.





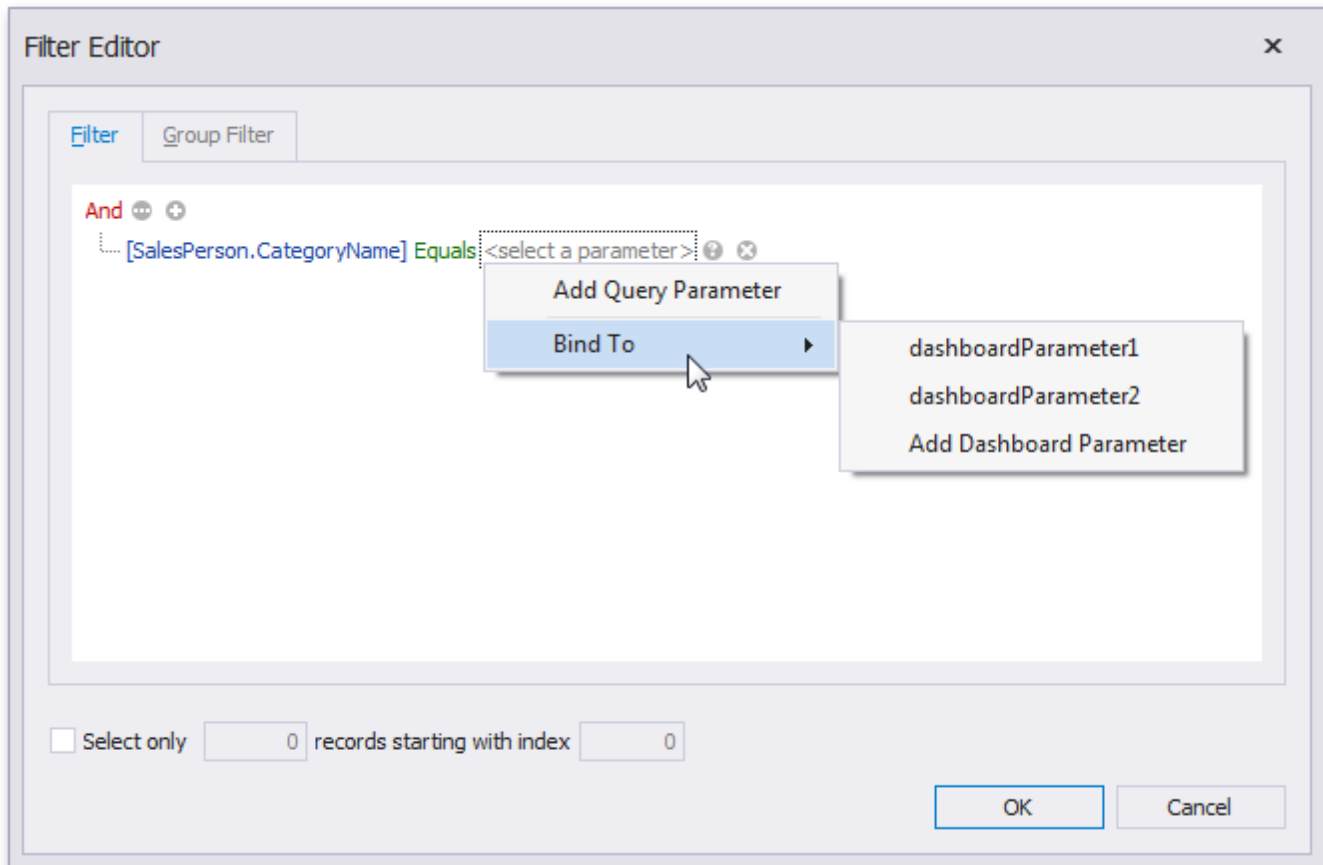
The **Filter** tab allows you to filter underlying data while the **Group Filter** tab provides the capability to filter data aggregated on the server side.

Filter Data

In the Filter Editor, you can compare a field value with the following objects.

- A *static value* (represented by the  icon). Click this button to switch to the next item mode ("another field value") to compare the field value with another field value.
- Another *field value* (represented by the  icon). Click this button to switch to the next item mode (parameter value) to compare the field value with a parameter value.
- A *parameter value* (represented by the  icon). Click this button to switch back to the initial mode ("static value") to compare the field value with a static value.

Thus, you can pass the [query parameter](#) to the filter string. To do this, click the  button, then click the  button and finally click `<select a parameter>`.



In the invoked popup menu, you can choose from the following options.

- **Add Query Parameter** - allows you to create a new [query parameter](#). The following dialog will be invoked.

Create Query Parameter

Design

Name	Parameter1
Type	String
Value	Beverages

Value

OK Cancel

In this dialog, you can specify a parameter's name (**Name**), type (**Type**) and value (**Value**).

If the current query already contains query parameters, they will be displayed within the popup menu.

- **Bind to** - allows you to pass a [dashboard parameter](#) to a filter string. You can choose from the list of predefined dashboard parameters or create a new dashboard parameter by selecting **Add Dashboard Parameter**. If you selected **Add Dashboard Parameter**, the following dialog will be invoked.

Dashboard Parameter

Behavior

Allow Multiselect	No
Allow Null	No
Visible	Yes

Data

Description	
Look-Up Settings	No Look-Up
Type	String
Value	

Design

Name	Parameter1
------	------------

Name

Gets of sets the parameter name.

OK Cancel

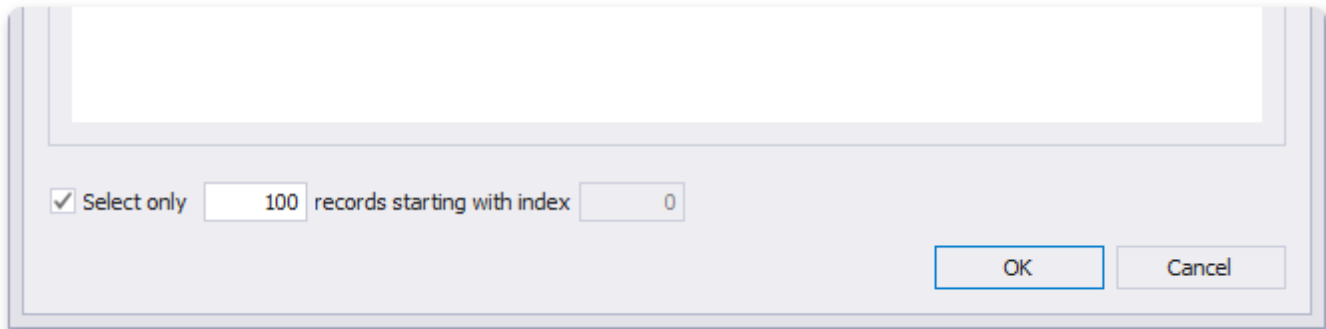
In this dialog, you can specify settings of the dashboard parameter to be created. To learn more, see [Creating Parameters](#).

After you specified the required settings, click **OK**. A new dashboard parameter along with a new query parameter will be created. Note that created dashboard and query parameters will be bound automatically.

The **Group Filter** tab of the Filter Editor allows you to apply filtering to grouped/aggregated data fields by including HAVING clauses to the query. Grouping and aggregation are managed by the **Group By** and **Aggregate** options in the Query Builder. To learn more, see the **Edit Column Settings** paragraph in the [Query Builder](#) topic.

Add Limits

The Filter Editor also allows you to limit the number of returned records. To do this, enable the **Select only** checkbox and specify the number of records to be returned.



You can also skip the required number of records in the returned dataset by specifying the **records starting with index** value.

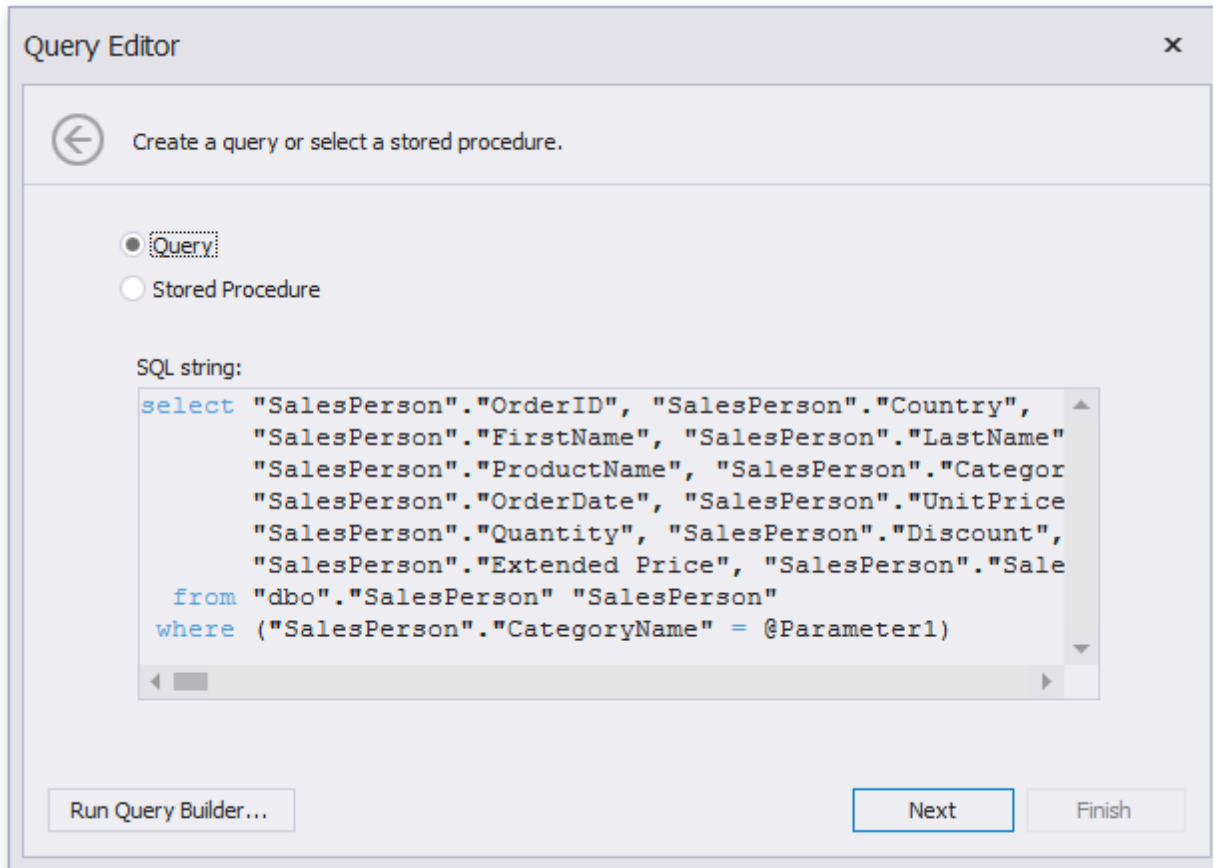
Note

Note that the **Sorting type** should be specified in the Query Builder to enable the capability to skip the specified number of records. To learn how to apply sorting, see the **Edit Column Settings** paragraph in the [Query Builder](#) topic.

Pass Query Parameters

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Pass Query Parameters](#)

The [Query Builder](#) allows you to add query parameters when creating a filter criteria. To specify settings of an added query parameter, click **Next** in the [Query Editor](#) dialog.



On the next page, add a new parameter (using the **Add** button) and specify its settings.

Name	Type	Expression	Value
Parameter 1	String	<input type="checkbox"/>	Beverages

- **Name** - Specifies a parameter's name.
- **Type** - Specifies the parameter's type.
- **Expression** - Specifies whether an expression is used to specify a parameter's value.
- **Value** - Specifies the parameter's value. If the **Expression** check box is checked, you can invoke the Expression Editor dialog to specify the required expression or select an existing [dashboard parameter](#) to pass to the SQL query.

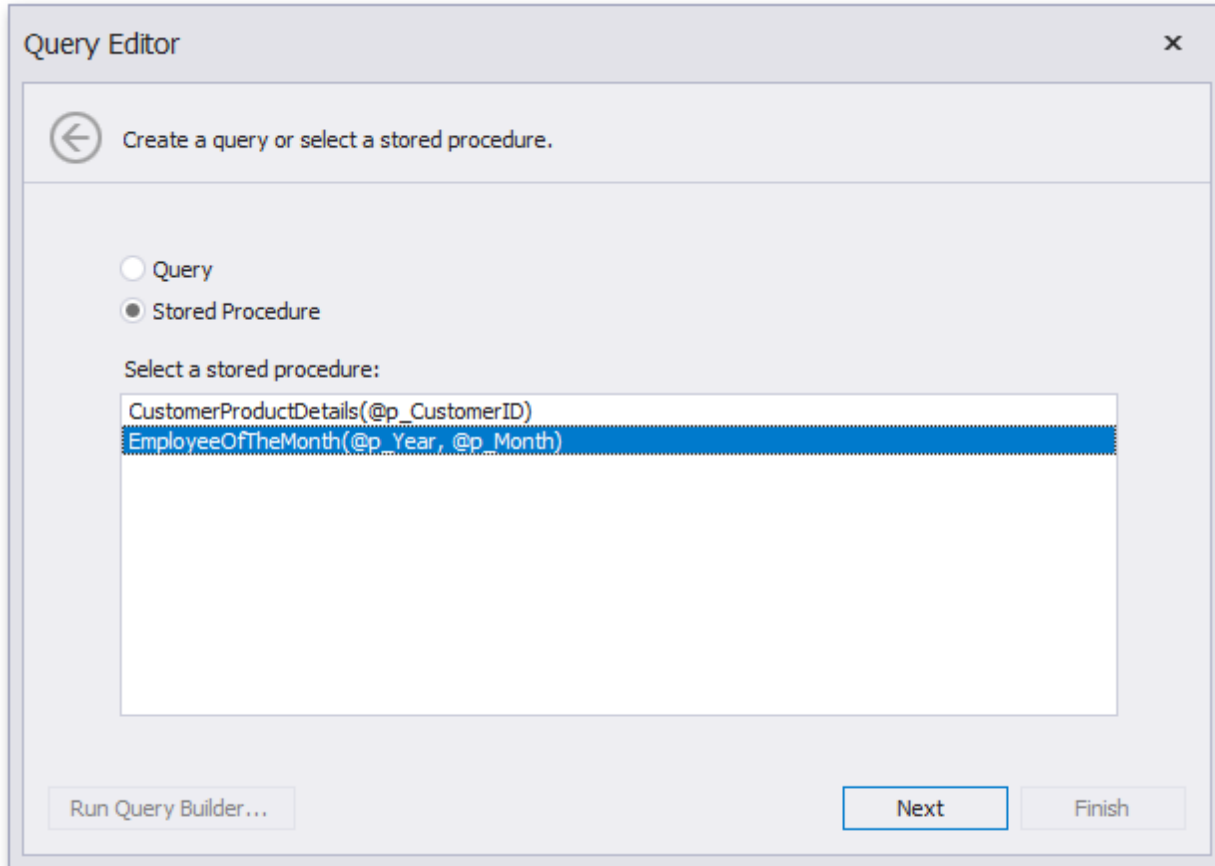
Use the **Remove** button to remove query parameters.

Click the [Preview...](#) button to preview the query result. Then, click **Finish** to complete query modification.

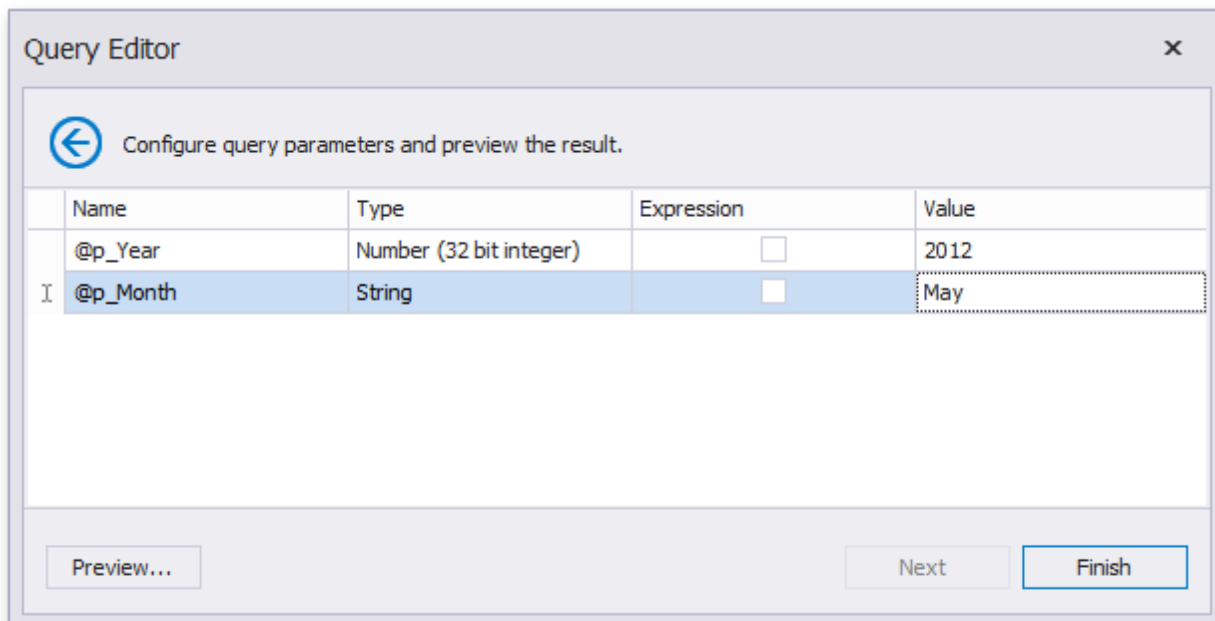
Stored Procedures

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Stored Procedures](#)

If you use a stored procedure to supply the dashboard with data, you should specify the stored procedure parameters. In the [Query Editor](#) dialog, select the required stored procedure and click **Next**.



On the next page, you can specify the parameter settings.



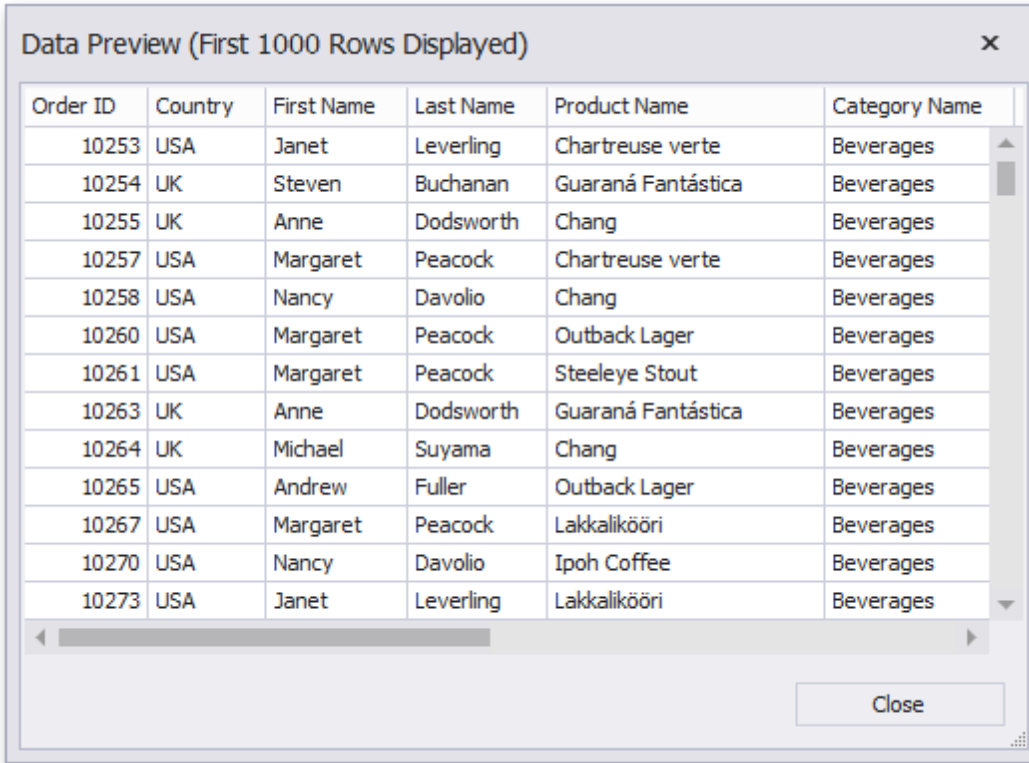
- **Name** - Displays the parameter name.
- **Type** - Displays the parameter type.
- **Expression** - Specifies whether the expression is used to specify a parameter value.
- **Value** - Specifies a parameter value. If the **Expression** check box is checked, you can invoke the Expression Editor dialog to specify the required expression or select an existing [dashboard parameter](#) to use it as a stored procedure parameter.

Click the [Preview...](#) button to preview the query result. Then, click **Finish** to complete query modifying.

Preview Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Preview Data](#)

The [Query Editor](#) and [Query Builder](#) allow you to preview data returned after a query/[stored procedure](#) execution. To do this, click the **Preview...** button.



The screenshot shows a window titled "Data Preview (First 1000 Rows Displayed)" with a close button in the top right corner. The window contains a table with the following columns: Order ID, Country, First Name, Last Name, Product Name, and Category Name. The table displays 15 rows of data, all of which are categorized as "Beverages".

Order ID	Country	First Name	Last Name	Product Name	Category Name
10253	USA	Janet	Leverling	Chartreuse verte	Beverages
10254	UK	Steven	Buchanan	Guaraná Fantástica	Beverages
10255	UK	Anne	Dodsworth	Chang	Beverages
10257	USA	Margaret	Peacock	Chartreuse verte	Beverages
10258	USA	Nancy	Davolio	Chang	Beverages
10260	USA	Margaret	Peacock	Outback Lager	Beverages
10261	USA	Margaret	Peacock	Steeleye Stout	Beverages
10263	UK	Anne	Dodsworth	Guaraná Fantástica	Beverages
10264	UK	Michael	Suyama	Chang	Beverages
10265	USA	Andrew	Fuller	Outback Lager	Beverages
10267	USA	Margaret	Peacock	Lakkalikööri	Beverages
10270	USA	Nancy	Davolio	Ipoh Coffee	Beverages
10273	USA	Janet	Leverling	Lakkalikööri	Beverages

At the bottom right of the window is a "Close" button.

This invokes the **Data Preview** window containing data returned after executing the current query/stored procedure.

Creating Calculated Fields

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Working with Data](#) > [Creating Calculated Fields](#)

The Dashboard Designer provides the capability to create calculated fields that allow you to apply complex expressions to data fields that are obtained from the dashboard's data source. You can use these fields in data visualizations as regular data source fields.

- [Creating a Calculated Field](#)
- [Editing a Calculated Field](#)

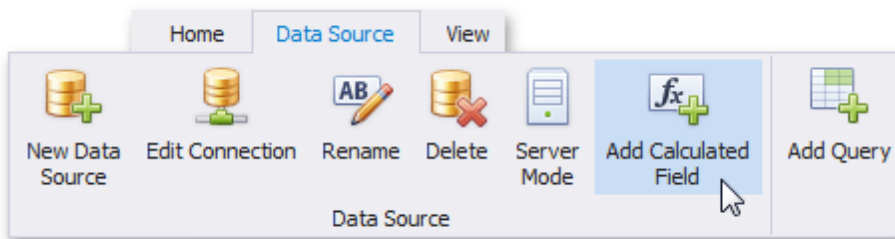
Note

Note that calculated fields are not supported for [OLAP](#) data sources.

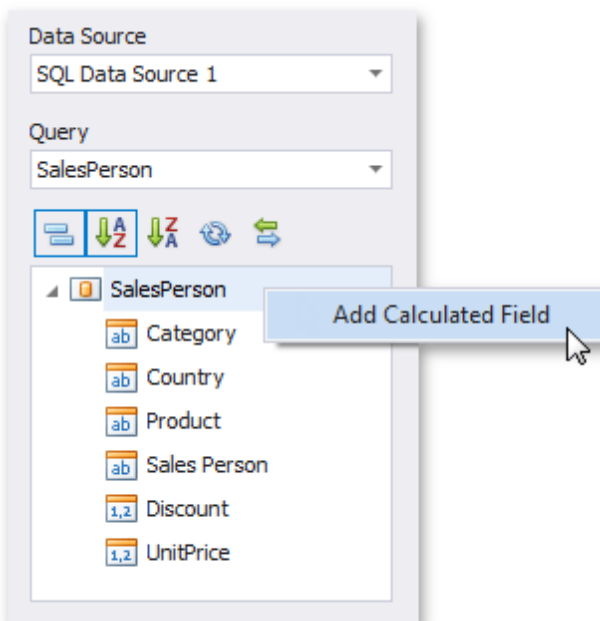
Creating a Calculated Field

After you have created a data source, you can add a new calculated field based on the existing data source fields.

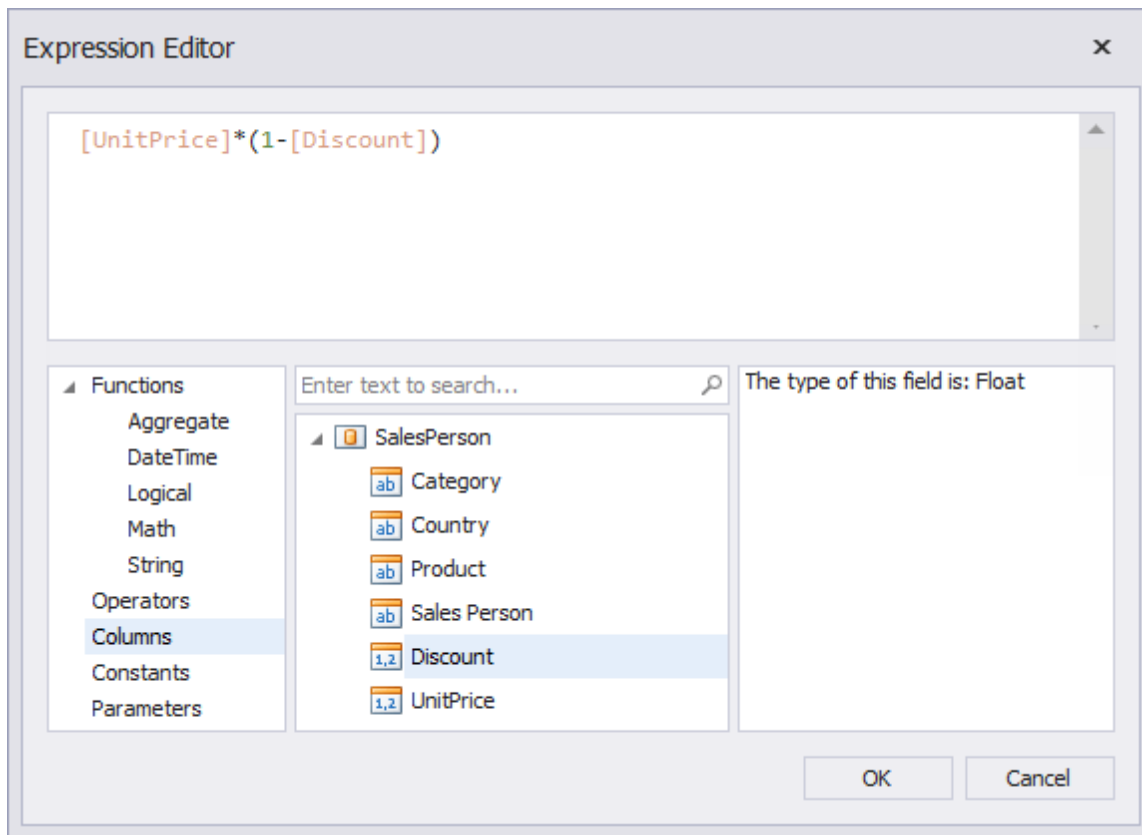
To create a calculated field, select the required data source (and the required [query](#)/data member, if applicable) in the [Data Source Browser](#) and click the **Add Calculated Field** button in the Ribbon's Data Source tab...



...or right-click the Field List and select **Add Calculated Field** in the context menu.



This invokes the Expression Editor dialog, which allows you to specify an expression that will be used to obtain calculated field values. Here, you can construct the required expression.



You can use the following elements in expressions.

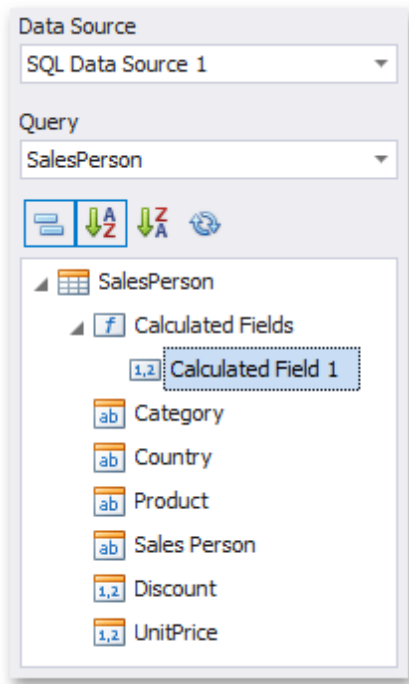
- Functions

Note

To learn how to use **Aggregate** functions, see [Aggregations](#). The Expression Operators, Functions and Constants topic lists common functions (**DateTime**, **Math**, **String**, etc.) supported by expressions.

- Operators
- Columns
- Constants
- [Parameters](#)

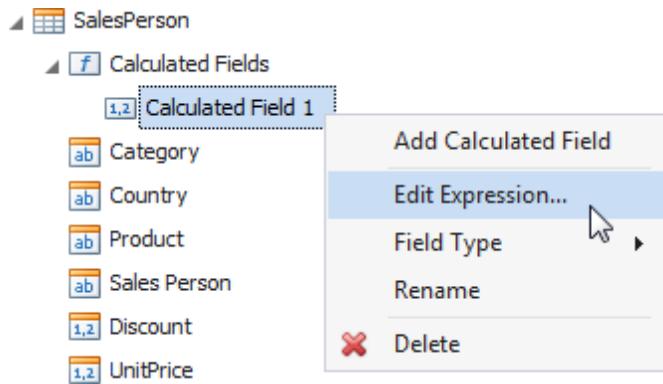
After the expression has been specified, click **OK**. This displays a new calculated field in the data source structure.



Now you can specify the required calculated field type, change its default name, etc.

Editing a Calculated Field

To edit a calculated field, use its context menu.



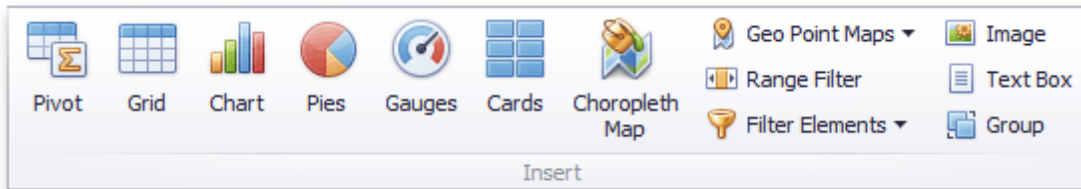
This menu contains the following items.

Item	Description
Edit Expression...	Invokes the Expression Editor dialog, which allows you to change an expression for an existing calculated field.
Field Type	Specifies the type of the calculated field.
Rename	Changes the calculated field name.
Delete	Removes the existing calculated field from the data source.

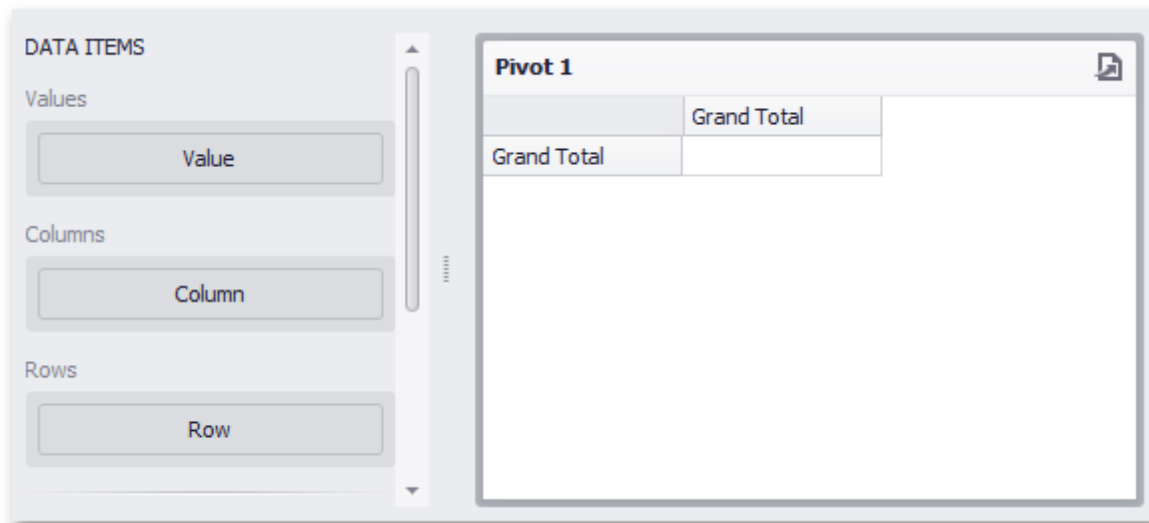
Adding Dashboard Items

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Adding Dashboard Items](#)

To create a dashboard item in the Dashboard Designer, click the corresponding button in the **Home** ribbon tab.



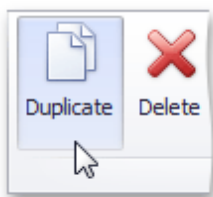
This creates an empty dashboard item, and displays the required data sections for binding this item to data (for instance, the image below displays the [Pivot](#) dashboard item and corresponding data sections).



Perform the following steps to design a dashboard item.

- [Bind](#) the dashboard item to data.
- Perform the required [data shaping](#) operations (such as grouping, sorting and filtering).
- Use the [interactivity](#) features to enable interaction between various dashboard items.
- Adjust the dashboard item's [position and size](#) and specify the [dashboard item caption](#) settings.
- Specify specific dashboard item settings based on its type. To learn more, see [Designing Dashboard Items](#).

After you have created and designed the dashboard item, you can create an exact copy. To do this, click the **Duplicate** button in the **Home** ribbon tab...



... or use the dashboard item's context menu. To remove the dashboard item from the dashboard, use the **Delete** button or the corresponding item in the context menu.

See Also

[Binding Dashboard Items to Data](#)

Binding Dashboard Items to Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Binding Dashboard Items to Data](#)

This section consists of the following topics.

- [Binding Dashboard Items to Data](#)
- [Hidden Data Items](#)
- [Binding Dashboard Items to Data in OLAP mode](#)

See Also

[Adding Dashboard Items](#)

Binding Dashboard Items to Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Binding Dashboard Items to Data](#) > [Binding Dashboard Items to Data](#)

This topic explains how to bind the newly [created](#) dashboard item to [data source](#) fields, to display data.

- [Binding Concepts](#)
- [Create Binding](#)
- [Modify Binding](#)
- [Clear Binding](#)

Binding Concepts

To bind dashboard items to data in the Dashboard Designer, the [DATA ITEMS](#) pane is used.

The screenshot shows the Dashboard Designer interface. On the left, a tree view displays a 'Sales' dashboard item with sub-items: Category, Product, State, UnitsSold, Year, and Revenue. The 'DATA ITEMS' pane is open, showing a configuration for a bar chart. It includes sections for 'Values (Pane 1)' with 'Revenue (Sum)' and 'Value', 'Arguments' with 'Year' and 'Argument', and 'Series' with 'Series'. To the right, a bar chart displays 'Revenue' for the years 2011, 2012, and 2013. The y-axis ranges from 120M to 138M. The bars show revenue values of approximately 121M for 2011, 129M for 2012, and 137M for 2013.

Each dashboard item type has a specific set of **data sections**, such as *Values*, *Arguments* and *Series* in the chart, *Columns* and *Sparklines* in the grid, and *Values*, *Columns* and *Rows* in the pivot grid. Each data section corresponds to a particular dashboard item area or element, and should be mapped to data to be displayed within this area/element.

Mapping is performed using **data items** - objects that are used to bind a dashboard item to data source fields. Data items are used to link the dashboard item to the required data source fields and, thus, visualize data within the dashboard item.

Another key concept in data binding is the **data item container**, which represents a set of data items. It can contain either a single data item or multiple data items, and allows you to specify various options related to how a [specific dashboard item](#) visualizes data.

The diagram shows a close-up of the 'DATA ITEMS' pane. A red bracket on the left labels the entire pane as the 'Data Item container'. Inside, a red bracket on the left labels the 'Extended Price (Sum)' field as a 'Data Item'. A red bracket on the right labels the 'Value' and 'Weight' fields as 'Data Section'.

The data item can process data in two ways - as **dimensions** or **measures**. This depends on the data section to which the data item is assigned, and the type of the data item container.

- **dimension** - a data item whose values are not intended to be summarized.

These values can be of any type - string, date-time or numeric. In any case, the dashboard does not summarize the dimension values, but groups identical values. You can perform [grouping](#), [sorting](#), or display the [top](#) values for the dimension values. You can also customize [data format](#) settings for numeric and date-time values. To access the data shaping settings, use the data item's *menu button*.



For instance, dimensions are used to provide data for the chart argument axis, pivot grid column and row headers.

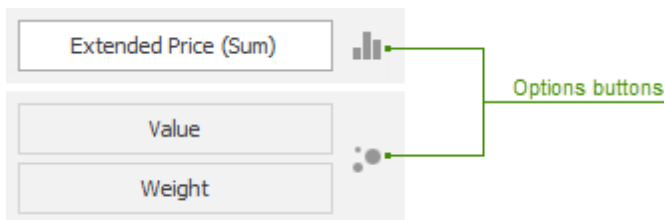
- **measure** - a data item whose values are summarized before they are used in the dashboard.

These values can be of any type - numeric, date-time or string. In any case, the dashboard will calculate an appropriate [summary](#) function against measure values. You can also customize the [data format](#) settings that affect how summary values are displayed. To access these settings, use the data item's *menu button*.



For example, measures are used to provide data for the chart's Y-axis, and to calculate pivot cell values.

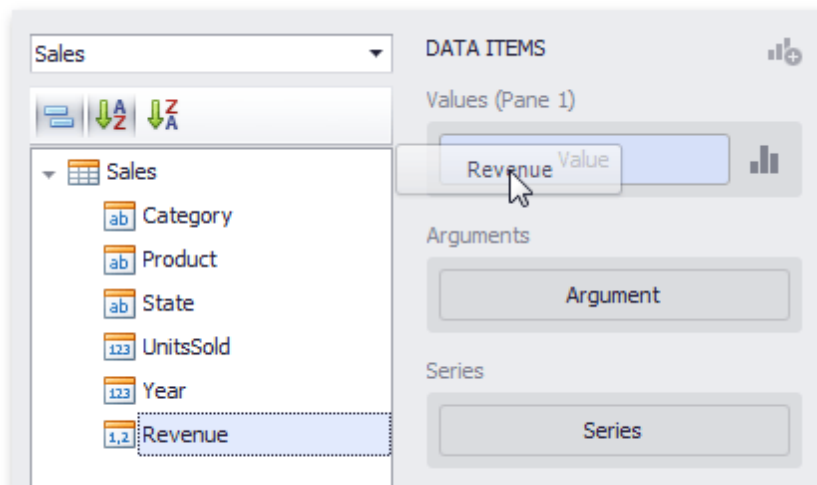
Specific data sections display *Options buttons* for each data item container. Use these buttons to invoke a dialog that allows you to specify the settings of this data item container. These settings affect how a particular dashboard item's area/element displays the provided data.



Create Binding

The DATA ITEMS pane displays data sections of the selected dashboard item. It can be used to add, rearrange or remove data items.

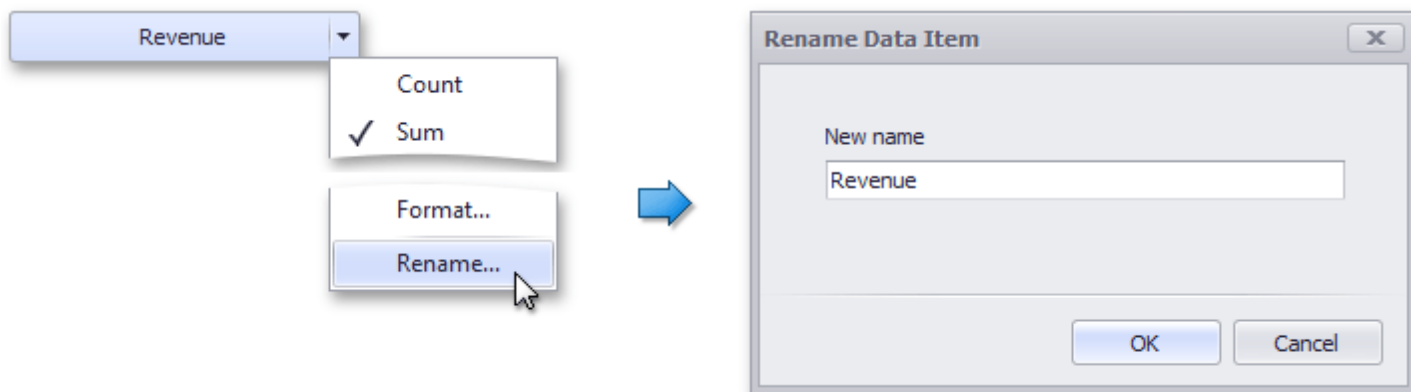
To bind a dashboard item to data, select the dashboard item. Then choose the required data field from the [Data Source Browser](#) and drop it onto the appropriate section in the DATA ITEMS pane.



You can remove the data item by dragging it outside the DATA ITEMS pane.

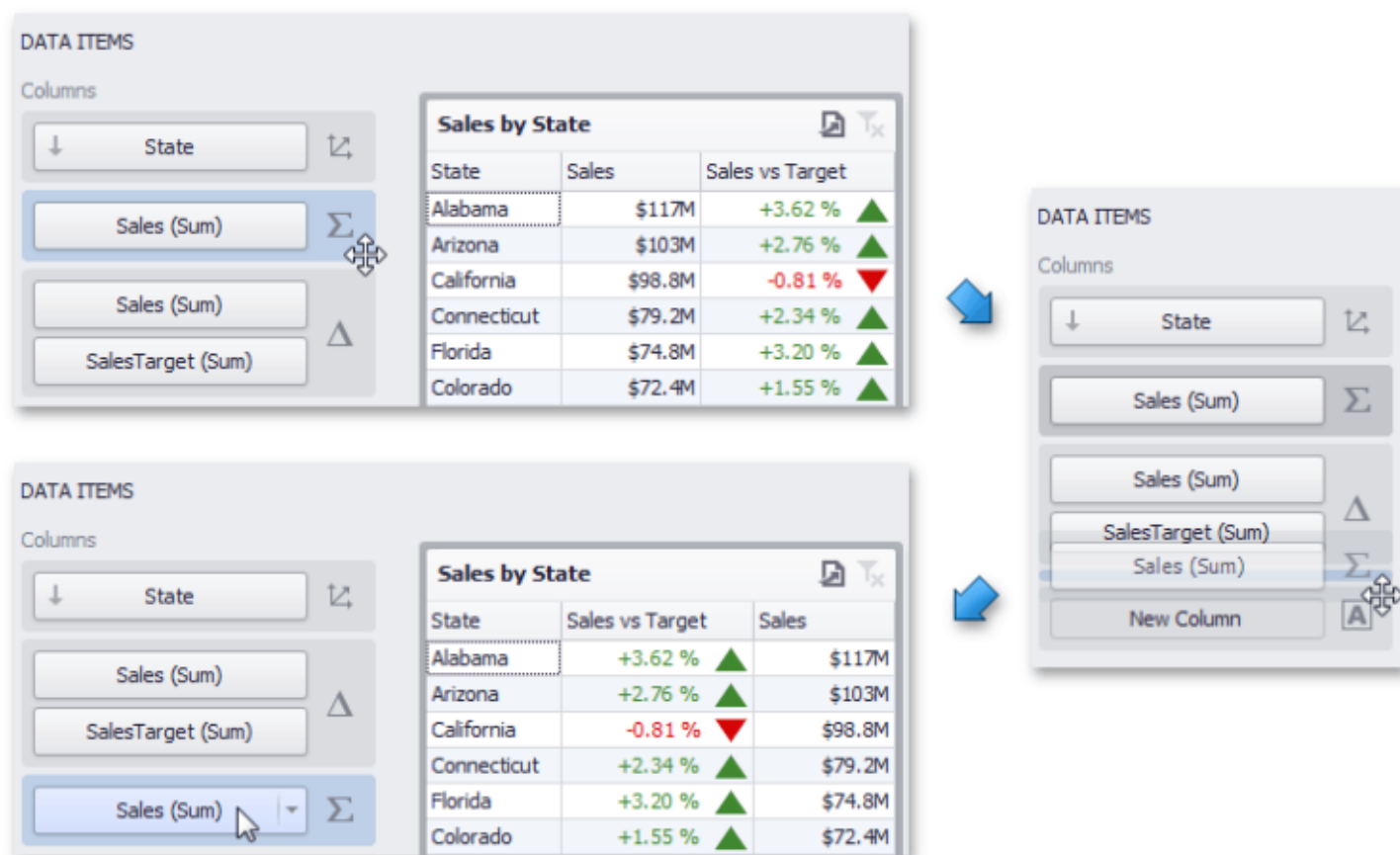
To learn how to bind a specific dashboard item to data, see the [Providing Data](#) topic for the required [dashboard item](#).

To rename the data item, click its menu button and select **Rename**, to invoke the **Rename Data Item** dialog.



Modify Binding

You can modify data binding by dragging data item containers within a data section. To do this, drag the data item container to the required position.

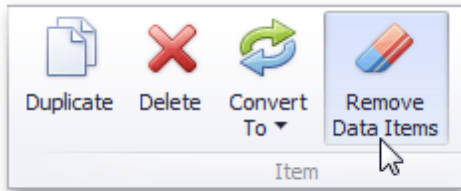


You can also modify data binding by dragging data items within the DATA ITEMS pane. This action has the following specifics.

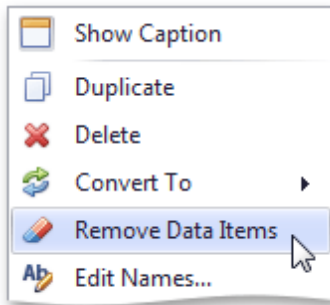
- If you drag the data item to a new position, the settings specified for the corresponding data item container will be restored to the default values.
- If you drag the data item to an existing data item placeholder, the settings of the corresponding data item container will be applied.

Clear Binding

To remove all data items for a selected dashboard item, use the **Remove Data Items** button in the **Home** ribbon tab.



You can also do this via the dashboard item's context menu.



See Also

[Adding Dashboard Items](#)

Hidden Data Items

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Binding Dashboard Items to Data](#) > [Hidden Data Items](#)

The **HIDDEN DATA ITEMS** area can be used to perform various [data shaping](#) and analysis operations by measures or dimensions that do not directly take part in the visual representation of data.

To create hidden data items, choose the required data field from the [Data Source Browser](#) and drop it onto the appropriate section in the HIDDEN DATA ITEMS area.

You can perform the following operations using hidden data items.

- [Filtering](#)
- [Sorting](#)
- [Top N](#)
- [Conditional Formatting](#)

Filtering

You can use **hidden dimensions** to [apply filtering](#) to the dashboard item. To do this, select the required hidden dimension in the Filter Editor dialog and specify the required condition.

The screenshot shows the Dashboard Designer interface. On the left, the 'HIDDEN DATA ITEMS' section is visible, with 'OrderDate (Quarter)' selected under 'Dimensions'. In the center, a 'Filter Editor' dialog box is open, displaying the filter condition: 'And [OrderDate (Quarter)] Equals 1'. The background shows a table with the following data:

OrderDate (Month)	Extended Price (Sum)
January	\$155K
February	\$138K
March	\$143K

For instance, the [Grid](#) on the image above is filtered by the first quarter of the *OrderDate (Quarter)* dimension.

Sorting

You can [sort](#) values of the specified dimension by the **hidden measure**. To do this, select the required measure from the dimension's **Sort By** sub-menu.

The screenshot shows the Dashboard Designer interface. On the left, there are panels for 'DATA ITEMS', 'Columns', 'Sparkline', 'HIDDEN DATA ITEMS', 'Dimensions', and 'Measures'. The 'Columns' panel has a dropdown menu open showing 'Category', 'Extended Price (Sum)', and 'New Column'. The 'Measures' panel has 'Quantity (Sum)' and 'Measure' buttons. The main area displays a data grid with the following data:

Category	Extended Price (Sum)
Beverages	\$268K
Dairy Products	\$235K
Confections	\$167K
	\$131K
	\$106K
	\$95.7K
	\$163K
	\$100K

A context menu is open over the grid, showing the following options:

- Sort Ascending
- Sort Descending
- Sort by
 - (Value)
 - Extended Price (Sum)
 - Quantity (Sum)** (selected)
- Top N...
- No Grouping (checked)
- Alphabetical
- Add Format Rule
- Edit Rules...
- Clear Rules
- Rename...

For instance, categories displayed in the [Grid](#) on the image above are sorted by values of the hidden *Quantity (Sum)* measure.

Top N

You can use **hidden measures** in [Top N](#) conditions. To do this, select the required measure from the **Measure** combo box in the **Top N Values** dialog.

The screenshot shows the Dashboard Designer interface. On the left, there are sections for 'DATA ITEMS', 'HIDDEN DATA ITEMS', and 'Measures'. The 'DATA ITEMS' section includes 'Columns' with 'Category' and 'Extended Price (Sum)', and a 'New Column' button. The 'HIDDEN DATA ITEMS' section includes 'Dimensions' with 'Dimension' and 'Measures' with 'Quantity (Sum)'. The 'Measures' section includes a 'Measure' button. In the center, a data grid displays the following data:

Category	Extended Price (Sum)
Beverages	\$268K
Dairy Products	\$235K
Confections	\$167K
Seafood	\$131K
Condiments	\$106K

Overlaid on the grid is a 'Top N Values' dialog box. The dialog box has the following settings:

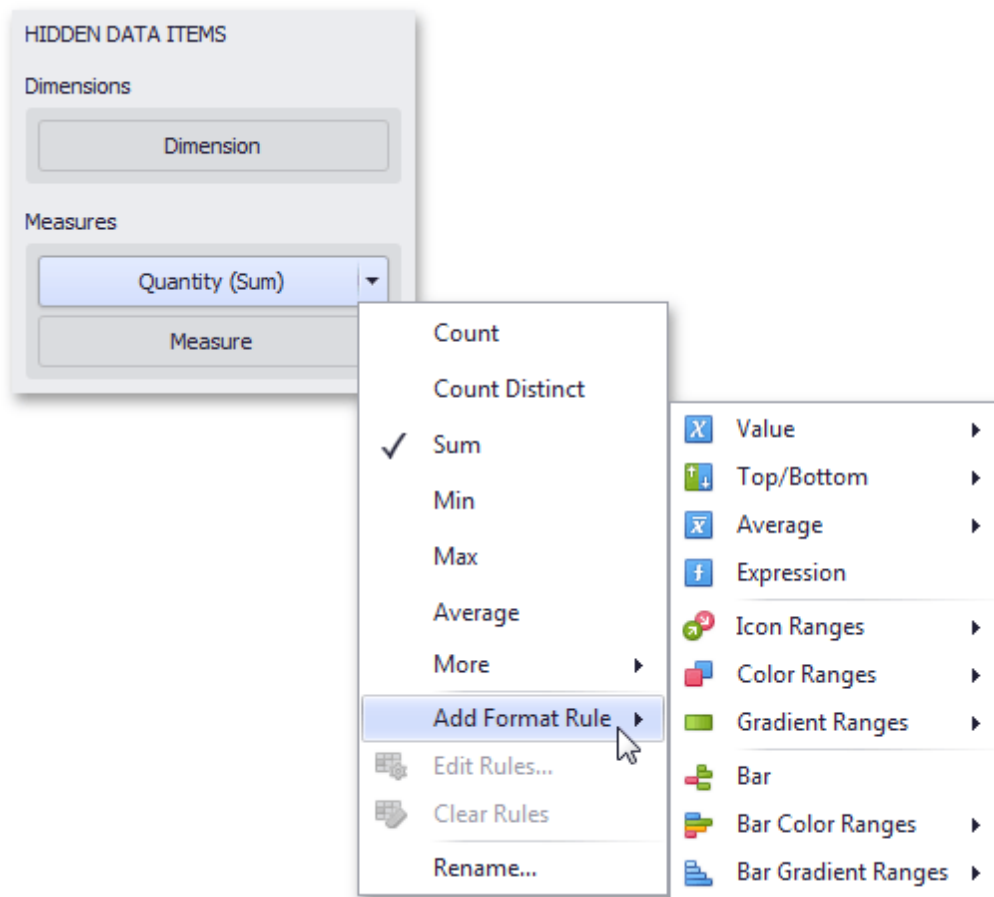
- Enabled
- Mode: Top
- Count: 5
- Measure: Quantity (Sum)
- Show "Others" value:

Buttons at the bottom of the dialog box are OK, Cancel, and Apply.

For instance, the [Grid](#) on the image above displays top 5 categories for the *Quantity (Sum)* hidden measure.

Conditional Formatting

You can create format rules based on **hidden measures** to apply [conditional formatting](#) to elements corresponding to visible values. To do this, use the **Add Format Rule** menu of the hidden measure.

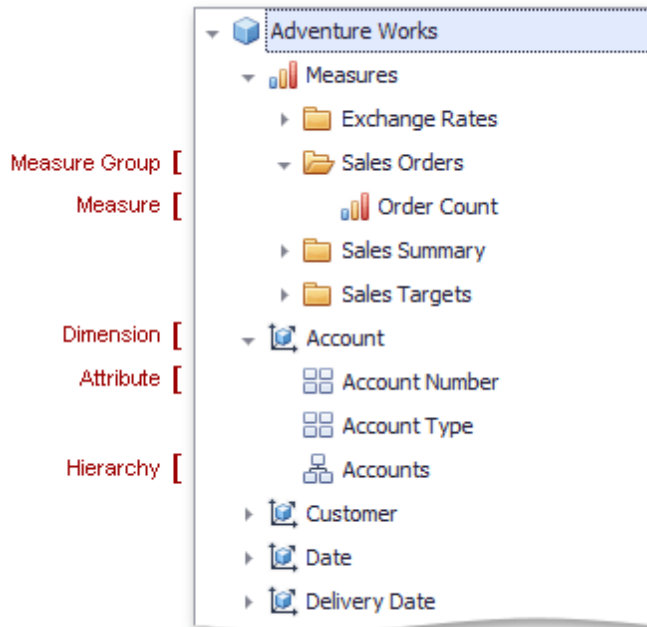


For the [Expression](#) format condition, you can use the required hidden measure in the same manner as in the [Filter Editor](#) dialog.

Binding Dashboard Items to Data in OLAP mode

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Binding Dashboard Items to Data](#) > [Binding Dashboard Items to Data in OLAP mode](#)

In **OLAP** mode, the cube schema is fetched automatically, and the [Data Source Browser](#) displays the entire OLAP cube structure.



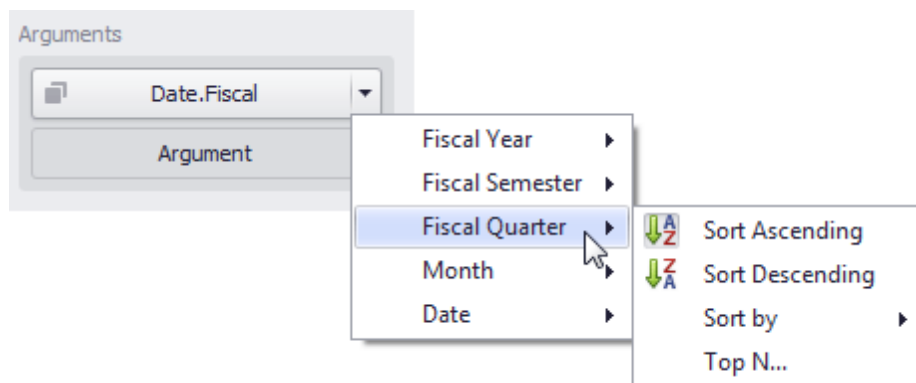
To visualize data from the OLAP cube, [drag-and-drop](#) measures, attributes or hierarchies onto the appropriate data sections in the **DATA ITEMS** area.

Note that OLAP measures can only be placed in the **Values** section, while dimension attributes and hierarchies can only be placed in other data sections.

Note

By default, the dashboard displays only dimension values that have intersections with measures in a cube. To show all available dimension values, add [hidden measures](#) to the dashboard item so that all dimension values of the dimension will have not be empty for at least one measure value of these measures.

OLAP hierarchies allow you to customize each level separately. To access hierarchy level options, invoke the data item menu for the hierarchy and then use the submenu that corresponds to the desired level.



Note

You can easily drill down through OLAP hierarchies using the [Drill-Down](#) feature.

See Also

[Binding Dashboard Items to Data](#)

Designing Dashboard Items

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#)

DevExpress Dashboard provides a number of visualization elements designed to present visual or textual information in a dashboard - **dashboard items**.

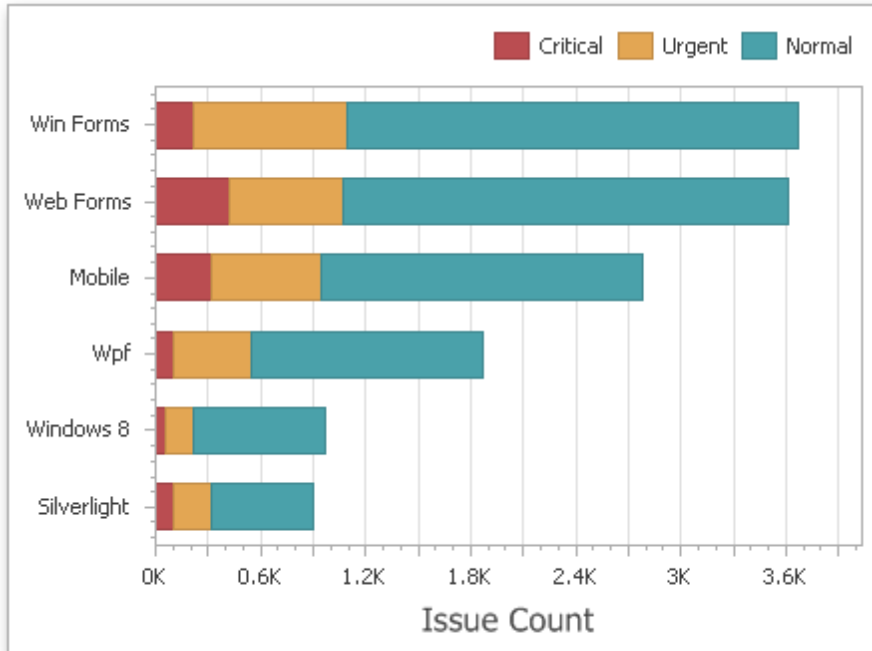
This section describes the available dashboard items.

- [Chart](#)
- [Scatter Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Pivot](#)
- [Choropleth Map](#)
- [Geo Point Maps](#)
- [Range Filter](#)
- [Images](#)
- [Text Box](#)
- [Treemap](#)
- [Filter Elements](#)
- [Dashboard Item Group](#)

Chart

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#)

The topics in this section describe the features available in the **Chart** dashboard item, and provide extensive information on how to create and customize charts in the Dashboard Designer.



This section is divided into the following subsections.

- [Providing Data](#)
Provides information on how to supply the Chart dashboard item with data.
- [Series](#)
Enumerates and describes different types of series that can be displayed within the Chart dashboard item.
- [Panels](#)
Introduces the concept of chart panes (visual areas within a diagram that display chart series), and provides information on how to create them.
- [Interactivity](#)
Describes features that enable interaction between the Chart and other dashboard items.
- [Coloring](#)
Describes coloring capabilities of the Chart dashboard item.
- [Axes](#)
Describes how to customize settings related to chart axes.
- [Legend](#)
Provides information about the chart legend and its options.
- [Orientation](#)
Describes how to toggle the chart's orientation.

Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Providing Data](#)

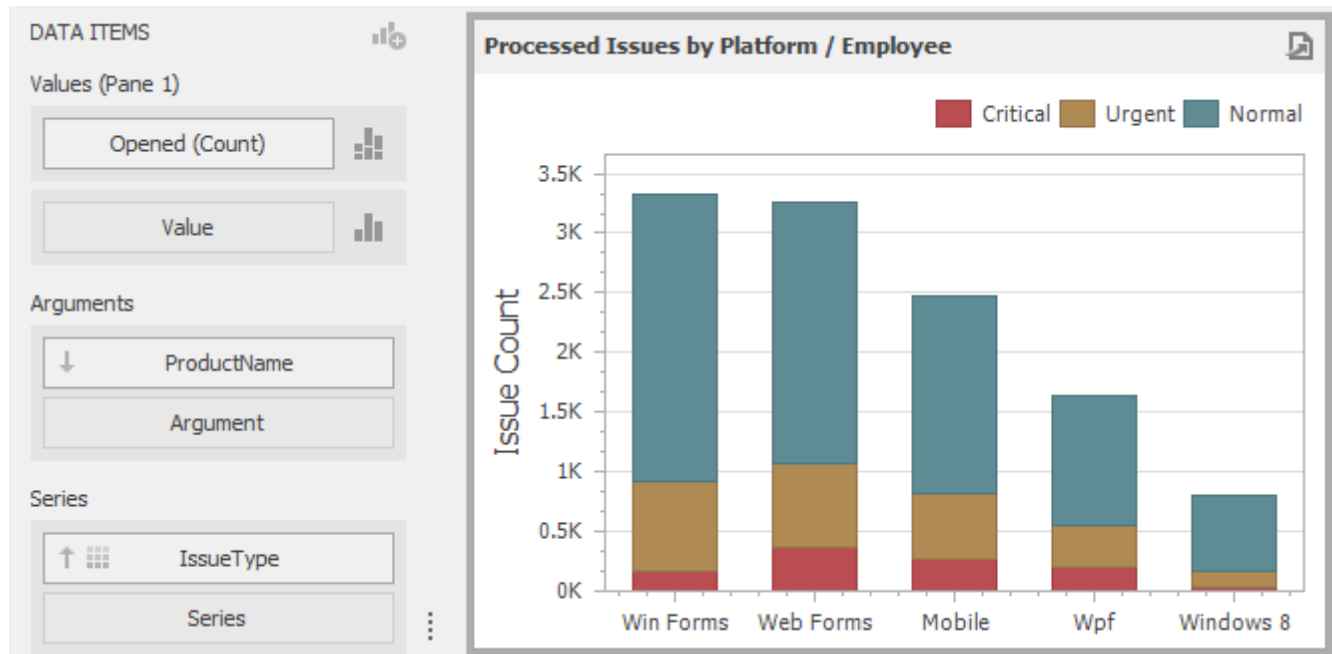
The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Chart** dashboard item to data in the Designer.

- [Binding to Data in the Designer](#)
- [Transposing Arguments and Series](#)

Binding to Data in the Designer

The image below shows a sample Chart dashboard item that is bound to data.

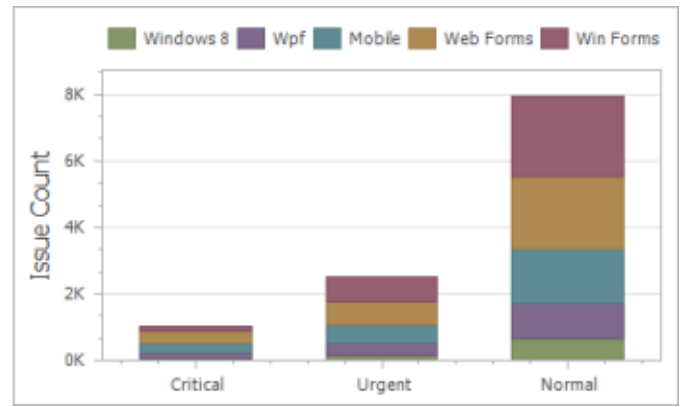
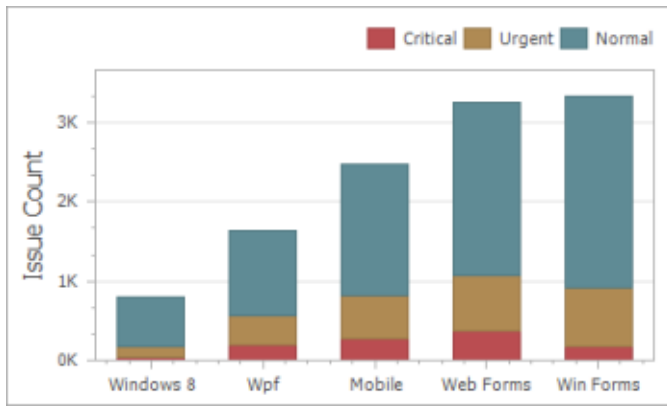


To bind the Chart dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. The table below lists and describes the Chart's data sections.

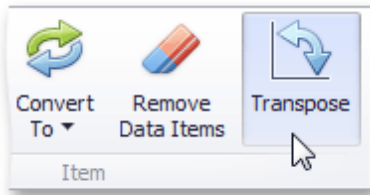
Section	Description
Values	Contains data items against which the Y-coordinates of data points are calculated. The Options button next to the Value data item allows you to select the series type and specify different options. Note that some types of series accept several measures. To learn more, see the documentation for the required series type .
Arguments	Contains data items that provide values displayed along the X-axis of the chart.
Series	Contains data items whose values are used to create chart series .

Transposing Arguments and Series

The Chart dashboard item provides the capability to transpose chart arguments and series. In this case, data items contained in the **Arguments** section are moved to the **Series** section, and vice versa.



To transpose the selected Chart dashboard item, use the **Transpose** button in the **Home** ribbon tab.



Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#)

This section describes how to select a desired series type in the overview topic, and lists the variety of available series types.

The section consists of the following topics.

- [Series Overview](#)
Provides information on how to specify a series type in the Dashboard Designer.
- [Bar Series](#)
Lists the available types of bar series.
- [Point and Line Series](#)
Lists the available types of point and line series.
- [Area Series](#)
Lists the available types of area series.
- [Range Series](#)
Lists the available types of range series.
- [Weighted Series](#)
Lists the available types of weighted series.
- [Financial Series](#)
Lists the available types of financial series.

Series Overview

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Series Overview](#)

The Chart dashboard item supports a variety of series types - from simple bar and line charts to complex candle stick and bubble graphs.

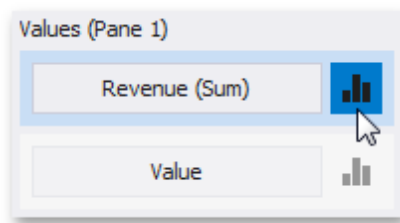
- [Bar Series](#)
- [Point and Line Series](#)
- [Area Series](#)
- [Range Series](#)
- [Weighted Series](#)
- [Financial Series](#)

This topic describes how to change the series type and specify various series options (for instance, how to use secondary axis or enable point labels).

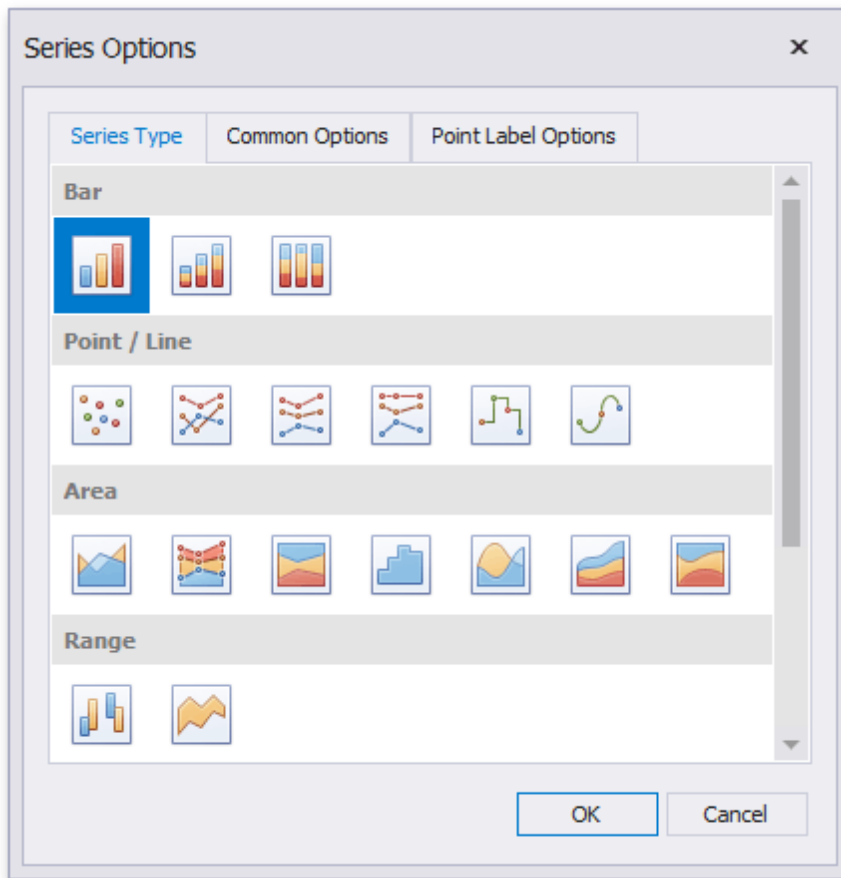
- [Series Types](#)
- [Series Options](#)
- [Series Point Labels](#)

Series Types

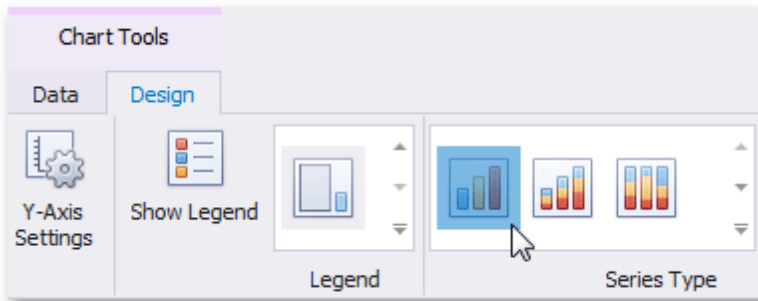
To switch between series types in the Dashboard Designer, click the **Options** button next to the required [data item](#) (or placeholder) in the **Values** section.



In the invoked **Series Options** dialog, select the required series type and click **OK**.

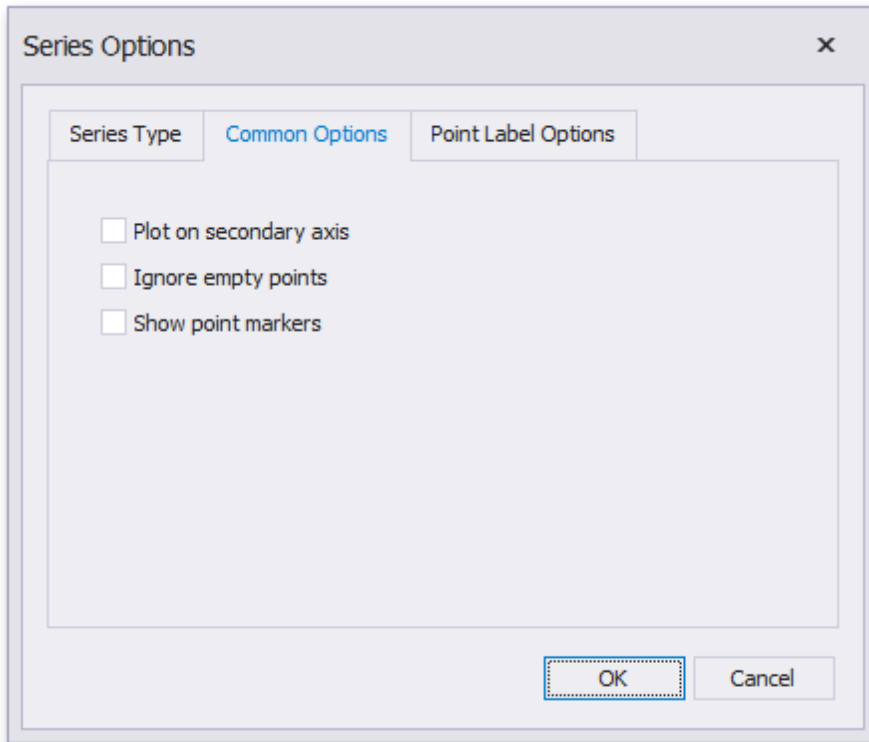


You can also do this using the **Series Type** gallery in the **Design** Ribbon tab.



Series Options

To manage common series options, use the **Common Options** tab of the **Series Options** dialog.



- **Plot on secondary axis** - Specifies whether or not the secondary axis is used to plot the current series.
- **Ignore empty points** - Specifies whether or not empty points are ignored when plotting the current series.
Note that this option is in effect for the [Line](#), [Area](#) and [Range Area](#) series.
- **Show point markers** - Specifies whether or not to show point markers for the current series.

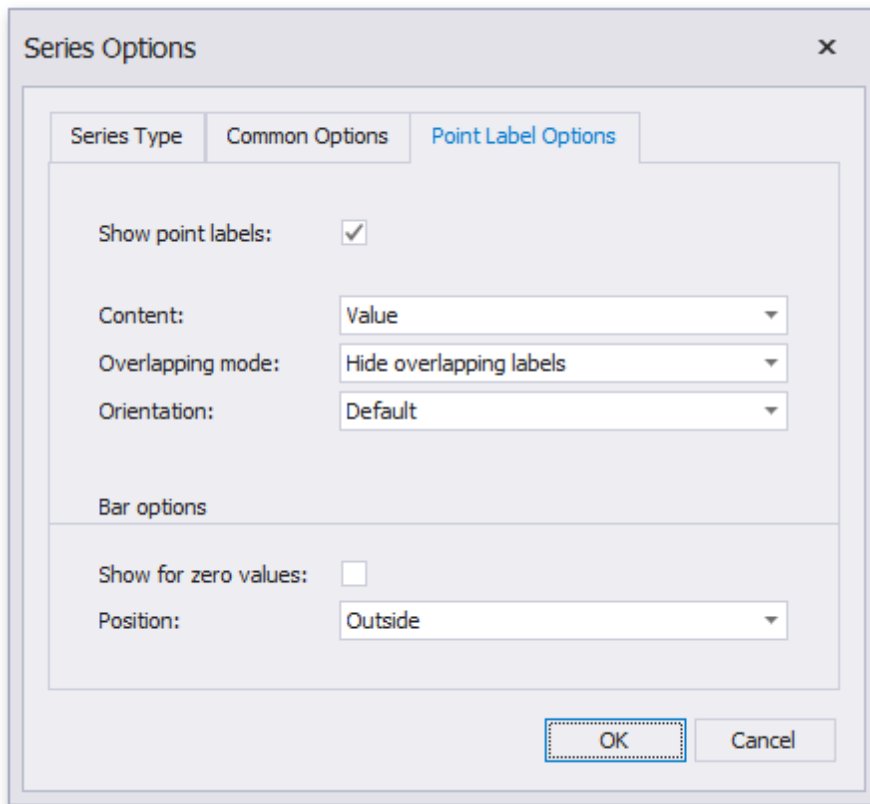
Note

Note that point markers are always shown when [Master Filtering](#) is enabled for the Chart dashboard item.

Note that this option is in effect for the [Line](#) and [Area](#) series.

Series Point Labels

The **Point Label Options** tab of the **Series Options** dialog allows you to enable series point labels and manage their settings.



- **Show point labels** - Specifies whether or not to show point labels for the current series.
- **Content** - Specifies the type of content displayed within point labels.
- **Overlapping mode** - Specifies the label overlap mode.

Note

This option is not in effect when the dashboard is displayed in the Web Viewer.

- **Orientation** - Specifies the orientation of point labels.

Bar options

Note

These settings are in effect for [Bar](#) series only.

- **Show for zero values** - Specifies whether or not to show labels for points with zero values.
- **Position** - Specifies the position of point labels relative to bars.

Bar Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Bar Series](#)

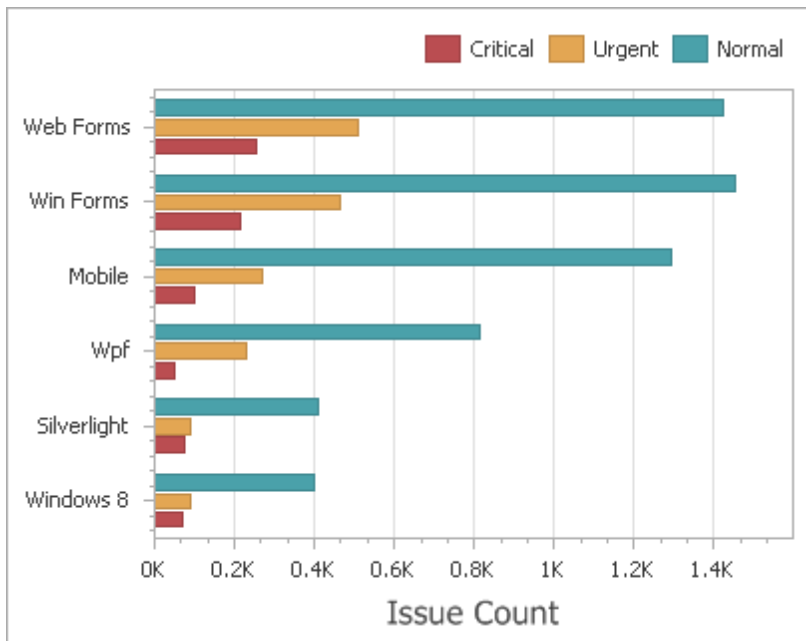
Bar series visualize data using rectangular bars with lengths proportional to the values that they represent.

The following types of Bar series are available.

- [Bar](#)
- [Stacked Bar](#)
- [Full-Stacked Bar](#)

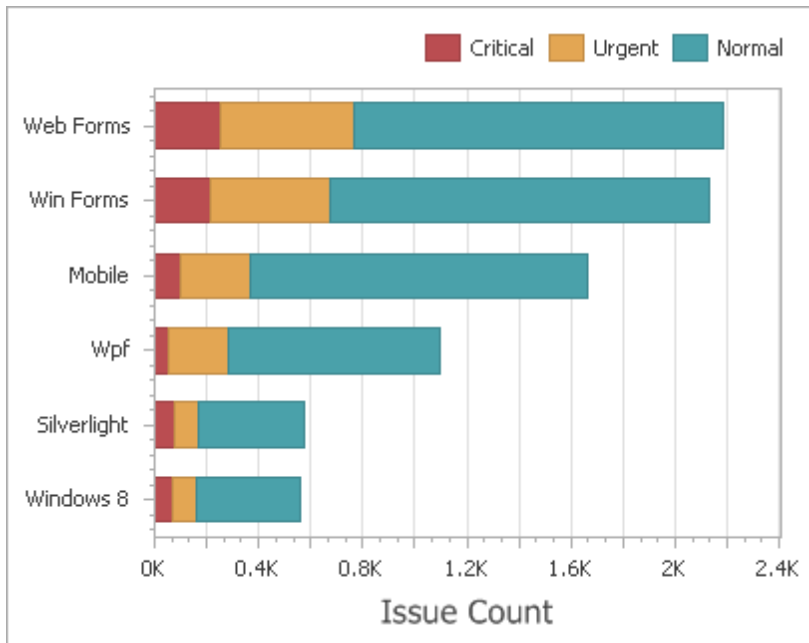
Bar

Bar series can be used to compare values across categories.



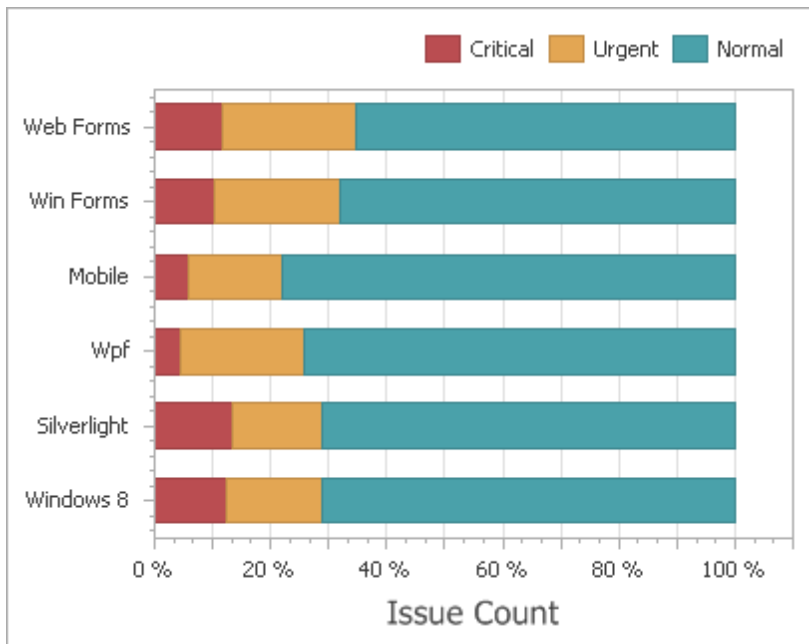
Stacked Bar

Stacked Bar series show the contribution of individual categories to the whole.



Full-Stacked Bar

Full-Stacked Bar series allow you to compare the percentage that each value contributes to a total across categories.



Point and Line Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Point and Line Series](#)

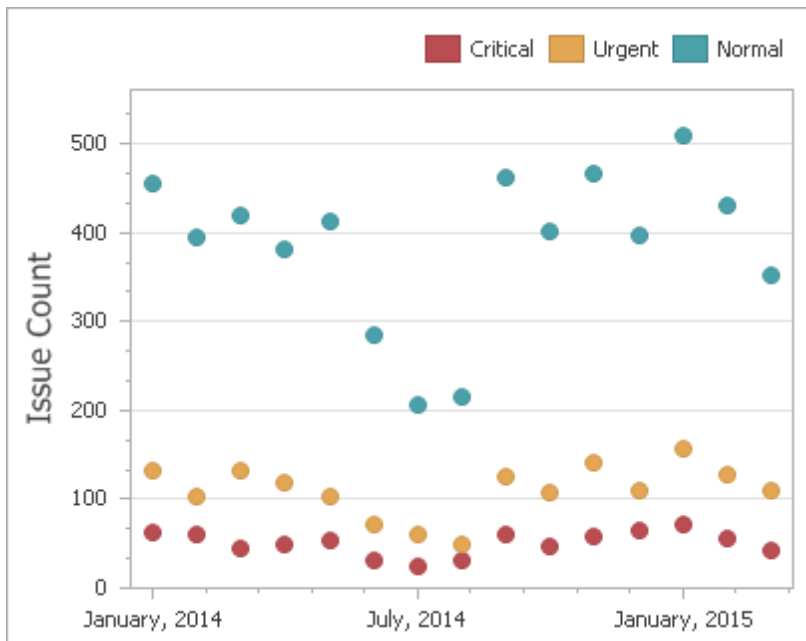
Point series visualize data as a set of individual numeric data points. Line series are used to connect numeric data points by different types of line segments.

The following types of Point and Line series are available.

- [Point](#)
- [Line](#)
- [Stacked Line](#)
- [Full-Stacked Line](#)
- [Step Line](#)
- [Spline](#)

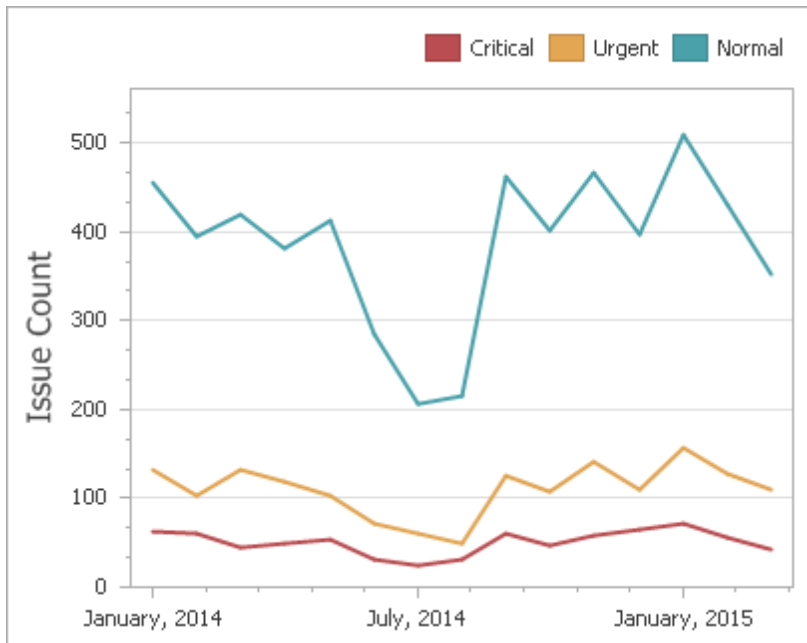
Point

Point series visualize data as a set of individual numeric data points.



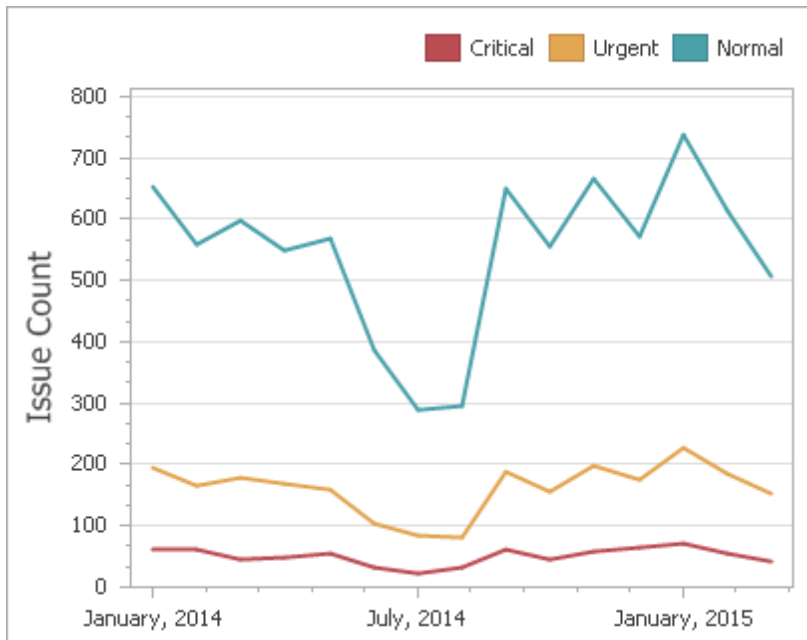
Line

Line series connect numeric data points by straight line segments.



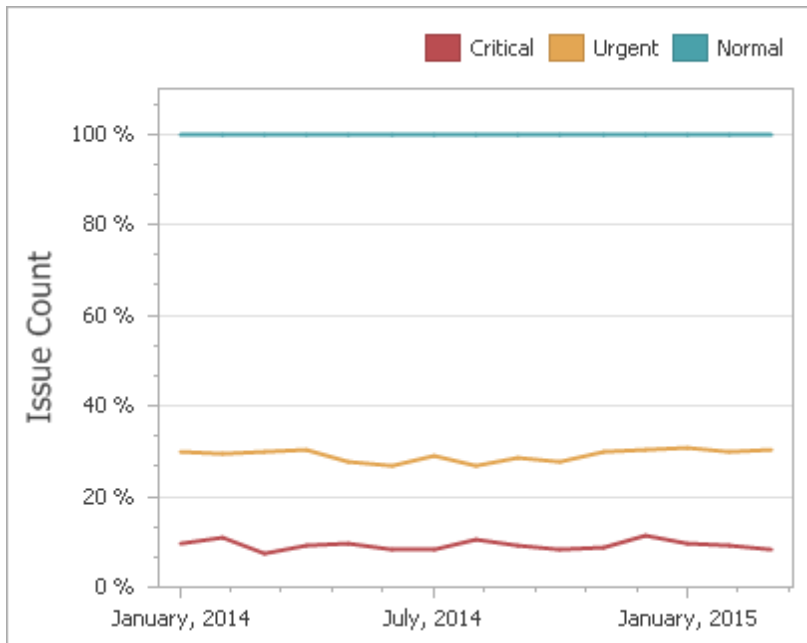
Stacked Line

Stacked Line series can be used to show the trend of the contribution for each value.



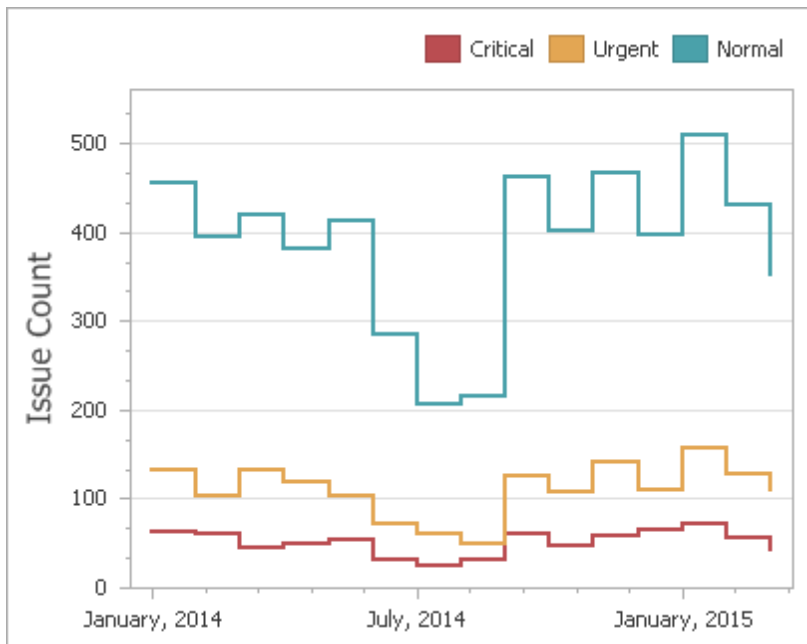
Full-Stacked Line

Stacked Line series are useful for showing the trend of the percentage for each value.



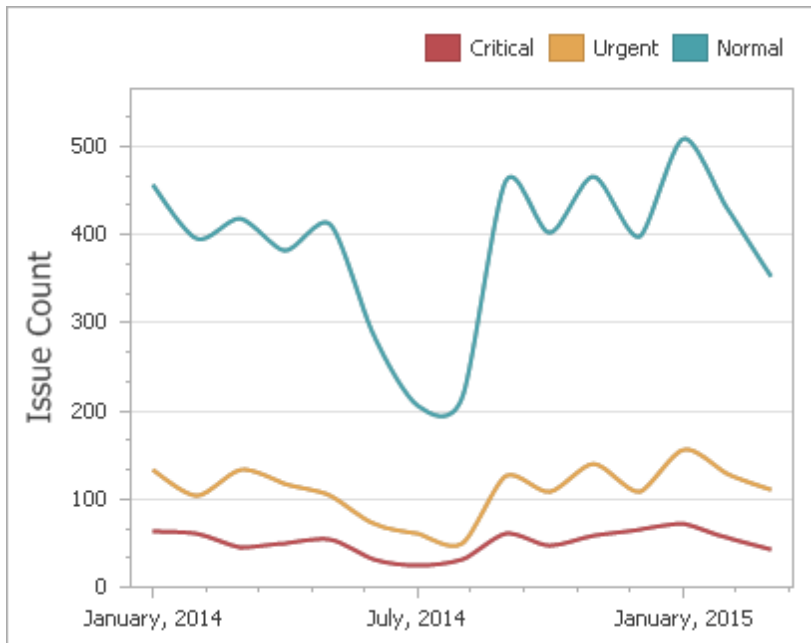
Step Line

Step Line series use vertical and horizontal lines to connect the numeric data points forming a step-like progression.



Spline

Spline series plot a fitted curve through each numeric data point.



Area Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Area Series](#)

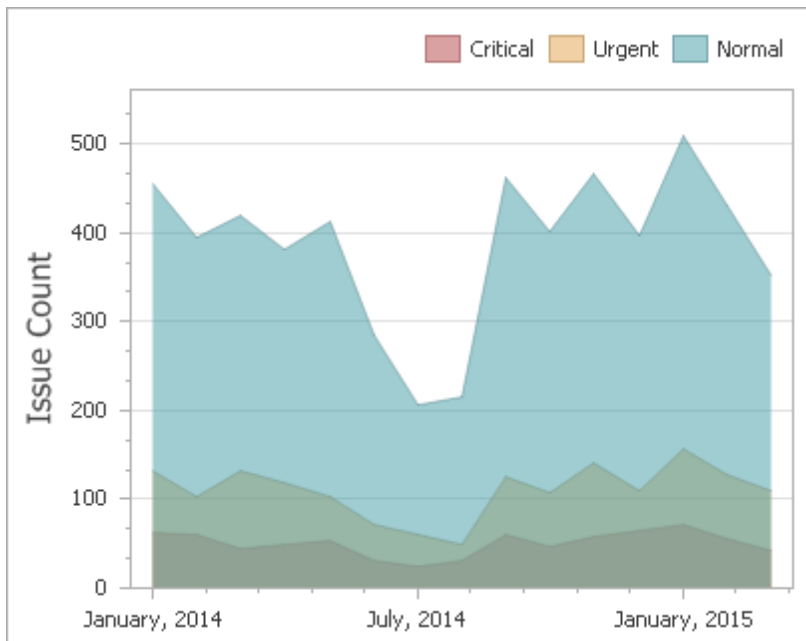
Area series connect numeric data points by different types of line segments and fill the area between the line and X-axis/other series.

The following types of Point and Line series are available.

- [Area](#)
- [Stacked Area](#)
- [Full-Stacked Area](#)
- [Step Area](#)
- [Spline Area](#)
- [Stacked Spline Area](#)
- [Full-Stacked Spline Area](#)

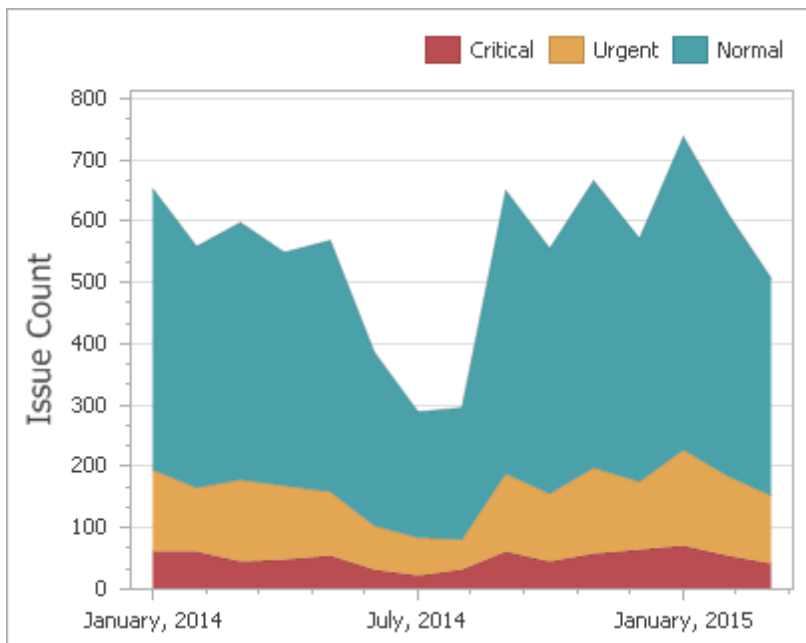
Area

Area series connect numeric data points by straight line segments and fill the area between the line and X-axis.



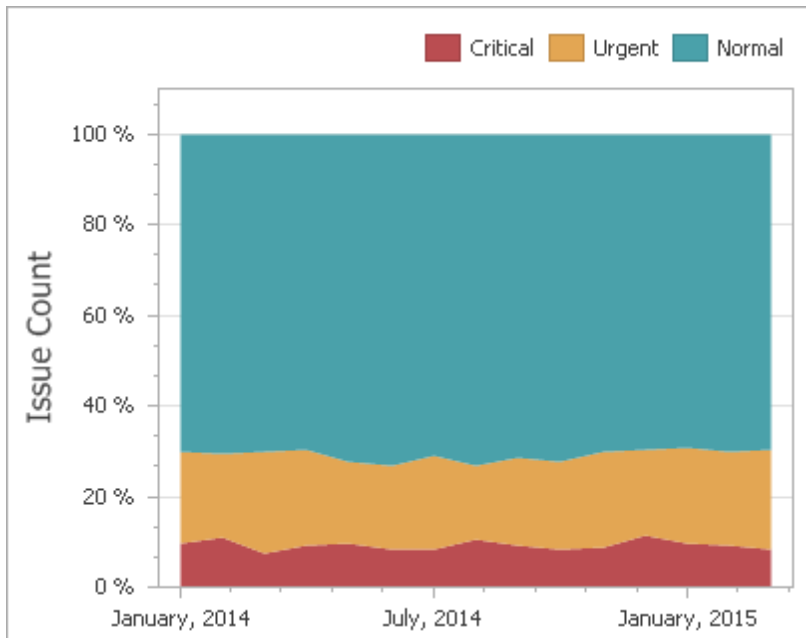
Stacked Area

Stacked Area series can be used to show the trend of the contribution for each value. Stacked Area series connect numeric data points by straight line segments and fill the area between the line and previous series.



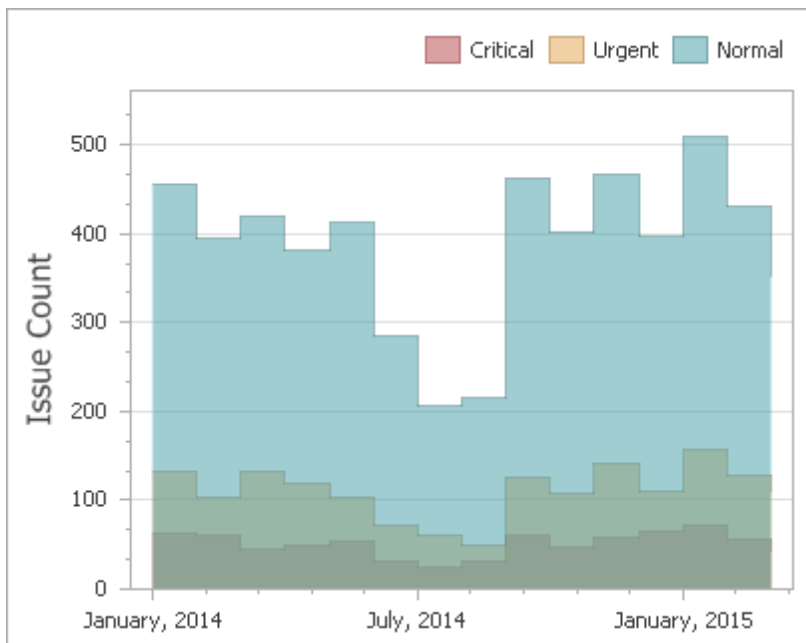
Full-Stacked Area

Full-Stacked Area series are useful to show the trend of the percentage for each value.



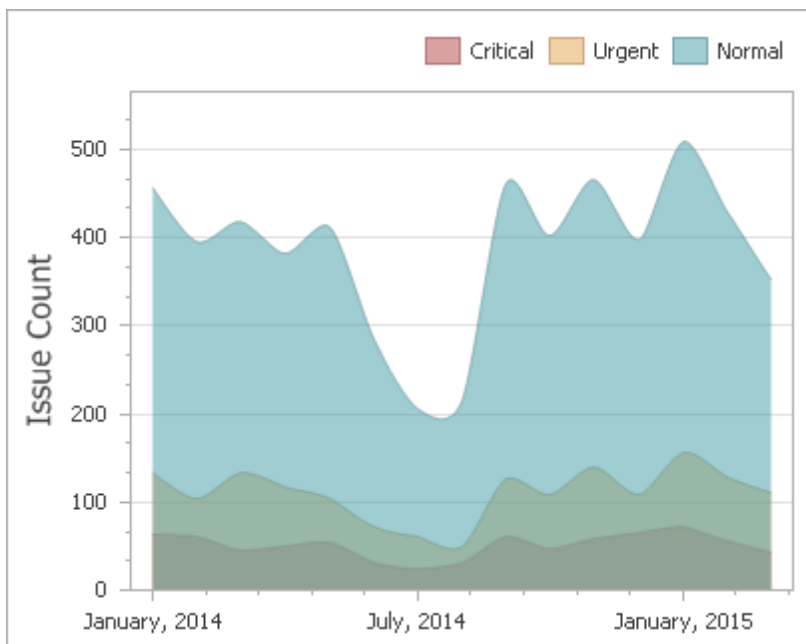
Step Area

Step Area series use vertical and horizontal lines to connect the numeric data points forming a step-like progression and fill the area between the line and X-axis.



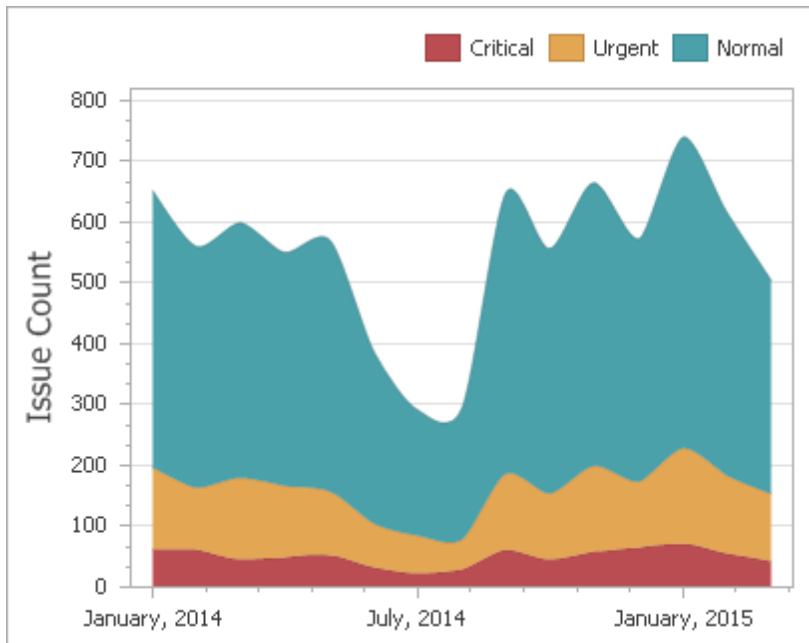
Spline Area

Spline Area series plot a fitted curve through each numeric data point and fill the area between the line and X-axis.



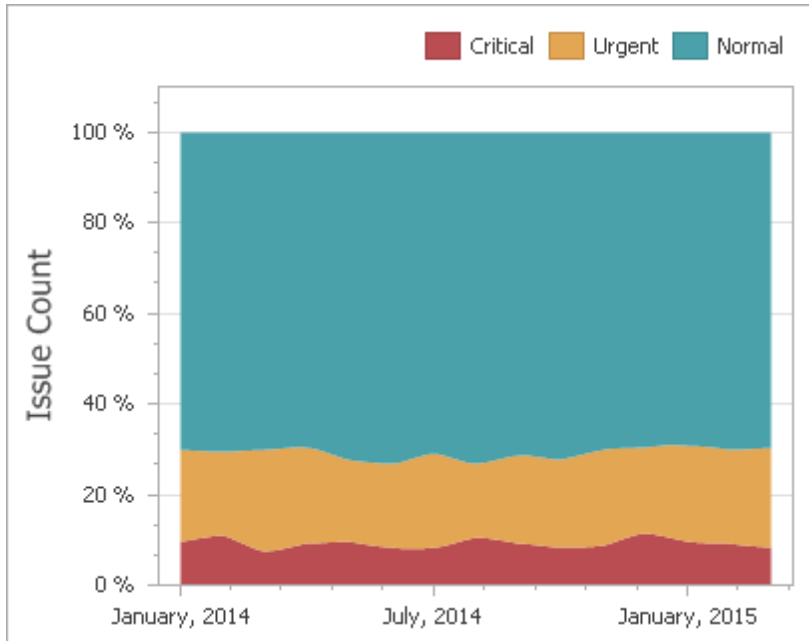
Stacked Spline Area

Stacked Area series can be used to show the trend of the contribution for each value. Stacked Area series plot a fitted curve through each numeric data point, and fill the area between the line and previous series.



Full-Stacked Spline Area

Full-Stacked Spline Area series are useful to show the trend of the percentage for each value.



Range Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Range Series](#)

Range series are generally used to show variations in a specified time range like temperature, price, etc.

The following types of Range series are available.

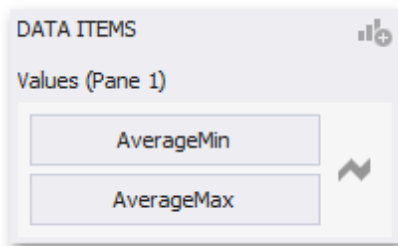
- [Range Bar](#)
- [Range Area](#)

Data Binding Specifics

A range series is a space between two simple series displayed as a filled area (**Range Area**) or bars that stretch from a point in one series to the corresponding point in the other (**Range Bar**). Thus, you need to provide two measures instead of one to display a range series.

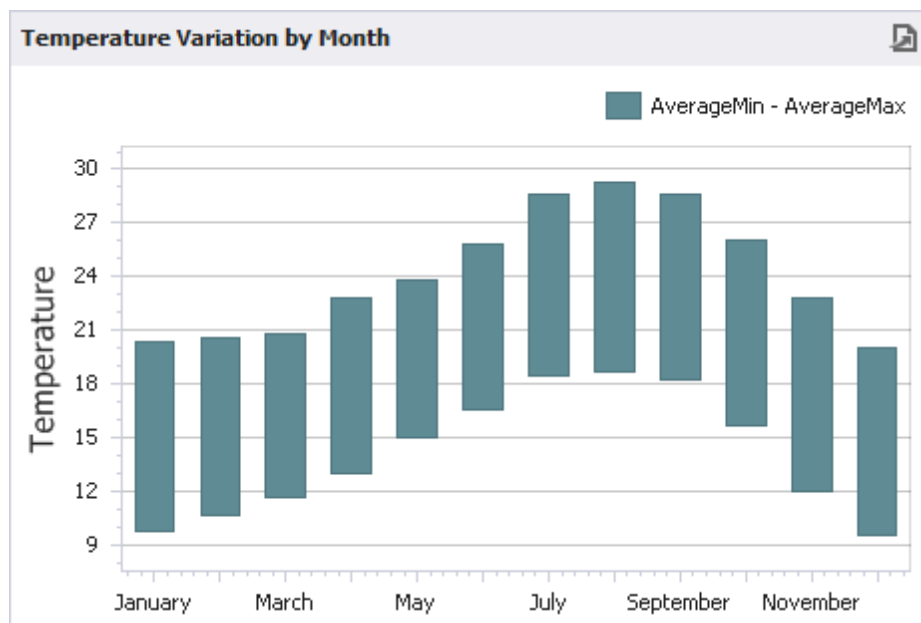
- **Value 1** - a measure against which the first set of values is calculated.
- **Value 2** - a measure against which the second set of values is calculated.

When you select the **Range Bar** or **Range Area** series type in the Designer, the [DATA ITEMS](#) area displays two data item placeholders. Drag and drop the required measures to corresponding placeholders.



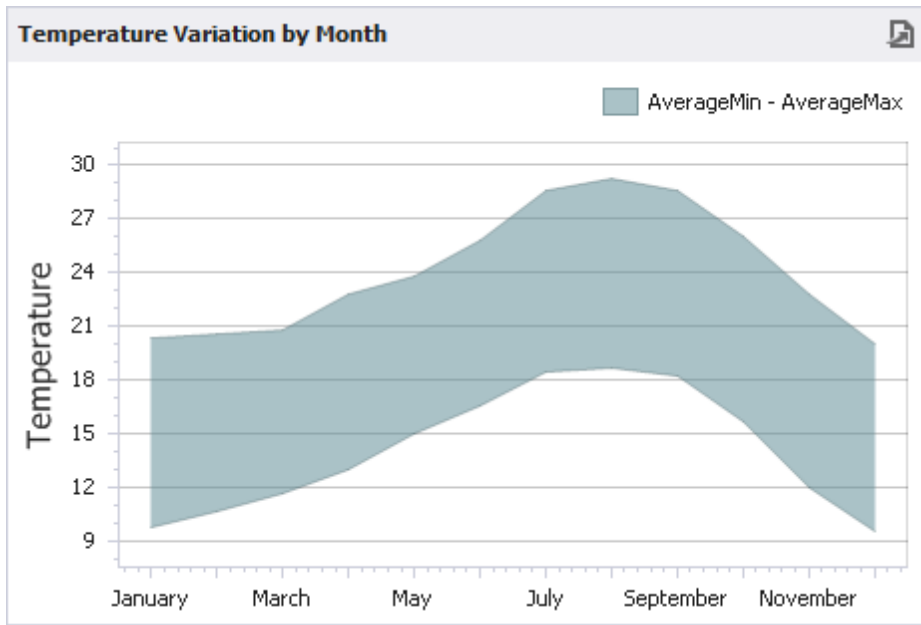
Range Bar

Range Bar series are similar to [Bar series](#) except that they are drawn between a range of values.



Range Area

Range Area series are similar to [Area series](#) except that their areas are filled between a range of values.



Weighted Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Weighted Series](#)

Weighted series allow you to visualize data in three dimensions.

The following types of Weighted series are available.

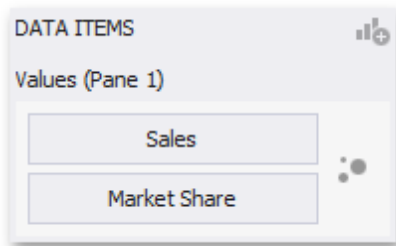
- [Bubble](#)

Data Binding Specifics

Data points in a weighted series present the following two measures.

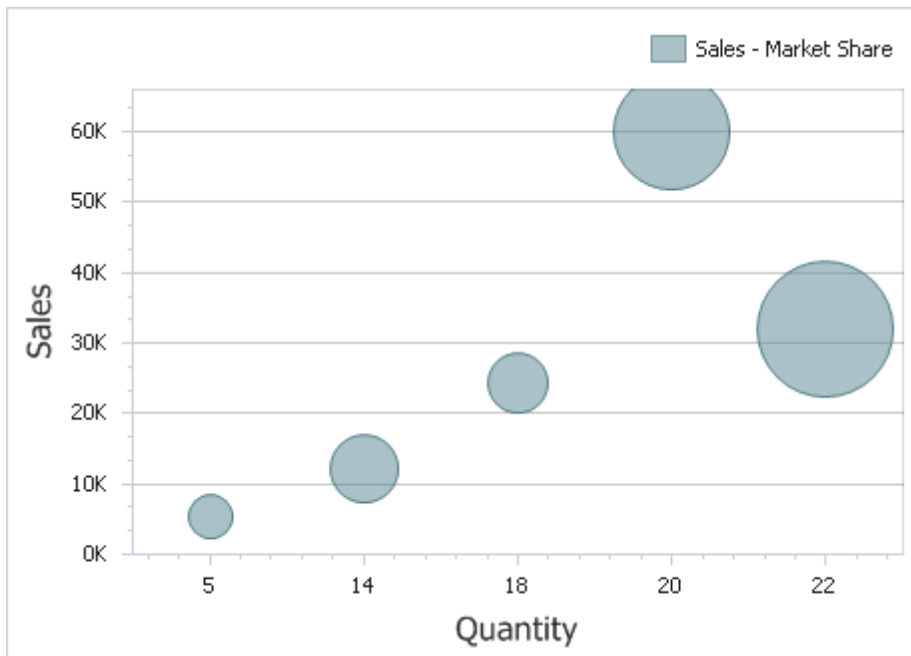
- **Value** - the Y-coordinate of series points.
- **Weight** - the size of series points.

When you select the **Bubble** series type in the Designer, the [DATA ITEMS](#) area displays two data item placeholders. Drag and drop the required measures to corresponding placeholders.



Bubble

Bubble series are similar to [Point series](#) except that they allow you to provide an additional measure whose values are expressed in a bubble size.



Financial Series

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Series](#) > [Financial Series](#)

Financial series are used to illustrate stock prices.

The following types of Financial series are available.

- [High-Low-Close](#)
- [Stock](#)
- [Candle Stick](#)

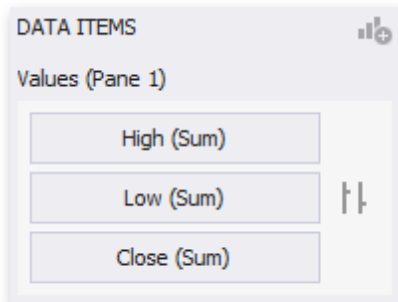
Coloring Specifics

Note that financial series do not support a standard [coloring](#) mechanism used to color chart series points. The Chart dashboard item colors series points of financial series in the following way.

- **Black** if the price at the end of the previous period is lower than the price at the end of the current period.
- **Red** if the price at the end of the previous period is larger than the price at the end of the current period.

High-Low-Close

When you select the High-Low-Close series type in the Designer, the [DATA ITEMS](#) area displays three data item placeholders. High-Low-Close series require three measures to be provided.

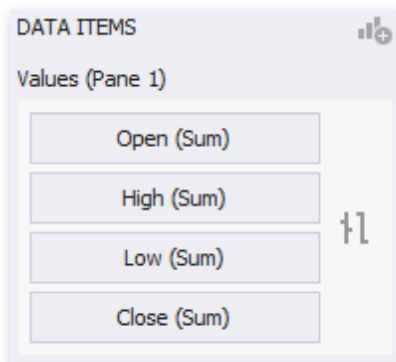


- **High** - the maximum price within the specified period (the top of the series point).
- **Low** - the minimum price within the specified period (the bottom of the series point).
- **Close** - the price at the end of the specified period (the tick mark).

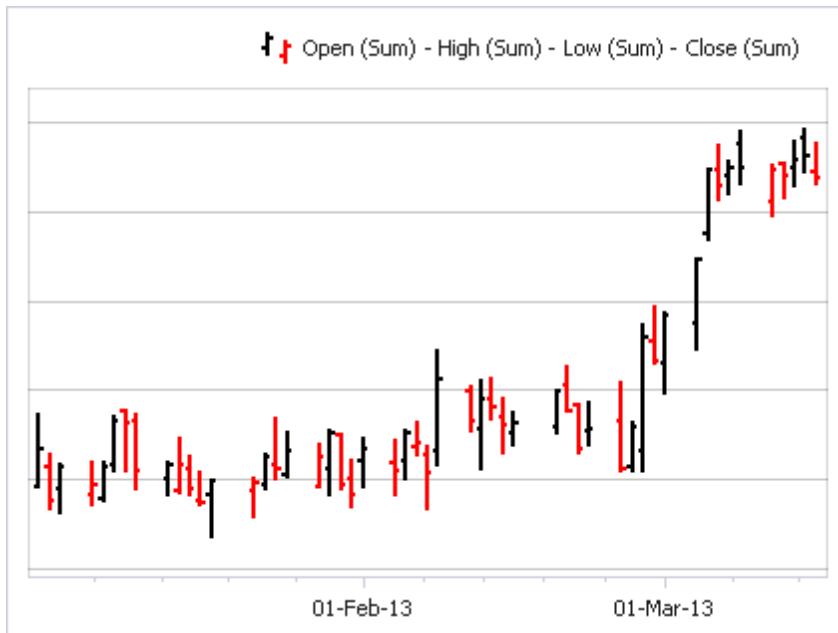


Stock

When you select the Stock series type in the Designer, the [DATA ITEMS](#) area displays four data item placeholders. Stock series require four measures to be provided.

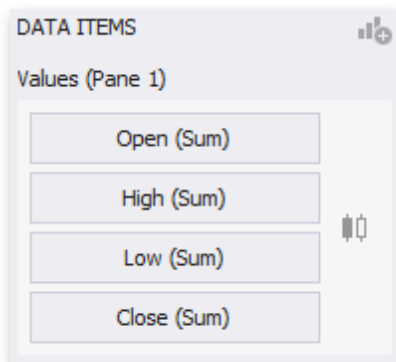


- **Open** - the price at the beginning of the specified period (the left tick mark).
- **High** - the maximum price within the specified period (the top of the series point).
- **Low** - the minimum price within the specified period (the bottom of the series point).
- **Close** - the price at the end of the specified period (the right tick mark).



Candle Stick

When you select the Candle Stick series type in the Designer, the [DATA ITEMS](#) area displays four data item placeholders. Candle Stick series require four measures to be provided.



- **Open** - the price at the beginning of the specified period.
- **High** - the maximum price within the specified period (the upper shadow top).
- **Low** - the minimum price within the specified period (the lower shadow bottom).
- **Close** - the price at the end of the specified period.

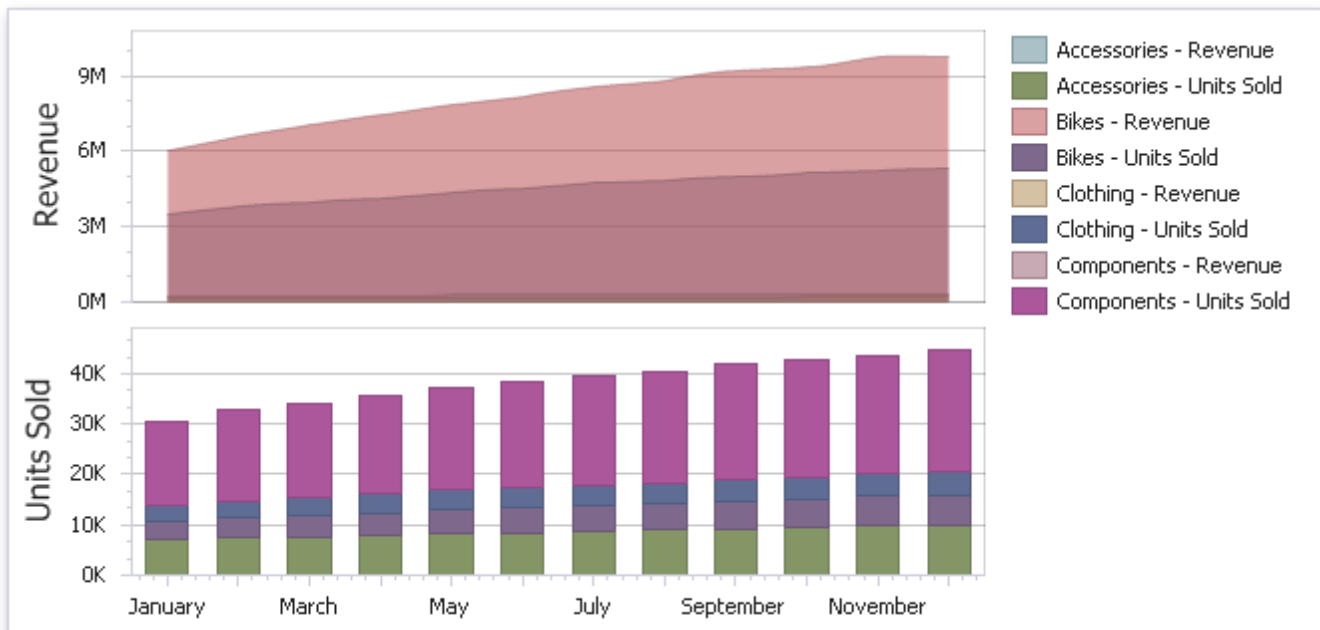


Panes

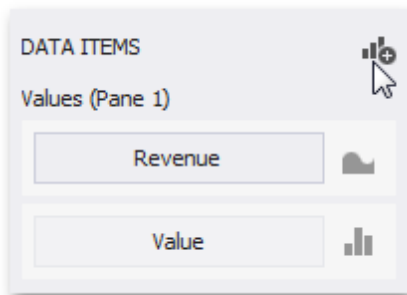
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Panes](#)

The Chart dashboard item can contain any number of **panes**. Panes are visual areas within a diagram that display chart series.

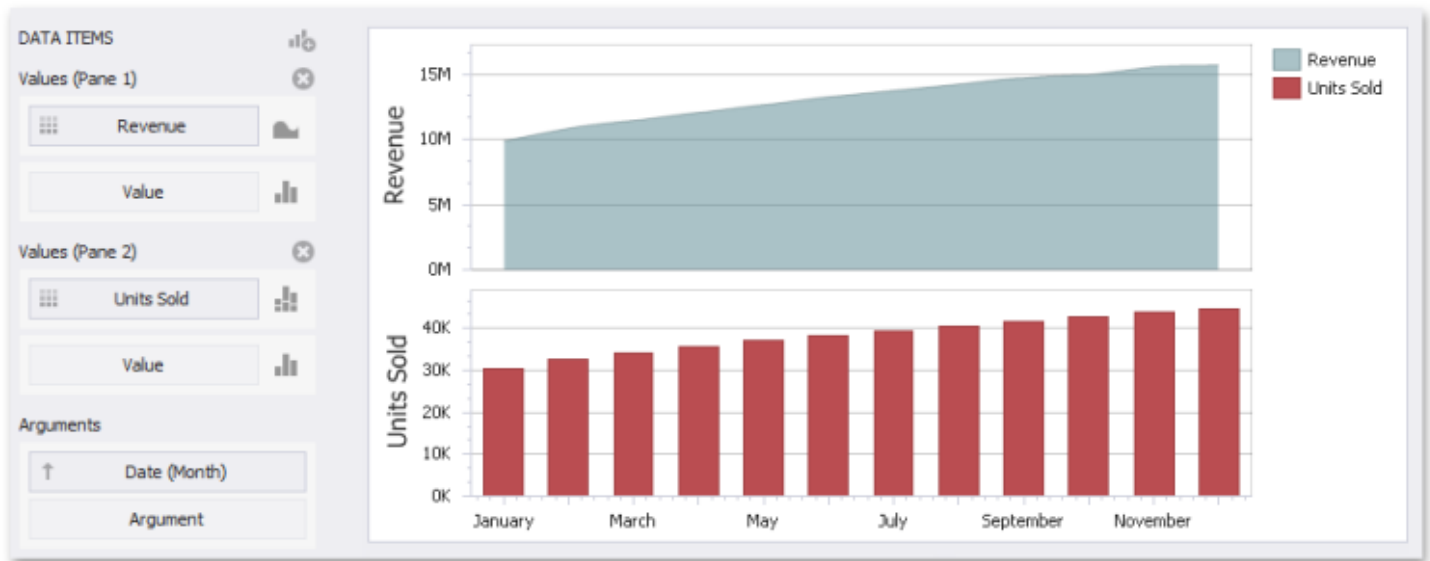
Each pane has its own [Y-axis](#) and displays a specific set of series. All panes in a chart share the same [X-axis](#).



To add a pane, click the **Add Pane** button (the  icon) at the top right of the [DATA ITEMS](#) pane.



Once a new pane is added, the Dashboard Designer creates another **Values** section in the DATA ITEMS pane.



Use this section to provide data items that supply values to be displayed in the new pane (see [Providing Data](#) for details on data binding).

To remove a pane, click the **Remove Pane** button (the  icon) displayed in the corresponding **Values** section.

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Interactivity](#)

This section describes features that enable interaction between the **Chart** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

The section contains the following topics.

- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

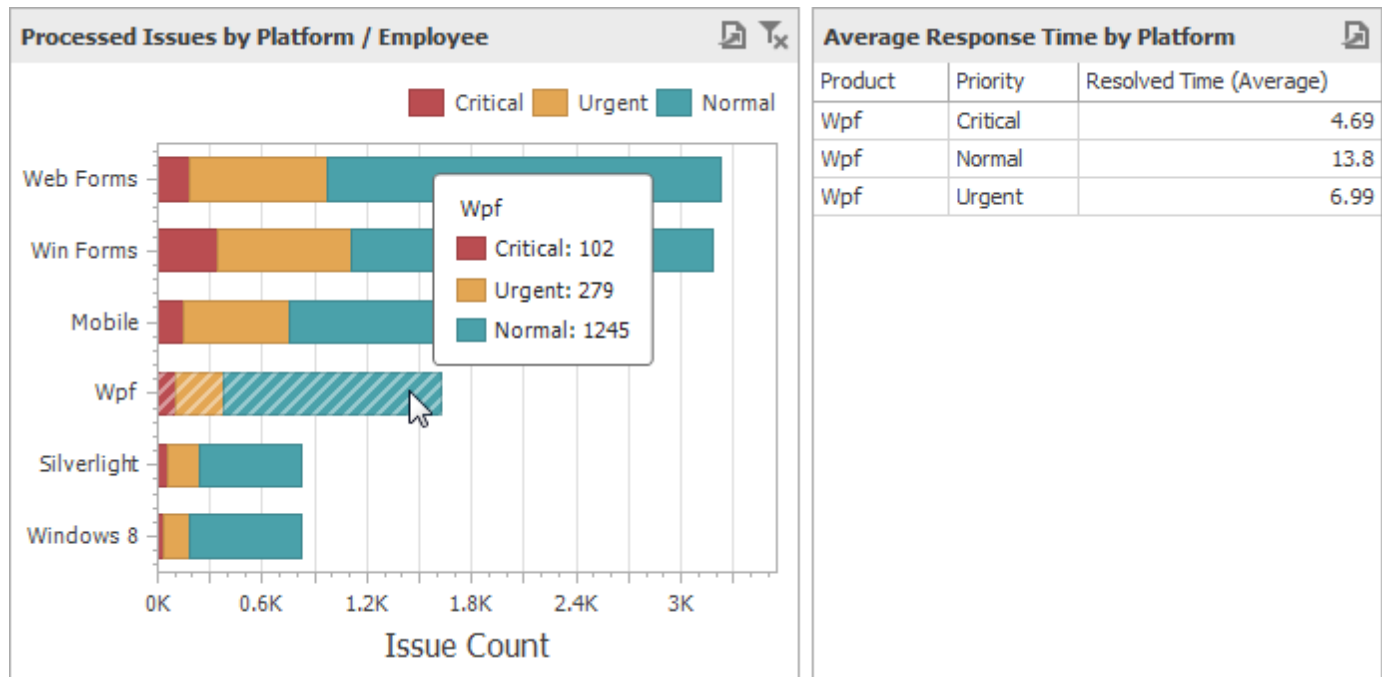
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Interactivity](#) > [Master Filtering](#)


The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

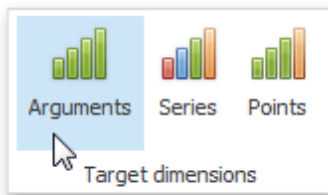
The Chart dashboard item supports filtering by **argument**, **series** or **points**.

Filtering by Arguments

When filtering by arguments is enabled, you can click series points to make other dashboard items only display data related to selected argument values.

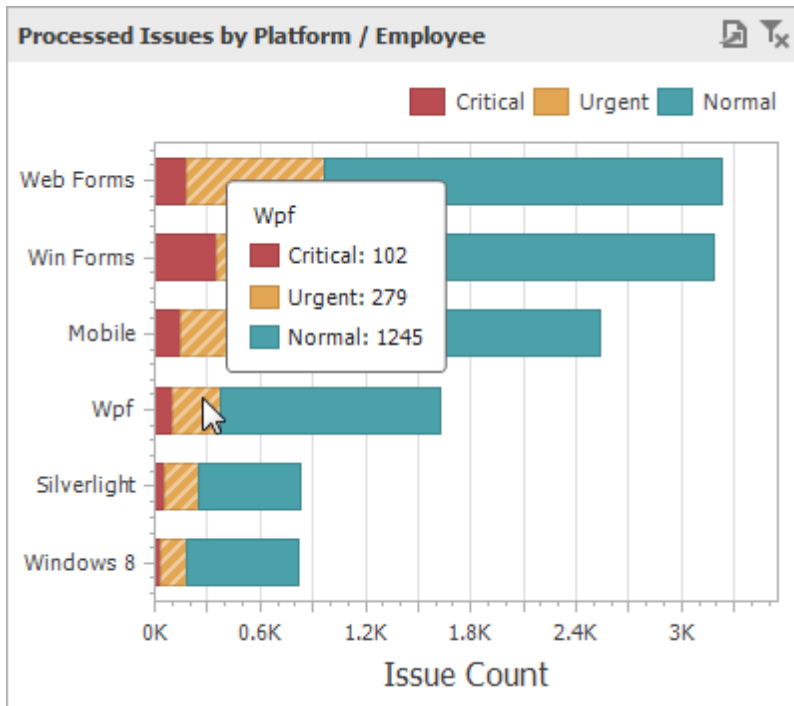


To enable filtering by arguments in the Designer, set the required [Master Filter mode](#) and click the **Arguments** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).




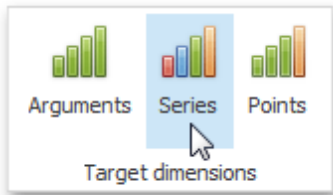
Filtering by Series

When filtering by series is enabled, you can click a series point to make other dashboard items only display data related to the selected series.



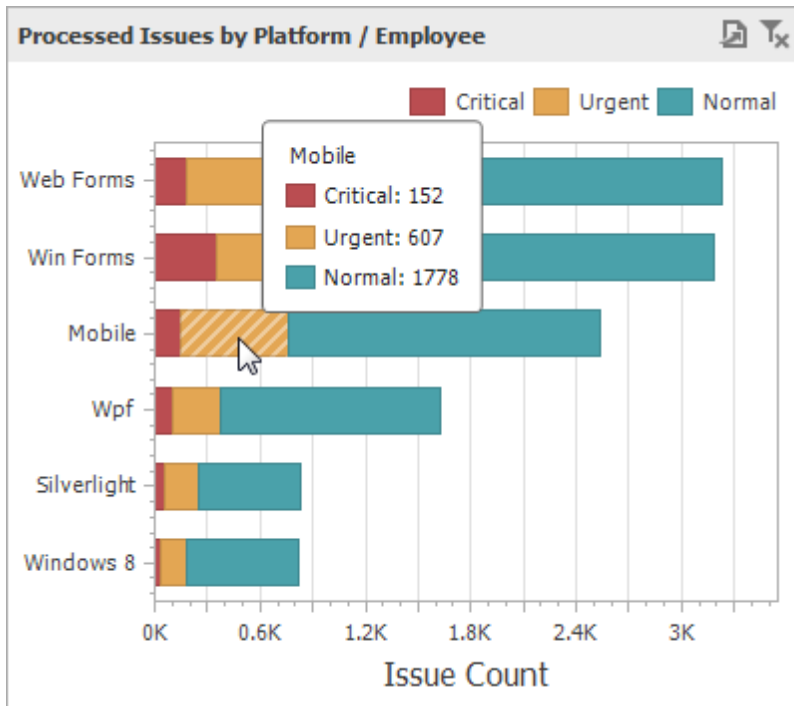
Product	Priority	Resolved Time (Average)
Wpf	Urgent	6.99
Windows 8	Urgent	7.55
Win Forms	Urgent	6.94
Web Forms	Urgent	7.54
Silverlight	Urgent	7.45
Mobile	Urgent	7.51

To enable filtering by series in the Designer, set the required [Master Filter mode](#) and click the **Series** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



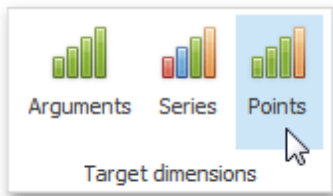
Filtering by Points

When filtering by points is enabled, you can click a individual point to make other dashboard items display only data related to the selected point.



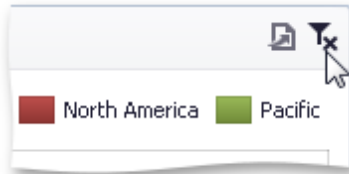
Product	Priority	Resolved Time (Average)
Mobile	Urgent	7.51

To enable filtering by points in the Designer, set the required [Master Filter mode](#) and click the **Points** button in the **Data** Ribbon tab.

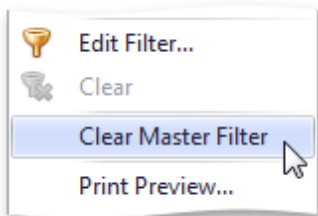


Reset Filtering

To reset filtering, use the **Clear Master Filter** button in the Chart's [caption](#) area



or the corresponding command in the Chart's context menu.



Drill-Down

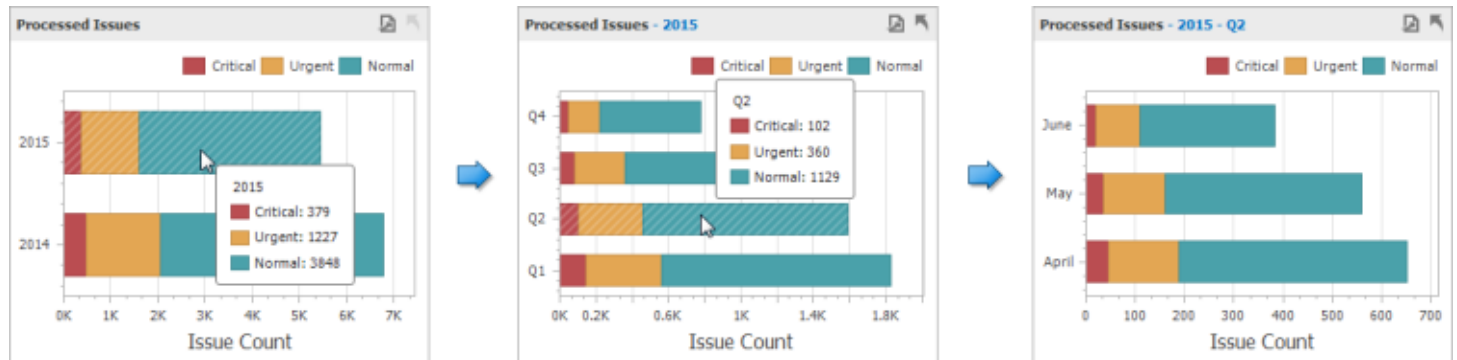
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

The Chart dashboard item supports drill down on argument or series values.

Drill Down on an Argument

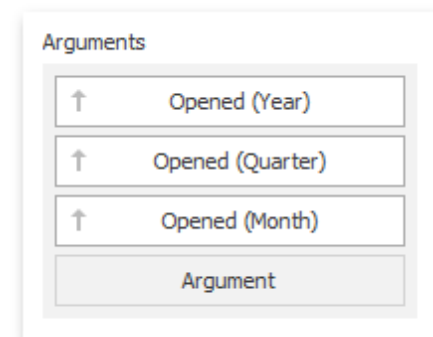
When drill down on arguments is enabled, you can click a series point to view a detail chart for the corresponding argument value.



Note


When [Filtering by Arguments](#) is enabled, you can view the details by double-clicking a series point.

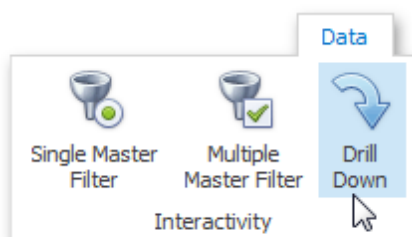
Drill down on arguments requires that the Arguments section contains several data items, from the least detailed to the most detailed item.



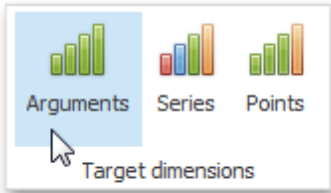
Note

In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill down on arguments, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu)...

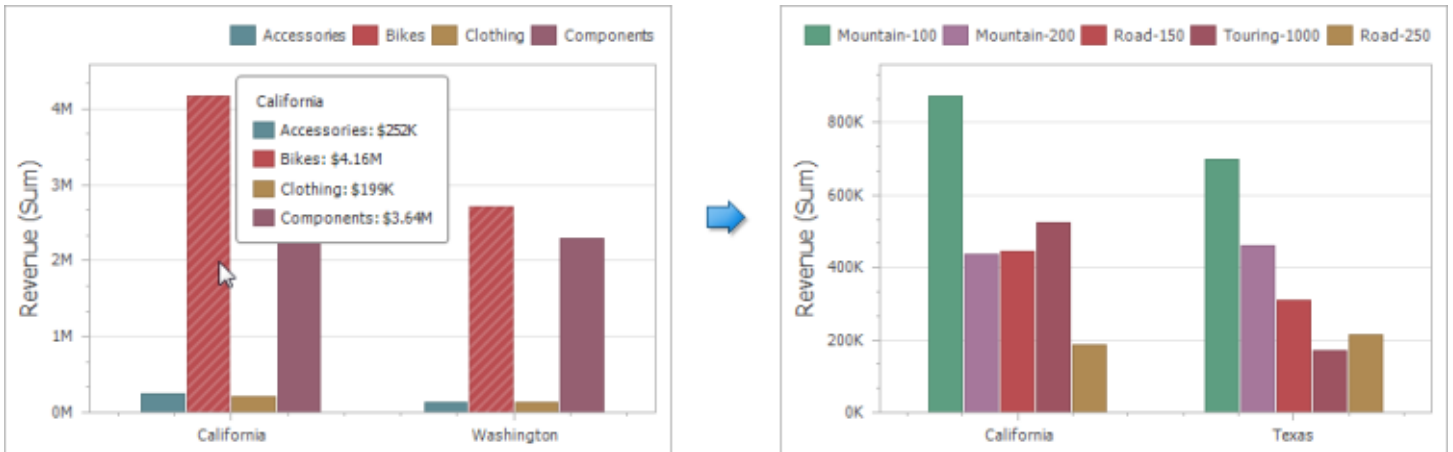


...and the **Arguments** button (or the  button if you are using the toolbar menu).



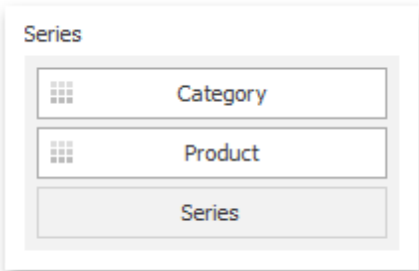
Drill Down on a Series

When drill down on a series is enabled, you can click a series point (or corresponding legend item) to view a detail chart for the corresponding series.




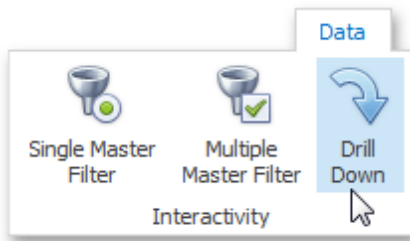
Note
When [Filtering by Series](#) is enabled, you can view the details by double-clicking a series point.


Drill down on a series requires that the Series section contains several data items, from the least detailed to the most detailed item.

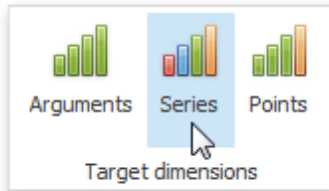


Note
In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill down on a series, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu)...

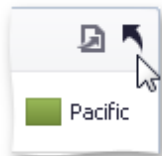


...and the **Series** button (or the  button if you are using the toolbar menu).



Drill Up

To return to the previous detail level (drill up), use the **Drill Up** button within the Chart [caption](#) or in the context menu.

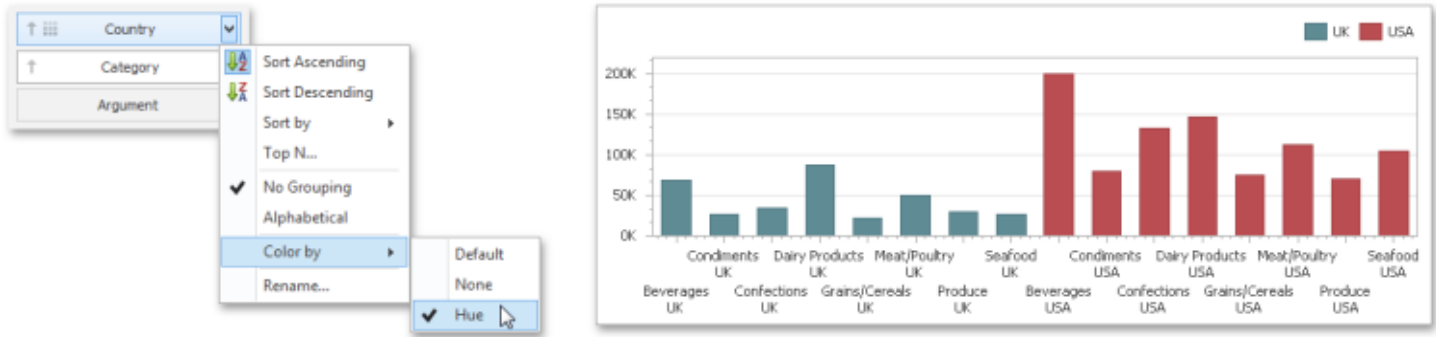


Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/ measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

By default, the Chart dashboard item colors different measures and series dimensions by hue. In the example below, series points corresponding to different countries (*UK* and *USA*) are painted in different colors.



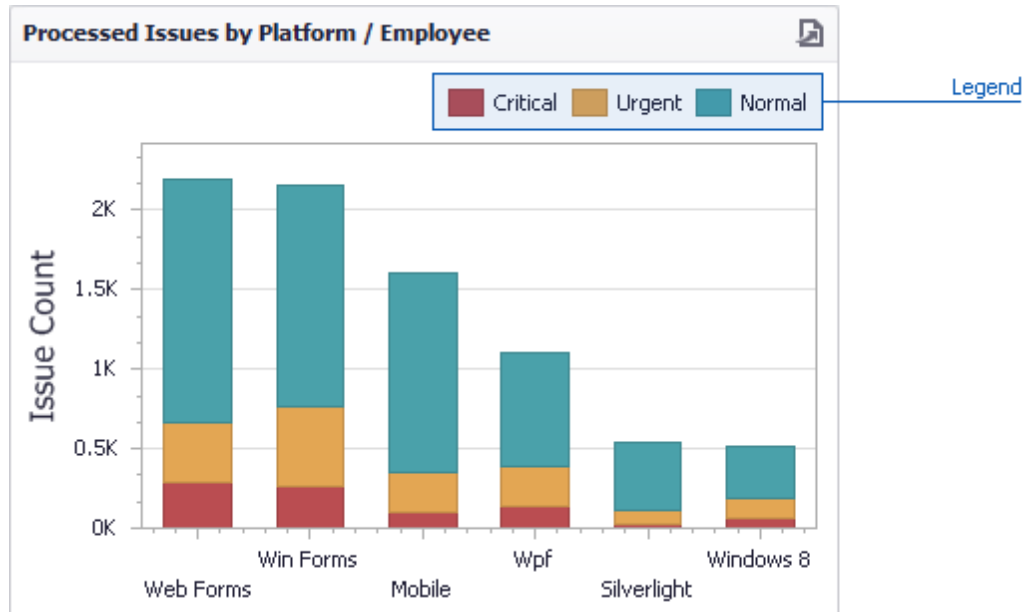
Note

Note that the Chart dashboard item does not support coloring for the [financial](#) series.

Legend

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Legend](#)

A **legend** is an element of a chart that identifies [chart series](#) and series points (for instance, [colored points](#) corresponding to argument values).

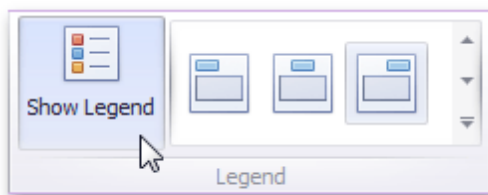


This topic describes how to customize various legend settings.

Visibility

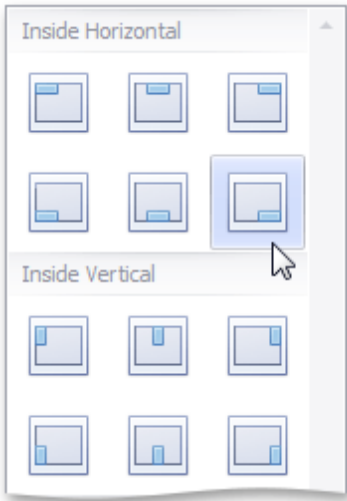
You can specify whether or not a chart should display a legend.

In the Designer, use the **Show Legend** button in the **Legend** section of the **Design** Ribbon tab.



Position and Orientation

To specify the legend's position and orientation, select one of the predefined options from the gallery in the **Design** Ribbon tab.



Axes

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Axes](#)

The **Chart** dashboard item displays two axes by default: the *X-axis* and the *Y-axis*. The topics in this section describe how to customize axis settings.

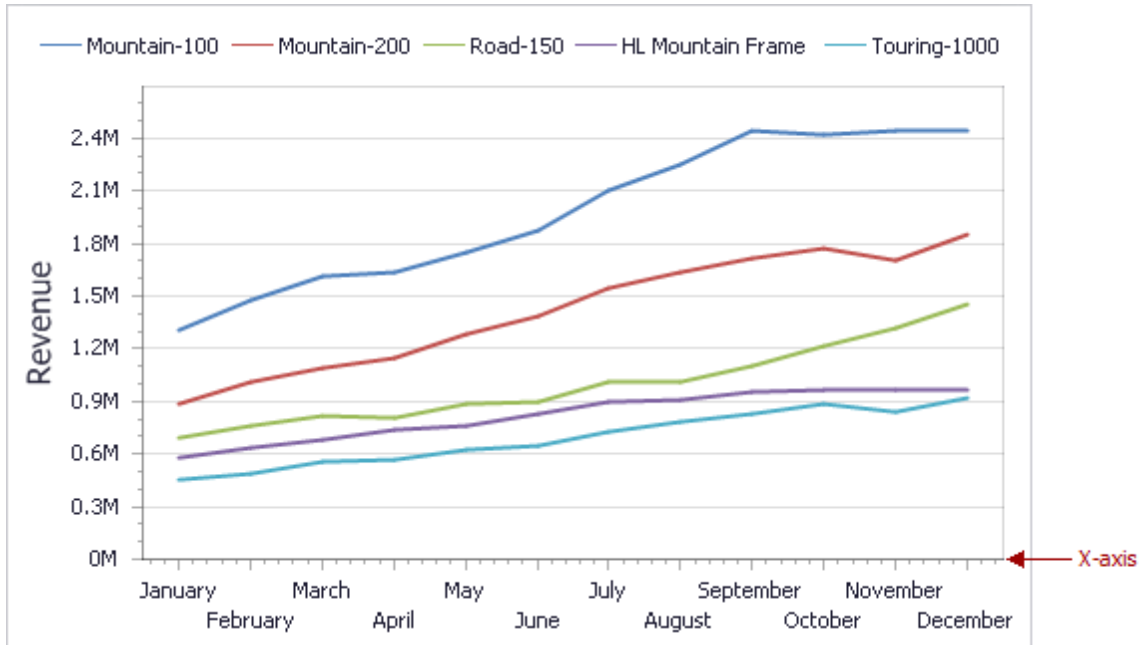
The section contains the following topics.

- [X-Axis](#)
- [Y-Axis](#)

X-Axis

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Axes](#) > [X-Axis](#)

The **X-axis** is the axis of arguments.

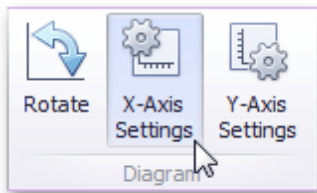


This topic consists of the following sections.

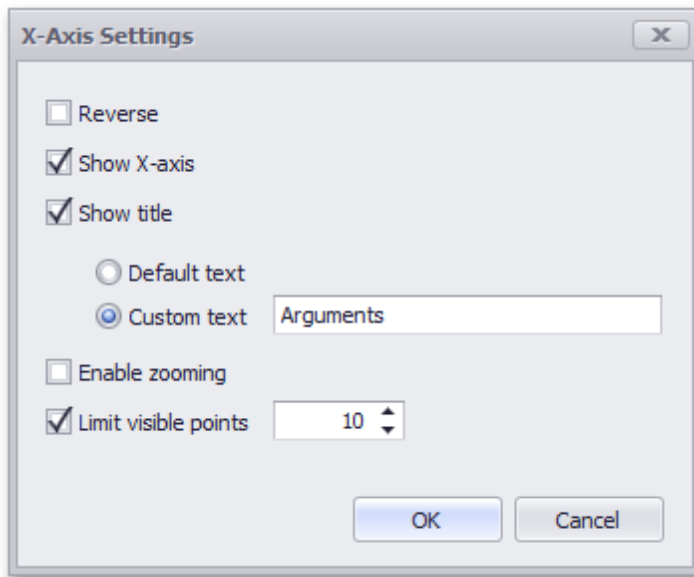
- [General X-Axis Settings](#)
- [Continuous and Discrete X-Axes](#)

General X-Axis Settings

To access X-axis settings, use the **X-Axis Settings** button in the **Diagram** section of the **Design** Ribbon tab.



This will invoke the **X-Axis Settings** dialog.



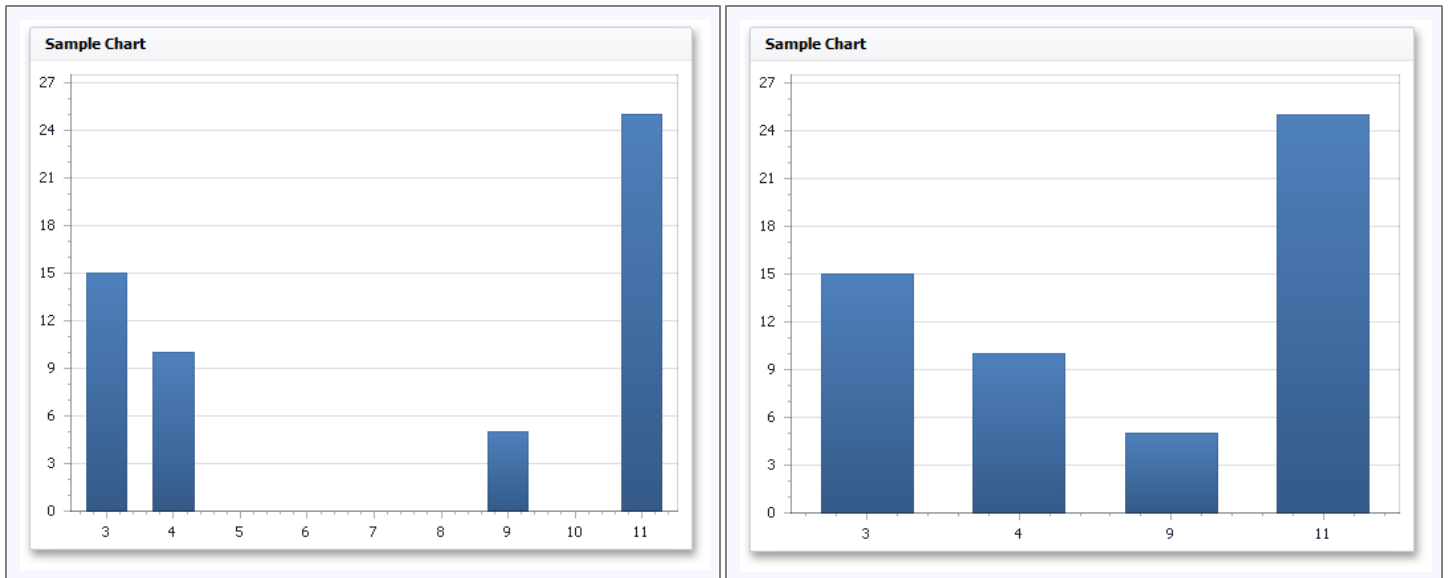
This dialog contains the following settings.

Reverse	Allows you to reverse the X-axis. If the X-axis is reversed, its values are ordered from right to left.
Show X-axis	Allows you to hide and show the X-axis.
Show title	Allows you to hide and show the X-axis title. You can choose whether to use the default text or specify a custom string.
Enable zooming	Allows you to enable zooming for the X-axis. The X-axis' scroll bar provides the capability to perform navigation in the zoomed diagram.
Limit visible points	Allows you to limit the number of points displayed on the chart's diagram along the X-axis. The X-axis' scroll bar provides the capability to perform navigation if the number of all points exceeds the number of visible points.

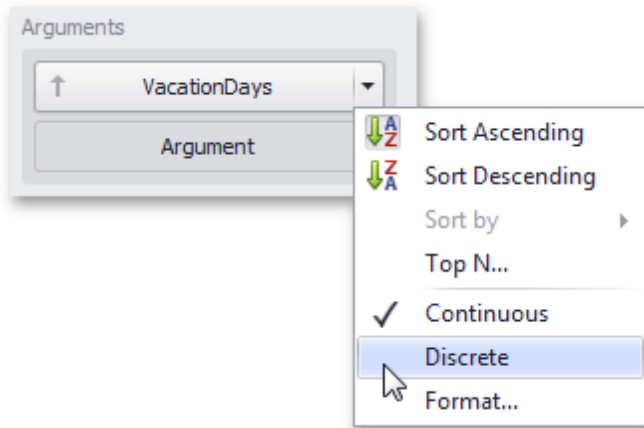
Continuous and Discrete X-Axes

If the dimension in the Arguments section contains numeric data, the Chart can create either a continuous X-axis or a discrete X-axis.

Continuous X-axis	Discrete X-axis
If a continuous axis is used, the distance between argument values is proportional to their values.	On a discrete axis, all argument values are an equal distance from each other.



To specify the X-axis type in the Designer, invoke the data item menu for the argument dimension and select the axis type.

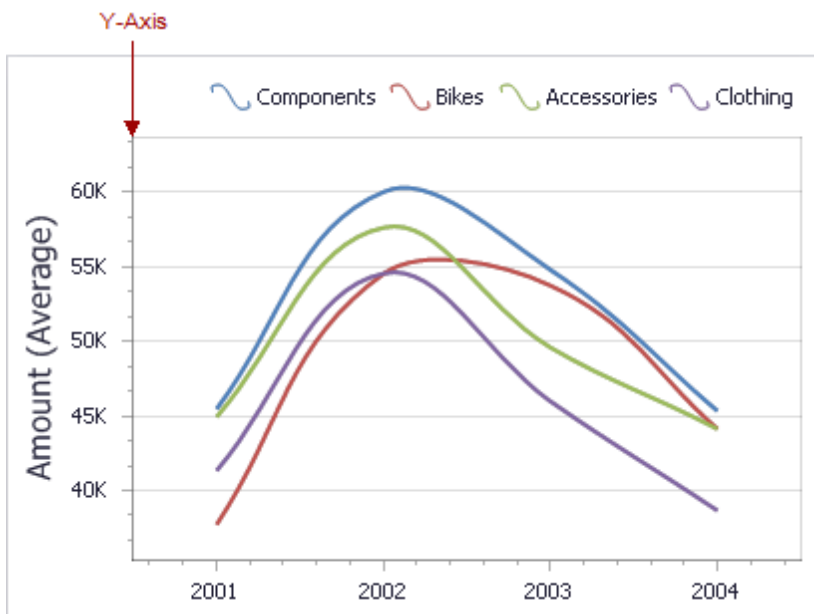
**Note**

Note that the continuous X-axis is not supported in [OLAP](#) mode.

Y-Axis

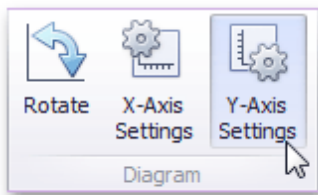
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Axes](#) > [Y-Axis](#)

The **Y-axis** is the numerical axis of values.

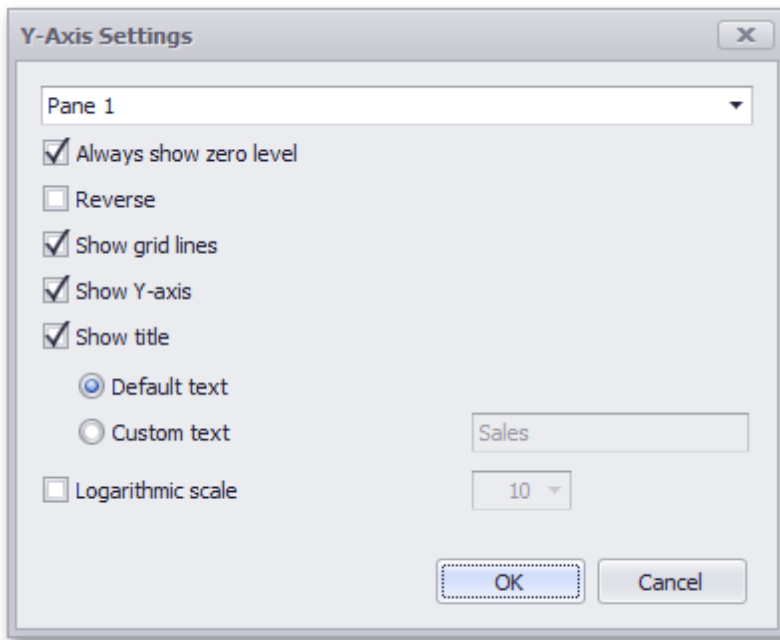


General Settings

To access the Y-axis settings, use the **Y-Axis Settings** button in the **Diagram** section of the **Design** Ribbon tab.



This will invoke the **Y-Axis Settings** dialog.

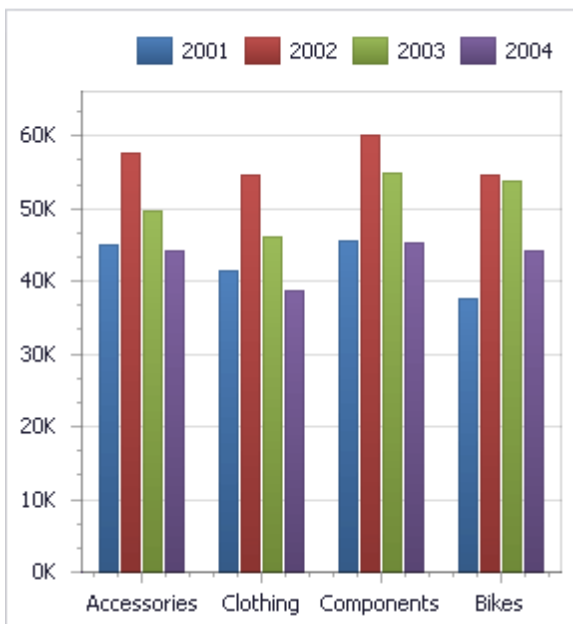


Use the combo box at the top to select the [pane](#) for the Y-axis settings you need to edit.

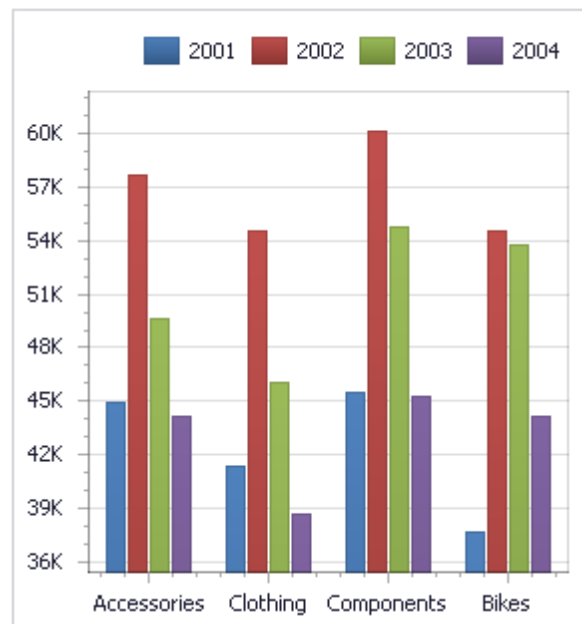
The dialog contains the following settings.

- **Always show zero level** - Specifies whether or not the axis' zero level is visible. If this option is unchecked, the visible axis range is defined based on the values plotted in the chart.

`AlwaysShowZeroLevel == true`



`AlwaysShowZeroLevel == false`

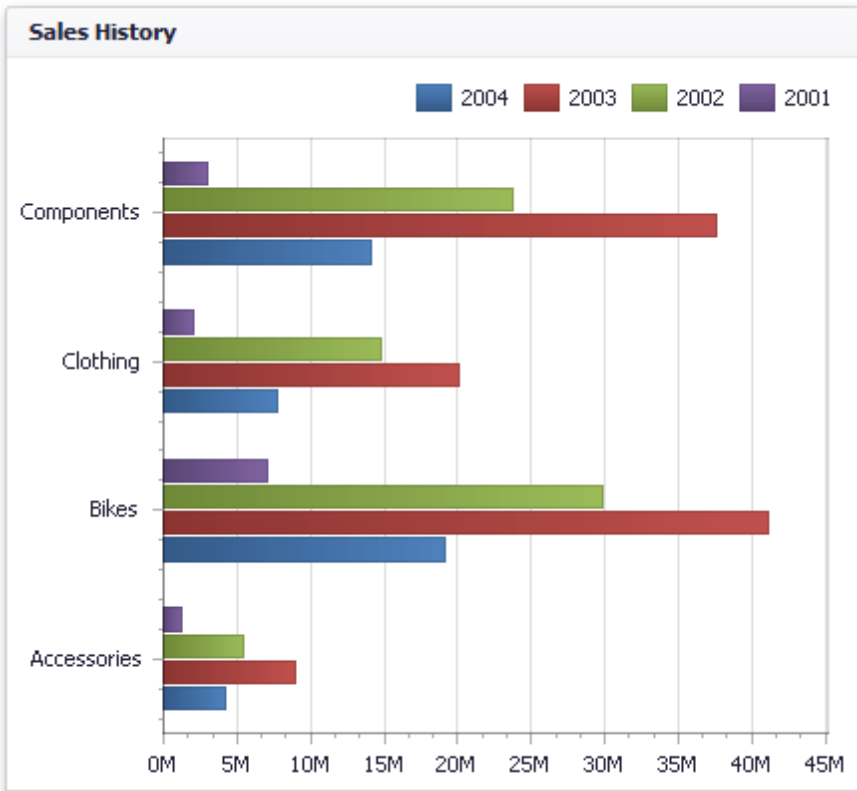
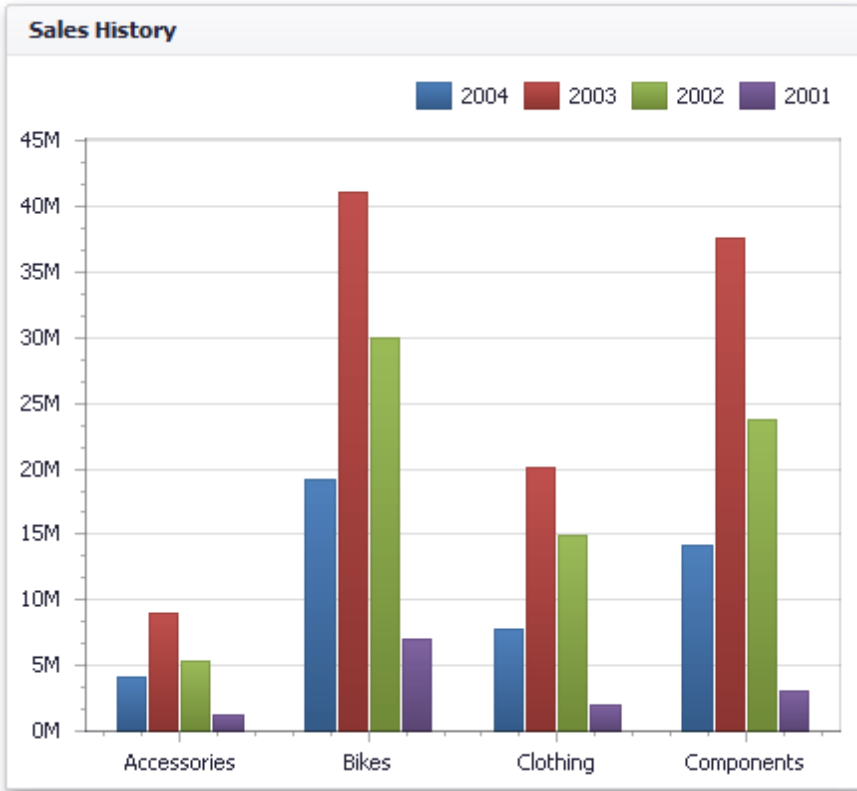


- **Reverse** - Allows you to reverse the X-axis. If the X-axis is reversed, its values are ordered from top to down.
- **Show grid lines** - Allows you to hide and show grid lines for the Y-axis.
- **Show Y-axis** - Allows you to hide and show the Y-axis.
- **Show title** - Allows you to hide and show the Y-axis title. You can choose whether to use the default text or specify a custom string.

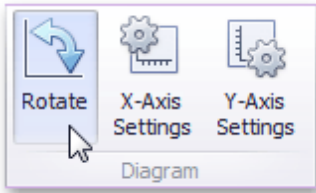
Orientation

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Chart](#) > [Orientation](#)

You can rotate the Chart so that the X-axis becomes vertical, and the Y-axis becomes horizontal.



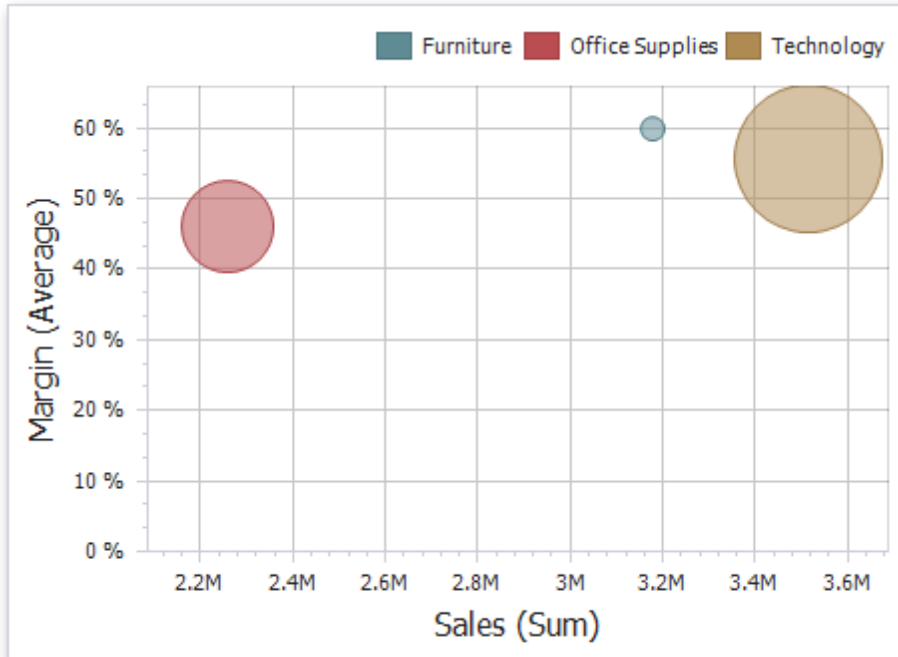
To rotate a Chart in the Designer, use the **Rotate** button in the **Diagram** group of the **Design** Ribbon tab.



Scatter Chart

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#)

The topics in this section describe the features available in the **Scatter Chart** dashboard item, and provide information on how to create and customize scatter charts in the **DevExpress Dashboard Suite**.



This section is divided into the following subsections.

- [Providing Data](#)
Provides information on how to supply the Scatter Chart dashboard item with data.
- [Interactivity](#)
Describes features that enable interaction between the Scatter Chart and other dashboard items.
- [Coloring](#)
Describes coloring capabilities of the Scatter Chart dashboard item.
- [Legend](#)
Provides information about the chart legend and its options.
- [Axes](#)
Describes how to customize settings related to chart axes.
- [Orientation](#)
Describes how to toggle the chart's orientation.
- [Labels](#)
Provides information about point labels and tooltips that contain descriptions of data points.

Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Providing Data](#)

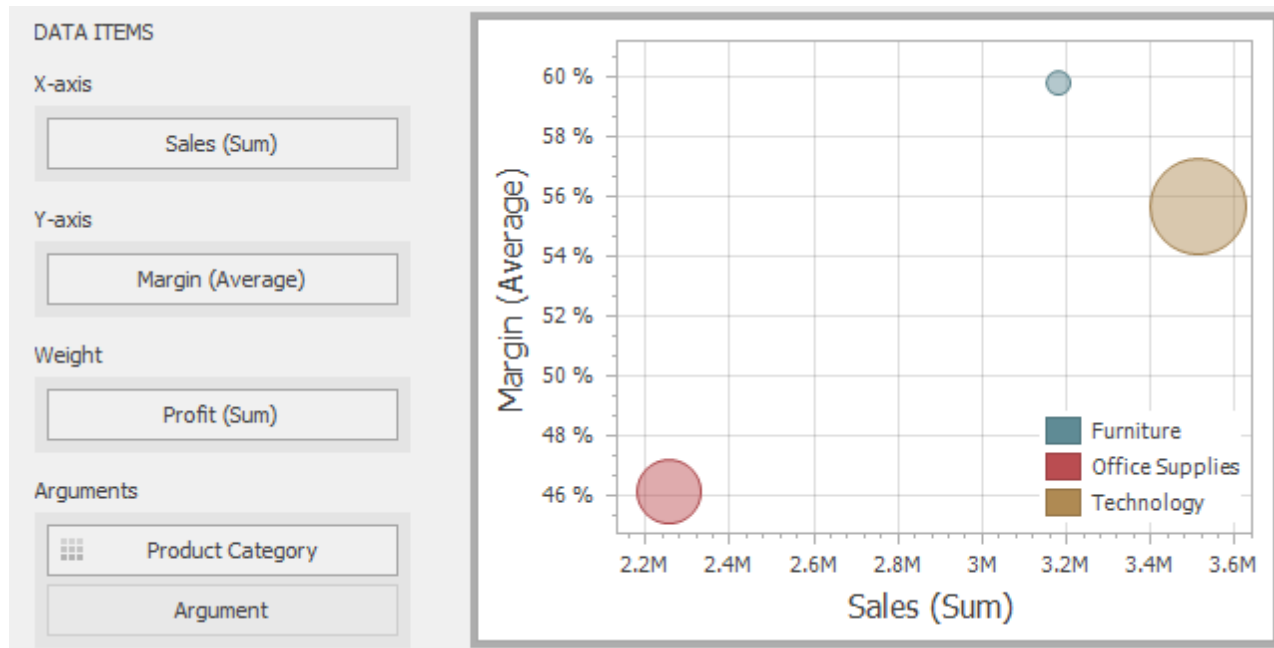
The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Scatter Chart** dashboard item to data in the Designer.

- [Binding to Data in the Designer](#)
- [Transposing X- and Y-axis](#)

Binding to Data in the Designer

The image below shows a sample Scatter Chart dashboard item that is bound to data.

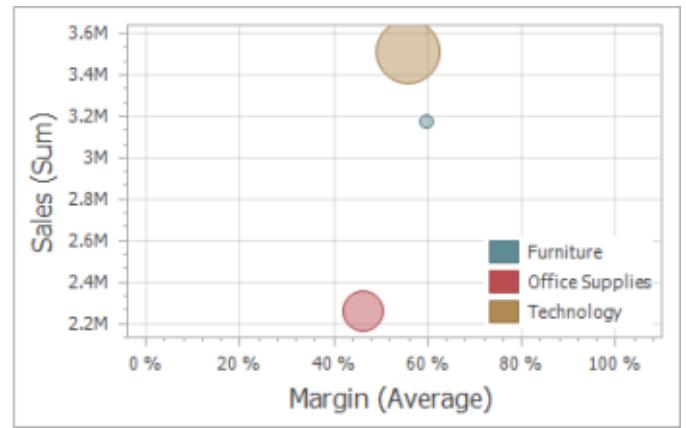
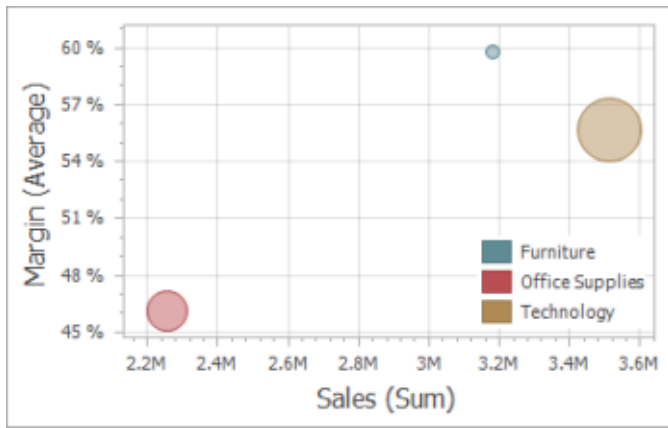


To bind the Scatter Chart dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes Scatter Chart data sections.

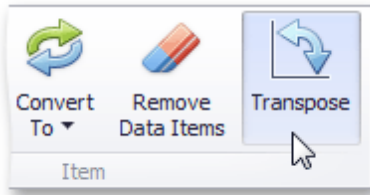
Section	Description
X-Axis	Contains the data item against which the X-coordinates of data points are calculated.
Y-Axis	Contains the data item against which the Y-coordinates of data points are calculated.
Weight	Contains the data item whose values are used to calculate the weight of data points.
Arguments	Contains data items providing scatter chart arguments that are used to create data points.

Transposing X- and Y-axis

The Scatter Chart dashboard item provides the capability to transpose its axes. In this case, the data item contained in the **X-Axis** section is moved to the **Y-Axis** section, and vice versa.



To transpose the selected Scatter Chart dashboard item, use the **Transpose** button in the **Home** ribbon tab.



Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Interactivity](#)

This section describes features that enable interaction between the Scatter Chart and other dashboard items. These features include Master Filtering and Drill-Down.

The section contains the following topics.

- [Master Filtering](#)
- [Drill-Down](#)

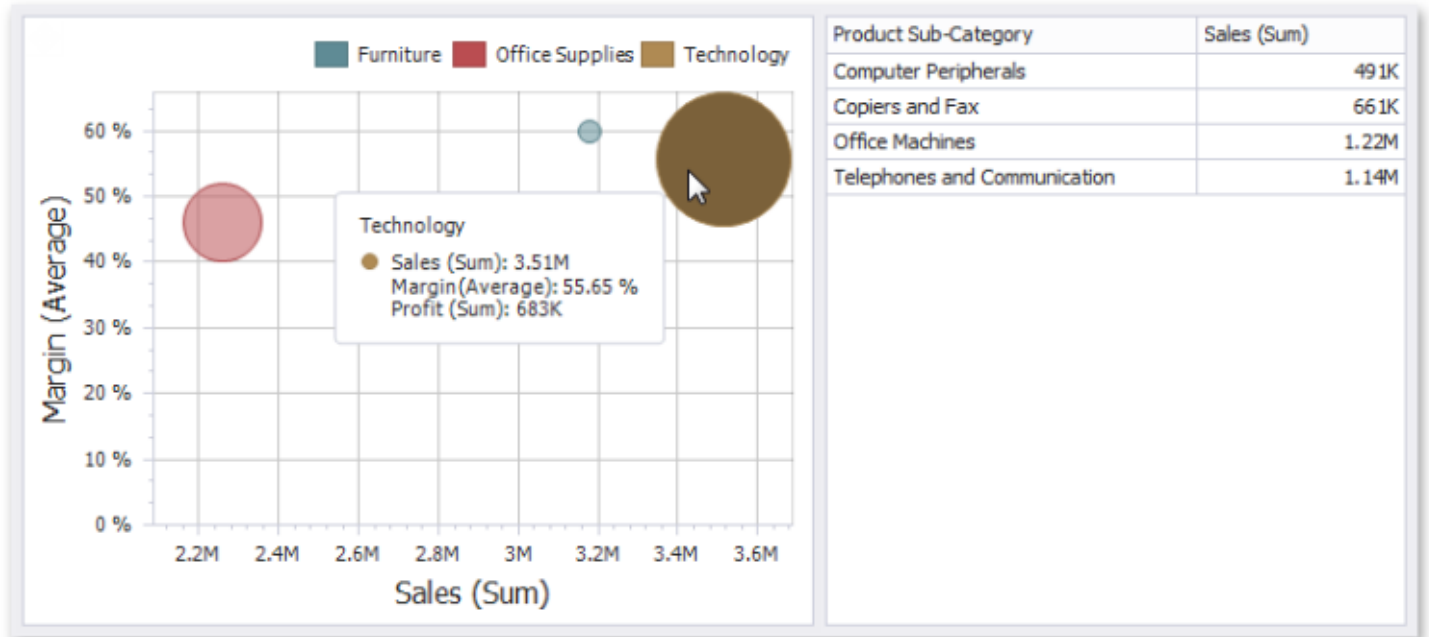
Master Filtering

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Interactivity](#) > [Master Filtering](#)

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

The Scatter Chart dashboard item supports filtering by points that correspond to specific argument values or their combinations.

When Master Filtering is enabled, you can click a point (or multiple points by holding down the **CTRL** key) to make other dashboard items only display data related to the selected point(s).



To learn how to enable Master Filtering in the Designer, see the [Master Filtering](#) topic.

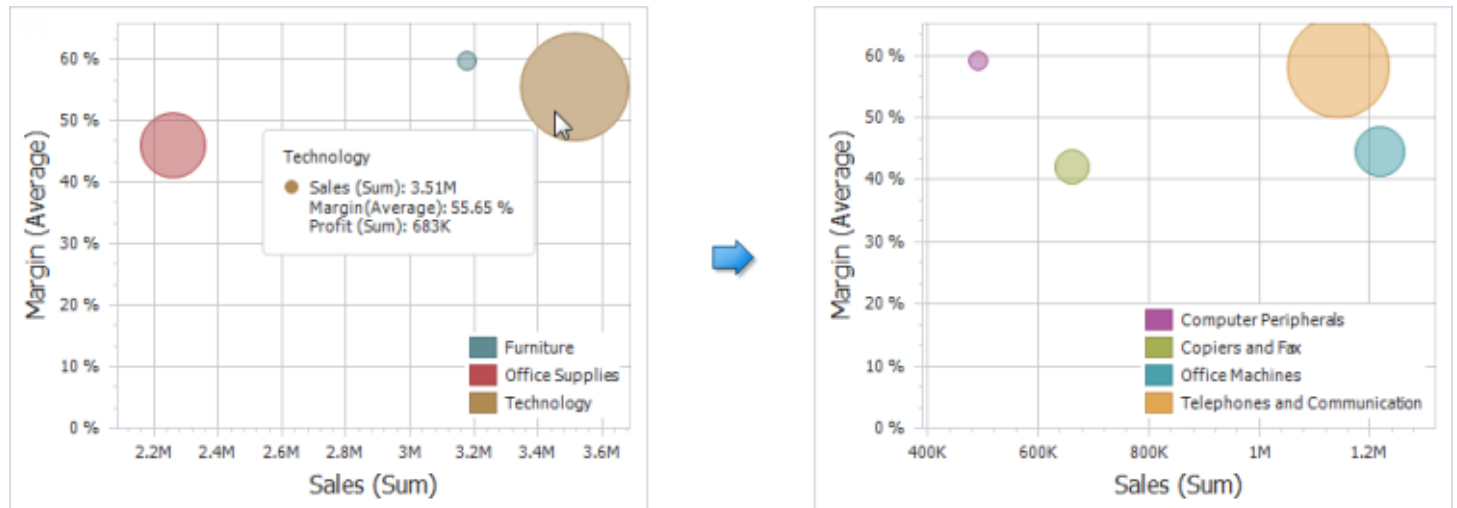
To reset filtering, use the **Clear Master Filter** (✕) button in the Chart's caption area, or the **Clear Master Filter** command in the context menu.

Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

When drill-down is enabled, you can click a point to view the details.



Note

When [Master Filtering](#) is enabled, you can view the details by double-clicking a point.

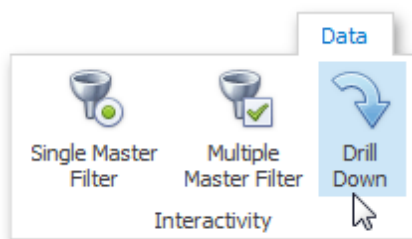
Drill-down requires that the **Arguments** section contain several dimensions, from the least to the most detailed dimension.



Note

In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes. To learn more about OLAP mode, see [Binding Dashboard Items to Data in OLAP mode](#).

To enable drill-down, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



To return to the previous detail level (drill up), use the **Drill Up** () button in the caption of the Scatter Chart

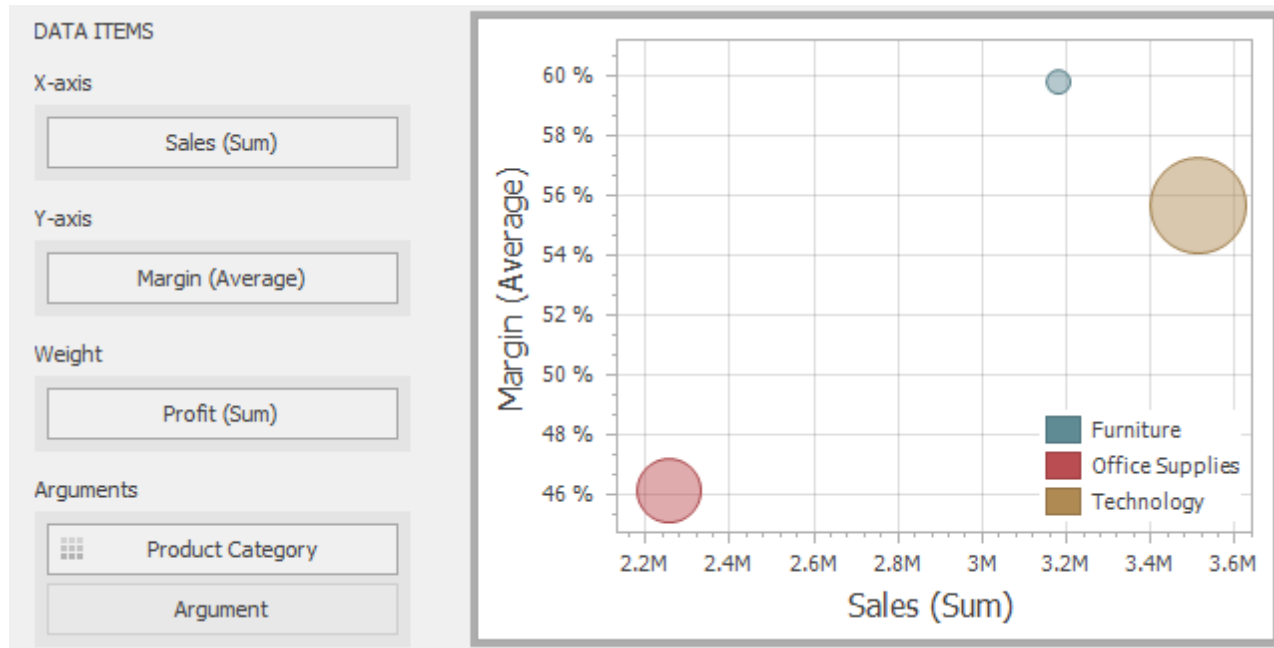
dashboard item, or the **Drill Up** command in the context menu.

Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/ measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

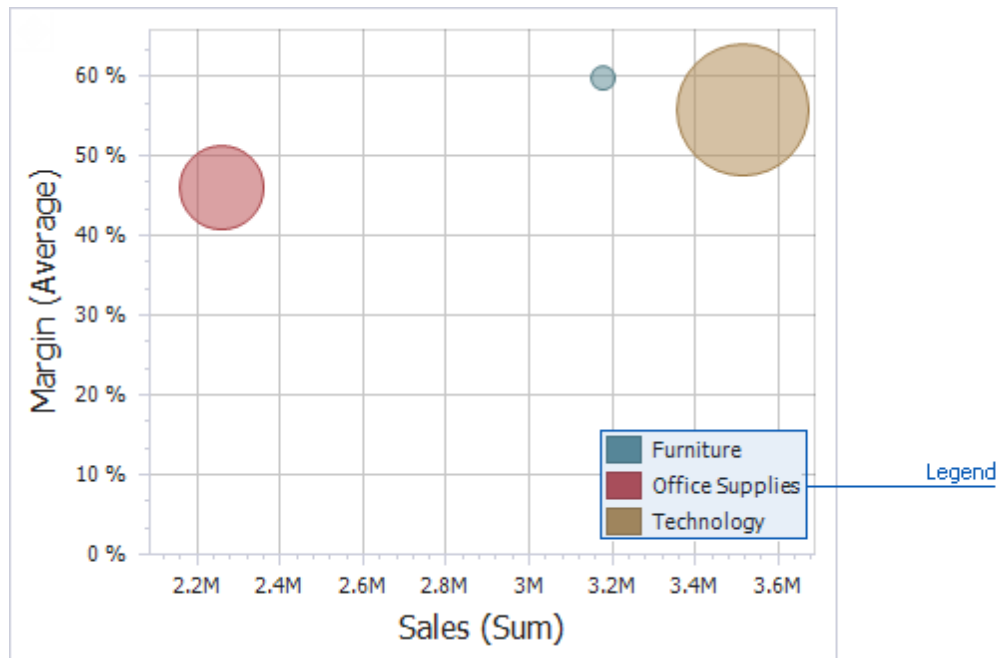
By default, the Scatter Chart dashboard item does not color its arguments. If necessary, you can change this behavior. For instance, the image below displays the Scatter Chart dashboard item whose *Product Category* points are colored by hue.



Legend

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Legend](#)

A **legend** is an element of a scatter chart that identifies chart points (for instance, [colored points](#) corresponding to argument values).

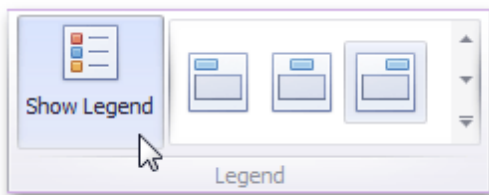


This topic describes how to customize various legend settings.

Visibility

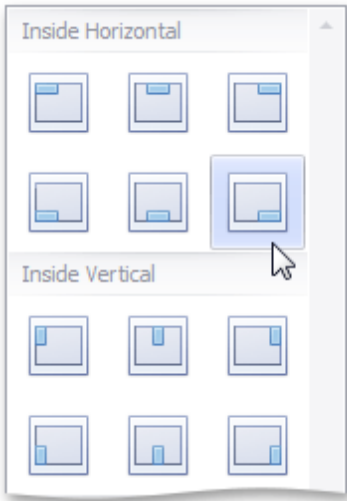
You can specify whether or not a chart should display a legend.

In the Designer, use the **Show Legend** button in the **Legend** section of the **Design** Ribbon tab.



Position and Orientation

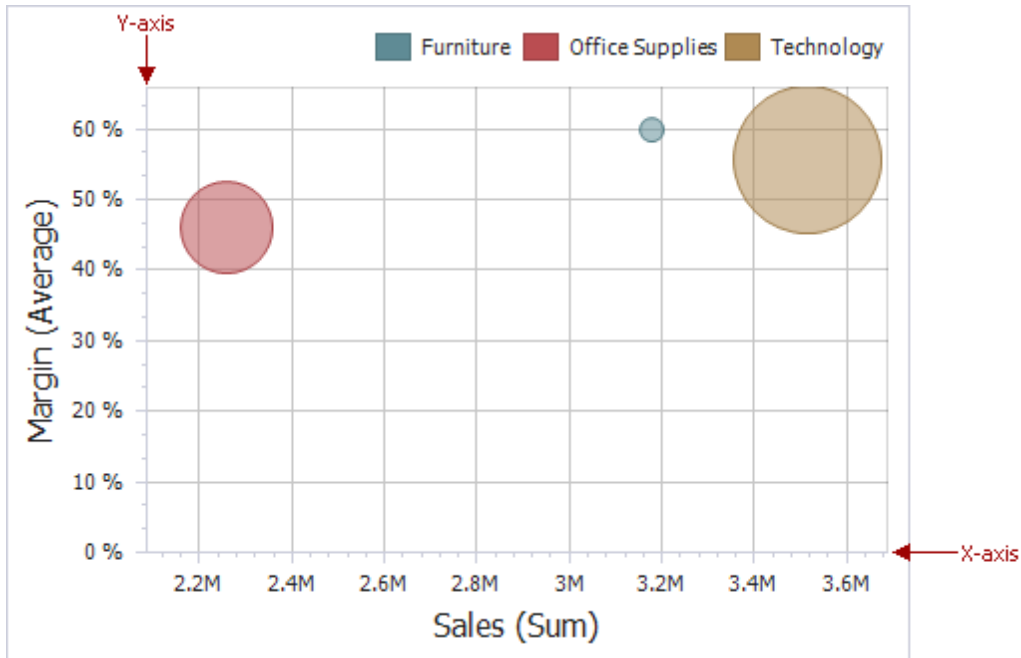
To specify the legend's position and orientation, select one of the predefined options from the gallery in the **Design** Ribbon tab.



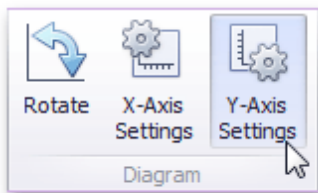
Axes

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Axes](#)

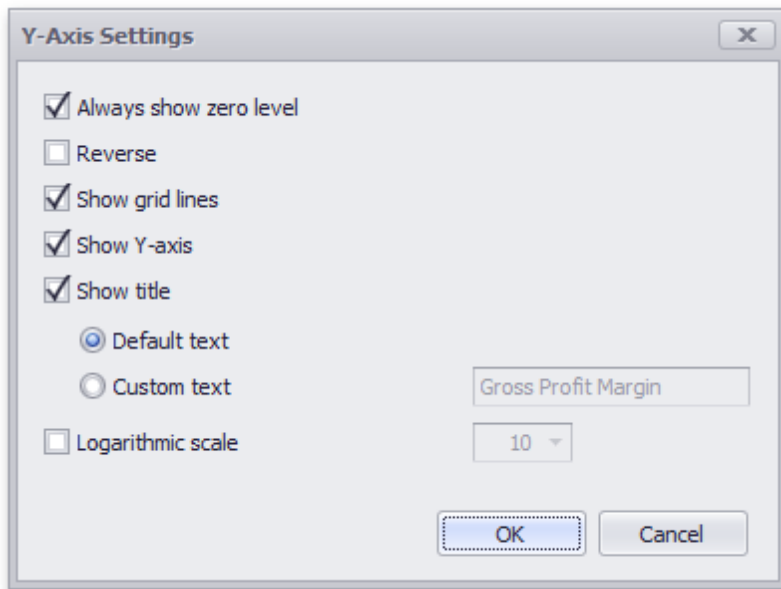
Scatter Chart X and Y-axes are numerical axis of values. You can specify various axes settings to change visual data presentation.



To access X and Y-axis settings, use the **X-Axis Settings/Y-Axis Settings** buttons in the **Diagram** section of the **Design** Ribbon tab.



This will invoke the **X-Axis Settings/Y-Axis Settings** dialog.



In this dialog, you can specify the following settings.

- **Always show zero level** - Specifies whether or not the axis' zero level is visible. If this option is unchecked, the visible axis range is defined based on the values plotted in the chart.

Note

Note that the **X-Axis Settings** dialog does not contain this option.

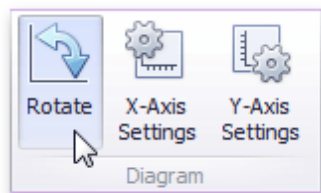
- **Reverse** - Allows you to reverse the axis. If the axis is reversed, its values are ordered from top to down.
- **Show grid lines** - Allows you to hide and show grid lines for the axis.
- **Show axis** - Allows you to hide and show the axis.
- **Show title** - Allows you to hide and show the axis title. You can choose whether to use the default text or specify a custom string.
- **Logarithmic scale** - Specifies whether or not the axis should display its numerical values using a logarithmic scale. The combo box next to this option allows you to select the logarithmic base from one of the predefined values.

Orientation

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Orientation](#)

You can rotate the Scatter Chart so that the [X-axis](#) becomes vertical, and the [Y-axis](#) becomes horizontal.

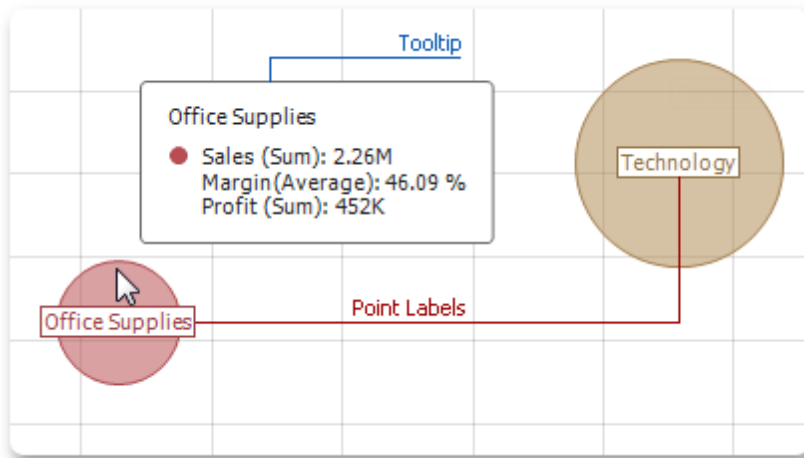
To rotate a Chart in the Designer, use the **Rotate** button in the **Diagram** section of the **Design** Ribbon tab.



Labels

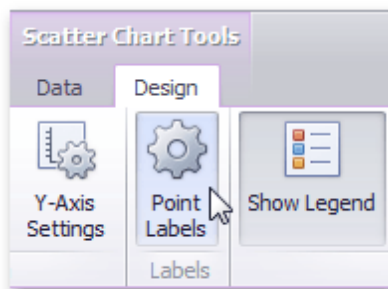
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Scatter Chart](#) > [Labels](#)

The Scatter Chart display can display **point labels** that contain descriptions for data points, and provide **tooltips** with additional information.

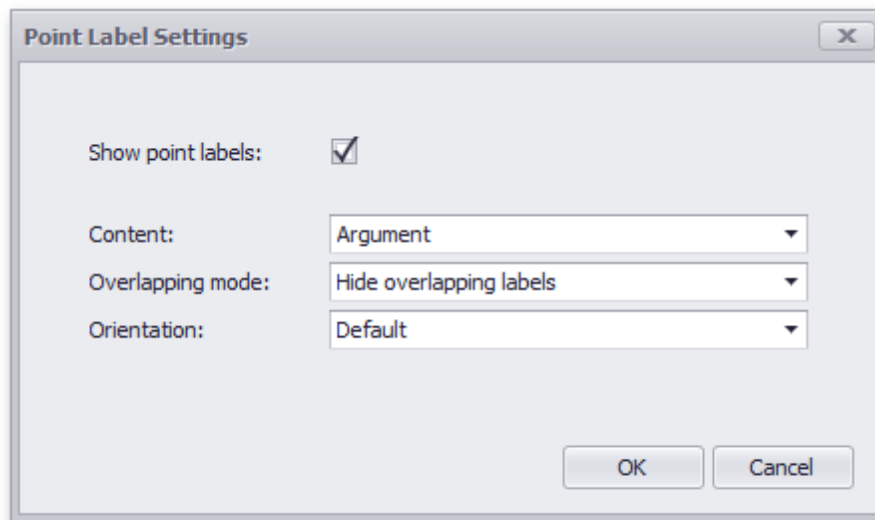


Point Labels

To manage the visibility of point labels, click the **Point Labels** button in the **Design** ribbon tab.



In the invoked **Point Label Settings** dialog, enable the **Show point labels** check box to show point labels.




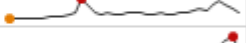

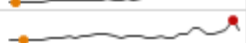





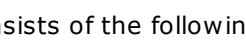
You can specify the following settings for point labels:

- **Content** - Specifies the type of content displayed within point labels. You can select one of the following options.
 - *Values* - Point labels show summary values from X and Y-axes.
 - *Argument* - Point labels show argument values.
 - *Argument and values* - Point labels show argument values and corresponding summary values.
 - *Weight* - Point labels show the weight summary value.
 - *Argument and weight* - Point labels show the argument value and the corresponding weight summary value.
- **Overlapping mode** - Specifies the label overlap mode. The following options are available.
 - *Hide overlapping labels* - If two or more labels overlap, some of them are automatically hidden to avoid overlapping.
 - *None* - The overlapping resolving algorithm is disabled.
 - *Reposition overlapping labels* - The default algorithm to re-position point labels in a random way, and avoid overlapping labels.
- **Orientation** - Specifies the orientation of point labels. The following options are available.
 - *Default* - A point label is displayed in its default orientation.
 - *Rotate to the Right* - A point label is rotated 90 degrees clockwise.
 - *Rotate to the Left* - A point label is rotated 90 degrees counter clockwise.

Grid

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#)

The topics in this section describe the features available in the **Grid** dashboard item, and provide extensive information on how to create and customize grids in the **Dashboard Designer**.

State	Trend	Sales	Sales vs Target
Washington		\$269M	-6.49 % ▼
New York		\$266M	+9.39 % ▲
California		\$207M	+1.53 % ▲
Ohio		\$207M	+5.52 % ▲
Texas		\$192M	+0.55 % ▲
Utah		\$180M	-1.60 % ▼
Mississippi		\$172M	+4.07 % ▲
Nevada		\$164M	+1.00 % ▲
Maine		\$161M	+0.62 % ▲
Missouri		\$152M	+6.27 % ▲

This section consists of the following subsections.

- [Providing Data](#)
Provides information about how to supply the Grid dashboard item with data.
- [Columns](#)
Describes different types of grid columns.
- [Interactivity](#)
Describes features that imply interaction between the Grid and other dashboard items.
- [Conditional Formatting](#)
Describes the conditional formatting feature that provides the capability to apply formatting to grid cells whose values meet the specified condition.
- [Totals](#)
Describes totals that allow you to calculate summaries against values displayed within Grid columns.
- [Layout](#)
Describes the Grid's layout options.
- [Style](#)
Describes the Grid's style settings.

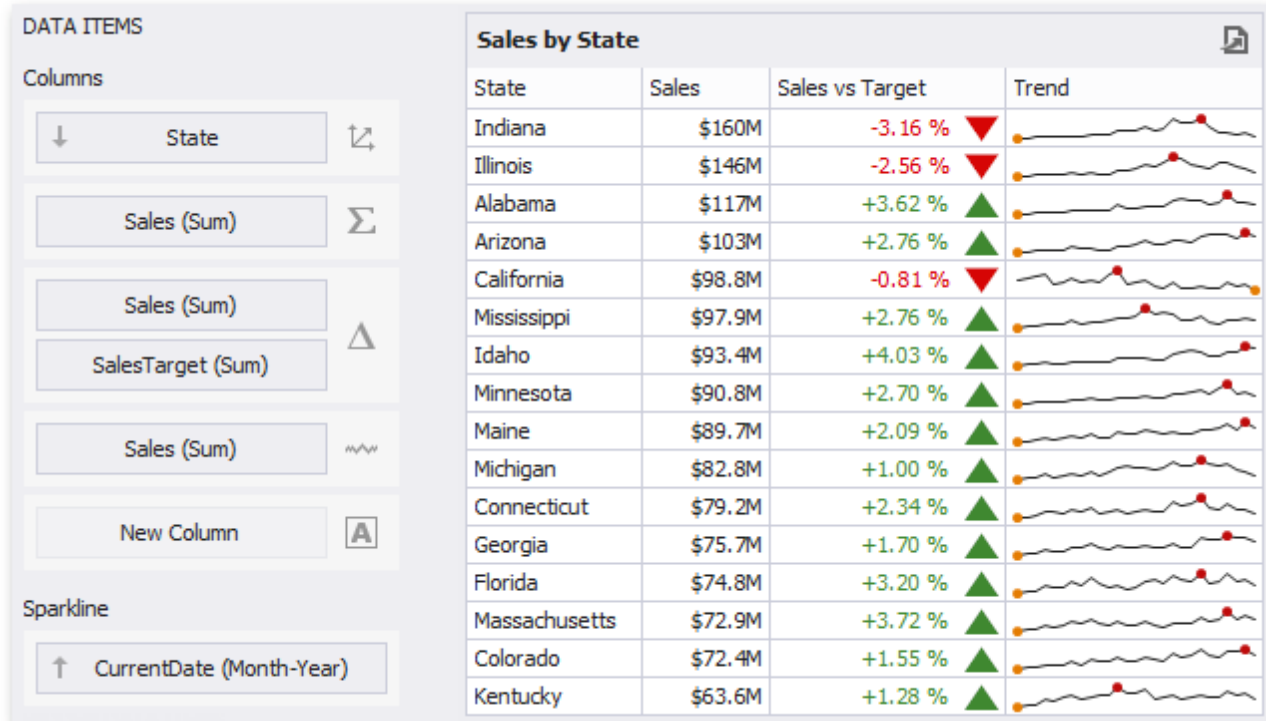
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Grid** dashboard item to data in the Designer.

The image below shows a sample Grid dashboard item that is bound to data.



To bind the Grid dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes a Grid's data sections.

Section	Description
Columns	Contains data items that provide values for grid columns. The <i>Options</i> button next to the Column data item allows you to select the column type and specify their options.
Sparkline	Contains a data item that provides arguments for sparkline columns. To learn more, see Sparkline Column .

Columns

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#)

The topics in this section describe the different types of grid columns, and contain information on when to use each column type and how to customize them based on the type.

This section consists of the following topics.

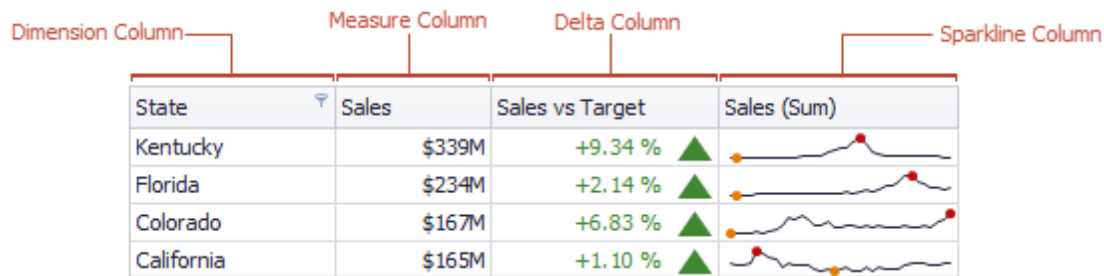
- [Column Type Overview](#)
Provides general information about column types and describes how to change the type of a particular column.
- [Dimension Column](#)
Describes dimension column specifics.
- [Measure Column](#)
Describes measure column specifics.
- [Delta Column](#)
Describes delta column specifics.
- [Sparkline Column](#)
Describes sparkline column specifics.

Column Type Overview

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#) > [Column Type Overview](#)

The **Grid** dashboard item supports four types of columns.

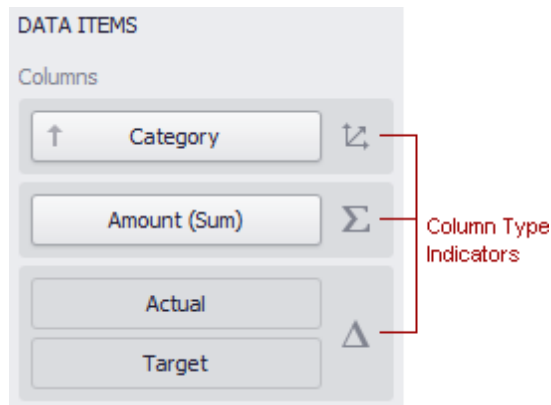
- [Dimension Column](#)
Displays values in the bound data item "as is".
- [Measure Column](#)
Displays summaries calculated against data in the bound data item.
- [Delta Column](#)
Bound to two measures, it calculates summaries for both measures, and displays the difference between these summaries.
- [Sparkline Column](#)
Displays values in the bound data item using sparklines.



When you drop a data item into the **Columns** section, the type for the new column is determined automatically, based on the data type.

Column Type Indication

The type of the column is indicated within the corresponding data item container in the DATA ITEMS area.

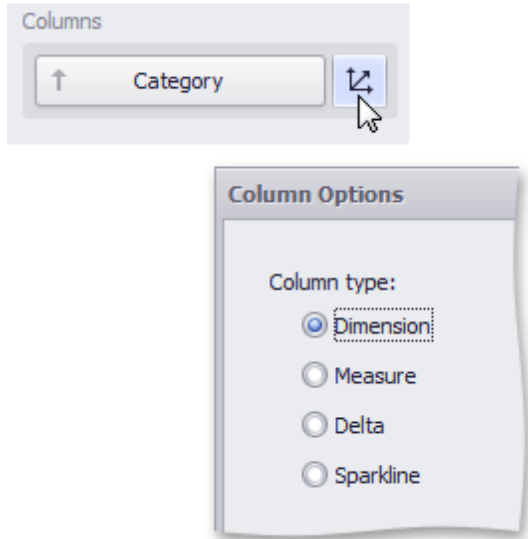


Column type indicators are defined as follows:

↗	Dimension Column
Σ	Measure Column
Δ	Delta Column
	Sparkline Column

Changing Column Type

To change the column type, click the column type indicator. In the invoked **Column Options** window, select the required column type in the **Column type** section.



Dimension Column

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#) > [Dimension Column](#)

The **dimension column** displays values from the bound data item "as is".

State	Sales	Sales vs Target	Sales (Sum)
Kentucky	\$339M	+9.34 % ▲	
Florida	\$234M	+2.14 % ▲	
Colorado	\$167M	+6.83 % ▲	
California	\$165M	+1.10 % ▲	

If the dimension column is bound to a data source containing images, it can display images.

See Also

[Column Type Overview](#)

[Measure Column](#)

[Delta Column](#)

[Sparkline Column](#)

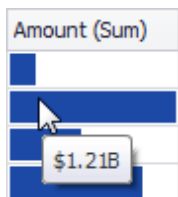
Measure Column

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#) > [Measure Column](#)

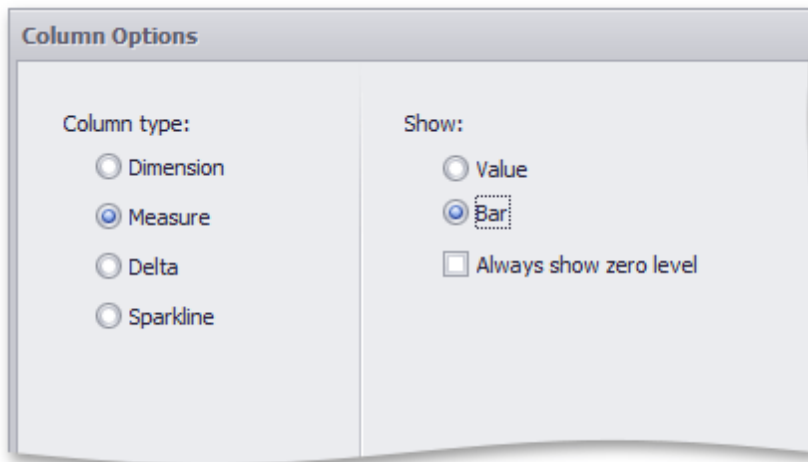
A **measure column** displays summaries calculated against data in a bound data item.

State	Sales	Sales vs Target	Sales (Sum)
Kentucky	\$339M	+9.34 % ▲	
Florida	\$234M	+2.14 % ▲	
Colorado	\$167M	+6.83 % ▲	
California	\$165M	+1.10 % ▲	

Values in the measure column can be displayed as text or represented by bars.



To select between these modes, invoke the **Column Options** window (see [Column Type Overview](#) to learn how to do this) and select **Value** or **Bar**.



If bars are displayed, use the **Always show zero level** check box to specify whether the bar's zero level is always visible.

See Also

[Column Type Overview](#)
[Dimension Column](#)
[Delta Column](#)
[Sparkline Column](#)

Delta Column

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#) > [Delta Column](#)

A **delta column** calculates summaries against two measures, and displays the difference between these summaries. This difference can be indicated with a numeric value displayed within the delta element and an additional delta indication.

Amount (Sum) vs Taxes (Sum)	
+227M	▲
+1.12B	▲
+513M	▲
+903M	▲

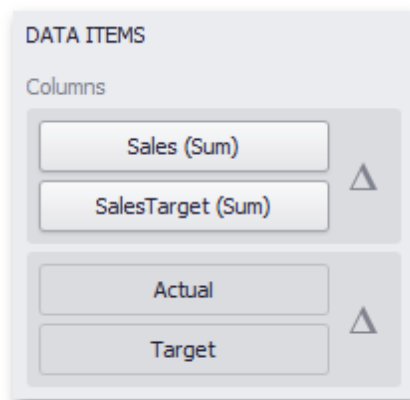
Delta Values ———

Delta Indication ———

Data Binding Specifics

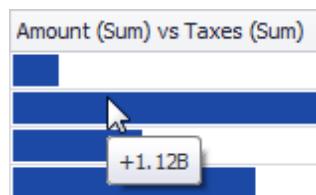
Delta columns are bound to two measures that provide two values: the **Actual** value and the **Target** value. The difference between these values is displayed in the column.

When you switch the column type to **Delta**, the data item container is changed, to accept the Actual and Target measures.

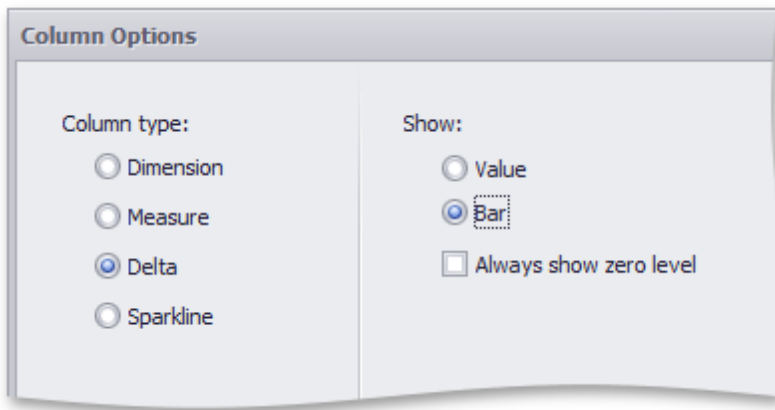


Display Mode

Values in the delta column can be displayed as text, or represented by bars.



To select between these modes, invoke the **Column Options** window (see the [Column Type Overview](#) topic to learn how to do this) and select **Value** or **Bar**.



If bars are displayed, use the **Always show zero level** check box to specify whether the bar's minimum value is zero (checked) or an automatically selected value that ensures that the difference between bars is clearly displayed (unchecked).

`AlwaysShowZeroLevel == true`

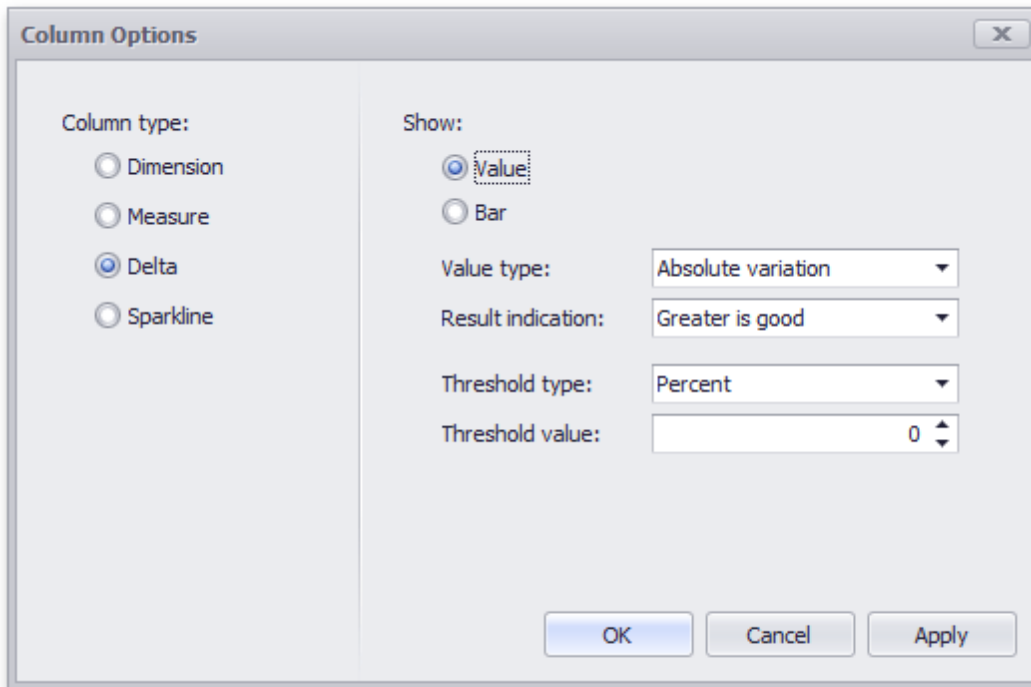
Sales	Sales
	\$79.5M
	\$80.3M
	\$85.6M
	\$86.6M
	\$87.3M

`AlwaysShowZeroLevel == false`

Sales	Sales
	\$79.5M
	\$80.3M
	\$85.6M
	\$86.6M
	\$87.3M

Delta Values and Indication

If the display type is set to **Value**, the **Column Options** window displays options that allow you to configure delta values and indication.



You can specify which values should be displayed in the delta column. To do this, use the **Value type** combo box in the **Column Options** window.

Actual value	Absolute variation	Percent variation	Percent of target																				
<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>\$113M ▲</td></tr> <tr><td>\$106M ▼</td></tr> <tr><td>\$104M ▲</td></tr> <tr><td>\$90.3M ▼</td></tr> </table>	Sales vs Target	\$113M ▲	\$106M ▼	\$104M ▲	\$90.3M ▼	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.7M ▲</td></tr> <tr><td>-1.02M ▼</td></tr> <tr><td>+7.72M ▲</td></tr> <tr><td>-1.38M ▼</td></tr> </table>	Sales vs Target	+5.7M ▲	-1.02M ▼	+7.72M ▲	-1.38M ▼	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 % ▲</td></tr> <tr><td>-0.95 % ▼</td></tr> <tr><td>+8.02 % ▲</td></tr> <tr><td>-1.51 % ▼</td></tr> </table>	Sales vs Target	+5.32 % ▲	-0.95 % ▼	+8.02 % ▲	-1.51 % ▼	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>105.32 % ▲</td></tr> <tr><td>99.05 % ▼</td></tr> <tr><td>108.02 % ▲</td></tr> <tr><td>98.49 % ▼</td></tr> </table>	Sales vs Target	105.32 % ▲	99.05 % ▼	108.02 % ▲	98.49 % ▼
Sales vs Target																							
\$113M ▲																							
\$106M ▼																							
\$104M ▲																							
\$90.3M ▼																							
Sales vs Target																							
+5.7M ▲																							
-1.02M ▼																							
+7.72M ▲																							
-1.38M ▼																							
Sales vs Target																							
+5.32 % ▲																							
-0.95 % ▼																							
+8.02 % ▲																							
-1.51 % ▼																							
Sales vs Target																							
105.32 % ▲																							
99.05 % ▼																							
108.02 % ▲																							
98.49 % ▼																							

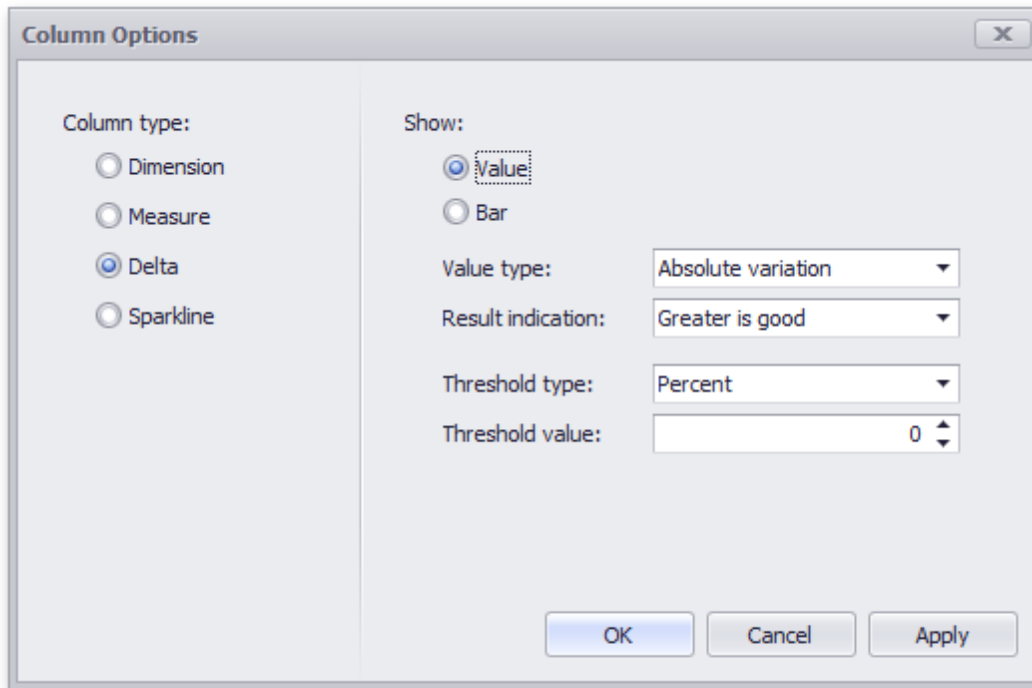
To specify the condition for displaying delta indication, use the **Result indication** combo box in the **Column Options** window.

Greater is good	Less is good	Warning if greater	Warning if less	No indication																									
<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 % ▲</td></tr> <tr><td>-0.95 % ▼</td></tr> <tr><td>+8.02 % ▲</td></tr> <tr><td>-1.51 % ▼</td></tr> </table>	Sales vs Target	+5.32 % ▲	-0.95 % ▼	+8.02 % ▲	-1.51 % ▼	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 % ▲</td></tr> <tr><td>-0.95 % ▼</td></tr> <tr><td>+8.02 % ▲</td></tr> <tr><td>-1.51 % ▼</td></tr> </table>	Sales vs Target	+5.32 % ▲	-0.95 % ▼	+8.02 % ▲	-1.51 % ▼	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 % ●</td></tr> <tr><td>-0.95 %</td></tr> <tr><td>+8.02 % ●</td></tr> <tr><td>-1.51 %</td></tr> </table>	Sales vs Target	+5.32 % ●	-0.95 %	+8.02 % ●	-1.51 %	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 %</td></tr> <tr><td>-0.95 % ●</td></tr> <tr><td>+8.02 %</td></tr> <tr><td>-1.51 % ●</td></tr> </table>	Sales vs Target	+5.32 %	-0.95 % ●	+8.02 %	-1.51 % ●	<table border="1"> <tr><td>Sales vs Target</td></tr> <tr><td>+5.32 %</td></tr> <tr><td>-0.95 %</td></tr> <tr><td>+8.02 %</td></tr> <tr><td>-1.51 %</td></tr> </table>	Sales vs Target	+5.32 %	-0.95 %	+8.02 %	-1.51 %
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Sales vs Target																													
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+8.02 %																													
-1.51 %																													

Comparison Tolerance

The comparison tolerance allows you to specify more advanced conditions for displaying delta indication. For instance, you can set a specific indication to be displayed when the actual value exceeds the target value *by 10%* or *by \$2K*.

Use the **Threshold type** combo box to select whether you wish to specify the comparison tolerance in percentage values or in absolute values. Then use the **Threshold value** box to specify the comparison tolerance.



See Also

- [Column Type Overview](#)
- [Dimension Column](#)
- [Measure Column](#)




[Sparkline Column](#)

Sparkline Column

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Columns](#) > [Sparkline Column](#)

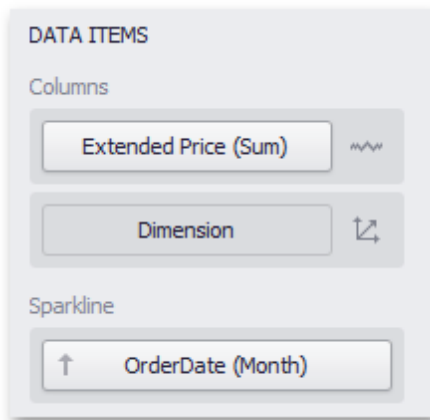
A **sparkline column** visualizes the variation in summary values over time.

Sparkline column

CategoryName	Extended Price
Beverages	\$49.1K  \$20.3K
Condiments	\$9.99K  \$7.32K
Produce	\$4.23K  \$15.3K

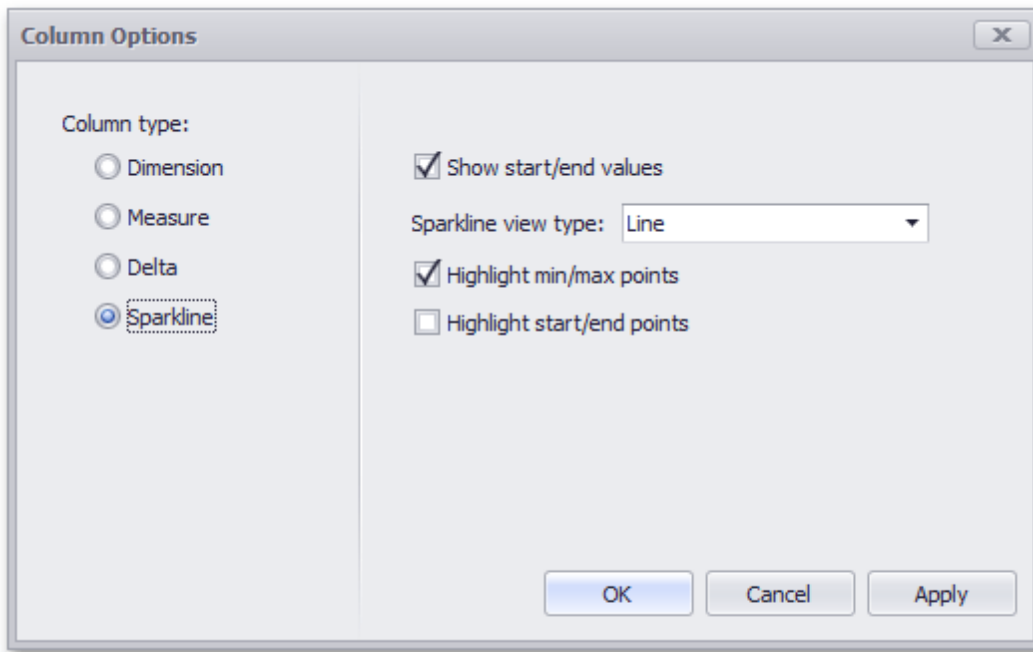
Data Binding Specifics

The sparkline column is bound to a measure providing sparkline values and to a dimension providing a date-time interval.

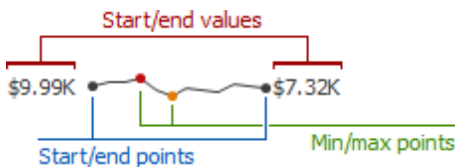


Sparkline Options

You can control sparkline appearance settings using the **Column Options** dialog. To invoke this dialog, click the column type indicator ()



In this dialog, you can control various settings that affect how the sparkline is displayed within a grid cell.



Sparkline Options	Description
Show start/end values	Specifies whether or not to display sparkline start/end values within a grid cell.
Sparkline view type	Defines the view type of a sparkline. Sparkline view types include Line , Area , Bar , and Win/Loss .
Highlight min/max points	Specifies whether or not to highlight the minimum/maximum points of a sparkline.
Highlight start/end points	Specifies whether or not to highlight the start/end points of a sparkline.

See Also

- [Column Type Overview](#)
- [Dimension Column](#)
- [Measure Column](#)
- [Delta Column](#)

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Interactivity](#)

This section describes features that enable interaction between the **Grid** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

The section consists of the following topics.

- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

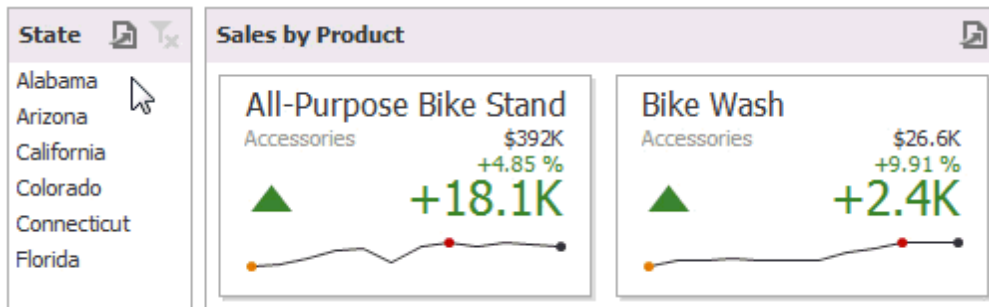
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Interactivity](#) > [Master Filtering](#)

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.


Configure Master Filters in the Designer

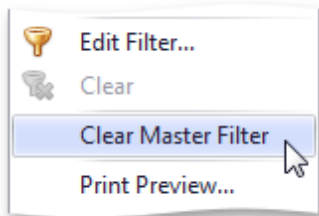
The **Grid** dashboard item supports filtering by rows.

When Master Filtering is enabled, you can click a grid row (or multiple rows by holding down the **CTRL** key) to make other dashboard items only display data related to the selected record(s).



To learn how to enable Master Filtering in the Designer, see the [Master Filtering](#) topic.

To reset filtering, use the **Clear Master Filter** button (the  icon) in the grid's [caption](#) area, or the **Clear Master Filter** command in the grid's context menu.



Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

The **Grid** dashboard item supports drill-down for rows.

When drill-down is enabled, you can click a grid row to view the details.

Category	Amount (Sum)
Accessories	\$247M
Bikes	\$1.21B
Clothing	\$558M
Components	\$981M

Note

When [Master Filtering](#) is enabled, you can view the details by double-clicking a grid row.

Drill-down requires that the **Columns** section contains several dimensions at the top, from the least detailed to the most detailed dimension.

DATA ITEMS

Columns

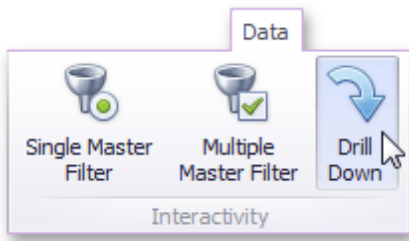
- ↑ Category ↗
- ↑ Subcategory ↗
- ↑ Product ↗
- Amount (Sum) Σ
- Dimension ↗

Category	Amount (Sum)
Accessories	\$247M
Bikes	\$1.21B
Clothing	\$558M
Components	\$981M

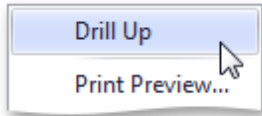
Note

In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill-down, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) within the grid's [caption](#) area, or the **Drill Up** command in the grid's context menu.



Conditional Formatting

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Conditional Formatting](#)

The Grid dashboard item supports the conditional formatting feature that provides the capability to apply formatting to grid cells whose values meet the specified condition. This feature allows you to highlight specific cells or entire rows using a predefined set of rules. To learn more about conditional formatting concepts common for all dashboard items, see the [Conditional Formatting](#) topic.

- [Conditional Formatting Overview](#)
- [Create a Format Rule](#)
- [Edit a Format Rule](#)

Conditional Formatting Overview

The Grid dashboard item allows you to apply conditional formatting to data items providing data to the following column types.

- [dimension column](#);
- [measure column](#);
- [sparkline column](#).

Note

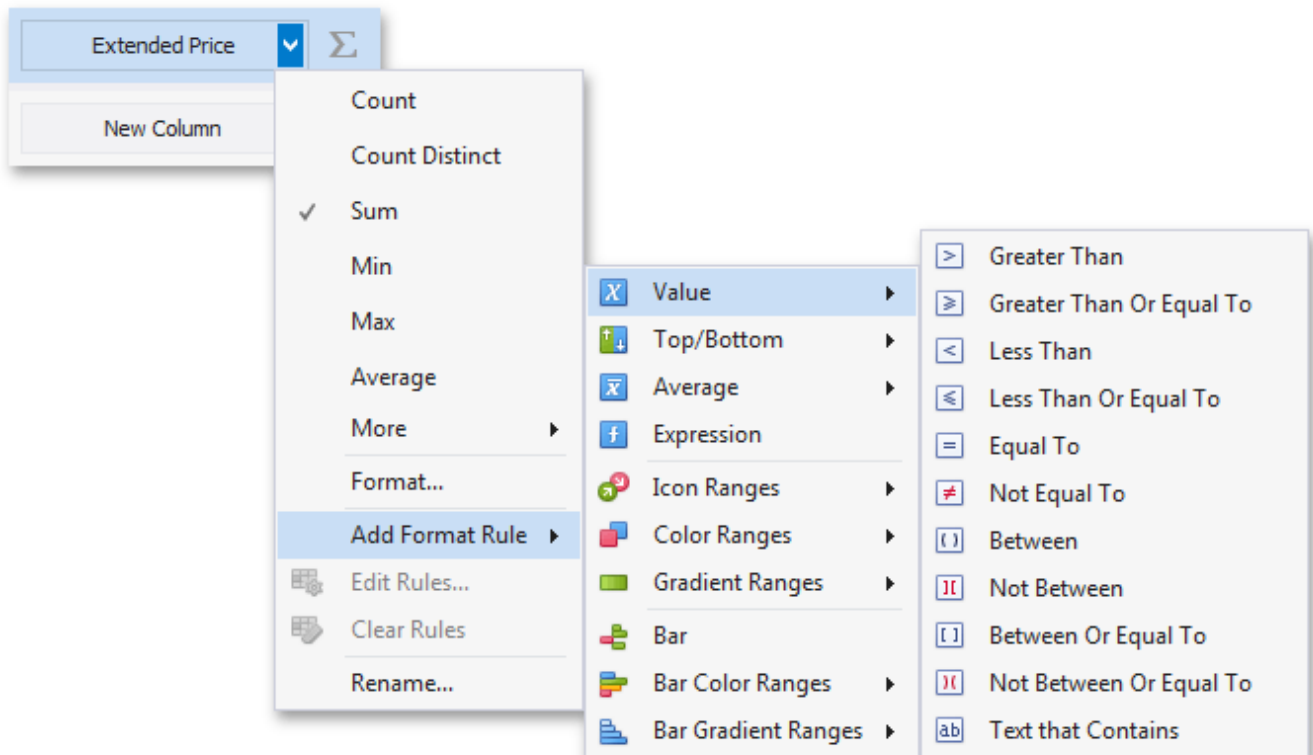
Note that you can use [hidden measures](#) to specify a condition used to apply formatting to visible values.

New appearance settings are applied to grid cells corresponding to the target dimension/measure values.

Create a Format Rule

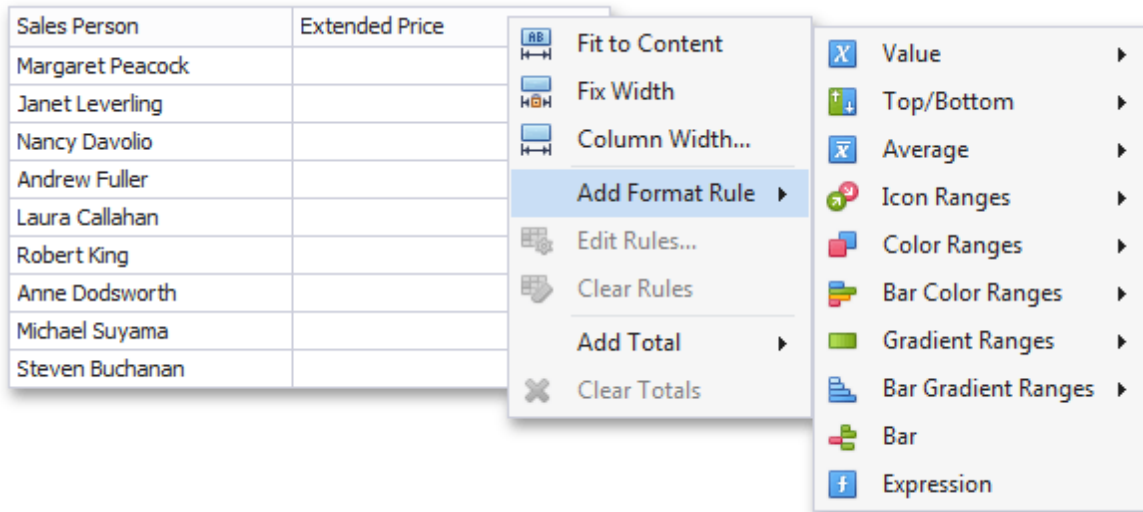
To create a new format rule for the Grid's dimension/measure, do one of the following.

- Click the **Options** button next to the required measure/dimension, select **Add Format Rule** and choose the condition.



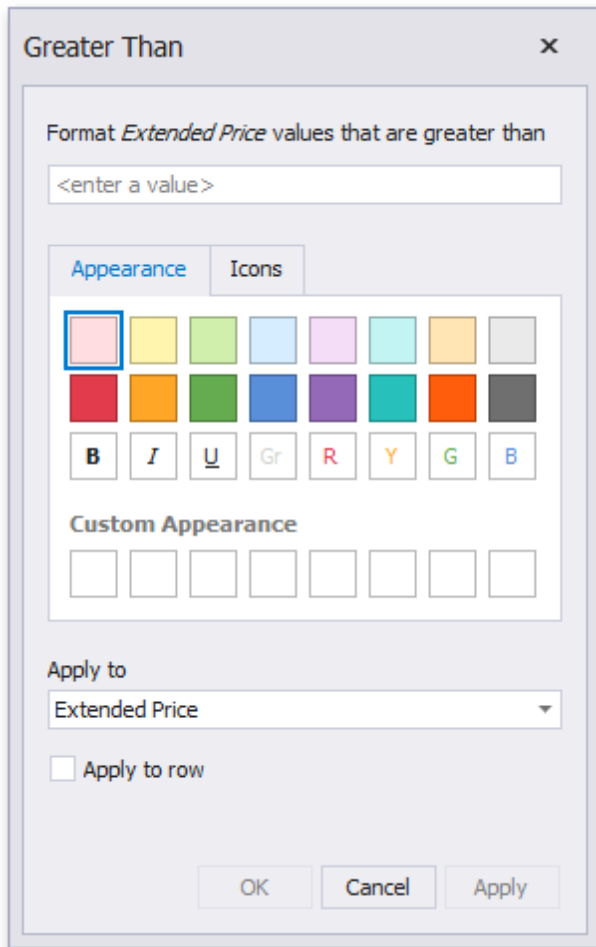
- Right-click the column header corresponding to the required measure/dimension and select **Add Format**

Rule.



- Use the [Edit Rules](#) dialog.

Depending on the selected format condition, the dialog used to create a format rule for Grid contains different settings. For instance, the image below displays the **Greater Than** dialog corresponding to the [Value](#) format condition.



The **Apply to row** check box allows you to specify whether to apply the formatting to the entire grid row.

Edit a Format Rule

To edit format rules for the current Grid dashboard item, use the following options.

- Click the **Edit Rules** button in the **Home** ribbon tab or use corresponding item in the Grid context menu.
- Click the [menu button](#) for the required data item and select **Edit Rules**. As an alternative, right-click the column header corresponding to the required data item and select **Edit Rules**.

All of these actions invoke the **Edit Rules** dialog containing existing format rules. To learn more, see [Conditional Formatting](#).

Totals

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Totals](#)

The Grid dashboard item enables you to add a summary value (a **total**) calculated against displayed values of an individual column, and show the result under this column. Note that you can add any number of totals for each column. For example, you can obtain the number of column records, average or maximum value, etc.

Category	Extended Price (Sum)	Discount (Average)
Beverages	\$268K	6.19 %
Condiments	\$106K	5.26 %
Confections	\$167K	5.69 %
Dairy Products	\$235K	5.34 %
Grains/Cereals	\$95.7K	4.53 %
Meat/Poultry	\$163K	6.45 %
Produce	\$100K	4.54 %
Seafood	\$131K	6.02 %
Count = 8	Max = \$268K	Avg = 5.50 %
	Sum = \$1.27M	

} Totals

This topic describes how to create, edit or clear totals.

The topic consists of the following sections.

- [Totals Overview](#)
- [Create and Edit Totals](#)
- [Clear Totals](#)

Totals Overview

You can use the following summary functions when creating totals.

- **Count** - The number of records.
- **Sum** - The sum of the values.



$$Sum = \sum_i v_i$$




- **Min** - The smallest value.
- **Max** - The largest value.
- **Average** - The average of the values.

$$\bar{v} = \frac{1}{n} \cdot \sum_i v_i$$

- **Auto** - The total is calculated using the type of [summary function](#) specified for the measure corresponding to the current Grid column. Note that in this case, the total is calculated based on values of the corresponding data field from the underlying data source. Note that the **Auto** type is not supported when the Grid is bound to the [OLAP](#) data source.

You can create totals using different sets of summary functions. This depends on the type of the data source field providing data for the target column.

Icon	Data Source Field Type	Supported Totals
	Boolean	Count
	Byte	Count

	Date-time	Min, Max, Count
	Numeric	All available types
	String	Min, Max, Count

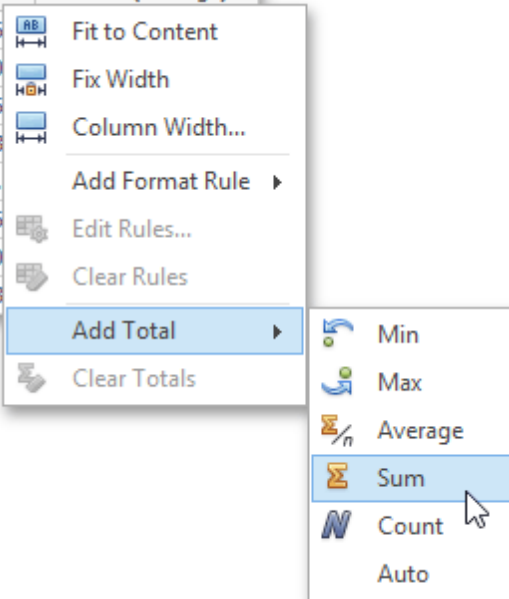
Important

Note that the **Auto** type is available only for the [Measure](#) column.

Create and Edit Totals

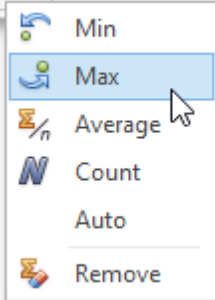
To create a total, use the context menu of the column header. Right-click the required column header, select **Add Total** and specify the type of summary function used to calculate a total.

Category	Extended Price (Sum)	Discount (Average)
Beverages	\$26	
Condiments	\$10	
Confections	\$16	
Dairy Products	\$23	
Grains/Cereals	\$95.	
Meat/Poultry	\$16	
Produce	\$10	
Seafood	\$13	



To change the total type, right-click the required total and select a new total type.

Category	Extended Price (Sum)	Discount (Average)
Beverages	\$268K	6.19 %
Condiments	\$106K	5.26 %
Confections	\$167K	5.69 %
Dairy Products	\$235K	5.34 %
Grains/Cereals	\$95.7K	4.53 %
Meat/Poultry	\$163K	6.45 %
Produce	\$100K	4.54 %
Seafood	\$131K	6.02 %
Sum = \$1.27M		

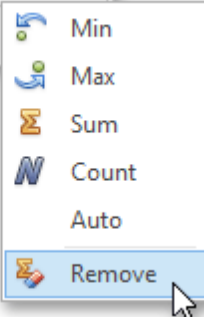


Clear Totals

You can delete one total or all the totals in a particular column.

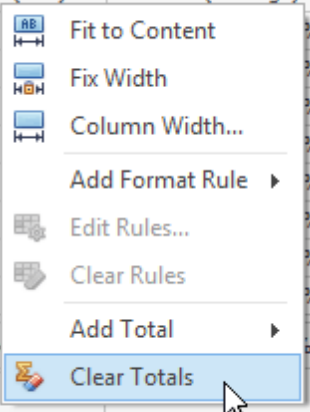
- To delete a single total, right-click a total and select **Remove**.

Category	Extended Price (Sum)	Discount (Average)
Beverages	\$268K	6.19 %
Condiments	\$106K	5.26 %
Confections	\$167K	5.69 %
Dairy Products	\$235K	5.34 %
Grains/Cereals	\$95.7K	4.53 %
Meat/Poultry	\$163K	6.45 %
Produce	\$100K	4.54 %
Seafood	\$131K	6.02 %
Count = 8	Max = \$268K	Avg = 5.50 %
Sum = \$1.27M		



- To delete all column totals, right-click the column header and select **Clear Totals** in the invoked context menu.

Category	Extended Price (Sum)	Discount (Average)
Beverages		
Condiments		
Confections		
Dairy Products		
Grains/Cereals		
Meat/Poultry		
Produce		
Seafood		
Count = 8	Max	
	Sum	

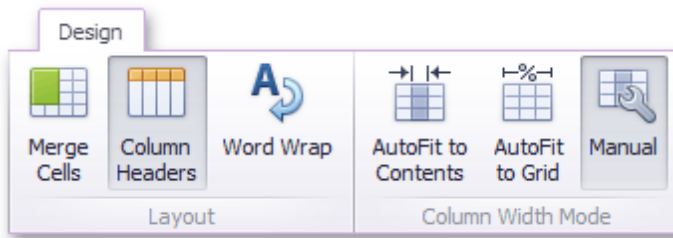


Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Layout](#)

The Grid dashboard item allows you to customize its layout in various ways. You can manage the width of grid columns, specify the visibility of column headers, enable cell merging, etc.

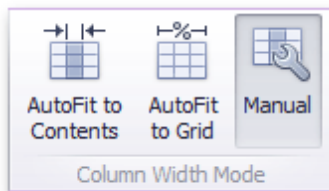
To do this, use the **Layout** and **Column Width Mode** groups in the **Design** Ribbon tab.



- [Column Width Modes](#)
- [Column Header](#)
- [Cell Merging](#)
- [Word Wrapping](#)

Column Width Modes

The Grid dashboard item allows you to manage column widths using different modes. Use buttons in the **Column Width Mode** group to manage the column width modes.



The following modes are available.

AutoFit to Contents

The grid adjusts columns to the minimum width required to completely display their content automatically. If the entire content cannot be displayed within the dashboard item, horizontal scrolling is enabled..

AutoFit to Grid

The grid adjusts the width of all columns to fit their content in an optimal way. If you are changing the size of the dashboard item, the width of columns is changed proportionally..

Manual

The grid allows you to adjust column widths manually.

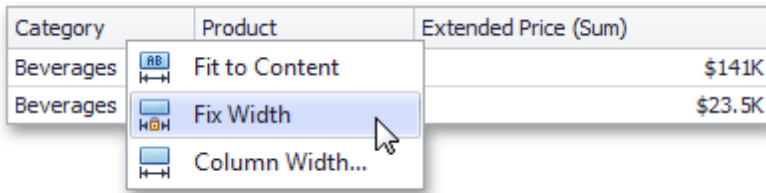
In this mode, you can adjust the width of individual columns in the following ways.

- Specify the width of the required column by dragging the right edge of the column header.

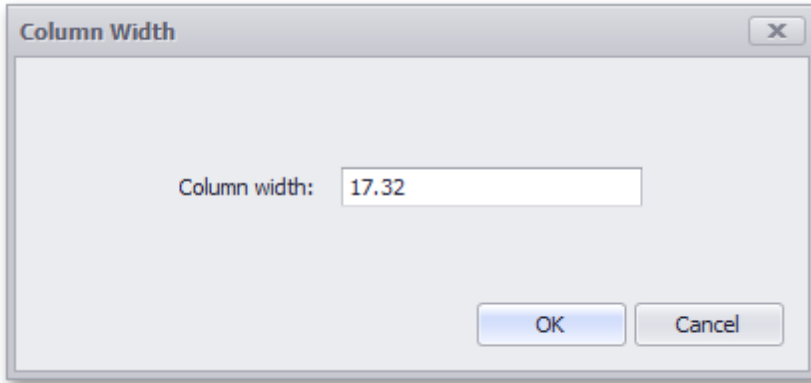
Category	Product	Extended Price (Sum)
Beverages	Côte de Blaye	\$141K
Beverages	Ipoh Coffee	\$23.5K

In this case, all columns preserve their relative size when the grid width is changed.

- Specify the column width and fix it by right-clicking the required column header and selecting **Fix Width**.



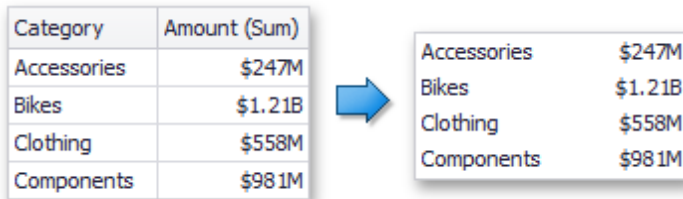
You can also specify the fixed column width by selecting **Column Width...**. This invokes the **Column Width** window that allows you to specify the width of the column in characters.



- Fit the column width to its content and fix it by right-clicking the required column header and selecting **Fit to Content**.

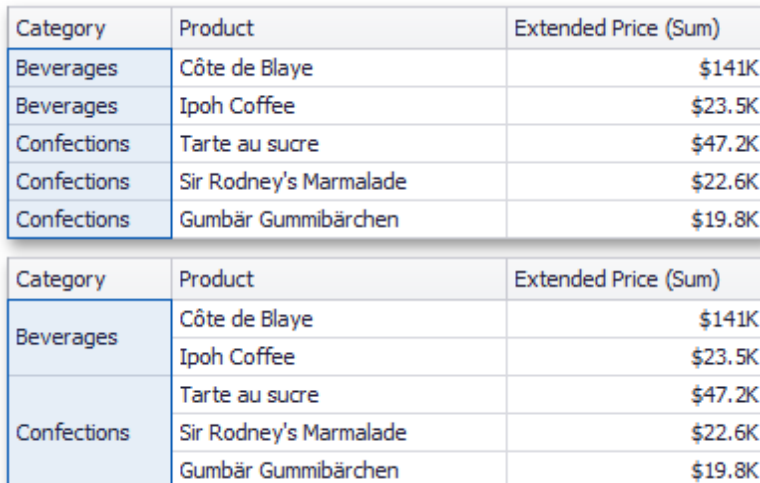
Column Header

Use the **Column Headers** button to toggle column header visibility.



Cell Merging

The Grid allows you to merge neighboring cells with identical values. To do this, use the **Merge Cells** button.



Note

Note that [banded rows](#) are not available when cell merging is enabled.

Word Wrapping

The word wrapping feature enables the capability to display cell content on multiple lines if the size of a dashboard item is insufficient to completely display the cell content on a single line.

Category	Product	Extended Price (Sum)
Beverages	Côte de Blaye	\$141K
Beverages	Ipoh Coffee	\$23.5K

Category	Product	Extended Price (Sum)
Beverages	Côte de Blaye	\$141K
Beverages	Ipoh Coffee	\$23.5K

Note

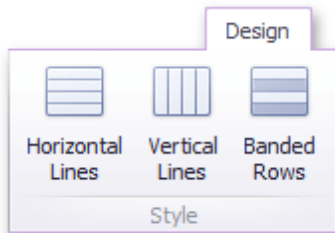
The word wrapping feature is not in effect when the **AutoFit to Contents** [column width mode](#) is enabled.

Style

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Grid](#) > [Style](#)

The Grid dashboard item allows you to specify various style settings.

To do this, use the **Style** group in the **Design** Ribbon tab.




- [Grid Lines](#)
- [Banded Rows](#)

Grid Lines

The **Horizontal Lines** and **Vertical Lines** buttons control grid line visibility.

Category	Amount (Sum)
Accessories	\$247M
Bikes	\$1.21B
Clothing	\$558M
Components	\$981M



Accessories	\$247M
Bikes	\$1.21B
Clothing	\$558M
Components	\$981M

Banded Rows

To paint the background of odd and even rows differently, use the **Banded Rows** button.

Category	Product	Extended Price (Sum)
Beverages	Côte de Blaye	\$141K
Beverages	Ipoh Coffee	\$23.5K
Confections	Tarte au sucre	\$47.2K
Confections	Sir Rodney's Marmalade	\$22.6K
Confections	Gumbär Gummibärchen	\$19.8K

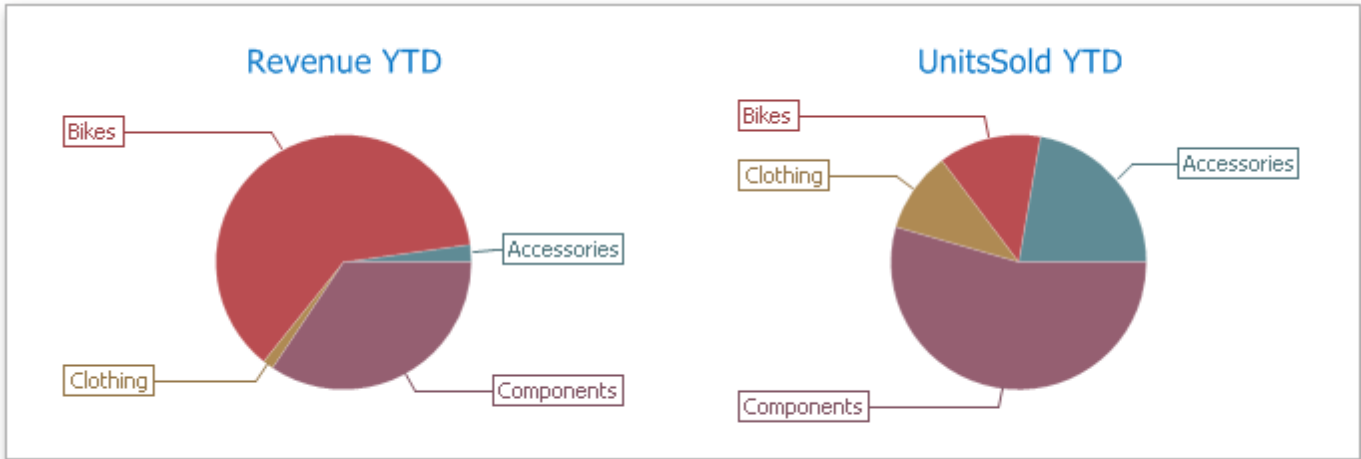
Note

Note that banded rows are not available when [cell merging](#) is enabled.

Pies

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#)

The **Pie** dashboard item displays a series of pies or donuts that represent the contribution of each value to a total.



This section consists of the following subsections:

- [Providing Data](#)
Describes how to supply the Pie dashboard item with data.
- [Interactivity](#)
Describes features that enable interaction between the Pie dashboard item and other items.
- [Coloring](#)
Describes coloring capabilities of the Pie dashboard item.
- [Layout](#)
Describes layout options of the Pie dashboard item.
- [Labels](#)
Explains how to customize data labels and tooltips.
- [Style](#)
Describes how to select the style of pie charts.

Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Pie** dashboard item to data in the Designer.

- [Binding to Data in the Designer](#)
- [Transposing Arguments and Series](#)

Binding to Data in the Designer

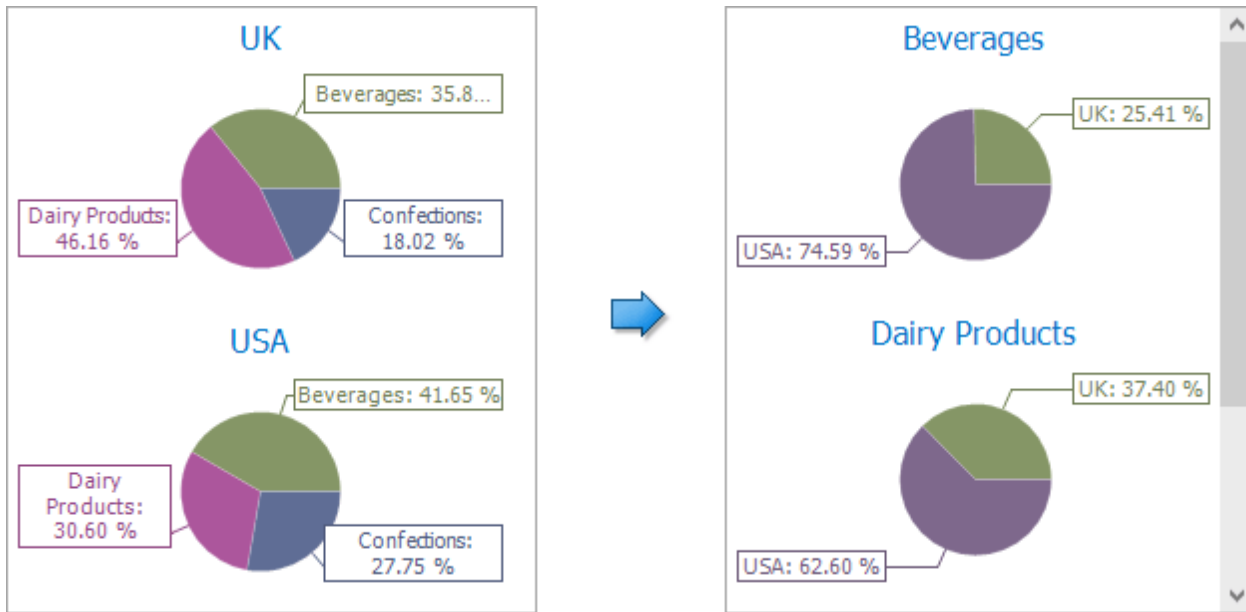
The image below shows a sample Pie dashboard item that is bound to data.

To bind the Pie dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes Pie's data sections.

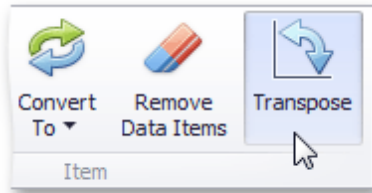
Section	Description
Values	Contains data items that define the share of pie segments. In case of negative measure values, Pie uses their absolute values.
Arguments	Contains data items that provide values used to label pie segments.
Series	Contains data items whose values are used to label pie charts.

Transposing Arguments and Series

The Pie dashboard item provides the capability to transpose pie arguments and series. In this case, data items contained in the **Arguments** section are moved to the **Series** section, and vice versa.



To transpose the selected Pie dashboard item, use the **Transpose** button in the **Home** ribbon tab.



Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Interactivity](#)

This section describes features that enable interaction between the **Pie** dashboard item and other items. These features include **Master Filtering** and **Drill-Down**.

The section contains the following topics.

- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

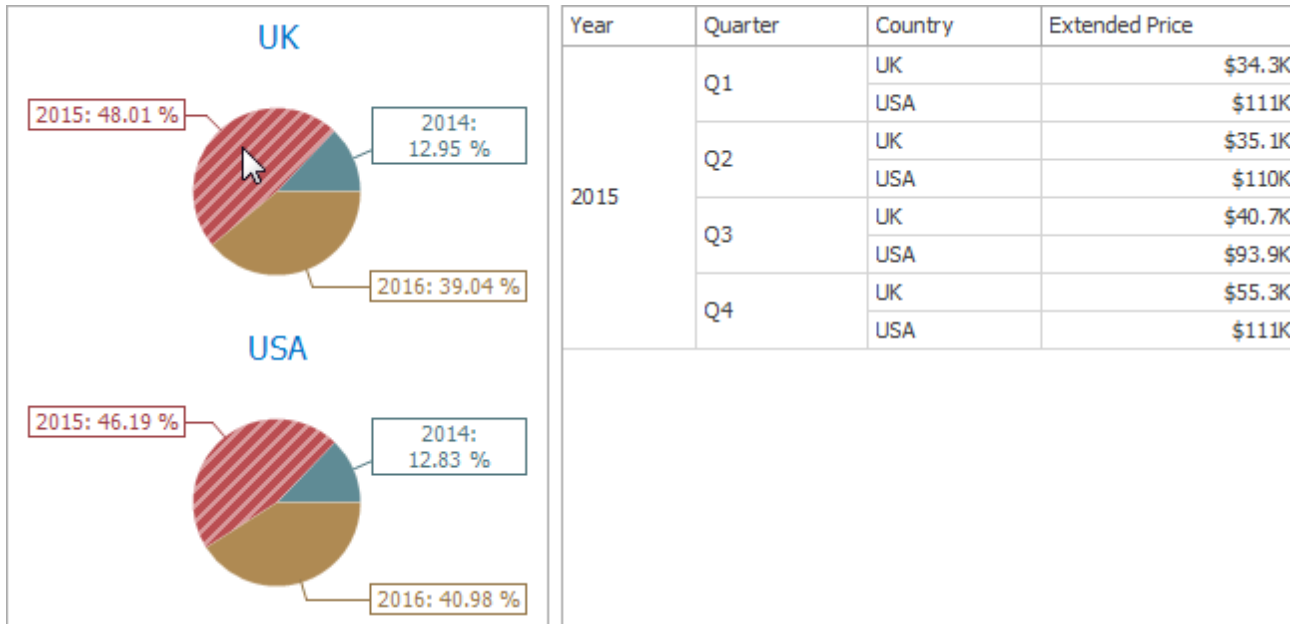
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Interactivity](#) > [Master Filtering](#)


The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

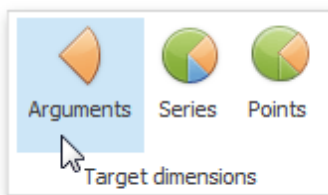
The **Pie** dashboard item supports filtering by **argument** or **series** values.

Filtering by Arguments

When filtering by arguments is enabled, you can click a pie segment to make other dashboard items only display data related to the selected argument value.

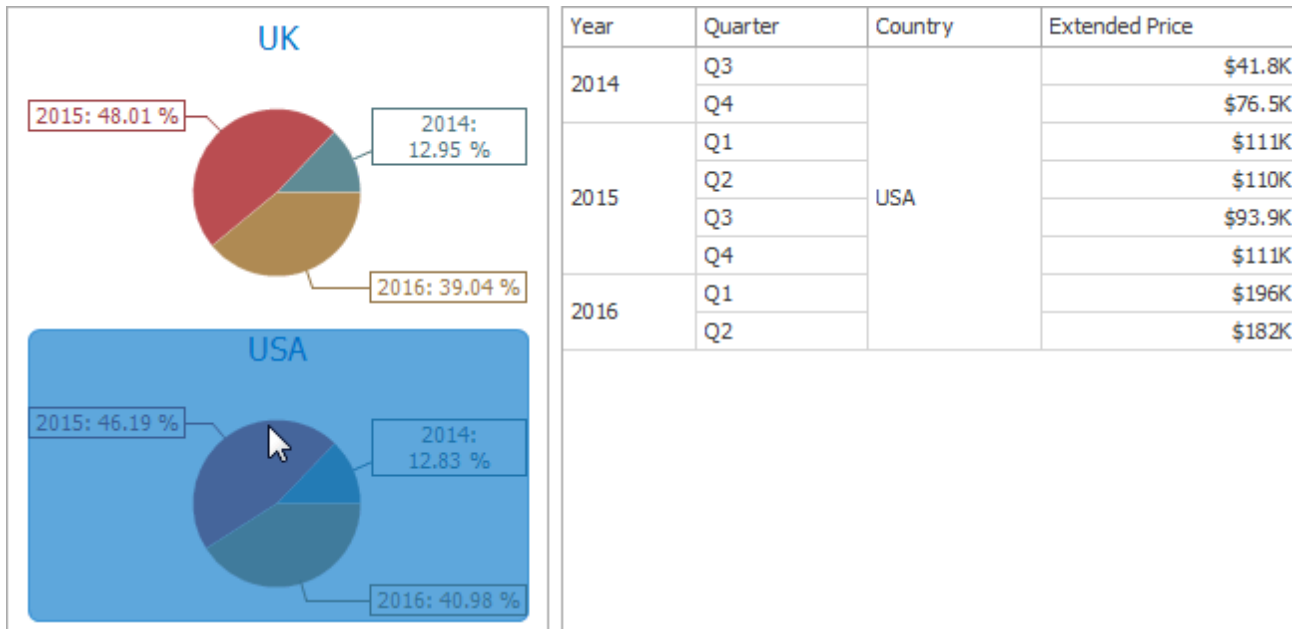



To enable filtering by arguments in the Designer, set the required [Master Filter mode](#) and click the **Arguments** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).

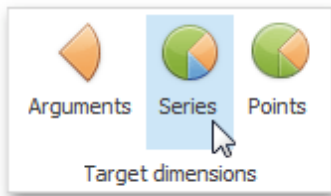


Filtering by Series

When filtering by series is enabled, you can click a pie to make other dashboard items display only data related to the selected pie.

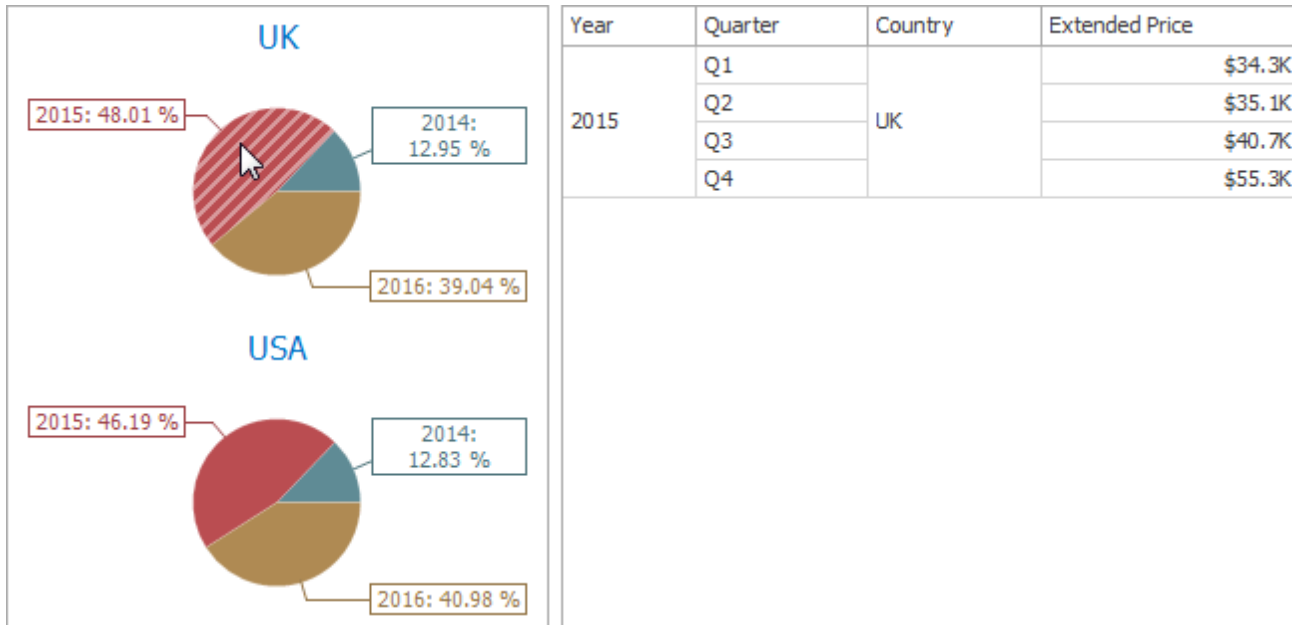


To enable filtering by series in the Designer, set the required [Master Filter mode](#) and click the **Series** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).

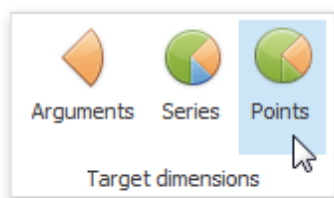


Filtering by Points


When filtering by points is enabled, you can click a single pie segment to make other dashboard items display only data related to the selected segment.



To enable filtering by points in the Designer, set the required [Master Filter mode](#) and click the **Points** button in the **Data** Ribbon tab.



Reset Filtering

To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) area of the Pie dashboard item, or the **Clear Master Filter** command in the Pie's context menu.

Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

The **Pie** dashboard item supports drill-down on **argument** or **series** values.

Drill Down on an Argument

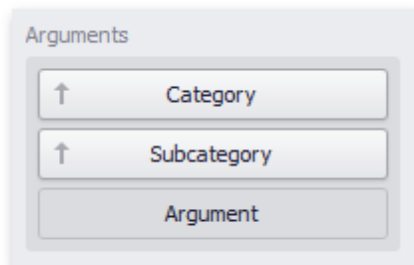
When drill down on an argument is enabled, you can click a pie segment to view a detail diagram for the corresponding argument value.



Note

When [Filtering by Arguments](#) is enabled, you can view the details by double-clicking a pie segment.

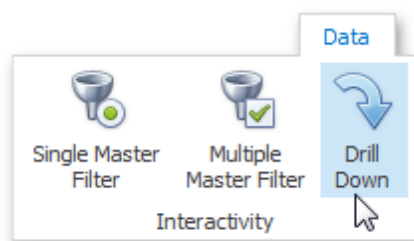
Drill down on an argument requires that the Arguments section contains several data items, from the least detailed to the most detailed item.




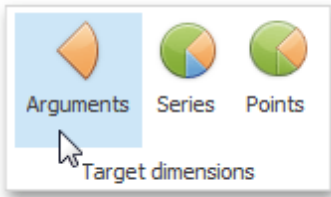
Note

In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill down on an argument, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu)...

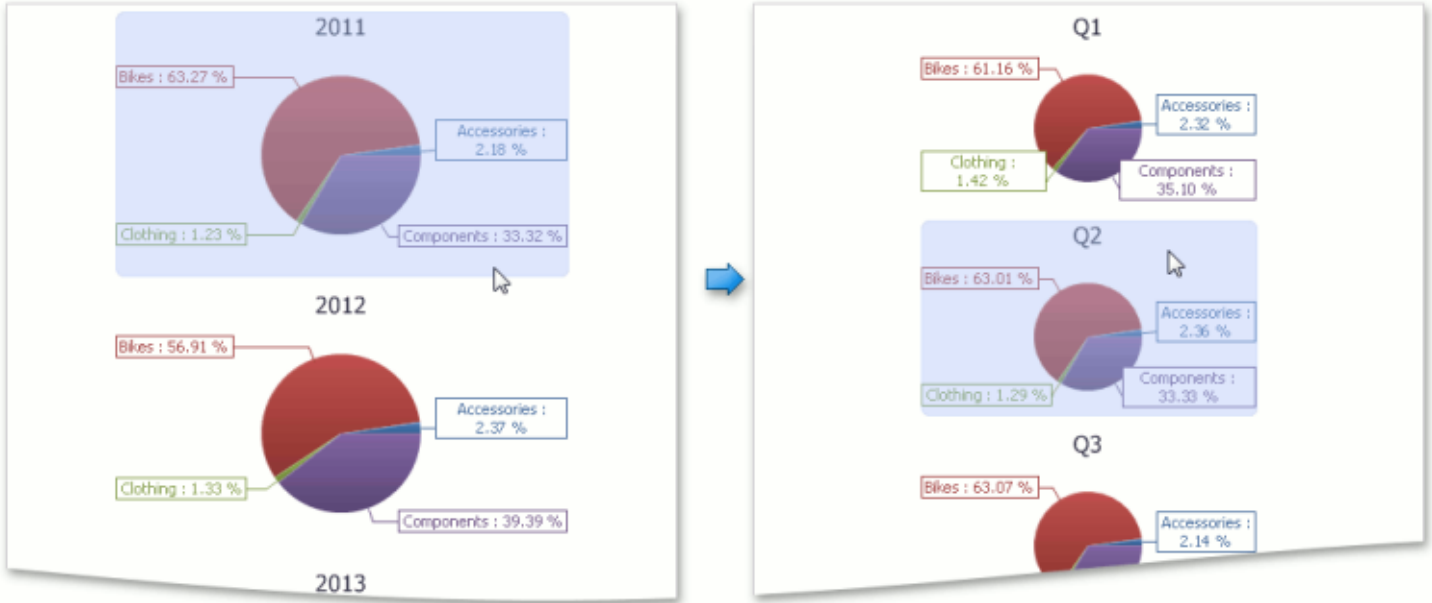


...and the **Arguments** button (or the  button if you are using the toolbar menu).



Drill Down on a Series

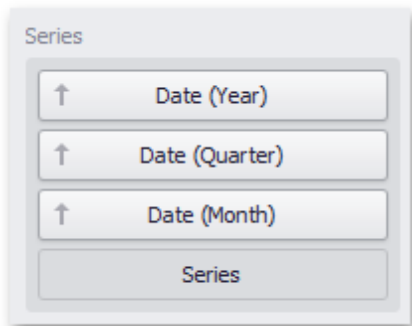
When drill down on a series is enabled, you can click a pie chart to view a detail diagram for the corresponding series value.



Note

When [Filtering by Series](#) is enabled, you can view the details by double-clicking a pie chart.

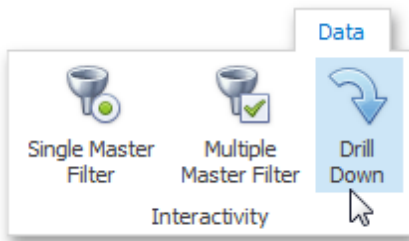
Drill down on a series requires that the Series section contains several data items, from the least detailed to the most detailed item.




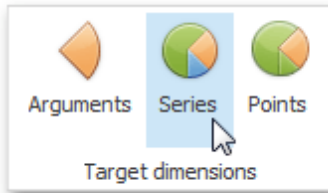
Note

In **OLAP** mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.


To enable drill down on a series, click the **Drill Down** button in the **Data** Ribbon tab (or the button if you are using the toolbar menu)...



...and the **Series** button (or the  button if you are using the toolbar menu).



Drill Up

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the [caption](#) area of the Pie dashboard item, or the **Drill Up** command in the context menu.

Coloring

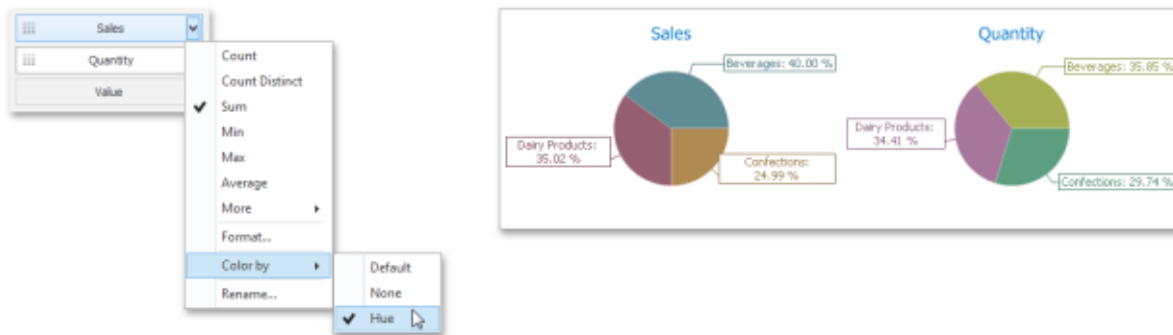
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/ measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

By default, the Pie dashboard item colors its segments in the following way.

- If the Pie dashboard item contains measures (the **Values** section) and series dimensions (the **Series** section), only values corresponding to different measures are colored by hue.
- If the Pie dashboard item contains arguments (the **Arguments** section), different argument values are colored by hue.

If necessary, you can change the default behavior. For instance, the image below shows the Pie dashboard item whose measures and argument values are colored by hue.

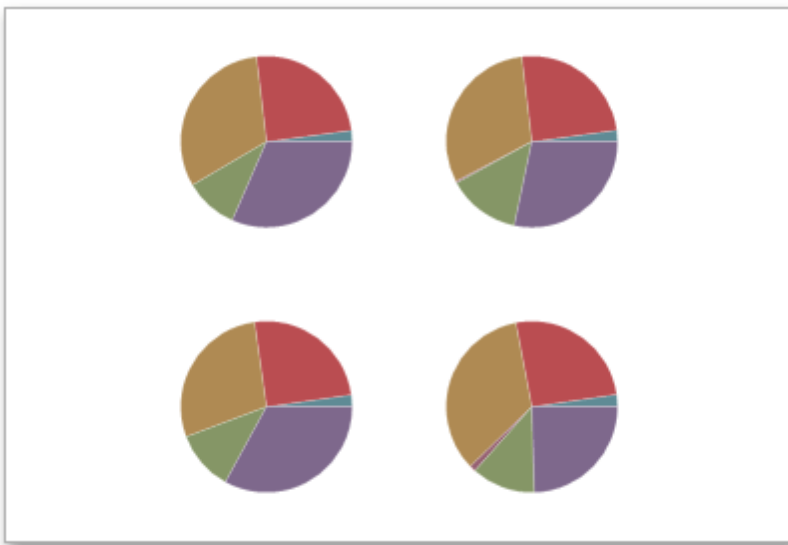
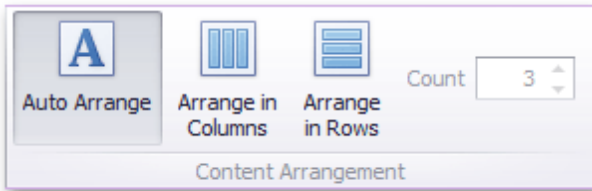


Layout

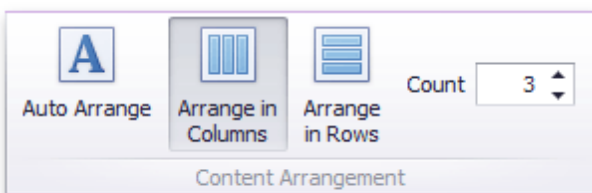
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Layout](#)

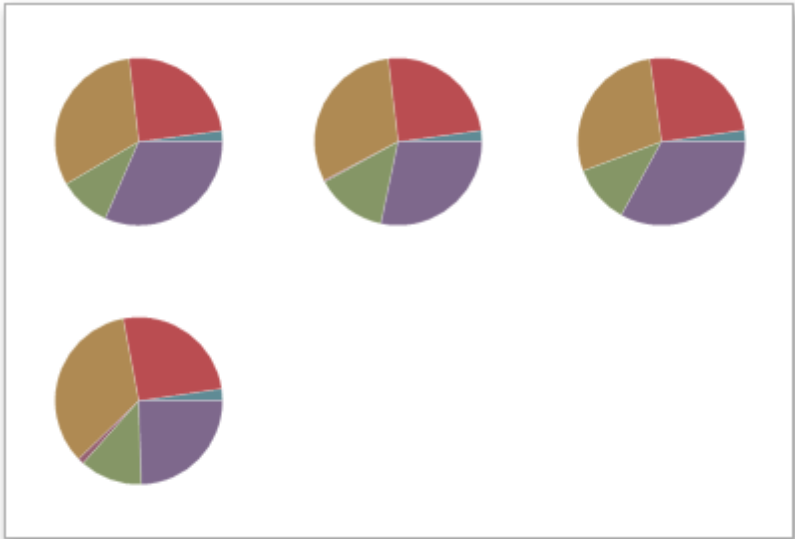
The **Pie** dashboard item allows you to specify the number of columns or rows in which individual diagrams are arranged.

To control how pies are arranged, use the buttons in the **Content Arrangement** group of the **Design** Ribbon tab. By default, the **Auto Arrange** option is enabled, which automatically resizes pies to fit within the dashboard item.

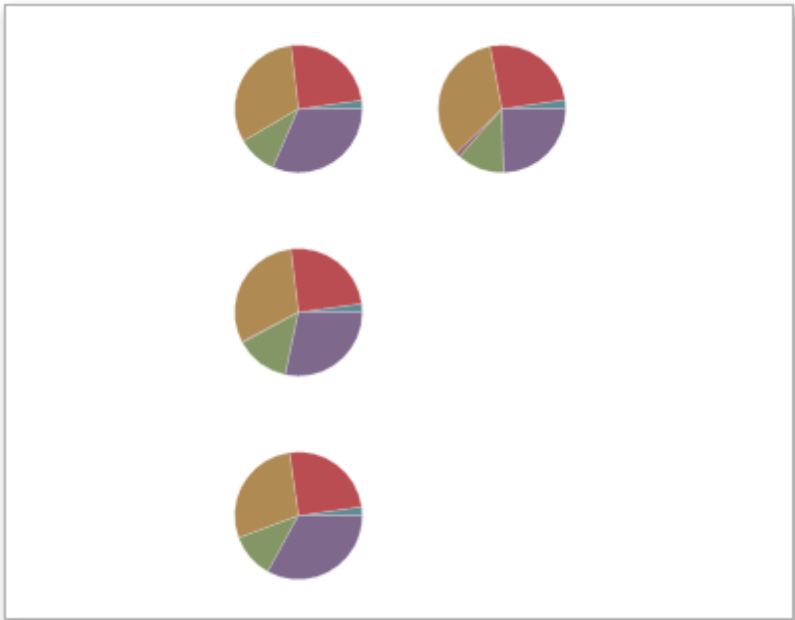
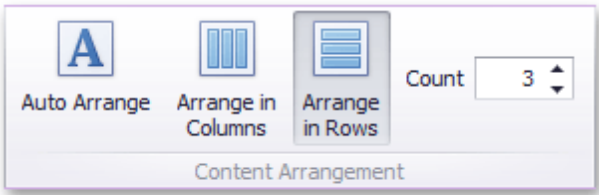


You can also specify the number of columns in which pies are arranged. Click the **Arrange in Columns** button and specify the appropriate number in the **Count** field.



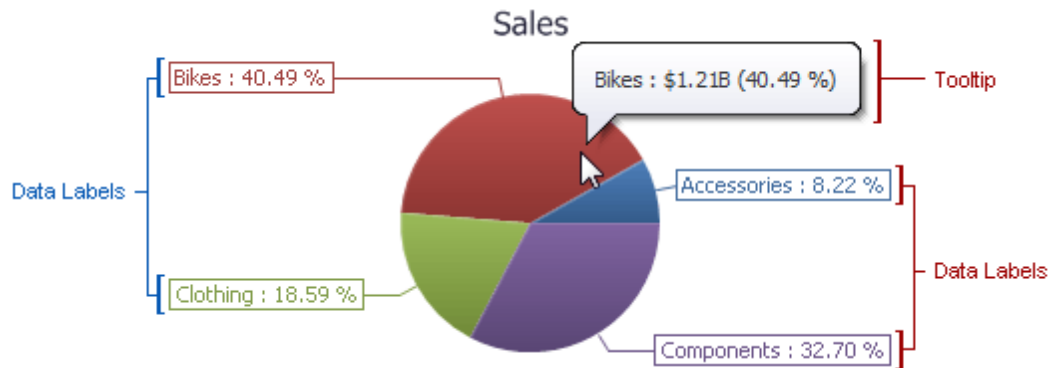


Similarly, you can arrange pies in a specific number of rows.

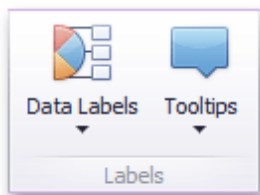


Labels

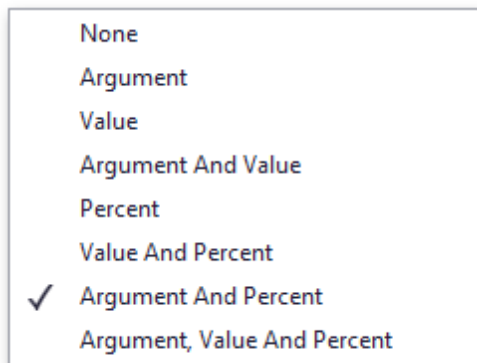
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Labels](#)



You can specify which information should be displayed within data labels and tooltips. To do this, use the **Data Labels** and **Tooltips** buttons in the **Labels** group of the **Design** Ribbon tab.



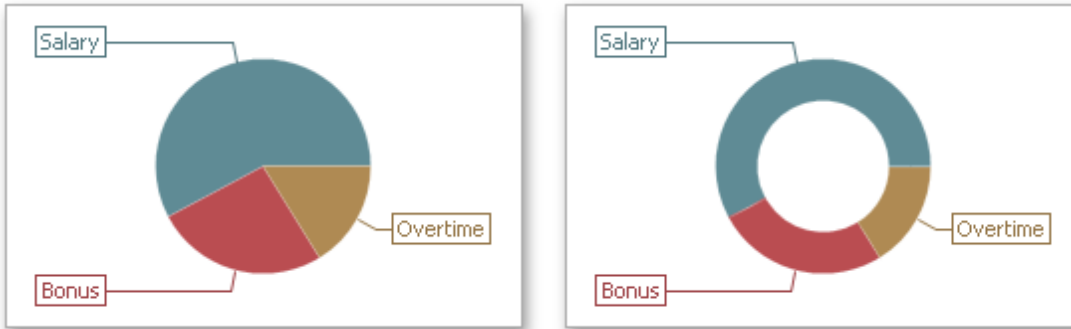
These buttons invoke a drop-down menu that is similar for both buttons. This menu allows you to specify which values are displayed within data labels or tooltips.



Style

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pies](#) > [Style](#)

The **Pie** dashboard item allows you to select whether diagrams should be painted as **pies** or **donuts**.



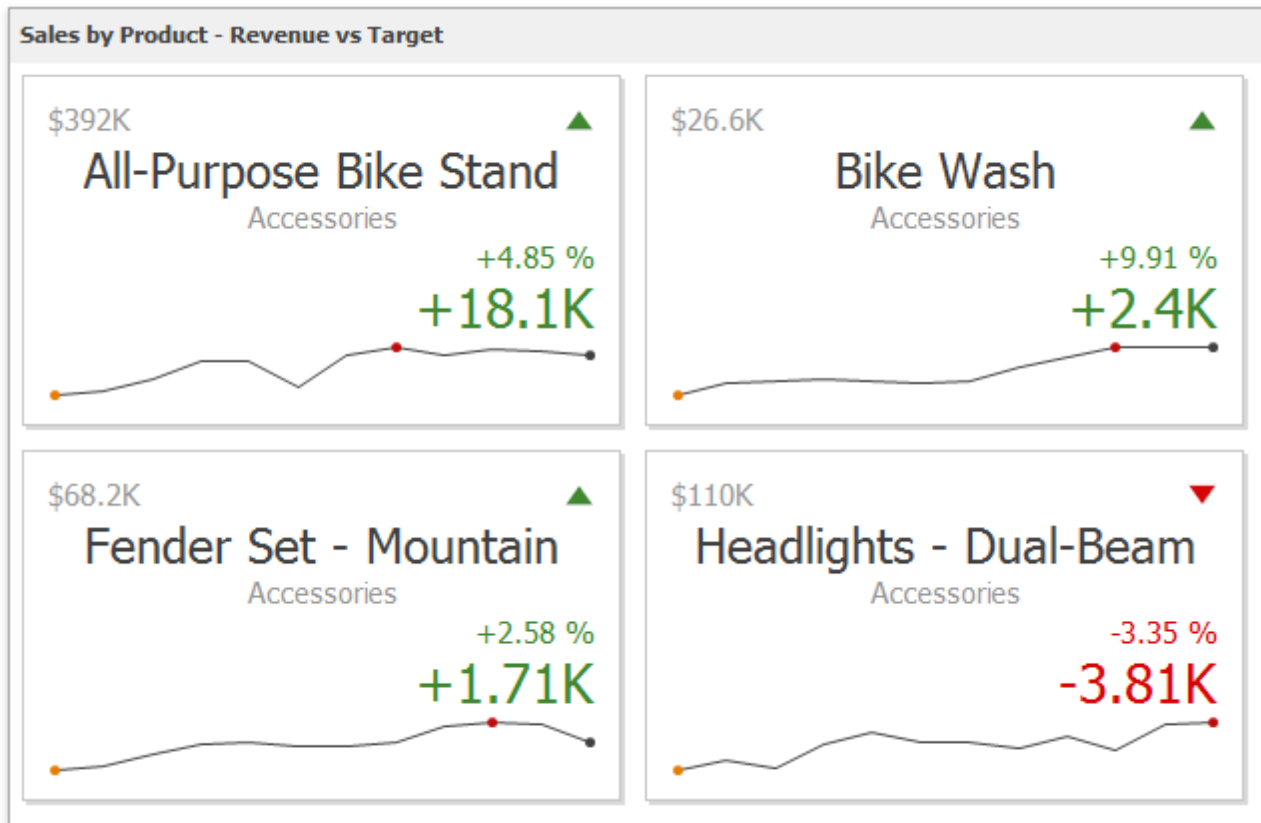
To select the diagram style, use the **Pie** and **Donut** buttons in the **Style** section of the **Design** Ribbon tab.



Cards

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#)

The **Card** dashboard item displays a series of cards. Each card illustrates the difference between two values. This difference can be expressed as an absolute value, an absolute variation or a percentage variation.



This section consists of the following subsections:

- [Providing Data](#)
Provides information about how to supply the Card dashboard item with data.
- [Layout](#)
Describes how to manage the position and visibility of elements within a card.
- [Delta](#)
Provides an overview of the Card dashboard item's capability to display the difference between two parameters.
- [Sparkline](#)
Provides an overview of the Card dashboard item's capability to visualize data using sparklines.
- [Formatting](#)
Shows how to format values displayed within a card.
- [Interactivity](#)
Describes features that enable interaction between the Card dashboard item and other items.
- [Cards Arrangement](#)
Describes how to arrange cards within the Card dashboard item.

Providing Data

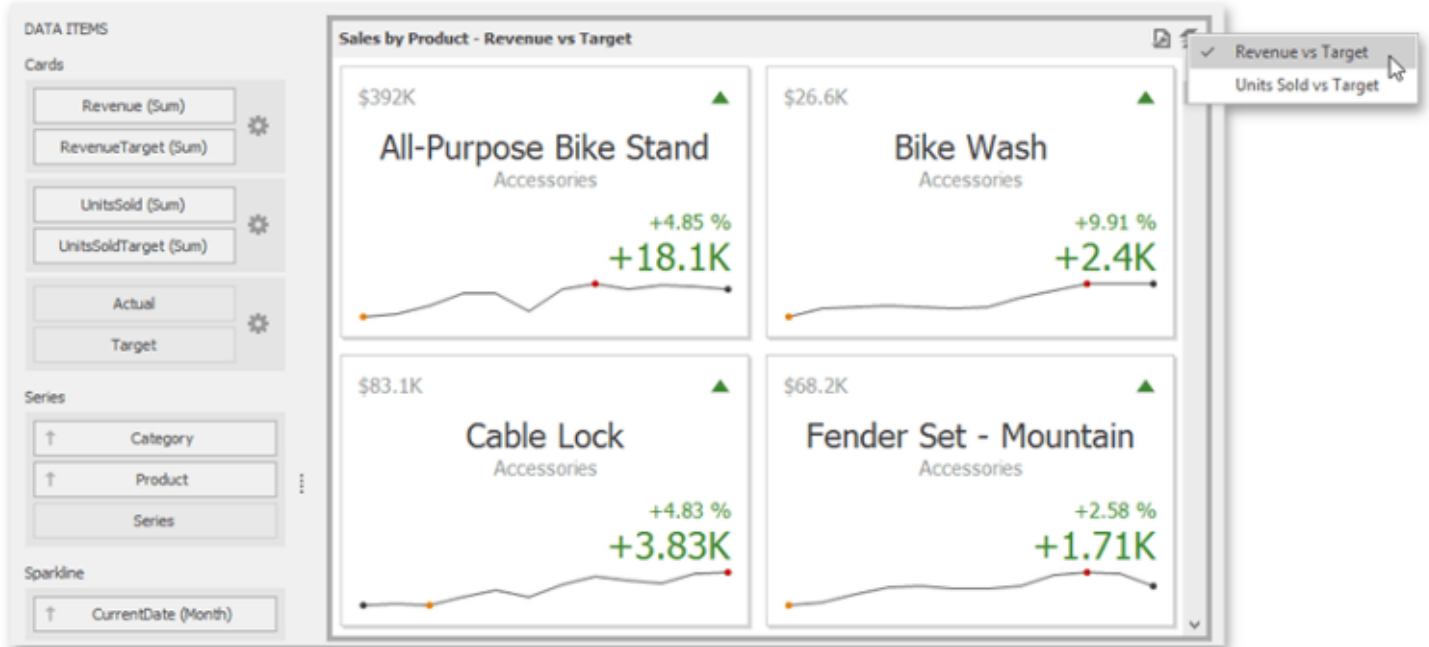
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.


The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Card** dashboard item to data in the Designer.

Binding to Data in the Designer

The image below shows a sample Card dashboard item that is bound to data.



To bind the Card dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes Card data sections.

Section	Description
Cards	Contains data items used to calculate values displayed within cards. Data items are arranged in containers. Each data item container can hold two data items. The first item contains <i>actual</i> data and the second item (optional) contains <i>target</i> data. If both items are provided, cards show the difference between actual and target values. You can fill several data item containers in the Cards section and use the Values drop-down menu to switch between the provided values. To invoke the Values menu, click the  icon in the dashboard item caption or use its context menu. This drop-down menu is available if the Series section is not empty. Otherwise, a separate card is created for each data item container, and all cards are displayed simultaneously.
Series	Contains data items whose values are used to label cards.
Sparkline	Provide a dimension whose data will be used to



visualize values using sparklines.

Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Layout](#)

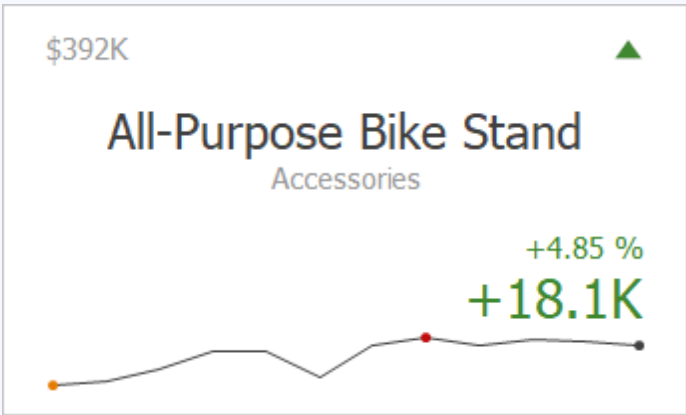
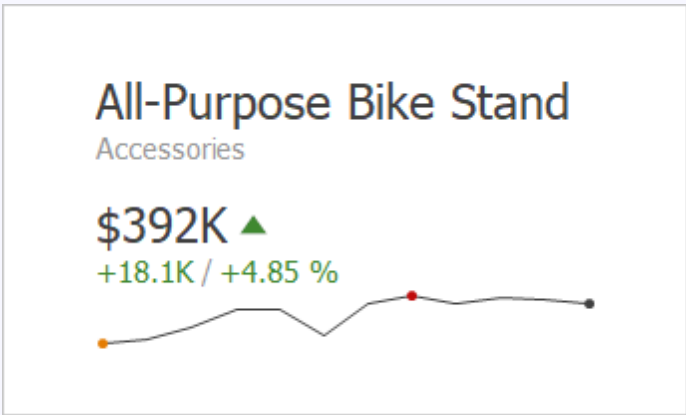
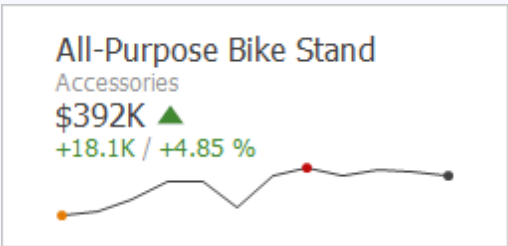
The Card dashboard item allows you to manage the position and visibility of elements displayed on cards. These elements include actual and target values, a [delta indicator and corresponding delta values](#), a [sparkline](#), etc.

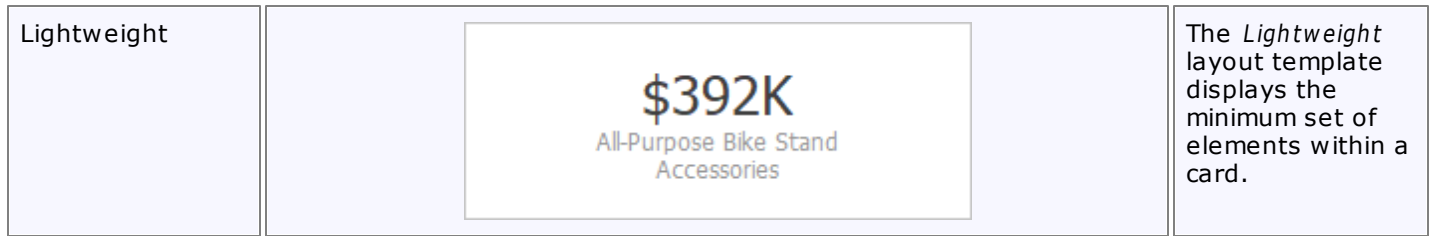
To manage the position and visibility of card elements, choose a predefined layout template and customize its settings.

- [Available Layout Templates](#)
- [Default Layout](#)
- [Change Layout](#)

Available Layout Templates

The table below contains information about the available layout templates:

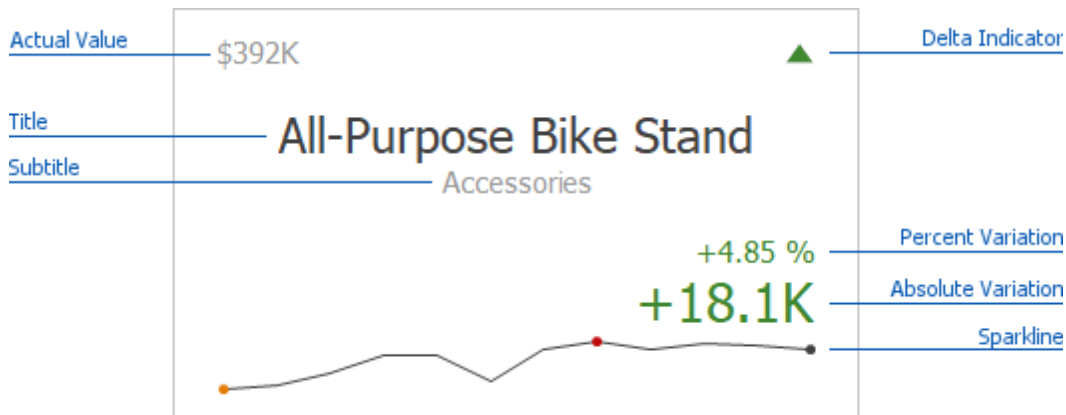
Layout Type	Example	Description
Stretched		The <i>Stretched</i> layout template arranges card elements so that they occupy an entire card area.
Centered		The <i>Centered</i> layout template is used to center card elements so that they occupy a specified width/height.
Compact		The <i>Compact</i> layout template is used to arrange card elements so that they occupy the minimum area.



For all layout types, you can change the visibility of its elements, or you can specify the display value type for data-bound elements. To learn more, see the [Change Layout](#) paragraph below.

Default Layout

The Card dashboard item uses the [Stretched](#) layout template that arranges card visual elements in the following way by default:




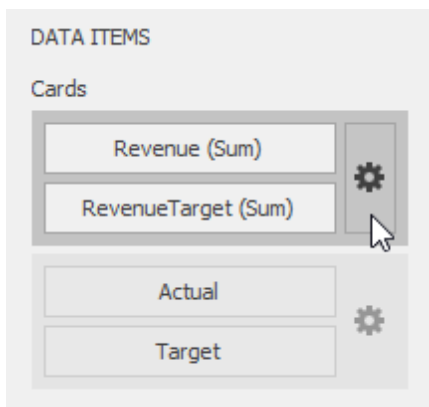
To learn more about the available value types and visual elements, see [Change Layout](#).

Note

Delta Indicator and delta values (such as **Percent Variation** or **Absolute Variation**) are colored depending on delta settings. To learn how to manage delta settings, see [Delta](#).

Change Layout

To change a card's layout in the Dashboard Designer, click the Options button (the  icon) displayed next to the data item container in the [Cards](#) section.





This invokes the **Card Settings** dialog.

On the **Layout Options** tab, select the required layout type in the **Select template** list and specify its settings:

- **Min width** - Specifies the minimum width of the card content.
- **Max width** - Specifies the maximum width of the card content. Use the **Auto** option to determine the maximum width automatically.

You can show/hide the following values and visual elements within the card:

Value	Description	Example
Title	Displays values of the last (bottommost) dimension placed in the Series section.	<i>Microsoft Office Keyboard</i>
Subtitle	Displays combined values of all dimensions except the last (bottommost) dimension.	<i>Technology - Computer Peripherals</i>
Absolute Variation	An absolute difference between the actual and target value (see Delta).	<i>+18.1K</i>
Actual Value	A summary value for a measure placed in the Actual placeholder.	<i>\$392K</i>
Card Name	A card name.	<i>Revenue vs. Target</i>
Percent of Target	A percent of a target	<i>104.85 %</i>

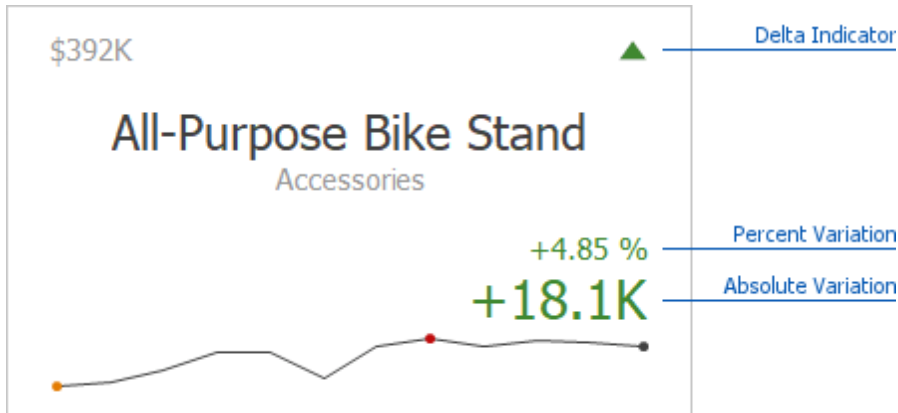
	value (see Delta).	
Percent Variation	A percent difference between the actual and target value (see Delta).	4.85 %
Target Value	A summary value for a measure placed in the Target placeholder.	\$374K
Dimension {Name}	Allows you to display values of a specific dimension placed in the Series section.	<i>Technology</i>
Element	Description	Example
Delta Indicator	Indicates whether the actual value is less or greater than the target value (see Delta).	
Sparkline	Visualizes the variation of actual or target values. To learn more, see Sparkline .	

Use the **Apply to All Cards** button to propagate the specified layout settings to all cards corresponding to [Actual-Target](#) pairs. The **Reset** button resets all setting to their default values.


Delta

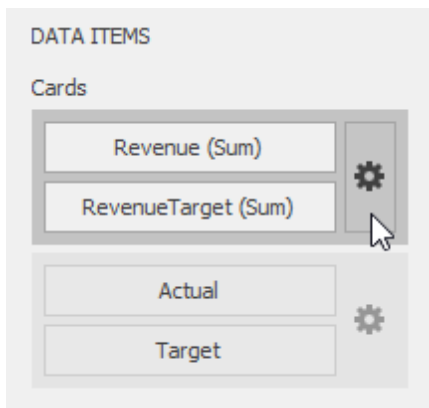
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Delta](#)

Cards allow you to visualize the difference between the [actual and target](#) values using special delta values and a delta indicator. If the default layout is used ([Stretched layout type](#)), the card displays the following delta values/elements:



- **Delta Indicator** - Indicates whether the actual value is less or greater than the target value.
- **Percent Variation** and **Absolute Variation** - delta values that show a difference between the actual and target value. You can also display the **Percent of Target** value. To do this, customize the [card's layout](#).

To customize settings that relate to the calculation and display of delta values/elements, use the Options button (the  icon) displayed next to the data item container in the [Cards](#) section.



In the invoked **Card Settings** dialog, go to the **Delta Options** tab:

Card Settings ✕

Layout Options **Delta Options** Sparkline Options Format Options

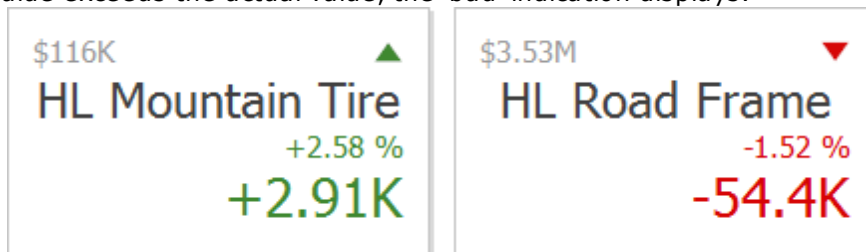
Result indication:

Threshold type:

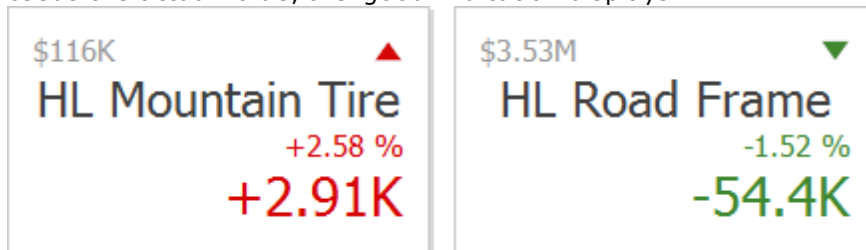
Threshold value:

Then, specify the following settings:

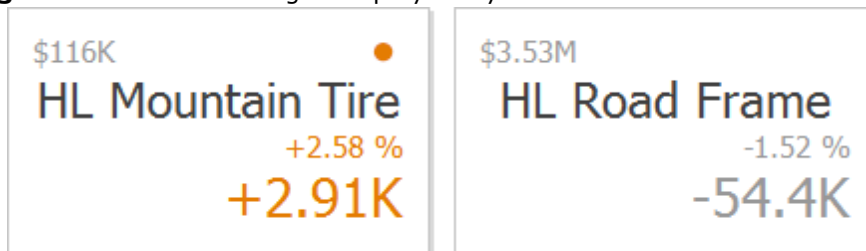
- **Result Indication** - You can specify the condition for displaying delta indication.
- **Greater is Good** - The 'good' indication is displayed if the actual value exceeds the target value; if the target value exceeds the actual value, the 'bad' indication displays.



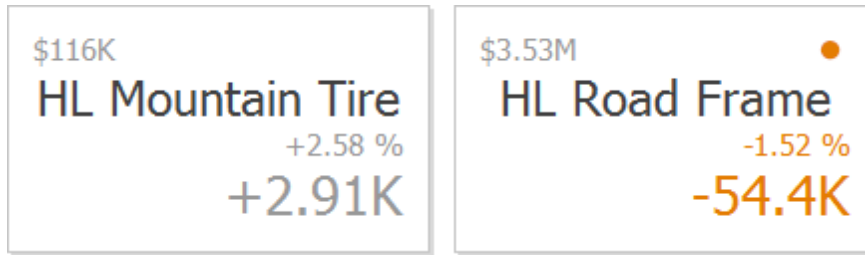
- **Less is Good** - The 'bad' indication displays if the actual value exceeds the target value; if the target value exceeds the actual value, the 'good' indication displays.



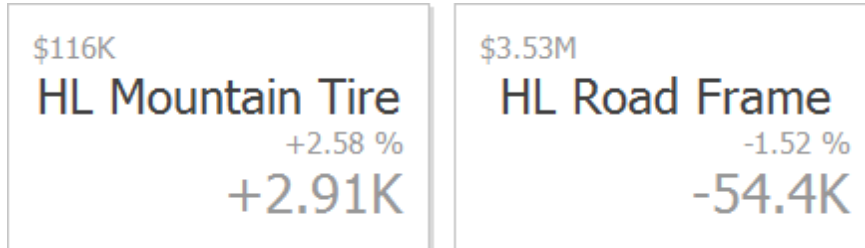
- **Warning if Greater** - A warning is displays only if the actual value exceeds the target value.



- **Warning if Less** - A warning is displays only if the target value exceeds the actual value.



- **No Indication** - Indication does not display.

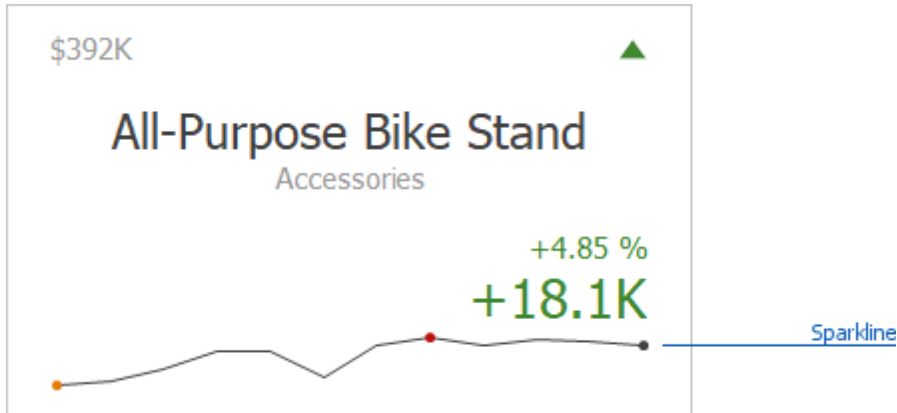


- **Threshold type / Threshold value** - For instance, you can specify that a specific indication should display when the actual value exceeds the target value *by 10%* or *by \$2K*. Use the **Threshold type** combo box to select whether you wish to specify the comparison tolerance in percentage values or absolute values. Then use the **Threshold value** box to specify the comparison tolerance.

Sparkline

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Sparkline](#)

Sparklines can be used to visualize the variation of [actual or target](#) values (for instance, over time).

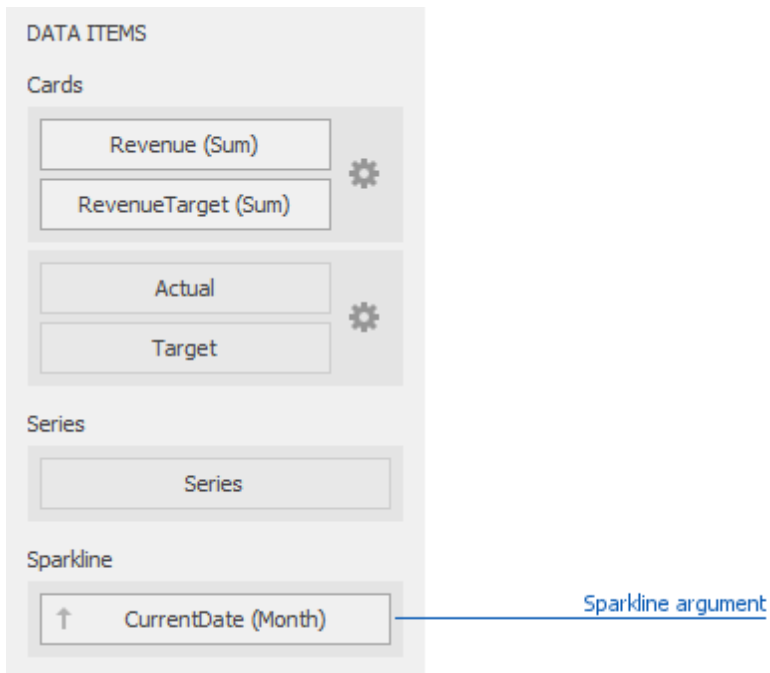


To learn how to display the sparkline for different layout types, see [Layout](#).

- [Data Binding Specifics](#)
- [Change Sparkline Options](#)


Data Binding Specifics

You need to provide a date-time or numeric dimension whose data is used as argument values to display a sparkline within the card.



If you have provided both actual and target values, a sparkline visualizes the actual value's variation.

Change Sparkline Options

To manage sparkline settings, click the Options button (the  icon) displayed next to the data item container. In the invoked **Card Settings** dialog, go to the **Sparkline Options** tab:

Card Settings

Layout Options Delta Options **Sparkline Options** Format Options

Sparkline view type: Line

Highlight min/max points

Highlight start/end points


OK Cancel Apply

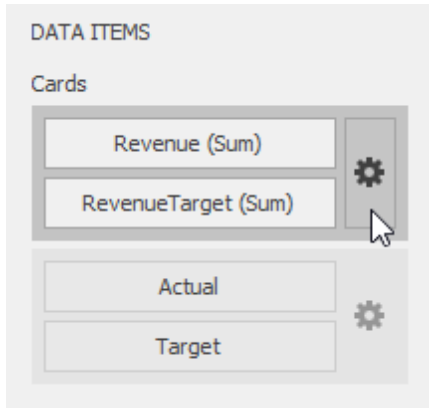
The following options are available:

Sparkline Options	Description
Sparkline view type	Defines the sparklines view type. Sparkline data points can be represented as area , line , bars , or win and loss squares.
Highlight min/max points	Specifies whether to highlight the minimum/maximum points of a sparkline.
Highlight start/end points	Specifies whether to highlight the start/end points of a sparkline.

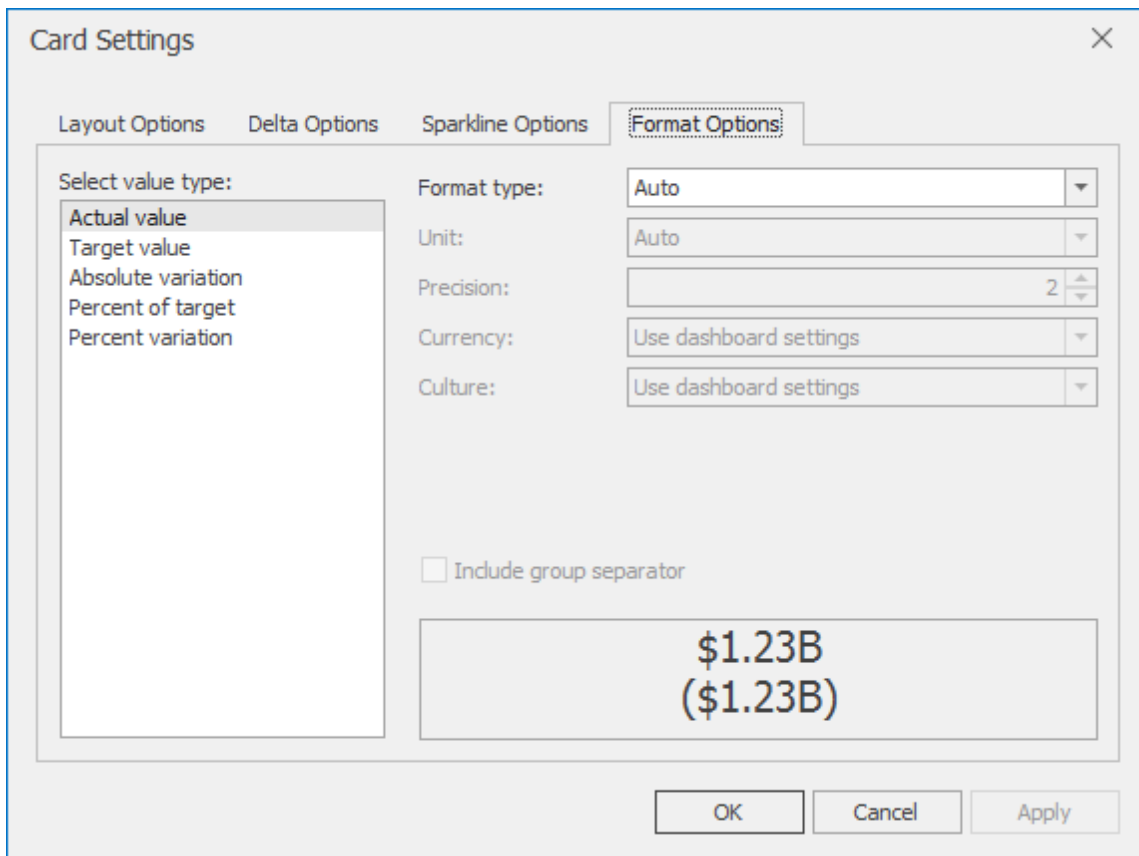
Formatting

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Formatting](#)

The Card dashboard item formats the [actual and target](#) values displayed within cards using [format settings](#) specified for data items. Click the options buttons (the ) displayed next to the data item container in the **Cards** section to change format settings for other values.



In the invoked **Card Settings** dialog, go to the **Format Options** tab and use the **Select value type** option to specify which values format settings should change.



You can change format settings for the following [value types](#):

- **Actual Value**
- **Target Value**
- **Absolute Variation**
- **Percent of Target**

- **Percent Variation**

To learn more about format settings, see **Formatting Numeric Values** in the [Formatting Data](#) topic.

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Interactivity](#)

This section describes features that enable interaction between the **Card** dashboard item and other items. These features include **Master Filtering** and **Drill-Down**.

The section contains the following topics.

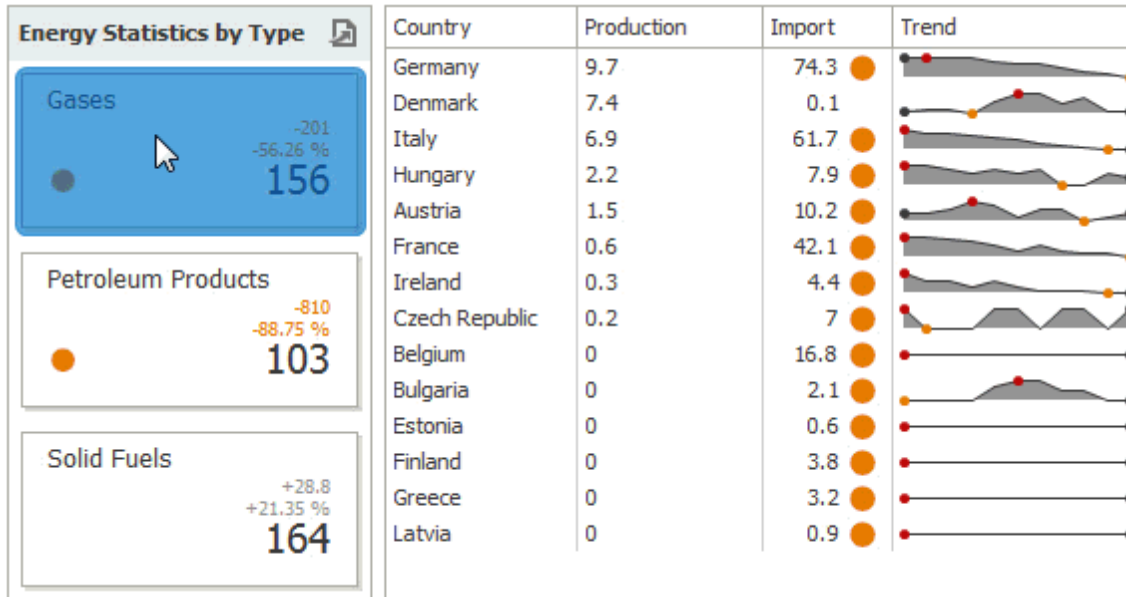
- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering


[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Interactivity](#) > [Master Filtering](#)

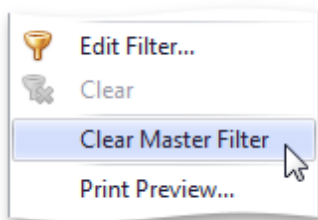
The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a card (or multiple cards by holding down the **CTRL** key) to make other dashboard items only display data related to the selected card(s).



To learn how to enable Master Filtering in the Designer, see the [Master Filtering](#) topic.

To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) of the Card dashboard item, or the **Clear Master Filter** command in the Card's context menu.

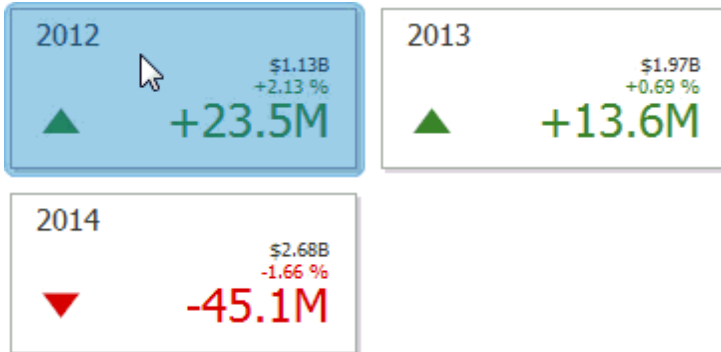


Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

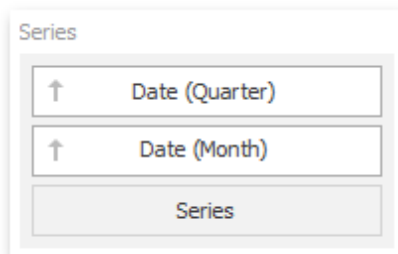
When drill-down is enabled, you can click a card to view the details.



Note

When [Master Filtering](#) is enabled, you can view the details by double-clicking a card.

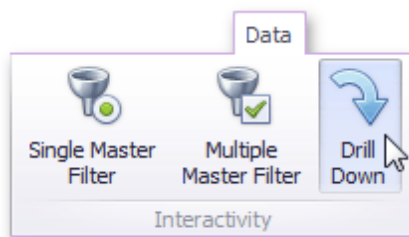
Drill-down requires that the **Series** section contains several dimensions, from the least to the most detailed dimension.




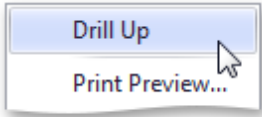
Note

In **OLAP** mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill-down, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the [caption](#) of the Card dashboard item, or the **Drill Up** command in the Card's context menu.

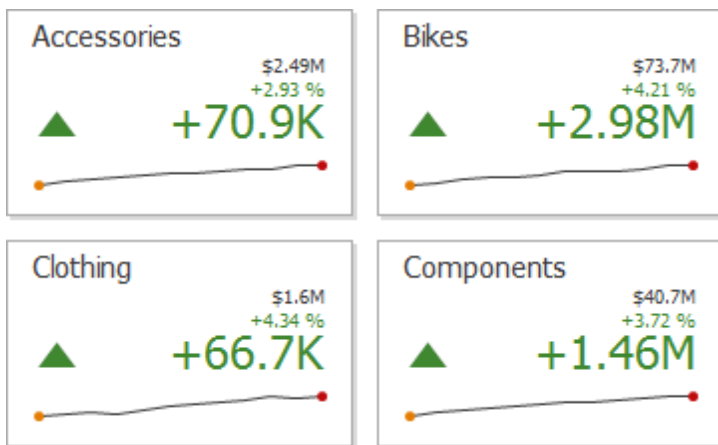
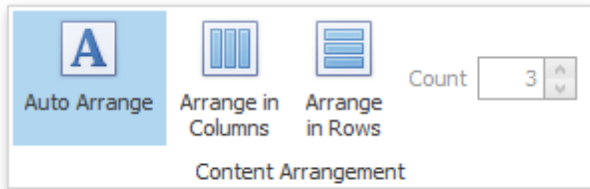


Cards Arrangement

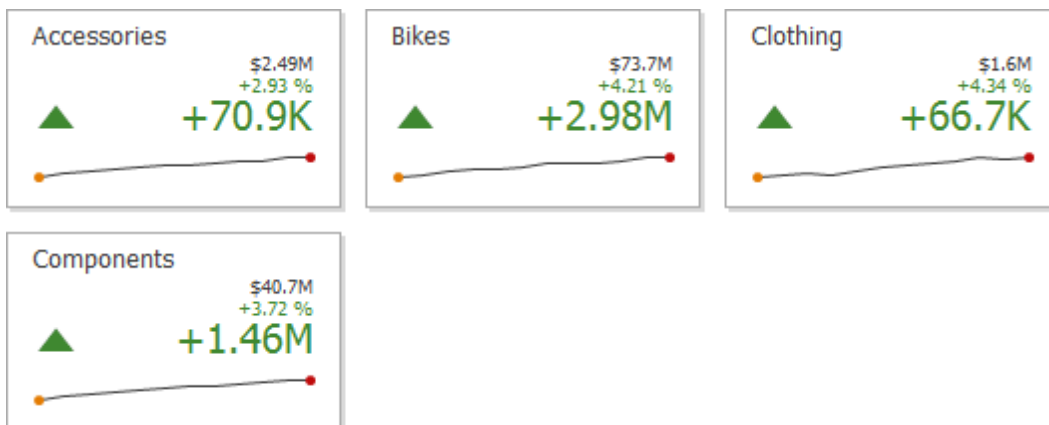
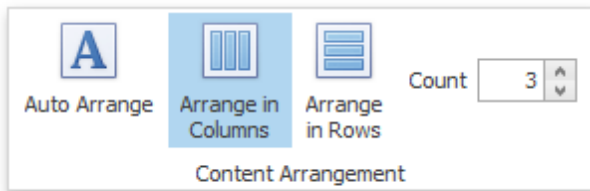
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Cards](#) > [Cards Arrangement](#)

The **Card** dashboard item allows you to specify the number of columns or rows in which individual cards are arranged.

Use the buttons in the **Content Arrangement** group of the **Design** Ribbon tab to control how cards are arranged. The **Auto Arrange** option is enabled by default, which automatically resizes cards to fit within the dashboard item.



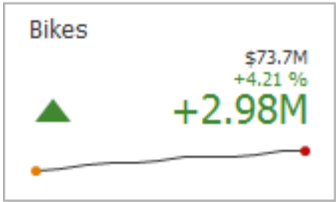
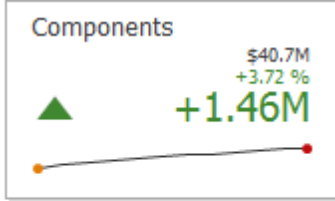
You can also specify the number of columns in which cards are arranged. Click the **Arrange in Columns** button and specify the appropriate number in the **Count** field.



Similarly, you can arrange cards in a specific number of rows.

Content Arrangement

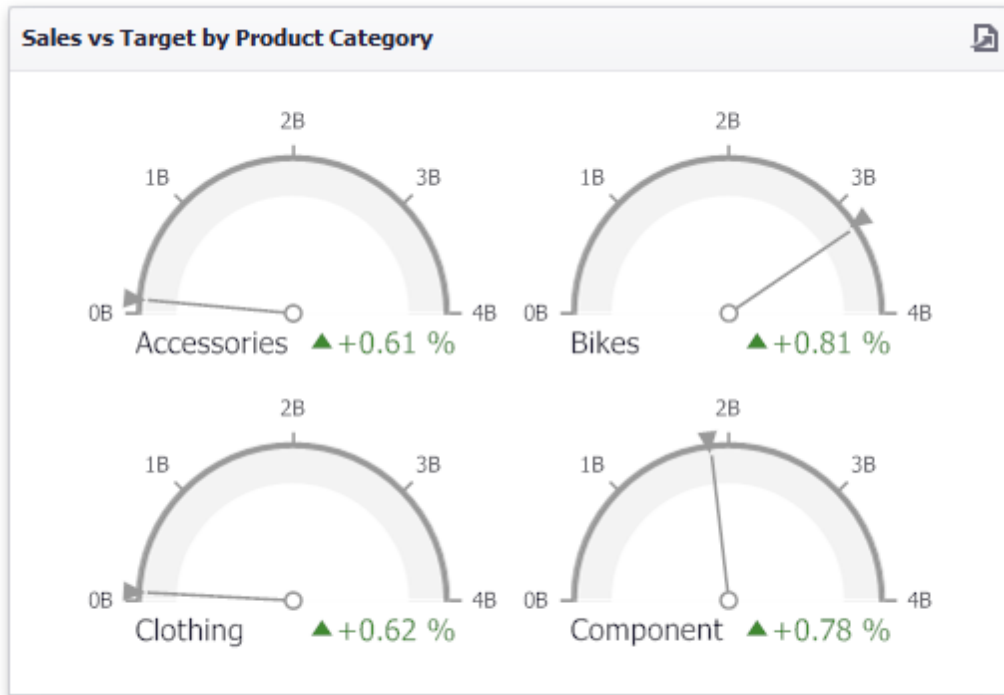
Auto Arrange Arrange in Columns **Arrange in Rows** Count: 3



Gauges

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#)

The **Gauge** dashboard item displays a series of gauges. Each gauge can communicate two values - one with a needle and the other with a marker on the scale.



This section consists of the following subsections:

- [Providing Data](#)
Provides information about how to supply the Gauge dashboard item with data.
- [Delta](#)
Provides an overview of the Gauge dashboard item's capability to display the difference between two parameters.
- [Gauge Scale](#)
Describes options that relate to the gauge scales.
- [Interactivity](#)
Describes features that enable interaction between the Gauge dashboard item and other items.
- [Layout](#)
Describes layout options of the Gauge dashboard item.
- [Style](#)
Provides information about how to specify the gauge style.

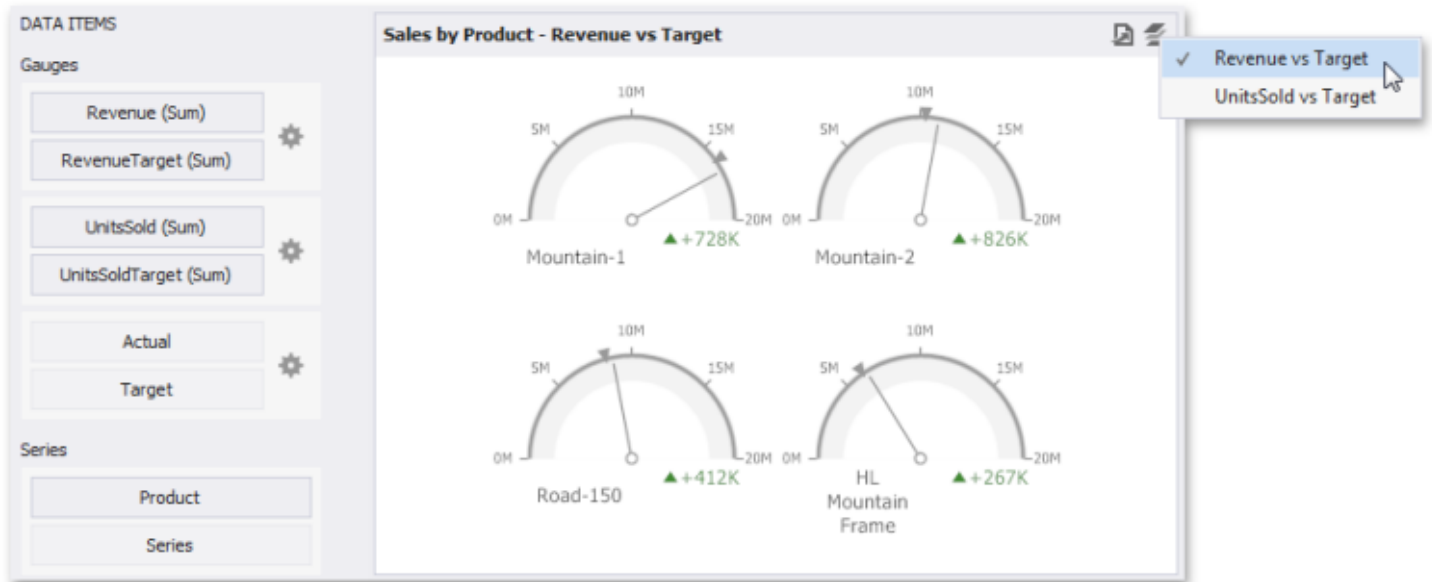
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Providing Data](#)


The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Gauge** dashboard item to data in the Designer.

The image below shows a sample Gauge dashboard item that is bound to data.



To bind the Gauge dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes Gauge's data sections.

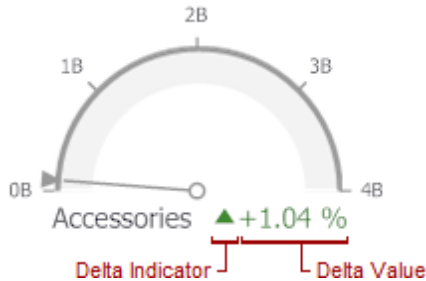
Section	Description
<p>Gauges</p>	<p>Contains data items used to calculate values displayed by gauges. Data items are arranged in containers. Each <i>data item container</i> can hold two data items. The first item contains <i>actual</i> data and the second item (optional) contains <i>target</i> data. If both items are provided, gauges show the difference between actual and target values. You can fill several data item containers in the Gauges section and use the Values drop-down menu to switch between the provided values. To invoke the Values menu, click the  icon in the dashboard item caption. This drop-down menu is available if the Series section is not empty. Otherwise, a separate gauge is created for each data item container, and all gauges are displayed simultaneously.</p>
<p>Series</p>	<p>Contains data items whose values are used to label gauges.</p>


Delta

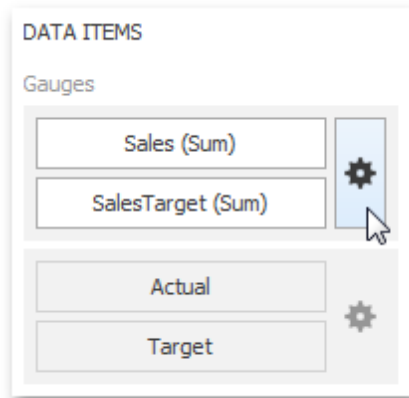
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Delta](#)

Gauges allow you to display the difference between the *actual* and *target* values of a particular parameter. This difference is called **delta**.

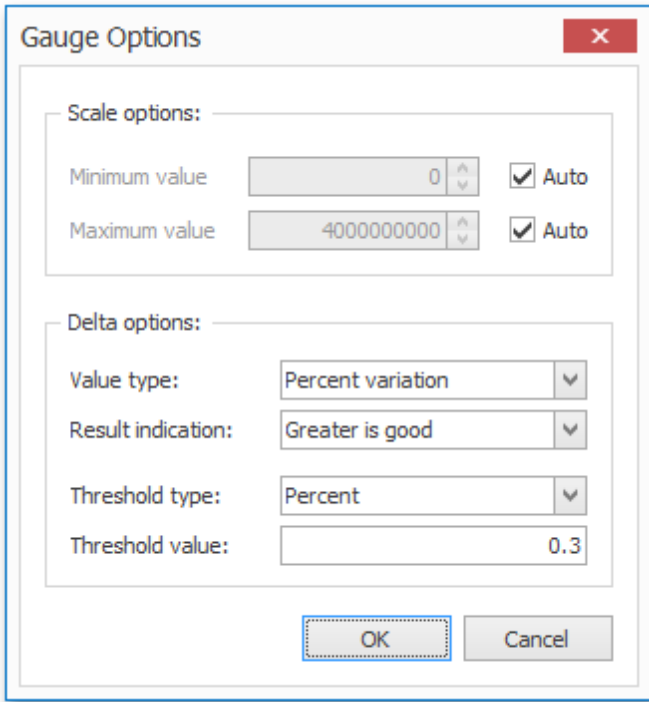
Delta is shown with a *delta indicator* (indicating whether the actual value is less than or greater than the target value) and *delta values* (representing this difference as an absolute value or a variation).



To customize settings that relate to the calculation and display of deltas, use the options buttons (the  icon) displayed next to the data item container in the Gauges section of the DATA ITEMS pane.



These buttons invoke the **Gauge Options** dialog.



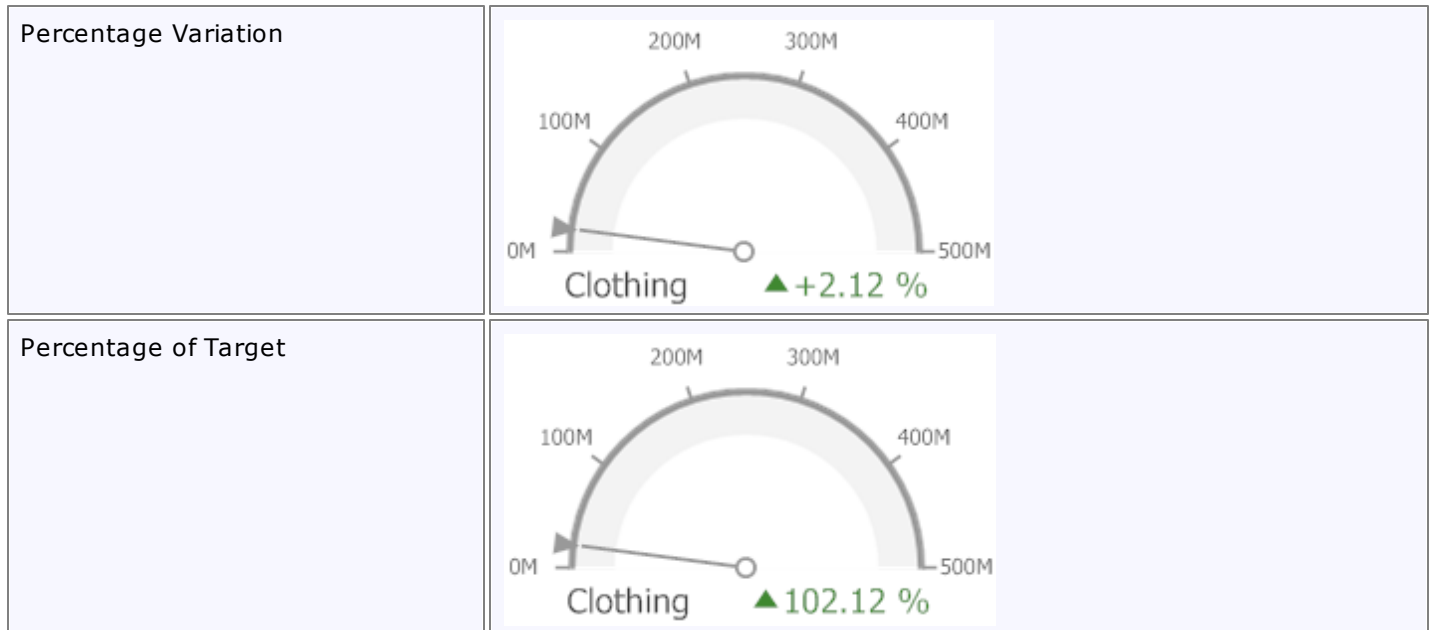
Use it to define the condition for displaying delta indication, specify which delta values should be displayed, and introduce the comparison tolerance.

- [Delta Values](#)
- [Delta Indication](#)
- [Comparison Tolerance](#)

Delta Values

You can specify which values should be displayed within gauges. Use the **Value type** combo box in the **Gauge Options** window to select the value that will be displayed as the delta value.

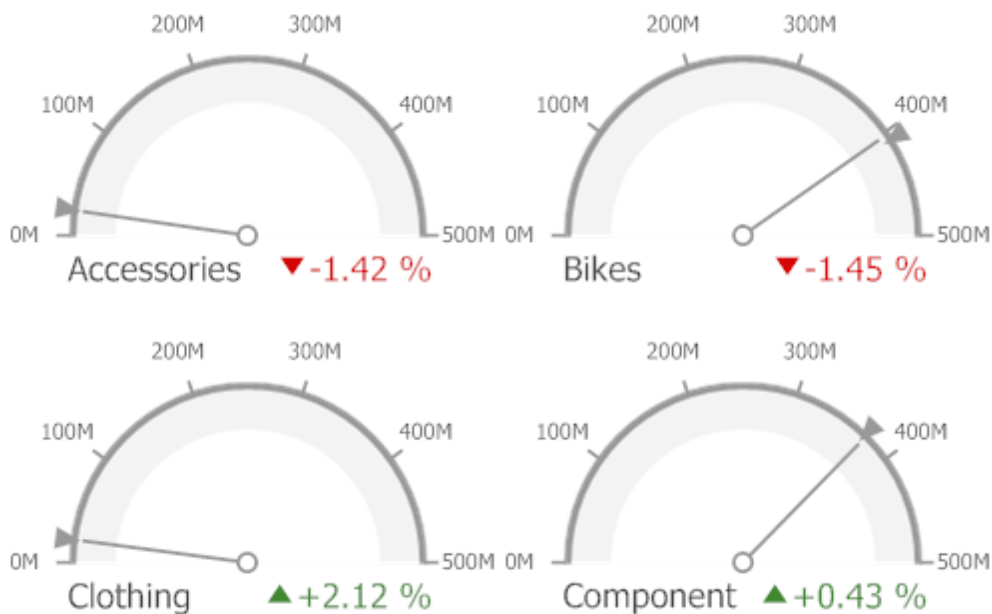
Value Type	Result
Actual Value	
Absolute Variation	



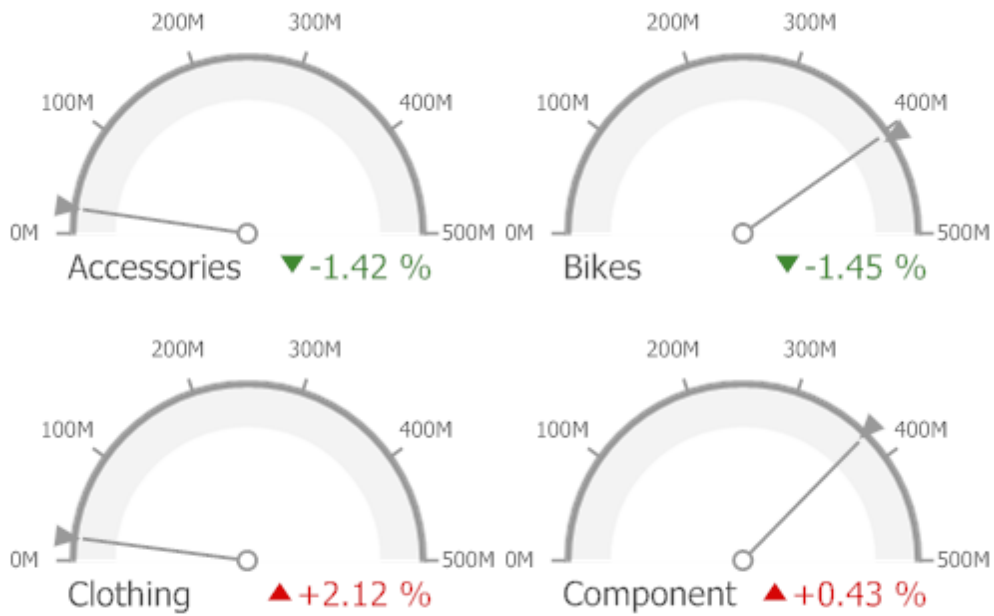
Delta Indication

You can specify the condition for displaying delta indication. To do this, use the **Result indication** combo box in the **Gauge Options** window.

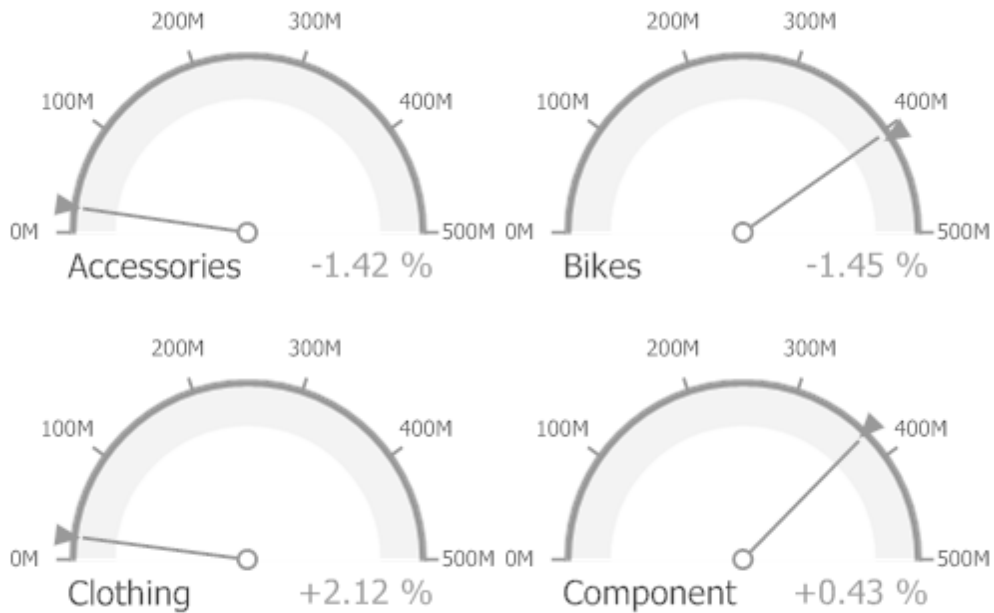
- Greater is Good - The 'good' indication is displayed if the actual value exceeds the target value; if the target value exceeds the actual value, the 'bad' indication is displayed.



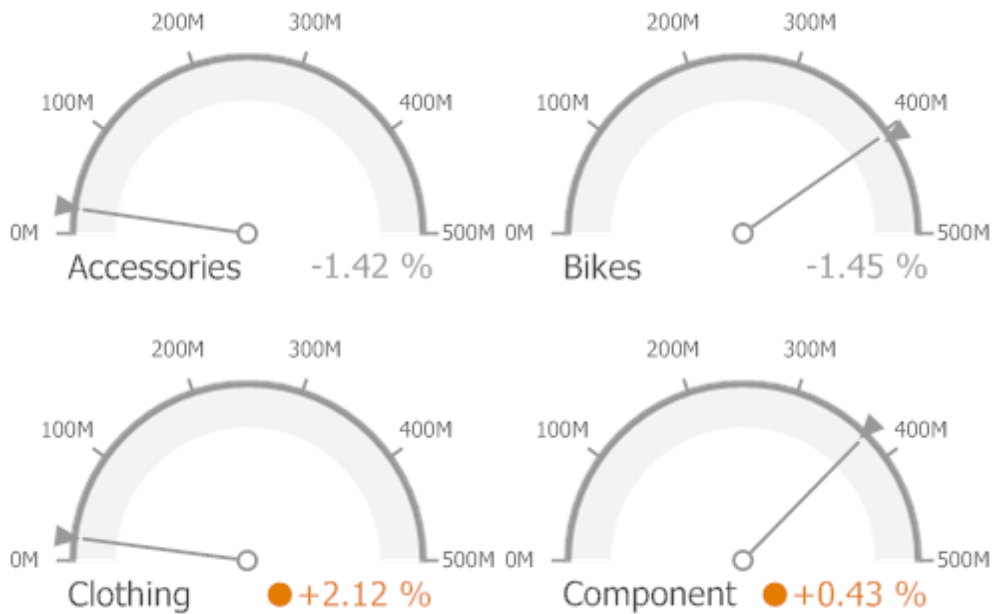
- Less is Good - The 'bad' indication is displayed if the actual value exceeds the target value; if the target value exceeds the actual value, the 'good' indication is displayed.



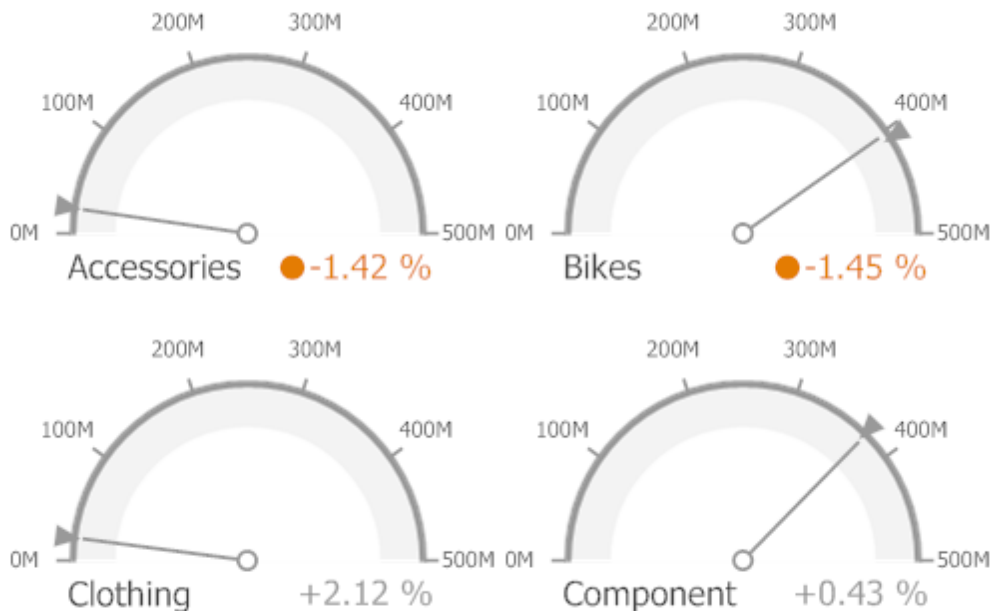
- No Indication - Indication is not displayed.



- Warning if Greater - A warning is displayed if the actual value exceeds the target value; otherwise, no indication is displayed.



- **Warning if Less** - A warning is displayed if the target value exceeds the actual value; otherwise, no indication is displayed.



Comparison Tolerance

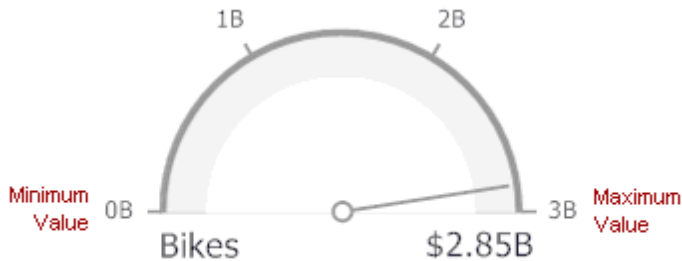
The comparison tolerance allows you to create more advanced conditions for displaying delta indication. For instance, you can specify that a specific indication should be displayed when the actual value exceeds the target value *by 10%* or *by \$2K*.

Use the **Threshold type** combo box to select whether you wish to specify the comparison tolerance in percentage values or in absolute values. Then use the **Threshold value** box to specify the comparison tolerance.

Gauge Scale

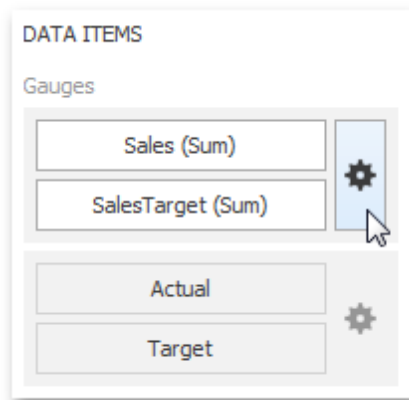
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Gauge Scale](#)

By default, the Gauge dashboard item automatically determines the range of the gauge scales based on the values they display.



You can override this behavior and specify the maximum and minimum values on the scale.

To do this, invoke the **Gauge Options** window using the **Options** button displayed in the data item container in the Gauges section of the DATA ITEMS pane.



In the **Gauge Options** window, uncheck the **Auto** check box for the maximum or minimum value, and specify this value in the corresponding field.

Gauge Options ✕

Scale options:

Minimum value: Auto

Maximum value: Auto

Delta options:

Value type: ▼

Result indication: ▼

Threshold type: ▼

Threshold value:

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Interactivity](#)

This section describes features that enable interaction between the **Gauge** dashboard item and other items. These features include **Master Filtering** and **Drill-Down**.

The section contains the following topics.

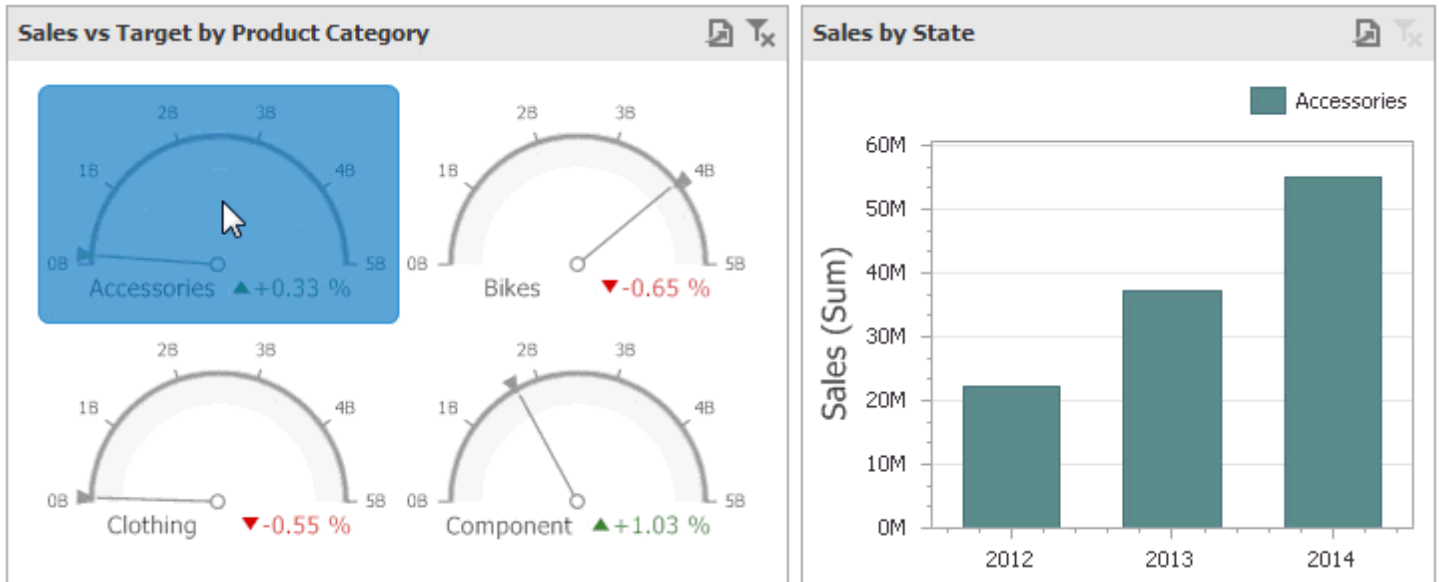
- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Interactivity](#) > [Master Filtering](#)

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When master filtering is enabled, you can click a gauge (or multiple gauges by holding down the **CTRL** key) to make other dashboard items only display data related to the selected gauge(s).



To learn how to enable master filtering in the Designer, see the [Master Filtering](#) topic.

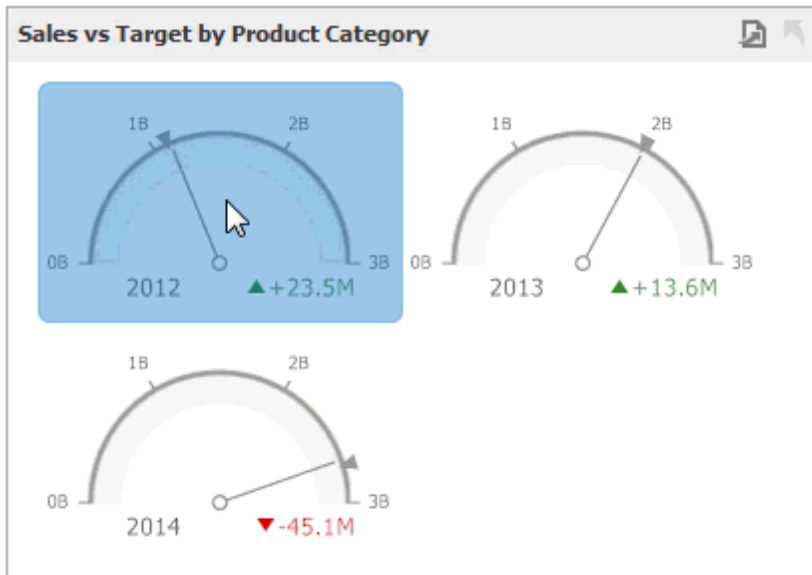
To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) of the Gauge dashboard item, or the **Clear Master Filter** command in the Gauges context menu.

Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

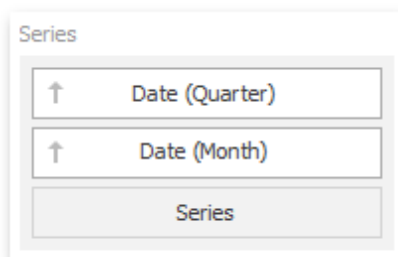
When drill-down is enabled, you can click a gauge to view the details.



Note

When [Master Filtering](#) is enabled, you can view the details by double-clicking a gauge.

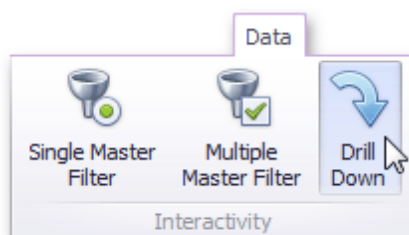
Drill-down requires that the **Series** section contains several dimensions, from the least detailed to the most detailed dimension.




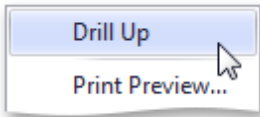
Note

In **OLAP** mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill-down, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the [caption](#) of the Gauge dashboard item, or the **Drill Up** command in the Gauges context menu.



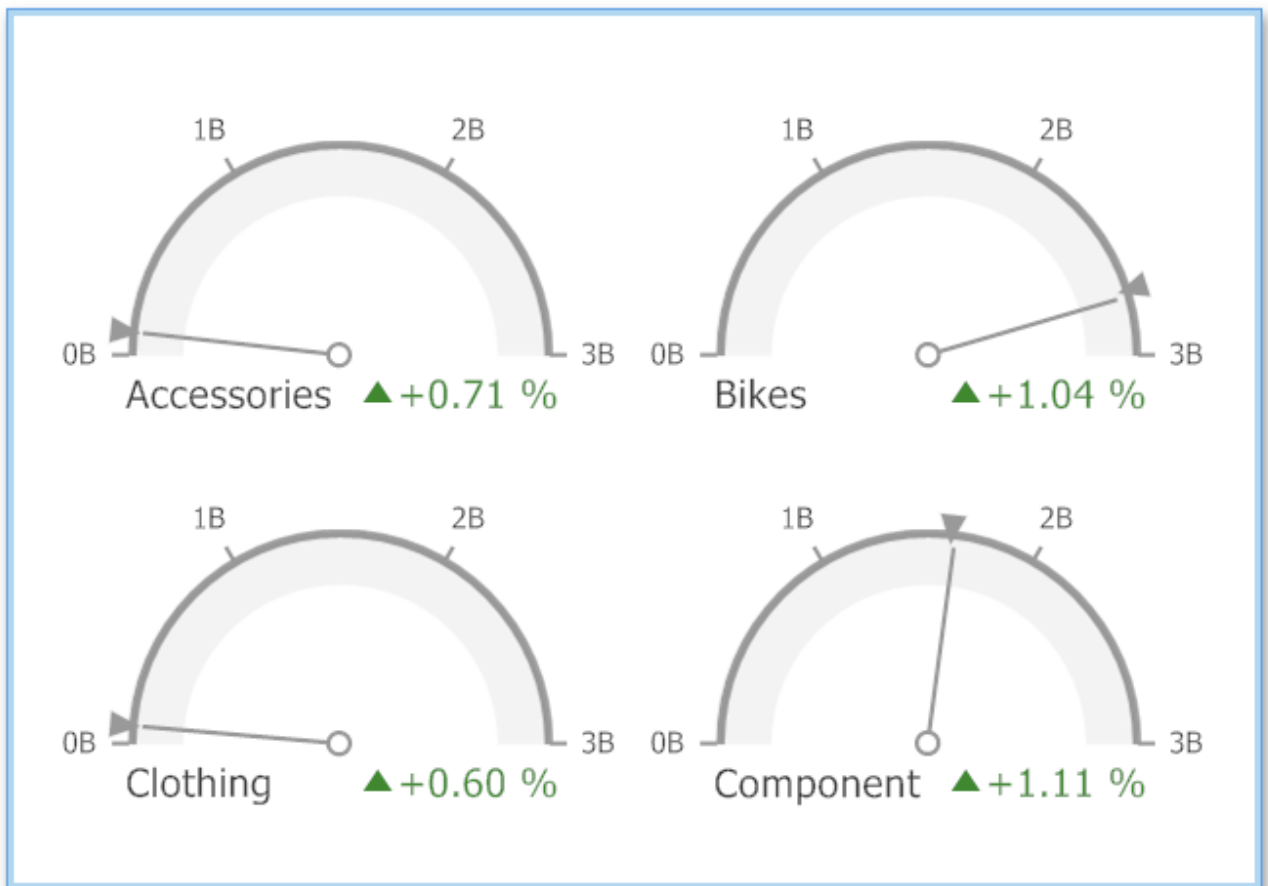
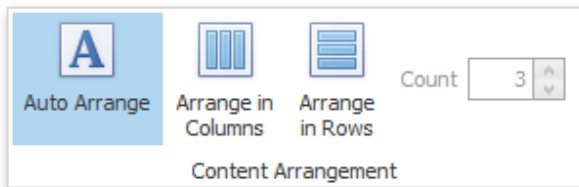
Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Layout](#)

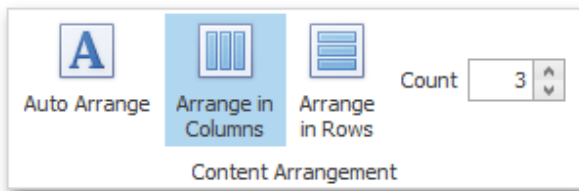
The **Gauge** dashboard item allows you to specify the number of columns or rows in which individual gauges are arranged.

To control how gauges are arranged, use the buttons in the **Content Arrangement** group of the **Design** Ribbon tab.

By default, the **Auto Arrange** option is enabled, which automatically resizes gauges to fit within the dashboard item.



You can also specify the number of columns in which gauges are arranged. Click the **Arrange in Columns** button and specify the appropriate number in the **Count** field.

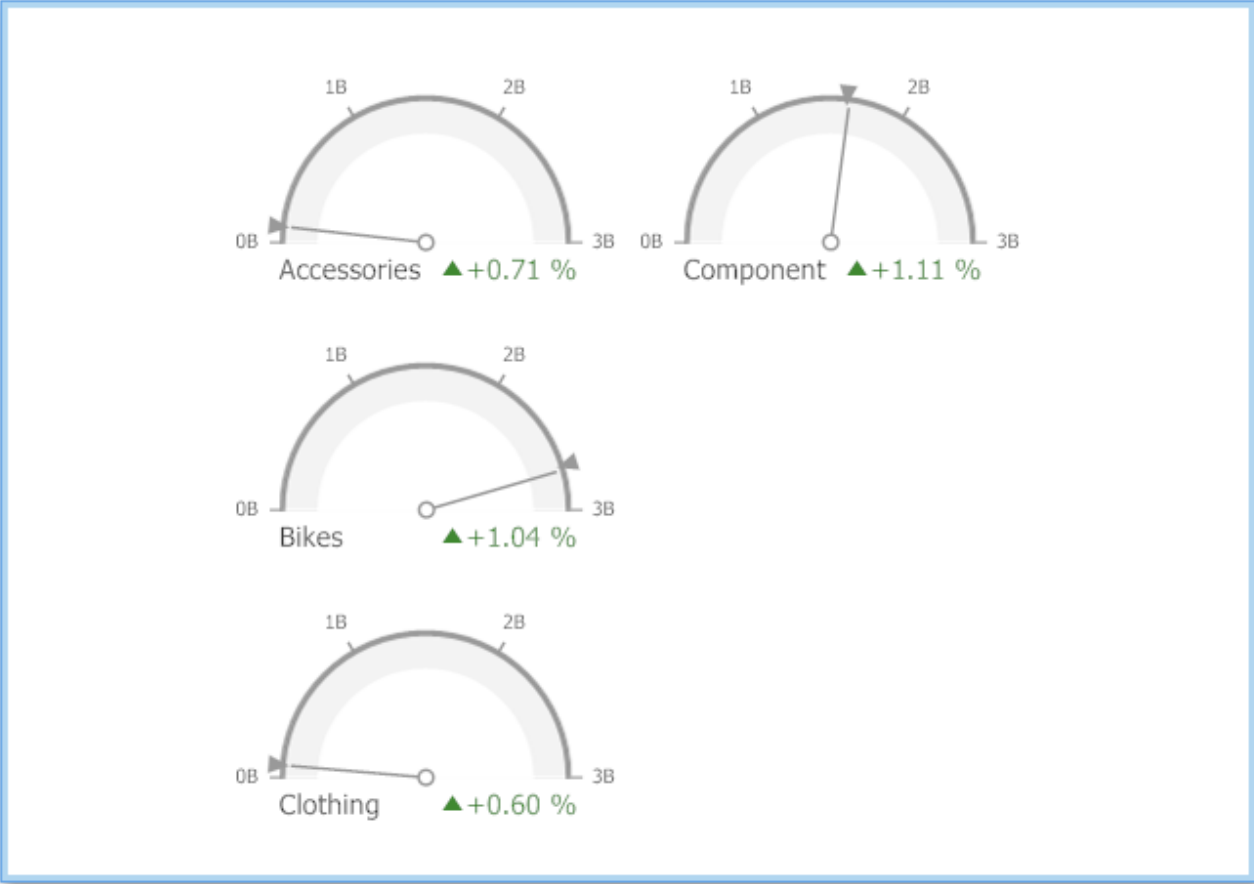


Similarly, you can arrange pies in a specific number of rows by clicking the **Arrange in Rows** button.

Content Arrangement

Auto Arrange Arrange in Columns **Arrange in Rows**

Count

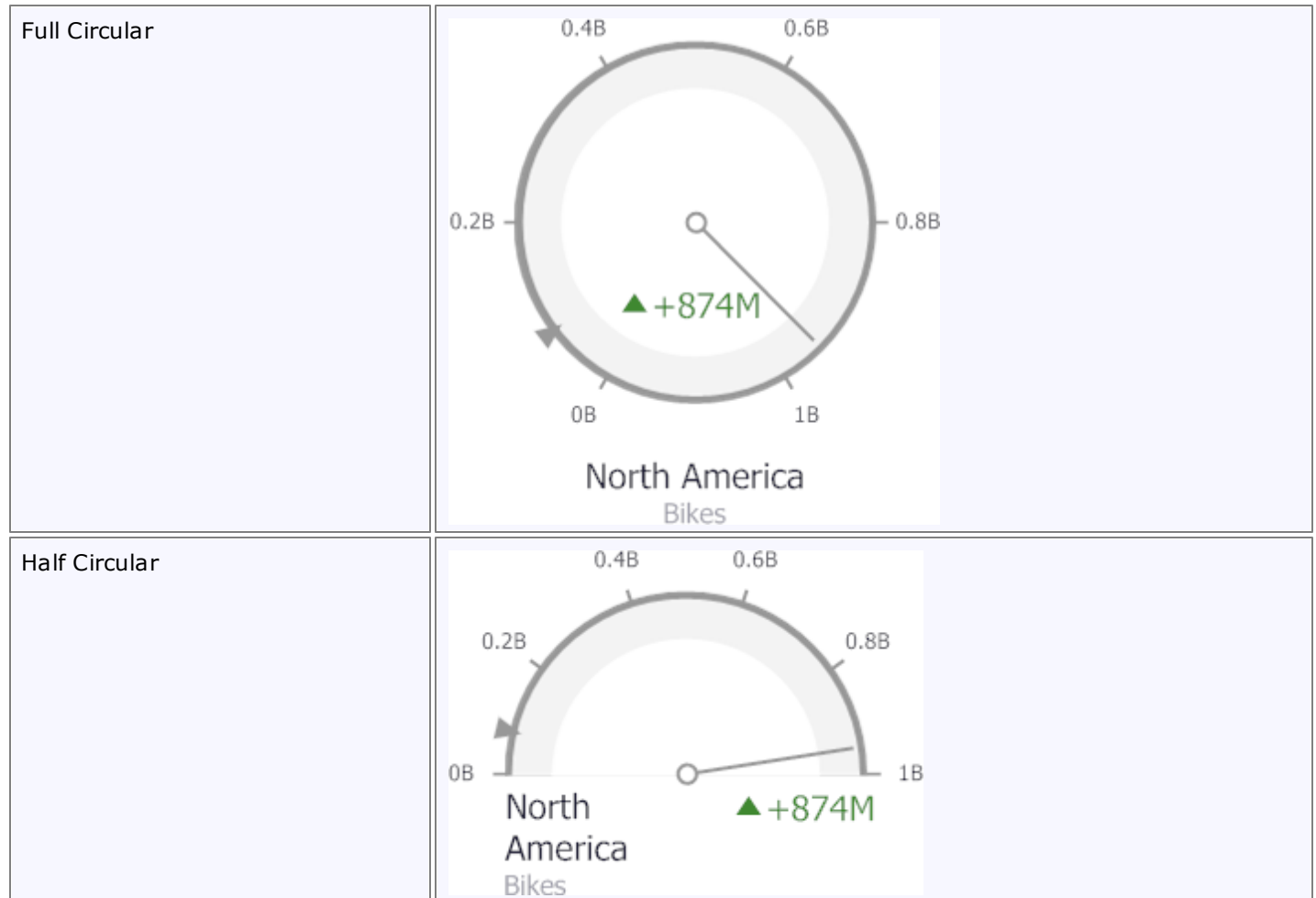


Style

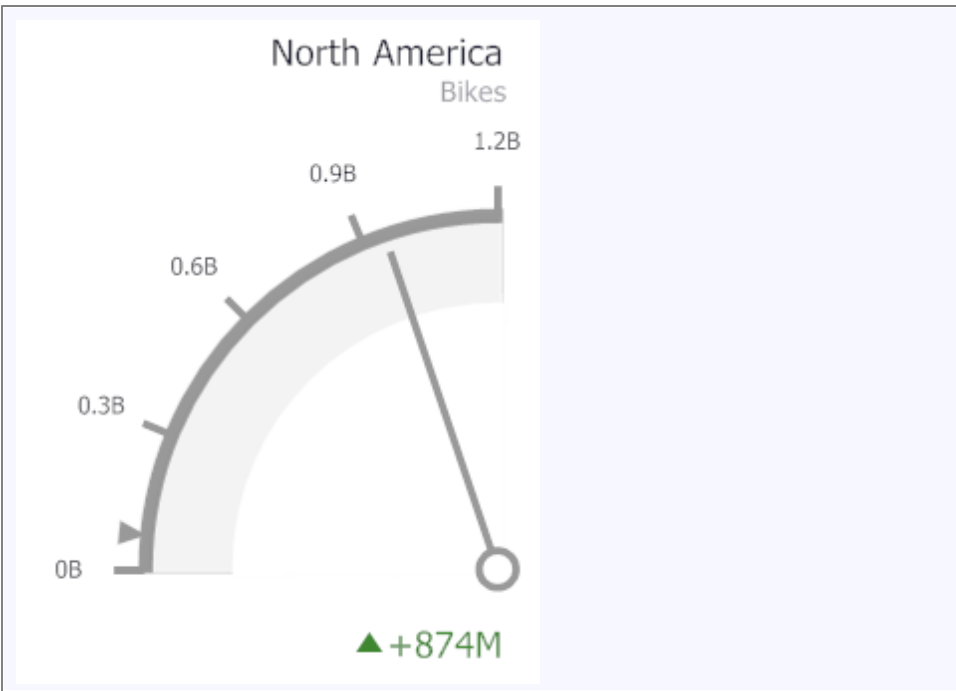
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Gauges](#) > [Style](#)

The **Gauge** dashboard item allows you to select the gauge type.

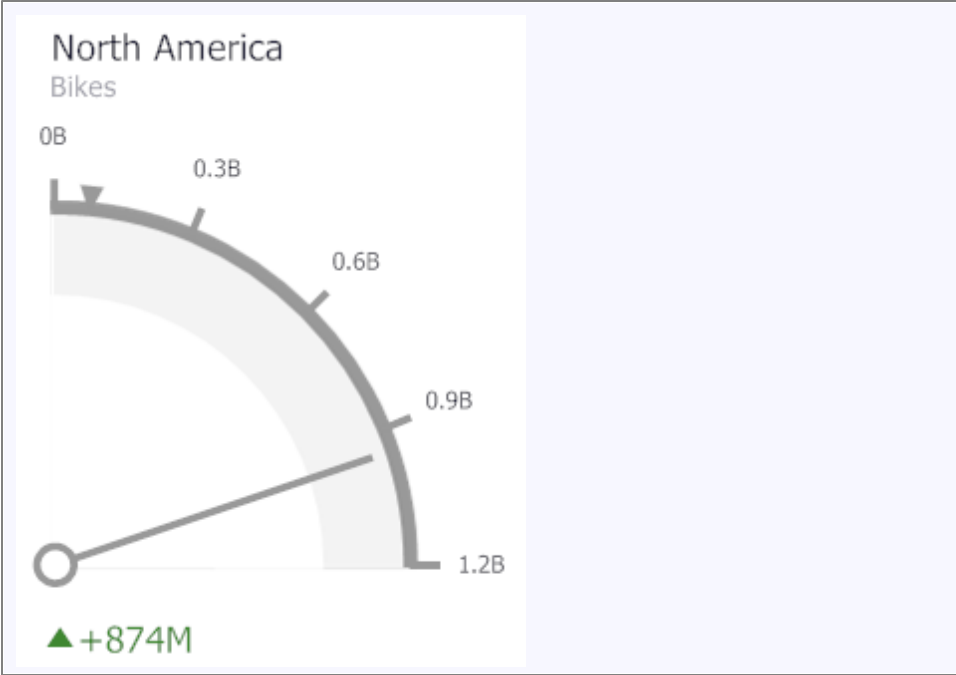
The following types are supported.



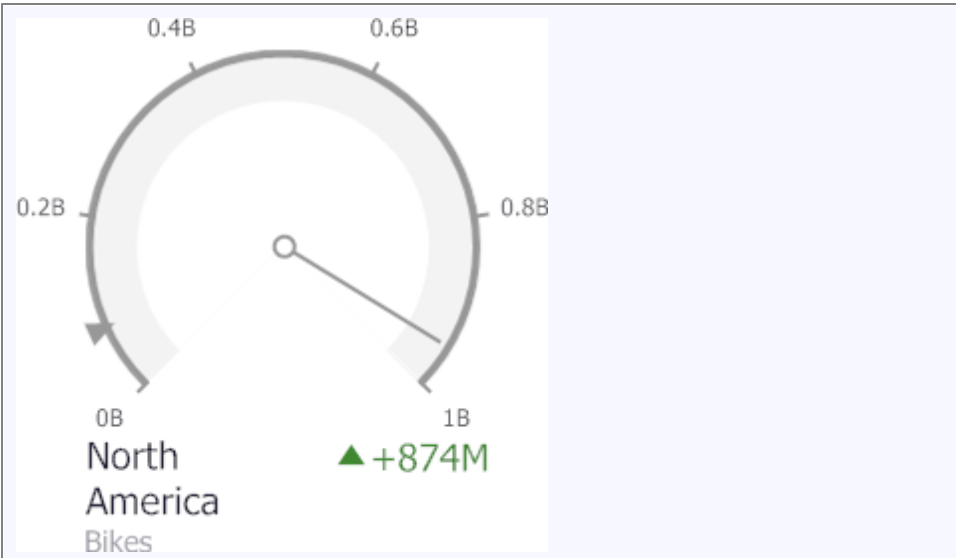
Left-Quarter Circular



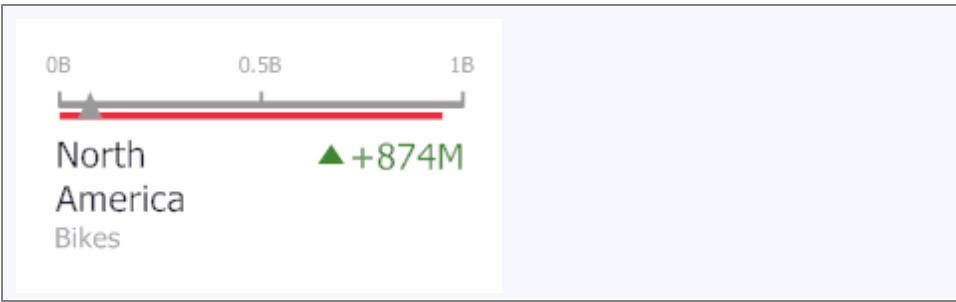
Right-Quarter Circular



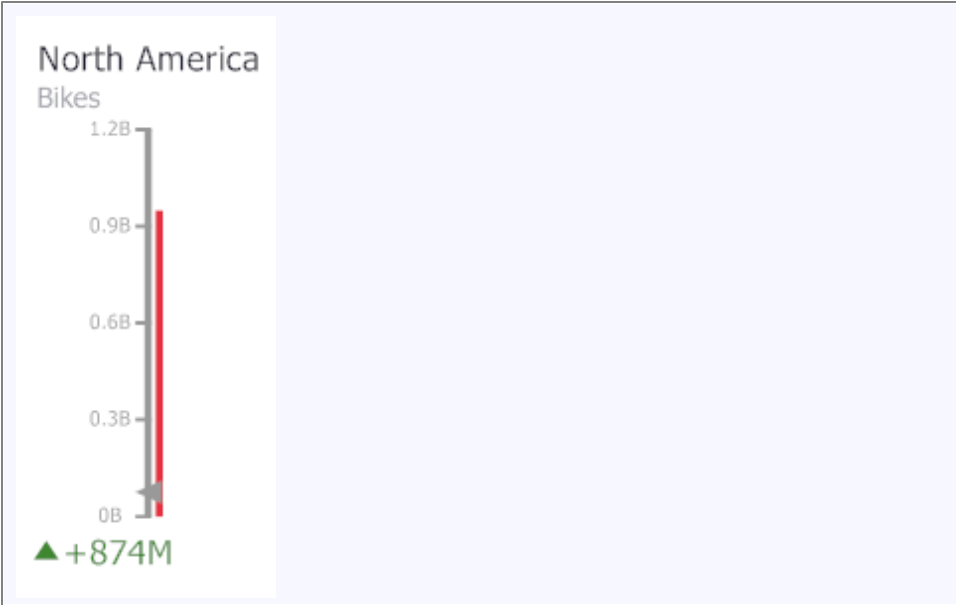
Three-Fourths Circular



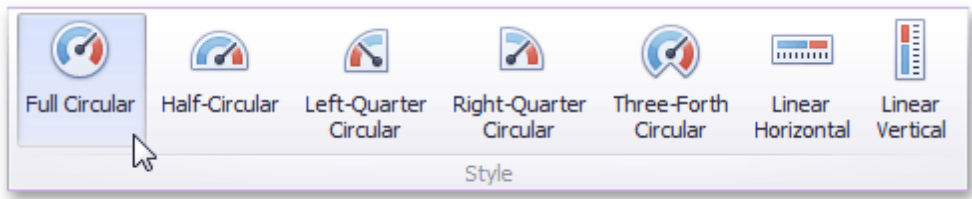
Linear Horizontal



Linear Vertical



To select the gauge type, use the buttons in the **Style** group of the **Design** Ribbon tab.



Pivot

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#)

The **Pivot** dashboard item displays a cross-tabular report that presents multi-dimensional data in an easy-to-read format.

Sales by State								
	▶ Accessories		▶ Bikes		▶ Components		Grand Total	
	Units Sold	Revenue	Units Sold	Revenue	Units Sold	Revenue	Units Sold	Revenue
California	36.4K	\$1.18M	12K	\$18.9M	77.8K	\$15.6M	126K	\$35.7M
Washington	20.6K	\$622K	7.6K	\$11.1M	43K	\$8.64M	71.2K	\$20.3M
Texas	19.1K	\$655K	6.29K	\$9.53M	44.3K	\$8.92M	69.6K	\$19.1M
Florida	12.1K	\$383K	4.4K	\$6.86M	25.8K	\$5M	42.3K	\$12.2M
Oregon	8.51K	\$279K	3.89K	\$6.47M	19.7K	\$3.92M	32.1K	\$10.7M
Tennessee	7.9K	\$253K	3.82K	\$6.25M	19.2K	\$3.7M	30.9K	\$10.2M
Mississippi	5.46K	\$186K	3.78K	\$6.48M	13.6K	\$3.08M	22.9K	\$9.75M

This section consists of the following subsections:

- [Providing Data](#)
Explains how to supply the Pivot dashboard item with data.
- [Interactivity](#)
Describes features that enable interaction between the Pivot and other dashboard items.
- [Conditional Formatting](#)
Describes the conditional formatting feature that provides the capability to apply formatting to cells whose values meet the specified condition.
- [Layout](#)
Describes the Pivot dashboard item's layout options.
- [Expanded State](#)
Describes how to specify whether to expand column/row groups by default.

Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Pivot** dashboard item to data in the Designer.

- [Binding to Data in the Designer](#)
- [Transposing Columns and Rows](#)

Binding to Data in the Designer

The image below shows a sample Pivot dashboard item that is bound to data.

	California		Washington		Grand Total	
	Units Sold	Revenue	Units Sold	Revenue	Units Sold	Revenue
Accessories	36.4K	\$1.18M	20.6K	\$622K	57K	\$1.8M
Bikes Total	12K	\$18.9M	7.6K	\$11.1M	19.6K	\$29.9M
Mountain-100	1.07K	\$3.62M	600	\$2.03M	1.67K	\$5.65M
Mountain-200	1.3K	\$2.99M	672	\$1.55M	1.97K	\$4.54M
Road-150	780	\$2.79M	324	\$1.16M	1.1K	\$3.95M
Road-350-W	720	\$1.22M	348	\$592K	1.07K	\$1.82M
Road-250	396	\$968K	312	\$762K	708	\$1.73M
Mountain-300	888	\$959K	648	\$700K	1.54K	\$1.66M
Road-550-W	852	\$955K	588	\$659K	1.44K	\$1.61M
Touring-1000	420	\$1M	252	\$601K	672	\$1.6M
Mountain-500	1.37K	\$758K	1.09K	\$603K	2.46K	\$1.36M
Road-450	552	\$805K	336	\$490K	888	\$1.29M
Others	3.65K	\$2.8M	2.42K	\$1.93M	6.07K	\$4.73M
Clothing	15.9K	\$763K	9.04K	\$409K	24.9K	\$1.17M
Components	77.8K	\$15.6M	43K	\$8.64M	121K	\$24.2M
Grand Total	142K	\$36.4M	80.2K	\$20.7M	222K	\$57.2M

To bind the Pivot dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes a Pivot's data sections.

Section	Description
Values	Contains data items used to calculate values displayed in the pivot table.
Columns	Contains data items whose values are used to label columns.
Rows	Contains data items whose values are used to label rows.

Transposing Columns and Rows

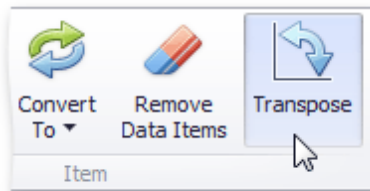
The **Pivot** dashboard item provides the capability to transpose pivot columns and rows. In this case, data items contained in the Columns section are moved to the Rows section and vice versa.

	2013	2014	2015	Grand Total
Bikes	\$72.2M	\$79.3M	\$83.6M	\$235M
Components	\$42.2M	\$45.3M	\$48.2M	\$136M
Accessories	\$2.77M	\$2.99M	\$3.15M	\$8.91M
Grand Total	\$117M	\$128M	\$135M	\$380M



	Bikes	Components	Accessories	Grand Total
2013	\$72.2M	\$42.2M	\$2.77M	\$117M
2014	\$79.3M	\$45.3M	\$2.99M	\$128M
2015	\$83.6M	\$48.2M	\$3.15M	\$135M
Grand Total	\$235M	\$136M	\$8.91M	\$380M

To transpose the selected Pivot dashboard item, use the **Transpose** button in the **Home** ribbon tab.



Interactivity

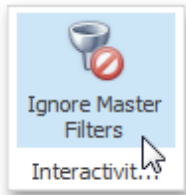
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#) > [Interactivity](#)

This document describes the features that enable interaction between the **Pivot** and other dashboard items. These features include **Master Filtering**.

Master Filtering

The Dashboard allows you to use any data-aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

Data displayed in the Pivot dashboard item can be filtered by other master filter items. You can prevent the pivot from being affected by other master filter items using the **Ignore Master Filters** button on the **Data** Ribbon tab.



Conditional Formatting

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#) > [Conditional Formatting](#)

The Pivot dashboard item supports the conditional formatting feature that provides the capability to apply formatting to cells whose values meet the specified condition. This feature allows you to highlight specific cells or entire rows/columns using a predefined set of rules. To learn more about conditional formatting concepts common for all dashboard items, see the [Conditional Formatting](#) topic.

- [Conditional Formatting Overview](#)
- [Create a Format Rule](#)
- [Edit a Format Rule](#)

Conditional Formatting Overview

The Pivot dashboard item allows you to use conditional formatting to measures placed in the **Values** section and dimensions placed in the **Columns/Rows** sections.

Note

Note that you can use [hidden measures](#) to specify a condition used to apply formatting to visible values.

New appearance settings are applied to pivot data cell or cells corresponding to column/row field values.

Create a Format Rule

To create a new format rule for the Pivot's dimension/measure, do one of the following.

- Click the **Options** button next to the required measure/dimension, select **Add Format Rule** and choose the condition.
- Use the [Edit Rules](#) dialog.

Depending on the selected format condition, the dialog used to create a format rule for Pivot contains different settings. For instance, the image below displays the [Greater Than](#) dialog invoked for the measure.

This dialog contains the following settings specific to Pivot.

- **Intersection mode** specifies the level on which to apply conditional formatting to pivot cells. The following levels are supported.
 - .1. *Auto* - Identifies the default level. For the Pivot dashboard item, *Auto* identifies the *First Level*.
 - .2. *First Level* - First level values are used to apply conditional formatting.
 - .3. *Last Level* - The last level values are used to apply conditional formatting.
 - .4. *All Levels* - All pivot data cells are used to apply conditional formatting.
 - .5. *Specific Level* - Values from the specific level are used to apply conditional formatting.
- If you specified the **Intersection mode** as *Specific Level*, use the **Row dimension** and **Column dimension** combo boxes to set the specific level.
- The **Apply to row** and **Apply to column** check boxes allow you to specify whether to apply the formatting to the entire pivot row/column.

Note

If you are creating a new format rule for the dimension from the **Columns/Rows** section, the corresponding format condition dialog would not contain any Pivot specific settings.

Edit a Format Rule

To edit format rules for the current Grid dashboard item, use the following options.

- Click the **Edit Rules** button in the **Home** ribbon tab or use corresponding item in the Pivot context menu.
- Click the [menu button](#) for the required data item and select **Edit Rules**.

All of these actions invoke the **Edit Rules** dialog containing existing format rules. To learn more, see [Conditional Formatting](#).

Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#) > [Layout](#)

This topic describes how to control the Pivot dashboard item layout, the visibility of totals and grand totals, etc.

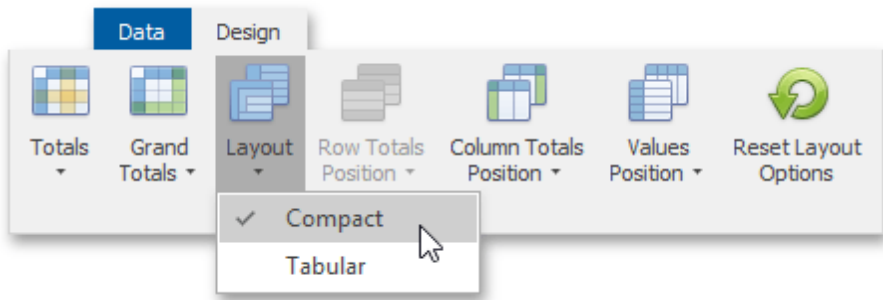
- [Layout Type](#)
- [Totals Visibility](#)
- [Totals Position](#)
- [Values Visibility](#)
- [Values Position](#)
- [Reset Layout Options](#)

Layout Type

If the Pivot dashboard item contains a hierarchy of dimensions in the [Rows](#) section, you can specify the layout used to arrange values corresponding to individual groups.

Layout type	Example	Description																																						
Compact	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Grand Total</th> </tr> <tr> <th>Extended Price (Sum)</th> <th>Quantity (Sum)</th> </tr> </thead> <tbody> <tr> <td>▲ 2015 Total</td> <td>\$617K</td> <td>25.5K</td> </tr> <tr> <td> Q1</td> <td>\$138K</td> <td>6.3K</td> </tr> <tr> <td> Q2</td> <td>\$143K</td> <td>5.71K</td> </tr> <tr> <td> Q3</td> <td>\$154K</td> <td>6.26K</td> </tr> <tr> <td> Q4</td> <td>\$182K</td> <td>7.22K</td> </tr> <tr> <td>▲ 2016 Total</td> <td>\$441K</td> <td>16.2K</td> </tr> <tr> <td> Q1</td> <td>\$298K</td> <td>10.6K</td> </tr> <tr> <td> Q2</td> <td>\$142K</td> <td>5.6K</td> </tr> <tr> <td>Grand Total</td> <td>\$1.06M</td> <td>41.7K</td> </tr> </tbody> </table>		Grand Total		Extended Price (Sum)	Quantity (Sum)	▲ 2015 Total	\$617K	25.5K	Q1	\$138K	6.3K	Q2	\$143K	5.71K	Q3	\$154K	6.26K	Q4	\$182K	7.22K	▲ 2016 Total	\$441K	16.2K	Q1	\$298K	10.6K	Q2	\$142K	5.6K	Grand Total	\$1.06M	41.7K	Displays values from different Row dimensions in a single column. Note that in this case totals are shown at the top of a group, and you cannot change totals position .						
	Grand Total																																							
	Extended Price (Sum)	Quantity (Sum)																																						
▲ 2015 Total	\$617K	25.5K																																						
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Tabular	<table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="2">Grand Total</th> </tr> <tr> <th>Extended Price (Sum)</th> <th>Quantity (Sum)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">▲ 2015</td> <td>Q1</td> <td>\$138K</td> <td>6.3K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>5.71K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>6.26K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>7.22K</td> </tr> <tr> <td colspan="2">2015 Total</td> <td>\$617K</td> <td>25.5K</td> </tr> <tr> <td rowspan="2">▲ 2016</td> <td>Q1</td> <td>\$298K</td> <td>10.6K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>5.6K</td> </tr> <tr> <td colspan="2">2016 Total</td> <td>\$441K</td> <td>16.2K</td> </tr> <tr> <td colspan="2">Grand Total</td> <td>\$1.06M</td> <td>41.7K</td> </tr> </tbody> </table>			Grand Total		Extended Price (Sum)	Quantity (Sum)	▲ 2015	Q1	\$138K	6.3K	Q2	\$143K	5.71K	Q3	\$154K	6.26K	Q4	\$182K	7.22K	2015 Total		\$617K	25.5K	▲ 2016	Q1	\$298K	10.6K	Q2	\$142K	5.6K	2016 Total		\$441K	16.2K	Grand Total		\$1.06M	41.7K	Displays values from different Row dimensions in separate columns.
				Grand Total																																				
		Extended Price (Sum)	Quantity (Sum)																																					
▲ 2015	Q1	\$138K	6.3K																																					
	Q2	\$143K	5.71K																																					
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2016 Total		\$441K	16.2K																																					
Grand Total		\$1.06M	41.7K																																					

Use the **Layout** button in the **Design** ribbon tab to change the Pivot layout.



Totals Visibility

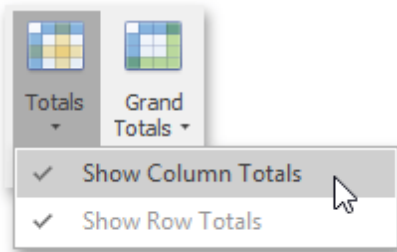
You can control the visibility of totals and grand totals for the entire Pivot dashboard item. For instance, the image below displays the Pivot dashboard item with the disabled row totals.

The image shows two tables side-by-side, illustrating the effect of disabling row totals. A blue arrow points from the left table to the right table.

		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
2015	Q1	\$138K	6.3K
	Q2	\$143K	5.71K
	Q3	\$154K	6.26K
	Q4	\$182K	7.22K
2015 Total		\$617K	25.5K
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K
2016 Total		\$441K	16.2K
Grand Total		\$1.06M	41.7K

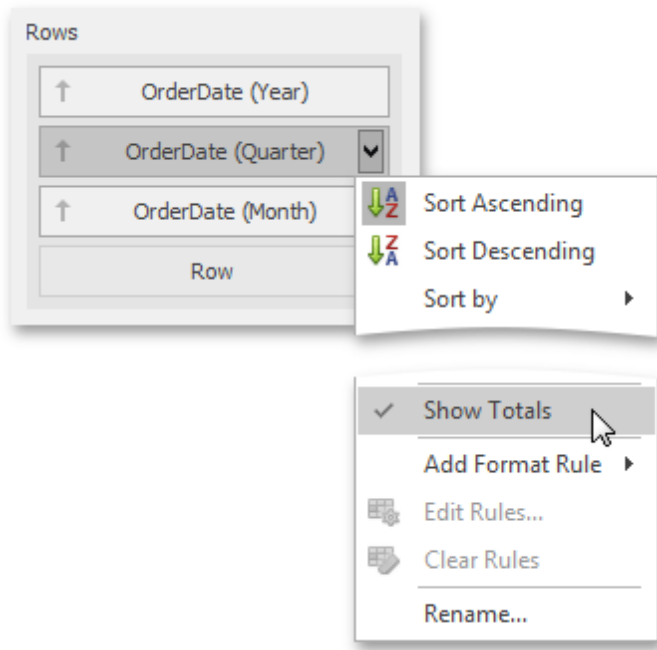
		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
2015	Q1	\$138K	6.3K
	Q2	\$143K	5.71K
	Q3	\$154K	6.26K
	Q4	\$182K	7.22K
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K
Grand Total		\$1.06M	41.7K

To manage the visibility of totals and grand totals, use the **Totals** and **Grand Totals** buttons in the **Design** ribbon tab, respectively.



These buttons invoke a popup menu that allows you to manage the visibility of column and row totals/grand totals separately.

Moreover, you can control the visibility of totals for individual dimensions/measures by using the data item's context menu (**Show Totals** and **Show Grand Totals** options).



Totals Position

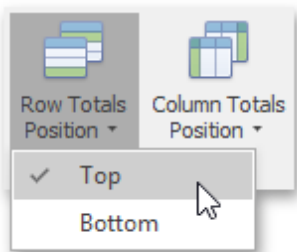
If necessary, you can change the Pivot dashboard items totals/grand totals position. For instance, in the image below the row totals are moved from the bottom to the top.

		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
2015	Q1	\$138K	6.3K
	Q2	\$143K	5.71K
	Q3	\$154K	6.26K
	Q4	\$182K	7.22K
2015 Total		\$617K	25.5K
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K
2016 Total		\$441K	16.2K
Grand Total		\$1.06M	41.7K

➔

		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
Grand Total		\$1.06M	41.7K
2015 Total		\$617K	25.5K
2015	Q1	\$138K	6.3K
	Q2	\$143K	5.71K
	Q3	\$154K	6.26K
	Q4	\$182K	7.22K
2015 Total		\$441K	16.2K
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K

To manage totals position, use the **Row Totals Position** and **Column Totals Position** buttons in the **Design** ribbon tab.



Values Visibility

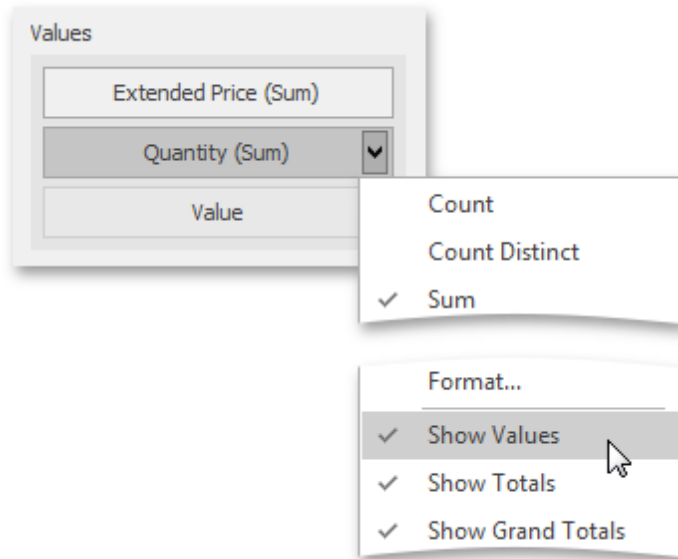
The Pivot dashboard item can contain several measures in the [Values](#) section to hide summary values corresponding to specific measures. For instance, the image below shows the Pivot with hidden *Quantity* values.

		UK		USA	
		Extended Price (Sum)	Quantity (Sum)	Extended Price (Sum)	Quantity (Sum)
▲ 2015	Q1	\$27.8K	1.24K	\$110K	5.06K
	Q2	\$38.1K	1.65K	\$105K	4.06K
	Q3	\$53.3K	1.86K	\$101K	4.4K
	Q4	\$41.3K	1.71K	\$140K	5.51K
▲ 2016	Q1	\$79.1K	3.04K	\$219K	7.6K
	Q2	\$44.7K	1.59K	\$97.4K	4.01K



		UK	USA
▲ 2015	Q1	\$27.8K	\$110K
	Q2	\$38.1K	\$105K
	Q3	\$53.3K	\$101K
	Q4	\$41.3K	\$140K
▲ 2016	Q1	\$79.1K	\$219K
	Q2	\$44.7K	\$97.4K

To do this, use the **Show Values** command in the measure menu.



Values Position

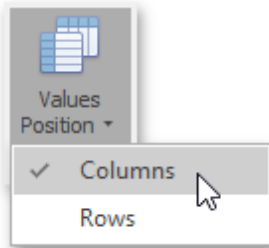
The Pivot dashboard item allows you to control the position of headers used to arrange summary values corresponding to different measures. For instance, you can display values in columns or rows.

		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K
2016 Total		\$441K	16.2K
Grand Total		\$441K	16.2K



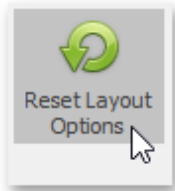
		Grand Total	
		Extended Price (Sum)	Quantity (Sum)
2016	Q1	\$298K	10.6K
	Q2	\$142K	5.6K
2016 Total		\$441K	16.2K
Grand Total		\$441K	16.2K

To manage this position, use the **Values Position** button in the **Design** ribbon tab.



Reset Layout Options

To reset layout options, click the **Reset Layout Options** button in the **Design** ribbon tab.



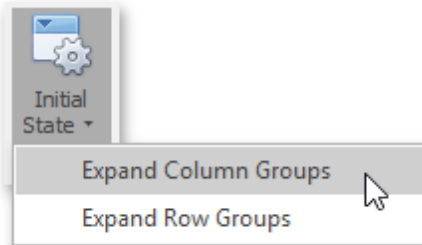
Expanded State

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Pivot](#) > [Expanded State](#)

If the [Columns or Rows](#) section contains several data items, the Pivot column and row headers are arranged in a hierarchy and make up column and row groups.

	UK	USA	Grand Total
▲ 2016 Total	\$124K	\$317K	\$441K
└─ Q1 Total	\$79.1K	\$219K	\$298K
└─ January	\$25.5K	\$68.7K	\$94.2K
└─ February	\$32.9K	\$66.6K	\$99.4K
└─ March	\$20.7K	\$84.2K	\$105K
▶ Q2	\$44.7K	\$97.4K	\$142K
Grand Total	\$124K	\$317K	\$441K

You can collapse and expand row and column groups using the ▲ and ▶ buttons. However, the current expanded state of column and row groups do not save in the dashboard definition. If necessary, you can specify the default expanded state using the **Initial State** button in the **Design** ribbon tab.



This button invokes the popup menu that allows you to select whether column and row groups should be collapsed or expanded by default.

Providing Maps

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Providing Maps](#)

This document explains how to use the default **DevExpress Dashboard maps**, or provide custom maps.

Default Maps

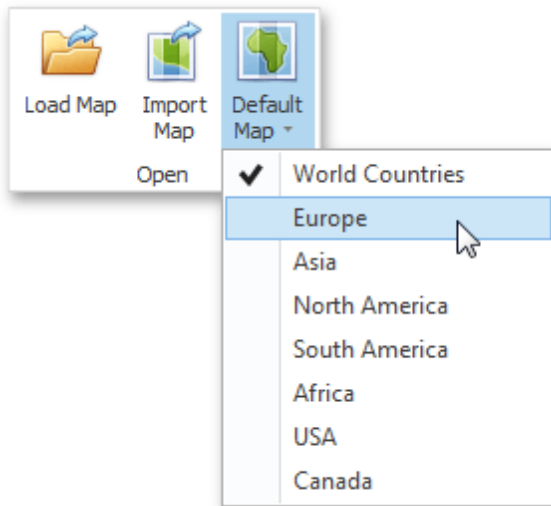
DevExpress Dashboard ships with a set of default maps showing various parts of the world. The following maps are included.

- **World Countries** - a world map.
- **Europe** - a map of Europe.
- **Asia** - a map of Asia.
- **North America** - a map of North America.
- **South America** - a map of South America.
- **Africa** - a map of Africa.
- **USA** - a map of the USA.
- **Canada** - a map of Canada.

Note

Note that the **World Countries** map has a lower level of detail than maps of specific regions and may not contain some countries. As an alternative, you can load a custom map with the required granularity.

To select the required default map, use the **Default Map** button in the **Open** group of the **Design** ribbon tab.



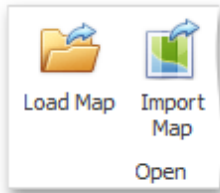
As an alternative, use the corresponding command in the map context menu.

Custom Maps

DevExpress Dashboard uses a **Shapefile** vector format to provide custom maps. Commonly, this format includes two file types.

- **.shp** file - holds map shapes (points/lines/polygons).
- **.dbf** file - contains attributes for each shape.

To open an existing shapefile, use the **Load Map** or **Import Map** button in the Ribbon, or the command in the context menu (**Load Map...** or **Import Map...**).



In the invoked dialog, locate the required **.shp** file. Note that custom maps created in the Cartesian coordinate system are not supported.

Note

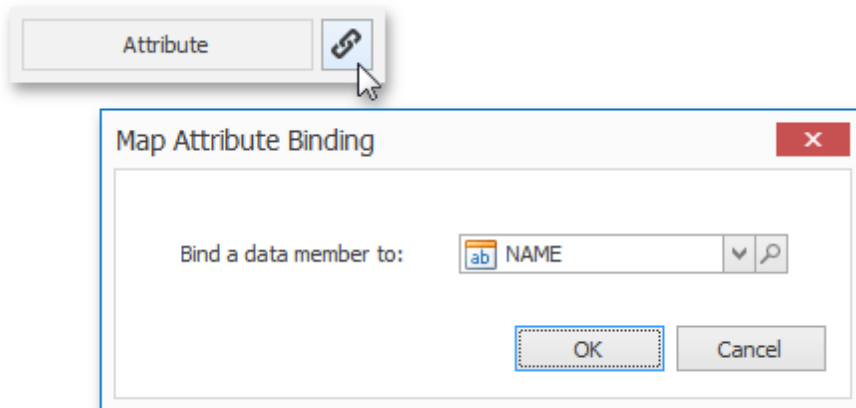
If the map is opened using the **Load Map** button, the [dashboard XML definition](#) will contain the path to a map shapefile. If the map is opened using the **Import Map** button, the dashboard XML definition will contain the map itself.

Note

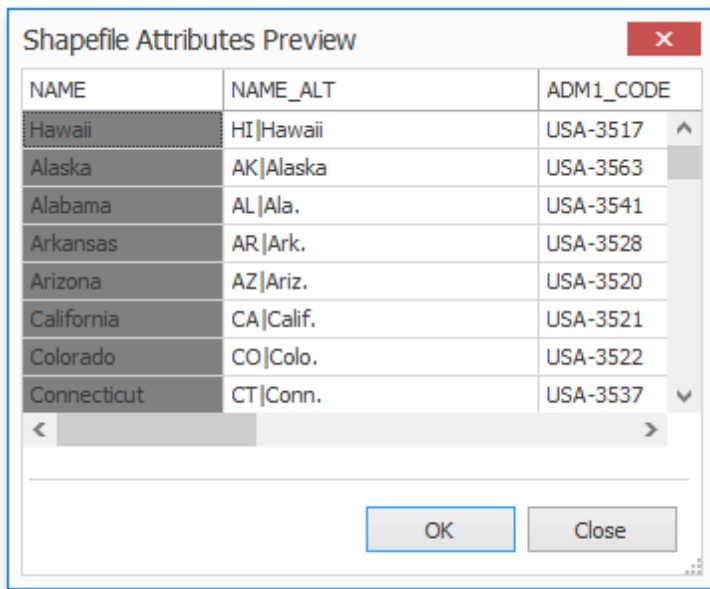
Attributes from the corresponding **.dbf** file located in the same directory will be included in the map automatically.

Map Attributes

After you select the default map or a custom map, you can view supplemental information (such as the name of the country, state, etc.). To do this, click the **Options** button next to the **Attribute** placeholder.



In the invoked **Map Attribute Binding** dialog, click **Preview**.

A dialog box titled "Shapefile Attributes Preview" with a red close button in the top right corner. It contains a table with three columns: "NAME", "NAME_ALT", and "ADM1_CODE". The table lists several US states with their alternative names and FIPS codes. Below the table is a horizontal scrollbar and two buttons: "OK" and "Close".

NAME	NAME_ALT	ADM1_CODE
Hawaii	HI Hawaii	USA-3517
Alaska	AK Alaska	USA-3563
Alabama	AL Ala.	USA-3541
Arkansas	AR Ark.	USA-3528
Arizona	AZ Ariz.	USA-3520
California	CA Calif.	USA-3521
Colorado	CO Colo.	USA-3522
Connecticut	CT Conn.	USA-3537

This table displays the available attributes for the current map. Each set of attribute values is related to a specific map shape.

To learn how to bind the map attribute to a data source field, see the [Providing Data](#) topic.

See Also

[Providing Data](#)

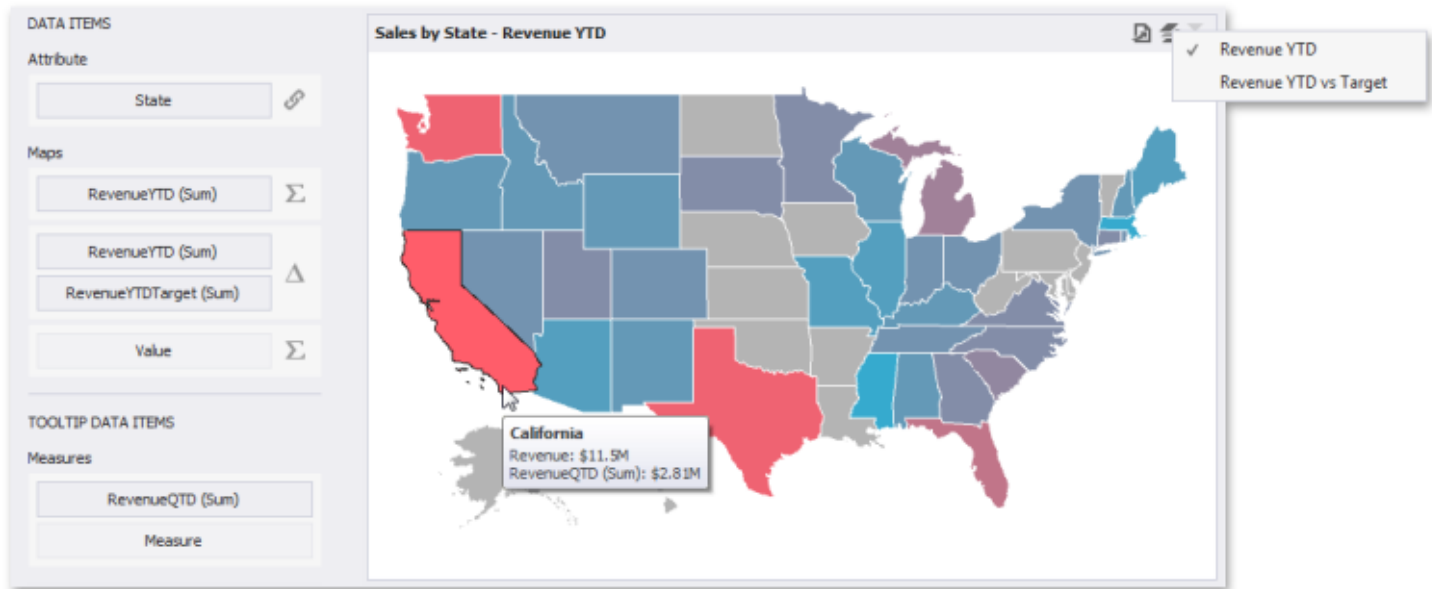
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Choropleth Map** dashboard item to data in the Designer.


The image below shows a sample Choropleth Map dashboard item that is bound to data.

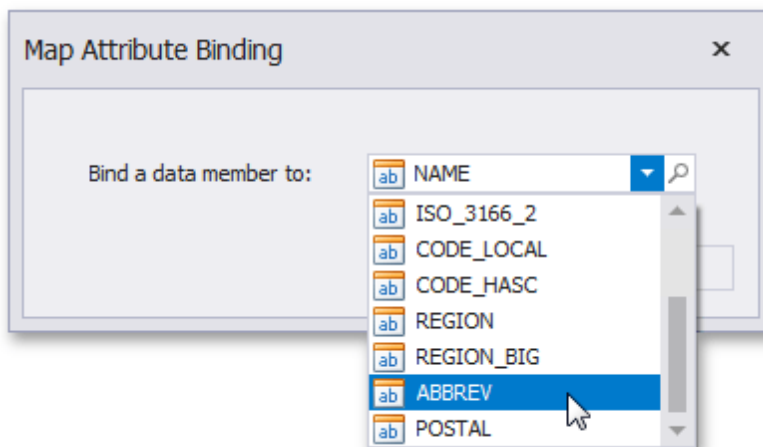


To bind the Choropleth Map dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. The Choropleth Map provides two data item groups for data binding: DATA ITEMS and TOOLTIP DATA ITEMS. Tables below list the available data sections.

DATA ITEMS

- **Attribute** - Allows you to associate map shapes with data source field values.

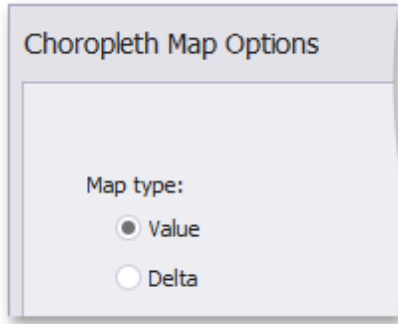
To associate map shapes with data source field values, drag-and-drop the required dimension to the data item's placeholder and select the required attribute in the **Map Attribute Binding** dialog. To invoke this dialog, click the [Options](#) button (the  icon) next to the **Attribute** placeholder.



Select the required attribute and click **OK**.


- **Maps** - Contains data items whose values are used to color map shapes. Map shape colors vary based on the map type.

Click the [Options](#) button (the Σ or Δ icon depending on the map type) next to the **Value** placeholder and select the required map type in the invoked **Choropleth Map Options** dialog.



- If you select **Value**, the Choropleth map colors map shapes depending on the values provided. To learn more, see [Map Coloring](#).
- If you select **Delta**, the Choropleth map colors map shapes depending on the difference between two values. To learn how to specify delta indication settings, see [Delta](#).

Note

You can fill several data item containers in the **Maps** section and use the **Values** drop-down menu to switch between the provided values. To invoke the **Values** menu, click the  icon in the dashboard item caption.

TOOLTIP DATA ITEMS

- **Measures** - Allows you to add supplementary content to the tooltips. Drag and drop the required measures to provide additional data.

See Also

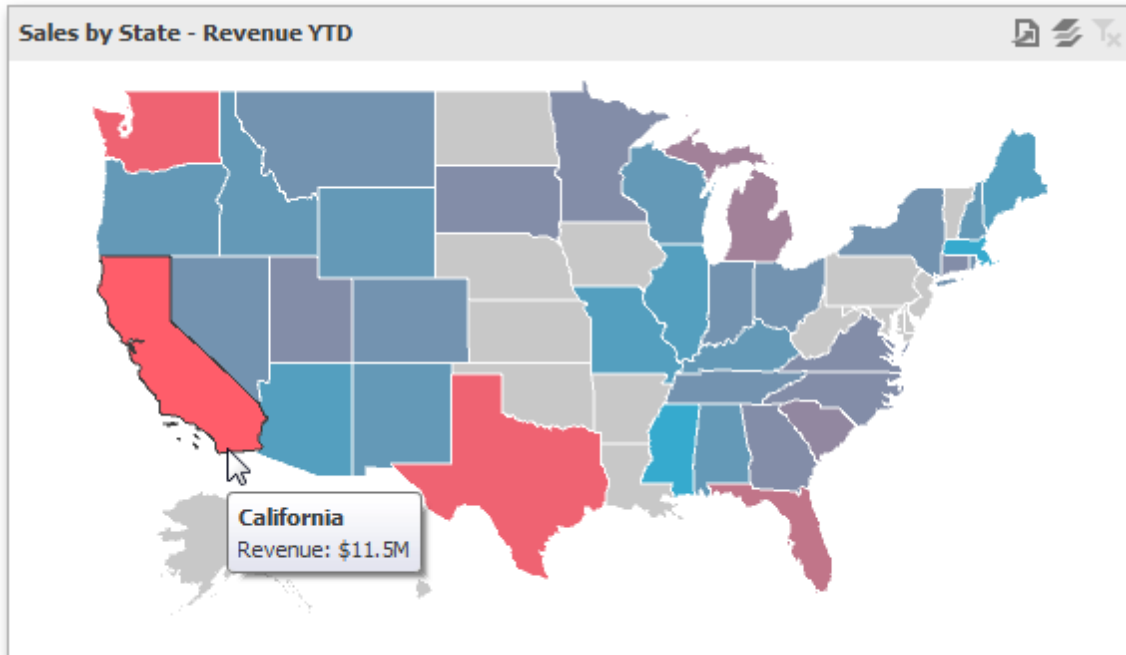
[Map Coloring](#)
[Delta](#)

Map Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Map Coloring](#)

The **Choropleth Map** dashboard item colors map shapes depending on the [data provided](#).

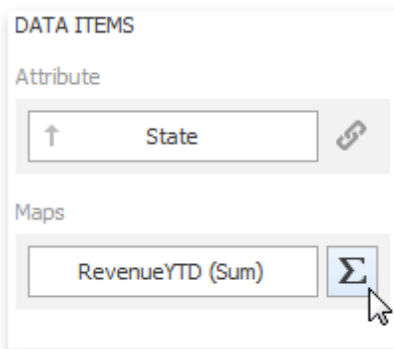
For instance, you can visualize a sales amount or population density.



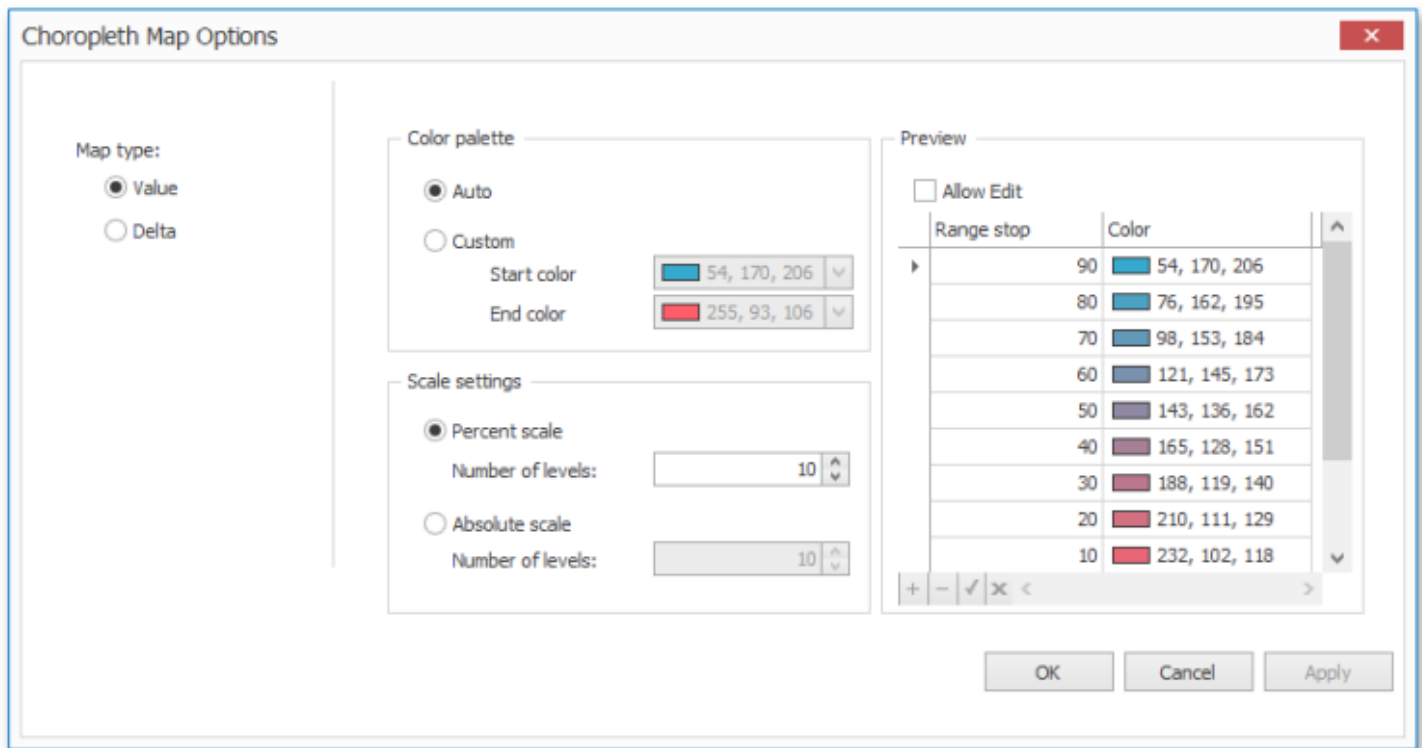
Palette and Scale Settings

The **Choropleth Map** automatically selects palette and scale settings to color map shapes.

If you need to customize these settings, click the **Options** button next to the data item that contains these values.



This invokes the **Choropleth Map Options** dialog.



You can specify the following settings in this window.

- **Color palette** - allows you to specify the start and end color of the palette.
- **Scale settings** - specifies whether a *percent* scale or an *absolute* scale is used to define a set of colors. You can specify the number of levels that represent the number of colors used to color the map.
- **Preview** is used to display a full set of palette colors generated based on the start/end colors and the number of levels. Use the **Allow Edit** check box to automatically change the generated colors or specify value ranges for each color.

To learn how to display a map legend, see [Legend](#).

Also, the Choropleth Map allows you to visualize the difference between the *actual* and *target* values of a particular parameter. To learn more, see the [Delta](#) topic.

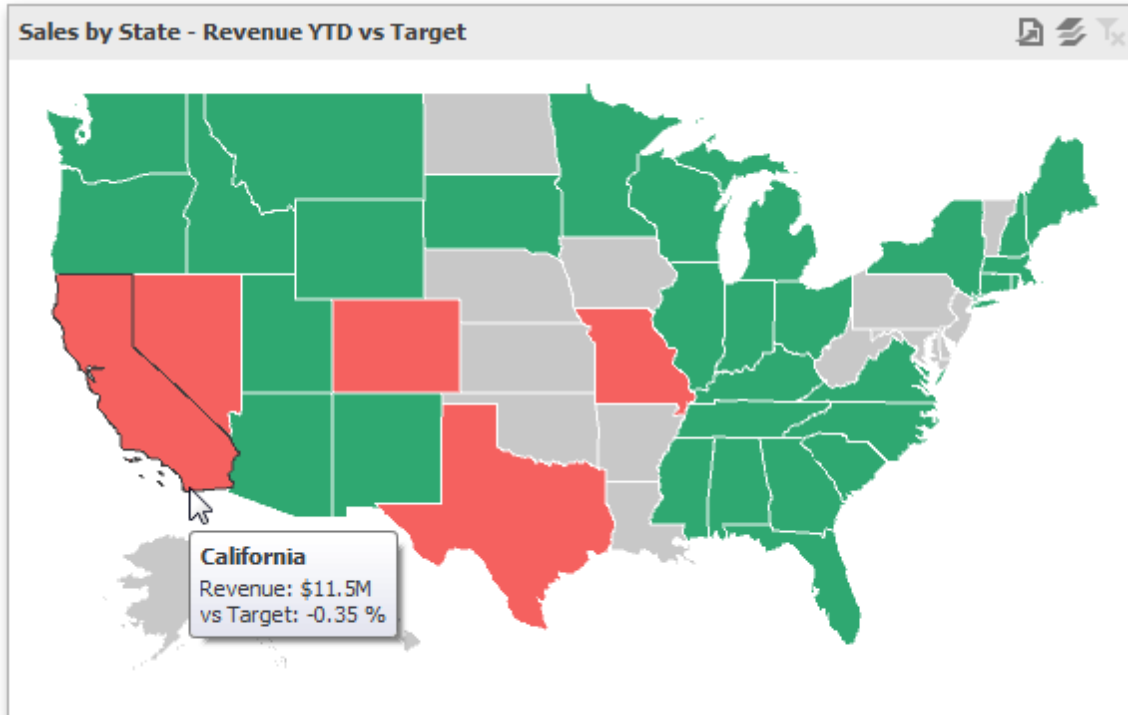
See Also

[Delta](#)
[Legend](#)

Delta

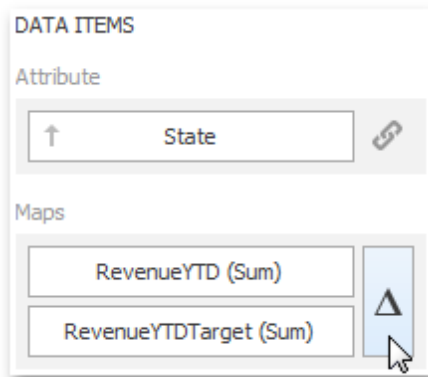
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Map Coloring](#) > [Delta](#)

The **Choropleth Map** allows you to indicate the difference between the *actual* and *target* values of a particular parameter. This difference is called **delta**.



Delta Options

To specify delta indication settings, click the **Options** button next to the data item container.



This invokes the **Choropleth Map Options** dialog. When the map type is set to **Delta**, this dialog contains the following settings.

Choropleth Map Options

Map type:

Value

Delta

Delta Options

Value type: Actual value

Result indication: Greater is good

Threshold type: Percent

Threshold value: 0

OK Cancel Apply

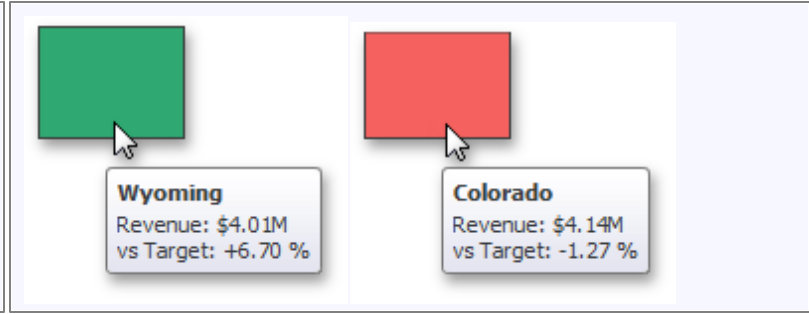
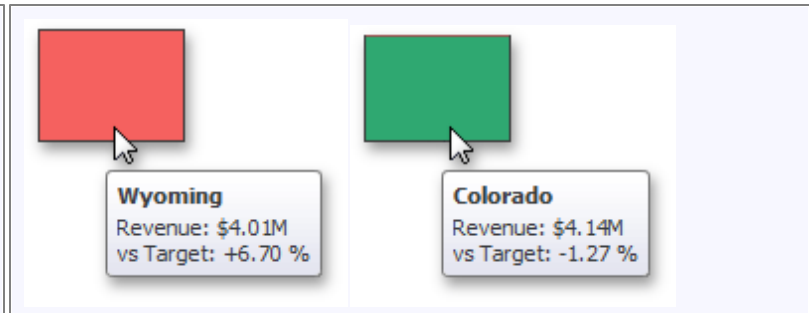
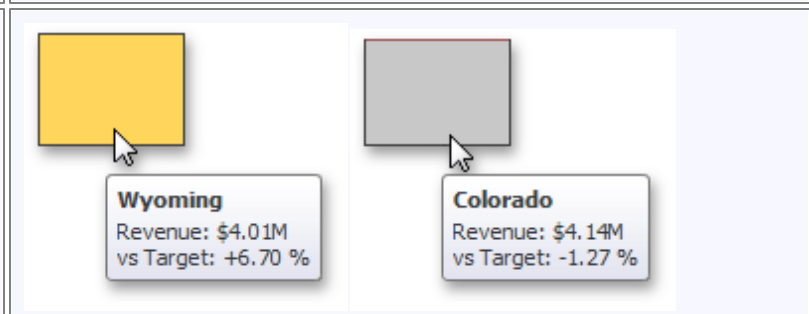
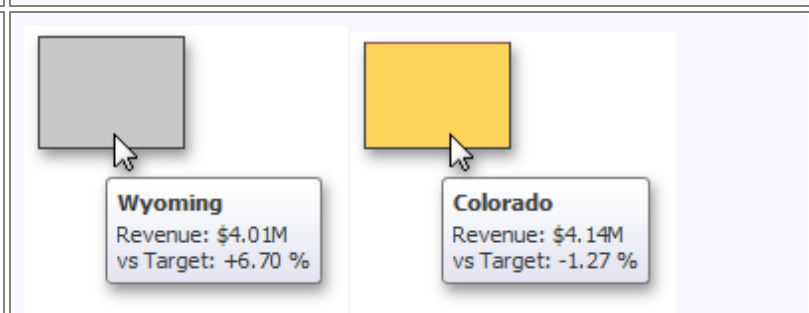
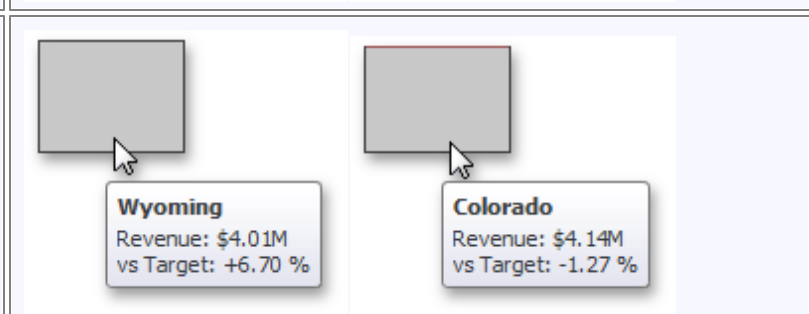
- **Value type**

You can specify which values to display within map tooltips. Use the **Value type** combo box to select the value that will be displayed as the delta value.

Actual value	<div style="border: 1px solid gray; padding: 5px; width: fit-content;"> California Revenue: \$11.5M </div>
Absolute variation	<div style="border: 1px solid gray; padding: 5px; width: fit-content;"> California Revenue: \$11.5M vs Target: -40.6K </div>
Percent variation	<div style="border: 1px solid gray; padding: 5px; width: fit-content;"> California Revenue: \$11.5M vs Target: -0.35 % </div>
Percent of target	<div style="border: 1px solid gray; padding: 5px; width: fit-content;"> California Revenue: \$11.5M vs Target: 99.65 % </div>

- **Result Indication**

You can specify the condition that will be used to select the indicator color. To do this, use the **Result indication** combo box.

Greater is good	 <p>Wyoming Revenue: \$4.01M vs Target: +6.70 %</p> <p>Colorado Revenue: \$4.14M vs Target: -1.27 %</p>
Less is good	 <p>Wyoming Revenue: \$4.01M vs Target: +6.70 %</p> <p>Colorado Revenue: \$4.14M vs Target: -1.27 %</p>
Warning if greater	 <p>Wyoming Revenue: \$4.01M vs Target: +6.70 %</p> <p>Colorado Revenue: \$4.14M vs Target: -1.27 %</p>
Warning if less	 <p>Wyoming Revenue: \$4.01M vs Target: +6.70 %</p> <p>Colorado Revenue: \$4.14M vs Target: -1.27 %</p>
No indication	 <p>Wyoming Revenue: \$4.01M vs Target: +6.70 %</p> <p>Colorado Revenue: \$4.14M vs Target: -1.27 %</p>

- **Threshold type** and **Threshold value**

You can specify that a required indicator should only be displayed when the difference between the actual and target values exceeds a specified value. For instance, the actual value exceeds the target value by 10%, or by \$2K.

Use the **Threshold type** combo box to select whether you wish to specify the threshold in percentage values or in absolute values. Then use the **Threshold value** box to specify the threshold value.

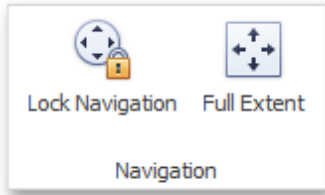
Map Navigation

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Map Navigation](#)

The Choropleth Map dashboard item allows you to perform navigation actions such as zooming and scrolling.

The Dashboard Designer allows you to specify the initial zooming/scrolling state for the Choropleth map using the mouse.

You can disable the capability to scroll/zoom the map using the **Lock Navigation** button in the **Design** ribbon tab.



Use the **Full Extent** button to display the entire map within the dashboard item.

Interactivity

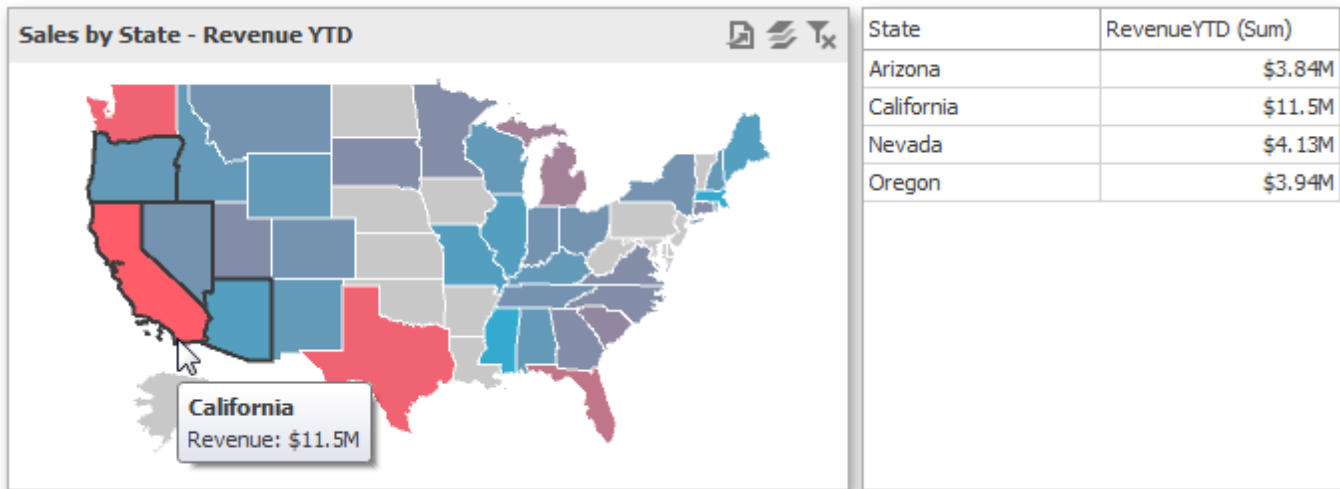
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Interactivity](#)

This document describes the **Master Filtering** feature, which enables interaction between the **Choropleth Map** and other dashboard items.


Master Filtering

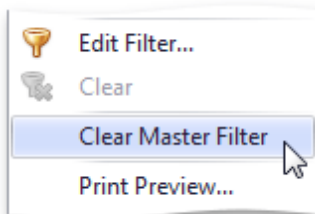
The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about the filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a shape (or multiple shapes by holding down the **CTRL** key) to make other dashboard items only display data related to the selected shape(s).



To learn how to enable Master Filtering in the Designer, see the [Master Filtering](#) topic.

To reset filtering, use the **Clear Master Filter** button (the  icon) in the map's [caption](#), or the **Clear Master Filter** command in the map's context menu.

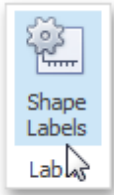


Labels

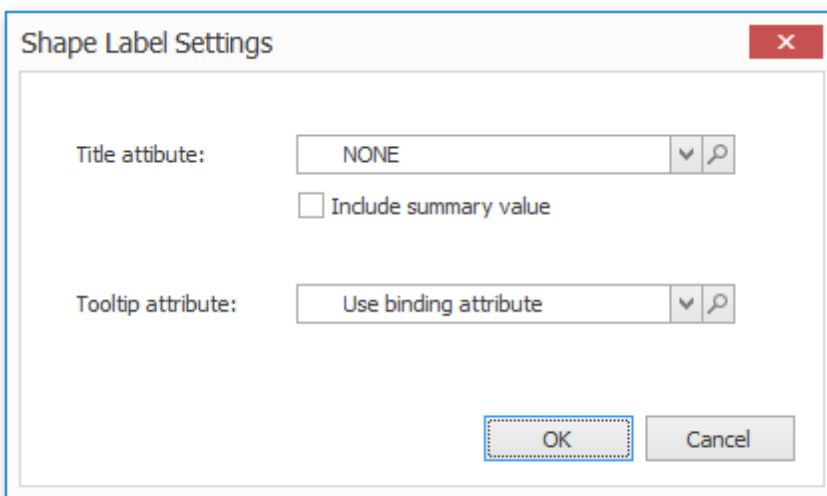
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Labels](#)


A Choropleth map provides the capability to display titles within map shapes and allows you to manage what data to show in the shape tooltips.

To manage map titles and tooltips, click the **Shape Labels** button in the **Design** ribbon tab.



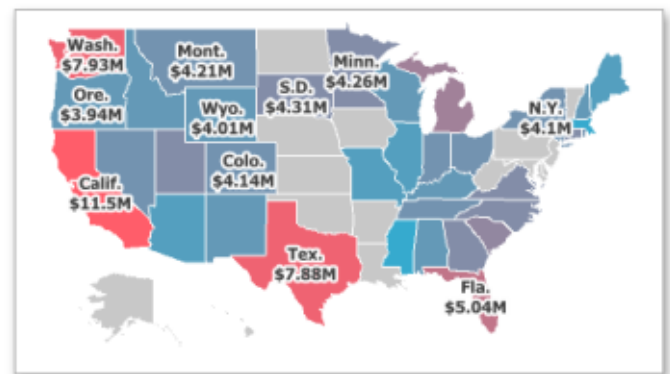
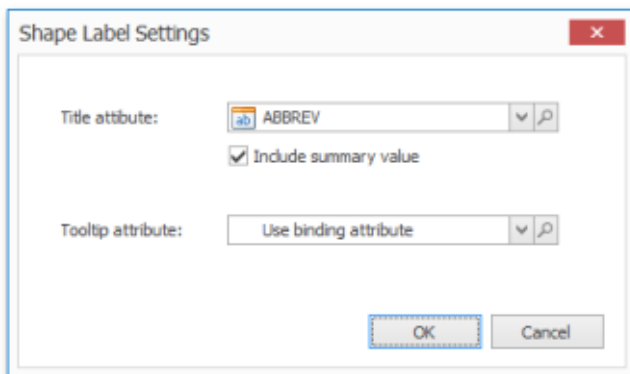
This invokes the **Shape Label Settings** dialog.



In this dialog, you can specify attributes whose values will be displayed within shapes and tooltips. Use the  button to preview the available attributes and their values for the current map.

Shape Titles

The **Title attribute** option allows you to select the attribute whose values are displayed within corresponding map shapes.



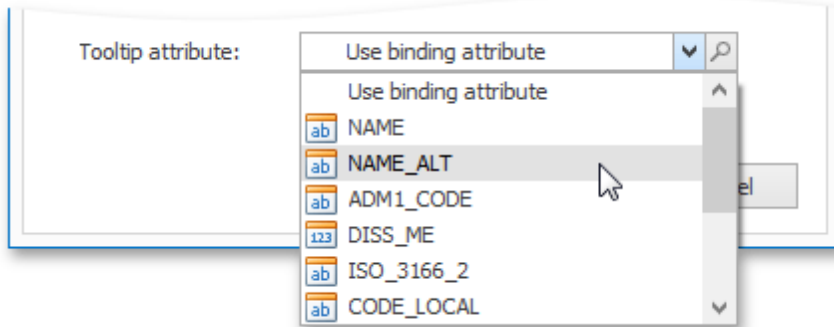
You can also use the **Include summary value** option to add summary values to shape titles.

Tooltips

The **Choropleth Map** dashboard item displays a tooltip that shows information related to a hovered shape.



You can choose whether to use a [binding attribute](#) to display as the title of shape tooltips (the **Use binding attribute** option) or specify a custom attribute using the **Tooltip attribute** option.



The Choropleth Map also allows you to add supplementary content to the tooltips using the TOOLTIP DATA ITEMS area. To learn more, see the [Providing Data](#) topic.

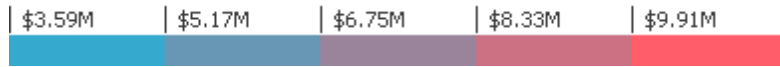
See Also

[Providing Data](#)

Legend

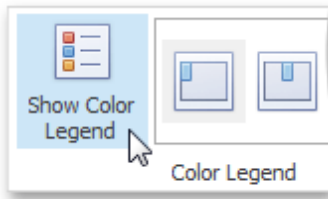
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Choropleth Map](#) > [Legend](#)

A legend is an element of a map that shows values corresponding to each [color](#).



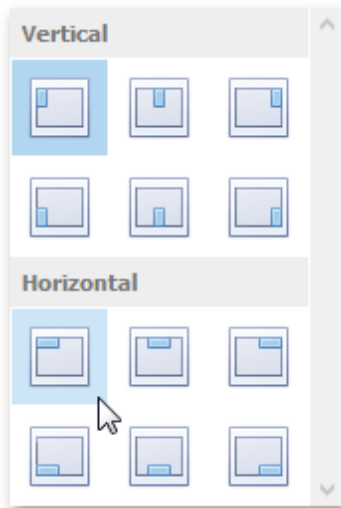
Visibility

To display a legend within a map, use the **Show Legend** button in the **Legend** group of the **Design** Ribbon tab.



Position and Orientation

To specify the legend's position and orientation, select one of the predefined options from the gallery in the **Design** Ribbon tab.



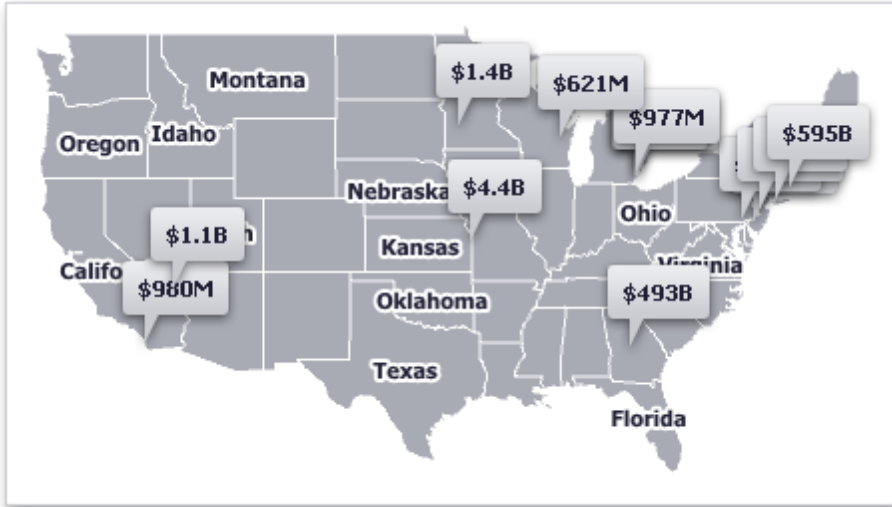
See Also

[Map Coloring](#)

Geo Point Maps

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#)

The topics in this section describe various types of **Geo Point Map** dashboard items that allow you to place callouts, bubbles or pies on the map using geographical coordinates.



This section consists of the following subsections.

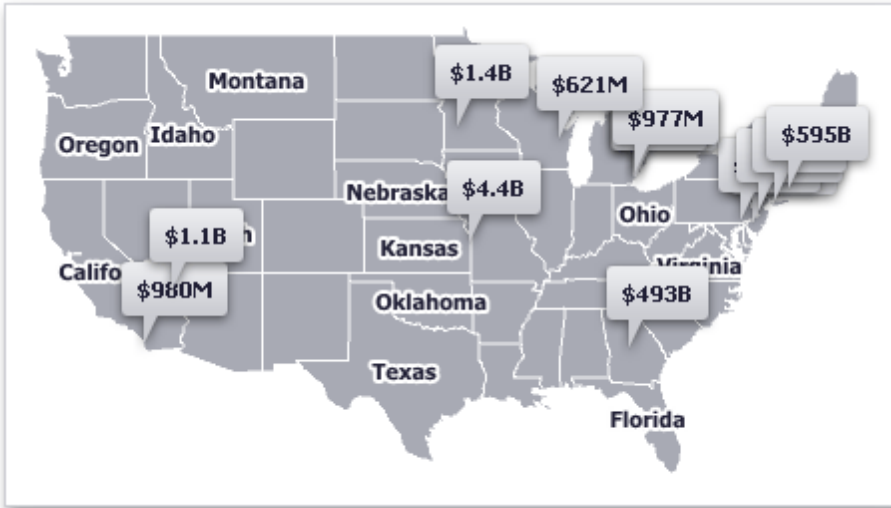
- [Map Types Overview](#)
Lists the available types of Geo Point maps and their features.
- [Providing Maps](#)
Explains how to use default dashboard maps or provide custom maps.
- [Geo Point Map](#) | [Bubble Map](#) | [Pie Map](#)
Describe specific capabilities of various Geo Point Map types.
- [Clustering](#)
Describes the feature that enables grouping of neighboring map objects.
- [Interactivity](#)
Describes features that enable interaction between the Geo Point maps and other dashboard items.
- [Labels](#)
Describes how to display additional information related to map shapes.
- [Map Navigation](#)
Explains how to manage map zooming and scrolling.

Map Types Overview

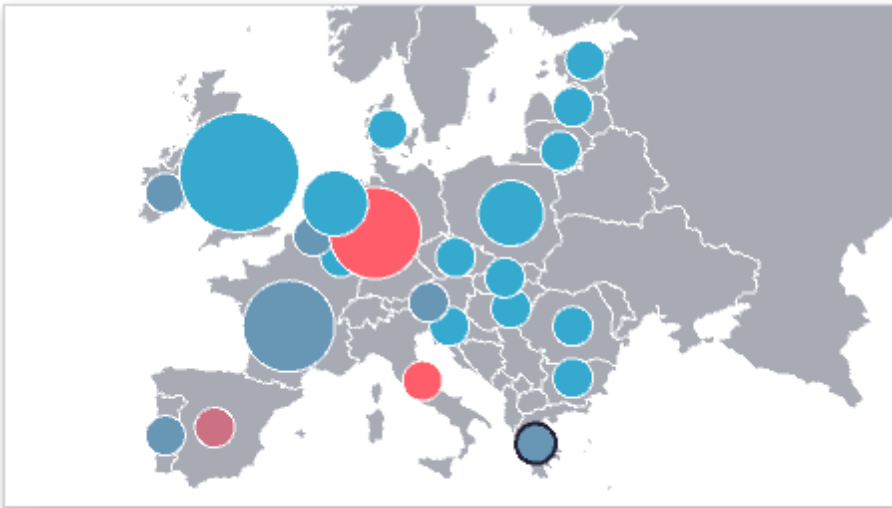
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Map Types Overview](#)

The **Dashboard Designer** allows you to create three types of **Geo Point** maps.

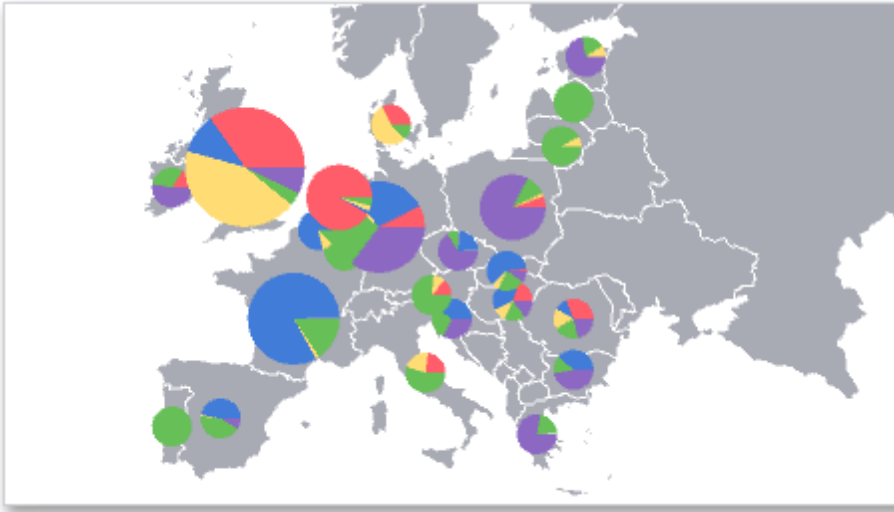
- The **Geo Point Map** dashboard item allows you to place callouts on the map using geographical coordinates.



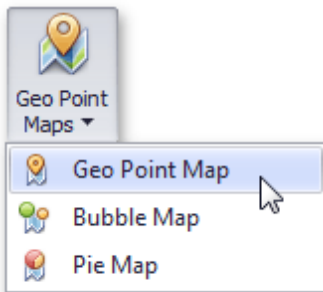
- The **Bubble Map** dashboard item allows you to place bubbles on the map. Each bubble can represent data using its weight and color.



- The **Pie Map** dashboard item allows you to display pies on the map. Each pie visualizes the contribution of each value to the total.



To create the required **Geo Point Map** dashboard item, use the **Geo Point Maps** button in the **Home** ribbon tab.



To learn more about common capabilities of all Geo Point map types, see the following topics.

- [Providing Maps](#)
Explains how to use default dashboard maps or provide custom maps.
- [Clustering](#)
Describes the feature that enables grouping of neighboring map objects.
- [Interactivity](#)
Describes features that enable interaction between the Geo Point maps and other dashboard items.
- [Labels](#)
Describes how to display additional information related to map shapes.
- [Map Navigation](#)
Explains how to manage map zooming and scrolling.

Providing Maps

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Providing Maps](#)

This document explains how to use the default **DevExpress Dashboard maps**, or provide custom maps.

Default Maps

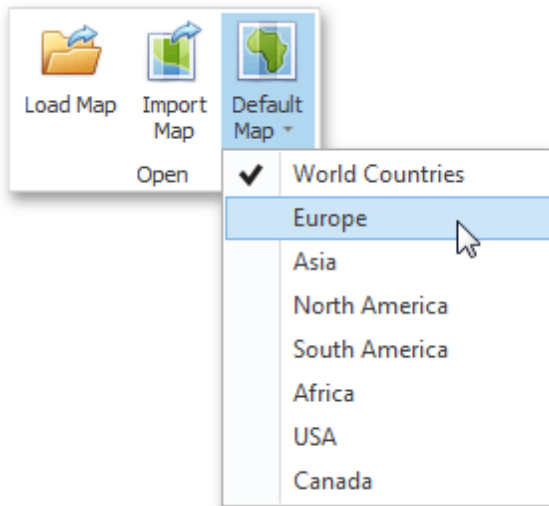
DevExpress Dashboard ships with a set of default maps showing various parts of the world. The following maps are included.

- **World Countries** - a world map.
- **Europe** - a map of Europe.
- **Asia** - a map of Asia.
- **North America** - a map of North America.
- **South America** - a map of South America.
- **Africa** - a map of Africa.
- **USA** - a map of the USA.
- **Canada** - a map of Canada.

Note

Note that the **World Countries** map has a lower level of detail than maps of specific regions and may not contain some countries. As an alternative, you can load a custom map with the required granularity.

To select the default map, use the **Default Map** button in the **Design** ribbon tab.



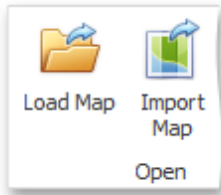
As an alternative, use the corresponding command in the map's context menu.

Custom Maps

DevExpress Dashboard uses a **Shapefile** vector format to provide custom maps. Commonly, this format includes two file types.

- **.shp** file - holds map shapes (points/lines/polygons).
- **.dbf** file - contains attributes for each shape.

To open an existing shapefile, use the **Load Map** or **Import Map** button in the Ribbon, or the command in the context menu (**Load Map...** or **Import Map...**).



In the invoked dialog, locate the required **.shp** file. Note that custom maps created in the Cartesian coordinate system are not supported.

Note

If the map is opened using the **Load Map** button, the [dashboard XML definition](#) will contain the path to a map shapefile. If the map is opened using the **Import Map** button, the dashboard XML definition will contain the map itself.

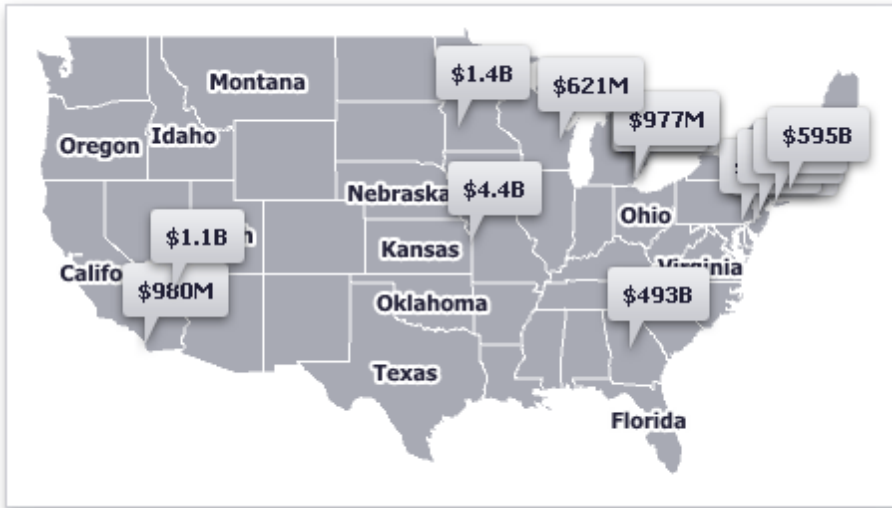
Note

Attributes from the corresponding **.dbf** file located in the same directory will automatically be included in the map.

Geo Point Map

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Geo Point Map](#)

The **Geo Point Map** dashboard item allows you to place callouts on the map using geographical coordinates.



Topics in this section describe specific capabilities of the Geo Point Map dashboard item.

- [Providing Data](#)

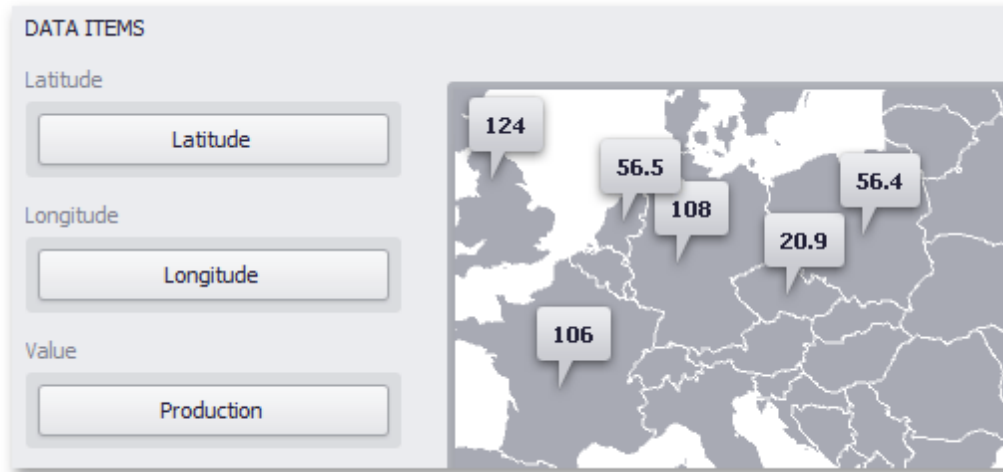
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Geo Point Map](#) > [Providing Data](#)

This topic describes how to bind the **Geo Point Map** dashboard item to data using the **Dashboard Designer**.

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner (see [Binding Dashboard Items to Data](#) for details). The only difference is in the data sections that these dashboard items have.

The image below shows a sample Geo Point Map dashboard item that is bound to data.



Note that the Geo Point Map provides two data item groups for data binding: DATA ITEMS and TOOLTIP DATA ITEMS. Tables below list the available data sections.

DATA ITEMS

Section	Description
Latitude	Accepts a dimension used to provide geographic latitude.
Longitude	Accepts a dimension used to provide geographic longitude.
Value	Accepts values related to geographic points. These values are displayed within map callouts.

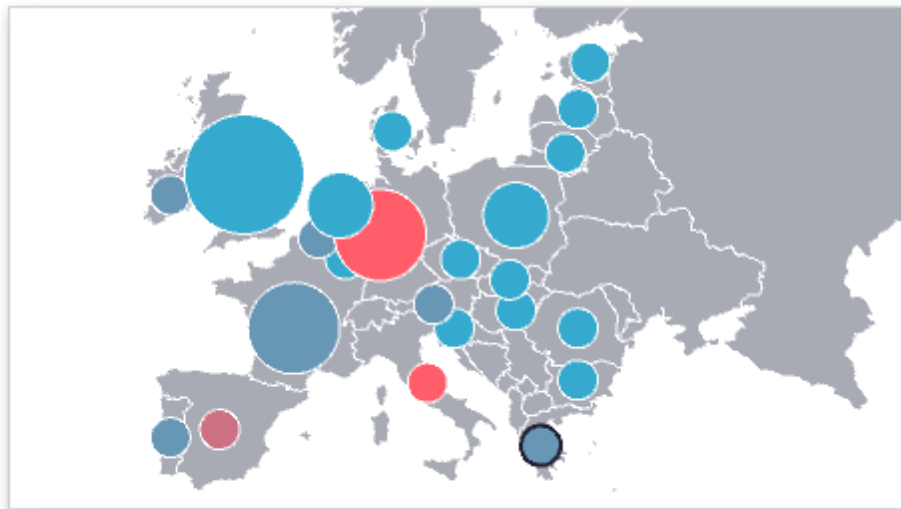
TOOLTIP DATA ITEMS

Section	Description
Dimensions	Accepts dimensions allowing you to add supplementary content to the tooltips.
Measures	Accepts measures allowing you to add summaries to the tooltips.

Bubble Map

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Bubble Map](#)

The **Bubble Map** dashboard item allows you to place bubbles on the map. Each bubble can represent data using its weight and color.



Topics in this section describe specific capabilities of the Bubble Map dashboard item.

- [Providing Data](#)
- [Coloring](#)
- [Legends](#)

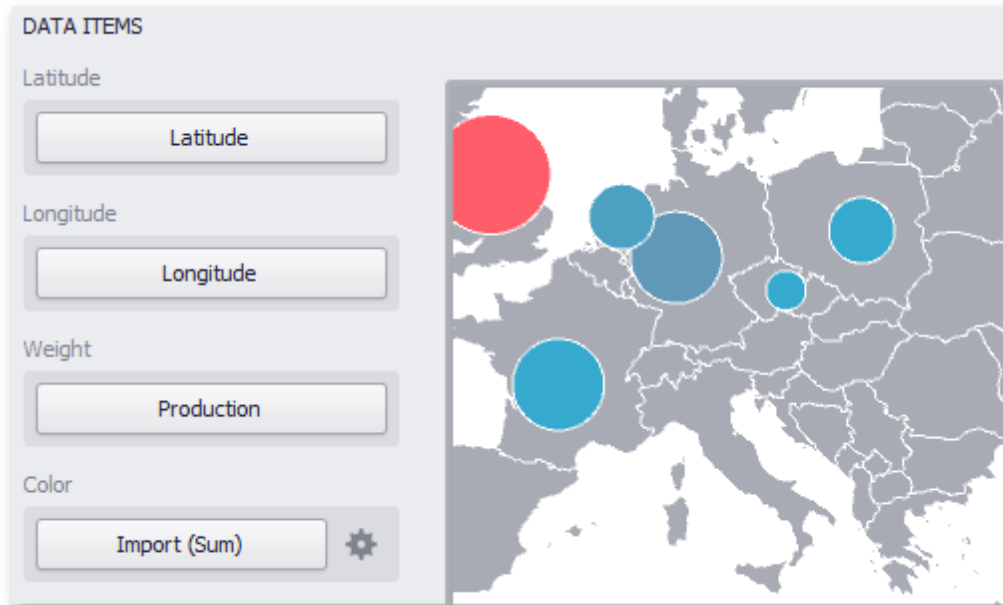
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Bubble Map](#) > [Providing Data](#)

This topic describes how to bind the **Bubble Map** dashboard item to data using the **Dashboard Designer**.

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner (see [Binding Dashboard Items to Data](#) for details). The only difference is in the data sections that these dashboard items have.

The image below shows a sample Bubble Map dashboard item that is bound to data.



Note that the Bubble Map provides two data item groups for data binding: DATA ITEMS and TOOLTIP DATA ITEMS. Tables below list the available data sections.

DATA ITEMS

- **Latitude** - Accepts a dimension used to provide geographic latitude.
- **Longitude** - Accepts a dimension used to provide geographic longitude.
- **Weight** - Accepts a measure used to evaluate the bubble's weight.
- **Color** - Accepts a measure used to evaluate the bubble's color.

The Bubble Map dashboard item automatically selects palette and scale settings used to color bubbles. To customize these settings, click the **Options** button next to the **Color** placeholder. This invokes the **Color Scale Options** dialog, which allows you to specify the palette and scale options. To learn how to use this dialog, see [Coloring](#).

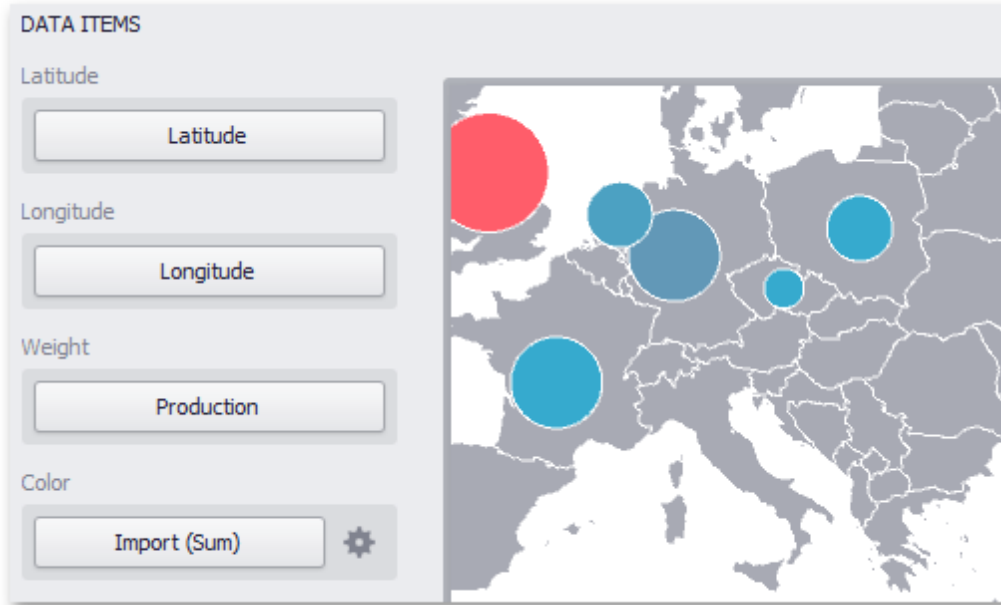
TOOLTIP DATA ITEMS

- **Dimensions** - Accepts dimensions allowing you to add supplementary content to the tooltips.
- **Measures** - Accepts measures allowing you to add summaries to the tooltips.

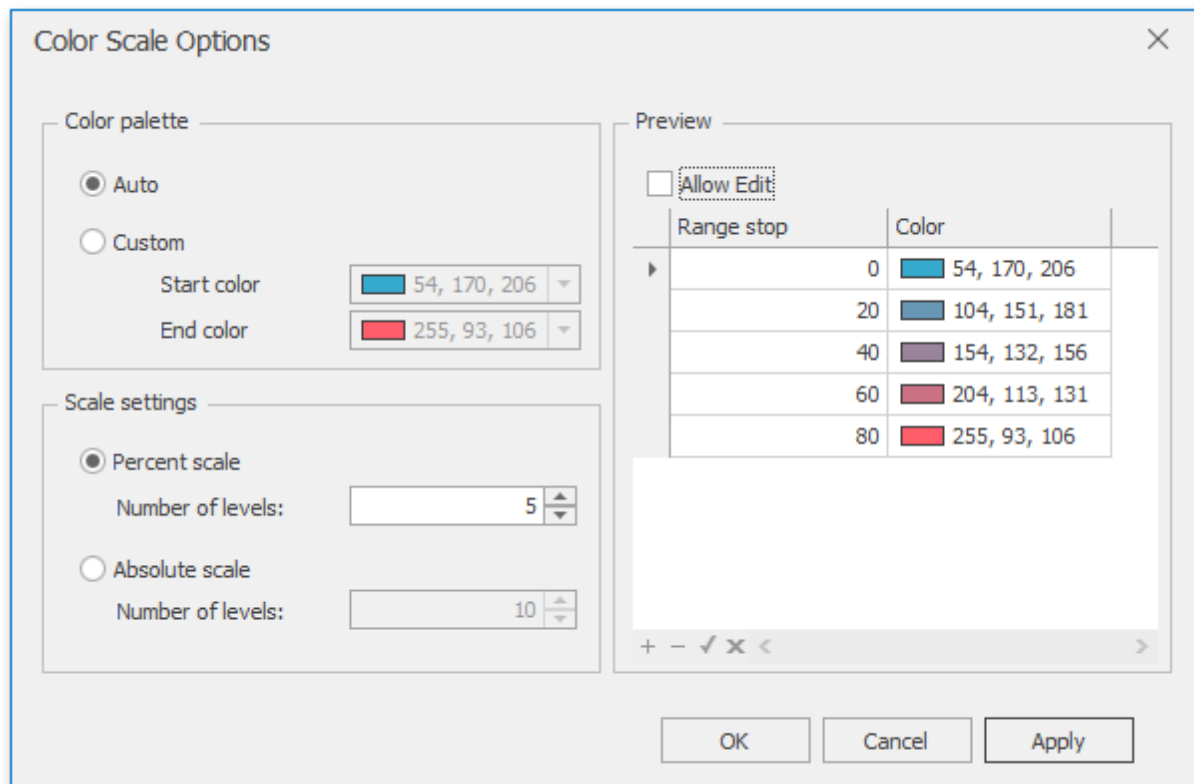
Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Bubble Map](#) > [Coloring](#)

The Bubble Map dashboard item automatically selects palette and scale settings used to color bubbles depending on the [provided](#) values.



To customize these settings, click the **Options** button next to the **Color** placeholder. This invokes the **Color Scale Options** dialog, which allows you to specify the palette and scale options.



You can specify the following settings in this window.

- **Color palette** - allows you to specify the start and end color of the palette.
- **Scale settings** - specifies whether a *percent* scale or an *absolute* scale is used to define a set of colors. You can specify the number of levels that represent the number of colors used to color the map.
- **Preview** is used to display a full set of palette colors generated based on the start/end colors and the number of levels. Use the **Allow Edit** check box to automatically change the generated colors or specify value ranges for each color.

Legends

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Bubble Map](#) > [Legends](#)

Bubble Map provides two types of legends used to identify map objects - color and weighted legends.

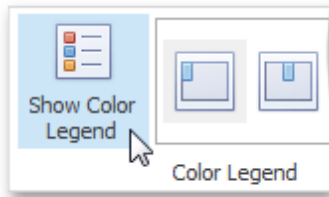
- [Color Legend](#)
- [Weighted Legend](#)

Color Legend

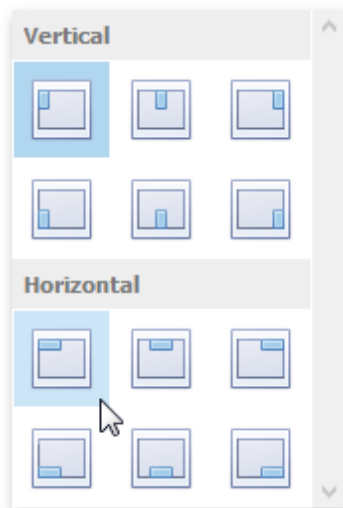
The color legend helps you to identify which colors correspond to specific values.



To display a color legend within a map, use the **Show Color Legend** button in the **Color Legend** section of the **Design** Ribbon tab.

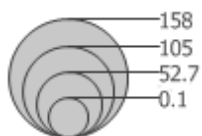


To specify the legend's position and orientation, select one of the predefined options from the gallery in the **Design** Ribbon tab.

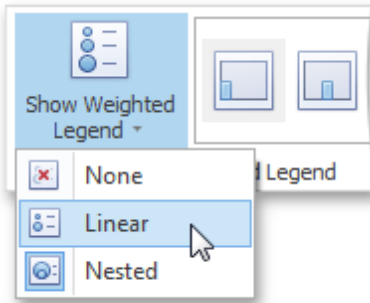


Weighted Legend

The weighted legend allows you to identify values corresponding to specific bubble sizes.



To select the required weighted legend type, use the **Show Weighted Legend** button in the **Weighted Legend** section of the **Design** Ribbon tab.



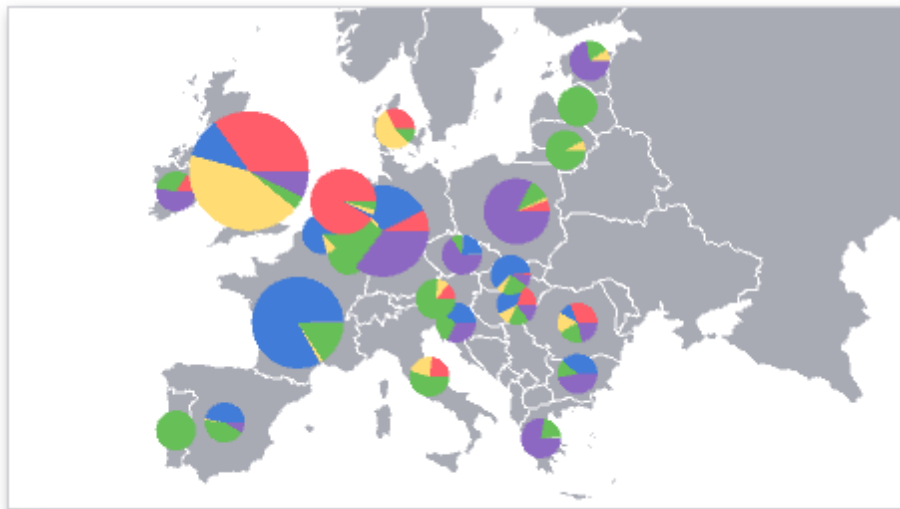
To specify the legend's position, select one of the predefined options from the gallery in the **Design** Ribbon tab.



Pie Map

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Pie Map](#)

The **Pie Map** dashboard item allows you to display pies on the map. Each pie visualizes the contribution of each value to the total.



Topics in this section describe specific capabilities of the Pie Map dashboard item.

- [Providing Data](#)
- [Pie Options](#)
- [Coloring](#)
- [Legends](#)

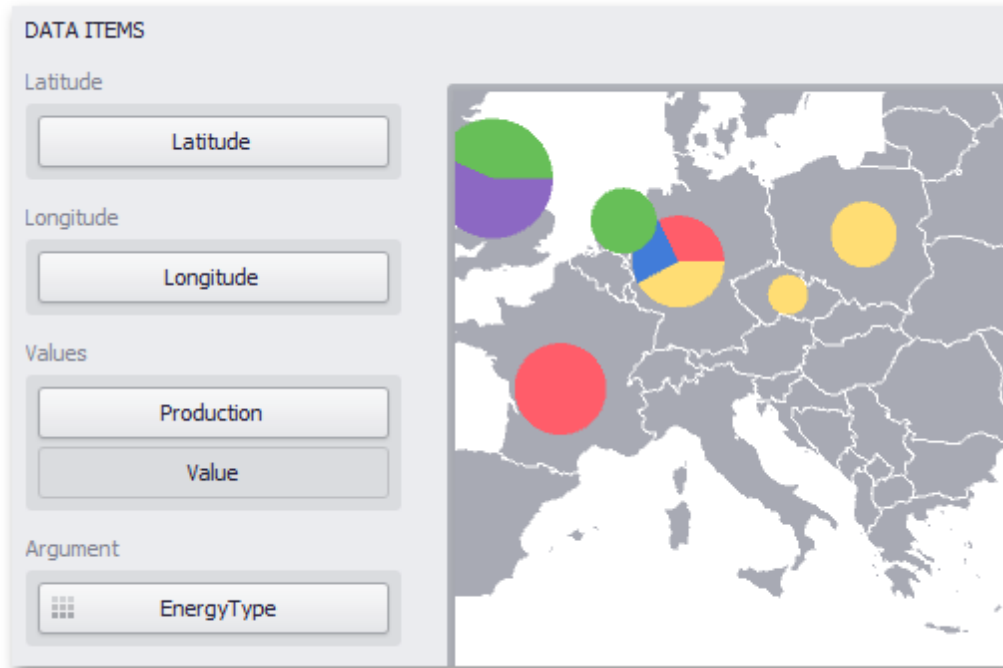
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Pie Map](#) > [Providing Data](#)

This topic describes how to bind the **Pie Map** dashboard item to data using the **Dashboard Designer**.


The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner (see [Binding Dashboard Items to Data](#) for details). The only difference is in the data sections that these dashboard items have.

The image below shows a sample Pie Map dashboard item that is bound to data.



Note that the Pie Map provides two data item groups for data binding: DATA ITEMS and TOOLTIP DATA ITEMS. Tables below list the available data sections.

DATA ITEMS

Section	Description
Latitude	Accepts a dimension used to provide geographic latitude.
Longitude	Accepts a dimension used to provide geographic longitude.
Values	Accepts measures used to calculate pie values. In case of negative measure values, Pie Map uses their absolute values. If you added a data item to the Argument section and several data items to the Values section, you can use the Values drop-down menu to switch between the provided values. To invoke the Values menu, click the  icon in the map's caption or use the map's context menu.
Argument	Allows you to provide data for pie arguments.

TOOLTIP DATA ITEMS

Section	Description
Dimensions	Accepts dimensions allowing you to add supplementary content to the tooltips.
Measures	Accepts measures allowing you to add summaries to the tooltips.

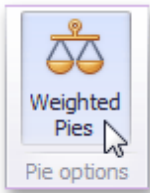
Pie Options

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Pie Map](#) > [Pie Options](#)

The Pie Map dashboard item allows you to take into account the weight of pies. In this case, the relative sizes of the pies depend on the corresponding summary values.



To enable this capability, use the **Weighted Pies** button in the **Design** ribbon tab.

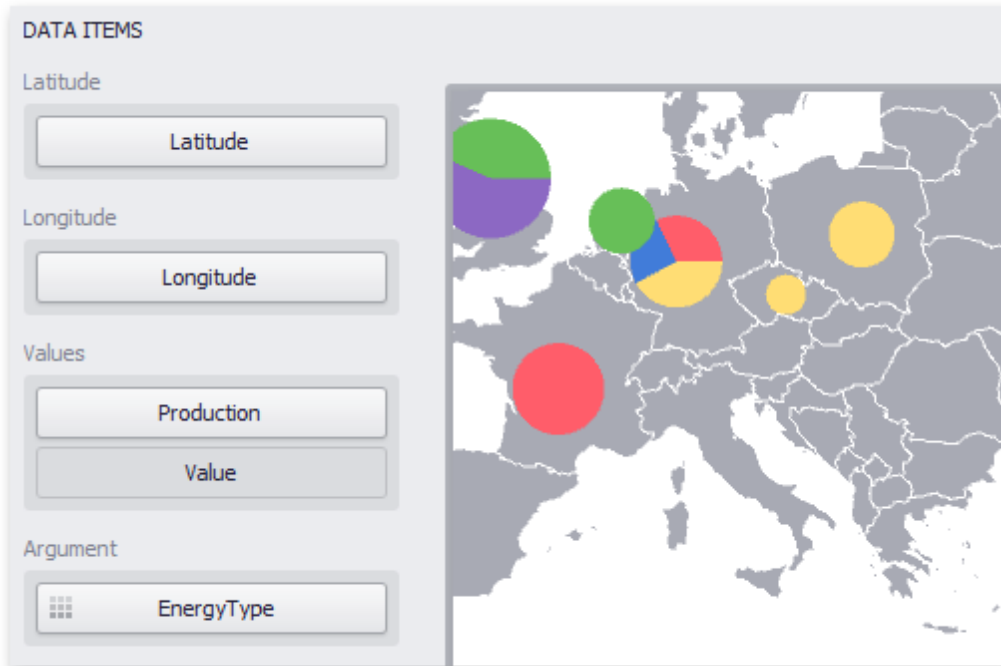


Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Pie Map](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

The Pie Map dashboard item allows you to manage the coloring of segments corresponding to various dimension values/measures. For instance, the image below illustrates the Pie Map dashboard item whose argument values are colored by hue.



Legends

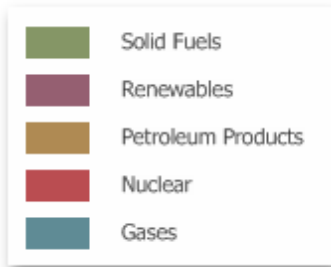
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Pie Map](#) > [Legends](#)

The Pie Map provides two types of legends used to identify map objects - color and weighted legends.

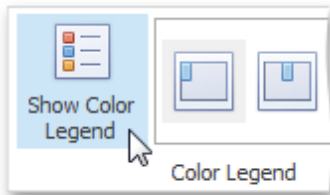
- [Color Legend](#)
- [Weighted Legend](#)

Color Legend

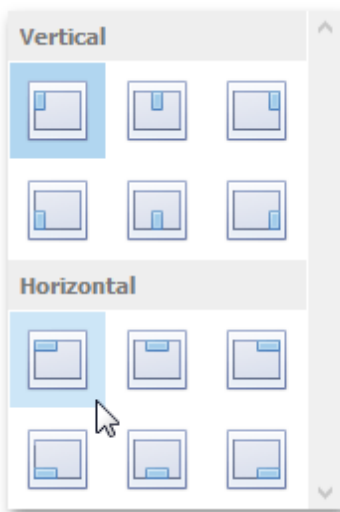
The color legend helps you to identify which colors correspond to specific argument values.



To display a color legend within a map, use the **Show Color Legend** button in the **Color Legend** section of the **Design** Ribbon tab.

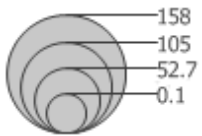


To specify the legend's position and orientation, select one of the predefined options from the gallery in the **Design** Ribbon tab.



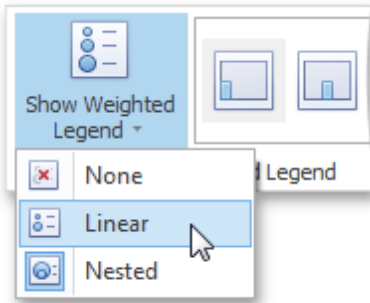
Weighted Legend

The weighted legend allows you to identify values corresponding to specific pie sizes.

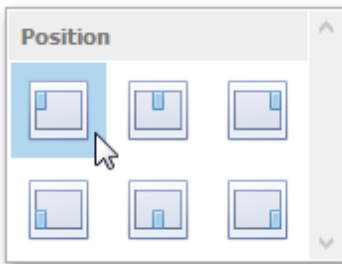
**Note**

The Pie Map dashboard item does not display the weighted legend if [weighed_pies](#) are disabled.

To select the required weighted legend type, use the **Show Weighted Legend** button in the **Weighted Legend** section of the **Design** Ribbon tab.



To specify the legend's position, select one of the predefined options from the gallery in the **Design** Ribbon tab.



Clustering

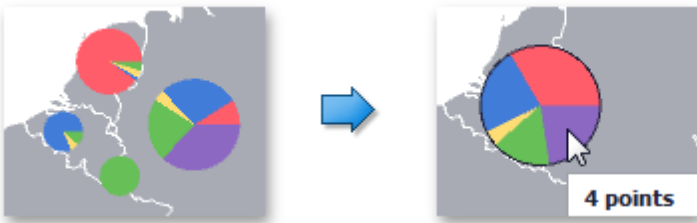
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Clustering](#)

When a **Geo Point** map contains a large number of objects (callouts, bubbles or pies), showing each object individually on the map is not useful. The **Dashboard Designer** provides the capability to group neighboring map objects. This feature is called **Clustering**.

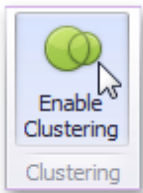
For instance, the **Geo Point Map** dashboard item combines callouts to bubbles.



The **Bubble Map** and **Pie Map** dashboard items cluster bubbles/pies with other bubbles/pies.



To enable clustering in the Designer, use the **Enable Clustering** button in the **Data** ribbon tab.



Interactivity

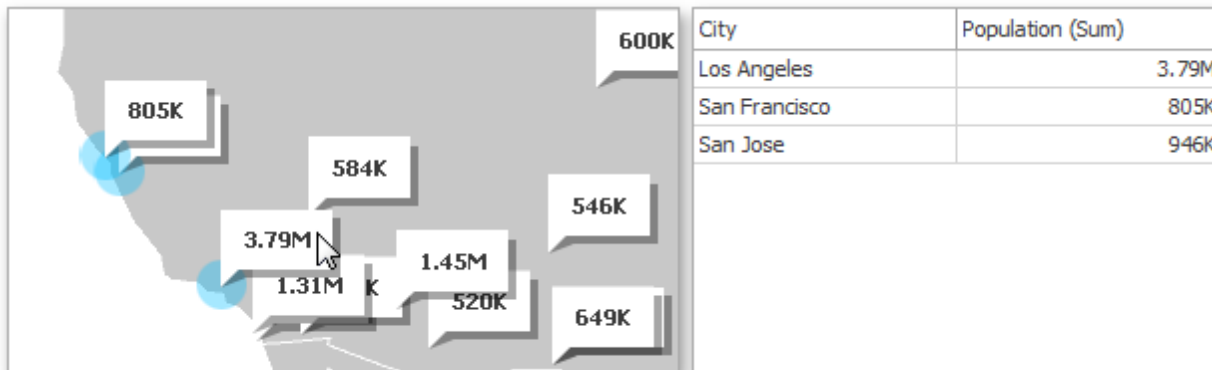
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Interactivity](#)

This document describes the **Master Filtering** capability, which enables interaction between the **Geo Point Map** and other dashboard items.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about the filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.


When Master Filtering is enabled, you can click a callout/bubble/pie (or multiple callouts/bubbles/pies by holding down the **CTRL** key) to make other dashboard items only display data related to the selected callout(s)/bubble(s)/pie(s).

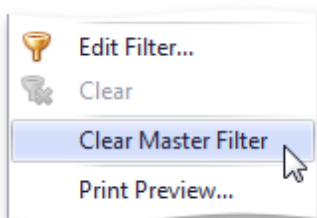


Note

When you select a [clustered](#) bubble or pie, master filtering is applied by all points that are clustered into this bubble/pie.

To learn how to enable Master Filtering in the Designer, see the [Master Filtering](#) topic.

To reset filtering, use the **Clear Master Filter** button (the  icon) in the map's [caption](#), or the **Clear Master Filter** command in the context menu.



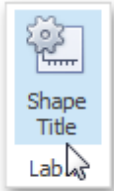
Labels

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Labels](#)

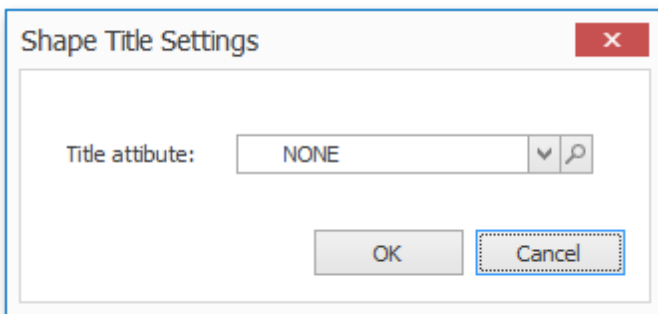
Geo Point maps provide the capability to display titles within map shapes and allows you to add supplementary content to the callout/bubble/pie tooltips.


Shape Titles

To manage map titles, click the **Shape Title** button in the **Design** ribbon tab.

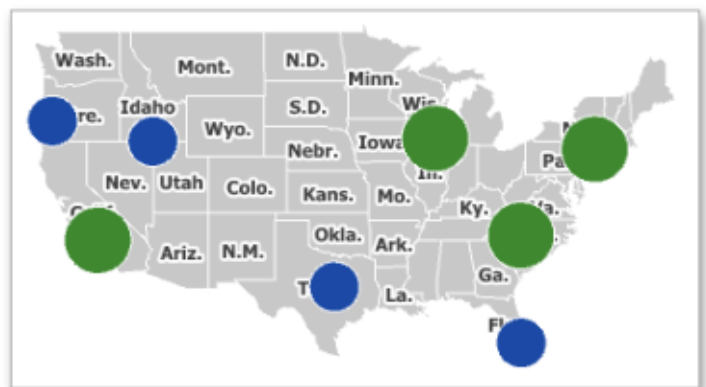
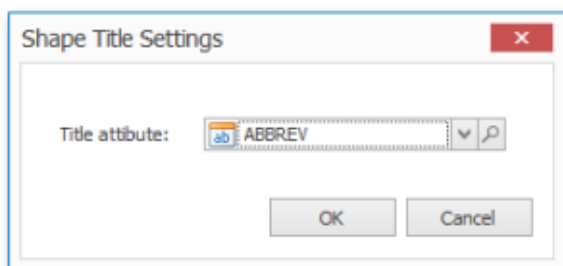


This invokes the **Shape Title Settings** dialog.



In this dialog, you can specify attributes whose values will be displayed within shapes. Use the  button to preview the available attributes and their values for the current map.

The **Title attribute** option allows you to select the attribute whose values are displayed within corresponding map shapes.



Tooltips

Geo Point maps also allow you to add supplementary content to the callout/bubble/pie tooltips using the TOOLTIP DATA ITEMS area. To learn more, see the Tooltip Data Items paragraph in the [Providing Data](#) topic.

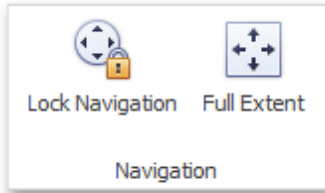
Map Navigation

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Geo Point Maps](#) > [Map Navigation](#)

Geo Point maps allow you to perform navigation actions such as zooming and scrolling.

The Dashboard Designer allows you to specify the initial zooming/scrolling state for the Geo Point map using the mouse.

You can disable the capability to scroll/zoom the map using the **Lock Navigation** button in the **Design** ribbon tab.

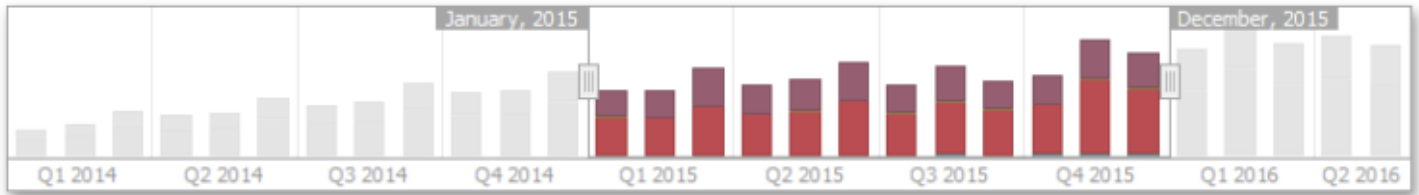


Use the **Full Extent** button to display the entire map within the dashboard item.

Range Filter

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Range Filter](#)

The **Range Filter** dashboard item allows you to apply filtering to other dashboard items. This item displays a chart with selection thumbs that allow you to filter out values displayed along the argument axis.



This section consists of the following subsections.

- [Providing Data](#)
Explains how to supply the Range Filter dashboard item with data.
- [Series](#)
Enumerates and describes different types of series that can be displayed within the Range Filter dashboard item.
- [Interactivity](#)
Describes features that enable interaction between the Range Filter and other dashboard items.
- [Predefined Ranges](#)
Shows you how to add predefined date-time periods that can be used to perform a selection (for instance, *year-to-date* or *quarter-to-date*).
- [Coloring](#)
Describes coloring capabilities of the Range Filter dashboard item.

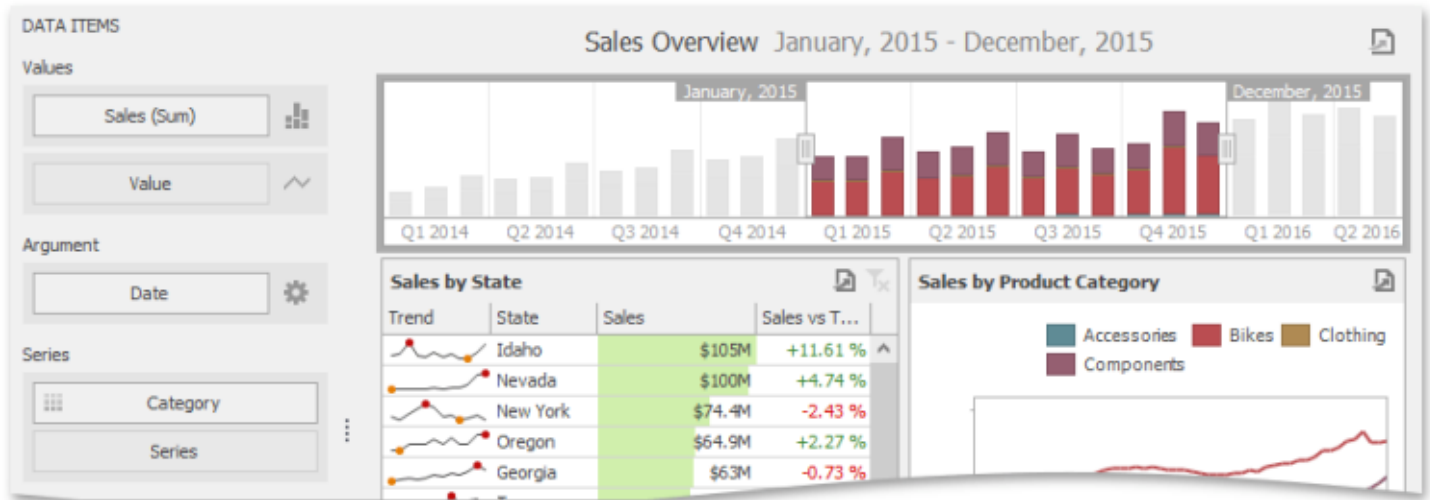
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Range Filter](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic.

The only difference is in the data sections that the required dashboard item has. This topic describes how to bind a **Range Filter** dashboard item to data in the Designer.

The image below shows a sample Range Filter dashboard item that is bound to data.



To bind the Range Filter dashboard item to data, drag and drop a data source field to a placeholder contained in one of the available data sections. A table below lists and describes Range Filter data sections.

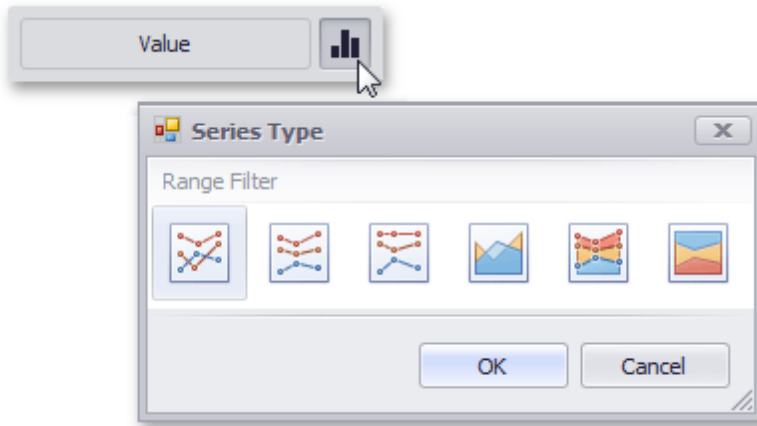
Section	Description
Values	Contains data items against which the Y-coordinates of data points are calculated.
Argument	Contains a data item that provides values displayed along the horizontal axis of the Range Filter. Filtering is performed based on these values. Note that the Options button (the icon) allows you to create predefined ranges used to select the required date-time interval.
Series	Contains data items whose values are used to create chart series.

Series

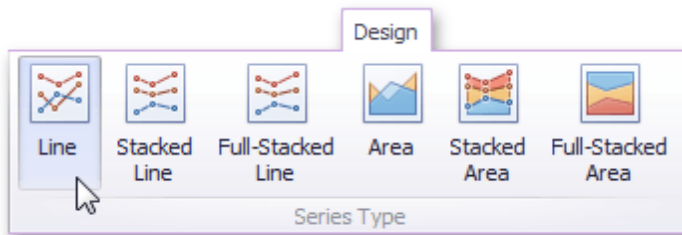
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Range Filter](#) > [Series](#)

The **Range Filter** dashboard item supports various **Line** and **Area** series types.

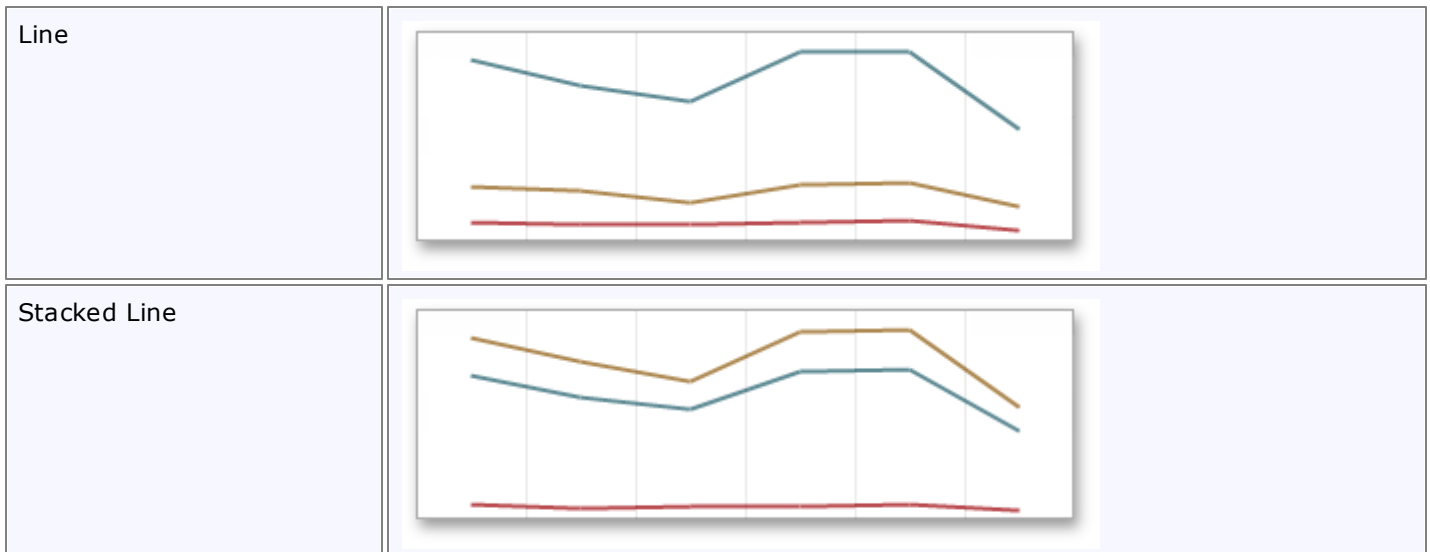
To switch between series types in the Designer, click the options button next to the required data item in the **Values** section. In the invoked **Series Type** dialog, select the required series type and click **OK**.



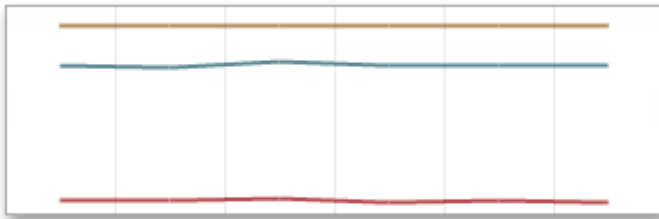
You can also do this using the buttons in the **Series Type** group of the **Design** Ribbon tab.



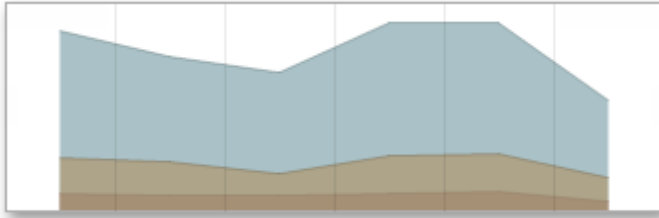
The Range Filter supports the following series types.



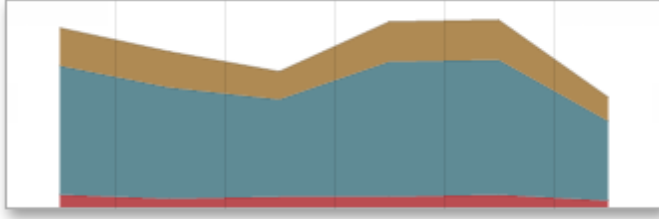
Full-Stacked Line



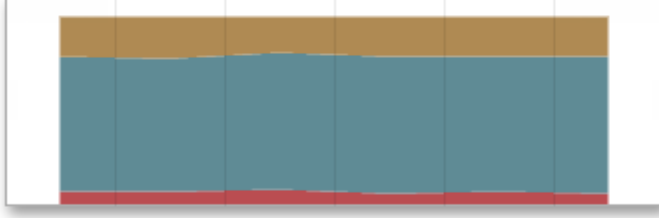
Area



Stacked Area



Full-Stacked Area



Interactivity

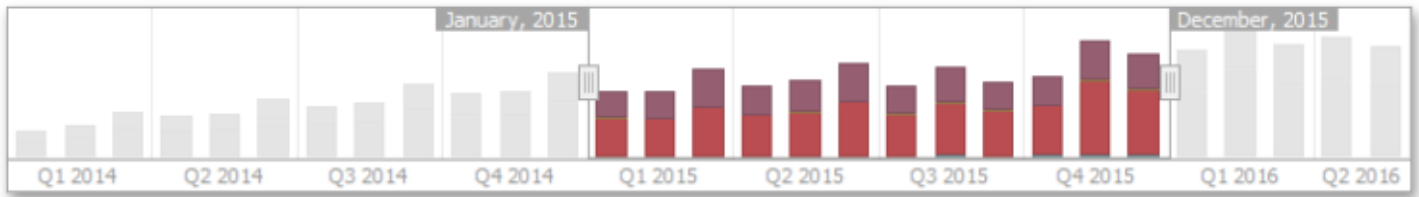
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Range Filter](#) > [Interactivity](#)

This document describes the features that enable interaction between the **Range Filter** and other dashboard items. These features include **Master Filtering**.

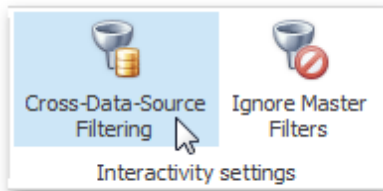
Master Filtering

The Dashboard allows you to use any data-aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

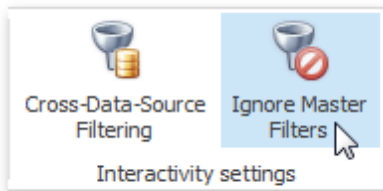
Master filtering is always enabled for the Range Filter dashboard item. This Range Filter displays a chart with selection thumbs that allow you to filter out values displayed along the argument axis.

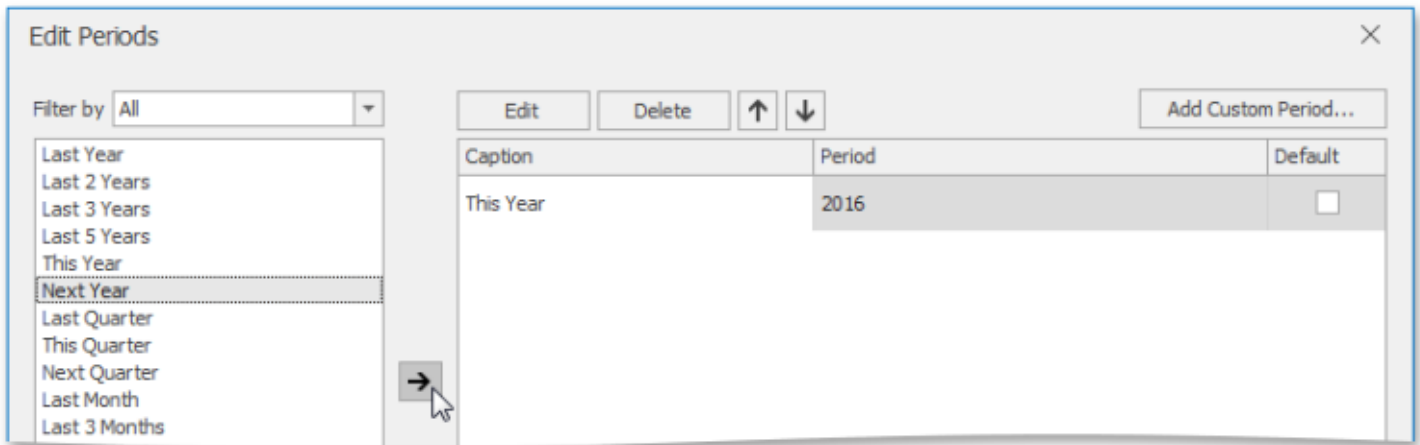


To enable filtering across data sources for the Range Filter, use the **Cross-Data-Source Filtering** button in the **Data** Ribbon tab.



You can enable/disable ignoring of other master filter items using the **Ignore Master Filters** button in the **Data** Ribbon tab.

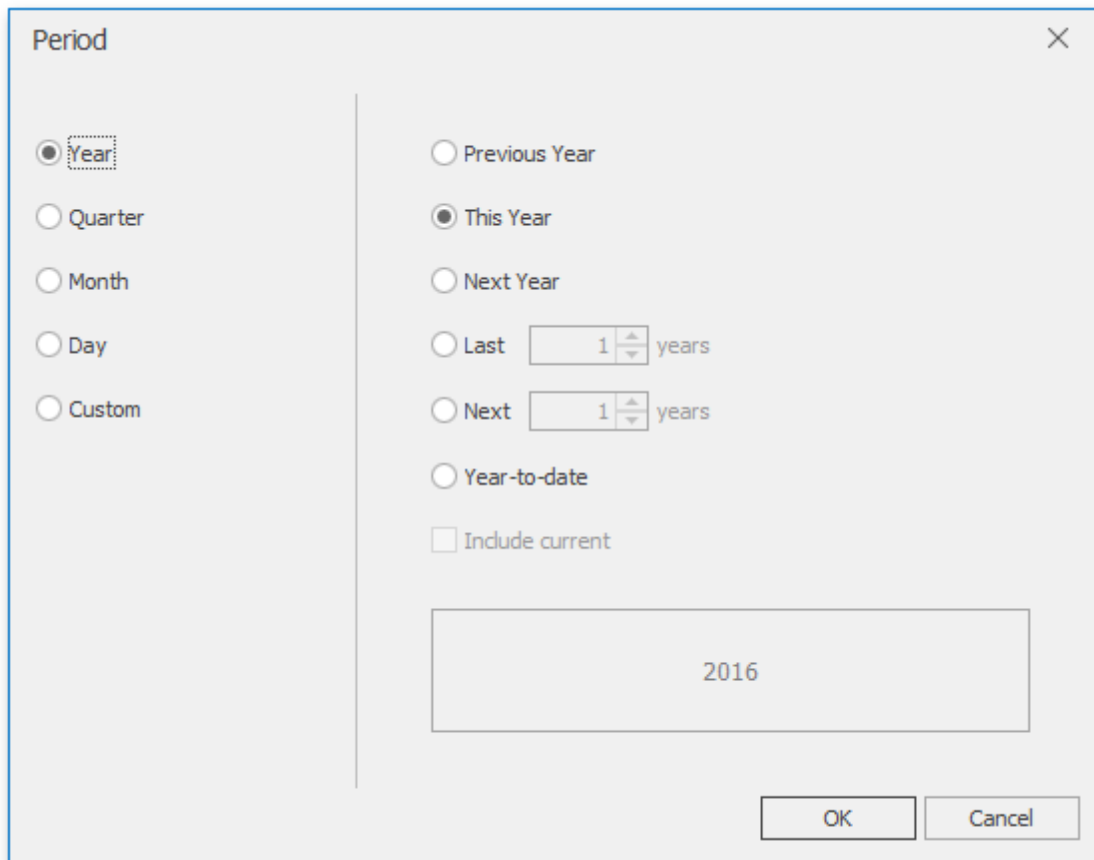




This period will be added to the right pane of the Edit Periods dialog. The following settings are available for the added period.

- **Caption** - Specifies the caption corresponding to the period.
- **Period** - Displays the date-time interval corresponding to the period.
- **Default** - Allows you to use the selected period as the default selection in the Range Filter dashboard item.

If necessary, you can customize the selected period by clicking the **Edit** button in the Edit Periods dialog. This invokes the **Period** dialog.



Note

Note that the **Edit** dialog above contains the displayed periods (**Year, Quarter, Month, Day**) if the [group interval](#)

of the Range Filter argument is set to **Day-Month-Year**.

This dialog allows you to add the following periods.

- **Year** - A period duration is measured in years.
 - **Previous Year** - Identifies the entire previous year.
 - **This Year** - Identifies the entire current year.
 - **Next Year** - Identifies the entire next year.
 - **Last Years** - Identifies a specific number of previous years. Use the **Include current** option to specify whether or not the period is ended with the current year.
 - **Next Years** - Identifies a specific number of next years. Use the **Include current** option to specify whether or not the period is started from the current year.
 - **Year-to-date** - A period from the beginning of the current year and up to the current day.
- **Quarter** - Period duration is measured in quarters.
 - **Previous Quarter** - Identifies the entire previous quarter.
 - **This Quarter** - Identifies the entire current quarter.
 - **Next Quarter** - Identifies the entire next quarter.
 - **Last Quarter** - Identifies a specific number of previous quarters. Use the **Include current** option to specify whether or not the period ends with the current quarter.
 - **Next Quarter** - Identifies a specific number of following quarters. Use the **Include current** option to specify whether or not the period starts from the current quarter.
 - **Quarter-to-date** - A period from the beginning of the current quarter and up to the current day.
- **Month** - Period duration is measured in months.
 - **Previous Month** - Identifies the entire previous month.
 - **This Month** - Identifies the entire current month.
 - **Next Month** - Identifies the entire next month.
 - **Last Month** - Identifies a specific number of previous months. Use the **Include current** option to specify whether or not the period ends with the current month.
 - **Next Month** - Identifies a specific number of the following months. Use the **Include current** option to specify whether or not the period starts with the current month.
 - **Month-to-date** - A period from the beginning of the current month and up to the current day.
- **Day** - Period duration is measured in days.
 - **Previous Day** - Identifies the entire previous day.
 - **This Day** - Identifies the entire current day.
 - **Next Day** - Identifies the entire next day.
 - **Last Day** - Identifies a specific number of previous days. Use the **Include current** option to specify whether or not the period ends with the current day.
 - **Next Day** - Identifies a specific number of the following days. Use the **Include current** option to specify whether or not the period starts with the current day.
- **Custom** - A custom period.
 - Allows you to specify a period with the custom boundaries (**Start point** and **End point**).

Period

Year
 Quarter
 Month
 Day
 Custom

Start point None Fixed Flow
1/1/2015

End point None Fixed Flow
Interval: Year
Offset: 1

1/1/2015 - 12/31/2016

OK Cancel

You can specify the following settings for the start/end boundaries.

- **None** - The selection will begin from the start/end of the visible range.
- **Fixed** - Allows you to select a specific date value using the calendar.
- **Flow** - Allows you to select a relative date value. The **Interval** option specifies the interval between the current date and the required date. The **Offset** option allows you to set the number of such intervals.

Note

Note that the **Offset** option can accept negative and positive values. Negative values correspond to dates before the current date, while positive values correspond to future dates.

See Also

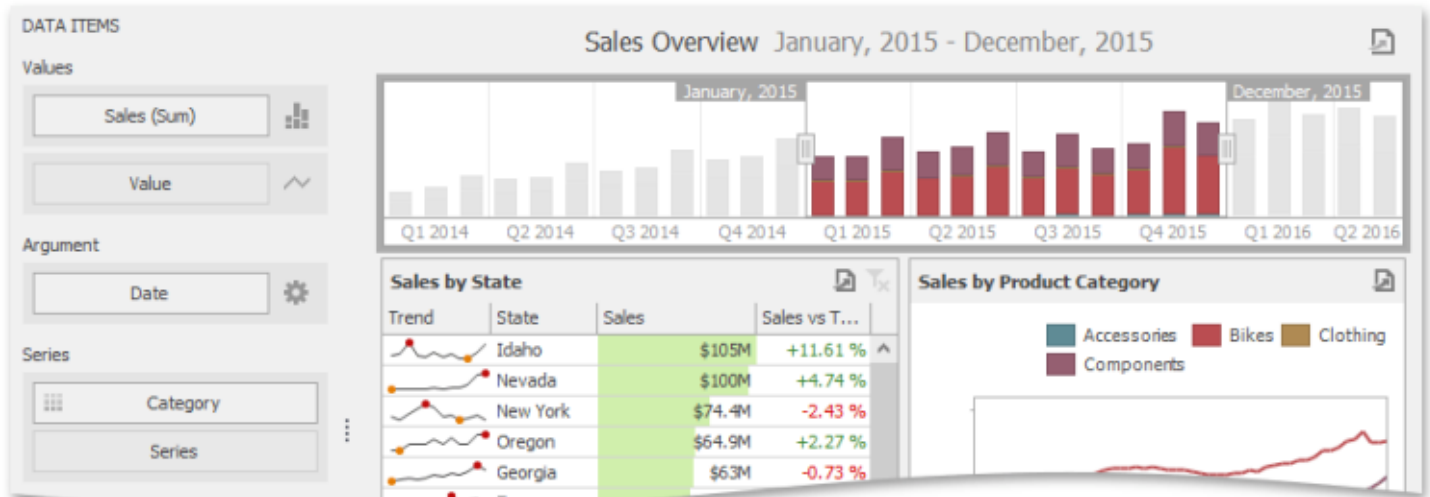
[Interactivity](#)

Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Range Filter](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/ measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

By default, the Range Filter dashboard item colors different measures and series dimensions by hue. The image below illustrates the Range Filter dashboard item whose series points corresponding to different categories are colored in different colors.



Images

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Images](#)

The Dashboard Designer allows you to add images to a dashboard.



You can either add a static image or you can use the Bound Image as a detail item along with the [Master Filtering](#) feature.

- [Image Types Overview](#)
- [Providing Images](#)
- [Interactivity](#)
- [Image Settings](#)

Image Types Overview

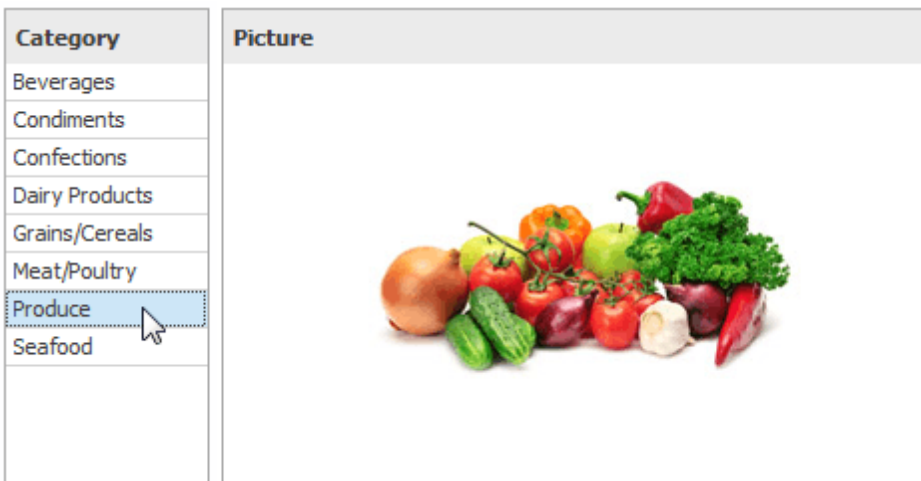
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Images](#) > [Image Types Overview](#)

The **Dashboard Designer** allows you to create two types of an **Image** dashboard item.

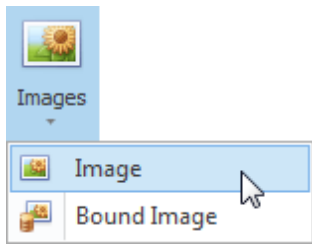
- The **Image** dashboard item allows you to add **static** images to a dashboard.



- The **Bound Image** dashboard item can be bound to a set of images (for instance, stored in the database). You can use the Bound Image as a detail item along with the [Master Filtering](#) feature.



To create the required Image dashboard item, use the **Images** button in the **Home** ribbon tab.

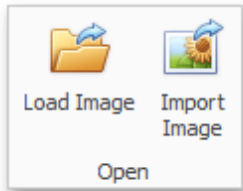


Providing Images

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Images](#) > [Providing Images](#)

Providing Static Images

To load an image to a dashboard item, use the **Load Image** and **Import Image** buttons in the Ribbon, or commands in the context menu (**Load Image...** and **Import Image...**, respectively).

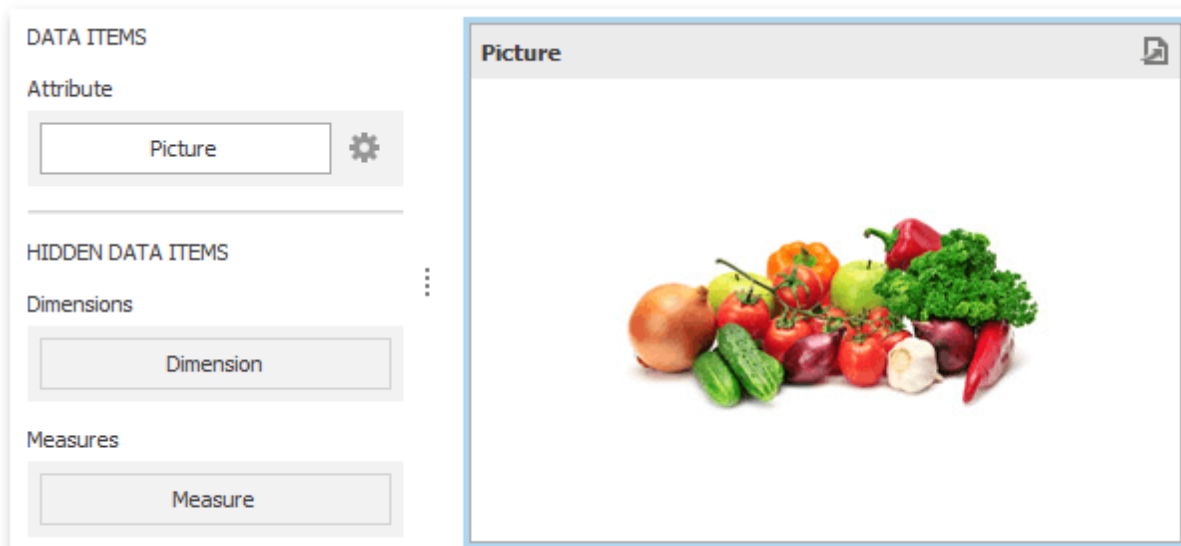


These commands invoke the **Open** dialog, which allows you to locate the desired image.

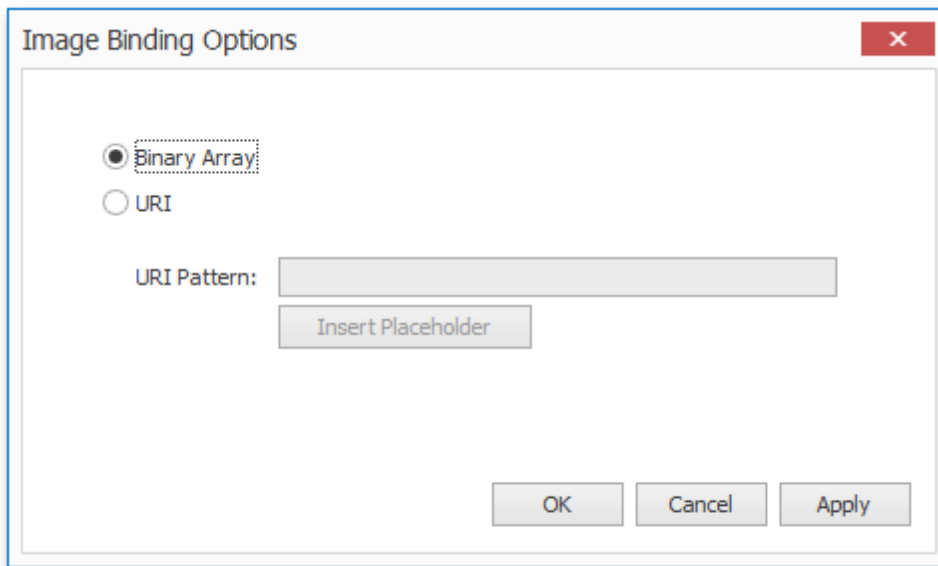
The **Load Image** command saves the path to the image in the dashboard definition, while the **Import Image** command saves the image itself.

Binding the Bound Image to Data

The Bound Image dashboard item provides the Attribute data section containing the corresponding placeholder.



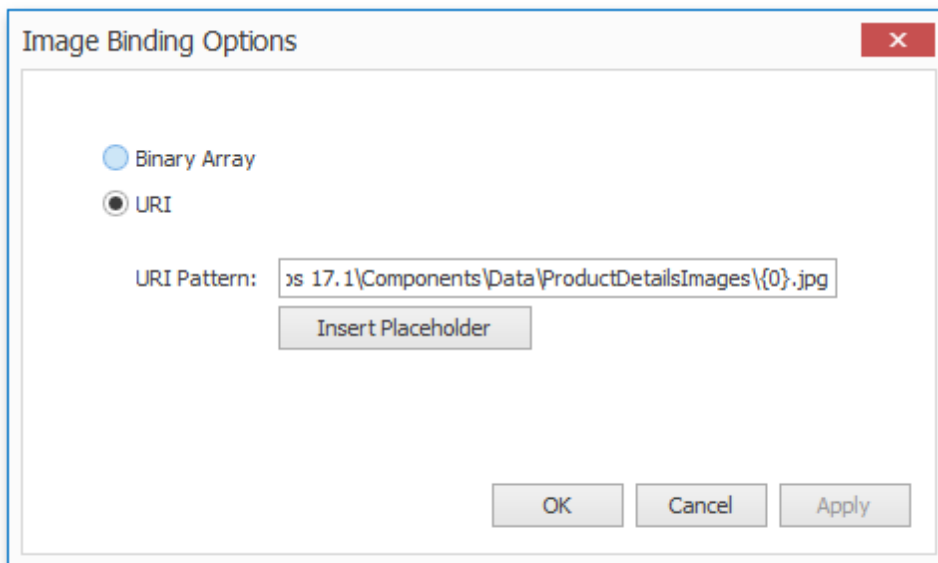
Specify the binding mode for the Bound Image by clicking the Options button (the icon) next to the Attribute placeholder. This invokes the following dialog.



This dialog provides two options.

- **Binary Array** - Use this mode if images are stored in the data source as byte arrays.
- **URI** - Use this mode to locate images accessible by a predefined URI. In this case, the data source field should return strings that are parts of URIs to these images.

For instance, the URI pattern in the form below specifies the path to the folder containing the required images.



Data source field values will be inserted to the position of the {0} placeholder. Thus, the Bound Image maps the current dimension value with the image placed at the specified URI.

Note

Note that the Bound Image can display only a single image simultaneously. If [Master Filtering](#) is not applied to the Bound Image, it selects the displayed image in the following ways.

- In the **Binary Array** mode, the displayed image cannot be predicted precisely as a result of sorting limitations for the *image/binary* data types. Use the [Master Filtering](#) feature to display the specified image.
- In the **URI** mode, the Bound Image displays an image corresponding a first attribute value taking into account the attribute's sort order.

Interactivity

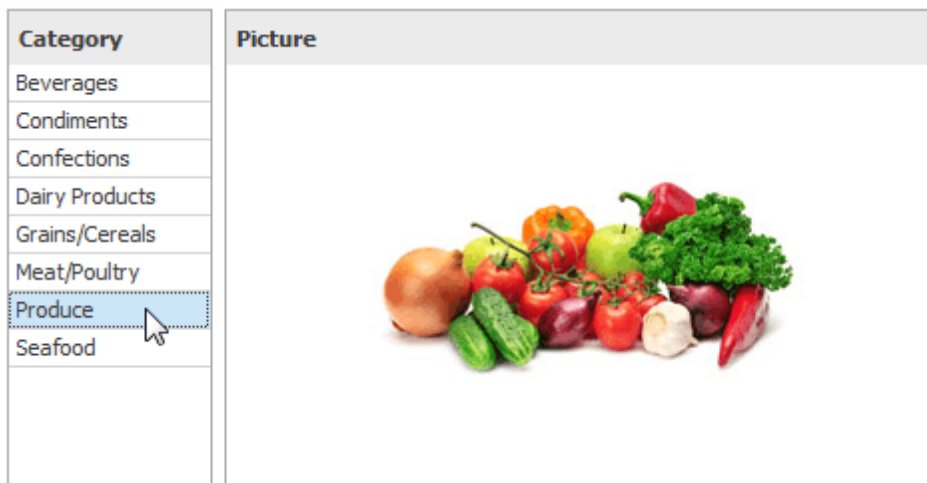
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Images](#) > [Interactivity](#)

This document describes the features that enable interaction between the **Bound Image** and other dashboard items. These features include **Master Filtering**.

Master Filtering

The Dashboard allows you to use most of the data-aware dashboard items as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

Data displayed in the **Bound Image** dashboard item can be filtered by other master filter items. For instance, the **Bound Image** below shows an image corresponding to a category selected in the [Grid](#) dashboard item.



You can prevent the Bound Image from being affected by other master filter items using the **Ignore Master Filters** button on the **Data** ribbon tab.

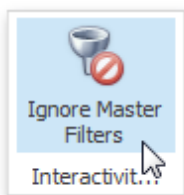


Image Settings

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Images](#) > [Image Settings](#)

You can customize the representation of Image and Bound Image dashboard items in different ways.

Image Alignment

To specify how the image is aligned within the dashboard item, use the **Alignment** group in the **Design** ribbon tab.

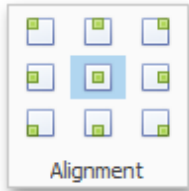
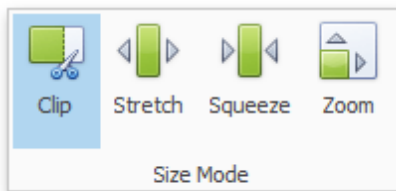




Image Size Mode

You can specify the image size mode that defines how the image fits within the dashboard item.

To do this, use the **Size Mode** group in the Ribbon's **Design** tab.



The following table illustrates each size mode in two cases: when the image is smaller than the dashboard item, and vice versa.

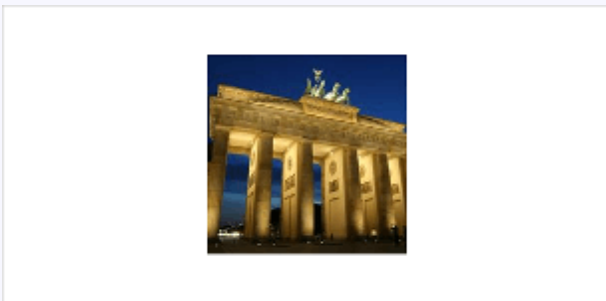
Size Mode	Image Smaller than Dashboard Item	Image Larger than Dashboard Item	Description
Clip			The image is clipped if it is larger than the Image dashboard item.

Stretch

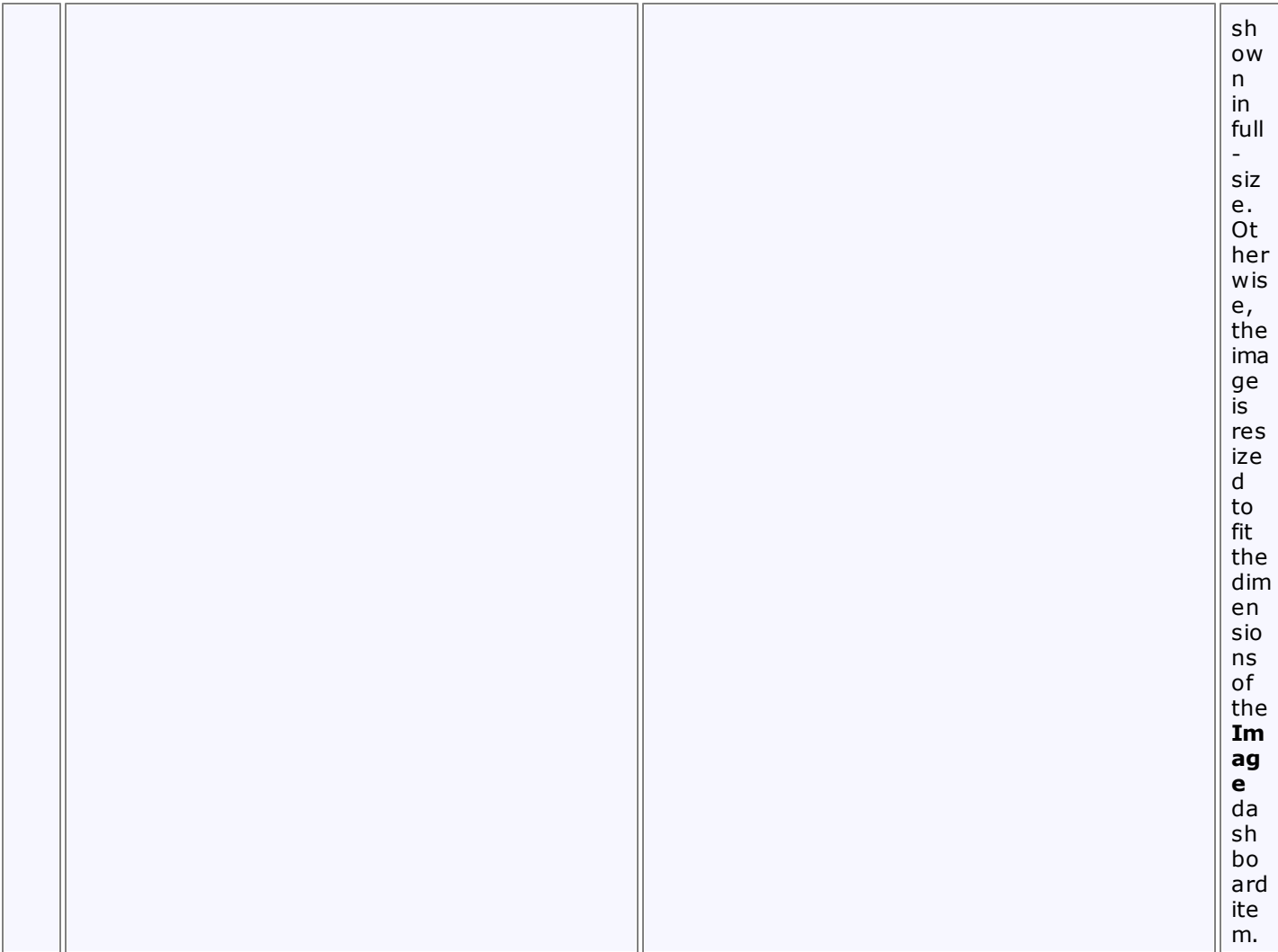


The image is stretched or shrunk to fit the size of the **Image** dashboard item.

Squeeze



If the dimensions of the **Image** dashboard item exceeded those of the image it contains, the image is

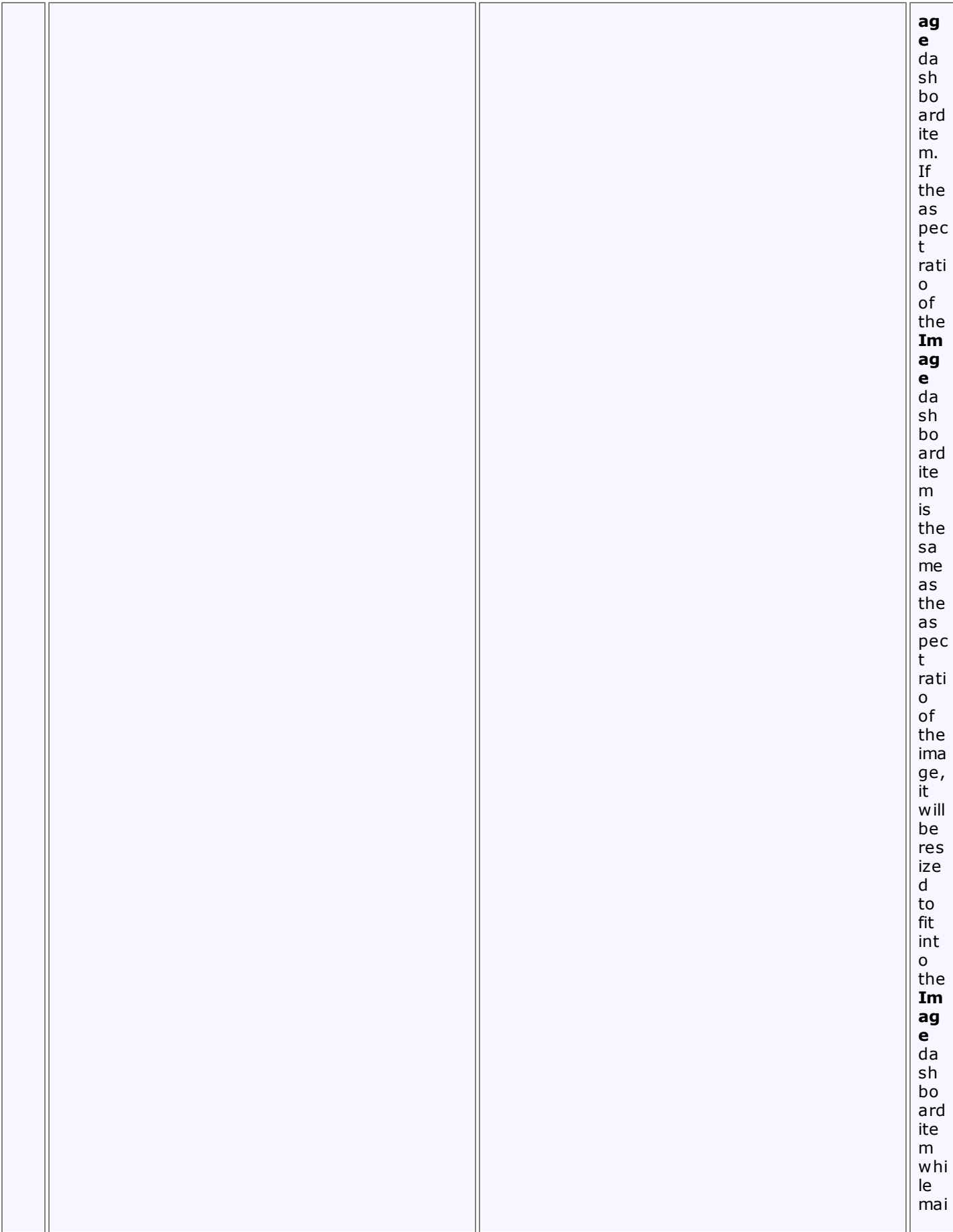


shown in full-size. Otherwise, the image is resized to fit the dimensions of the **Image** dashboard item.

Zoom



The image is sized proportionally (without clipping), so that it best fits the **Image**



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pec
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			<p>nta inin g its as pec t rati o. Ot her wis e, the ima ge will be res ize d in the clo ses t fitti ng dim en sio n (eit her the hei ght or the wid th), an d the re mai nin g dim en sio n will be res ize d whi le mai nta inin g the</p>
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			image's aspect ratio.
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Text Box

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Text Box](#)

Use the **Text Box** dashboard item to display rich text within a dashboard.



You can either add a static text or you can use the Text Box as a detail item along with the [Master Filtering](#) or [Filtering](#) features.

- [Editing Text](#)
- [Providing Data](#)
- [Interactivity](#)

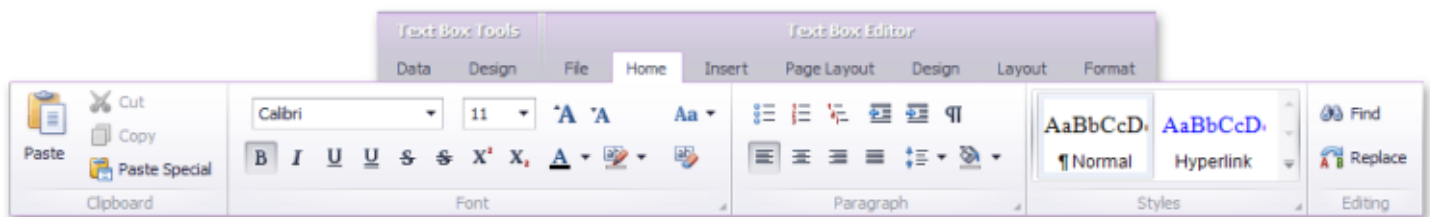
Editing Text

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Text Box](#) > [Editing Text](#)

To edit the text within the Text Box, click the **Edit** button in the ribbon's **Design** tab or use the corresponding item in the context menu.



This adds the **Text Box Editor** context category to the Dashboard Designer's ribbon and allows you to modify the content within the Text Box.



To learn how to edit the content within the Text Box, see Rich Text Editor. After you change the document, click **Edit** again to finish editing.

Note

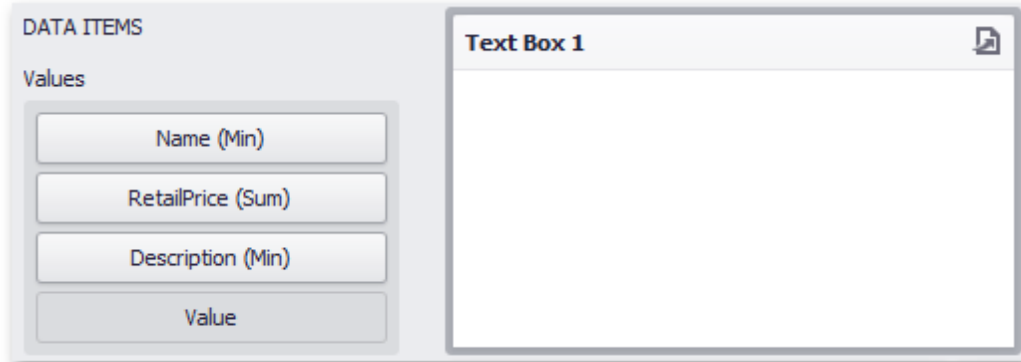
Note that the Text Box can be [bound](#) to data. To learn how to do this, see [Providing Data](#).

Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Text Box](#) > [Providing Data](#)

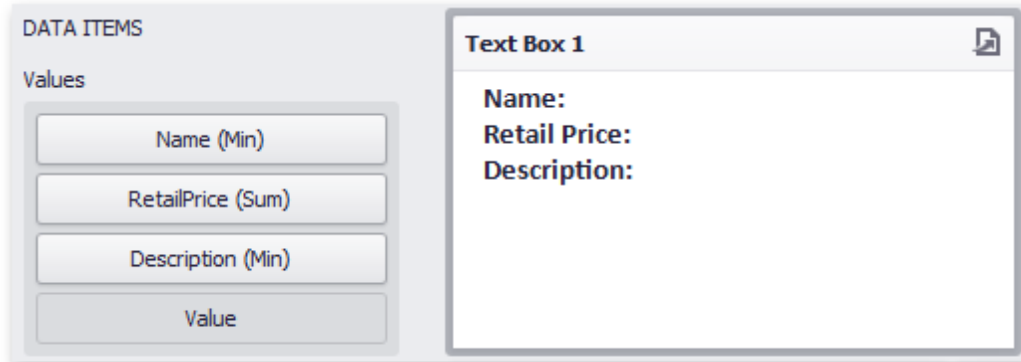
The Text Box dashboard item can be [bound to data](#) as other data-aware dashboard items. To do this, perform the following steps.

1. Drop the *Name*, *RetailPrice* and *Description* data source fields from the *Products* table to the **Values** section of the Text Box.

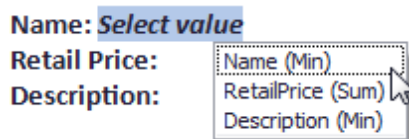


Note that [summary types](#) of the created measures are **Min**, **Sum** and **Min**, respectively.

2. Click the [Edit](#) button in the **Design** ribbon tab and add the *Name*, *Retail Price* and *Description* strings to the document.



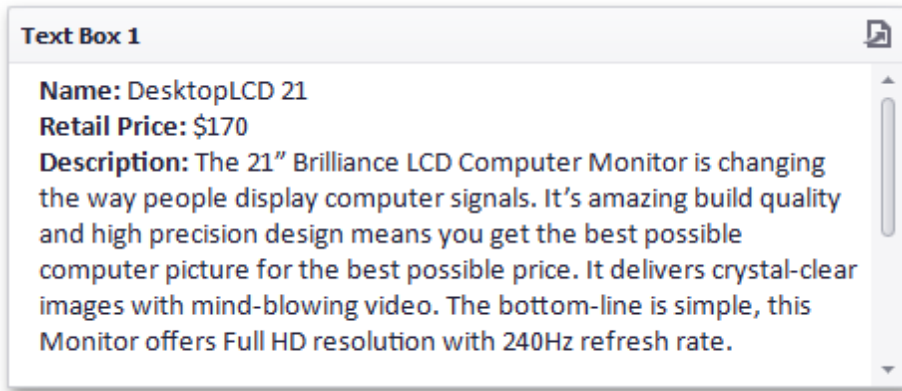
3. Place the pointer next to *Name*, right-click the document and select **Insert Field** (or use the [Insert Field](#) button in the ribbon). Then, click the *Select value* placeholder and select the *Name (Min)* measure.



4. Perform the third step for *Retail Price* and *Description*.

Name: Name (Min)
Retail Price: RetailPrice (Sum)
Description: Description (Min)

5. Click the [Edit](#) button again to leave the editing mode. The Text Box will show data in the following way.



You can use this Text Box as a detail item along with the [Master Filtering](#) feature to filter data according to the selected product.

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Text Box](#) > [Interactivity](#)

This document describes the features that enable interaction between the **Text Box** and other dashboard items. These features include **Master Filtering**.

Master Filtering

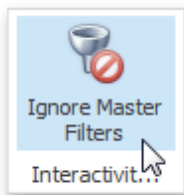
The Dashboard allows you to use most of the data-aware dashboard items as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

Data displayed in the Text Box dashboard item can be filtered by other master filter items. For instance, the Text Box below shows data corresponding to a product selected in the [List Box](#) dashboard item.



The screenshot displays a dashboard with two main sections. On the left, a 'Product' list box contains several items with radio buttons, where 'DesktopLCD 21' is selected. On the right, a 'Product Description' text box shows details for the selected product: 'DesktopLCD 21'. The details include 'Production Start: 31-Mar-10', 'Consumer Rating: 3 of 5', 'Retail Price: \$170', 'Best Sales Year: 2015', and 'Best Sales Company: ACME'. Below these details is a paragraph of descriptive text about the monitor's features.

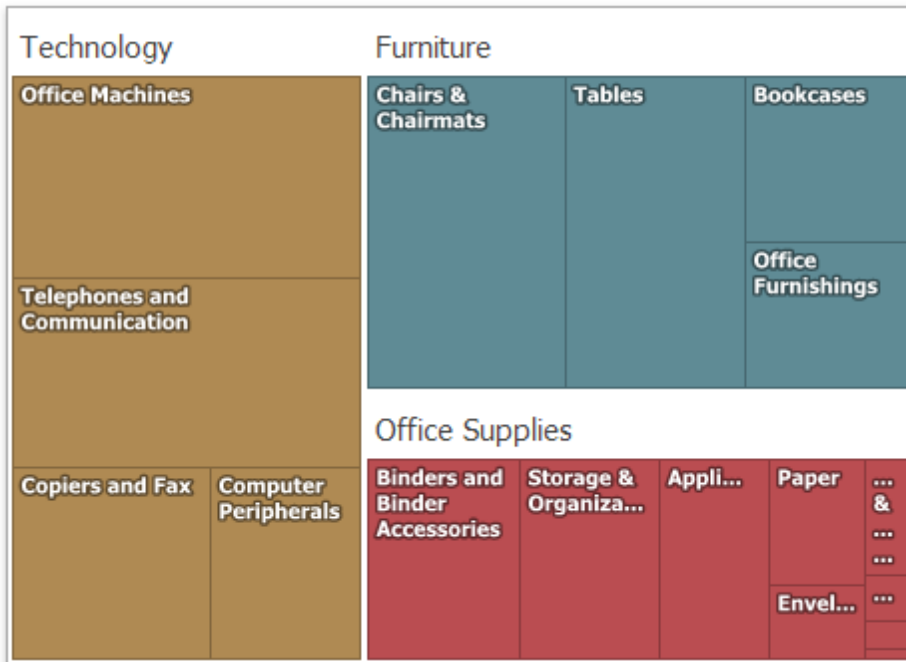
You can prevent the Text Box from being affected by other master filter items using the **Ignore Master Filters** button on the **Data** ribbon tab.



Treemap

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#)

Use the Treemap dashboard item to visualize data in nested rectangles that are called *tiles*.



This section is divided into the following subsections.

- [Providing Data](#)
- [Interactivity](#)
- [Layout](#)
- [Grouping](#)
- [Coloring](#)
- [Labels](#)

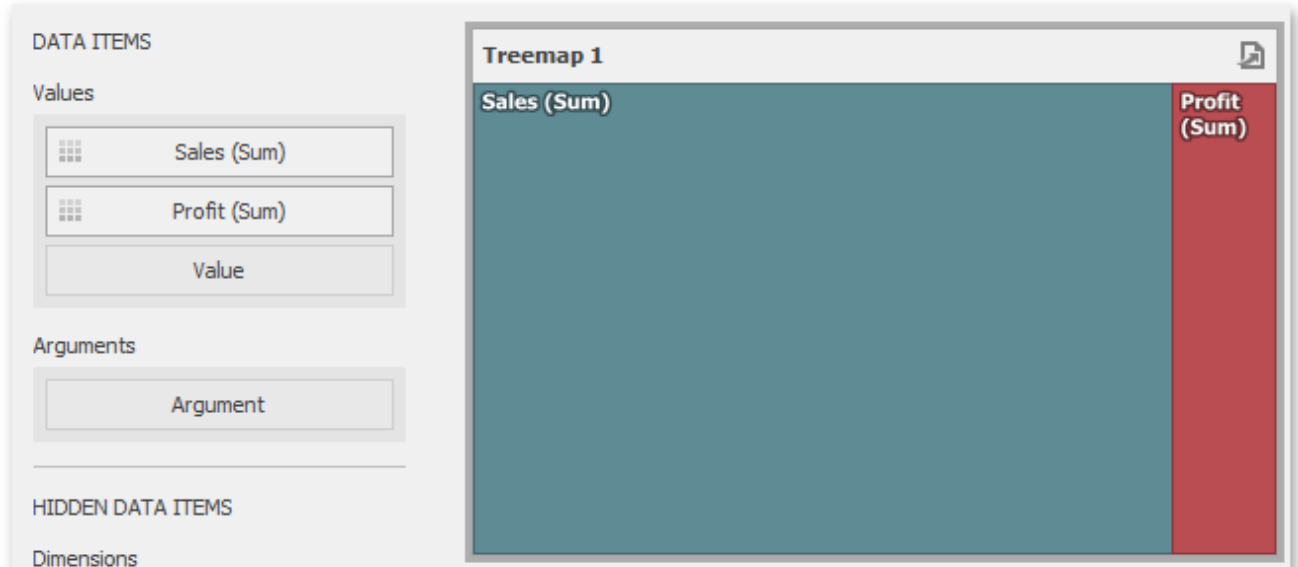
Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Providing Data](#)

The Dashboard Designer allows you to bind various dashboard items to data in a virtually uniform manner. To learn more, see the [Binding Dashboard Items to Data](#) topic. The only difference is in the data sections that the required dashboard item has.

The Treemap dashboard item has the **Values** and **Arguments** data sections that provide numeric and discrete categorical data, respectively. The steps below provide the most common scenarios of binding a Treemap to data.


1. Drop the *Sales* and *Profit* fields to the **Values** section.



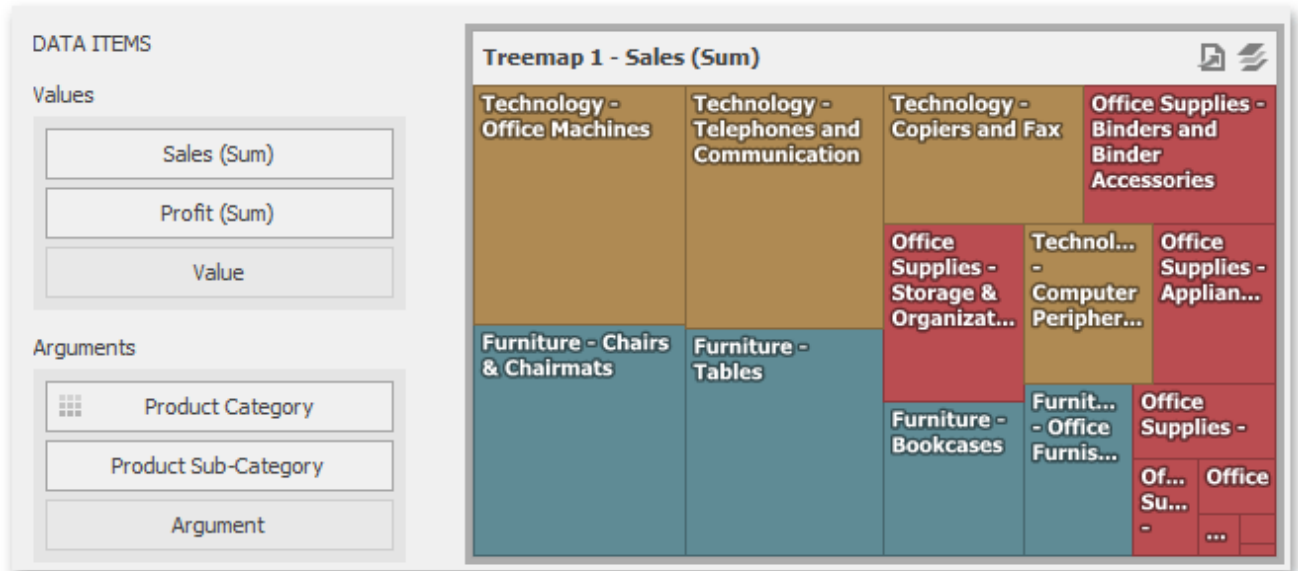
The Treemap will draw two tiles whose sizes correspond to the *Sales* and *Profit* summary values.

2. Drop the *Product Category* field to **Arguments**.



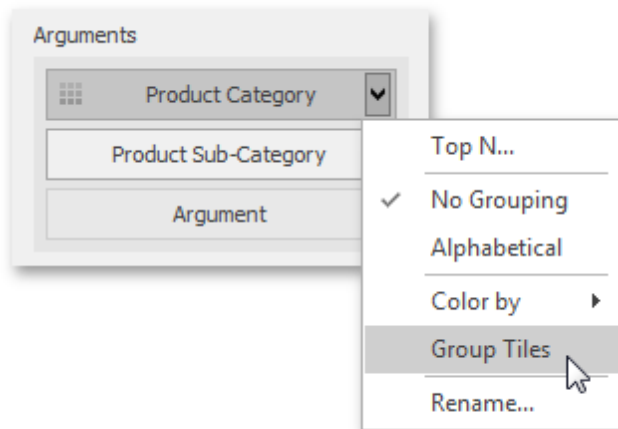
Treemap will create individual tiles for all categories. You can switch between *Sales* and *Profit* values by clicking the  icon in the item's [caption](#) or you can use its context menu.

3. Drop the child *Product Sub-Category* field into **Arguments**.

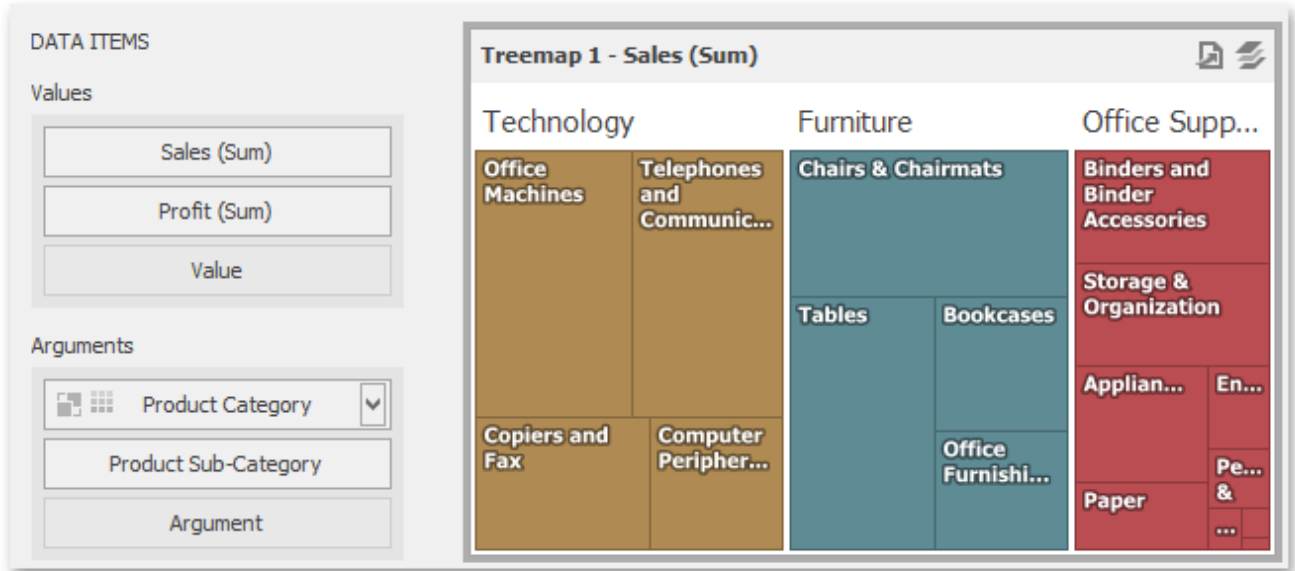


The Treemap will visualize all combinations of categories and corresponding sub-categories using individual tiles.

- If the **Arguments** section contains several dimensions, you can [group](#) child tiles by values of the parent dimension. To group sub-categories inside corresponding categories, click the *CategoryName* menu button and select **Group Tiles**.



Sub-category tiles will be grouped into category groups.



Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Interactivity](#)

This section describes features that enable interaction between the **Treemap** dashboard item and other items. These features include **Master Filtering** and **Drill-Down**.

The section contains the following topics.

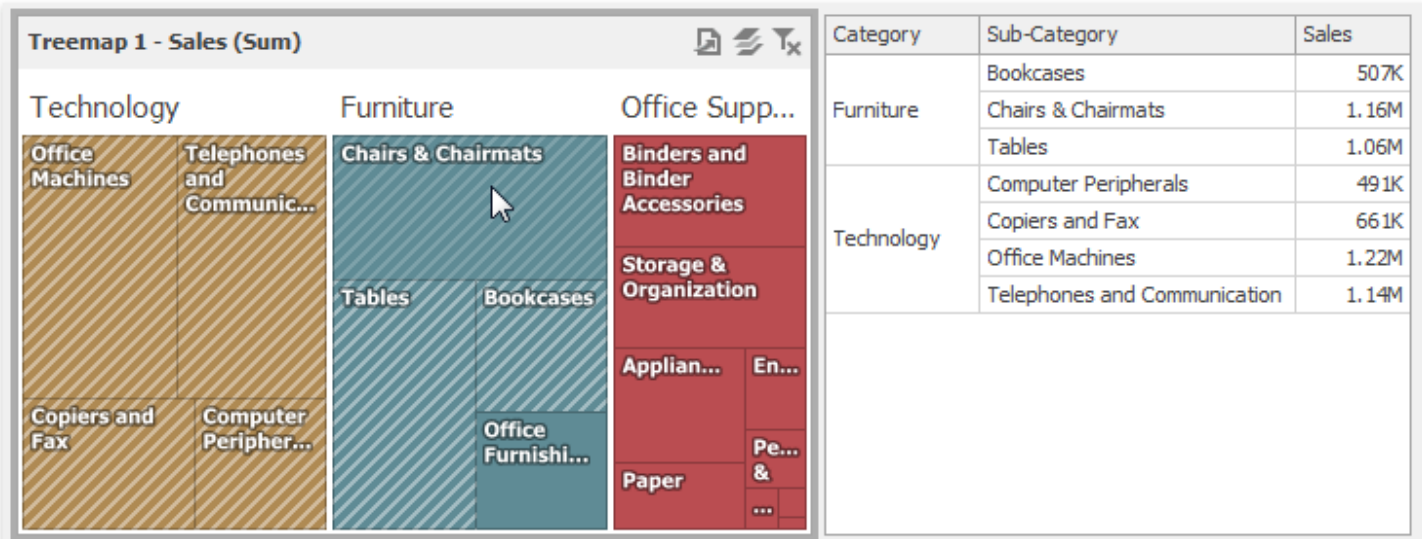
- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Interactivity](#) > [Master Filtering](#)

The **Dashboard Designer** allows you to use any data aware dashboard item as a filter for other dashboard items. To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

The Treemap dashboard item supports filtering by tiles/[groups](#). When Master Filtering is enabled, you can click a tile or group caption (or multiple tiles/groups by holding down the **CTRL** key) to make other dashboard items only display data related to the selected tile/group(s).



Note

If the Single Master Filter is used, you can select only tiles corresponding to the bottommost level.

Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Interactivity](#) > [Drill-Down](#)

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

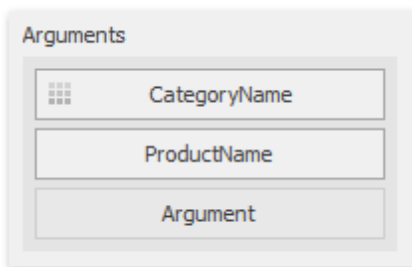
When drill-down is enabled, you can click a tile to view its details.

Note

When [Master Filtering](#) is enabled, you can view the details by double-clicking a tile.



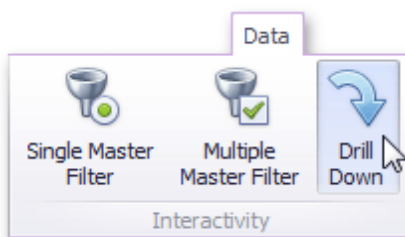
Drill-down requires that the **Arguments** section contains several dimensions, from the least detailed to the most detailed dimension.




Note

In OLAP mode, you can perform drill-down for either a hierarchy data item or several dimension attributes.

To enable drill-down, click the **Drill Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).



To return to the previous detail level (drill up), use the **Drill Up** () button in the caption of the Treemap dashboard item, or the **Drill Up** command in the context menu.

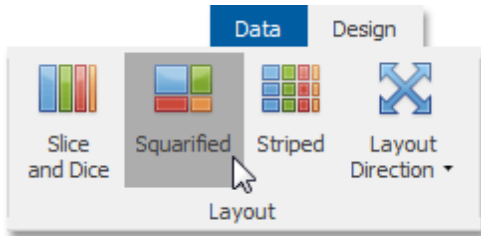
Note

[Grouping](#) is not in effect when the drill-down is enabled.

Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Layout](#)

This topic describes how to change a layout algorithm used to arrange Treemap tiles. To do this in the Designer, use buttons from the **Layout** group placed in the **Design** ribbon tab.



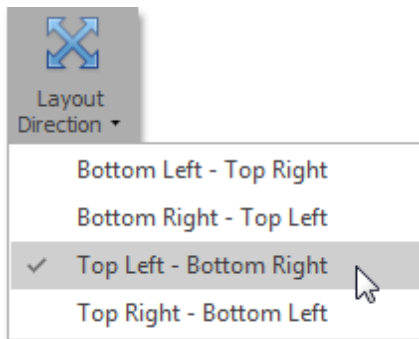
The following algorithms are available.

Algorithm	Example	Description
<p>Slice and Dice</p>		<p>This layout algorithm divides the space between items, slicing it in the specified direction depending on item value.</p>
<p>Squarified</p>		<p>The Squarified algorithm arranges tiles so that their width/height ratio will be closer to 1.</p>

Striped

This algorithm is a modified version of the Squarified algorithm. The difference here is that tiles are drawn side by side as columns or rows.

You can also set a layout direction to specify an arrangement of tiles depending on their sizes. To do this, click the **Layout Direction** button and select the required direction.

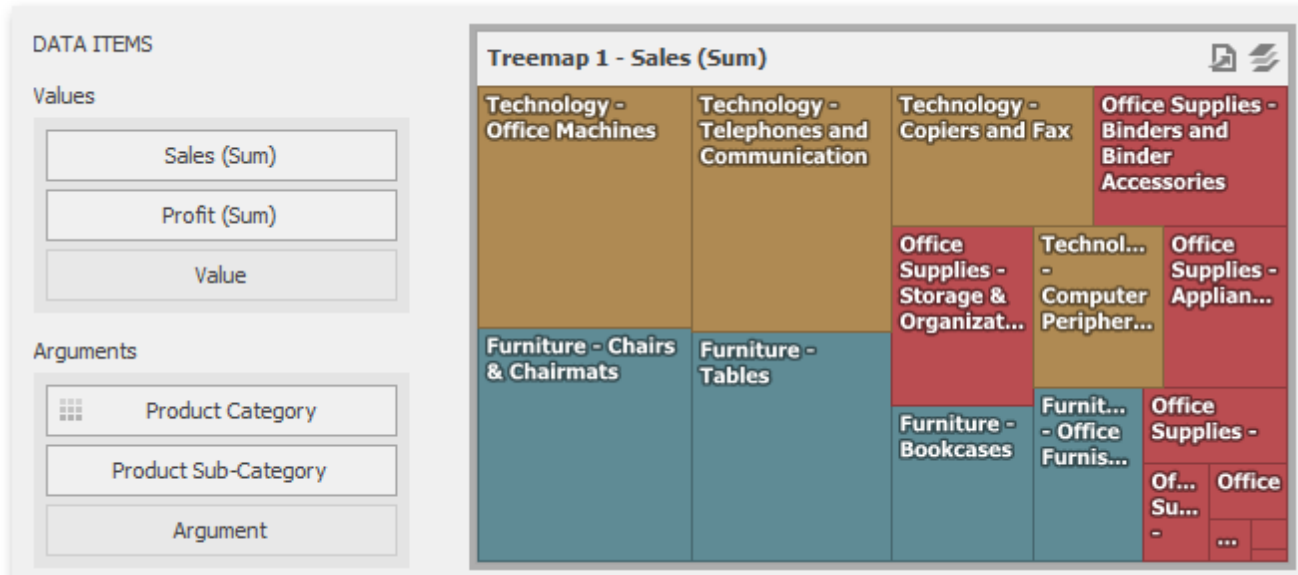


- **Bottom Left - Top Right** - Arrange tiles from the bottom-left to the top-right corner.
- **Bottom Right - Top Left** - Arrange tiles from the bottom-right to the top-left corner.
- **Top Left - Bottom Right** - Arrange tiles from the top-left to the bottom-right corner.
- **Top Right - Bottom Left** - Arrange tiles from the top-right to the bottom-left corner.

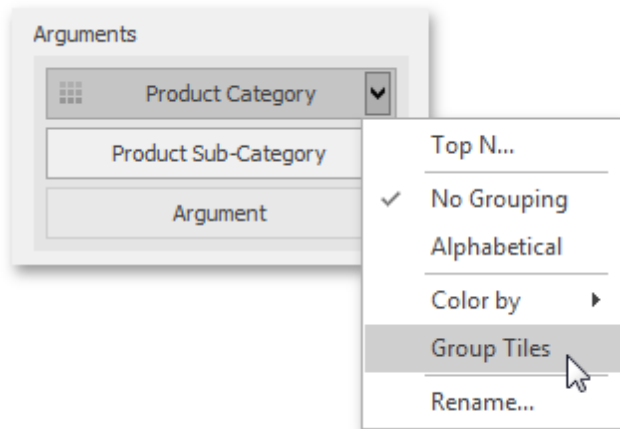
Grouping

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Grouping](#)

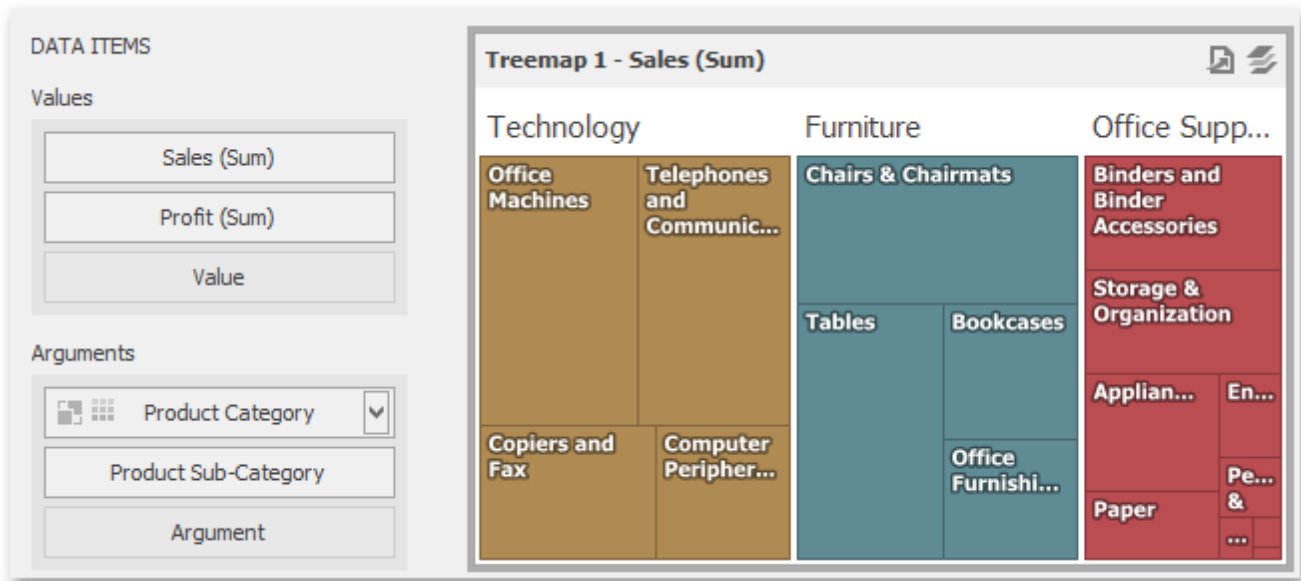
If you use several [arguments](#) in the Treemap, you can group tiles corresponding to child values by parent values. For instance, the following Treemap dashboard item displays combinations of categories and sub-categories.




To group sub-categories inside corresponding categories, click the *Product Category* [menu button](#) and select **Group Tiles**.



Product tiles will be grouped into category groups.



Note that the  icon will be displayed within the *Product Category* dimension.

Coloring

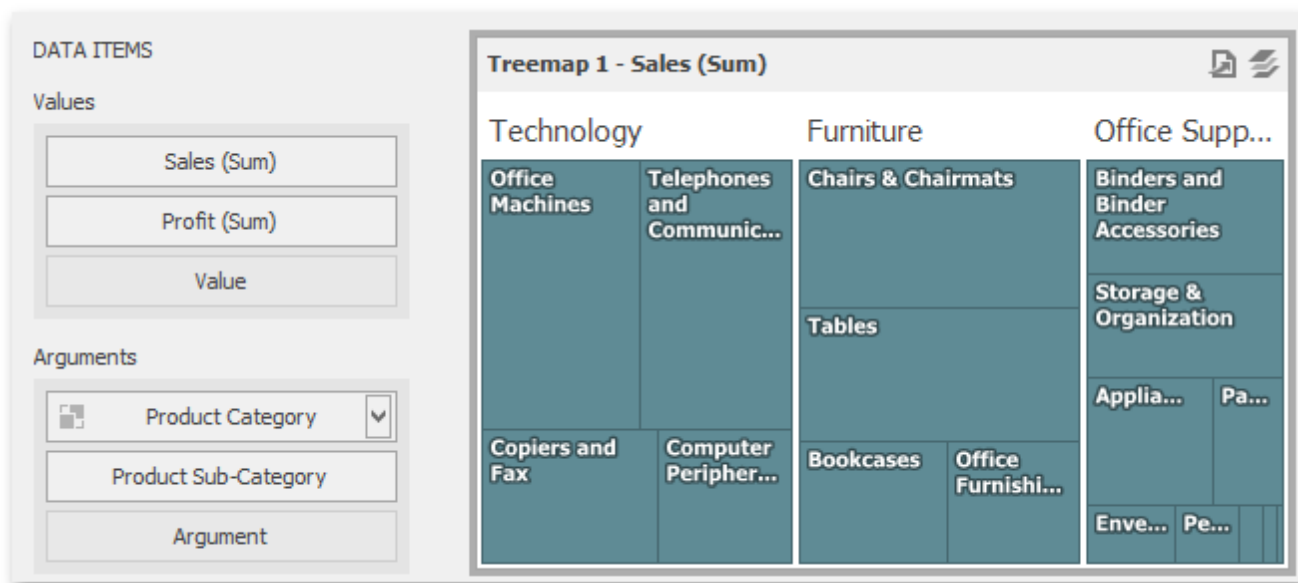
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Coloring](#)

Certain dashboard items provide the capability to color dashboard item elements by associating dimension values/ measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item. To learn more about coloring concepts common for all dashboard items, see the [Coloring](#) section.

By default, the Treemap dashboard item colors its tiles in the following way.

- If the Treemap dashboard item contains only measures (the **Values** section), values corresponding to different measures are colored by hue.
- If the Treemap dashboard item contains arguments (the **Arguments** section), values corresponding to the first argument are colored by hue.

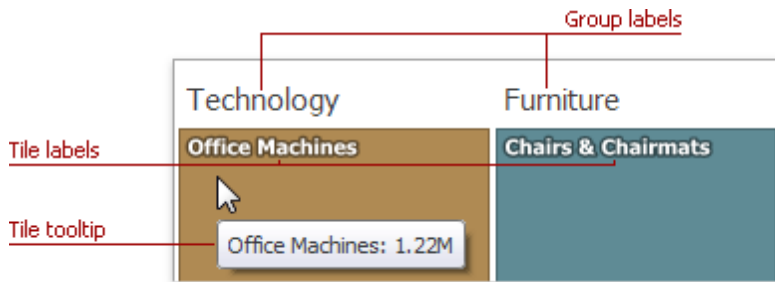
If necessary, you can change the default behavior. For instance, the image below shows the Treemap dashboard item whose measures and argument values are painted with the same color.



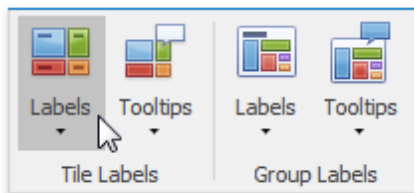
Labels

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Treemap](#) > [Labels](#)

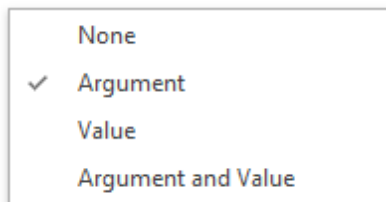
The Treemap displays **labels** that contain descriptions for tiles and **groups**, and provide **tooltips** with additional information.



You can specify which information should be displayed within tile and group labels separately. To do this, use the **Labels** and **Tooltips** buttons in the **Design** Ribbon tab.



Use buttons within the **Tile Labels/Group Labels** ribbon groups to manage tile and group labels, respectively. These buttons invoke the drop-down menu, which is similar for all buttons.



Filter Elements

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Filter Elements](#)

Filter elements represent a special type of dashboard item that allows you to apply filtering to other dashboard items.

Topics in this section.

- [Filter Elements Overview](#)
- [Providing Data](#)
- [Interactivity](#)

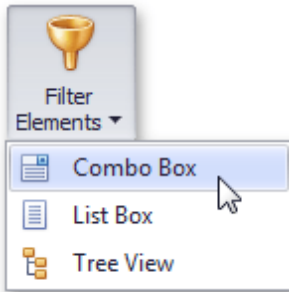
Filter Elements Overview

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Filter Elements](#) > [Filter Elements Overview](#)

The **Dashboard Designer** allows you to create three types of filter elements that provide the capability to filter other dashboard items.

- [Combo Box](#)
- [List Box](#)
- [Tree View](#)

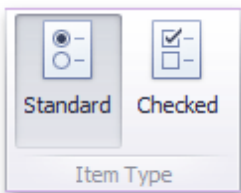
To add the required filter element to the dashboard, use the **Filter Elements** button in the **Home** ribbon tab.



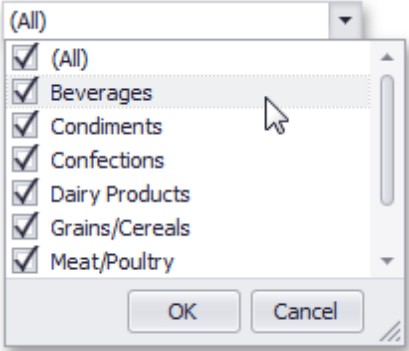
Combo Box

The **Combo Box** dashboard item allows you to select a value(s) from the drop-down list.

You can switch the combo box type in the ribbon **Design** tab.

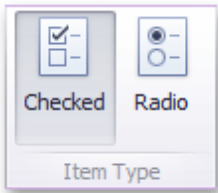


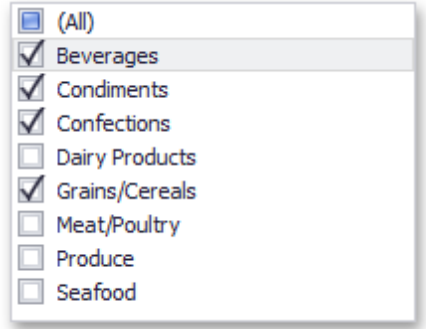

Combo Box Type	Example	Description
Standard		Allows you to select only a single value.

<p>Checked</p>		<p>Allows you to select multiple values in the invoked drop-down list.</p>
-----------------------	---	--

List Box

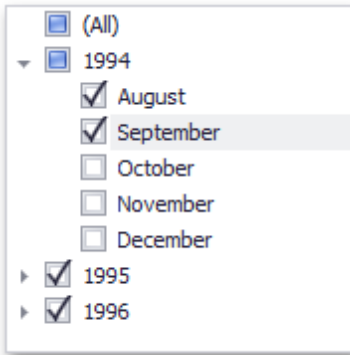
The **List Box** dashboard item allows you to select a value(s) from the list. You can switch the list box type in the ribbon **Design** tab.



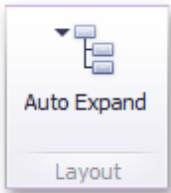
List Box Type	Example	Description
<p>Checked</p>		<p>Allows you to select multiple values in the list box.</p>
<p>Radio</p>		<p>Allows you to select only a single value in the radio group.</p>

Tree View

The **Tree View** dashboard item displays values in a hierarchical way and allows you to expand/collapse nodes.



You can manage the initial expanded state of filter values using the **Auto Expand** button in the **Design** ribbon tab.



Providing Data

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Filter Elements](#) > [Providing Data](#)


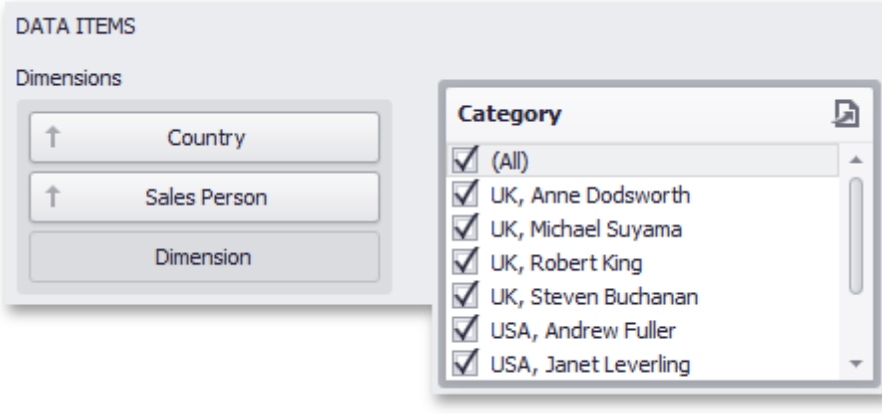
This topic describes how to bind filter elements to data using the **Dashboard Designer**.

The Dashboard Designer allows you to bind various dashboard items to data in a consistent manner (see [Binding Dashboard Items to Data](#) for details), the only difference being the data sections that these dashboard items comprise.

Binding Overview

All filter elements provide the **Dimensions** data section, which accepts dimensions used to provide filter values.

To learn about the specifics of binding various filter elements to data, see the table below.


Dashboard Item	Data Sections	Description
<p>Combo Box</p>		<p>The Combo Box filter element can contain several dimensions at the Dimensions data section. In this case, the drop-down list will contain combinations of dimension values.</p>
<p>List Box</p>		<p>The List Box filter element can contain several dimensions at the Dimensions data section. In this case, the list will contain combinations of dimension values.</p>

Tree View

DATA ITEMS

Dimensions

- ↑ Order Date (Year)
- ↑ Order Date (Quarter)
- ↑ Order Date (Month)
- Dimension

Order Date 

- (All)
- ▼ 1994
 - ▼ Q3
 - August
 - September
 - ▶ Q4
- ▶ 1995
- ▶ 1996

The Tree View filter element allows you to display dimension values in a hierarchical way. This can be the set of dimensions with different [group intervals](#) (for instance, Year/Quarter/Month) or the set of related dimensions (for instance, geographical data such as continents/countries/cities).

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Filter Elements](#) > [Interactivity](#)

This document describes the filtering capabilities supported by filter elements. You can use filter elements to apply master filtering to other dashboard items or introduce hierarchical filtering by adding several connected filters.

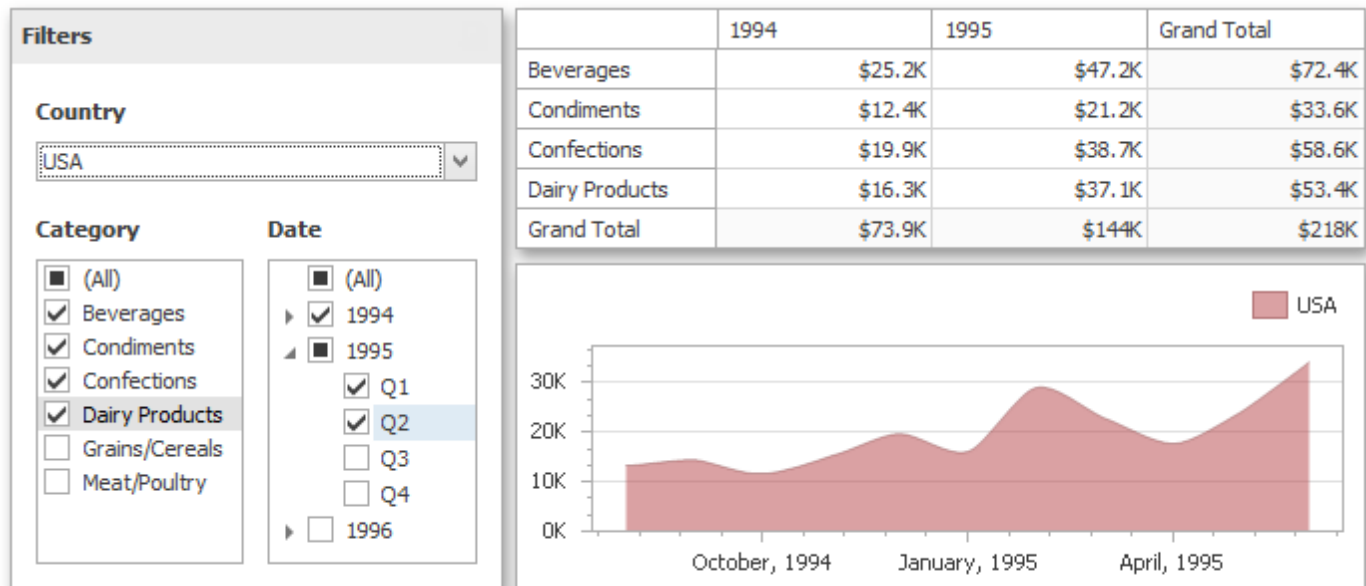
Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

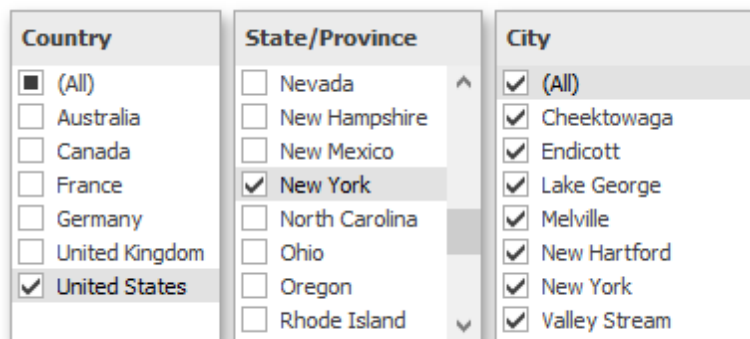
Important

Note that filter elements do not support Master Filter selection modes. You can switch the selection mode by [changing the type](#) of the required filter element.

Depending on the filter element type, you can select a value(s) to make other dashboard items display only data related to the selected value(s).



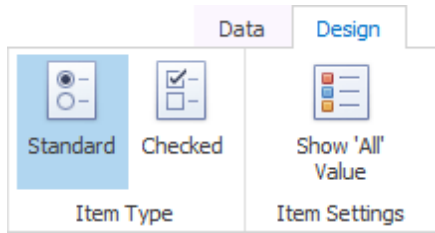
You can also create a set of related filter elements containing relevant filter values. For instance, in the image below, the **State/Province** filter element contains states related to the 'United States' value, while the **City** filter element contains cities related to the 'New York' value.



Disable the **Ignore Master Filters** option for the required filter element to allow applying filtering to this element.

Filter Element Options

Filter elements provide the capability to specify whether to enable the *(All)* option that allows you to apply filtering by all values. To do this, use the **Show 'All' Value** button in the **Design** ribbon tab.



Note that this capability is supported by the 'Standard' Combo Box and 'Radio' List Box filter elements.

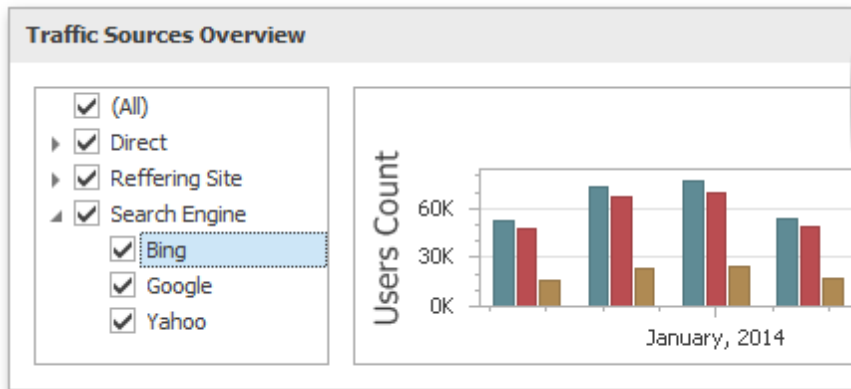
Dashboard Item Group

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Designing Dashboard Items](#) > [Dashboard Item Group](#)

DevExpress Dashboard provides the capability to combine dashboard items into a group. The dashboard item group serves two main purposes.

- Combine dashboard items within the dashboard into a separate [layout group](#).
- Manage [interaction](#) between dashboard items within and outside the group.

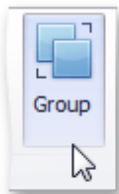
For instance, you can combine related [filter elements](#) and [data visualization dashboard items](#) into a group.



- [Create a Group](#)
- [Interactivity](#)

Create a Group

To create a new group, use the **Group** button in the **Home** ribbon tab.



You can add dashboard items to a group and manage item layout using [drag-and-drop](#). To learn how to manage a group's caption, see the [Dashboard Item Caption](#) topic.

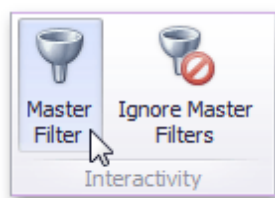
Note

Note that a dashboard item group cannot be added to another group.

Interactivity

The dashboard item group provides the capability to manage [interaction](#) between dashboard items within and outside the group.

The **Master Filter** button allows you to specify whether the current group allows you to filter external dashboard items using master filter items contained within the group. If this option is disabled, master filter items contained within the group can filter only dashboard items from this group.



The **Ignore Master Filters** button allows you to isolate dashboard items contained within the group from being filtered using external master filter items.

Data Shaping

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#)

This section describes how to perform various data shaping operations (such as grouping, sorting and filtering) in the **Dashboard Designer**.

The section contains the following topics.

 [Summarization](#)

 [Grouping](#)

 [Sorting](#)

 [Filtering](#)

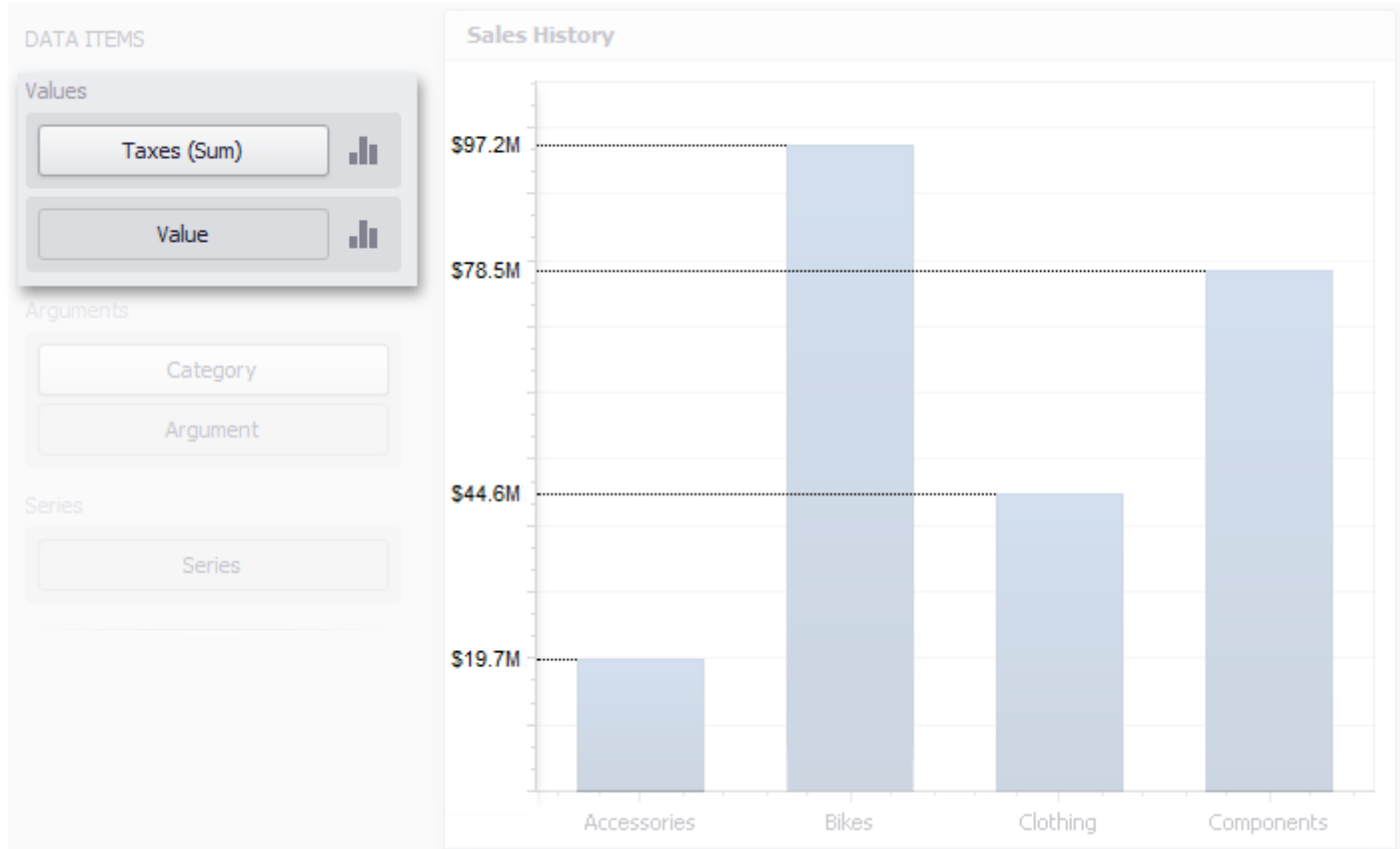
 [Top N](#)

 [Formatting Data](#)

Summarization

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Summarization](#)

To obtain numeric values that should be displayed within a dashboard item, Dashboard calculates a summary function against the specified measure.



This topic describes how to specify which summary function should be calculated against a particular measure.

The following sections are available.

- [Summary Function Types](#)
- [Changing Summary Type](#)

Summary Function Types

The following summary functions are available.

- **Count** - The number of values (excluding **Null** and **DBNull** values). This is the only summary type that can be calculated against non-numeric data.
- **Count Distinct** - The number of distinct values.
- **Sum** - The sum of the values.

$$Sum = \sum_i v_i$$

- **Min** - The smallest value.
- **Max** - The largest value.
- **Average** - The average of the values.

$$\bar{v} = \frac{1}{n} \cdot \sum_i v_i$$

- **StdDev** - An estimate of the standard deviation of a population, where the sample is a subset of the entire population.

$$StdDev = \sqrt{\frac{1}{n-1} \cdot \sum_i (v_i - \bar{v})^2}$$

- **StdDevP** - The standard deviation of a population, where the population is the entire data to be summarized.

$$StdDevP = \sqrt{\frac{1}{n} \cdot \sum_i (v_i - \bar{v})^2}$$

- **Var** - An estimate of the variance of a population, where the sample is a subset of the entire population.

$$Var = \frac{1}{n-1} \cdot \sum_i (v_i - \bar{v})^2$$

- **VarP** - The variance of a population, where the population is the entire data to be summarized.

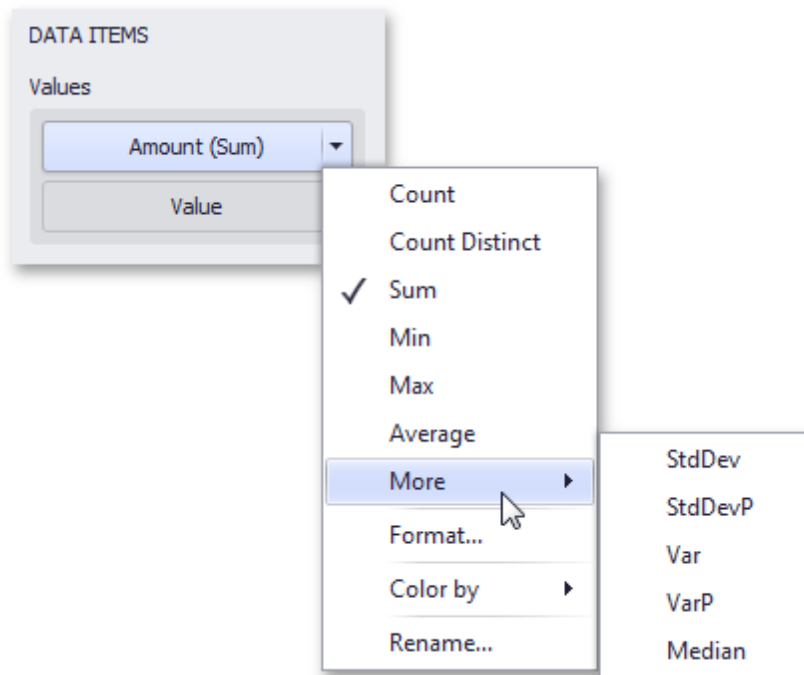
$$VarP = \frac{1}{n} \cdot \sum_i (v_i - \bar{v})^2$$

- **Median** - The *median* of the values (excluding **Null** and **DBNull** values). A *median* is the number separating the higher half of a value range from the lower half.

Changing Summary Type

By default, Dashboard calculates **Sum** for numeric measures and **Count** for measures that contain another type of data.

You can change the summary function type for numeric measures. To do this in the Designer, invoke the data item menu and select the desired summary type. Less common summary types are organized in the **More** submenu.



Grouping

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Grouping](#)

The **Dashboard Designer** allows you to group dimension values and display summaries for entire groups rather than individual values.

You can arrange dimension values in groups of different sizes by specifying the appropriate **group interval**. For instance, date-time values can be grouped by years, months, quarters, etc.

This topic lists the supported text and date-time group intervals, and describes how to change the group interval.

The following sections are available.

- [Text Group Intervals](#)
- [Date-Time Group Intervals](#)
- [Changing Group Interval](#)

Text Group Intervals

String values support the following grouping intervals.

No Grouping	Each value is displayed "as is".
Alphabetical	Values are grouped alphabetically (e.g., A, B, C, ... Z).

Date-Time Group Intervals

Date-time values support the following group intervals.

Note

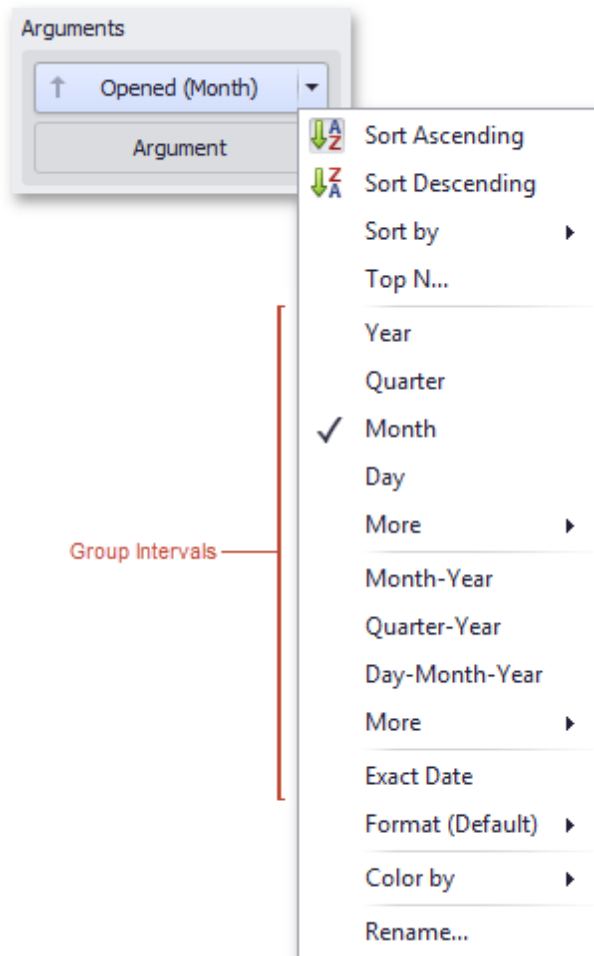
Examples in the table below are formatted using the default settings. To learn how to customize format settings, see [Formatting Data](#).

Group interval	Description	Examples
Year	Values are grouped by the year.	2010, 2011, 2012
Quarter	Values are grouped by the quarter.	Q1, Q2, Q3, Q4
Month	Values are grouped by the month.	January, February, March, ... December
Day	Values are grouped by the day of the month.	1, 2, 3, ... 31
Hour	Values are grouped by the hour.	0, 1, 2, ... 23
Minute	Values are grouped by the minute.	0, 1, 2, ... 59
Second	Values are grouped by the second.	0, 1, 2, ... 59
Day of the Year	Values are grouped by the day of the year.	1, 2, 3, ... 365
Day of the Week	Values are grouped by the day of the week.	Sunday, Monday, Tuesday, ... Saturday
Week of the Year	Values are grouped by the week of the year.	1, 2, 3, ... 52
Week of the Month	Values are grouped by the week of the month.	1, 2, 3, 4, 5

Month-Year	Values are grouped by the year and month.	January 2012, February 2012, ... December 2012, January 2013, ...
Quarter-Year	Values are grouped by the year and quarter.	Q3 2012, Q4 2012, Q1 2013, Q2 2013, ...
Day-Month-Year	Values are grouped by date.	3/4/2012, 3/5/2012, 3/6/2012, ...
Date-Hour	Values are grouped by date with the hour value.	3/4/2012 0:00 AM, 3/4/2012 1:00 AM, 3/4/2012 2:00 AM, ...
Date-Hour-Minute	Values are grouped by date with the hour and minute values.	3/4/2012 0:00 AM, 3/4/2012 0:01 AM, 3/4/2012 0:02 AM, ...
Date-Hour-Minute-Second	Values are grouped by date with the hour, minute and second values.	3/4/2012 0:00:00 AM, 3/4/2012 0:00:01 AM, 3/4/2012 0:00:02 AM, ...
Exact Date	Each value is displayed "as is".	2009, Q2 2009, 6/15/2009 1:45:30 PM, ...

Changing Group Interval

To specify the group interval in the Designer, invoke the data item menu and select the desired group interval. Less common group intervals are organized in the **More** submenus.



Sorting

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Sorting](#)

The Dashboard Designer allows you to easily change the sort order of values within a dashboard item. You can also enable sorting by parameter values.

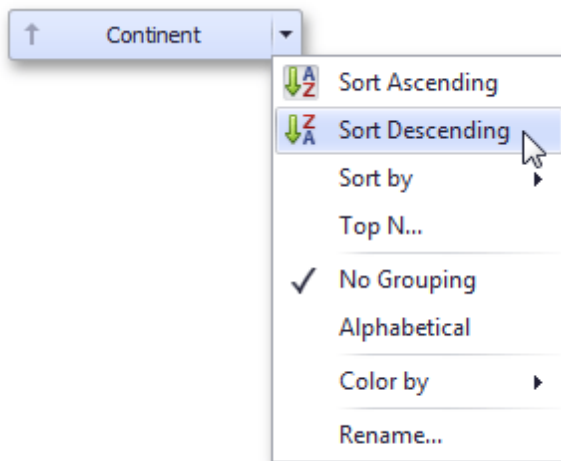
- [Changing Sort Order](#)
- [Sorting by Measure Values](#)
- [OLAP Sorting Specifics](#)

Changing Sort Order

The sort order of dimension values is indicated with an arrow.



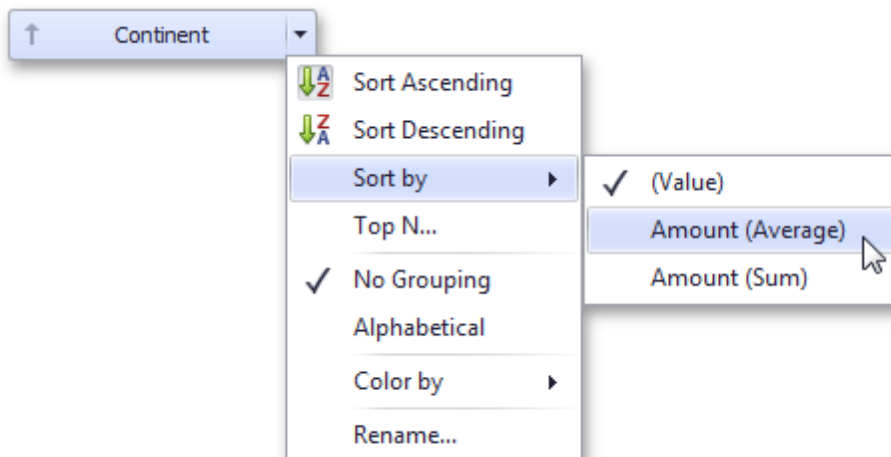
To change the sort order in the Designer, click the data item. You can also toggle sorting from the data item menu.



Sorting by Measure Values

Dashboard allows you to sort dimension values by summary values calculated for a specific measure.

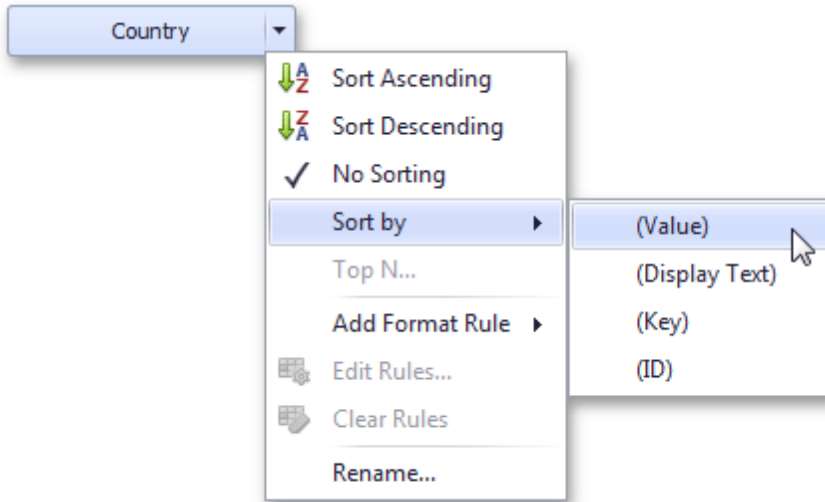
To enable sorting by measure in the Designer, use the **Sort by** submenu in the dimension's menu.



You can also sort dimension values by the values of [hidden measures](#).

OLAP Sorting Specifics

In [OLAP](#) mode, you can use the following options to specify the sort order for attribute members.



- **No Sorting** - Specifies the default server sorting for the current attribute.
- **Sort by** - Allows you to choose the OLAP member property by whose values sorting is performed:
 - **(Value)** - sorting is performed by member values;
 - **(Display Text)** - sorting is performed by captions associated with members;
 - **(Key)** - sorting is performed by member keys;
 - **(ID)** - sorting is performed by member IDs.

Filtering

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Filtering](#)

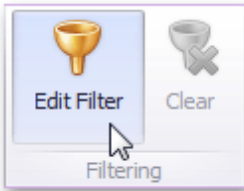
The **Dashboard** allows you to filter a [query](#) of the [SQL Data Source](#) or apply filtering to a specific data-aware dashboard item.

This topic describes how to enable and reset filtering.

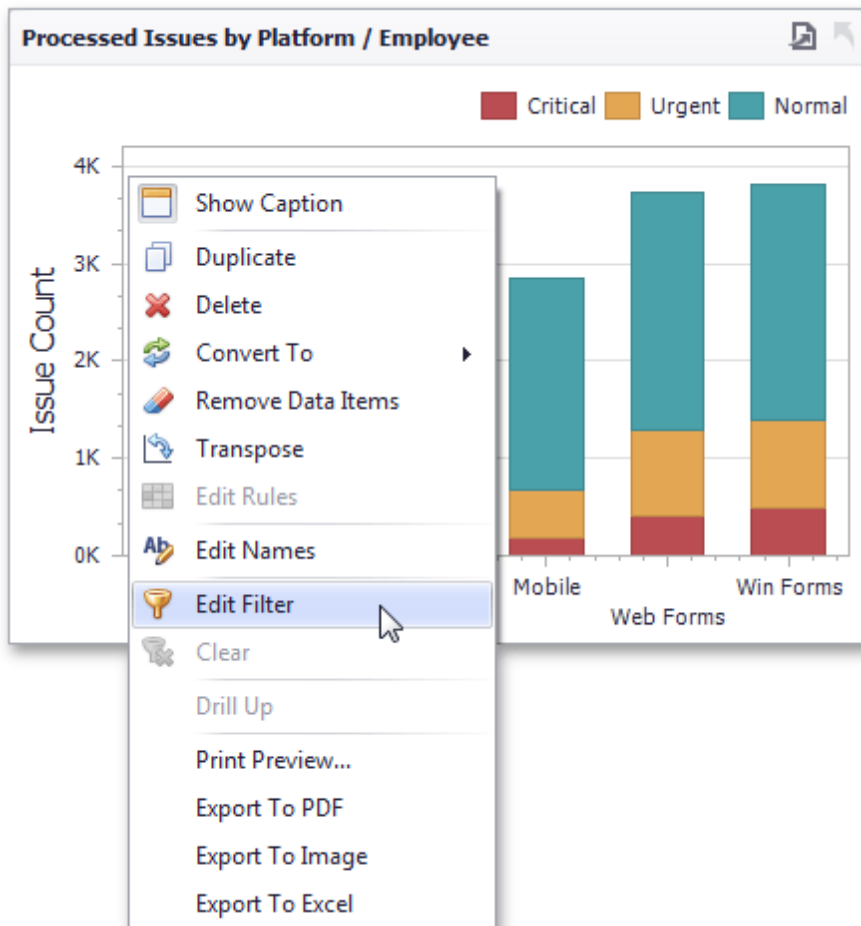
Apply Filtering

To configure filtering, select the target dashboard item and do one of the following.

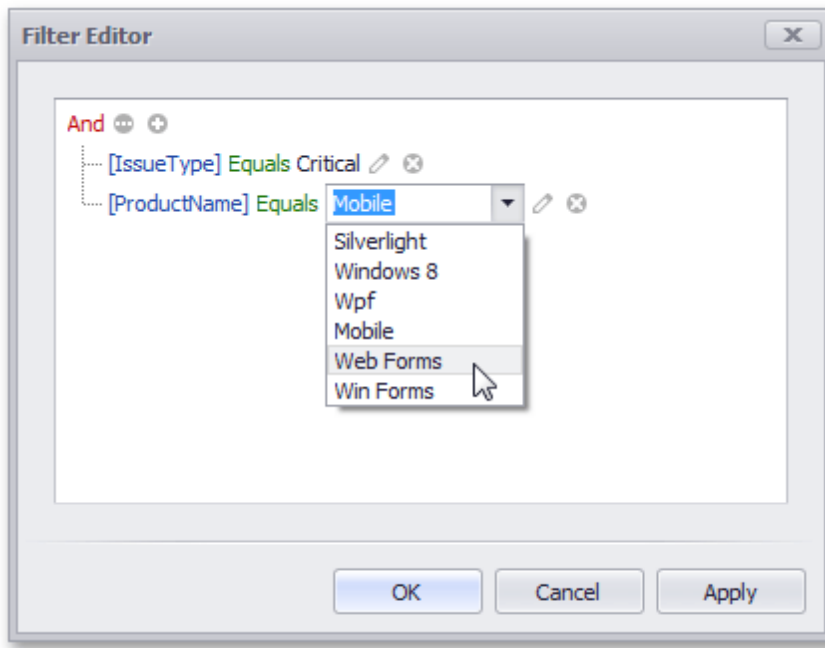
- If you are using a Ribbon menu, click the **Edit Filter** button in the **Data** tab.



- Right-click a dashboard item and select **Edit Filter** from its context menu.



This will invoke the **Filter Editor** dialog. Use this dialog to build filter criteria with a convenient tree-like interface.

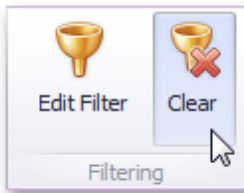


You can use [hidden dimensions](#) within the Filter Editor dialog, allowing you to filter data based on their values.

Clear Filtering

To clear filtering in the Designer, select the target dashboard item and do one of the following.

- If you are using a Ribbon menu, click the **Clear** button in the **Data** tab.

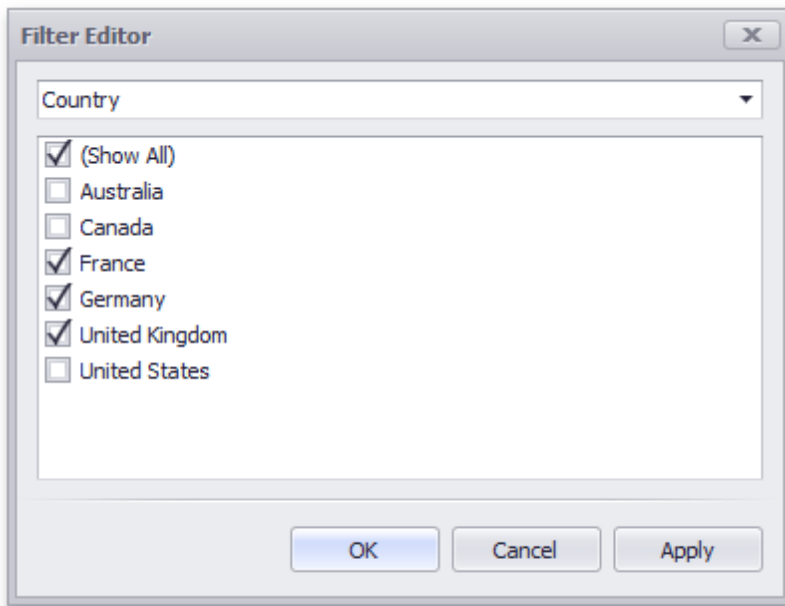


- Right-click a dashboard item and select **Clear** from its context menu.

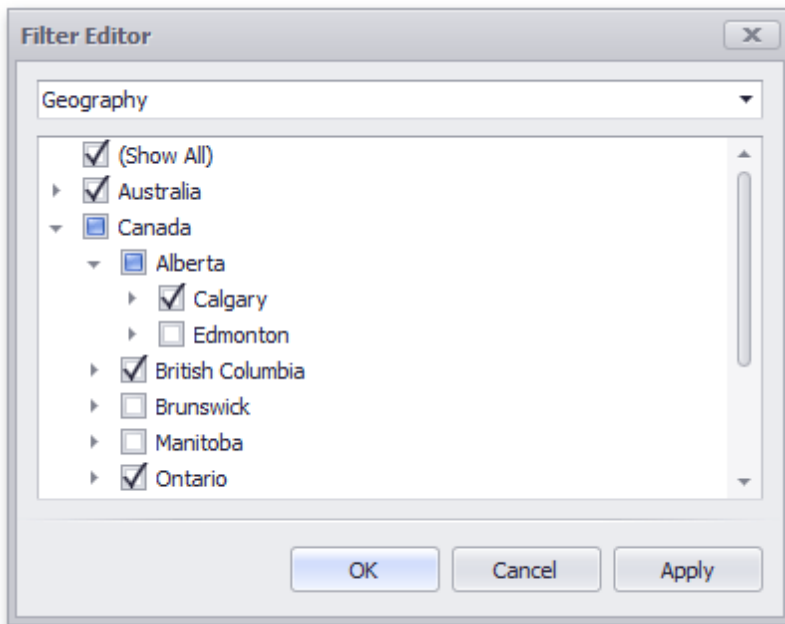
OLAP Filtering Specifics

You cannot apply filtering by building complex filter criteria in [OLAP](#) mode. Instead, you can filter dimension attributes and hierarchies by manually selecting the values you wish (or do not wish) to include in the dashboard.

For dimension attributes, the Filter Editor contains a list of all values. You can select the values that you wish to display.



For hierarchies, a tree is displayed instead, allowing you to filter individual values at any hierarchy level.



See Also

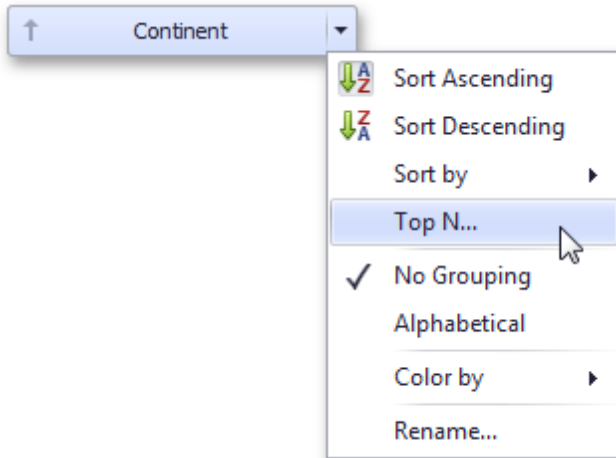
[Pass Query Parameters](#)

Top N

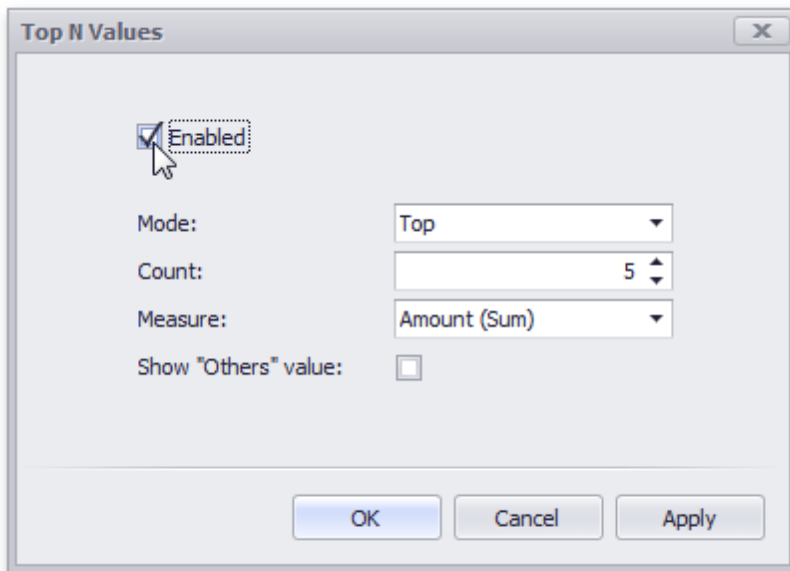
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Top N](#)

The **Top N** feature allows you to display only a limited number of values that correspond to the highest or lowest values of a particular measure.

To display the top values in a dimension, select **Top N** from the data item menu.



This invokes the **Top N Values** dialog.



In this dialog, check the **Enabled** check box and specify the following settings.

Mode	Specifies whether top or bottom values should be displayed.
Count	The number of values to be displayed.
Measure	The parameter that will determine the top or bottom value.
Show "Others" value	If enabled, all values that are not the top/bottom values are consolidated in the "Others" value.

You can use the [hidden measure](#) as a parameter that will determine the top or bottom value.

Formatting Data

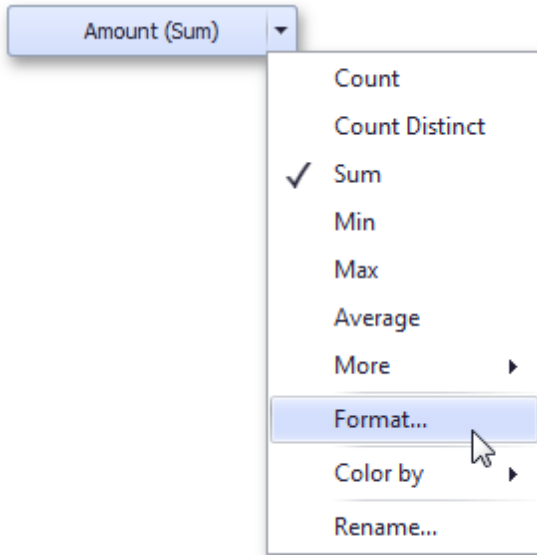
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Shaping](#) > [Formatting Data](#)

Dashboard allows you to customize various data format settings for numeric and date-time values.

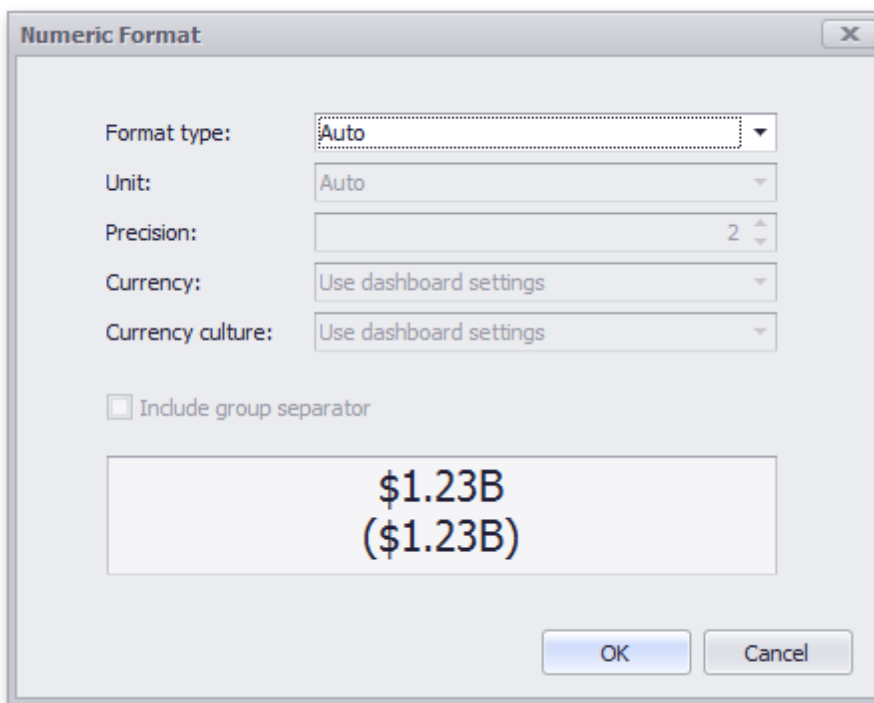
- [Formatting Numeric Values](#)
- [Formatting Date-Time Values](#)
- [Currency Formatting Specifics](#)

Formatting Numeric Values

To specify a format for numeric values, select **Format** from the data item menu.



This invokes the **Numeric Format** window.



In the **Format type** field, select the required format type.

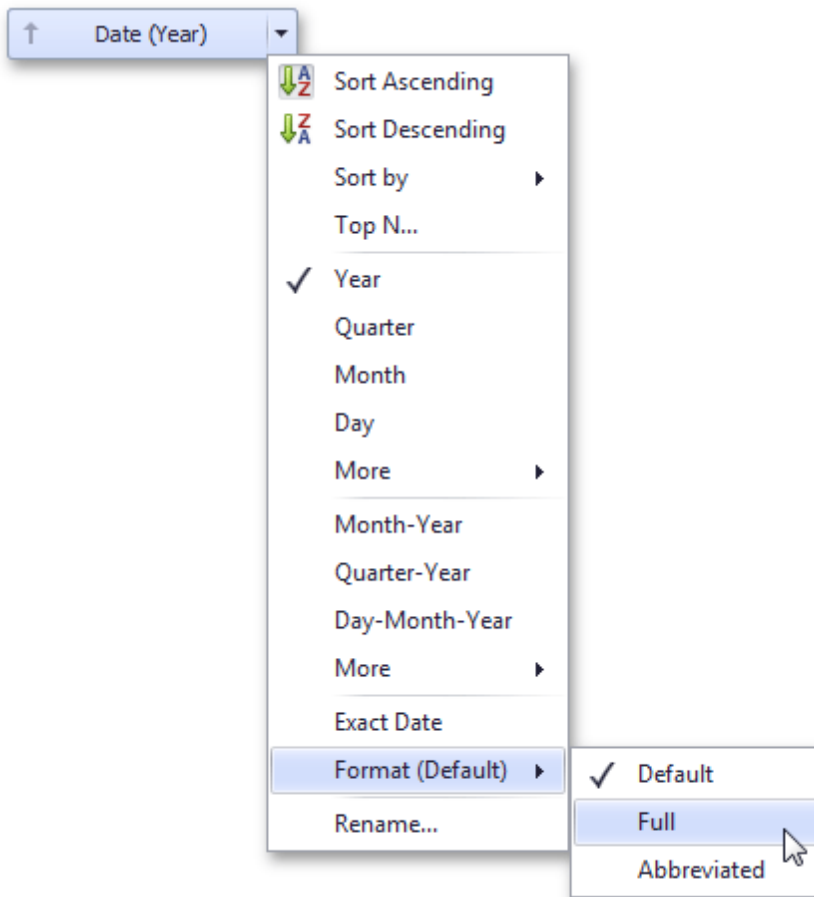
Auto	Format settings are automatically determined based on the data type.
General	Converts a number to the most compact of either fixed-point or scientific notation, depending on the type of the number.
Number	Converts a number to a string of the "-d,ddd,ddd.ddd" form where "-" indicates a negative number symbol (if required), "d" indicates a digit (0-9), ",", indicates a group separator, and "." indicates a decimal point symbol.
Currency	Converts a number to a string that represents a currency amount. To learn about currency formatting specifics, see the Currency Formatting Specifics section of this document.
Scientific	Converts a number to a string of the "-d.dddE+ddd" or "-d.ddde+ddd" form where each "d" indicates a digit (0-9).
Percent	Multiplies a number by 100 and converts it to a percentage string.

Other format settings are in effect for only specific format types.

Setting	Description	Format Types
Unit	The unit to which values should be converted.	Number, Currency
Precision	The number of fractional digits that should be displayed.	Scientific, Percent
Currency	Defines the currency sign and format settings that should be used to display currency values. To learn about currency formatting specifics, see the Currency Formatting Specifics section of this document.	Currency
Currency culture	For currencies used in a region with several cultures, specifies the culture that defines format settings.	Currency
Include group separator	Specifies whether or not separators should be inserted between digit groups.	Number, Currency, Percent

Formatting Date-Time Values

To specify a format for date-time values, use the **Format** submenu in the data item menu.



This submenu lists the available format types that depend on the selected group interval (for details on group intervals, see [Grouping](#)).

Note

Specific group intervals do not have format options. This means that corresponding values can only be presented in a single manner. The **Format** submenu is not displayed for such group intervals.

The following list shows format types by group interval.

- Year
 - *Full* - The full year pattern (Example - 6/15/2017 1:45:30 PM -> 2017 (en-US)).
 - *Abbreviated* - The year from 00 to 99 (Example - 6/15/2017 1:45:30 PM -> 17 (en-US)).
- Quarter
 - *Full* - The full quarter pattern (Example: 6/15/2017 1:45:30 PM -> Q2 (en-US)).
 - *Numeric* - The quarter from 1 through 4 (Example: 6/15/2017 1:45:30 PM -> 2 (en-US)).
- Month
 - *Full* - The full name of the month (Example: 6/15/2017 1:45:30 PM -> June (en-US)).
 - *Abbreviated* - The abbreviated name of the month (Example: 6/15/2017 1:45:30 PM -> Jun (en-US)).
 - *Numeric* - The month from 1 through 12 (Example: 6/15/2017 1:45:30 PM -> 6 (en-US)).
- Hour
 - *Long* - Long hour pattern, 12-hour format (Example: 6/15/2017 1:45:30 PM -> 1:00 PM).
 - *Short* - Short hour pattern, 24-hour format (Example: 6/15/2017 1:45:30 PM -> 13).
- Day of Week
 - *Full* - The full name of the day of the week (Example: 6/15/2017 1:45:30 PM -> Monday (en-US)).

- *Abbreviated* - The abbreviated name of the day of the week (Example: 6/15/2017 1:45:30 PM -> Mon (en-US)).
- *Numeric* - The day of the week from 1 through 7 (Example: 6/15/2017 1:45:30 PM -> 2 (en-US)).
- Day-Month-Year
 - *Long* - Long date pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 (en-US)).
 - *Short* - Short date pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 (en-US)).
- Date-Hour
 - *Long* - Long date pattern, long hour pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:00 PM (en-US)).
 - *Short* - Short date pattern, long hour pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:00 PM (en-US)).
 - *Time only* - Long hour pattern (Example: 6/15/2017 1:45:30 PM -> 1:00 PM (en-US)).
- Date-Hour-Minute
 - *Long* - Long date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:45 PM (en-US)).
 - *Short* - Short date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:45 PM (en-US)).
 - *Time only* - Long time pattern (Example: 6/15/2017 1:45:30 PM -> 1:45 PM (en-US)).
- Date-Hour-Minute-Second
 - *Long* - Long date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:45:30 PM (en-US)).
 - *Short* - Short date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:45:30 PM (en-US)).
 - *Time only* - Long time pattern (Example: 6/15/2017 1:45:30 PM -> 1:45:30 PM (en-US)).

The list below illustrates format types related to the **Exact Date** group interval.

- Year
 - *Full* - The full year pattern (Example: 6/15/2017 1:45:30 PM -> 2017 (en-US)).
 - *Abbreviated* - The year from 00 to 99 (Example: 6/15/2017 1:45:30 PM -> 17 (en-US)).
- Quarter
 - *n/a* - The default year and full quarter pattern (Example: 6/15/2017 1:45:30 PM -> Q2 2017 (en-US)).
- Month
 - *n/a* - The default year pattern and the full name of the month (Example: 6/15/2017 1:45:30 PM -> June, 2017 (en-US)).
- Day
 - *Long* - Long date pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 (en-US)).
 - *Short* - Short date pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 (en-US)).
- Hour
 - *Long* - Long date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:00 PM (en-US)).
 - *Short* - Short date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:00 PM (en-US)).
 - *Time only* - Long time pattern (Example: 6/15/2017 1:45:30 PM -> 1:00 PM (en-US)).
- Minute
 - *Long* - Long date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:45 PM (en-US)).
 - *Short* - Short date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:45 PM (en-US)).

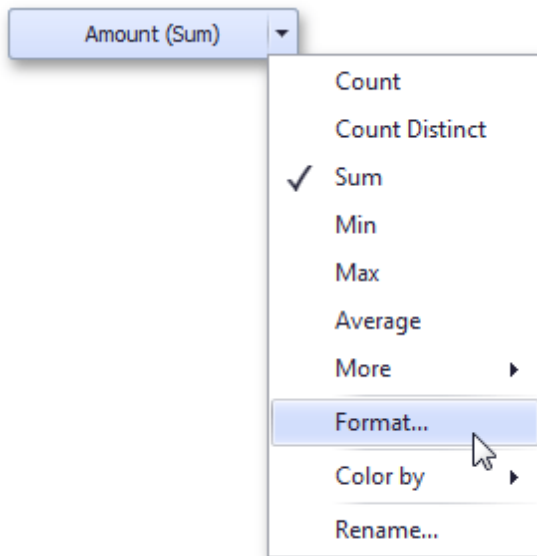
- *Time only* - Long time pattern (Example: 6/15/2017 1:45:30 PM -> 1:45 PM (en-US)).
- *Second*
 - *Long* - Long date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> Monday, June 15, 2017 1:45:30 PM (en-US)).
 - *Short* - Short date pattern, long time pattern (Example: 6/15/2017 1:45:30 PM -> 6/15/2017 1:45:30 PM (en-US)).
 - *Time only* - Long time pattern (Example: 6/15/2017 1:45:30 PM -> 1:45:30 PM (en-US)).

Currency Formatting Specifics

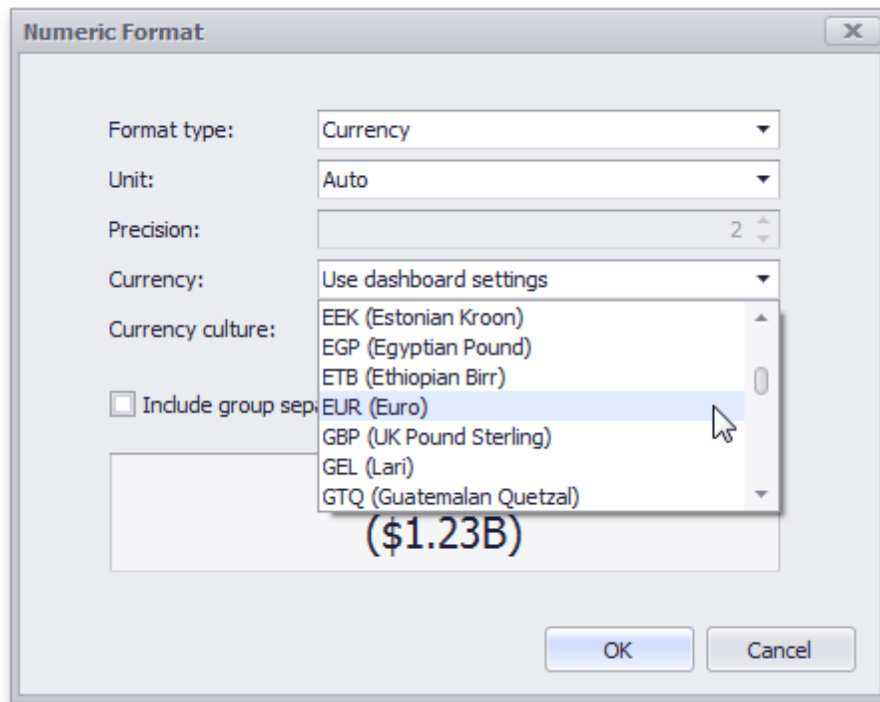
The Dashboard allows you to specify a currency format at two levels: for the entire dashboard and for individual data items.

1. Data Item Currency

To specify which currency to use for a particular data item, select **Format** from the data item menu.



In the **Numeric Format** dialog, select *Currency* in the **Format type** field and use the **Currency** combo box to select the required currency.



Note

This option only affects the way values are displayed. The Dashboard **does not** convert monetary amounts from one currency to another.

For regions with several cultures, you can also select the culture that will be used to format currency values.

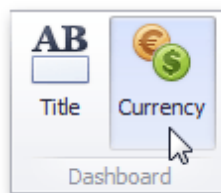


You can also apply the default dashboard currency by selecting *Use dashboard settings* in the **Currency** field.

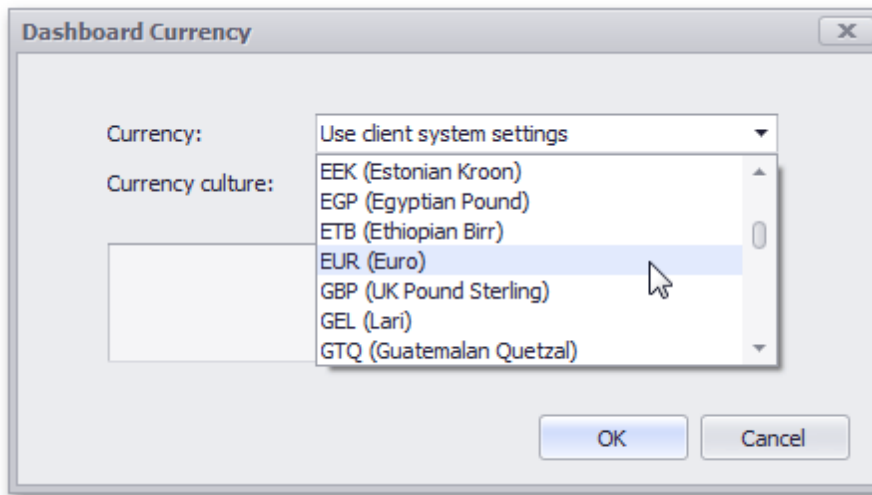
2. Dashboard Currency

You can also specify the default currency for the dashboard. This setting will be applied to dashboard items that have no currency defined.

To set the dashboard currency, click the **Currency** button in the Ribbon.



This invokes the **Dashboard Currency** window. In this window, select the required currency using the **Currency** combo box.

**Note**

This option only affects the way values are displayed. The Dashboard **does not** convert monetary amounts from one currency to another.

For regions with several cultures, you can also select the culture that will be used to format currency values.



Additionally, you can specify the client culture that should be used for the dashboard by selecting the *Use client system settings* item. In this instance, the current system culture will be used in WinForms applications, and the client culture will be used in Web applications.

Interactivity

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Interactivity](#)

This section describes features that enable interaction between various dashboard items. These features include Master Filtering and Drill-Down.

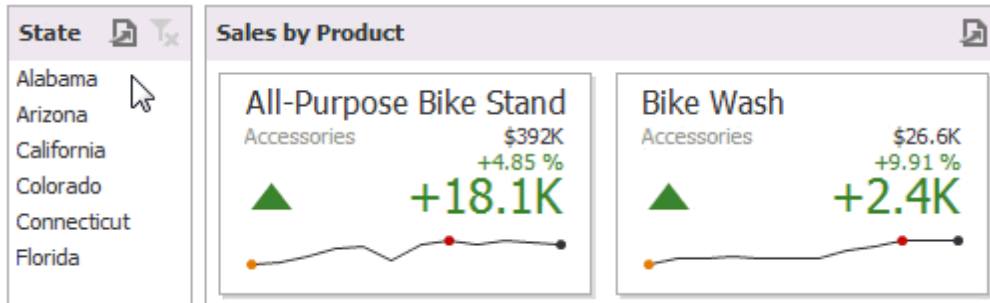
The section consists of the following topics.

- [Master Filtering](#)
- [Drill-Down](#)

Master Filtering

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Interactivity](#) > [Master Filtering](#)

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). You can select elements in a **Master Filter** item (grid records, chart bars, pie segments, etc.) to filter data in other dashboard items by the selected values.



- [Master Filtering Overview](#)
- [Master Filter Settings](#)
- [Apply Filtering](#)

Master Filtering Overview

Dashboard items can be divided into four groups by their master filtering capabilities.

1. **Data visualization dashboard items** allow you to enable master filtering by specifying the selection mode. The following dashboard items allow you to manage their master filtering mode.

- [Chart](#)
- [Scatter Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Choropleth Map](#)
- [Geo Point Maps](#)
- [Treemap](#)

To learn how to manage master filtering for these items, see [Master Filter Settings](#).

2. **Filter elements** represent a special type of dashboard item whose main purpose is to apply filtering to other dashboard items. This capability is always enabled for these dashboard items.

The following filter elements are available.

- Combo Box
- List Box
- Tree View

Instead of switching between standard master filtering modes, some filter elements allow you to switch their type. This allows you to select a single value or multiple values.

To learn more, see the [Filter Elements](#) section.

3. **Range Filter** is a special type of dashboard item that displays a chart with selection thumbs and allows you to filter out values displayed along the argument axis.

To learn more, see the [Range Filter](#) section.

4. **Dashboard item group** allows you to manage interaction between dashboard items in and out of the group.

To learn more about the interactivity capabilities of the dashboard item group, see the **Interactivity**

paragraph in the [Dashboard Item Group](#) topic.

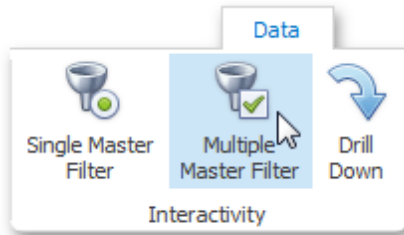
Master Filter Settings

Master Filtering Modes

The Master Filter item supports two selection modes.

- *Multiple* - Allows you to select multiple elements in the Master Filter item.
- *Single* - Allows you to select only one element in the Master Filter item. When this mode is enabled, the default selection will be set to a Master Filter element. You can change this selection, but cannot clear it.

To enable/disable master filtering, use the **Multiple Master Filter** or **Single Master Filter** buttons in the **Data** Ribbon tab.



Note

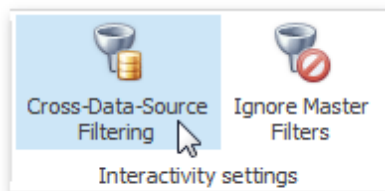
If the selected dashboard item contains several types of elements that can be used for filtering, the Ribbon or Toolbar will provide the appropriate buttons to switch between these types (e.g., the **Arguments** and **Series** buttons in the Chart). For details, refer to the documentation for individual dashboard items in the [Designing Dashboard Items](#) section.

Filtering Across Data Sources

When different items in a dashboard are bound to different data sources, you can specify that a particular Master Filter should be applied across data sources. This means that it will apply filtering to fields with matching names in all data sources.

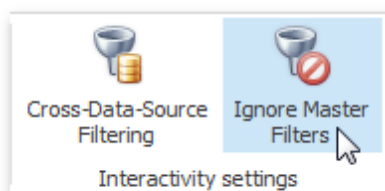
Fields are matched by their full names. For fields in other data sources to be affected by Master Filtering, their names must match the name of the field in the current data source, and they must belong to the same hierarchy level so that their full names also match. For instance, *Customer.City* and *Customer.Address.City* will not be treated as matching fields.

To enable filtering across data sources, use the **Cross-Data-Source Filtering** button in the **Data** Ribbon tab.



Preventing Items from Being Filtered

You can prevent specific dashboard items from being affected by Master Filters. To do this, use the **Ignore Master Filters** button in the **Data** Ribbon tab.



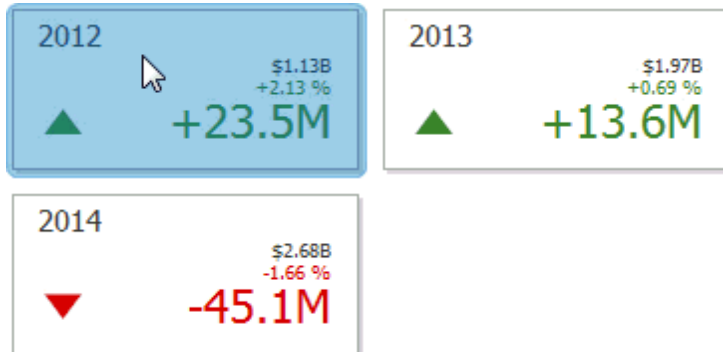
Apply Filtering

To learn how to apply filtering in a specific [dashboard item](#), refer to the **Master Filtering** topic in the **Interactivity** section for this item.

Drill-Down

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Interactivity](#) > [Drill-Down](#)

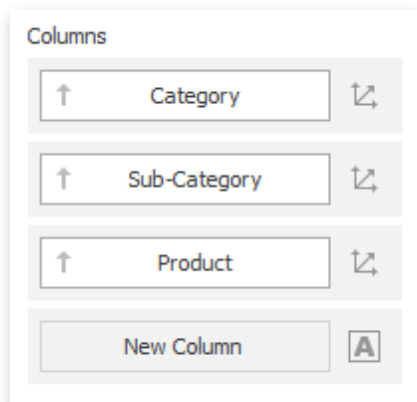
Dashboard provides the **Drill-Down** feature, which allows you to change the detail level of data displayed in a dashboard item. The Drill-Down feature enables users to drill down to display detail data, or drill up to view more general information.



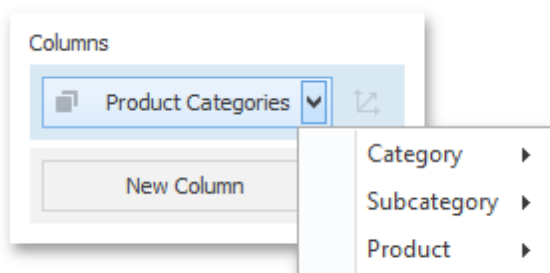
- [Enable Drill-Down](#)
- [Perform Drill-Down](#)

Enable Drill-Down

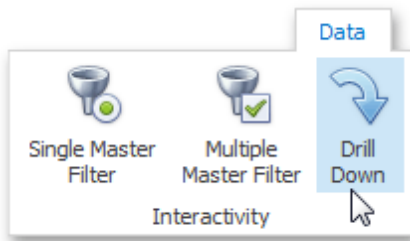
Drill-down requires that the [data section](#) contains several dimensions...



... or a hierarchy data item (in [OLAP mode](#)).



To enable drill-down, click the **Drill-Down** button in the **Data** Ribbon tab (or the  button if you are using the toolbar menu).

**Note**

If the selected dashboard item contains several types of elements that can be used for drill-down, the Ribbon or Toolbar will provide the appropriate buttons to switch between these types (e.g., **Arguments** and **Series** buttons in a Chart). For details, refer to the documentation for the individual dashboard items in the [Designing Dashboard Items](#) topic.

The following dashboard items support the Drill-Down feature.

- [Chart](#)
- [Scatter Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Treemap](#)

Perform Drill-Down

To learn how you can drill down using a particular [dashboard item](#), refer to the **Drill-Down** topic in the **Interactivity** section for this item.

Appearance Customization

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#)

The topics in this section describe how to customize the appearance of a dashboard or any of its elements using conditional formatting and coloring.

This section contains the following topics.

- [Conditional Formatting](#)
- [Coloring](#)

Conditional Formatting

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#)

The Dashboard Designer provides the capability to apply formatting to dashboard item elements whose values meet the specified condition. This feature allows you to highlight specific elements using a predefined set of rules.

To learn more about specifics of using a conditional formatting feature for different dashboard items, see the following topics.

- [Conditional Formatting - Grid](#)
- [Conditional Formatting - Pivot](#)

Product Sales YTD																																																												
Category	Product	Revenue YTD																																																										
Bikes	Mountain-100				\$21M																																																							
	Mountain-200				\$15.7M																																																							
	Road-150				\$11.4M																																																							
	Touring-1000	Sales by State <table border="1"> <thead> <tr> <th></th> <th colspan="2">Bikes</th> <th colspan="2">Clothing</th> </tr> <tr> <th></th> <th>Revenue</th> <th>Units Sold</th> <th>Revenue</th> <th>Units Sold</th> </tr> </thead> <tbody> <tr> <td>Alabama</td> <td>\$6.29M</td> <td>3.67K</td> <td>\$13K</td> <td>204</td> </tr> <tr> <td>Arizona</td> <td>\$6.11M</td> <td>3.52K</td> <td>\$16K</td> <td>252</td> </tr> <tr> <td>California ★</td> <td>\$18.9M</td> <td>12K</td> <td>\$93.7K</td> <td>1.48K</td> </tr> <tr> <td>Colorado</td> <td>\$6.14M</td> <td>3.68K</td> <td>\$11.4K</td> <td>180</td> </tr> <tr> <td>Connecticut</td> <td>\$6.07M</td> <td>3.65K</td> <td>\$14.5K</td> <td>228</td> </tr> <tr> <td>Florida ★</td> <td>\$6.86M</td> <td>4.4K</td> <td>\$20.6K</td> <td>324</td> </tr> <tr> <td>Georgia</td> <td>\$6M</td> <td>3.56K</td> <td>\$11.4K</td> <td>180</td> </tr> <tr> <td>Idaho</td> <td>\$6.05M</td> <td>3.61K</td> <td>\$11.4K</td> <td>180</td> </tr> <tr> <td>Illinois</td> <td>\$5.77M</td> <td>3.52K</td> <td>\$19.8K</td> <td>312</td> </tr> </tbody> </table>					Bikes		Clothing			Revenue	Units Sold	Revenue	Units Sold	Alabama	\$6.29M	3.67K	\$13K	204	Arizona	\$6.11M	3.52K	\$16K	252	California ★	\$18.9M	12K	\$93.7K	1.48K	Colorado	\$6.14M	3.68K	\$11.4K	180	Connecticut	\$6.07M	3.65K	\$14.5K	228	Florida ★	\$6.86M	4.4K	\$20.6K	324	Georgia	\$6M	3.56K	\$11.4K	180	Idaho	\$6.05M	3.61K	\$11.4K	180	Illinois	\$5.77M	3.52K	\$19.8K	312
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Mountain-500																																																												
Mountain-300																																																												
Road-550-W																																																												

The current topic describes the following common concepts.

- [Conditional Formatting Overview](#)
- [Create a Format Rule](#)
- [Specify Appearance Settings](#)
- [Edit a Format Rule](#)

Conditional Formatting Overview

Comparison rules used in conditional formatting can be divided into the following groups.

- [Value](#) - Allows you to compare static values (such as Greater Than, Less Than, Between, etc.).
- [Top-Bottom](#) - Highlights a specific number of topmost/bottommost values.
- [Average](#) - Highlights values above the average value or below the average value.
- [A Date Occurring](#) - Allows you to highlight date-time values that fall into a specified interval.
- [Expression](#) - Allows you to use complex conditions to apply formatting. You can also pass dashboard parameters to expressions.
- [Icon Ranges](#) - Allows you to apply formatting by displaying specific icons for different ranges of values. You can select a predefined set of icons or use a specific icon for each range.
- [Color Ranges](#) - Allows you to apply formatting using specific colors for different ranges of values. You can

select a predefined set of colors or use custom appearance settings to highlight values within specified ranges.

- [Gradient Ranges](#) - Allows you to apply formatting using gradient color scales.
- [Bar](#) - Allows you to visualize numeric values using bars. You can also color bars corresponding to positive and negative values using different colors.
- [Bar Color Ranges](#) - Allows you to visualize numeric values using bars whose colors are contained in the specified color set.
- [Bar Gradient Ranges](#) - Allows you to visualize numeric values using bars whose colors are contained in the specified color gradient.

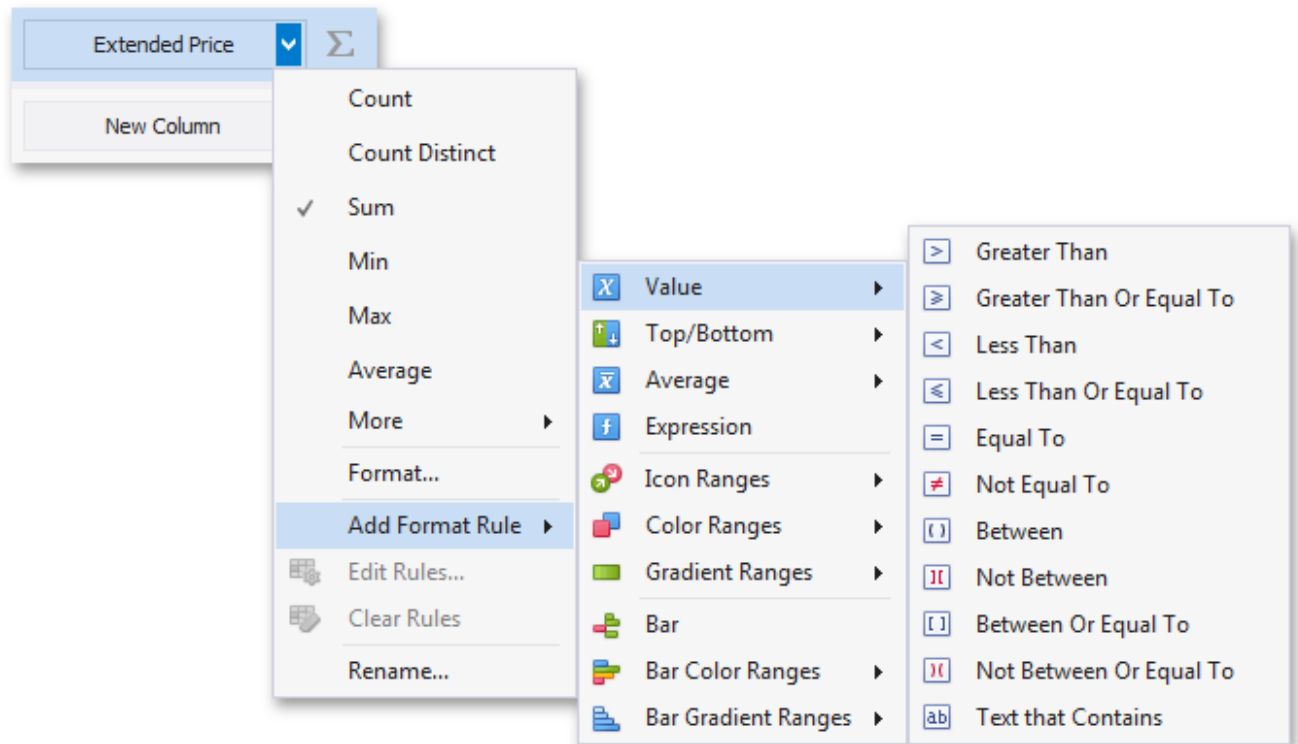
You can create comparison rules for [measures or dimensions](#). The list below shows format conditions that can be applied to different types of data items.

- Measure/numeric Dimension
 - [Value](#)
 - [Top-Bottom](#)
 - [Average](#)
 - [Expression](#)
 - [Icon Ranges](#)
 - [Color Ranges](#)
 - [Gradient Ranges](#)
 - [Bar](#)
 - [Bar Color Ranges](#)
 - [Bar Gradient Ranges](#)
- string Dimension
 - [Value](#) with the condition type set to *Equal To*, *Not Equal To* or *Text that Contains*
 - [Expression](#)
- date-time Dimension
 - [Value](#)
 - [A Date Occuring](#) for dimensions with the continuous date-time group interval
 - [Expression](#)
 - [Icon Ranges](#)
 - [Color Ranges](#)
 - [Gradient Ranges](#)
 - [Bar](#)
 - [Bar Color Ranges](#)
 - [Bar Gradient Ranges](#)

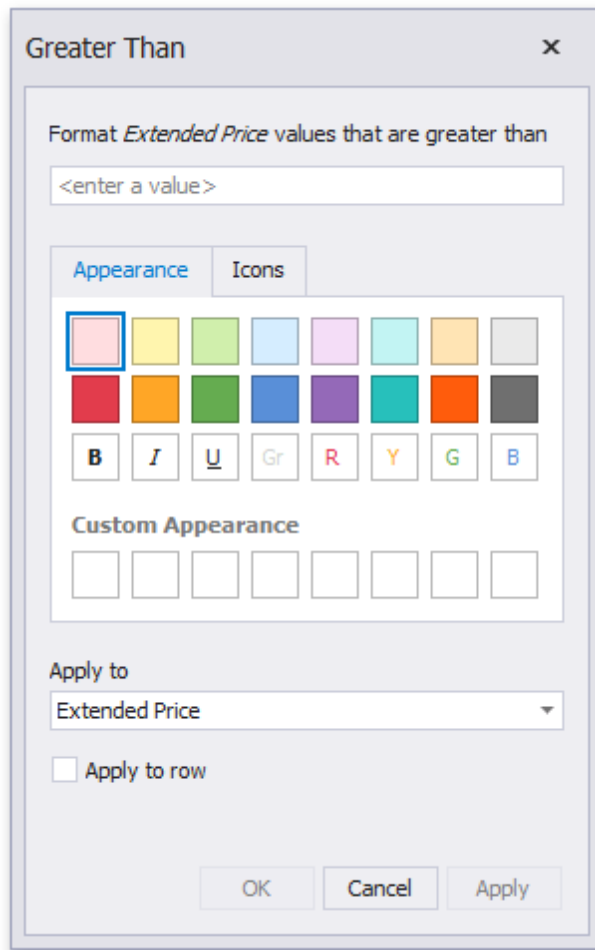
Create a Format Rule

To create a new rule used to apply formatting according to the required condition, do the following.

1. Choose a measure/dimension by whose values a format condition will be calculated. Click the measure/dimension menu button, select **Add Format Rule** and choose the condition.



2. This invokes the dialog that depends on the selected format condition and the type of dashboard item. For instance, the image below displays the **Greater Than** dialog corresponding to the [Value](#) format condition for the [Grid](#) dashboard item.



In this dialog, specify settings specific for the selected condition (for instance, specify a value to compare with dimension/measure values). To learn more, see the documentation for the required condition.

3. Specify [appearance settings](#) applied to elements whose values meet the specified condition.
4. Specify the data item to whose values conditional formatting is applied using the **Apply to** combo box. Thus, you can create a format rule for one data item and apply new appearance settings to the other data item. You can also create format rules for [hidden measures](#) and apply formatting to values of visible data items.

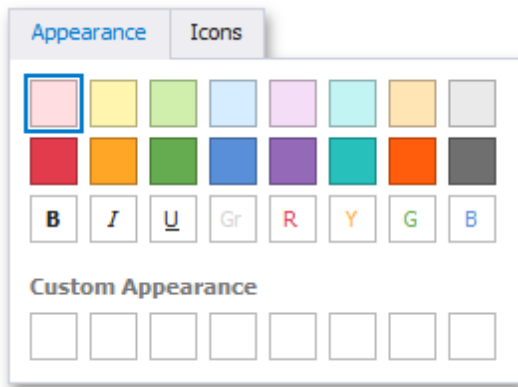
Note

Different dashboard items can provide additional capabilities for creating a new format rule. To learn more, refer to documentation for the required dashboard item.

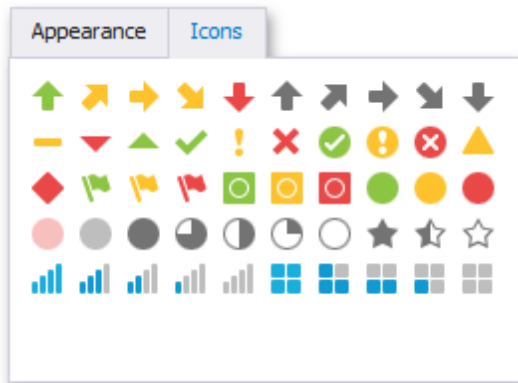
Specify Appearance Settings

When creating a new format rule, you can select the required appearance settings applied according to the current format condition. All format conditions allow you to customize appearance settings in a similar manner. For instance, the [Value](#) format condition allows you to specify appearance settings in the following way:

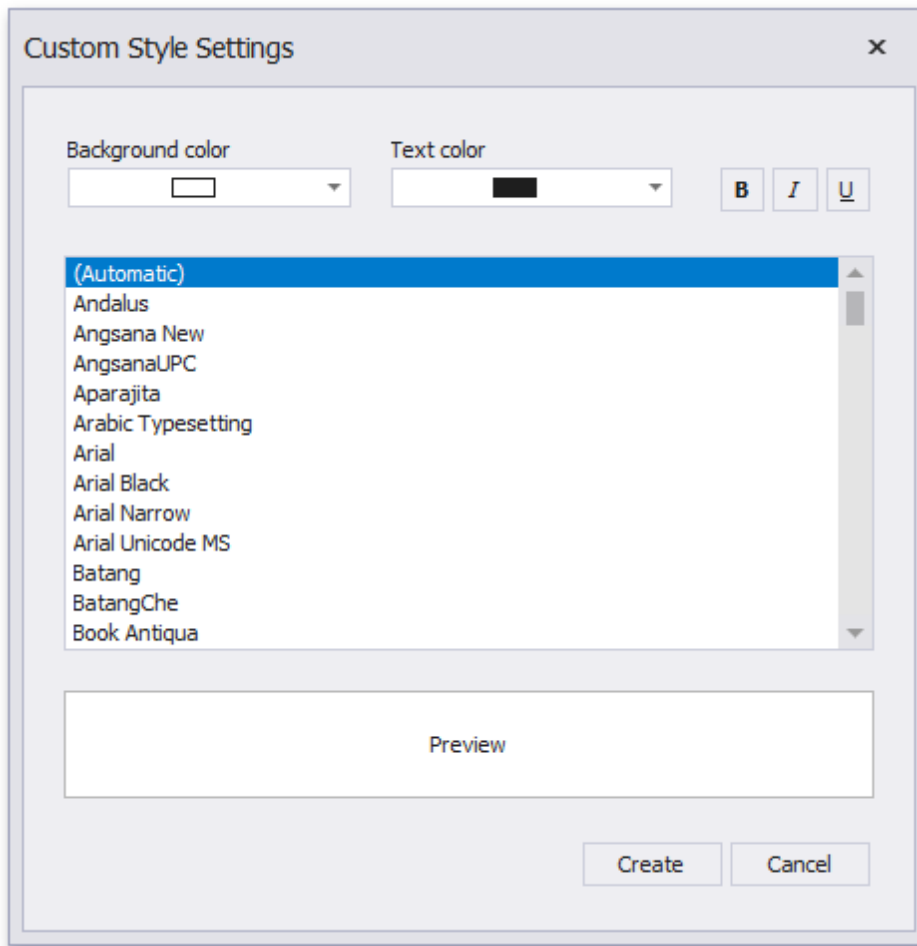
- The **Appearance** tab allows you to choose the predefined background color/font.



- The **Icons** tab allows you to add the predefined icon.



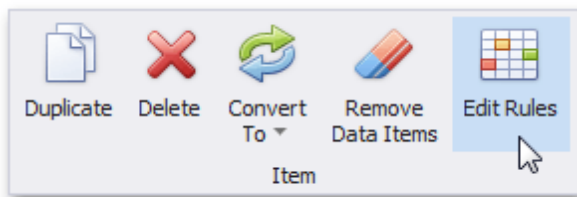
- Use the **Custom Appearance** area in the **Appearance** tab to add presets containing custom appearance settings. To add a new preset, click an empty square. This invokes the **Custom Style Settings** dialog, allowing you to specify the required appearance settings.



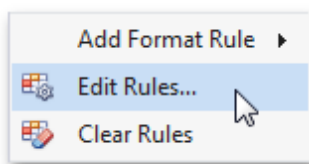
In this dialog, you can specify the background/foreground colors and font settings. Click **Create** to add a preset. The created preset will be displayed in the **Custom Appearance** area.

Edit a Format Rule

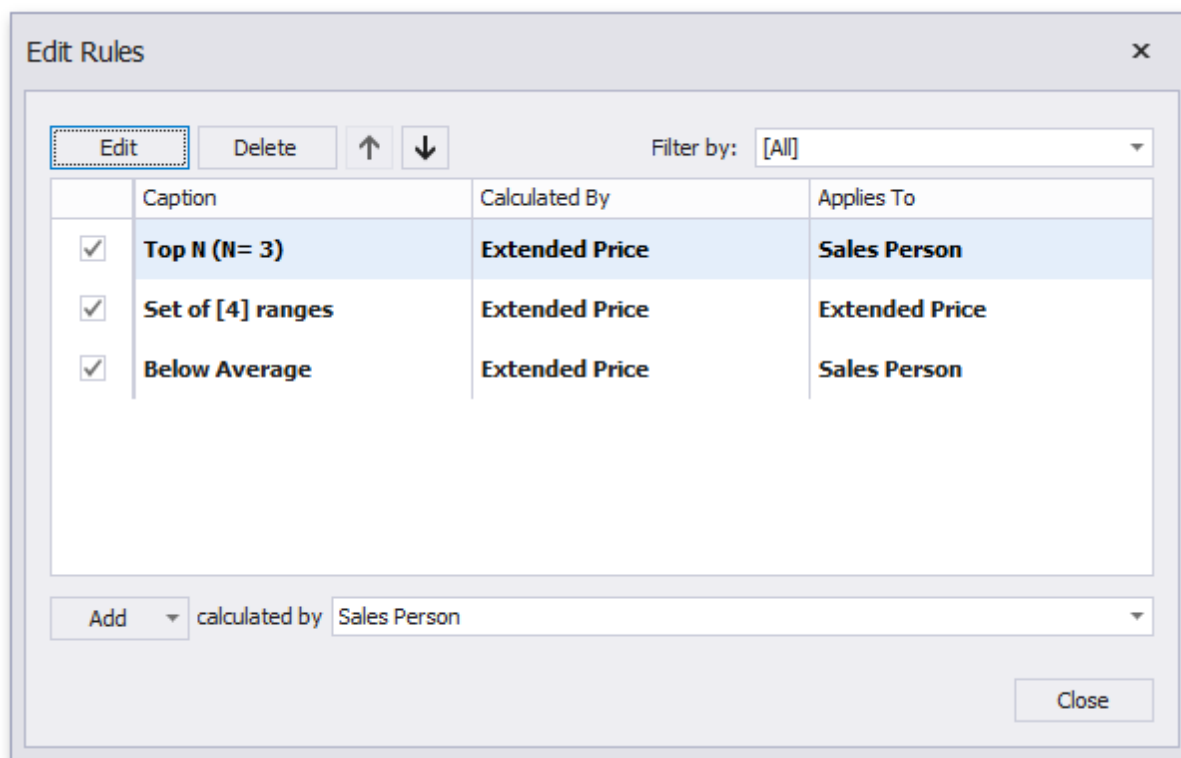
To edit format rules for the selected dashboard item, click the **Edit Rules** button in the **Home** ribbon tab.





As an alternative, use the **Edit Rules** data item's menu item or the corresponding item in the dashboard item's context menu.



This invokes the **Edit Rules** dialog containing existing format rules for this dashboard item.



This dialog allows you to perform the following actions.

- To edit the selected rule, use the **Edit** button or double-click the required rule.
- To delete the selected rule, use the **Delete** button.
- To reorder format rules, use the **Up** and **Down** buttons (the  and  icon, respectively). Reordering of rules allows you to specify the priority of rules from higher (a bottommost rule) to lower (a topmost rule).
- To enable/disable the required rule, use the corresponding check box on the left column.
- To create a new rule, click the **Add** button and select the required format condition. The **calculated by** combo box allows you to select the measure/dimension by whose values a format rule is applied.
- To filter format rules by the specified data item, use the **Filter by** combo box.

To clear all rules for the specified data item, use the **Clear Rules** button in the data item's context menu.

Value

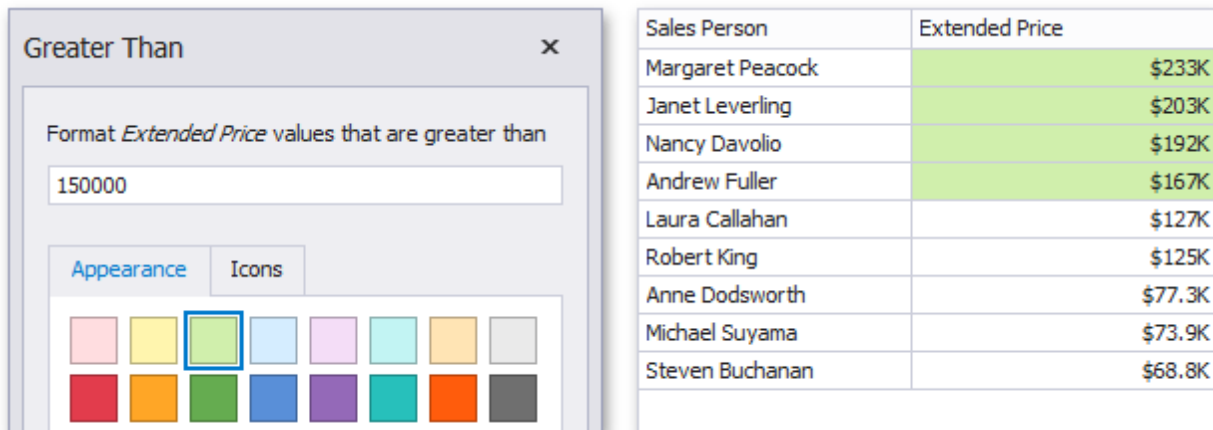
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Value](#)

The **Value** format condition allows you to compare static values (such as Greater Than, Less Than, Between, etc.).

The following condition types are supported for measures or date-time dimensions:

- **Greater Than/Greater Than or Equal To**

The "Greater Than"/"Greater Than or Equal To" format conditions allow you to apply formatting to elements whose values are greater than/greater than or equal to the specified value. For instance, the following image displays a Grid dashboard item whose *Extended Price* cells are filled in green if their values are Greater Than 150 000.

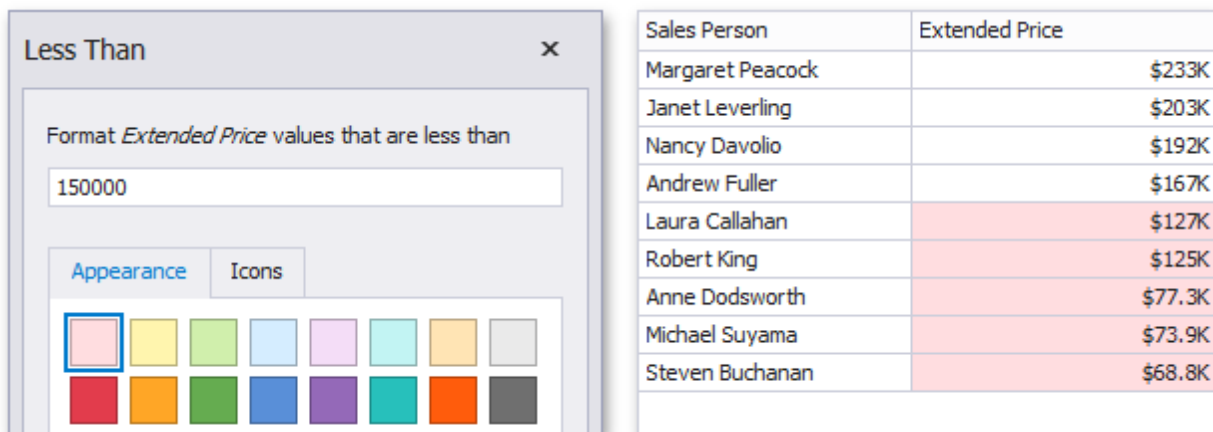


Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This format condition can be applied to measures or date-time dimensions.

- **Less Than/Less Than or Equal To**

The "Less Than"/"Less Than or Equal To" format conditions allow you to apply formatting to elements whose values are less than/less than or equal to the specified value. For instance, the following image displays a Grid dashboard item whose *Extended Price* cells are filled in red if their values are Less Than 150 000.



Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This format condition can be applied to measures or date-time dimensions.

- **Equal To/Not Equal To**

The "Equal To"/"Not Equal To" format conditions allow you to apply formatting to elements whose values are equal to/not equal to the specified value. For instance, the following image displays a Grid dashboard item whose *Sales Person* cells are filled in blue if their values are equal to 'Robert King'.

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This format condition can be applied to measures, string or date-time dimensions.

- **Between/Not Between**

The "Between"/"Not Between" format conditions allow you to apply formatting to elements whose values are between/not between the specified values. For instance, the following image displays a Grid dashboard item whose *Extended Price* cells are filled in orange if their values are Between 100 000 and 200 000.

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This format condition can be applied to measures or date-time dimensions.

- **Text That Contains**

The "Text That Contains" format condition allows you to apply formatting to elements whose values contain the specified text. For instance, the following image displays a Grid dashboard item whose *Sales Person* cells are in cyan if their values contain the 'An' text.

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This format condition can be applied to measures, string or date-time dimensions.

Top-Bottom

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Top-Bottom](#)

The **Top-Bottom** format conditions allow you to highlight a specific number of topmost/bottommost values. You can specify this number as an absolute or percent value.

The following condition types are supported for measures:

- **Top N**

The "Top N" format condition allows you to apply formatting to elements whose values are ranked at the top. For instance, the following image displays a Grid dashboard item whose top 3 *Extended Price* values filled in green.

Top N ✕

Format *Extended Price* values that rank in the top

N = % of all values

Appearance Icons

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

- **Bottom N**

The "Bottom N" format condition allows you to apply formatting to elements whose values are ranked at the bottom. For instance, the following image displays a Grid dashboard item whose bottom 40 percent *Extended Price* values are filled in red.

Bottom N ✕

Format *Extended Price* values that rank in the bottom

N = % of all values

Appearance Icons

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

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354

Average

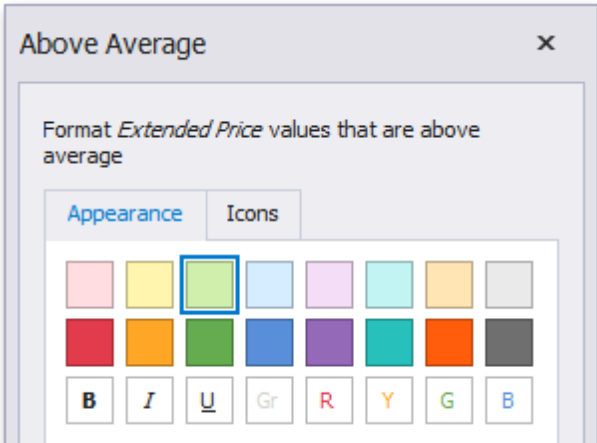
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Average](#)

The **Average** format conditions allow you to highlight values above or below an average value.

The following condition types are supported for measures:

- **Above Average/Above or Equal Average**

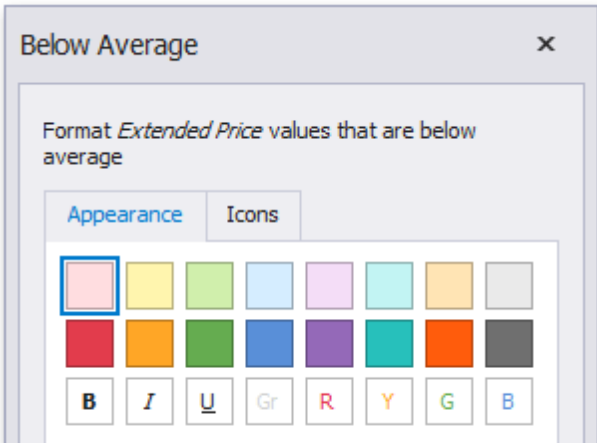
The "Above Average"/"Above or Equal Average" format conditions allow you to apply formatting to elements whose values are above/above or equal to the average. For instance, the following image displays a **Grid** dashboard item whose *Extended Price* values that are above average (~ 141 000) filled in green.



Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

- **Below Average/Below or Equal Average**

The "Below Average"/"Below or Equal Average" format conditions allow you to apply formatting to elements whose values are below/below or equal to the average. For instance, the following image displays a **Grid** dashboard item whose *Extended Price* values that are below average (~ 141 000) filled in red.



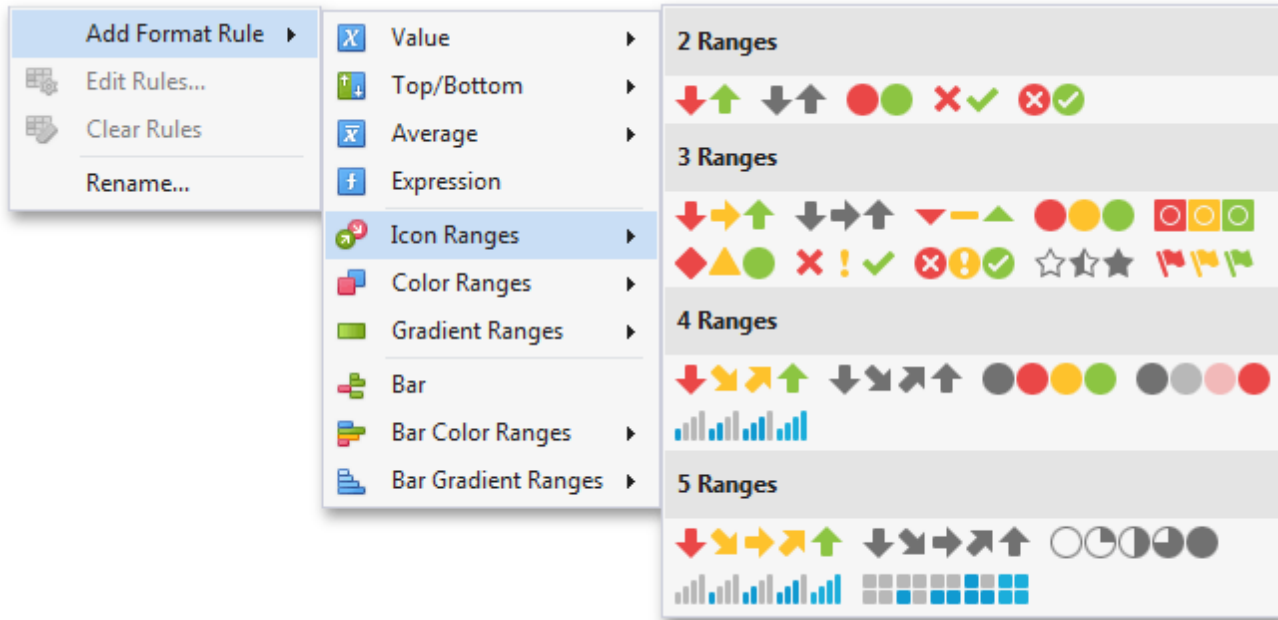
Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

Icon Ranges

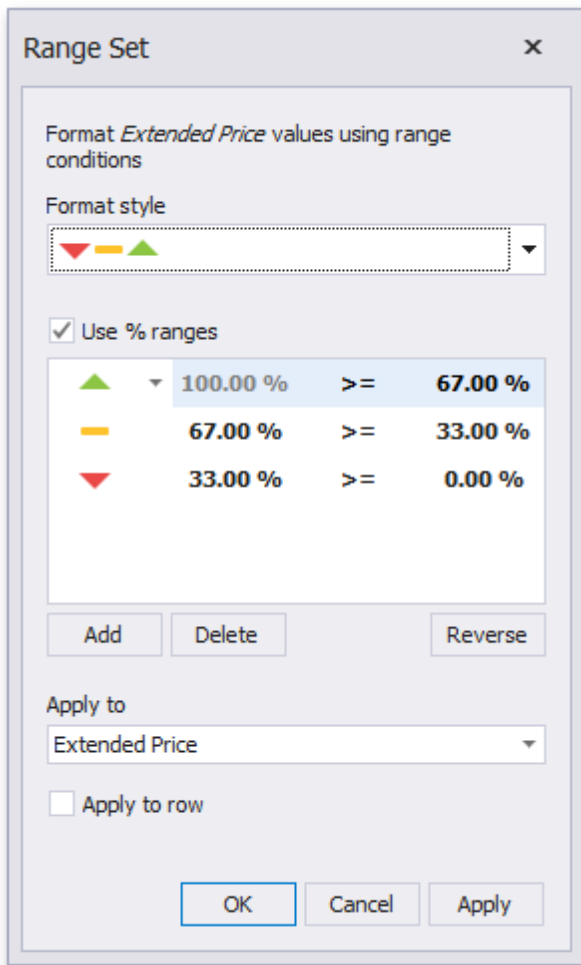
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Icon Ranges](#)

Icon Ranges allow you to use predefined or custom sets of icons to apply conditional formatting to different ranges of values.

To format values according the required condition, click the data item menu button, select **Add Format Rule | Icon Ranges** and choose the required icon set.



This invokes the **Range Set** dialog containing the set of value ranges and corresponding icons. The Grid dashboard item on the right displays the default formatting applied using the predefined set of 3 icons.



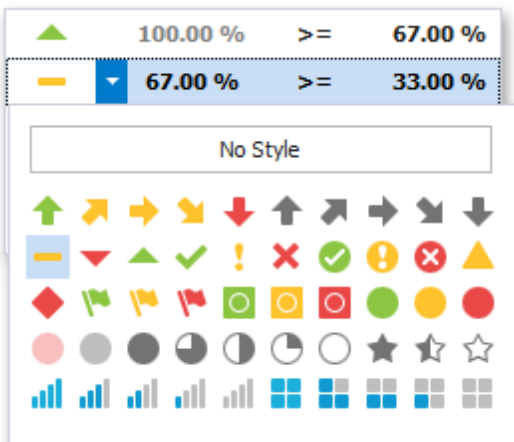
Sales Person	Extended Price
Margaret Peacock	▲ \$233K
Janet Leverling	▲ \$203K
Nancy Davolio	▲ \$192K
Andrew Fuller	▬ \$167K
Laura Callahan	▬ \$127K
Robert King	▬ \$125K
Anne Dodsworth	▼ \$77.3K
Michael Suyama	▼ \$73.9K
Steven Buchanan	▼ \$68.8K

This dialog allows you to change the following options specific to Icon Ranges.

- The **Format Style** combo box allows you to change the icon set used to apply formatting.
- The **Use % ranges** check box specifies whether the percent or absolute scale is used to generate ranges.

Note
Note that this option is not available for date-time dimensions.

- To change the icon displayed for values corresponding to the specified range, click the button next to the required icon and select a new icon.



Select **No Style** to disable the indication for the required range.

- You can change range boundaries by specifying the required values.

▲	100.00 %	>=	67.00 %
■	80.00 %	>=	33.00 %
▼	33.00 %	>=	0.00 %

Note

Note that a new value should fall into a range between corresponding values of the previous and next range.

- To change the comparison logic for the required range, click the comparison sign and select the required option.

▲	100.00 %	>=	67.00 %
■	67.00 %	>	33.00 %
▼	33.00 %	>=	0.00 %

The *greater or equal* sign includes the smallest value of the current interval while the *greater* sign excludes the smallest value from the current interval and includes it in the next interval.

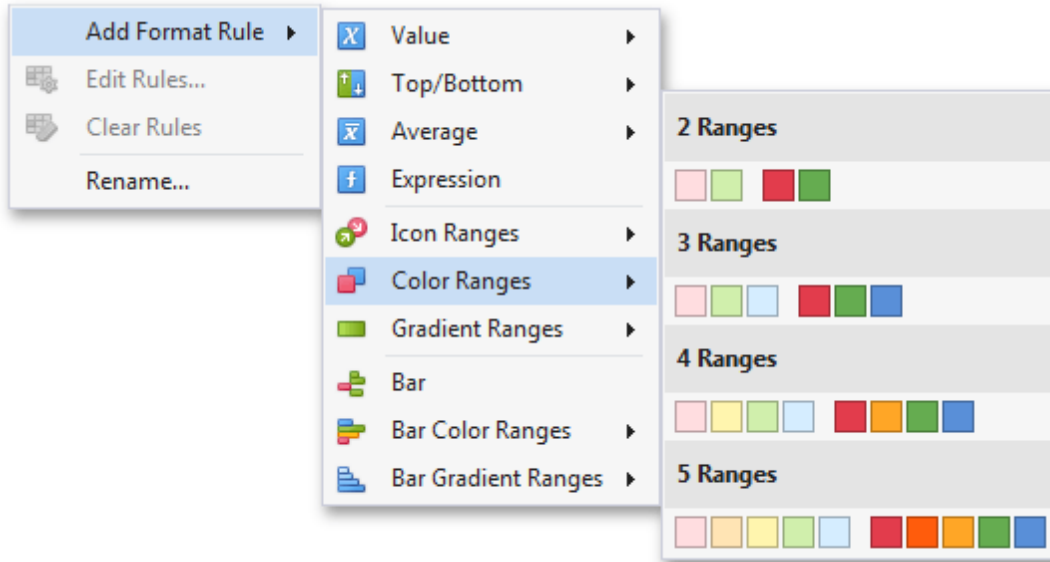
- Use the **Add** and **Delete** buttons to add new ranges or delete the selected range respectively. Note that new range is added below the selected range.

Color Ranges

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Color Ranges](#)

Color Ranges allow you to use predefined sets of colors to apply conditional formatting to different ranges of values. You can also use custom appearance settings for specific ranges.

To format values according the required condition, click the data item menu button, select **Add Format Rule | Color Ranges** and choose the required icon set.



This invokes the **Range Set** dialog containing the set of value ranges and corresponding appearance settings. The Grid dashboard item on the right displays the default formatting applied using the predefined set of 3 colors.

Range Set ✕

Format *Extended Price* values using range conditions

Format style

Use % ranges

<input type="checkbox"/>	100.00 %	>=	67.00 %
<input type="checkbox"/>	67.00 %	>=	33.00 %
<input type="checkbox"/>	33.00 %	>=	0.00 %

Add Delete Reverse

Apply to

Extended Price

Apply to row

OK Cancel Apply

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

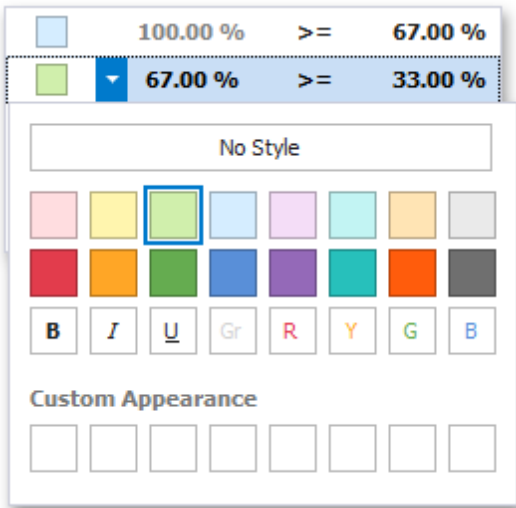
This dialog allows you to change the following options specific to Icon Ranges.

- The **Format Style** combo box allows you to change the color set used to apply formatting.
- The **Use % ranges** check box specifies whether the percent or absolute scale is used to generate ranges.

Note

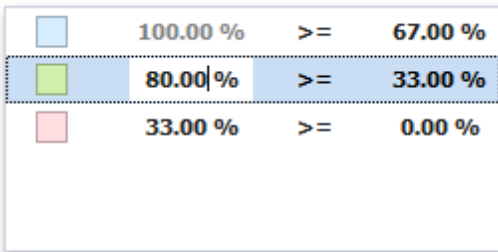
Note that this option is not available for date-time dimensions.

- To change the appearance settings applied to values corresponding to the specified range, click the button next to the required color and select a new color or specify custom appearance settings. To learn how to specify custom settings, see the **Specify Appearance Settings** paragraph in the [Conditional Formatting](#) topic.



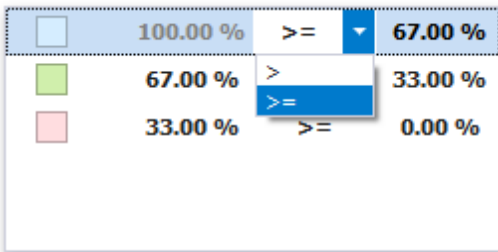
Select **No Style** to disable the indication for the required range.

- You can change range boundaries by specifying the required values.



Note
 Note that a new value should fall into a range between corresponding values of the previous and next range.

- To change the comparison logic for the required range, click the comparison sign and select the required option.



The *greater or equal* sign includes the smallest value for the current interval while the *greater* sign excludes the smallest value from the current interval and includes it in the next interval.

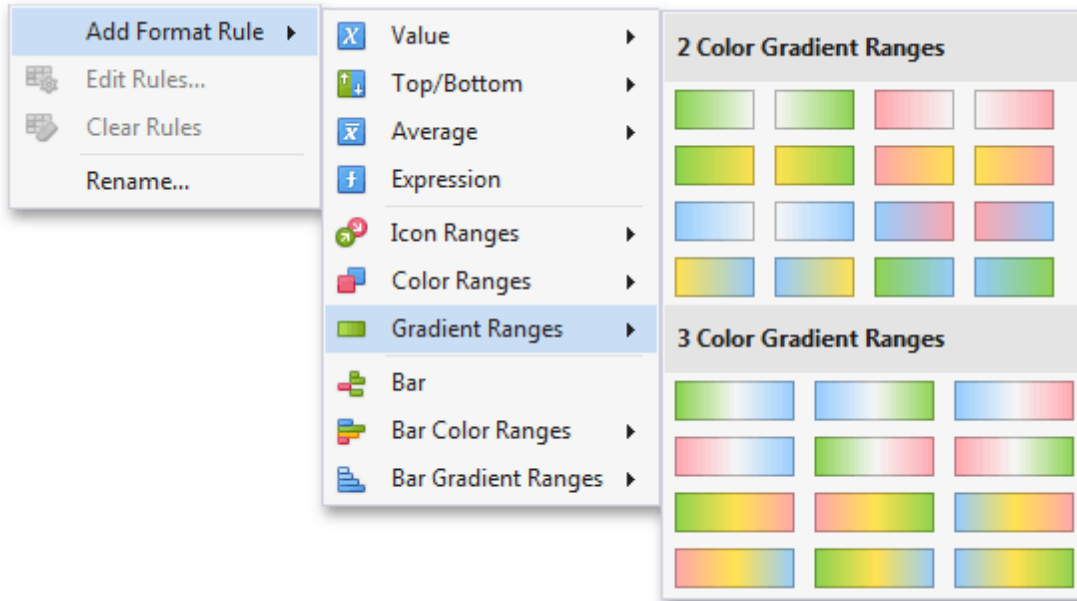
- Use the **Add** and **Delete** buttons to add new ranges or delete the selected range respectively.

Gradient Ranges

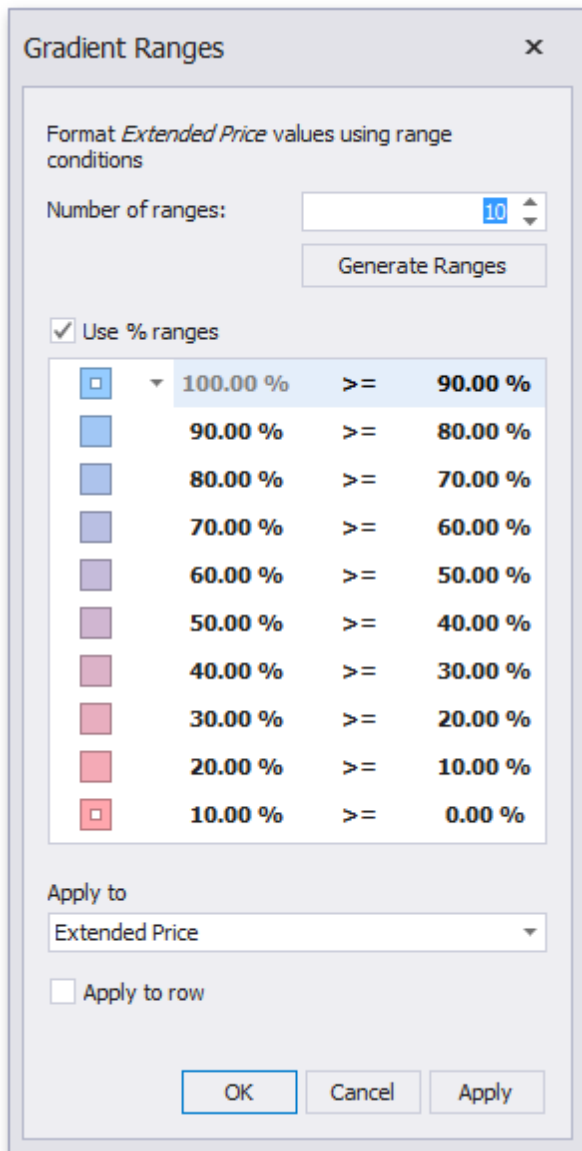
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Gradient Ranges](#)

Gradient Ranges allow you to use predefined color gradients to apply conditional formatting to different ranges of values. You can also use specific colors to generate custom gradients.

To format values according the required condition, click the measure menu button, select **Add Format Rule | Color Ranges** and choose the required color gradient.



This invokes the **Gradient Ranges** dialog containing the set of value ranges and corresponding appearance settings. The Grid dashboard item on the right displays the default formatting applied using the predefined Red-Blue gradient.



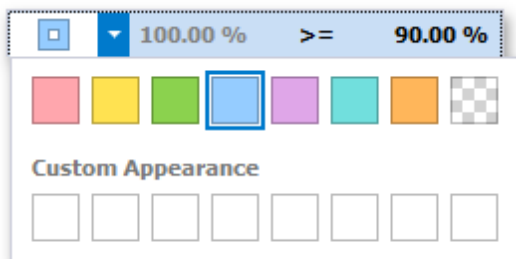
Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This dialog allows you to change the following options specific to Gradient Ranges.

- **Number of ranges** allows you to specify the number of ranges used to classify values. Click the **Generate Ranges** button to generate a new gradient scale according to the specified number of ranges.
- The **Use % ranges** check box specifies whether the percent or absolute scale is used to generate ranges.

Note
Note that this option is not available for date-time dimensions.

- To change the specific color in the gradient, click the button next to the required color and select a new color or specify a custom background color. This allows you to create a color gradient based on more than two colors. In this case, the specified colors are marked with an empty square.



To learn how to specify a custom color, see the **Specify Appearance Settings** paragraph in the [Conditional Formatting](#) topic.

- You can change range boundaries by specifying the required values.

<input type="checkbox"/>	100.00 %	>=	85.00 %
<input type="checkbox"/>	85.00 %	>=	80.00 %
<input type="checkbox"/>	80.00 %	>=	70.00 %

Note

Note that a new value should fall into a range between corresponding values of the previous and next range.

- To change the comparison logic for the required range, click the comparison sign and select the required option.

<input type="checkbox"/>	100.00 %	>=	90.00 %
<input type="checkbox"/>	90.00 %	>	80.00 %
<input type="checkbox"/>	80.00 %	>=	70.00 %

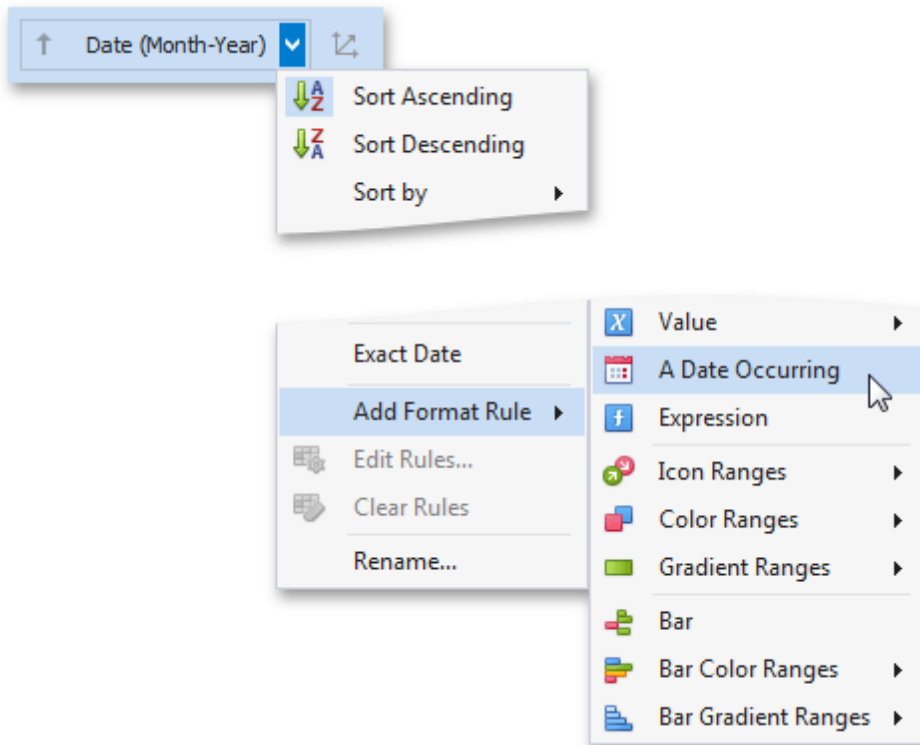
The *greater or equal* sign includes the smallest value in the current interval while the *greater* sign excludes the smallest value from the current interval and includes it in the next interval.

A Date Occurring

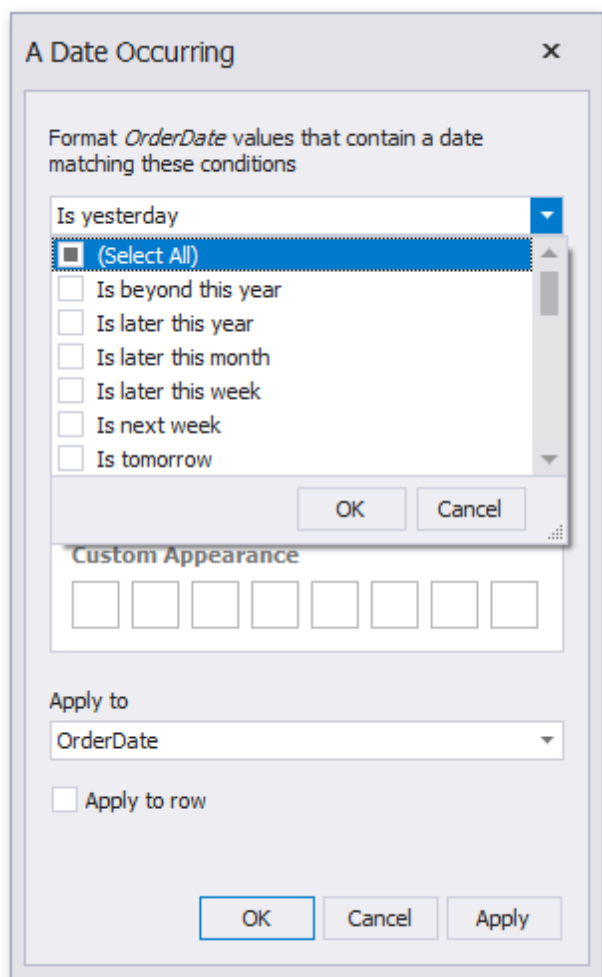
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [A Date Occurring](#)

A Date Occurring format condition allows you to highlight date-time values that fall into a specified interval. Note that this format condition can be applied to dimensions with the continuous date-time group interval.

To format values according the Date Occurring condition, click the menu button of the required dimension and select **Add Format Rule | A Date Occurring**.



This invokes the **A Date Occurring** dialog that allows you to select a date-time interval(s) whose value should be formatted.



The following intervals are supported.

- **Is beyond this year** - Dates that follow the current year.
- **Is later this year** - Dates of the current year starting from the following month.
- **Is later this month** - Dates of the current month that follow the next week.
- **Is later this week** - Dates of the current week starting from the day after tomorrow.
- **Is next week** - Dates that belong to the following week.
- **Is tomorrow** - Tomorrow.
- **Is today** - Today.
- **Is yesterday** - Yesterday.
- **Is earlier this week** - Dates of the current week that are prior to yesterday.
- **Is last week** - Dates of the previous week.
- **Is earlier this month** - Dates of the current month that are prior to the previous week.
- **Is earlier this year** - Dates of the current year that are prior to the current month.
- **Is prior to this year** - Dates that are prior to the current year.
- **Empty** - Does not specify any condition.
- **Beyond** - Dates that belong to the month in three-months time and beyond.
- **ThisWeek** - Dates that belong to the current week.
- **ThisMonth** - Dates that belong to the current month.
- **MonthAfter1** - Dates that belong to the following month.
- **MonthAfter2** - Dates that belong to the month in two-months time.

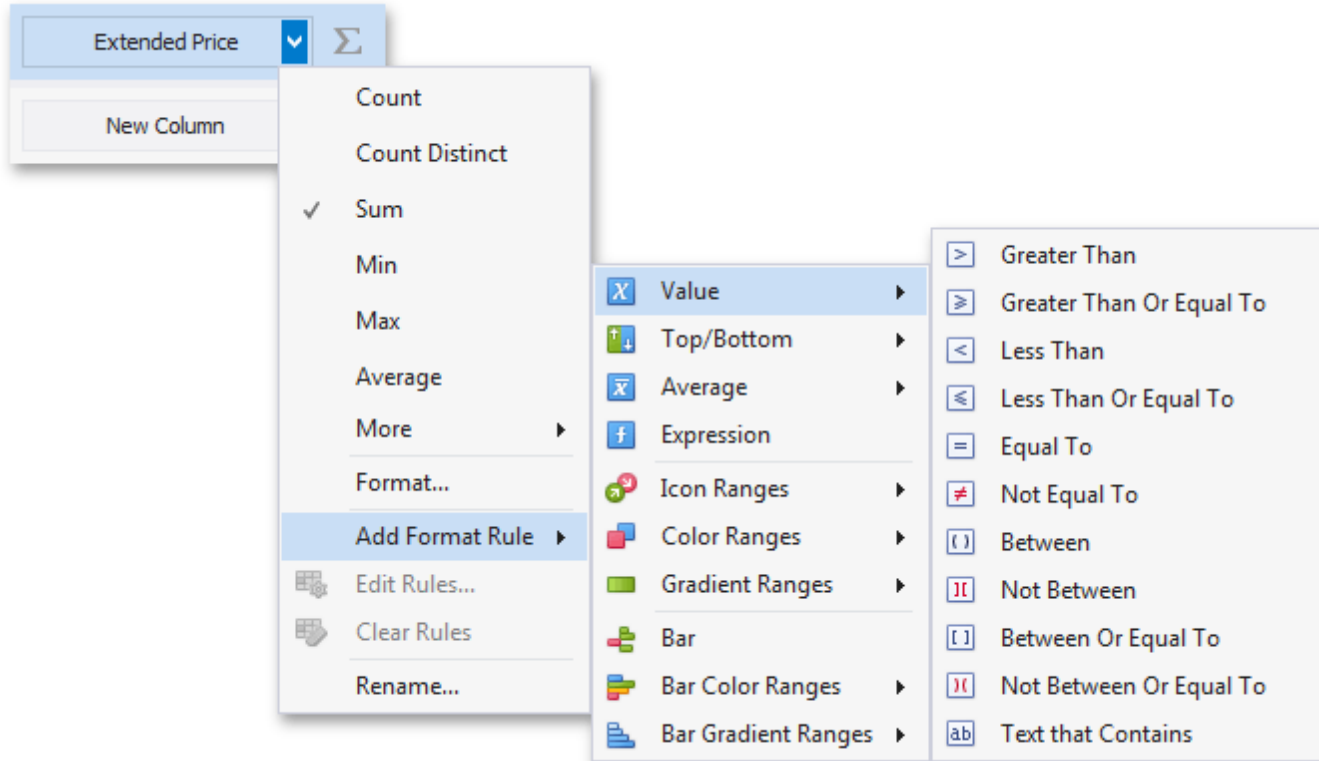
- **MonthAgo1** - Dates that belong to the previous month.
- **MonthAgo2** - Dates that belong to the month two months ago.
- **MonthAgo3** - Dates that belong to the month three months ago.
- **MonthAgo4** - Dates that belong to the month four months ago.
- **MonthAgo5** - Dates that belong to the month five months ago.
- **MonthAgo6** - Dates that belong to the month six months ago.
- **Earlier** - Dates that belong to the month seven months ago and earlier.

Expression

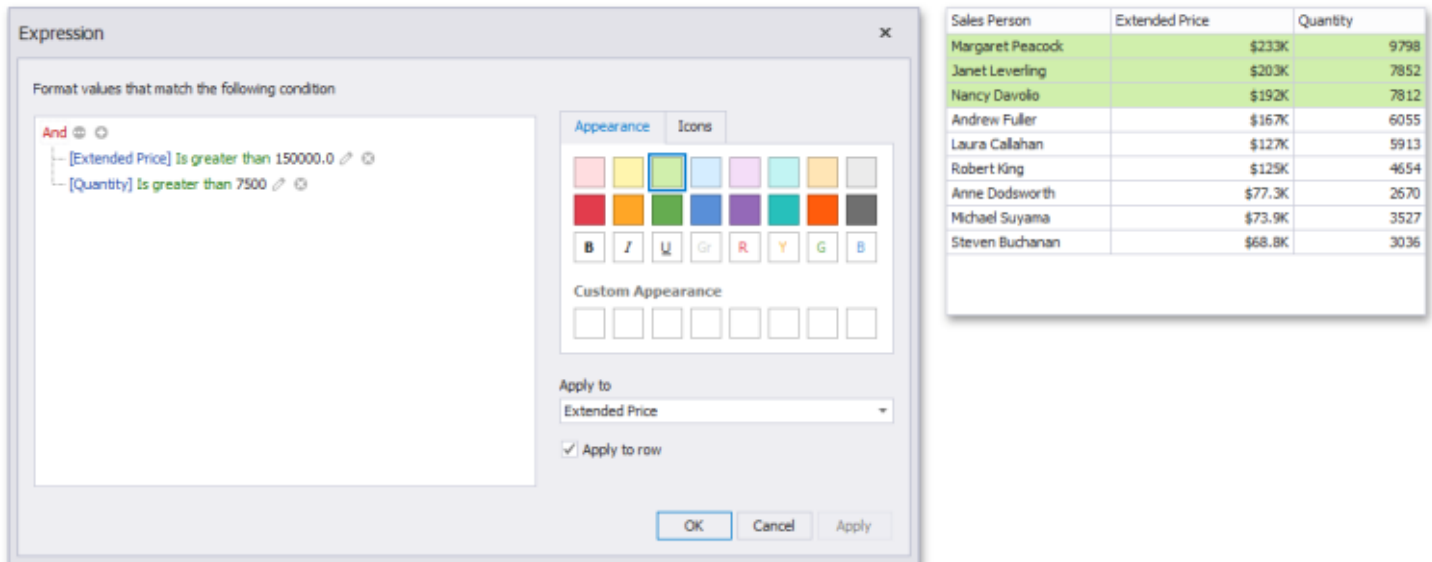
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Expression](#)

An Expression format condition allows you to use complex conditions to apply formatting.

To format values according to the Expression condition, click the menu button of the required data item and select **Add Format Rule | Expression**.



This invokes the **Expression** dialog that allows you to specify the required expression. For instance, the following image displays a **Grid** dashboard item whose rows are filled in green if the Extended Price/Quantity values are greater than 150 000 and 7 500, respectively.



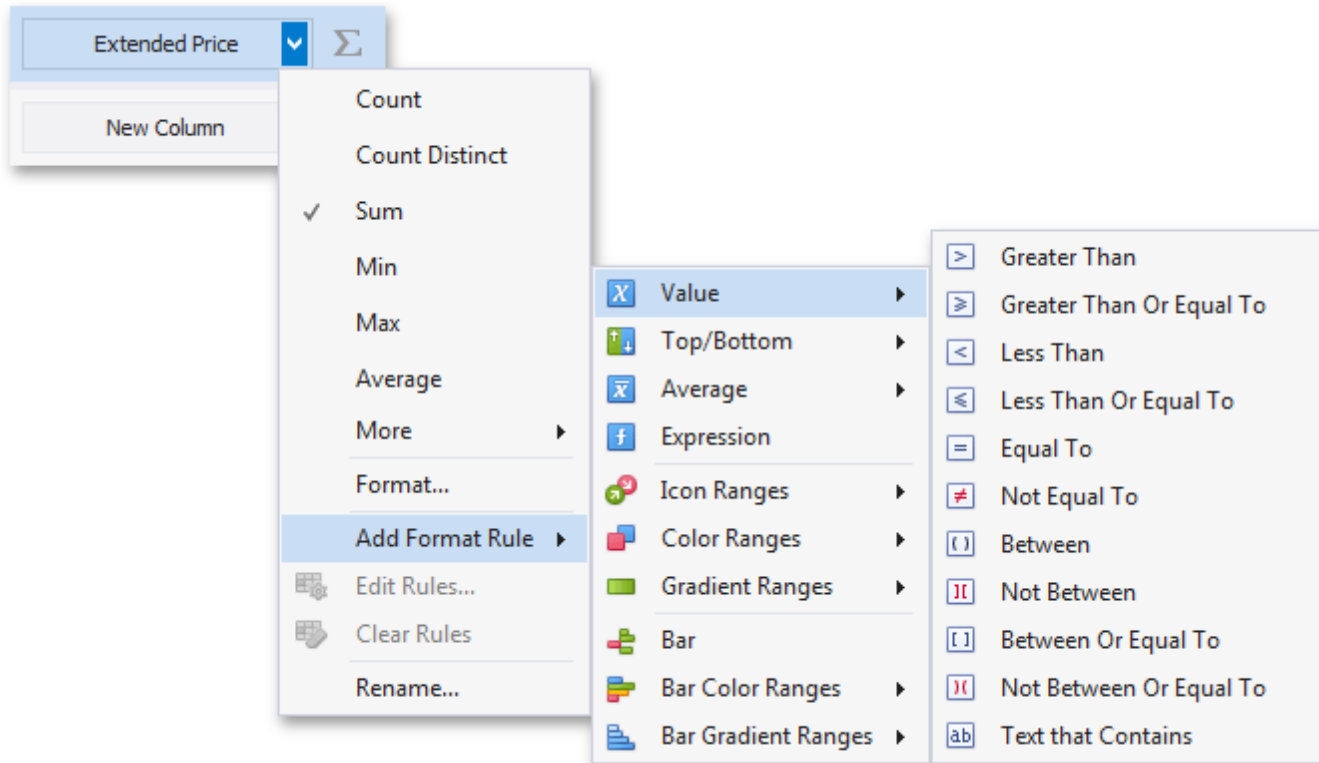
You can pass static values when creating conditions or pass a dashboard parameter to apply conditional formatting dynamically. To learn more, see [Passing Parameter Values](#).

Bar

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Bar](#)

The **Bar** format condition allows you to visualize numeric values using bars. You can also paint bars corresponding to positive and negative values using different colors.

To format values according to the Bar condition, click the menu button of the required data item and select **Add Format Rule | Bar**.



This invokes the **Bar** dialog that allows you to specify the required settings. For instance, the following image displays a **Grid** dashboard item whose *Extended Price* cell contains data bars corresponding to numeric values.

Bar

Format *Extended Price vs Avg* values using bar conditions

Min = Automatic

Max = Automatic

Style Settings Negative Style Settings

Custom Appearance

Apply to
Extended Price vs Avg

Allow negative axis
 Draw axis
 Show bar only

OK Cancel Apply

Sales Person	Extended Price vs Avg
Margaret Peacock	\$92.2K
Janet Leverling	\$62.2K
Nancy Davolio	\$51.5K
Andrew Fuller	\$25.9K
Laura Callahan	(\$13.8K)
Robert King	(\$16.1K)
Anne Dodsworth	(\$63.3K)
Michael Suyama	(\$66.7K)
Steven Buchanan	(\$71.9K)

This dialog allows you to change the following options specific to the Bar format condition.

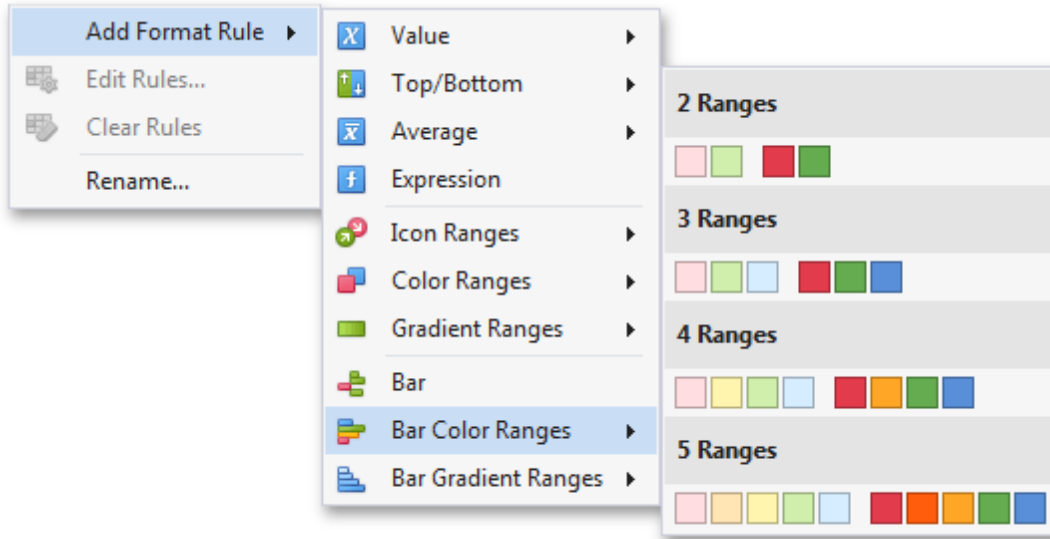
- By default, lengths of the shortest and longest bars correspond to minimum and maximum values, respectively. If necessary, you can specify values corresponding to the shortest and longest bars manually. To do this, change the type of minimum/maximum value from **Automatic** to **Number** or **Percent**, and specify the required values.
- **Style Settings** and **Negative Style Settings** allow you to specify style settings used to color data bars corresponding to positive and negative values, respectively. To learn how to specify custom style settings, see the **Specify Appearance Settings** paragraph in the [Conditional Formatting](#) topic.
- The **Allow negative axis** option allows you to specify whether negative data bars are displayed in the direction opposite to the positive data bars.
- The **Draw axis** option specifies whether to draw the vertical axis between positive and negative data bars.
- The **Show bar only** option specifies whether to show bars without corresponding values.

Bar Color Ranges

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Bar Color Ranges](#)

Bar Color Ranges allow you to visualize numeric values using bars whose colors are contained in the specified color set.

To format values according the required condition, click the data item menu button, select **Add Format Rule | Bar Color Ranges** and choose the required color set.



This invokes the **Color Range Bar** dialog containing the set of value ranges and corresponding colors. The Grid dashboard item on the right displays the default formatting applied using the predefined set of 3 colors.

Color Range Bar ✕

Format *Extended Price* values using color range bar conditions

Format style

■ ■ ■

Use % ranges

■	100.00 %	>=	67.00 %
■	67.00 %	>=	33.00 %
■	33.00 %	>=	0.00 %

Apply to

Extended Price

Allow negative axis

Draw axis

Show bar only

Sales Person	Extended Price
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

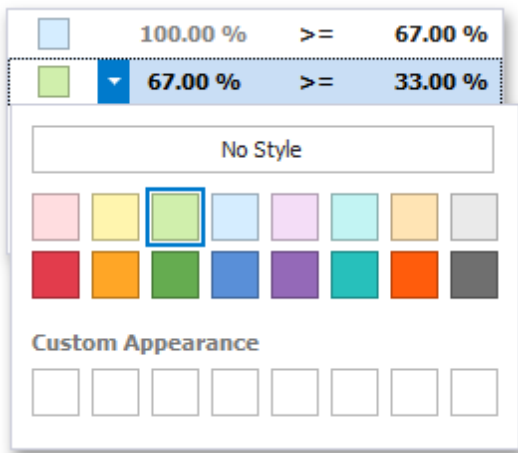
This dialog allows you to change the following options specific to Bar Color Ranges.

- The **Format Style** combo box allows you to change the color set used to apply formatting.
- The **Use % ranges** check box specifies whether the percent or absolute scale is used to generate ranges.

Note

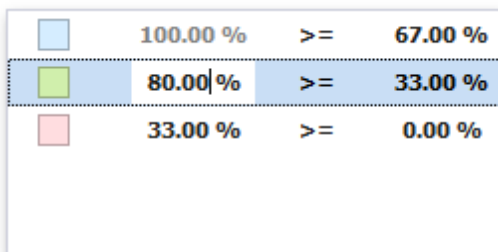
Note that this option is not available for numeric dimensions.

- To change the appearance settings applied to values corresponding to the specified range, click the button next to the required color and select a new color or specify custom appearance settings. To learn how to specify custom settings, see the **Specify Appearance Settings** paragraph in the [Conditional Formatting](#) topic.



Select **No Style** to disable the indication for the required range.

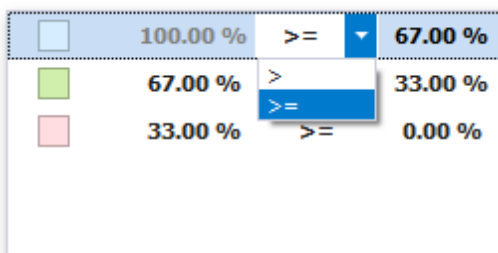
- You can change range boundaries by specifying the required values.



Note

Note that a new value should fall into a range between corresponding values of the previous and next range.

- To change the comparison logic for the required range, click the comparison sign and select the required option.



The *greater or equal* sign includes the smallest value for the current interval, while the *greater* sign excludes the smallest value from the current interval and includes it in the next interval.

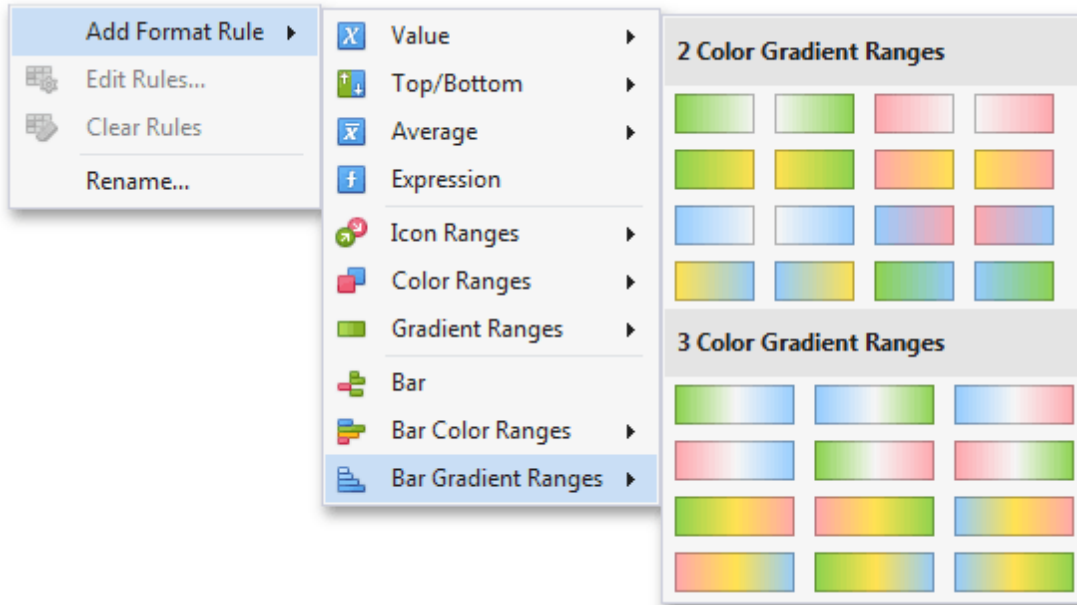
- Use the **Add** and **Delete** buttons to add new ranges or delete the selected range respectively.

Bar Gradient Ranges

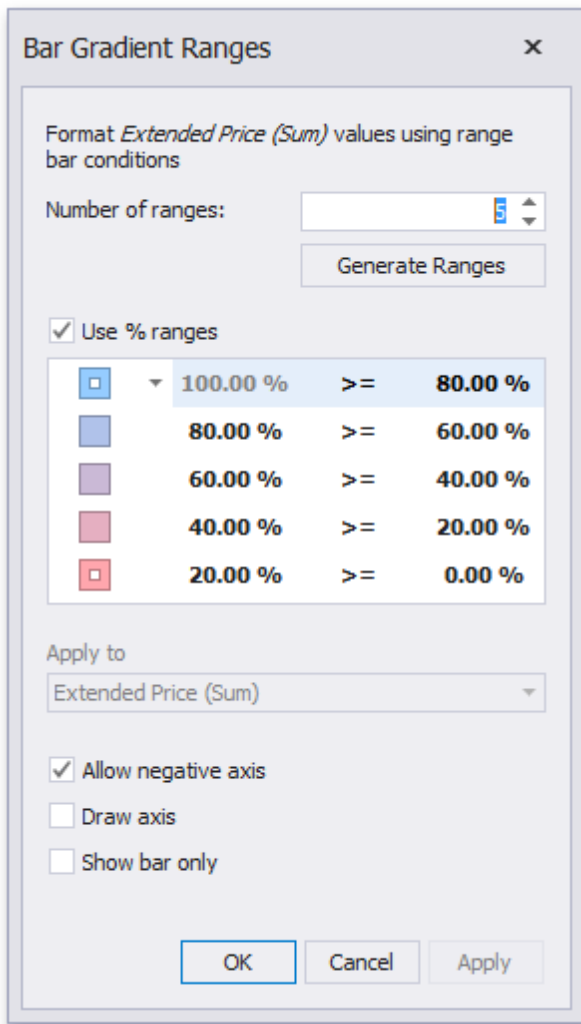
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Conditional Formatting](#) > [Bar Gradient Ranges](#)

The Bar Gradient Ranges allow you to visualize numeric values using bars whose colors are contained in the specified color gradient.

To format values according the required condition, click the measure menu button, select **Add Format Rule | Bar Gradient Ranges** and choose the required color gradient.



This invokes the **Bar Gradient Ranges** dialog containing the set of value ranges and corresponding appearance settings. The Grid dashboard item on the right displays the default formatting applied using the predefined Red-Blue gradient.



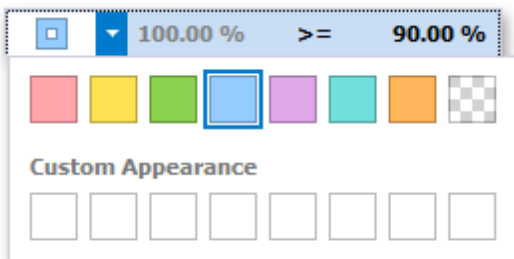
Sales Person	Extended Price (Sum)
Margaret Peacock	\$233K
Janet Leverling	\$203K
Nancy Davolio	\$192K
Andrew Fuller	\$167K
Laura Callahan	\$127K
Robert King	\$125K
Anne Dodsworth	\$77.3K
Michael Suyama	\$73.9K
Steven Buchanan	\$68.8K

This dialog allows you to change the following options specific to Bar Gradient Ranges.

- **Number of ranges** allows you to specify the number of ranges used to classify values. Click the **Generate Ranges** button to generate a new gradient scale according to the specified number of ranges.
- The **Use % ranges** check box specifies whether the percent or absolute scale is used to generate ranges.

Note
Note that this option is not available for numeric dimensions.

- To change the specific color in the gradient, click the button next to the required color and select a new color or specify a custom background color. This allows you to create a color gradient based on more than two colors. In this case, the specified colors are marked with an empty square.



To learn how to specify a custom color, see the **Specify Appearance Settings** paragraph in the [Conditional Formatting](#) topic.

- You can change range boundaries by specifying the required values.

<input type="checkbox"/>	100.00 %	>=	85.00 %
<input type="checkbox"/>	85.00 %	>=	80.00 %
<input type="checkbox"/>	80.00 %	>=	70.00 %

Note

Note that a new value should fall into a range between corresponding values of the previous and next range.

- To change the comparison logic for the required range, click the comparison sign and select the required option.

<input type="checkbox"/>	100.00 %	>=	90.00 %
<input type="checkbox"/>	90.00 %	>	80.00 %
<input type="checkbox"/>	80.00 %	>=	70.00 %

The *greater or equal* sign includes the smallest value in the current interval while the *greater* sign excludes the smallest value from the current interval and includes it in the next interval.

Coloring

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Coloring](#)

The Dashboard Designer provides the capability to manage coloring of dashboard item elements. You can choose whether to use a global color scheme providing consistent colors for identical values across the dashboard or a local color scheme that provides an independent set of colors for each dashboard item. The Dashboard Designer also allows you to edit colors automatically assigned from the default palette.

The section contains the following topics.

- [Coloring Concepts](#)
- [Customizing a Color Scheme](#)

Coloring Concepts

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Coloring](#) > [Coloring Concepts](#)

The Dashboard Designer provides you with the capability to color dashboard item elements by associating dimension values/measures and specified colors. You can choose whether to use a global color scheme to provide consistent colors for identical values or specify a local color scheme for each dashboard item.

- [Supported Dashboard Items](#)
- [Color Schemes](#)
- [Coloring Dimensions and Measures](#)

Supported Dashboard Items

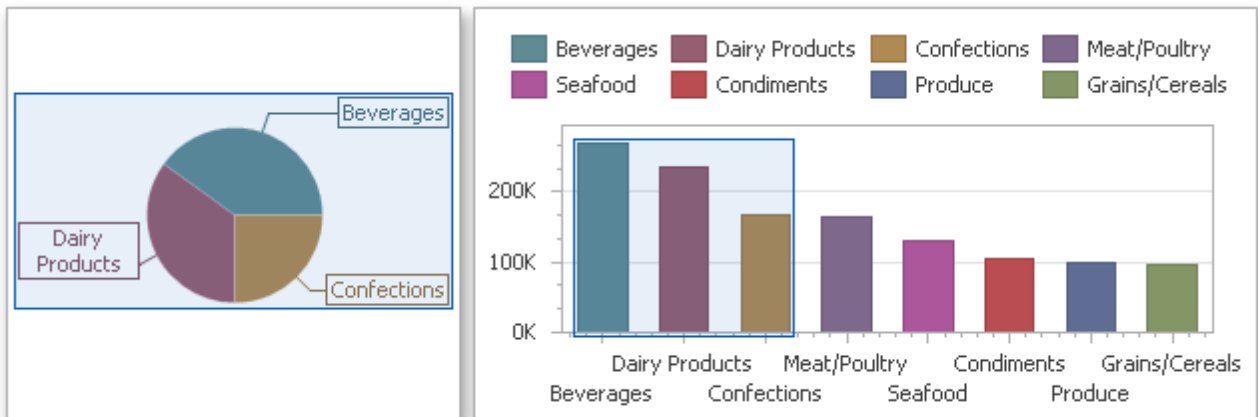
DevExpress Dashboard allows you to manage coloring for the following dashboard items.

- [Chart](#)
- [Scatter Chart](#)
- [Pie](#)
- [Pie Map](#)
- [Range Filter](#)
- [Treemap](#)

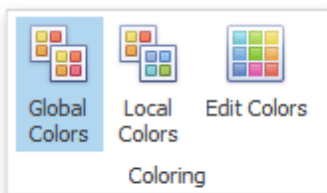
Color Schemes

The dashboard provides two ways of coloring dashboard item elements.

- Using a global color scheme that provides consistent colors for identical values across the dashboard. The image below shows the dashboard containing Pie and Chart dashboard items. Pie segments and chart series points corresponding to 'Beverages', 'Condiments' and 'Diary Products' dimension values are colored using identical colors from the default palette.



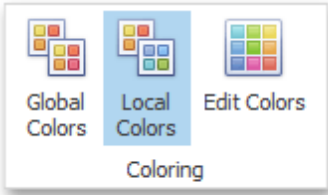
To use global colors for coloring dashboard item elements, click the **Global Colors** button in the **Design** ribbon tab.



Important

When a global color scheme is used, the dashboard reserves automatically generated colors for certain values regardless of the filter state.

- Using a local color scheme that provides an independent set of colors for each dashboard item. To use local colors for coloring dashboard item elements, click **Local Colors** in the **Design** ribbon tab.



Important
 When a local color scheme is used, the dashboard reassigns palette colors when the filter state is changed.

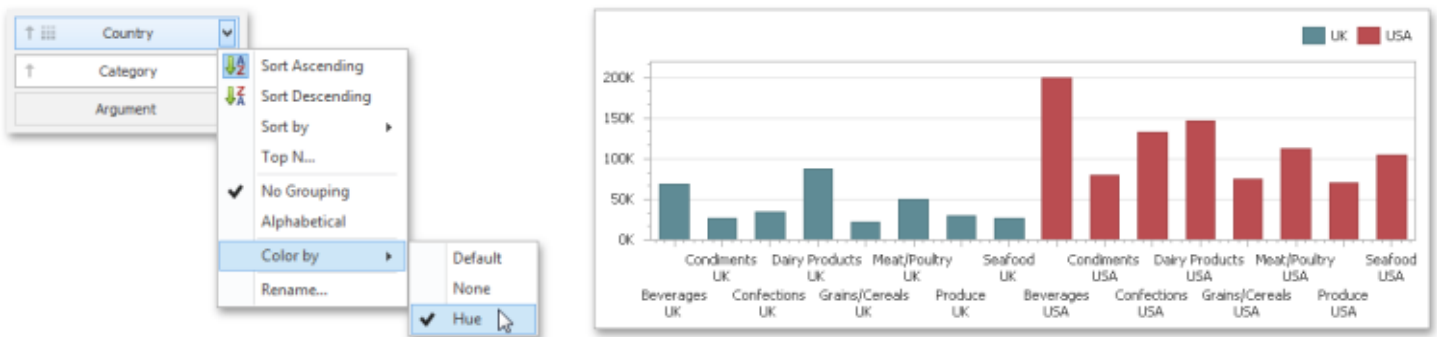
Coloring Dimensions and Measures

Dashboard items allow you to manage the coloring of individual dimensions or all dashboard item measures using predefined coloring modes.

Coloring Mode	Description
Default	Dimension values/measures are colored by default. To learn how specific dashboard items color their elements by default, see the Coloring topic for the corresponding dashboard item.
Hue	Dimension values/measures are colored by hue. If coloring by hue is enabled, a data item indicates this using the indicator.
None	Dimension values/measures are colored with the same color.

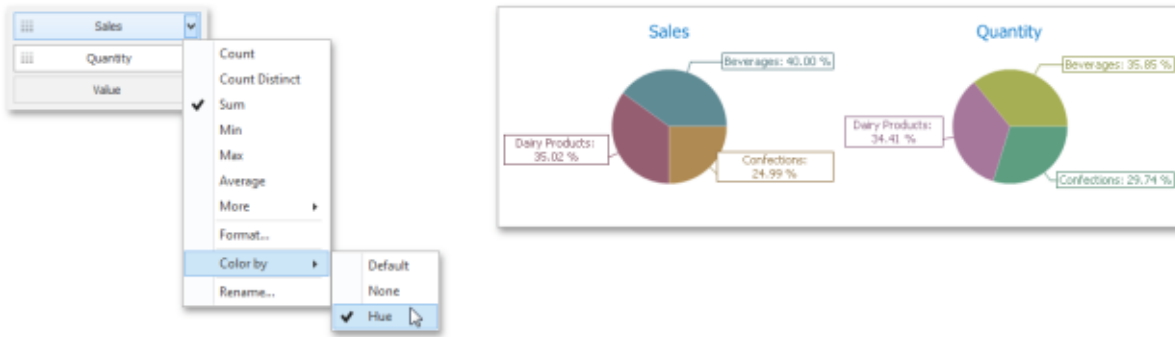
Coloring Dimension Values

To specify the coloring mode for the required dimension, click the dimension's [menu button](#) and use the **Color by** submenu. For instance, the image below shows the Chart dashboard item whose 'Country' dimension is colored by hue.



Coloring Measures

To specify the coloring mode for dashboard item measures, click the [menu button](#) of any measure and use the **Color by** submenu. For instance, the image below shows the Pie dashboard item whose measures are colored by hue.



If you enabled coloring by hue for several dimensions/measures, all combinations of dimension values/measures will be automatically colored using different colors from the default palette. To learn how to customize these colors, see [Customizing a Color Scheme](#).

Customizing a Color Scheme

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Appearance Customization](#) > [Coloring](#) > [Customizing a Color Scheme](#)

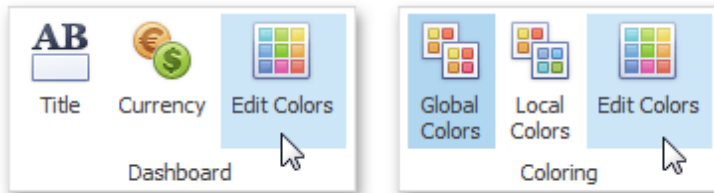
The Dashboard Designer provides the capability to edit colors contained in [global and local color schemes](#). You can select the required color from the default dashboard palette or specify a custom color.

- [Invoke a Color Scheme Dialog](#)
- [Edit Colors](#)
- [Add a New Value](#)
- [Add a New Color Table](#)

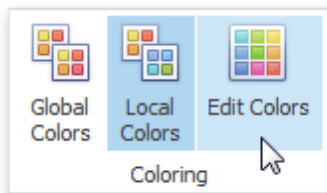
Invoke a Color Scheme Dialog

To edit colors, use the **Color Scheme** dialog. You can invoke this dialog in the following ways.

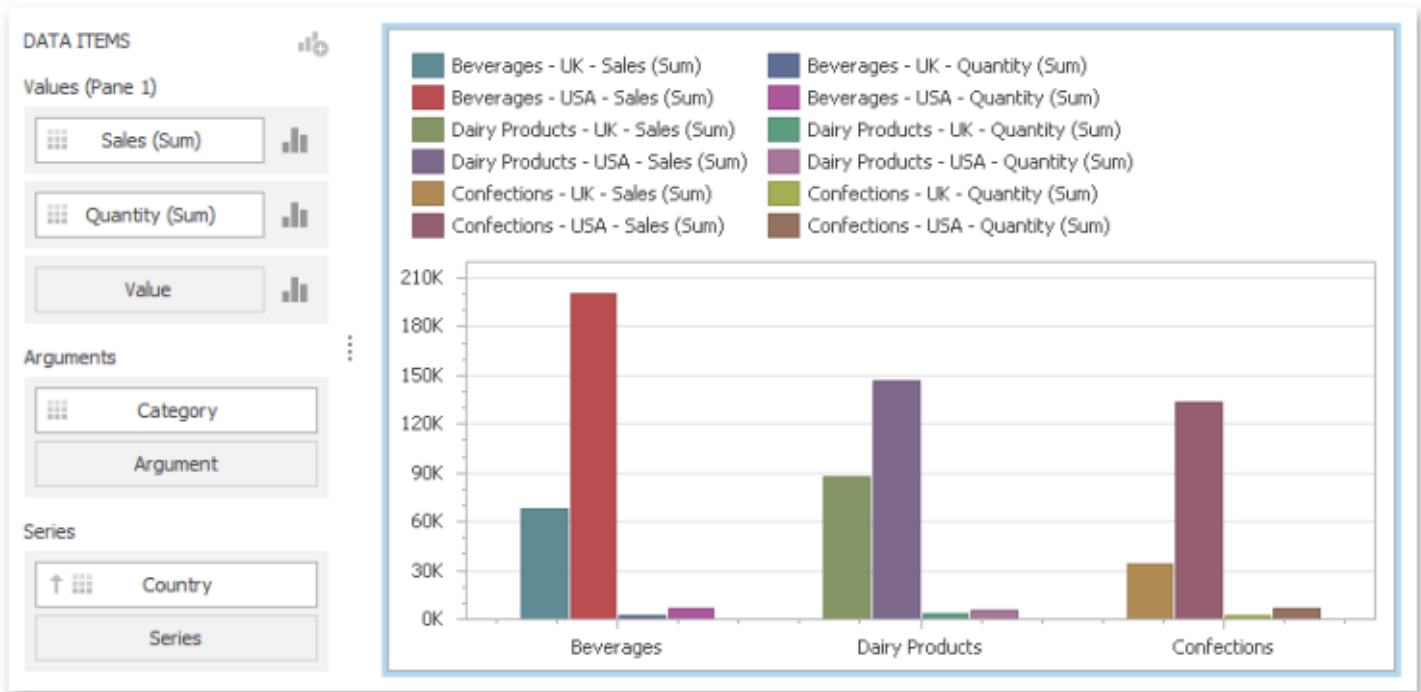
- To edit colors in a global color scheme, use the **Edit Colors** button in the **Home** ribbon tab or the **Edit Colors** button in the dashboard item's **Design** tab.



- To edit colors in a local color scheme, use the **Edit Colors** button in the contextual **Design** ribbon tab.



Lets consider a Chart dashboard item whose dimensions and measures are colored by hue using local colors.



For this dashboard item, the **Color Scheme** dialog will contain combinations of all dimension values and a specific measure.

The 'Local Color Scheme' dialog box shows the following configuration:

- Data Source 1:** Category | Country | MeasureNames
- Buttons:** Delete, New Color Table...
- Table:**

Value	Color
Beverages UK Quantity (Sum)	Auto
Beverages UK Sales (Sum)	Auto
Beverages USA Quantity (Sum)	Auto
Beverages USA Sales (Sum)	Auto
Confections UK Quantity (Sum)	Auto
Confections UK Sales (Sum)	Auto
Confections USA Quantity (Sum)	Auto
Confections USA Sales (Sum)	Auto
Dairy Products UK Quantity (Sum)	Auto
Dairy Products UK Sales (Sum)	Auto
Dairy Products USA Quantity (Sum)	Auto
Dairy Products USA Sales (Sum)	Auto
- Buttons:** New Value..., OK, Cancel, Apply

In this dialog, you can perform the following actions.

- [Edit automatically assigned colors](#) or specify new colors.
- [Add new values](#) to a color table.

- [Add new color tables](#) containing values whose colors are not yet assigned.

Edit Colors

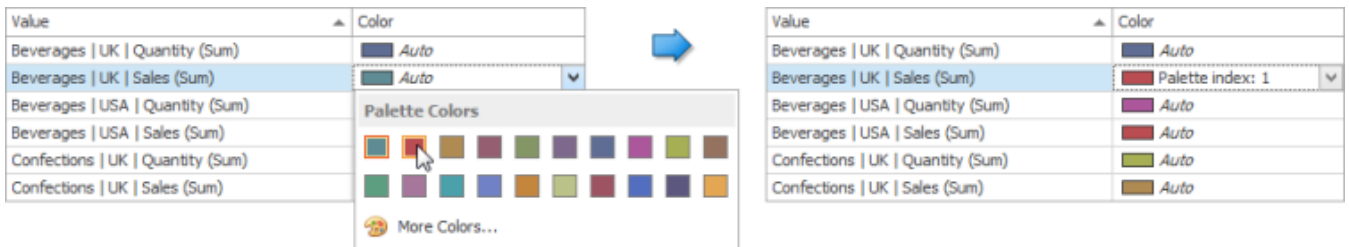
You can customize automatically assigned colors in several ways.

- To retain the automatically assigned color for the selected value, right-click the required value in the **Value** column and select **Retain this color**.

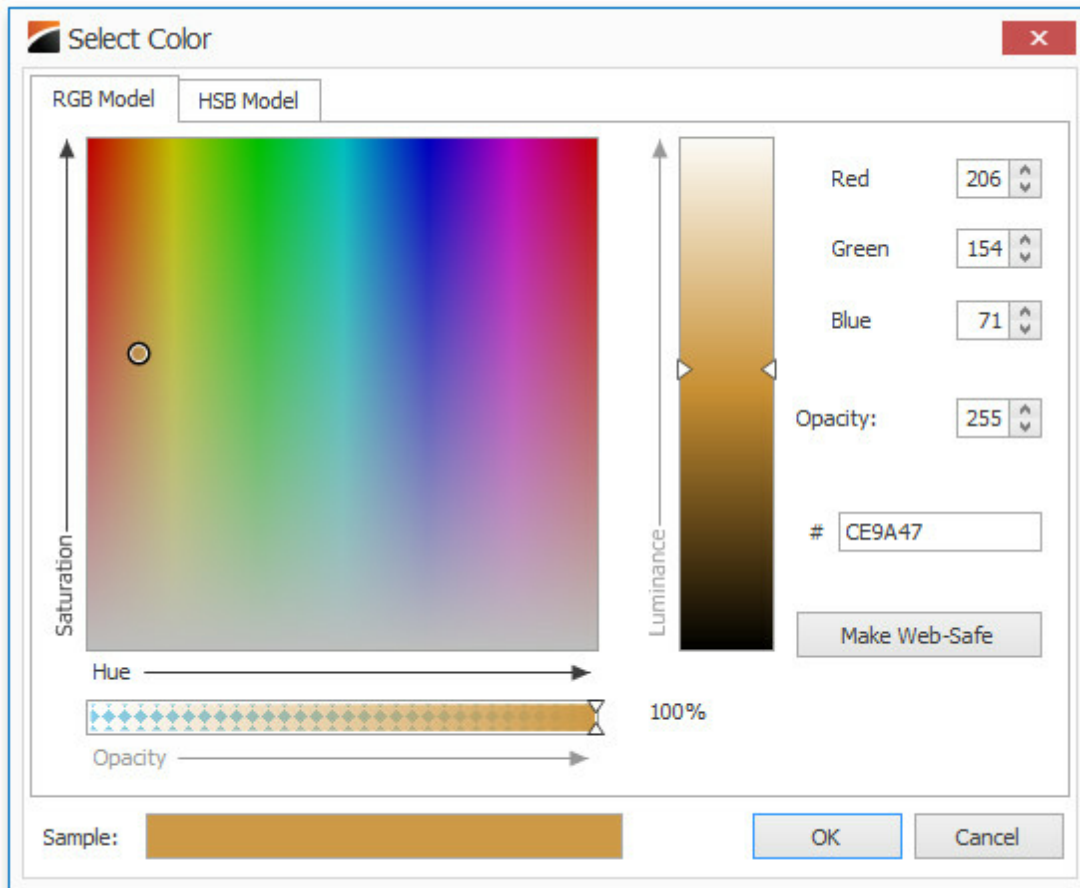


This reserves the current palette color for the selected value.

- You can select another palette color by clicking the required cell in the **Color** column.



- To specify a custom color, click **More Colors...** and pick any color using the RGB or HSB color model in the invoked **Select Color** dialog.



You can reset the customized color for the selected value using the **Reset** menu item.

Value	Color
Beverages UK Quantity (Sum)	Auto
Beverages UK Sales (Sum)	Palette index: 1
Beverages USA Quantity (Sum)	Reset
Beverages USA Sales (Sum)	Reset all
Confections UK Quantity (Sum)	Auto
Confections UK Sales (Sum)	Auto

Add a New Value

The **Color Scheme** dialog allows you adding a new value with the specified color to the selected color table. To do this, click the **New Value...** button.

In the invoked **New Value** dialog, specify the dimension values, add the required measures and click **OK**. This creates a new value whose color can be specified as described in [Edit Colors](#).

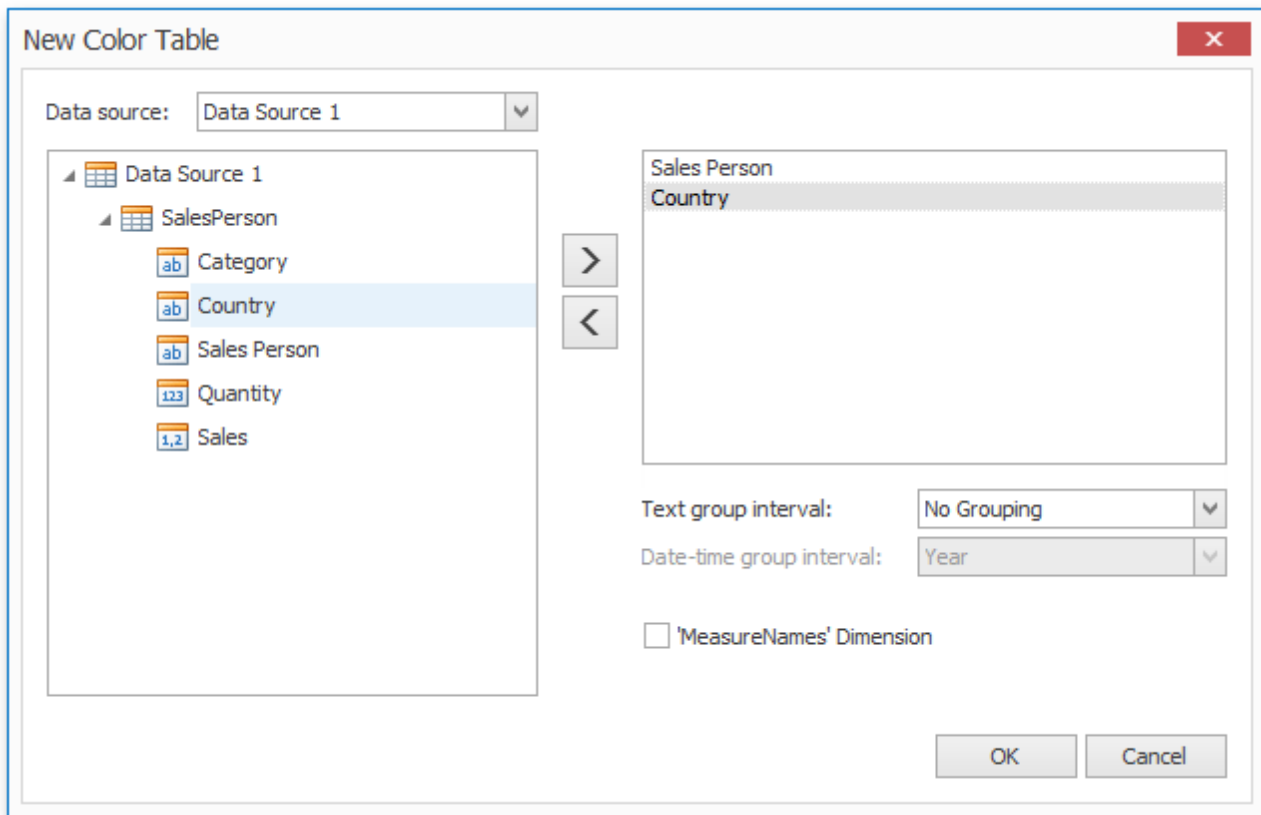
You can remove manually added values using the **Remove** context menu item.

Dairy Products USA Sales (Sum)	Auto
Seafood USA Sales (Sum)	Palette index: 8

Remove

Add a New Color Table

The **Color Scheme** dialog also allows you to add a new color table containing values whose colors are not yet assigned. To do this, click **New Color Table...** button.



In the invoked dialog, specify the data source, add the required dimensions and enable the **'MeasureNames' Dimension** check-box if you need to add measures to a color table.

Click **OK** to add the color table to a color scheme. Then, you can add values to this table (see [Add a New Value](#)) and specify its colors (see [Edit Colors](#)).

Data Analysis

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#)

This section describes how to perform advanced data analysis using the aggregate and window functions, dashboard parameters, etc.

The section consists of the following topics.

- [Aggregations](#)
- [Window Calculations](#)
- [Using Dashboard Parameters](#)

Aggregations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Aggregations](#)

Topics in this section describe functions used to introduce additional aggregation levels to prepare underlying data.

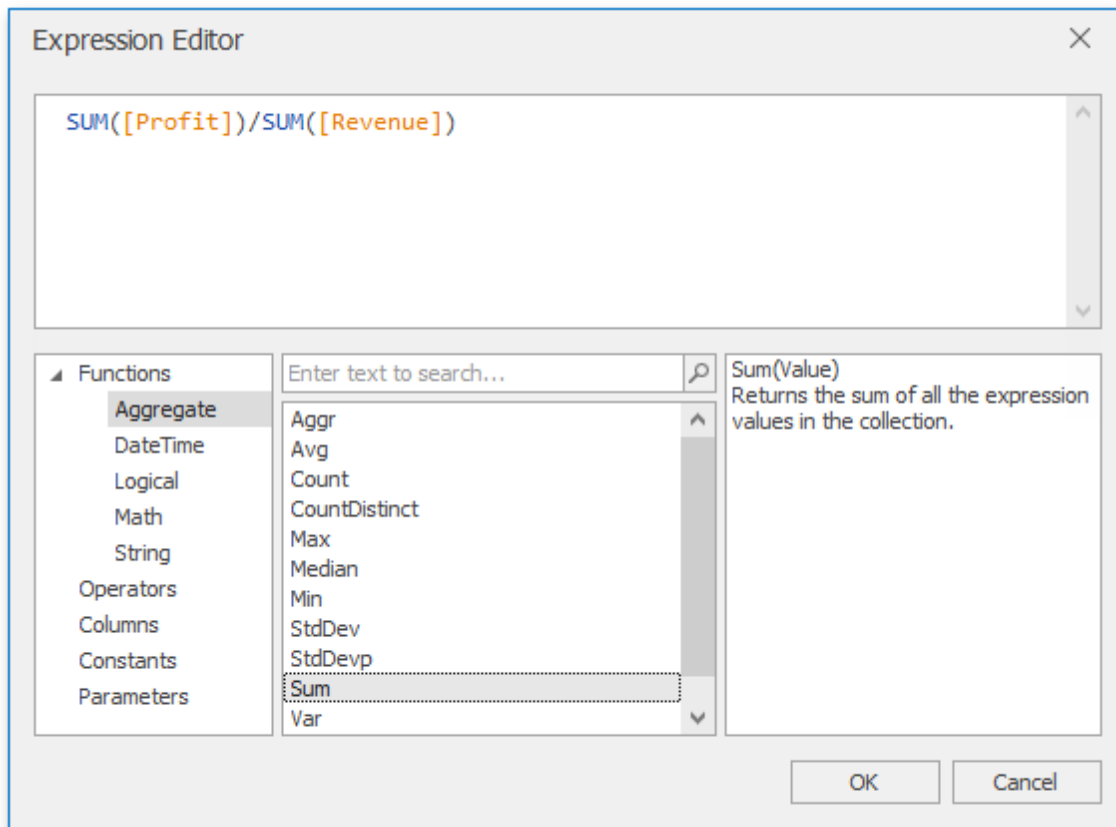
- [Summary Level Aggregations](#)
- [Intermediate Level Aggregations](#)

Summary Level Aggregations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Aggregations](#) > [Summary Level Aggregations](#)

The Dashboard Designer allows you to perform aggregations when constructing a [calculated field expression](#). This allows you to evaluate calculated fields on a summary level.

In the Dashboard Designer, you can use the following set of predefined aggregate functions.



Function	Description
Aggr(SummaryExpression, Dimensions)	Aggregates underlying data using the detail level specified by a predefined set of dimensions and a specified summary function. To learn more, see Intermediate Level Aggregations .
Avg(Value)	Returns the average of all the values in the expression.
Count()	Returns the number of values.
CountDistinct(Value)	Returns the number of distinct values.
Max(Value)	Returns the maximum value across all records.
Min(Value)	Returns the minimum value across all records.
Median(Value)	Returns the median of the values.
Sum(Value)	Returns the sum of all values.
Var(Value)	Returns an estimate of the variance of a population where the sample is a subset of the entire

	population.
Varp(Value)	Returns the variance of a population where the population is the entire data to be summarized.
StdDev(Value)	Returns an estimate of the standard deviation of a population where the sample is a subset of the entire population.
StdDevp(Value)	Returns the standard deviation of a population where the population is the entire data to be summarized.

These functions can be used for all types of numeric fields. After creating such calculated fields, you can use them as measures contained in an OLAP cube.

Intermediate Level Aggregations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Aggregations](#) > [Intermediate Level Aggregations](#)

The Dashboard can aggregate and summarize data on different levels.

- The [Query Builder](#) allows you to prepare an underlying data source before analyzing data. You can apply grouping, sorting, summarization and other data shaping operations during data selection.
- [Dashboard items](#) aggregate and summarize data at a visualization level using dimensions and measures, respectively. To learn more, see [Binding Dashboard Items to Data](#).
- The **Aggr** function allows you to introduce an intermediate detail level that is not related to the visualization level. This allows you to create custom aggregations at different levels and combine these aggregations with existing visualizations.

Overview

The **Aggr** function aggregates and summarizes underlying data using the detail level specified by a predefined set of dimensions and a specified summary function. This function can be used during the creation of a new [calculated field](#) in the Expression Editor.

The **Aggr** function has the following syntax.

C#	
<code>Aggr(summaryExpression, dimension1, dimension2, ...)</code>	

The first argument is a [summary expression](#) calculated against a specific data source field. The next arguments are the set of dimensions whose values are aggregated and used to calculate summaries specified using the first argument. For instance, the following function calculates sums of sales for each product within the specified category.

C#	
<code>Aggr(Sum([Sales]), [Category], [Product])</code>	

If you created the calculated field that includes the **Aggr** function and dropped the created field into an existing [dashboard item](#), the Dashboard joins the resulting aggregation with the already displayed data. This means that you can add data with the increased or decreased granularity to the dashboard item. There are two main scenarios.

- In the first scenario, an aggregation has a **less detailed granularity** than visualized data. In this scenario, an underlying data source contains the list of orders for two categories and corresponding products.

Order ID	Category	Product	Sales
1	Beverages	Chai	10
2	Beverages	Chai	15
3	Beverages	Coffee	35
4	Beverages	Coffee	20
5	Confections	Chocolate	40
6	Confections	Chocolate	55
7	Confections	Biscuits	25
8	Confections	Biscuits	35

To aggregate this data by individual categories, create a calculated field with the following expression.

C#	
<code>Aggr(Sum([Sales]), [Category])</code>	

The following internal table will be generated for this calculated field.

Order ID	Category	Product	Sales
1	Beverages	Chai	10
2	Beverages	Chai	15
3	Beverages	Coffee	35
4	Beverages	Coffee	20
5	Confections	Chocolate	40
6	Confections	Chocolate	55
7	Confections	Biscuits	25
8	Confections	Biscuits	35



Beverages	80
Confections	155

The sample [Grid](#) dashboard item contains more detailed data and includes the following columns: *Category*, *Product* and the sum of *Sales*.

Category	Product	Sales (Sum)
Beverages	Chai	\$25
Beverages	Coffee	\$55
Confections	Biscuits	\$60
Confections	Chocolate	\$95

If you drop the created calculated field to the Grid, the sum of sales for each category will be repeated for each Grid row.

Category	Product	Sales (Sum)
Beverages	Chai	\$25
Beverages	Coffee	\$55
Confections	Biscuits	\$60
Confections	Chocolate	\$95



Beverages	80
Confections	155



Category	Product	Sales (Sum)	Sales by Category (Sum)
Beverages	Chai	\$25	\$80
Beverages	Coffee	\$55	\$80
Confections	Biscuits	\$60	\$155
Confections	Chocolate	\$95	\$155

For instance, you can use these values later to calculate a contribution of each product to a categories sales.

- An aggregation has a **more detailed granularity** than visualized data.

To aggregate this data by categories and products, create a calculated field with the following expression.

```
C#
Aggr(Sum([Sales]), [Category], [Product])
```

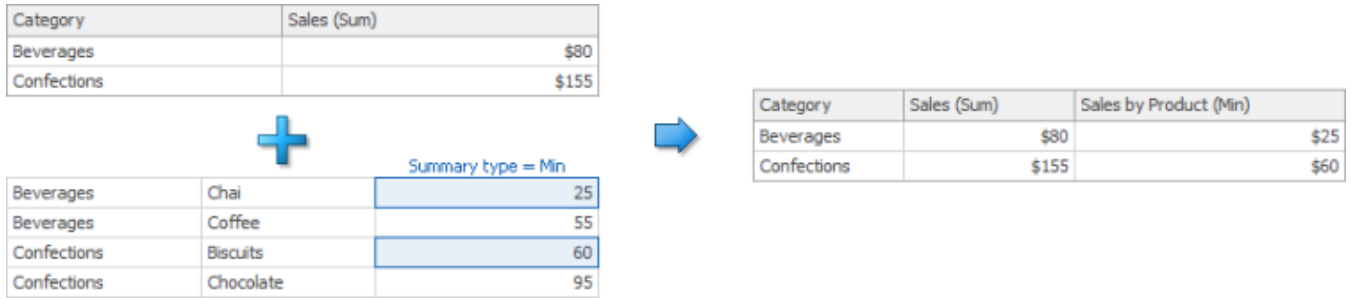
The following internal table will be generated for this calculated field.

Order ID	Category	Product	Sales
1	Beverages	Chai	10
2	Beverages	Chai	15
3	Beverages	Coffee	35
4	Beverages	Coffee	20
5	Confections	Chocolate	40
6	Confections	Chocolate	55
7	Confections	Biscuits	25
8	Confections	Biscuits	35



Beverages	Chai	25
Beverages	Coffee	55
Confections	Biscuits	60
Confections	Chocolate	95

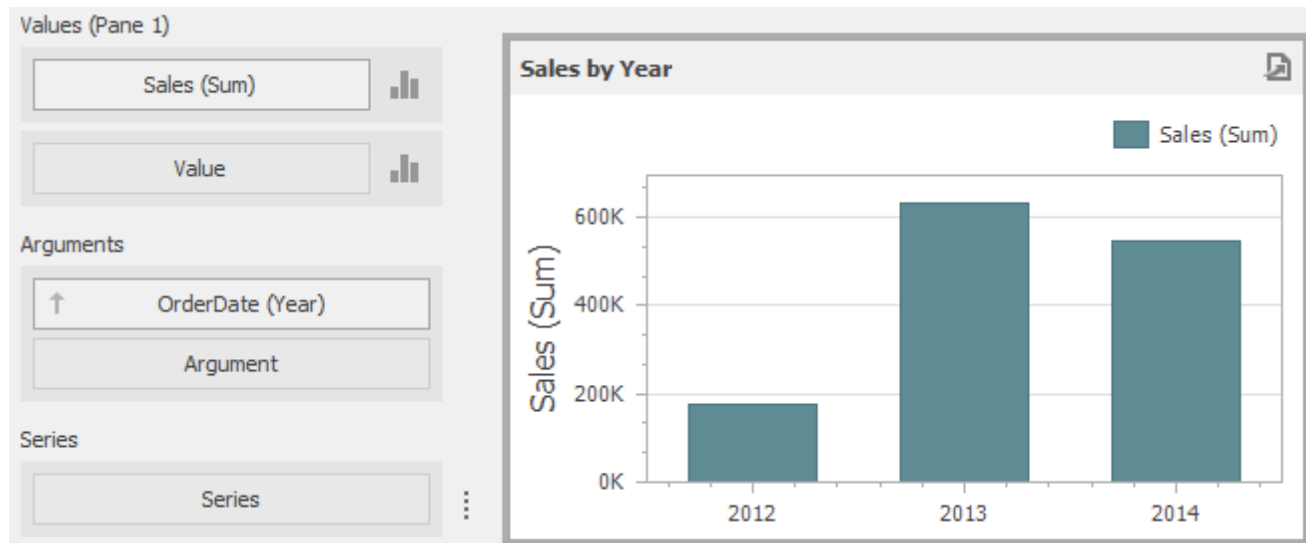
Drop the created calculated field to the Grid and set its summary type to **Min**. The Grid will display minimum product sales within each category.



Example 1 - Best/Worst Sales by Year

The following example shows how to display best and worst monthly sales for each year.

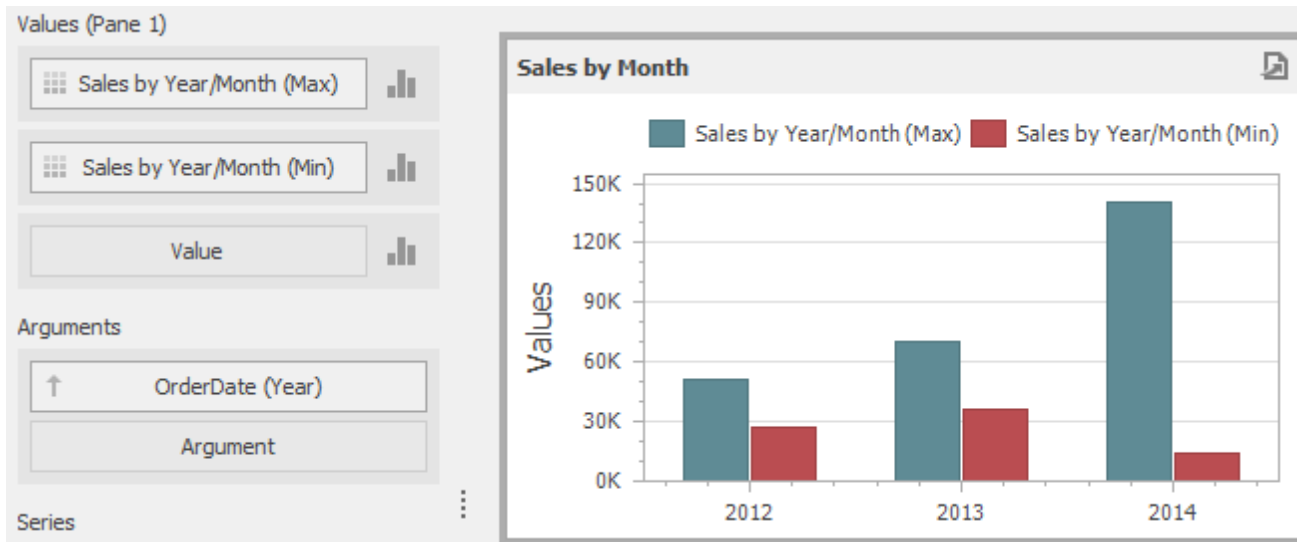
In this example, the [Chart](#) dashboard item shows the sum of sales by different years. The *Sales* field is placed in the [Values](#) section and the *OrderDate* (with the [Year group interval](#)) is placed in the [Arguments](#) section.



To display sales by the best/worst months for each year, create a new [calculated field](#) with the following expression.

```
C#
Aggr (Sum ([Sales]), GetYear ([OrderDate]), GetMonth ([OrderDate]))
```

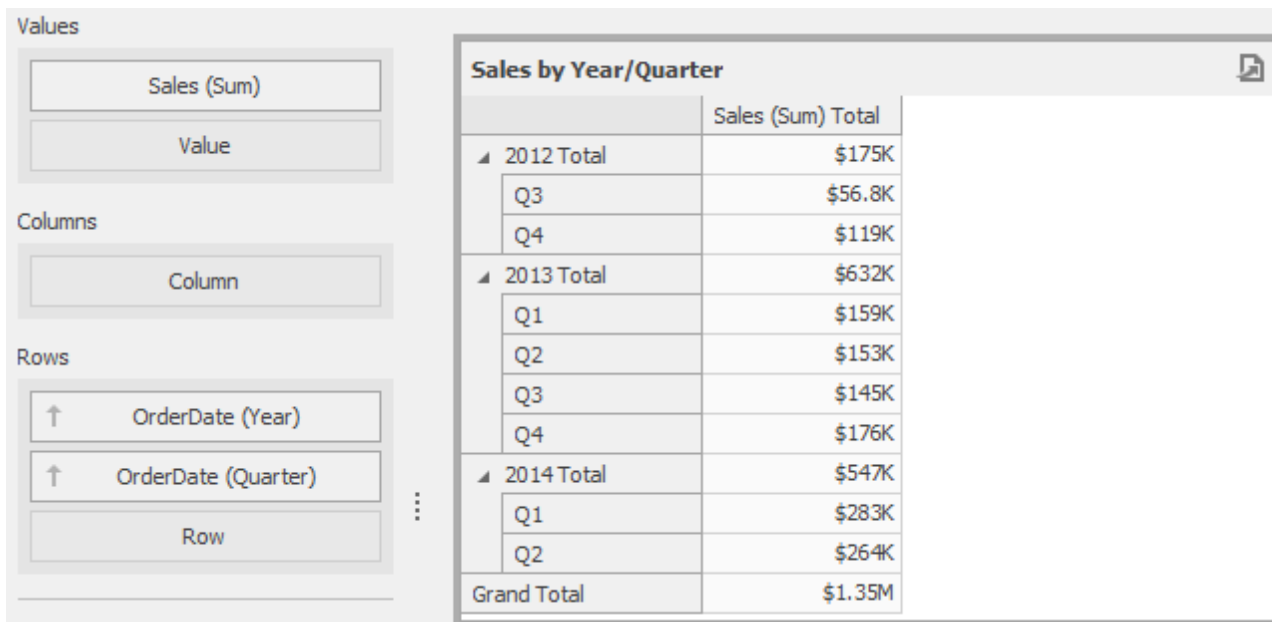
Drop this field (*Sales by Year/Month* in the image below) to the Values section and set its [summary type](#) to **Max**. Then, drop this field to Values again and set its summary type to **Min**. The Chart will visualize sales by the best/worst months in a year.



Example 2 - Percent of Total

This example will demonstrate how to calculate a contribution of individual quarter sales to year sales.

In this example, the [Pivot](#) dashboard item displays the sum of sales by year/quarter. The *Sales* field is placed in the [Values](#) section and the hierarchy of *OrderDate* fields (with the **Year** and **Quarter** [group intervals](#)) is placed in [Rows](#).



To calculate a contribution of each quarter to a year sales, do the following.

- Calculate totals for each year using the **Aggr** function by creating the following calculated field.

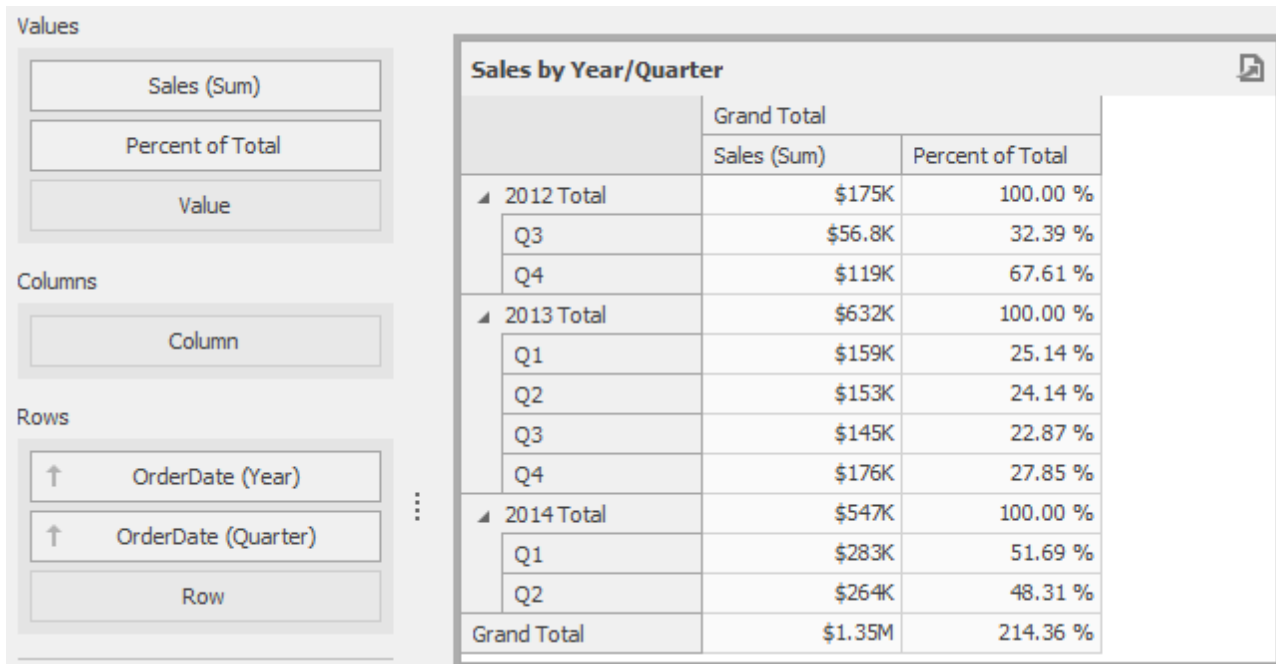
```
C#
Aggr(Sum([Sales]), GetYear([OrderDate]))
```

Set the name of the created field to *Sales by Year*.

- Calculate a contribution of each quarter to year sales by creating the following calculated field.

```
C#
Sum([Sales]) / Max([Sales by Year])
```

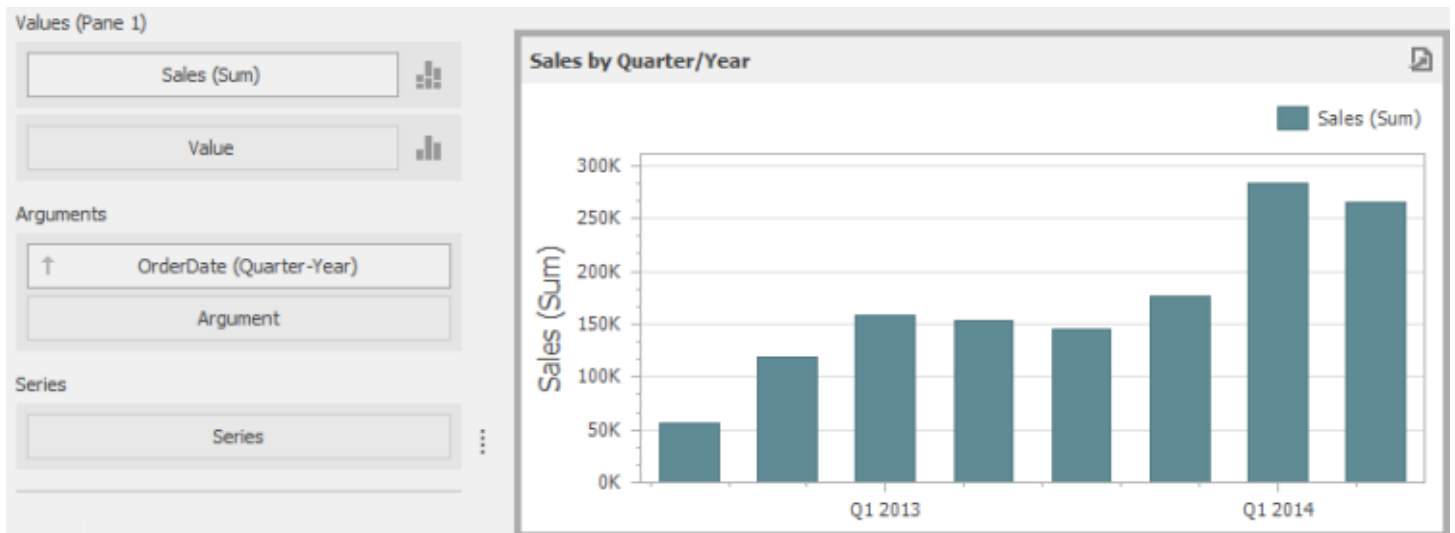
Name this field *Percent of Total* and drop it to **Values** to see the result.



Example 3 - Customer Acquisition

In this example, a customer acquisition will be evaluated by grouping customers by the quarter/year of their first purchase to compare sales contributions.

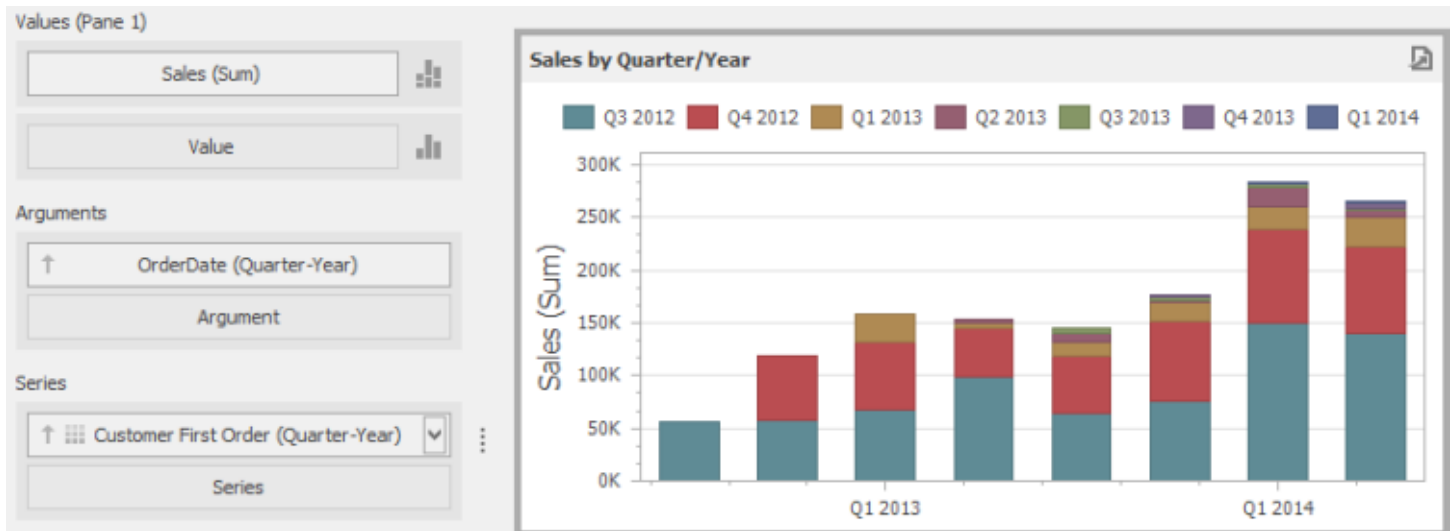
The [Chart](#) dashboard item below visualizes sales by quarter/year.



The following expression determines the minimum order date (the first purchase date) per customer.

```
C#
Aggr (Min (GetDateQuarterYear ([OrderDate])), [CustomerID])
```

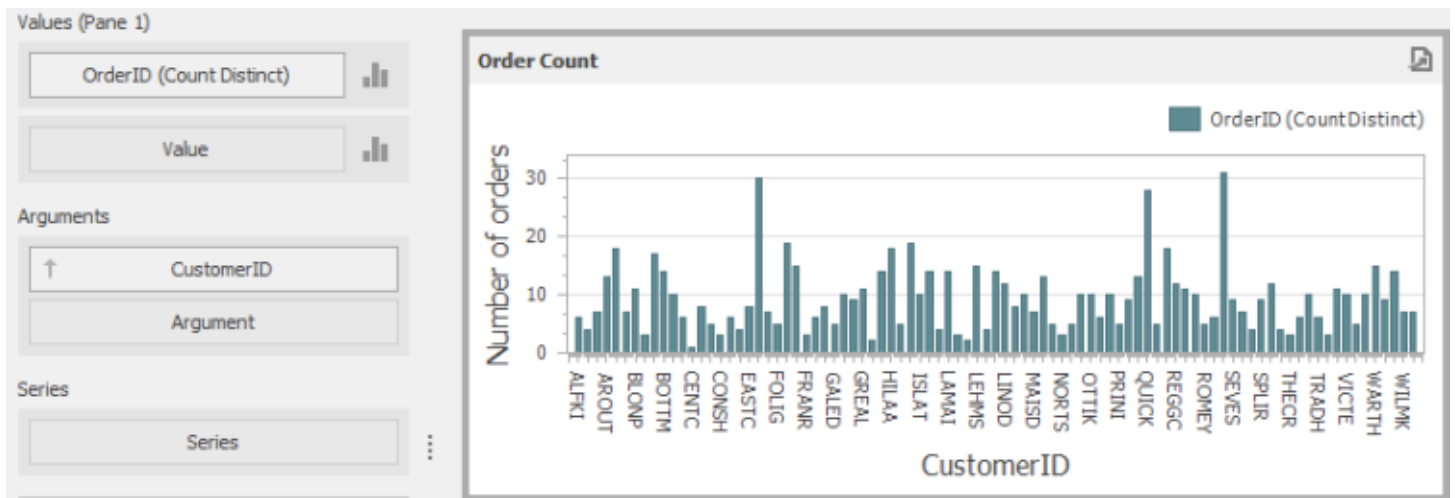
Set the name of the created field to *Customer First Order* and drop this field to the **Series** section to see the result.



Example 4 - Customer Order Count

In this example, you will learn how to divide customers count by the number of orders they made.

The Chart below shows the number of orders that is made by each customer.



The calculated field below evaluates the number of unique orders made by each customer.

C#	
	<code>Aggr (CountDistinct([OrderID]), [CustomerID])</code>

Set the name of this field to *Customer Order Count* and drop this field to arguments. Then, drop the *CustomerID* field to **Values** and change its [summary type](#) to **Count Distinct**.

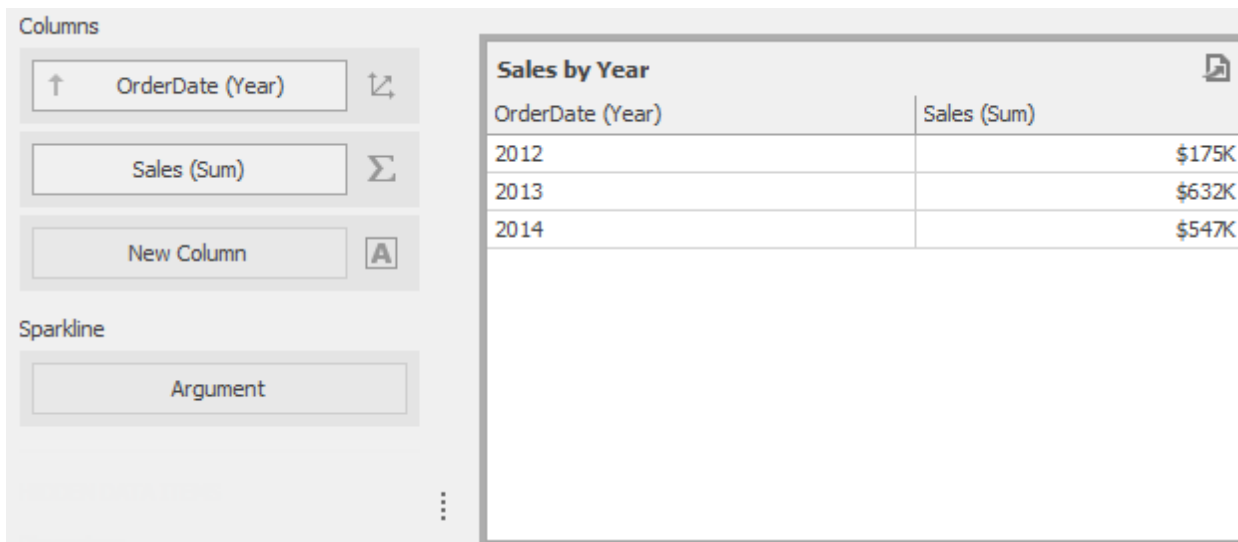


The Chart will show the number of customers that made a specific number of orders.

Example 5 - Best Product Sales by Year

This scenario requires the use of nested aggregations. In this example, the dashboard will show products with the best sales in a year along with sales values.

The initial [Grid](#) dashboard item shows sales of all products by year (the *OrderDate* column with the **Year** [group interval](#) and the *Sales* column). The data source also contains the *ProductName* field.



To implement this scenario, perform the following steps.

- Create the calculated field that will return product sales for individual years.

```
C#
Aggr(Sum([Sales]), GetYear([OrderDate]), [ProductName])
```

Set its name to *Product Sales by Year*.

- Create the calculated field that will return maximum sales values.

```
C#
Aggr(Max([Product Sales by Year]), GetYear([OrderDate]))
```

Set its name to *Max Product Sales by Year*.

- Finally, create a calculated field returning the name of the product with the best sales and a corresponding sales value.

```
C#
Iif([Max Product Sales by Year] = [Product Sales by Year], [ProductName] + ' ($ ' + [Product Sa]
```

Specify the name as *Best Sales Product*. Then, drop this field to the **Columns** section to see the result.

Columns

↕

Σ

Σ

A

Sparkline

Best Sales Products 📄		
OrderDate (Year)	Sales (Sum)	Best Sales Product (Max)
2012	\$175K	Côte de Blaye (\$ 21080.0)
2013	\$632K	Côte de Blaye (\$ 56441.7)
2014	\$547K	Côte de Blaye (\$ 72462.5)

Window Calculations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#)

Window calculations provide the capability to apply specific computations to measure values and allow you to perform different analytical tasks such as to compute running totals, percentages of totals, differences, etc.

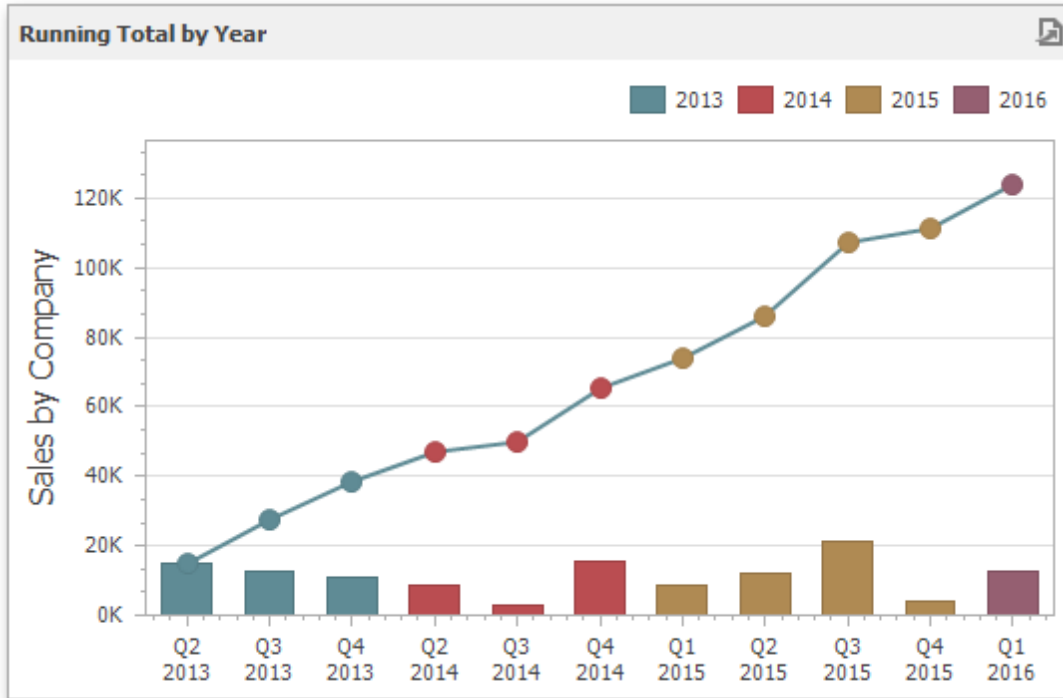
Topics in this section.

- [Window Calculations Overview](#)
- [Window Definition](#)
- [Creating Window Calculations](#)
- [Calculation Functions Reference](#)
- [Window Calculation Limitations](#)

Window Calculations Overview

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#) > [Window Calculations Overview](#)

Window calculations provide the capability to apply specific computations to measure values and allow you to perform different analytical tasks such as to compute running totals, percentages of totals, differences, etc.



The Dashboard Designer allows you to apply window calculations to values of the specified [measure](#). The following calculation types are supported.

- **Running Total** - Allows you to calculate a cumulative total for a set of measure values.

Sales	Running Total
10	10
20	30
25	55
25	80
20	100

20+10
25+20+10
25+25+20+10
20+25+25+20+10

- **Moving Calculation** - Allows you to apply a moving calculation, which uses neighboring values to calculate a total. Note that neighboring values are specified using offsets from the currently processed value.

Sales	Moving
10	30
20	55
25	70
25	70
20	45

StartOffset=-1; EndOffset=1
0+10+20
10+20+25
20+25+25
25+25+20
25+20+0

- **Difference** - Allows you to compute differences between measure values.

Sales	Difference
10	
20	10
25	5
25	0
20	-5

20-10

25-20

25-25

20-25

- **Percent of Total** - Allows you to calculate a contribution of individual measure values to a total.

Sales	Percent
10	10.00 %
20	20.00 %
25	25.00 %
25	25.00 %
20	20.00 %

10/100*100%

20/100*100%

25/100*100%

25/100*100%

20/100*100%

- **Rank** - Allows you to rank values of the specified measure.

Sales	Rank	Competition rank
10	1	10 20 20 25 25
20	2	1 2 2 4 4
25	4	
25	4	
20	2	

Note that the computing of calculations depends on two factors.

- The type of the [dashboard item](#).
In this case, you need to specify a calculation *direction* that depends on the dashboard item type. For instance, the [Pivot](#) dashboard item provides the capability to apply calculations along with its columns or rows.
- The set of dimensions that are used to calculate measure values.
In this case, a calculation *direction* depends on the dimensions' order.

In both cases, measure values participating in a calculation fall into a specified *window*. To learn more, see [Window Definition](#).

To learn how to create a calculation in the Dashboard Designer, see [Creating Window Calculations](#).

Window Definition

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#) > [Window Definition](#)

A window definition specifies a window that limits measure values participating in a calculation. To learn more, see [Window Calculations Overview](#).

Dashboard Item Window Definition

The following table lists window definitions in terms of the [Pivot](#) dashboard item. A calculation is performed using the [Index](#) function along the following *directions*.

Direction	Description	Example	Example Description																																																												
Columns	A calculation is performed horizontally through Pivot columns.	<table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="4">2015</th> <th colspan="2">2016</th> </tr> <tr> <th colspan="2"></th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Q1</th> <th>Q2</th> </tr> </thead> <tbody> <tr> <td rowspan="3">UK</td> <td>Beverages</td> <td>1 →</td> <td>2 →</td> <td>3 →</td> <td>4 →</td> <td>5 →</td> <td>6</td> </tr> <tr> <td>Condiments</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Confections</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td rowspan="3">USA</td> <td>Beverages</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Condiments</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Confections</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> </tbody> </table>			2015				2016				Q1	Q2	Q3	Q4	Q1	Q2	UK	Beverages	1 →	2 →	3 →	4 →	5 →	6	Condiments	1	2	3	4	5	6	Confections	1	2	3	4	5	6	USA	Beverages	1	2	3	4	5	6	Condiments	1	2	3	4	5	6	Confections	1	2	3	4	5	6	In this example, a window is a combination of Country/Category dimensions.
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Columns within Groups	A calculation is performed horizontally through Pivot columns within groups.			▲ 2015				▲ 2016	
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			Confections	1	2	3	4	1	2
		▲ USA	Beverages	1	2	3	4	1	2
			Condiments	1	2	3	4	1	2
			Confections	1	2	3	4	1	2

In this example, a window is a combination of the Country/Category and Year dimensions.

Rows within Groups	A calculation is performed vertically through Pivot rows within groups.			▲ 2015				▲ 2016	
				Q1	Q2	Q3	Q4	Q1	Q2
		▲ UK	Beverages	1	1	1	1	1	1
			Condiments	2	2	2	2	2	2
			Confections	3	3	3	3	3	3
		▲ USA	Beverages	1	1	1	1	1	1
			Condiments	2	2	2	2	2	2
			Confections	3	3	3	3	3	3

In this example, a window is a combination of the Year/Quarter and Country dimensions.

Columns / Rows within Groups

A calculation is performed horizontally through Pivot columns then rows within groups.

		2015				2016	
		Q1	Q2	Q3	Q4	Q1	Q2
UK	Beverages	1	2	3	4	1	2
	Condiments	5	6	7	8	3	4
	Confections	9	10	11	12	5	6
USA	Beverages	1	2	3	4	1	2
	Condiments	5	6	7	8	3	4
	Confections	9	10	11	12	5	6

In this example, a window is a combination of Country/Year dimensions.

Rows / Columns within Groups

A calculation is performed vertically through Pivot rows, then columns within groups.

		2015				2016	
		Q1	Q2	Q3	Q4	Q1	Q2
UK	Beverages	1	4	7	10	1	4
	Condiments	2	5	8	11	2	5
	Confections	3	6	9	12	3	6
USA	Beverages	1	4	7	10	1	4
	Condiments	2	5	8	11	2	5
	Confections	3	6	9	12	3	6

In this example, a window is a combination of Country/Year dimensions.

* *Group* - an area that is limited by a set of values corresponding to the bottommost partitioning dimensions.

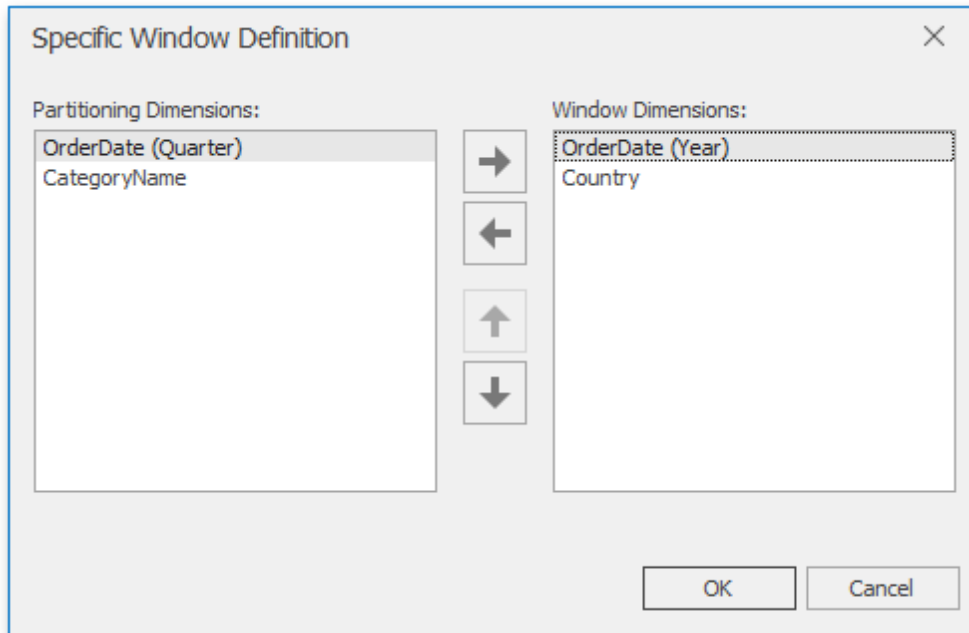
Specific Window Definition

If necessary, you can manually specify the set of dimensions that fall into the *window*. These dimensions are called *window dimensions*.

For instance, the [Index](#) function is applied to measure values of the pivot table below using the *OrderDate (Year)* and *Country* window dimensions.

		2015				2016	
		Q1	Q2	Q3	Q4	Q1	Q2
UK	Beverages	1	1	1	1	3	3
	Condiments	1	1	1	1	3	3
	Confections	1	1	1	1	3	3
USA	Beverages	2	2	2	2	4	4
	Condiments	2	2	2	2	4	4
	Confections	2	2	2	2	4	4

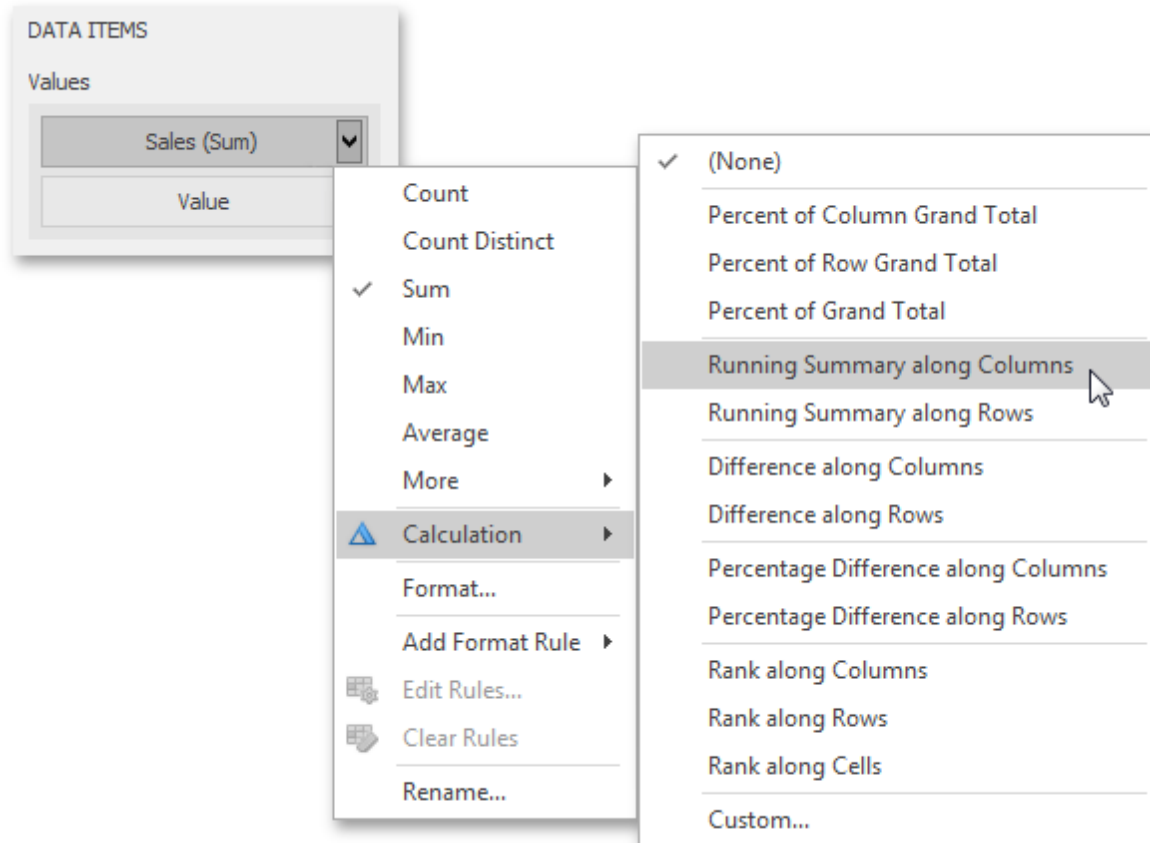
The **Specific Window Definition** dialog allows you to do this.



Creating Window Calculations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#) > [Creating Window Calculations](#)

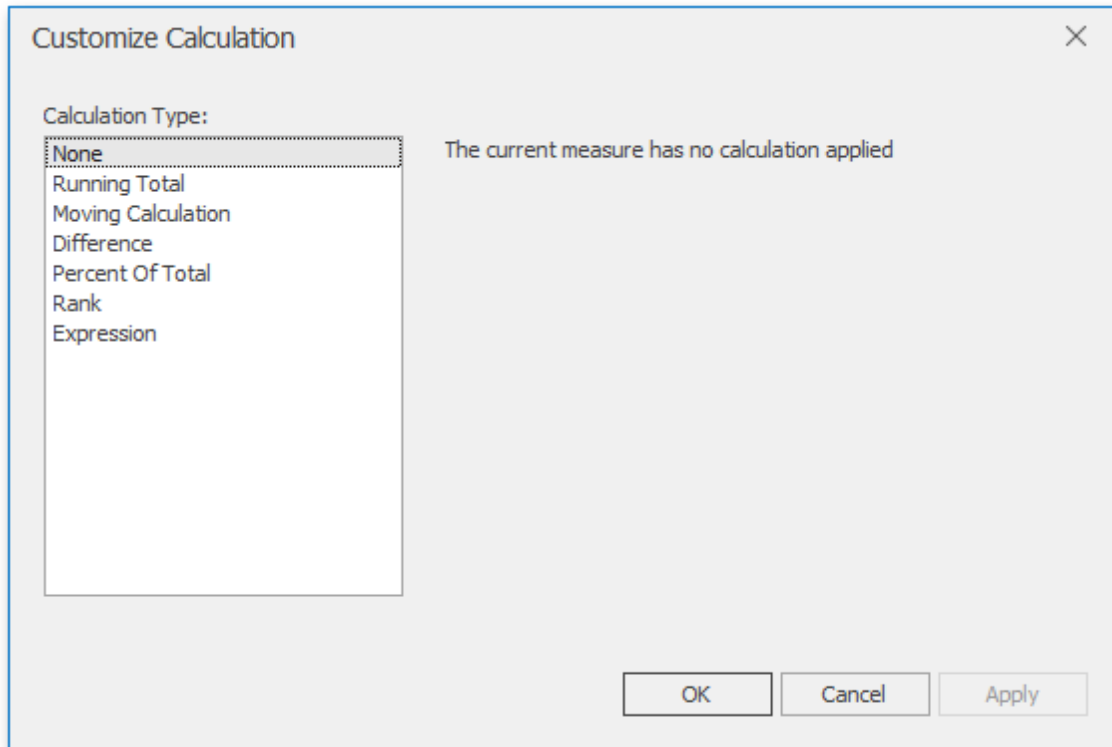
The Dashboard Designer allows you to add a [window calculation](#) for numeric measures. To do this, invoke the [data item menu](#) and select the required calculation type.



The image above shows a calculation menu of the [Pivot](#) dashboard item. The following items are available.

- **Percent of Column Grand Total** - Calculates a contribution of individual measure values to a column grand total.
- **Percent of Row Grand Total** - Calculates a contribution of individual measure values to a row grand total.
- **Percent of Grand Total** - Calculates a contribution of individual measure values to a grand total.
- **Running Summary along Columns** - Calculates a cumulative total for measure values along columns (horizontally).
- **Running Summary along Rows** - Calculates a cumulative total for measure values along rows (vertically).
- **Difference along Columns** - Calculates differences between measure values along columns (horizontally).
- **Difference along Rows** - Calculates differences between measure values along rows (vertically).
- **Percent Difference along Columns** - Calculates percentage differences between measure values along columns (horizontally).
- **Percent Difference along Rows** - Calculates percentage differences between measure values along rows (vertically).
- **Rank along Columns** - Ranks measure values along columns (horizontally).
- **Rank along Rows** - Ranks measure values along rows (vertically).
- **Rank along Cells** - Ranks measure values along cells (throughout the entire pivot table).
- **Custom...** - Allows you to create a custom calculation by specifying various settings. Clicking this item invokes the **Customize Calculation** dialog that allows you to add additional customizations to

calculations.



To learn more, see descriptions of the available calculations below.

Note

Note that the list of available items in this menu can be changed by the Dashboard Designer dynamically. For instance, if the Pivot dashboard item does not contain dimensions in the **Rows** section, menu items related to rows will be disabled.

Running Total

The Running Total calculation can be used to compute a cumulative total for the specified measure across a [window](#). For example, the Grid below displays cumulative sales across all quarters.

Order Year	Order Quarter	Sales	Running Total
2015	Q1	\$138K	\$138K
	Q2	\$143K	\$281K
	Q3	\$154K	\$435K
	Q4	\$182K	\$617K
2016	Q1	\$298K	\$916K
	Q2	\$142K	\$1.06M

The Customize Calculation dialog provides the following settings for the Running Total calculation.

Customize Calculation

Calculation Type:

- None
- Running Total
- Moving Calculation
- Difference
- Percent Of Total
- Rank
- Expression

Running along: Rows

Summary function: Sum

RunningSum(Sum([Sales]))

Edit in Expression Editor

OK Cancel Apply

- **Running along** - Specifies a [window and direction](#) used to calculate running totals.
- **Summary function** - Specifies a summary function used to apply calculation. To learn more about the available summary functions, see the **Summary Function Types** in the [summary function](#) topic.

Moving Calculation

The Moving calculation uses neighboring values to calculate a total. For example, the Grid below shows a moving average across all quarters.

Order Year	Order Quarter	Sales	Moving Average
2015	Q1	\$138K	\$138K
	Q2	\$143K	\$141K
	Q3	\$154K	\$145K
	Q4	\$182K	\$160K
2016	Q1	\$298K	\$211K
	Q2	\$142K	\$207K

The Customize Calculation dialog provides the following settings for the Moving calculation.

Customize Calculation

Calculation Type:

- None
- Running Total
- Moving Calculation**
- Difference
- Percent Of Total
- Rank
- Expression

Moving along: Rows

Summary function: Sum

Start offset: 2

End offset: 0

WindowSum(Sum([Sales]), -2, 0)

Edit in Expression Editor

OK Cancel Apply

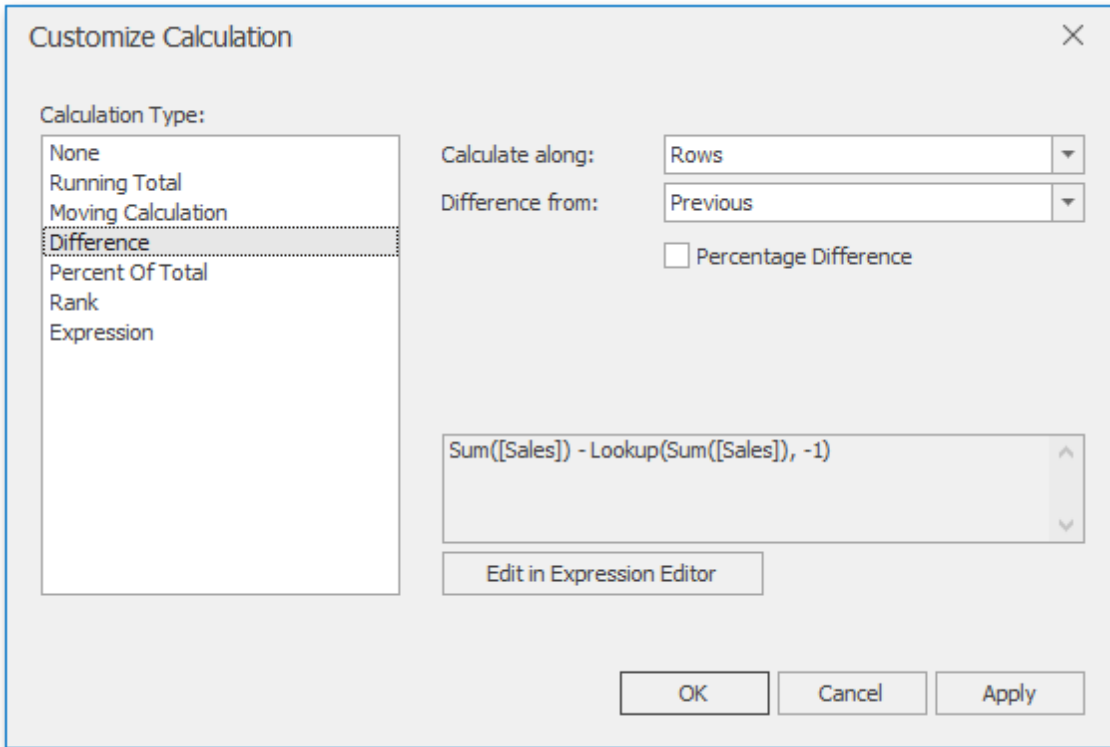
- **Moving along** - Specifies a [window and direction](#) used to apply a calculation.
- **Summary function** - Specifies a summary function used to apply a calculation. To learn more about the available summary functions, see the **Summary Function Types** in the [summary function](#) topic.
- **Start offset / End offset** - Specify start/end offsets from the currently processed value. For instance, if you specified offsets as 1/1, the previous and next values will be used along with the current value to apply the Moving calculation.

Difference

The Difference calculation can be used to compute the difference between measure values across a [window](#). For example, the Grid below shows absolute differences between quarterly sales.

Order Year	Order Quarter	Sales	Difference
2015	Q1	\$138K	
	Q2	\$143K	\$4.89K
	Q3	\$154K	\$10.8K
	Q4	\$182K	\$27.7K
2016	Q1	\$298K	\$117K
	Q2	\$142K	(\$156K)

The Customize Calculation dialog provides the following settings for the Difference calculation.



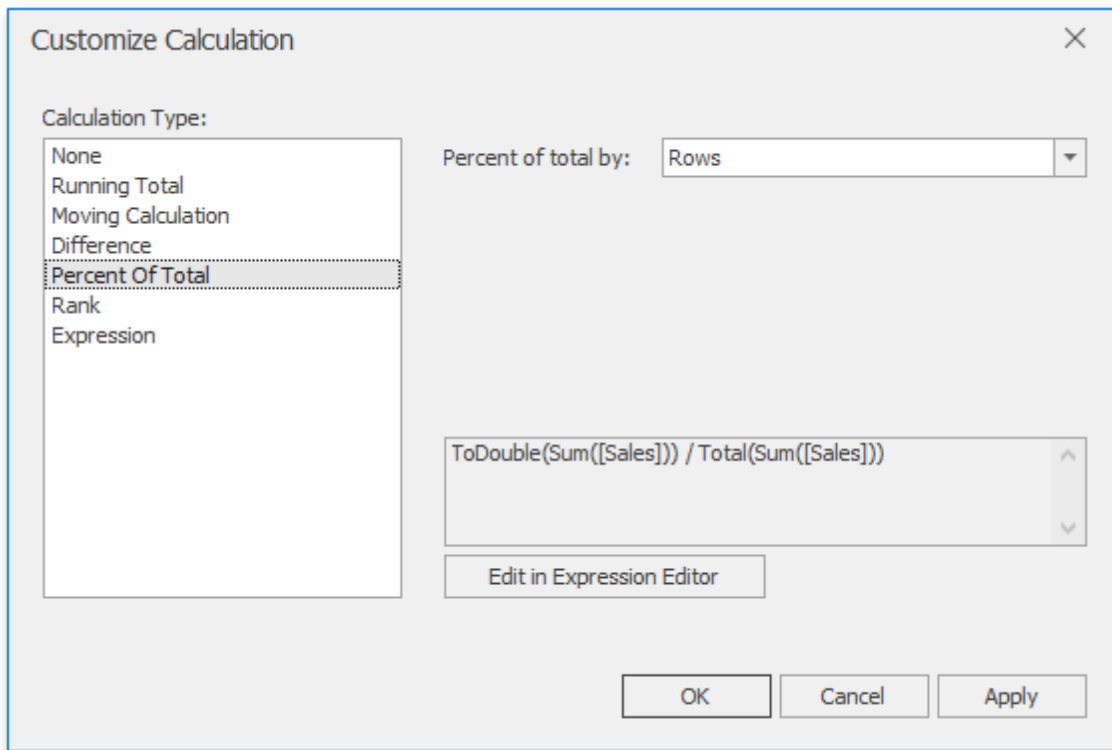
- **Calculate along** - Specifies a [window and direction](#) used to calculate differences.
- **Difference from** - Specifies the value used to calculate the difference. The following values are available: *Previous, Next, First and Last*. You can also use the **Percent Difference** option to specify whether the absolute or percentage difference is displayed.

Percent of Total

A calculation is used to compute a percentage of the total for the specified measure across a [window](#). For example, the Grid below shows a contribution of individual quarterly sales to total sales.

Order Year	Order Quarter	Sales	Percent of Total
2015	Q1	\$138K	13.07 %
	Q2	\$143K	13.54 %
	Q3	\$154K	14.55 %
	Q4	\$182K	17.18 %
2016	Q1	\$298K	28.22 %
	Q2	\$142K	13.44 %

The Customize Calculation dialog provides the following settings for the Percent of Total calculation.



- **Percent of Total** - Specifies a [window and direction](#) used to apply a Percent of Total calculation.

Rank

Use the Rank calculation to compute rankings for the specified measure across a [window](#). For example, the Grid below shows a ranking of sales for individual quarters.

Order Year	Order Quarter	Sales	Rank
2015	Q1	\$138K	6
	Q2	\$143K	4
	Q3	\$154K	3
	Q4	\$182K	2
2016	Q1	\$298K	1
	Q2	\$142K	5

The Customize Calculation dialog provides the following settings for the Rank calculation.

Customize Calculation

Calculation Type:

- None
- Running Total
- Moving Calculation
- Difference
- Percent Of Total
- Rank**
- Expression

Rank along: Rows

Rank type: Competition

Order:

 Ascending

 Descending

RankCompetition(Sum([Sales]), 'asc')

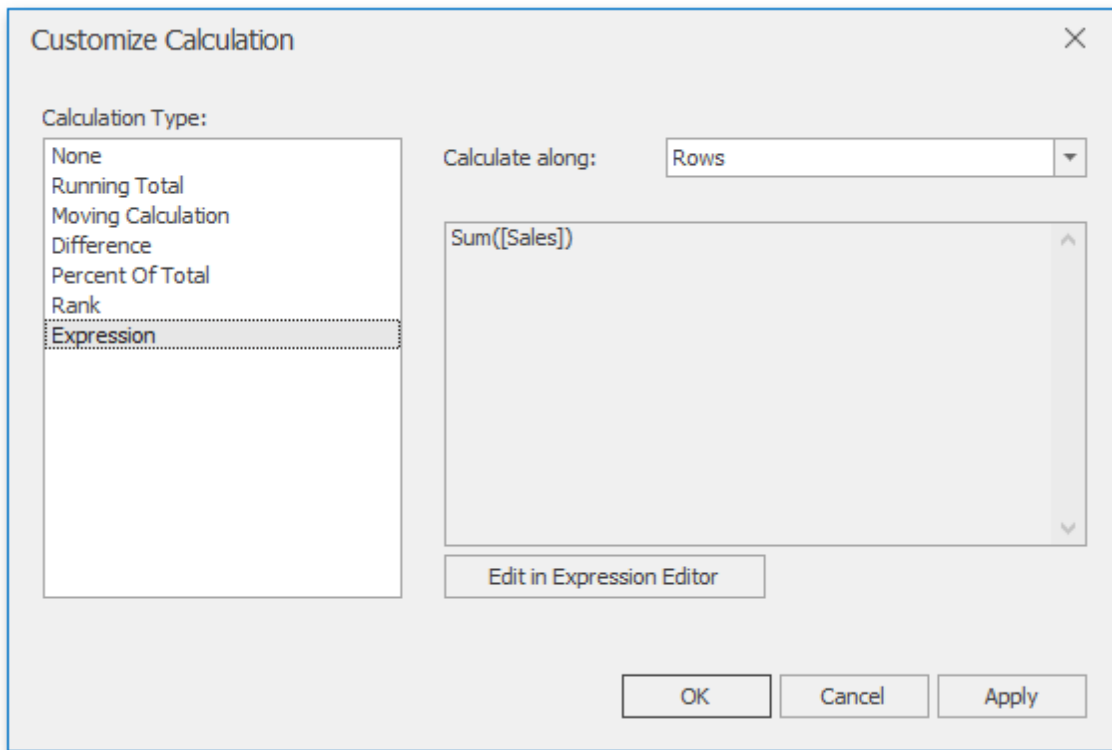
Edit in Expression Editor

OK Cancel Apply

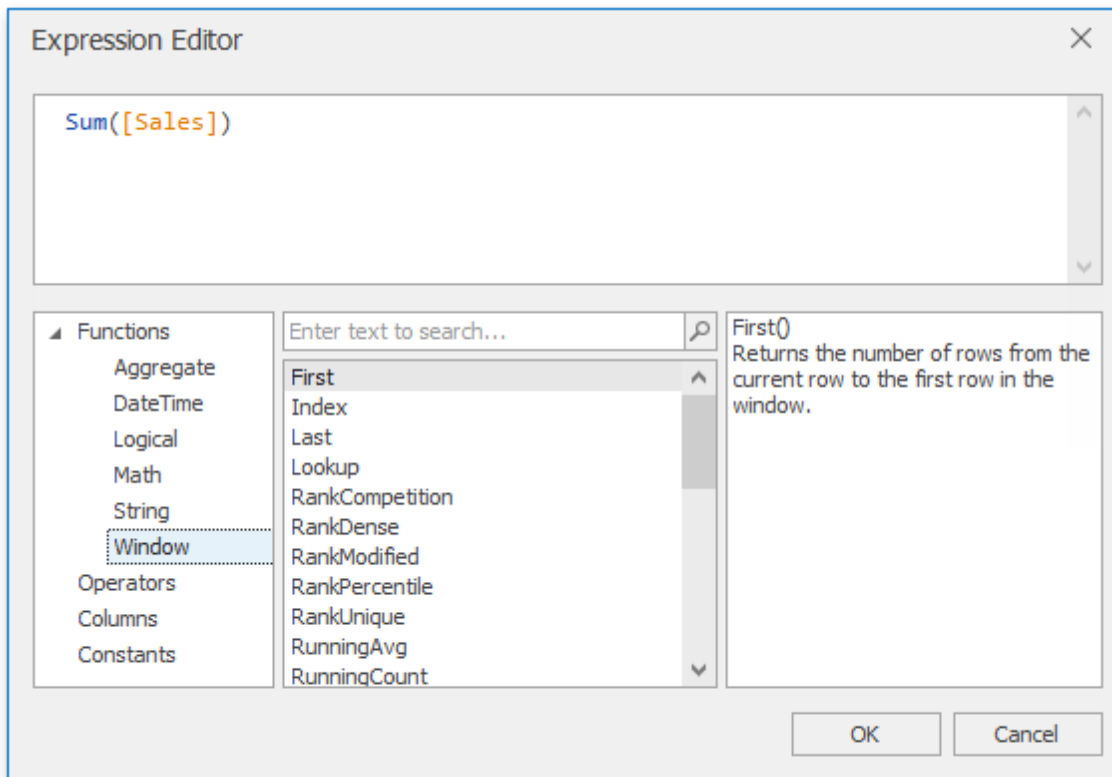
- **Rank along** - Specifies a [window and direction](#) used to rank values.
- **Rank type** - Specifies the type of ranking. The following rank types are available: *Unique, Competition, Dense, Modified* and *Percentile*.
- **Order** - Specifies the order of ranking. You can select *Ascending* or *Descending*.

Expression

Use Expression to specify a custom calculation by adding the required [calculation functions](#) inside the measure expression.



Click the **Edit in Expression Editor** button to invoke the **Expression Editor** and specify the required expression.



The Expression type provides the **Calculate along** option that specifies the [window and direction](#) used to calculate differences. Note that this option is in effect if the expression contains a [calculation function](#).

Calculation Functions Reference

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#) > [Calculation Functions Reference](#)

This topic contains the descriptions of window functions that can be used to specify measure expressions.

Function	Description	Example	Image																								
Last()	Returns the number of rows from the current row to the last row in the window.	Last()	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>Last()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>5</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>4</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>3</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>2</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>1</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>0</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	Last()	2015	Q1	\$138K	5	Q2	\$143K	4	Q3	\$154K	3	Q4	\$182K	2	2016	Q1	\$298K	1	Q2	\$142K	0
Order Year	Order Quarter	Sales	Last()																								
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First()	Returns the number of rows from the current row to the first row in the window.	First()	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>First()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>0</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>-1</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>-2</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>-3</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>-4</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>-5</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	First()	2015	Q1	\$138K	0	Q2	\$143K	-1	Q3	\$154K	-2	Q4	\$182K	-3	2016	Q1	\$298K	-4	Q2	\$142K	-5
Order Year	Order Quarter	Sales	First()																								
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Index()	Returns the index of the current row in the window.	Index()	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>Index()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>1</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>2</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>3</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>4</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>5</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>6</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	Index()	2015	Q1	\$138K	1	Q2	\$143K	2	Q3	\$154K	3	Q4	\$182K	4	2016	Q1	\$298K	5	Q2	\$142K	6
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Size()	Returns the number of rows in the window.	Size()	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>Size()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>6</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>6</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>6</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>6</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>6</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>6</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	Size()	2015	Q1	\$138K	6	Q2	\$143K	6	Q3	\$154K	6	Q4	\$182K	6	2016	Q1	\$298K	6	Q2	\$142K	6
Order Year	Order Quarter	Sales	Size()																								
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	Q3	\$154K	6																								
	Q4	\$182K	6																								
2016	Q1	\$298K	6																								
	Q2	\$142K	6																								

<p>Lookup (SummaryExpression, Position)</p>	<p>Returns the value of the expression in a target position specified as a relative offset from the current position.</p>	<p>Lookup(Sum([Sales]), 3)</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>Lookup(Sum([Sales]), 3)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$182K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$298K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$142K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td></td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td></td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td></td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	Lookup(Sum([Sales]), 3)	2015	Q1	\$138K	\$182K	Q2	\$143K	\$298K	Q3	\$154K	\$142K	Q4	\$182K		2016	Q1	\$298K		Q2	\$142K		<p>-</p>
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	Q2	\$142K																										
<p>RankCompetition (SummaryExpression, ['asc' 'desc'])</p>	<p>Returns the standard competition rank for the current row in the window.</p>	<p>RankCompetition (Sum([Sales]), 'asc')</p>	<p>-</p>	<p></p>																								
<p>RankDense (SummaryExpression, ['asc' 'desc'])</p>	<p>Returns the dense rank for the current row in the window.</p>	<p>RankDense (Sum([Sales]), 'asc')</p>	<p>-</p>	<p></p>																								
<p>RankUnique (SummaryExpression, ['asc' 'desc'])</p>	<p>Returns the unique rank for the current row in the window.</p>	<p>RankUnique (Sum([Sales]), 'asc')</p>	<p>-</p>	<p></p>																								
<p>RankModified (SummaryExpression,</p>	<p>Returns the modified competition</p>	<p>RankModified (Sum([Sales]), 'asc')</p>	<p>-</p>	<p></p>																								

['asc' 'desc'])	rank for the current row in the window.																											
RankPercentile (SummaryExpression, ['asc' 'desc'])	Returns the percentile rank for the current row in the window.	RankPercentile(Sum([Sales]), 'desc')	-																									
RunningAvg (SummaryExpression)	Returns the running average of the specified expression from the first row in the window to the current row.	RunningAvg (Sum([Sales]))	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>RunningAvg(Sum([Sales]))</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$141K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$145K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$154K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$183K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$176K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	RunningAvg(Sum([Sales]))	2015	Q1	\$138K	\$138K	Q2	\$143K	\$141K	Q3	\$154K	\$145K	Q4	\$182K	\$154K	2016	Q1	\$298K	\$183K	Q2	\$142K	\$176K	
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	Q2	\$142K	\$176K																									
RunningCount (SummaryExpression)	Returns the running count of the specified expression from the first row in the window to the current row.	RunningCount (Sum([Sales]))	-																									

<p>RunningMax (SummaryExpression)</p>	<p>Returns the running maximum of the specified expression from the first row in the window to the current row.</p>	<p>RunningMax (Sum([Sales]))</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>RunningMax(Sum([Sales]))</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$143K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$154K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$182K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$298K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$298K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	RunningMax(Sum([Sales]))	2015	Q1	\$138K	\$138K	Q2	\$143K	\$143K	Q3	\$154K	\$154K	Q4	\$182K	\$182K	2016	Q1	\$298K	\$298K	Q2	\$142K	\$298K	
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2016	Q1	\$298K	\$298K																									
	Q2	\$142K	\$298K																									
<p>RunningMin (SummaryExpression)</p>	<p>Returns the running minimum of the specified expression from the first row in the window to the current row.</p>	<p>RunningMin (Sum([Sales]))</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>RunningMin(Sum([Sales]))</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$138K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$138K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$138K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$138K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	RunningMin(Sum([Sales]))	2015	Q1	\$138K	\$138K	Q2	\$143K	\$138K	Q3	\$154K	\$138K	Q4	\$182K	\$138K	2016	Q1	\$298K	\$138K	Q2	\$142K	\$138K	
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	Q2	\$142K	\$138K																									
<p>RunningSum (SummaryExpression)</p>	<p>Returns the running sum of the specified expression from the first row in the window to the current row.</p>	<p>RunningSum (Sum([Sales]))</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>RunningSum(Sum([Sales]))</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$281K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$435K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$617K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$916K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$1.06M</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	RunningSum(Sum([Sales]))	2015	Q1	\$138K	\$138K	Q2	\$143K	\$281K	Q3	\$154K	\$435K	Q4	\$182K	\$617K	2016	Q1	\$298K	\$916K	Q2	\$142K	\$1.06M	
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<p>WindowAvg (SummaryExpression, StartOffset, EndOffset)</p>	<p>Returns the average of the expression within the window, which is defined using offsets from the current row.</p>	<p>WindowAvg (Sum([Sales]), First(), Last())</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>WindowAvg()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$176K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$176K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$176K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$176K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$176K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$176K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	WindowAvg()	2015	Q1	\$138K	\$176K	Q2	\$143K	\$176K	Q3	\$154K	\$176K	Q4	\$182K	\$176K	2016	Q1	\$298K	\$176K	Q2	\$142K	\$176K	
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<p>WindowCountDistinct (SummaryExpression, StartOffset, EndOffset)</p>	<p>Returns the distinct count of the expression within the window.</p>	<p>WindowCountDistinct (Sum([Sales]), First(), Last())</p>	<p>-</p>																									
<p>WindowMax (SummaryExpression, StartOffset, EndOffset)</p>	<p>Returns the maximum of the expression within the window.</p>	<p>WindowMax (Sum([Sales]), First(), Last())</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>WindowMax()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$298K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$298K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$298K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$298K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$298K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$298K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	WindowMax()	2015	Q1	\$138K	\$298K	Q2	\$143K	\$298K	Q3	\$154K	\$298K	Q4	\$182K	\$298K	2016	Q1	\$298K	\$298K	Q2	\$142K	\$298K	
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WindowMin (SummaryExpression, StartOffset, EndOffset)	Returns the minimum of the expression within the window.	WindowMin (Sum ([Sales]), First(), Last())	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>WindowMin()</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$138K</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$138K</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$138K</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$138K</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$138K</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	WindowMin()	2015	Q1	\$138K	\$138K	Q2	\$143K	\$138K	Q3	\$154K	\$138K	Q4	\$182K	\$138K	2016	Q1	\$298K	\$138K	Q2	\$142K	\$138K
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<p>ression, StartOffset, EndOffset)</p>	<p>ard deviation of the expression within the window.</p>	<p>s]), First(), Last())</p>																										
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<p>Total (SummaryExpression)</p>	<p>Returns the total for the specified expression in a calculation window. Note that the Total function calculates the total based on values from the underlying data source.</p>	<p>Total (Sum([Sales]))</p>	<table border="1"> <thead> <tr> <th>Order Year</th> <th>Order Quarter</th> <th>Sales</th> <th>Total(Sum([Sales]))</th> </tr> </thead> <tbody> <tr> <td rowspan="4">2015</td> <td>Q1</td> <td>\$138K</td> <td>\$1.06M</td> </tr> <tr> <td>Q2</td> <td>\$143K</td> <td>\$1.06M</td> </tr> <tr> <td>Q3</td> <td>\$154K</td> <td>\$1.06M</td> </tr> <tr> <td>Q4</td> <td>\$182K</td> <td>\$1.06M</td> </tr> <tr> <td rowspan="2">2016</td> <td>Q1</td> <td>\$298K</td> <td>\$1.06M</td> </tr> <tr> <td>Q2</td> <td>\$142K</td> <td>\$1.06M</td> </tr> </tbody> </table>	Order Year	Order Quarter	Sales	Total(Sum([Sales]))	2015	Q1	\$138K	\$1.06M	Q2	\$143K	\$1.06M	Q3	\$154K	\$1.06M	Q4	\$182K	\$1.06M	2016	Q1	\$298K	\$1.06M	Q2	\$142K	\$1.06M	
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Important
 Note that window functions cannot be used inside **Aggr**.

Window Calculation Limitations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Window Calculations](#) > [Window Calculation Limitations](#)

Supported Dashboard Items

Window calculations can be applied to measures of the following dashboard items.

- [Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Pivot](#)
- [Range Filter](#)

Data Shaping Limitations

The use of calculations imposes the following limitations related to [data shaping](#) features.

- [Sorting by measure](#) cannot be applied if the target measure has a calculation applied.
- [Top N](#) cannot be applied if its target measure has a calculation.

Using Dashboard Parameters

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Using Dashboard Parameters](#)

You can use **dashboard parameters** when it is necessary to pass data of a certain type to a dashboard (e.g., to pass a specific value to the data source filter string or a calculated field).

The topics in this section describe how to use dashboard parameters.

- [Creating Parameters](#)
- [Passing Parameter Values](#)
- [Requesting Parameter Values](#)

Creating Parameters

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Using Dashboard Parameters](#) > [Creating Parameters](#)

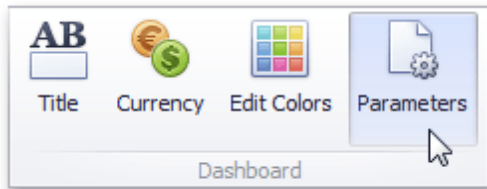
This topic explains how to create a new dashboard parameter and specify its settings.

- [Creating Parameters in the Dashboard Designer](#)
- [Look-Up Editor Settings](#)

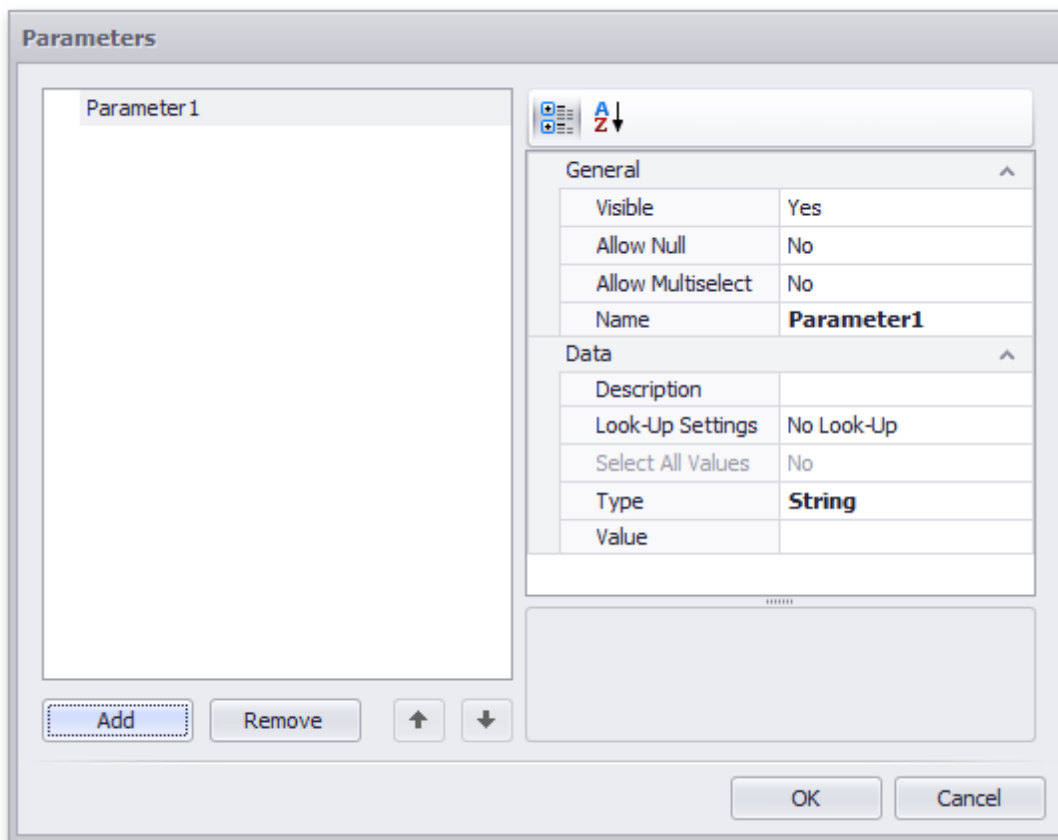
Creating Parameters in the Dashboard Designer

To create dashboard parameters in the Dashboard Designer, do the following:

1. Click the **Parameters** button on the Ribbon's **Data Source** tab.



2. In the invoked dialog, click the **Add** button to add a new parameter.



3. Specify the following settings.

- **Visible** - Specifies whether or not the parameter editor is visible in the [Dashboard Parameters](#) dialog.
- **Allow Null** - Specifies whether or a not null value can be passed as a parameter value.
- **Allow Multiselect** - Specifies whether or not multi-selection is enabled for the current parameter. The following limitations are applied to parameters with multi-selection enabled.
 - Use the **is any of** or **is none of** operators to pass a multi-select parameter to a [filter](#) criteria or to

the [Expression](#) format condition.

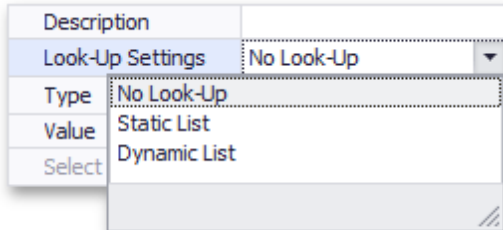
- Use the **In** or **Not In** operators to pass a multi-select parameter to a [calculated field](#) expression.
- Stored procedures used in the [SQL](#) data source do not support multi-select parameters.
- **Name** - Specifies the parameter name. When creating and modifying parameter names, follow the rules below.
 - A name can contain letters, numbers and underscores.
 - A name cannot contain spaces.
 - A name cannot be an empty string.
 - The dashboard cannot contain parameters with the same name.
 - Names are case-sensitive. For example, you can create the names *Parameter* and *PARAMETER*.
- **Description** - Specifies the parameter's description. The parameter's description is the value displayed in the **Parameter Name** column of the [Dashboard Parameters](#) dialog.
- **Look-Up Settings** - Specifies the parameter's [look-up editor settings](#).
- **Select All Values** - Specifies whether or not all parameter values should be selected in the initial state of the Dashboard Viewer.

Note that this option is in effect when **Allow Multiselect** is set to **true**.
- **Type** - Specifies the parameter type.
- **Value** - Specifies the default parameters value. Note that when **Allow Multiselect** is set to **true**, the **Value** option allows you to select multiple parameter values.

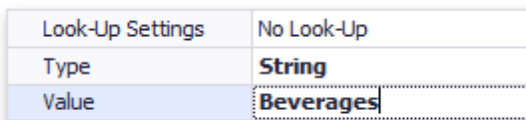
Then, click **OK** to add the created parameters to the dashboard.

Look-Up Editor Settings

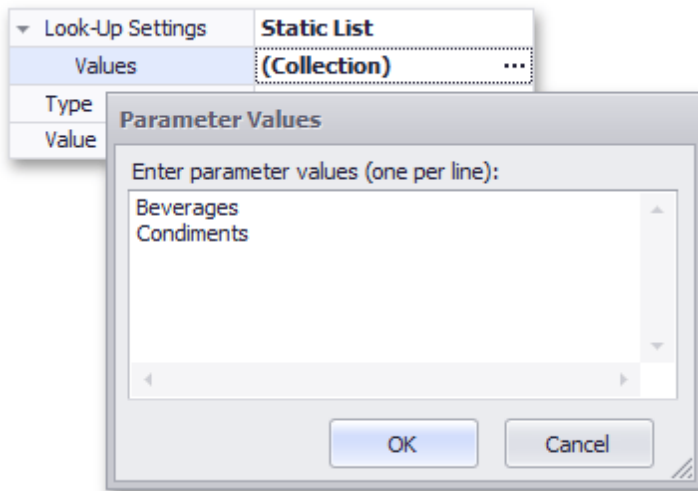
There are three types of look-up editor settings that can be specified for a parameter. Select the required type from the **LookUpSettings** drop-down list.



- **No Look-Up** - set the **Value** to use a static value as a parameter.



- **Static List** - click the ellipsis button to add static values for the current dashboard parameter.



In this case, the **Value** specifies the default parameter's value.

- **Dynamic List** - allows you to use a list of values from the existing data source as a parameter. You need to select the required **Data Source** from the list of available data sources and data members for the dashboard parameter's display name and value, respectively.

Look-Up Settings	Dynamic List
Data Source	SQL Data Source 1
Data Member	Categories
Value Member	CategoryID
Display Member	CategoryName
Sort By	
Sort Order	Ascending
Type	String
Value	1

1. First, select the required **Data Source** from the list of available data sources. For the [SQL](#) data source, select the required **Data Member** that specifies the query from the selected **Data Source**.
2. Then, specify data members for the dashboard parameter's value and display name using **Value Member** and **Display Member**, respectively.
3. If necessary, specify the data member used to sort parameter values using the **Sort By** option. **Sort Order** specifies the required sort order.

Note

To learn how to create a data source for a dashboard parameter, see [Providing Data](#). Note that you cannot specify an [OLAP](#) data source as the data source for the dashboard parameter in the Dashboard Designer.

See Also

[Passing Parameter Values](#)
[Requesting Parameter Values](#)

Passing Parameter Values

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Using Dashboard Parameters](#) > [Passing Parameter Values](#)

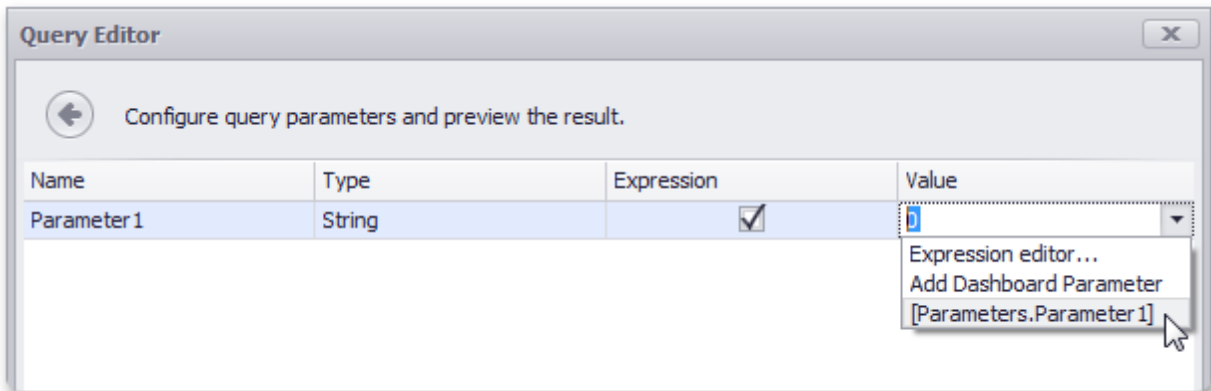
In this topic, you will learn how to pass parameter values to a dashboard.

- [SQL Queries](#)
- [Filtering](#)
- [Conditional Formatting](#)
- [Calculated Fields](#)
- [Window Calculations](#)

SQL Queries

The Dashboard Designer provides the capability to use a dashboard parameter as an SQL query/stored procedure parameter. To pass a dashboard parameter to an [SQL query/stored procedure](#) in the [Data Source](#) wizard or [Query Editor](#), do the following.

- Create a [query parameter](#) or select the required [stored procedure](#) parameter.
- Enable the **Expression** checkbox for this parameter and select the required dashboard parameter in the **Value** column.



If necessary, you can select **Expression editor...** and specify an expression to bind a query parameter to a dashboard parameter using custom logic.

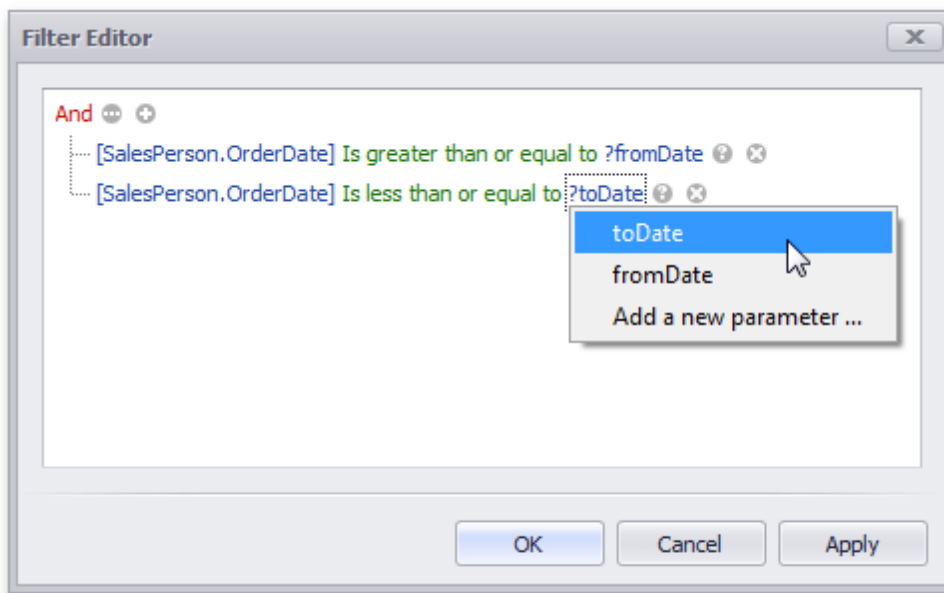
Filtering

You can filter the specified [query](#) of the [SQL Data Source](#) or [apply filtering](#) to a specific dashboard item according to the current parameter value(s) using the Filter Editor.

In the Filter Editor, you can compare a field value with the following objects.

- A *static value* (represented by the icon). Click this button to switch to the next item mode ("another field value"), to compare the field value with another field value.
- A *another field value* (represented by the icon). Click this button to switch to the next item mode (parameter value), to compare the field value with a parameter value.
- A *parameter value* (represented by the icon). Click this button to switch back to the initial mode ("static value"), to compare the field value with a static value.

Thus, to compare a field value with a parameter value, click the button, then click the button.



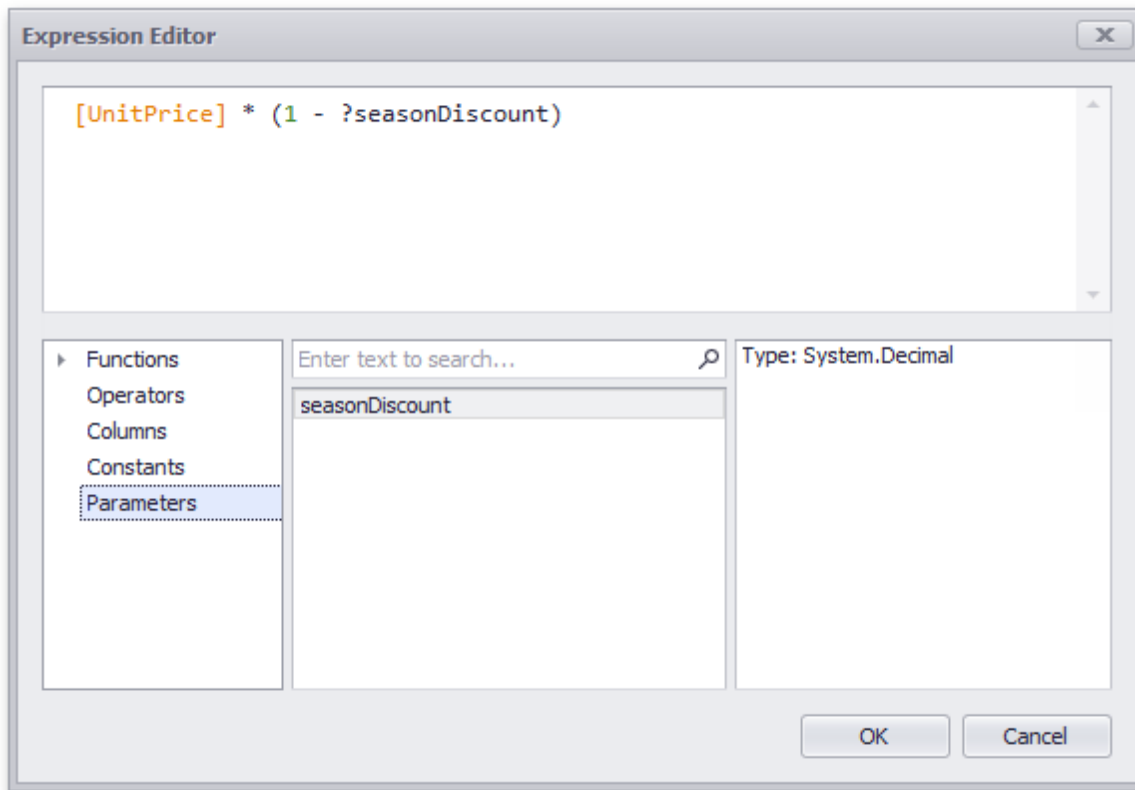
Conditional Formatting

You can apply conditional formatting to a specific dashboard item according to the current parameter value when creating the [Expression](#) format condition. In the **Expression** dialog, you can compare a field value with parameter values in the same manner as in the **Filter Editor** dialog.

Calculated Fields

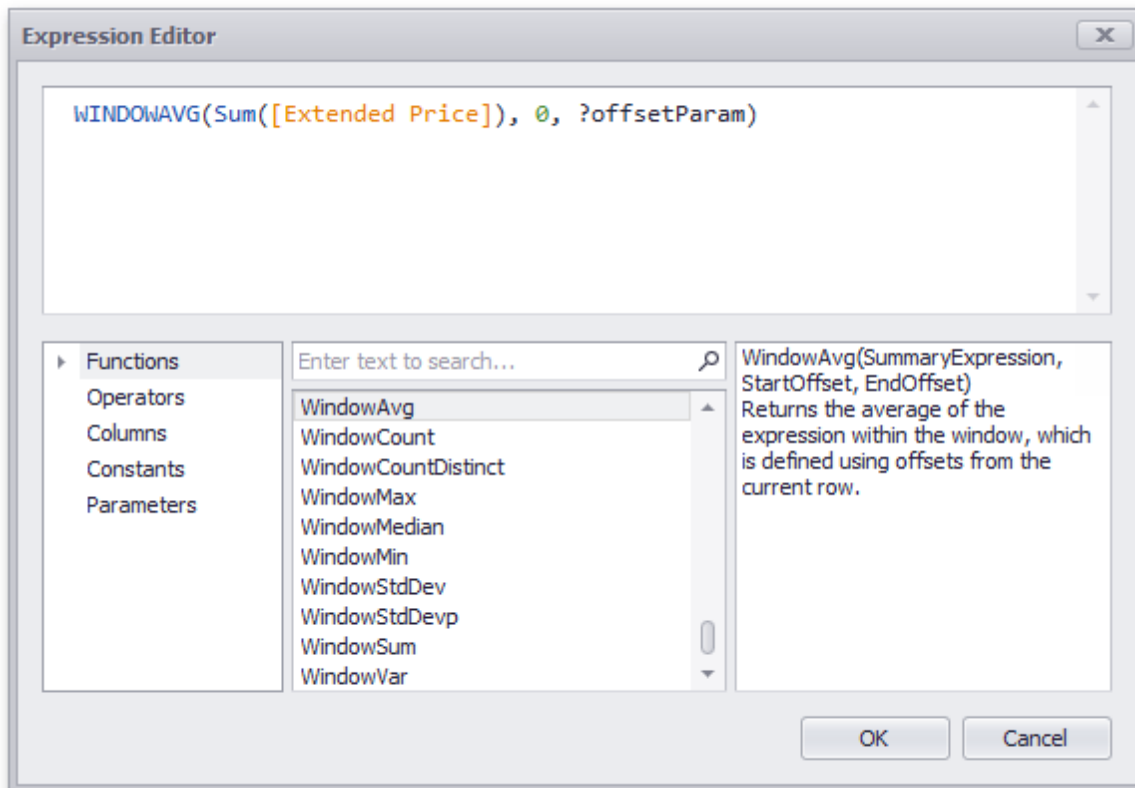
You can use parameters when constructing expressions for [calculated fields](#). This allows you to dynamically evaluate values of the calculated field depending on the current parameter value.

To include the required parameter in the calculated field expression, click **Parameters** in the Expression Editor dialog and double-click the required parameter.



Window Calculations

You can use parameters when customizing expressions for [window calculations](#). This allows you to apply a calculation dynamically, depending on the current parameter value.



See Also

[Creating Parameters](#)

[Requesting Parameter Values](#)

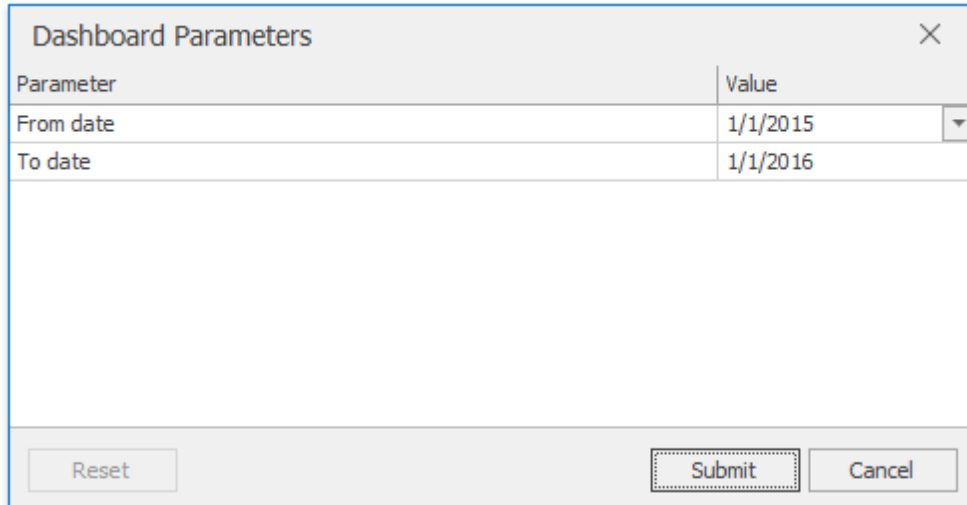
[Creating Calculated Fields](#)

Requesting Parameter Values

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Data Analysis](#) > [Using Dashboard Parameters](#) > [Requesting Parameter Values](#)

The dashboard provides a built-in **Dashboard Parameters** dialog, which provides the capability to change dashboard parameter values. This dialog is created automatically, depending on the parameter type and visibility settings.

To invoke the **Dashboard Parameters** dialog in the Dashboard Designer, click the **Parameters** (⚙️) button in the [dashboard title](#). Depending on the visibility state of the [created](#) dashboard parameters, this invokes the following dialog.



Parameter	Value
From date	1/1/2015
To date	1/1/2016

Select the required parameter values in the **Dashboard Parameters** dialog and click the **Submit** button to apply the changes.

To reset the changes to the default values, click the **Reset** button.

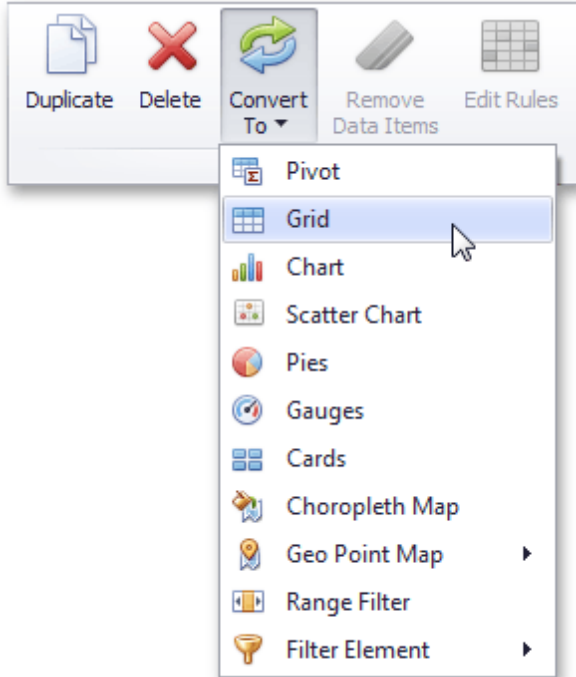
See Also

[Creating Parameters](#)
[Passing Parameter Values](#)

Converting Dashboard Items

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Converting Dashboard Items](#)

The Dashboard Designer provides the capability to convert data-bound dashboard items to another type. To convert the selected dashboard item to another type, use the **Convert** button in the ribbon's **Home** tab or the corresponding command in the item's context menu.



The Dashboard Designer always preserves the following settings for data-bound dashboard items.

- The set of [data items](#) used to bind the dashboard item to data.
- [Data shaping](#) settings of data items and their names.
- A custom name displayed within the dashboard item [caption](#).

The following settings are kept if the dashboard item is being converted to an item that also supports this feature.

- [Master Filtering](#) settings (e.g., the specified master filter mode) and [Drill-Down](#) settings (e.g., the target dimension).
- [Conditional Formatting](#) settings.
- [Coloring](#) settings.
- [Calculation](#) settings.

For different types of dashboard items, some specific settings can be preserved. For example, the following settings are preserved.

- Legend settings for the [Chart/Scatter Chart](#) dashboard items.
- Series types for the [Chart/Range Filter](#) dashboard items.
- Element arrangement settings for the [Pie/Card/Gauge](#) dashboard items.
- Caption settings for the [Pie/Gauge](#) dashboard items.
- Navigation settings for [Choropleth Map/Geo Point Maps](#).
- The attribute whose values are displayed within shape titles for [Choropleth Map/Geo Point Maps](#).
- Legend settings for the [Choropleth Map/Geo Point Maps](#).
- [Clustering](#) settings for [Geo Point Maps](#).

Dashboard Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Dashboard Layout](#)

This section describes the features related to the Dashboard layout.

The section consists of the following topics.

- [Dashboard Title](#)
- [Dashboard Item Caption](#)
- [Dashboard Items Layout](#)

Dashboard Title

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Dashboard Layout](#) > [Dashboard Title](#)

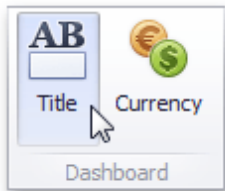
The **Dashboard Title** is located at the top of the dashboard surface. It can contain text or image content.

The screenshot shows a dashboard titled "Sales Overview" with a green coin icon on the left. Annotations point to various elements: "Dashboard Title image" points to the coin icon, "Dashboard Title text" points to the text "Sales Overview", "Master Filter state" points to a dropdown arrow, "Export To button" points to a document icon, and "Parameters button" points to a gear icon. Below the title are two main sections: "Sales by State" (a table) and "Sales by Product Category" (a line chart).

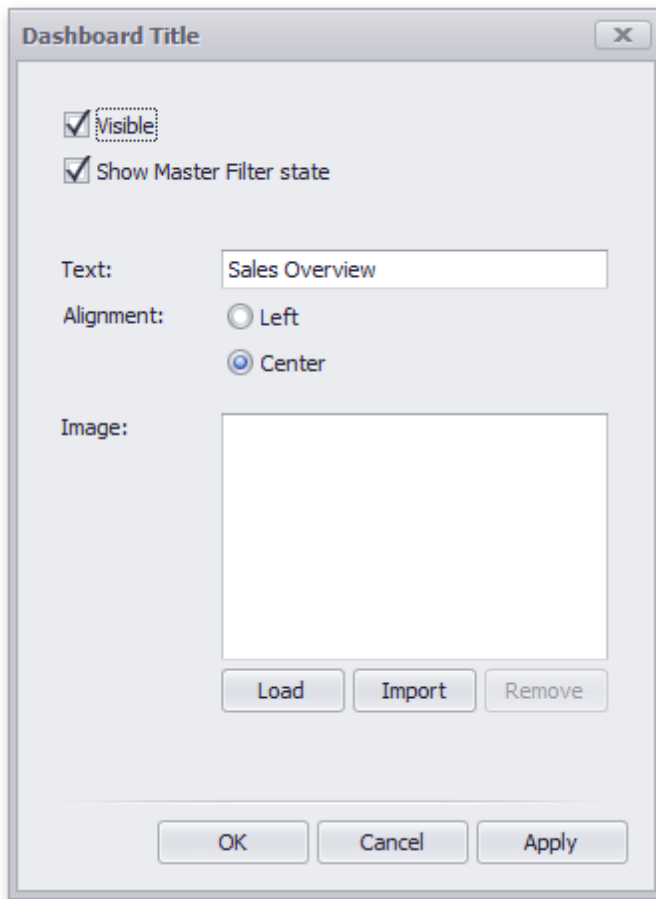
State	Sales	Sales vs Target
Georgia	\$48.2M	+7.18 % ▲
Florida	\$137M	-4.13 % ▼
Connecticut	\$62.1M	+4.12 % ▲
Colorado	\$61.5M	+3.80 % ▲
California	\$104M	+2.29 % ▲
Arizona	\$80.4M	+7.36 % ▲
Alabama	\$41.8M	+3.04 % ▲

The line chart shows sales for "Bikes" (blue line) and "Components" (red line) from 01-Oct-12. The Y-axis ranges from 0M to 2M. Bikes show a significant upward trend, while Components remain relatively flat.

If you are using the Ribbon menu in the **Dashboard Designer**, you can change title settings by clicking the **Title** button.



This invokes the **Dashboard Title** dialog, which allows you to change the text within the dashboard title, add an image, etc.



This dialog allows you to specify the following options.

- **Visible** - Specifies whether or not the dashboard title is visible.
- **Show Master Filter state** - Specifies whether or not to show the state of master filter items in the dashboard title.
When you hover over the filter icon (▼), all master filters applied to the dashboard are displayed in the invoked popup.



- **Alignment** - Specifies the alignment of the dashboard title.
- **Load** button - Allows you to specify the image displayed within the dashboard title. In this case, the dashboard definition will contain the URL to access the image.
- **Import** button - Allows you to specify the image displayed within the dashboard title. In this case, the dashboard definition will contain an image as a byte array.

The dashboard title can contain command buttons.

- **Export To** button - allows you to print/export the dashboard. To learn more about printing and exporting, see the [Printing and Exporting](#) topic.
- **Parameters** button - allows you to modify dashboard parameter values. To learn more about parameters, see the [Using Dashboard Parameters](#) topic.

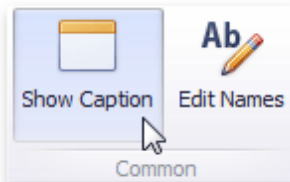
Dashboard Item Caption

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Dashboard Layout](#) > [Dashboard Item Caption](#)

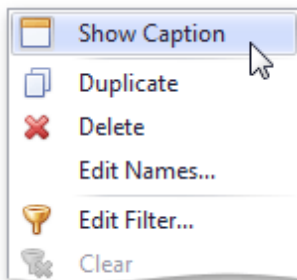
Each dashboard item has a caption that is displayed at the top of the item. The caption contains static text along with other information, as well as command buttons.



To show or hide the caption of a dashboard item, click the **Show Caption** button in the **Design** Ribbon tab...



...or right-click the item when designing the dashboard, and click the **Show Caption** menu item.



Note

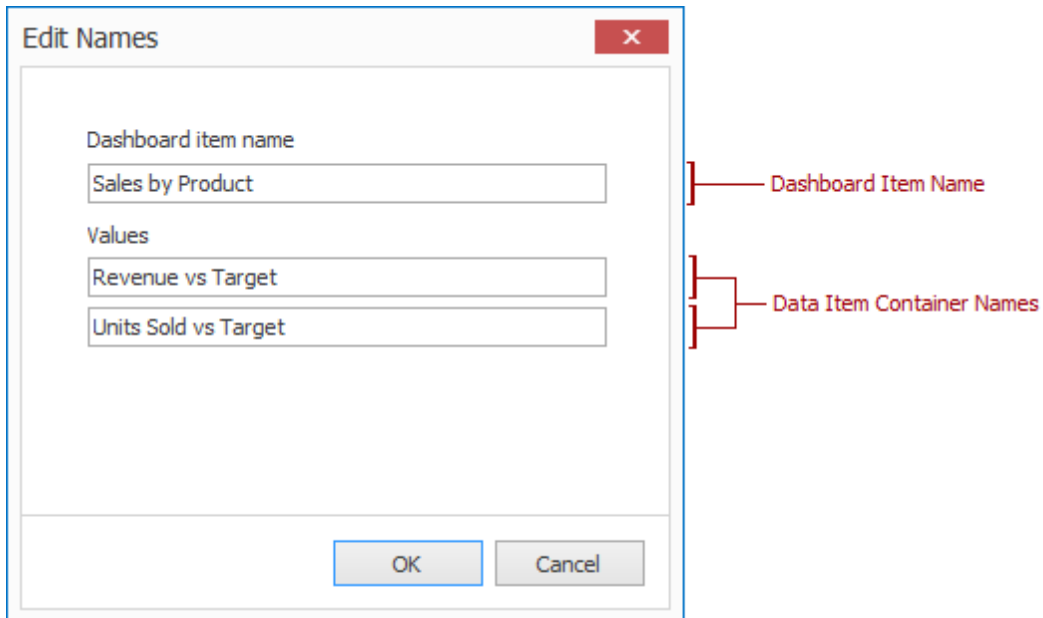
The caption of the Range Filter dashboard item is not visible by default.

The caption of the Dashboard item contains the following information and buttons, depending on the dashboard item type:

- **Dashboard Item Name** - represents the static text within a dashboard item's caption.
- **Data Item Container Name** - represents the name of the **data item container**. To learn more about data

item containers, see the **Providing Data** topic for the corresponding dashboard item.

You can change the default name of the dashboard item or data item container using the **Edit Names** dialog. To invoke this dialog, right-click the item when designing the dashboard, and click the **Edit Names...** menu item (alternatively, you can use the **Edit Names** button in the **Design** Ribbon tab).

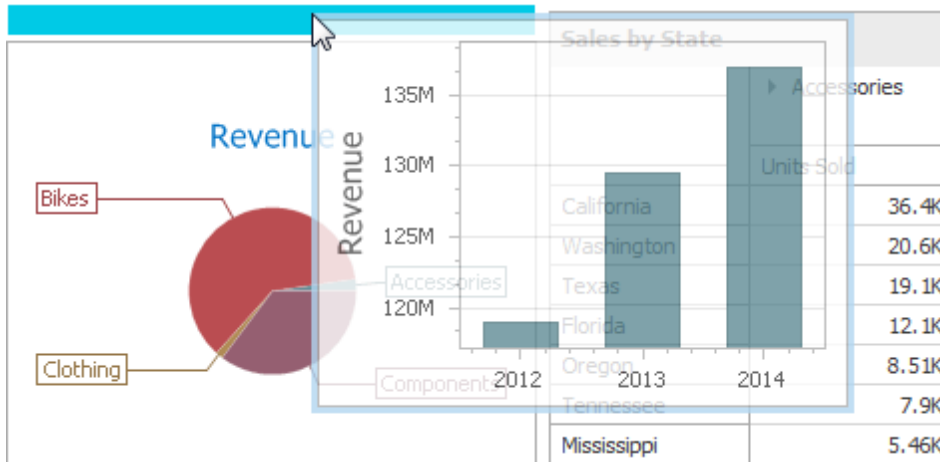


- **Drill-Down** value - shows the value or values from the current drill-down hierarchy. To learn more, see the [Drill-Down](#) topic.
- **Export to** button - allows you to print or export a dashboard item. To learn how to print individual dashboard items, see the [Printing and Exporting](#) topic.
- **Values** button - invokes a drop-down menu that allows you to switch between the provided values (in the pie, card, gauge and map dashboard items). To learn more, see the **Providing Data** topic for the corresponding dashboard item.
- **Clear Master Filter** button - allows you to reset filtering when a dashboard item acts as the [Master Filter](#). To learn more, see the **Master Filtering** topic in the **Interactivity** section for the corresponding dashboard item.
- **Drill Up** button - allows you to return to the previous detail level when the [drill-down](#) capability is enabled for this item. To learn more, see the **Drill-Down** topic in the **Interactivity** section for the corresponding dashboard item.

Dashboard Items Layout

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Dashboard Layout](#) > [Dashboard Items Layout](#)

The **Dashboard Designer** provides the capability to arrange and resize dashboard items and [groups](#) in various ways, using simple drag-and-drop operations.



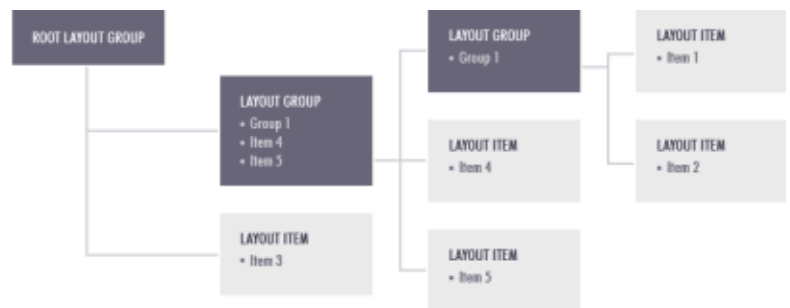
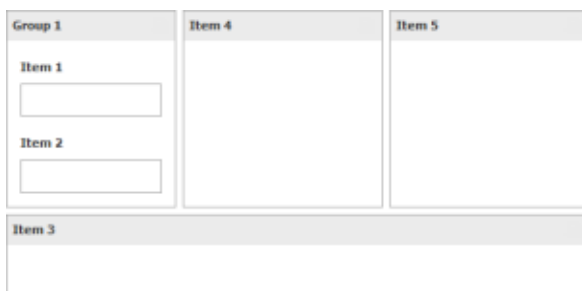
- [Layout Concepts](#)
- [Item Resizing](#)
- [Item Positioning](#)

Layout Concepts

The dashboard arranges dashboard items and [groups](#) using *layout items* and *layout groups*. They are special containers that are used to present a dashboard layout as a hierarchical structure.

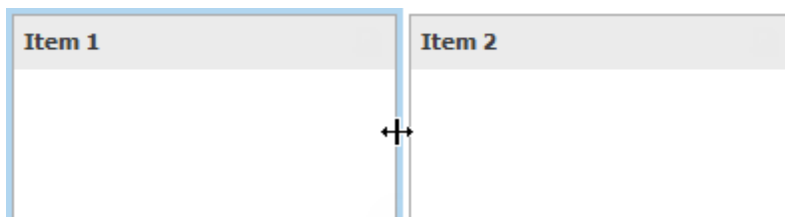
- A layout item is used as a container that displays an individual dashboard item.
- A layout group is used as a container that is used to arrange layout items (or other layout groups) either horizontally or vertically. At the same time, layout groups are used as containers that display [dashboard item groups](#).

Thus, a dashboard layout is hierarchically arranged from the root layout group to bottommost layout items, which display individual dashboard items.

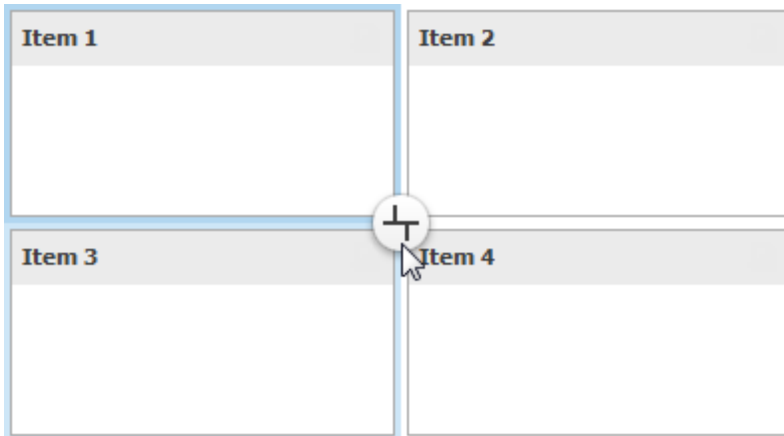


Item Resizing


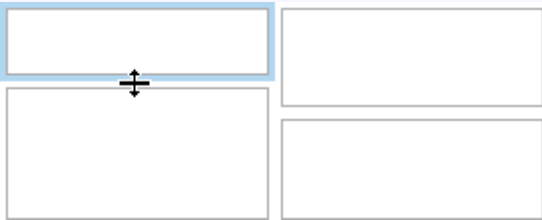


You can resize individual items/groups of items by dragging their edges.



By default, a 2x2 layout group of dashboard items is horizontally oriented and contains two child layout groups. This arranges dashboard items in two 'columns' and allows you to set a different height for items in different columns. You can switch the orientation of the 2x2 group to **Vertical** using the indicator at the group intersection.




This allows you to specify different widths for dashboard items in different 'rows'. The table below lists and describes different modes.

Indicator	Result	Description
		Orients the layout group horizontally and allows you to change the height of individual items and the width of 'columns'.
		Orients the layout group vertically and allows you to change the width of individual items and the height of 'rows'.

Item Positioning

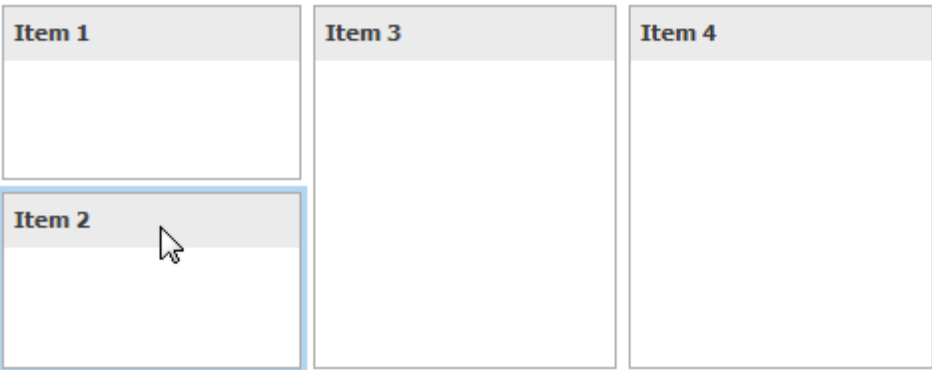
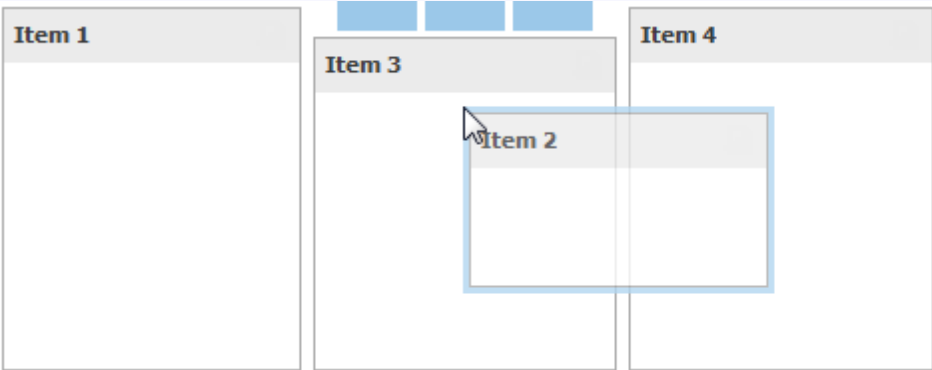
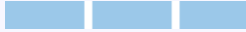
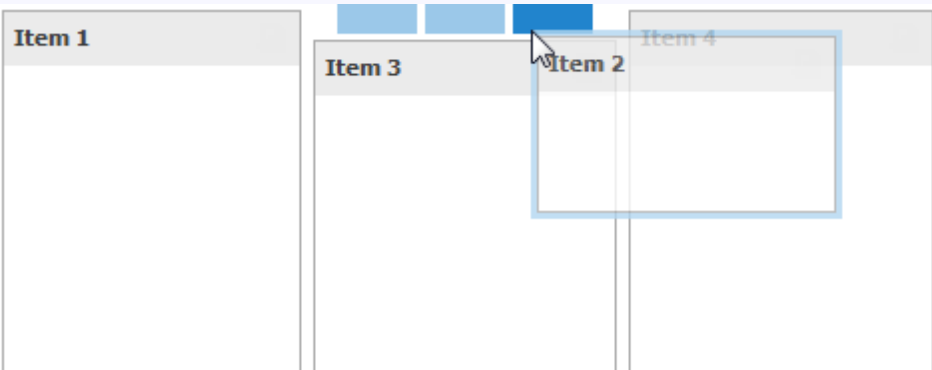

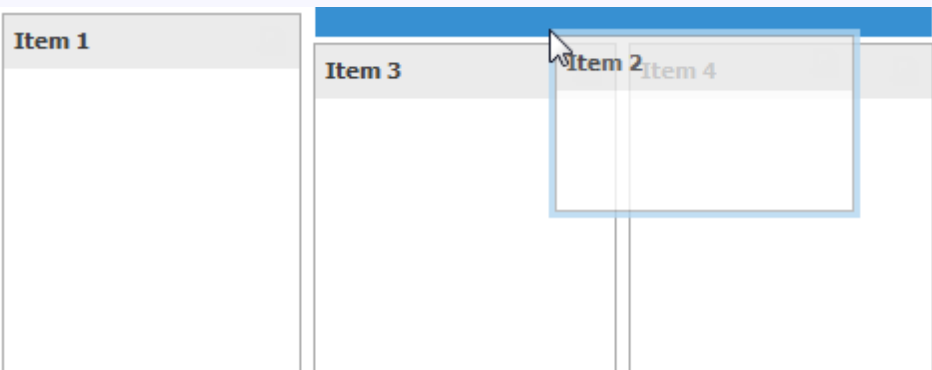
You can change the position of a dashboard item by using drag-and-drop and one of the following approaches.

- If the [caption](#) of the dashboard item is visible, click it and hold down the left mouse button while dragging the item.
- If the caption of the dashboard item is not visible, click the  icon in the top left corner, and hold down the left mouse button while dragging the item.

Depending on the required dashboard item position, a new layout group is created (if required) to maintain the arrangement of items. Thus, the dashboard item can be inserted to the desired area of a new or existing dashboard layout group.

The following table illustrates how a dashboard item is dragged.

Action	Description
--------	-------------

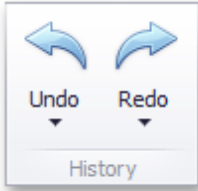
	<p>Select the required dashboard item.</p>
	<p>Drag the dashboard item to the expected area. The <i>drag indicator</i> () will show possible positions for the dashboard item.</p>
	<p>Move the mouse cursor to the required position. The <i>drop indicator</i> () highlights the hovered position.</p>
	<p>Then, the <i>drop indicator</i> sequentially displays areas that can be occupied by the dashboard item. Release the left mouse button when the drop indicator displays the required area.</p>

The diagram illustrates a dashboard layout with four items. Item 1 is a large rectangular widget on the left. Item 2 is a smaller rectangular widget positioned to the right of Item 1, highlighted with a blue border. Item 3 and Item 4 are two smaller rectangular widgets positioned below Item 2. To the right of the dashboard area is a text box containing the text: "The dashboard item is moved to a new position."

Undo and Redo Operations

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Undo and Redo Operations](#)

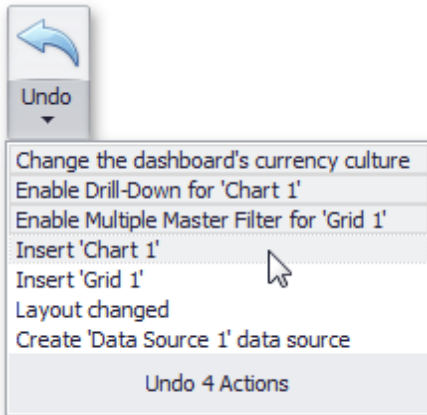
The **Dashboard Designer** keeps track of all user actions, and allows you to undo or repeat them using the **Undo/Redo** buttons.



To undo/redo the last action, use the following buttons.



To undo/redo several actions at once, click the arrow next to **Undo/Redo** button and select the actions in the list that you want to undo/redo.

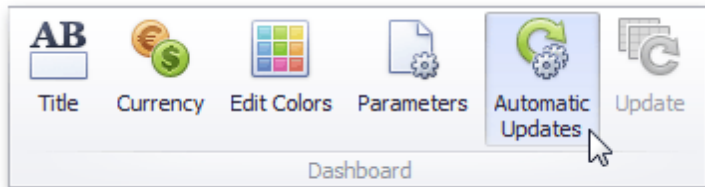



Automatic and Manual Updates

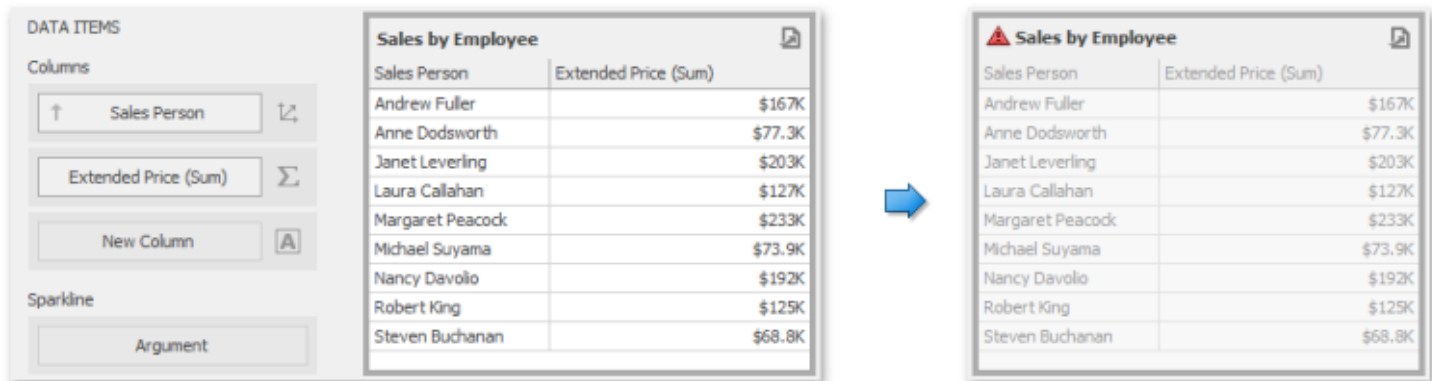
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Automatic and Manual Updates](#)

When you perform a data-aware operation in the Dashboard Designer (for instance, [change the binding](#) of a specified dashboard item or apply [filtering](#)), the dashboard sends a query to a data source and updates itself automatically according to the returned data. If the dashboard is bound to a large data source, updating the dashboard according to each change can consume a significant amount of time. In this case, you can disable automatic updates and update the dashboard manually when needed.

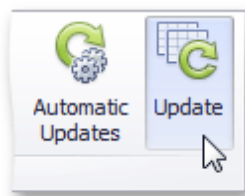
Automatic updates are enabled by default and can be managed using the **Automatic Updates** button in the **Home** ribbon tab.



Click this button to disable automatic updates. In this case, the dashboard item will not be updated automatically according to each change. Imagine that you have a Grid dashboard item containing the [dimension](#) and [measure](#) columns. If you change the [sort order](#) of the *Sales Person* column or change the [summary type](#) of the *Extended Price* column, the Grid will be shaded and will display the  icon within its caption.



This indicates that this dashboard item requires the update to reflect changes. To update the Grid manually, click the **Update** button in the **Home** ribbon tab.



Note that the state of the **Automatic Updates** option is saved to the [dashboard XML definition](#) but affects only the Dashboard Designer.

Note

Note that automatic updates are disabled if you click the **Cancel** button on the loading panel when performing a time-consuming operation.

Saving a Dashboard

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Saving a Dashboard](#)

A dashboard provides the capability to save a dashboard definition (dashboard items, data sources, data binding, layout settings, etc.) to an XML file, and restore the dashboard from an XML file.

Saving a Dashboard

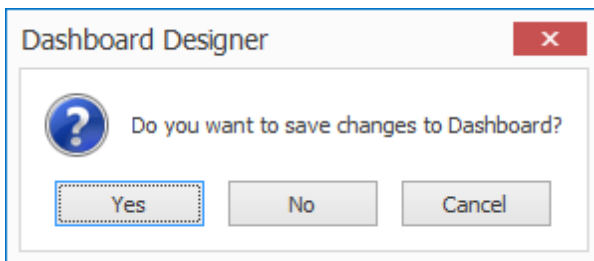
Once a dashboard is designed, you can save its definition to an XML file. In the **Dashboard Designer**, this can be accomplished in the following ways.

- You can save the dashboard by clicking the **Save** or **Save As** button in the Ribbon menu of the Designer.



This invokes the **Save As** dialog, which allows you to locate the folder in which you wish to store your file.

- The dashboard can be saved when the window containing the Dashboard Designer is closed. If the dashboard has been modified since the last save, a save confirmation dialog will be invoked.



Loading a Dashboard

A dashboard previously saved to an XML file can be loaded to the Dashboard Designer.

You can open the dashboard by clicking the **Open** button in the Ribbon menu of the Designer.



This invokes the **Open File** dialog, which allows you to locate the required dashboard XML file.


Printing and Exporting

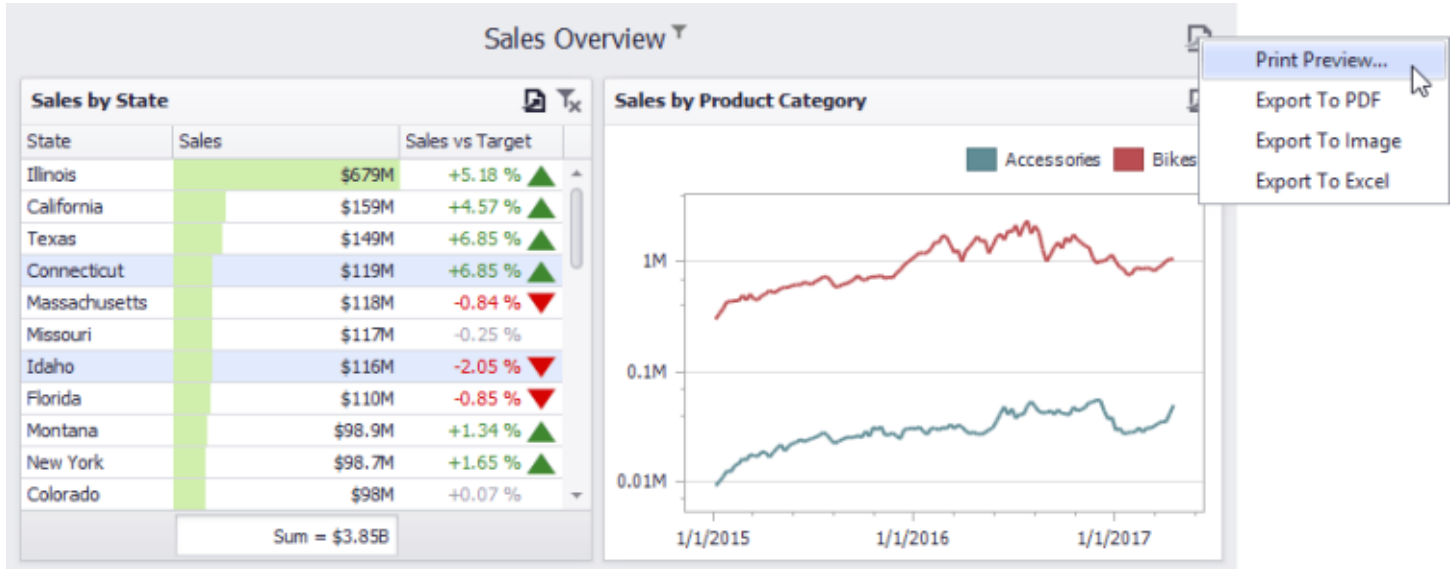
[Dashboard for Desktop](#) > [Dashboard Designer](#) > [Printing and Exporting](#)

The Dashboard Designer provides the capability to print or export an entire dashboard and individual items.

- [Printing and Exporting Dashboards](#)
- [Printing and Exporting Dashboard Items](#)

Printing and Exporting Dashboards

To print or export the entire dashboard, click the  button in the [dashboard title](#) area and choose the required action.

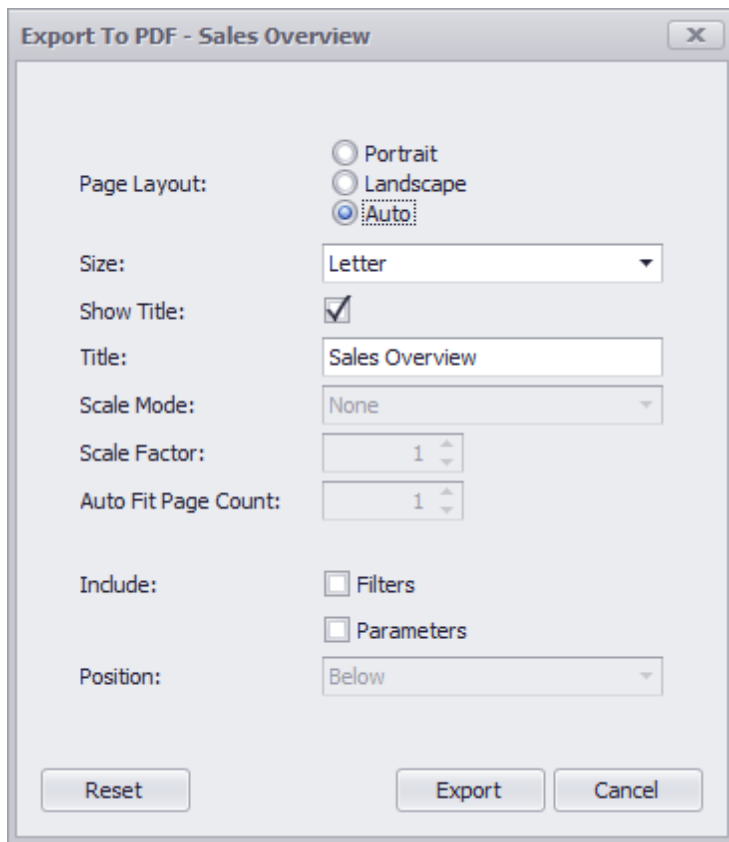


[Print Preview...](#)

Allows you to customize the document before printing/exporting. For instance, the following settings can be changed: the orientation and size of the printed page, page margins, etc.

Export to PDF

Invokes a corresponding dialog that allows you to export a dashboard to a PDF file with specific options. The following options are available.



- **Page Layout** - Specifies the page orientation used to export a dashboard. You can select between *Portrait*, *Landscape*, and *Auto*. Note that in the *Auto* mode, page orientation is selected automatically depending on the horizontal and vertical sizes of a dashboard.
- **Size** - Specifies the standard paper size (for instance, *Letter* or *A4*).
- **Show Title** - Specifies whether or not to apply the dashboard title to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard.

Note that this option is in effect when **Page Layout** is set to a value different from *Auto*.

- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard is scaled.

This option is in effect if **Scale Mode** is set to *Use Scale Factor*.

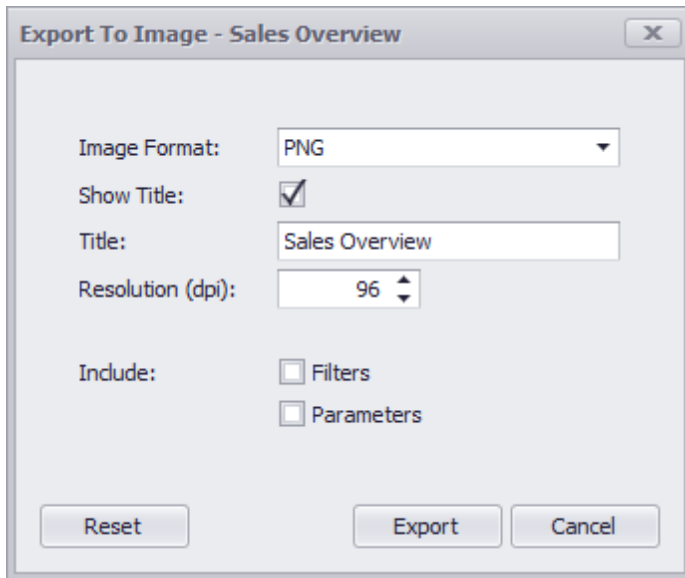
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard.

This option is in effect if **Scale Mode** is set to *Auto Fit to Page Width*.

- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Export to Image

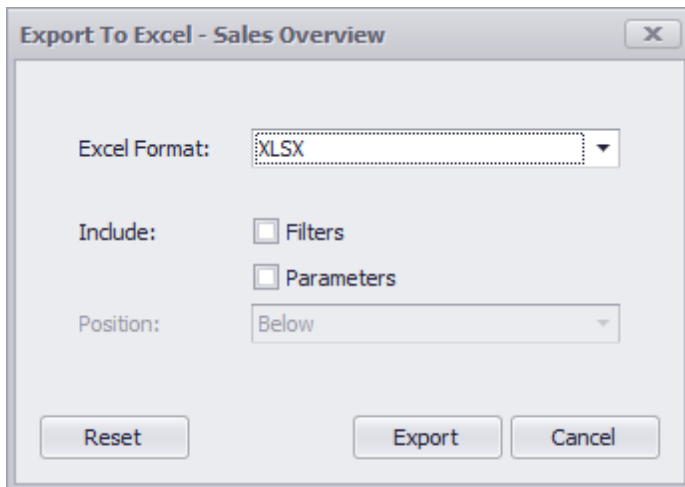
Invokes a corresponding dialog that allows you to export a dashboard to an image in the specified format. The following options are available.



- **Image Format** - Specifies the image format in which the dashboard is exported. The following formats are available: *PNG*, *JPEG*, and *GIF*.
- **Show Title** - Specifies whether or not to apply the dashboard title to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export a dashboard.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.

Export to Excel


Invokes a corresponding dialog that allows you to export dashboard's data to the Excel file. The following options are available:

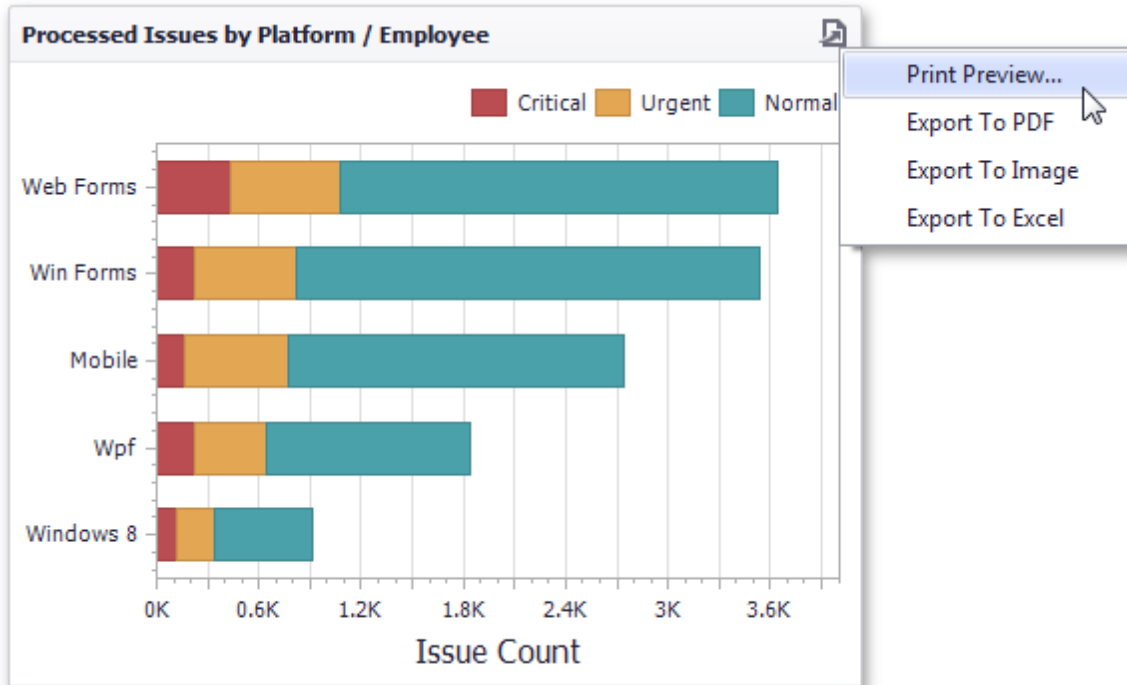


- **Excel Format** - Specifies the Excel workbook format in which the dashboard's data is exported. You can select between *XLSX* and *XLS*.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Sheet*.

Specify the required options in the invoked dialog and click the **Export** button to export the dashboard. To reset changes to the default values, click the **Reset** button.

Printing and Exporting Dashboard Items

To print or export a dashboard item, click the  button in its [caption](#) and choose the required action.



- **Print Preview...** - Allows you to customize the document before printing/exporting.
- **Export to PDF** - Invokes a corresponding dialog that allows you to export a dashboard to a PDF file with specific options.
- **Export to Image** - Invokes a corresponding dialog that allows you to export a dashboard to image in the specified format.
- **Export to Excel** - Invokes a corresponding dialog that allows you to export a dashboard item's data to the Excel workbook or CSV file.

To learn more about printing/exporting specifics of different dashboard items, see the **Printing and Exporting** topic for the required [dashboard item](#).

UI Elements

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [UI Elements](#)

The topics in this section describe the main elements of a **Dashboard Designer** application.

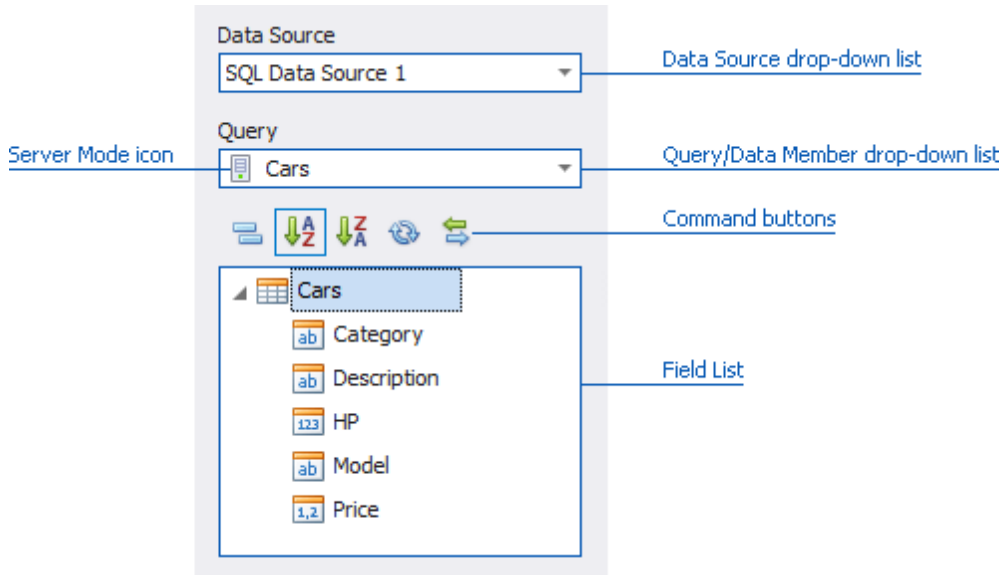
This section consists of the following topics.

- [Data Source Browser](#)
- [Data Items Pane](#)
- [Print Preview](#)

Data Source Browser


[Dashboard for Desktop](#) > [Dashboard Designer](#) > [UI Elements](#) > [Data Source Browser](#)



The **Data Source Browser** allows you to navigate through dashboard data sources. It displays the data source structure and allows you to [bind dashboard items](#) to the required data source fields using drag-and-drop operations. The Data Source Browser also enables you to manage [calculated fields](#).




The Data Source Browser contains the following elements.

- **Data Source** drop-down list - allows you to select the required data source.
- **Query/Data Member** drop-down list - allows you to select the required query or data member.
- The following **Command buttons** are available.









The  button groups fields by type.

The  and  buttons are used to switch the sort order.

The  button is used to refresh the Field List.

- **Field List** displays data source fields. You can drag these fields to the [data item placeholders](#) to specify data binding.

The Data Source Browser identifies the following data field types.

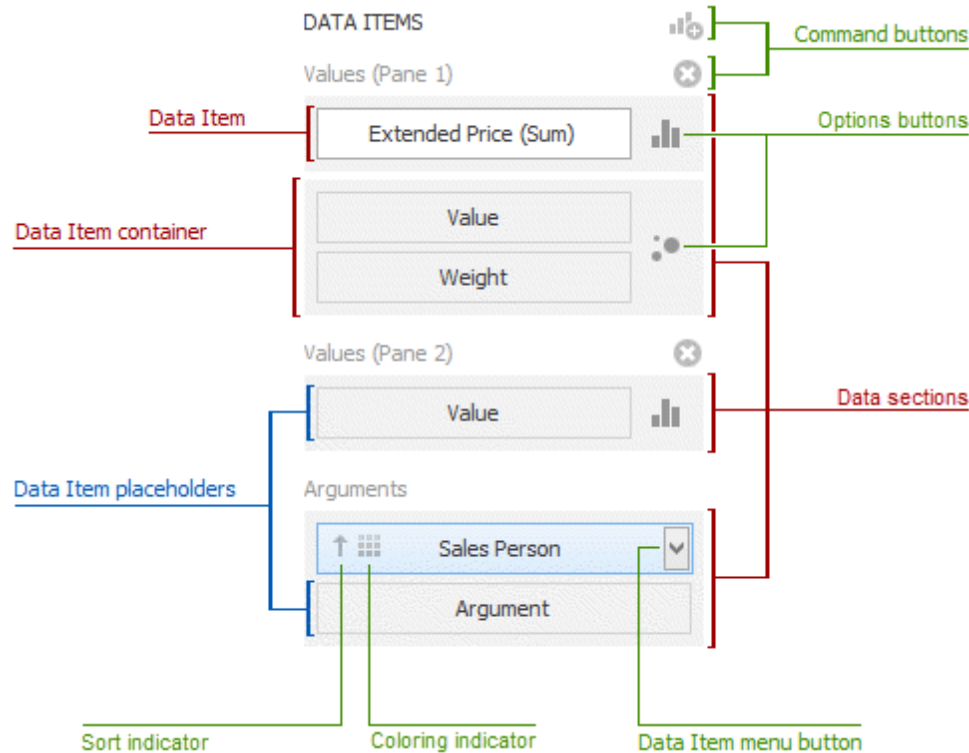
Icon	Description
	Boolean
	Byte
	Date-time
 	Numeric
	String
 	Calculated field

Data Items Pane

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [UI Elements](#) > [Data Items Pane](#)

The **DATA ITEMS** pane is placed side-by-side with the [Data Source Browser](#), and allows you to create and modify data binding using drag-and-drop operations.

To learn how to bind dashboard items to data source fields, see the [Binding Dashboard Items to Data](#) topic.



The DATA ITEMS pane can contain the following elements.

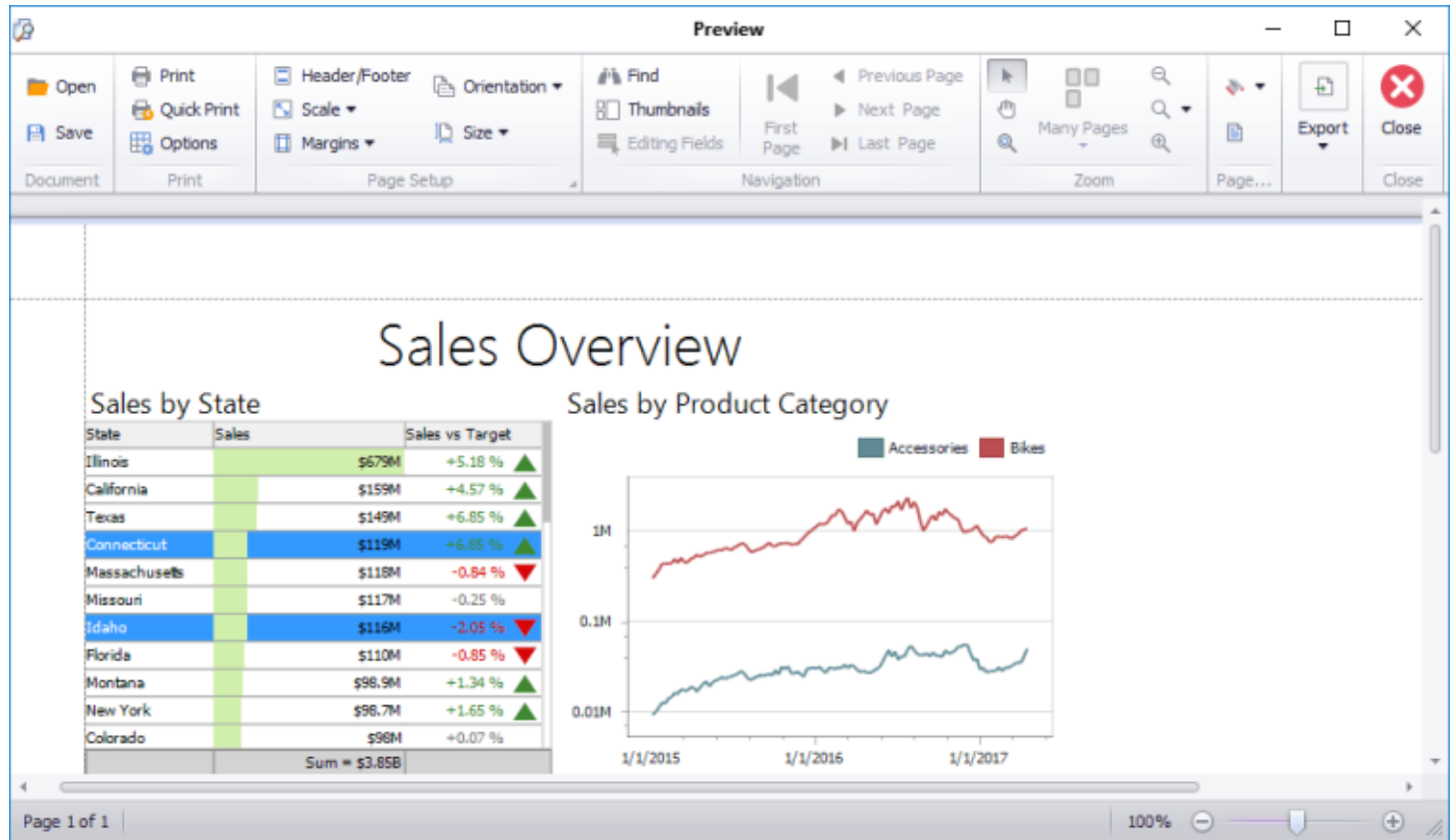
- **Data Item placeholder** - used to create a data binding using drag-and-drop operations.
- **Data Item** - identifies a data binding by mapping to a particular data source field. Each data item has the **Data Item menu** button, used to invoke a menu that allows you to perform various [data shaping](#) operations.
- **Data Section** - corresponds to a particular dashboard item area or element.
- **Data Item container** - used to provide *data item* sets (e.g., for calculating the difference between two measures). Data item containers have **Options** buttons that allow you to change specific dashboard item settings (e.g., to switch between chart series types or grid column types).
- **Sort indicator** - shows the current sort order for the data item.
- **Coloring indicator** - indicates whether coloring by hue is enabled for the data item.

Specific dashboard items have command buttons that allow you to perform various operations, for instance, to add a new pane to the chart dashboard item.

Print Preview

[Dashboard for Desktop](#) > [Dashboard Designer](#) > [UI Elements](#) > [Print Preview](#)

This document describes the **Print Preview** window, which displays the dashboard/dashboard item as it will appear on paper.



The screenshot shows the 'Print Preview' window for a dashboard titled 'Sales Overview'. The window has a ribbon with various options like Open, Print, Quick Print, Options, Header/Footer, Scale, Margins, Orientation, Size, Find, Thumbnails, Editing Fields, Navigation, Zoom, and Page... The dashboard content includes:

Sales Overview

Sales by State

State	Sales	Sales vs Target
Illinois	\$679M	+5.18 % ▲
California	\$159M	+4.57 % ▲
Texas	\$149M	+6.85 % ▲
Connecticut	\$119M	+6.85 % ▲
Massachusetts	\$118M	-0.84 % ▼
Missouri	\$117M	-0.25 % ▼
Idaho	\$116M	-2.08 % ▼
Florida	\$110M	-0.85 % ▼
Montana	\$98.9M	+1.34 % ▲
New York	\$98.7M	+1.65 % ▲
Colorado	\$98M	+0.07 % ▲
Sum = \$3.85B		

Sales by Product Category

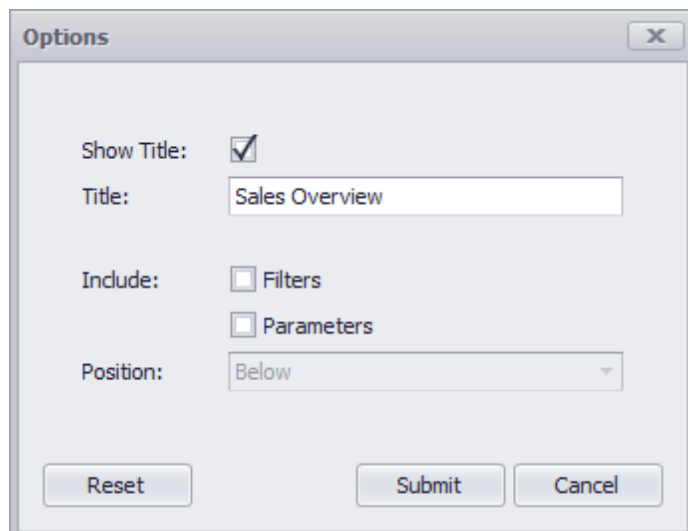
Line chart showing sales trends for Accessories (blue) and Bikes (red) from 1/1/2015 to 1/1/2017. The Y-axis ranges from 0.01M to 1M.

Page 1 of 1 | 100%

Specific Options

In the Print Preview, you can change the orientation and size of the printed page, specify the margins, scale the document, etc. To learn more, see [Print Preview for WinForms](#).

You can also customize printing options specific to a dashboard/dashboard item. To do this, click the **Options** button in the **Print** group. When previewing the dashboard, the following **Options** dialog will be invoked.



The 'Options' dialog box is shown with the following settings:

- Show Title:
- Title: Sales Overview
- Include: Filters, Parameters
- Position: Below

Buttons: Reset, Submit, Cancel

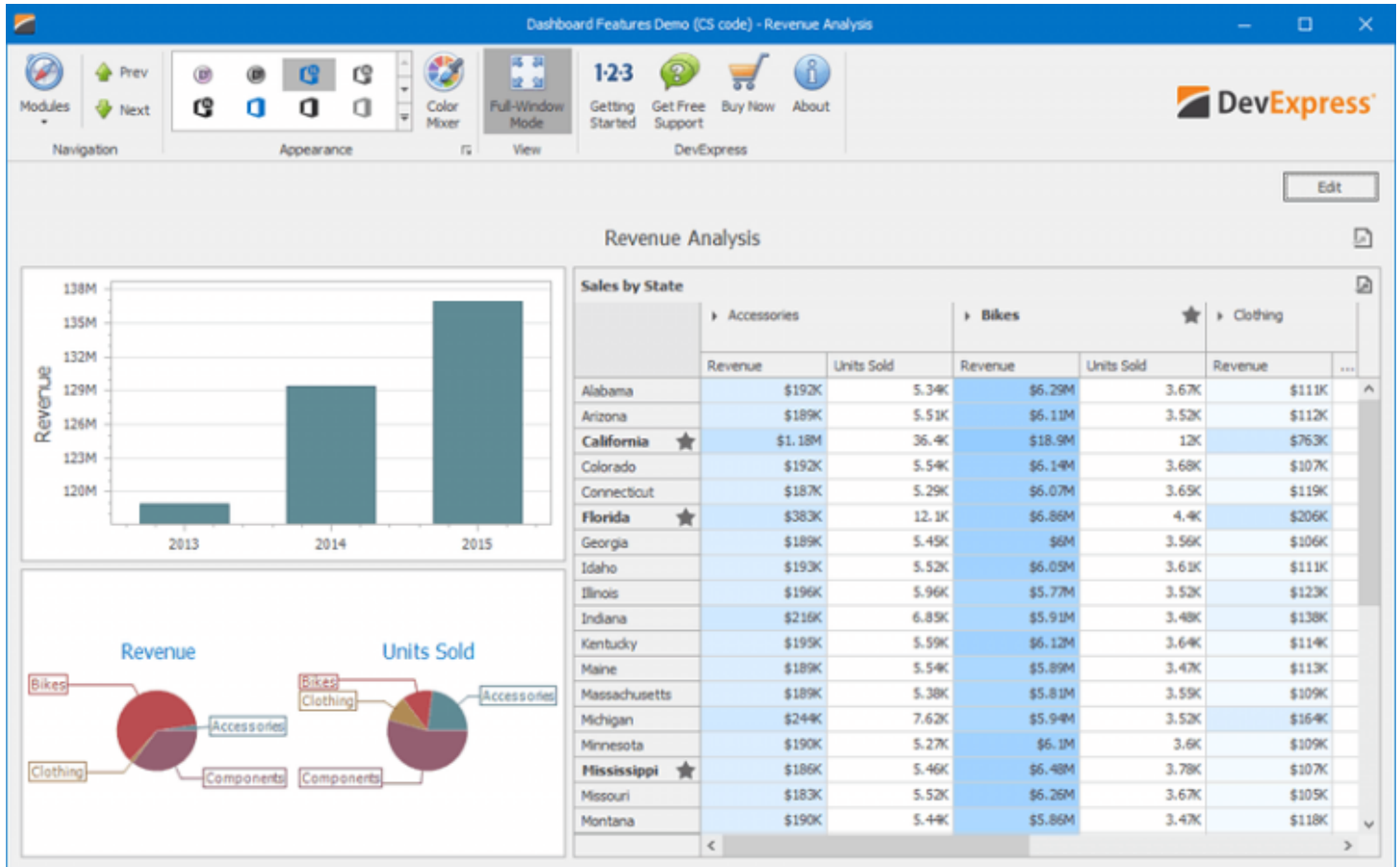
- **Show Title** - Specifies whether or not to show the dashboard title/dashboard item caption as the printed document title.
- **Title** - Specifies the title of the printed document.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

This dialog can contain different options, depending on the dashboard item. To learn more, see the documentation for the required [dashboard item](#).

Dashboard Viewer

[Dashboard for Desktop](#) > [Dashboard Viewer](#)

The **Dashboard Viewer** provides the capability to display dashboards in Windows Forms applications.



Data Presentation

The topics in this section provide information on how the **Dashboard Viewer** presents data.

- [Data Presentation Basics](#)
- [Master Filtering](#)
- [Drill-Down](#)
- [Dashboard Layout](#)

Dashboard Parameters

This topic describes how to change dashboard parameter values.

- [Requesting Parameter Values](#)

Printing and Exporting

A Dashboard Viewer provides the capability to print or export both individual items of a dashboard, as well as the entire dashboard.

- [Printing and Exporting](#)

Dashboard Items

Dashboard items are used to present information in various ways.

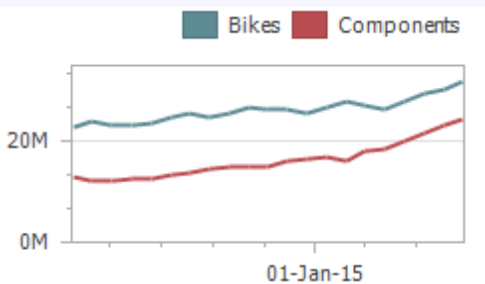
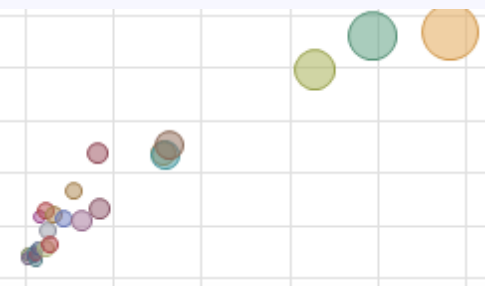
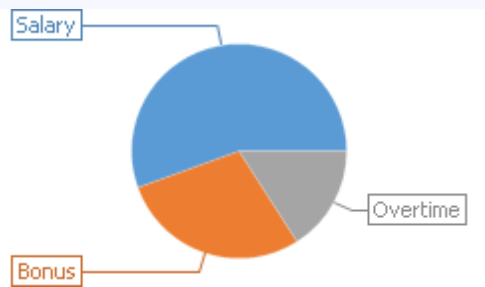
- [Chart](#)
- [Scatter Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Pivot](#)
- [Choropleth Map](#)
- [Geo Point Maps](#)
- [Range Filter](#)
- [Image](#)
- [Text Box](#)
- [Treemap](#)
- [Filter Elements](#)

Data Presentation

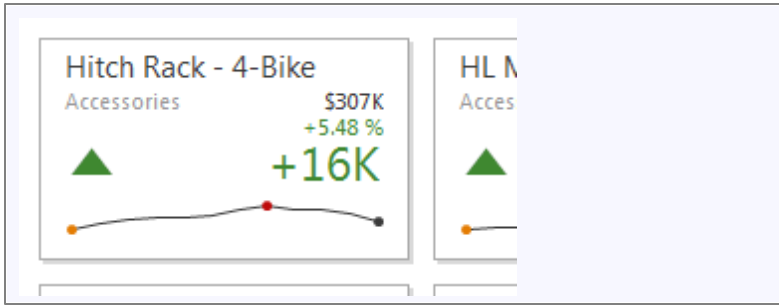
Data Presentation Basics

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Data Presentation Basics](#)

The **Dashboard Viewer** is used to present dashboards in Windows Forms applications. A wide range of dashboard items are used to display visual or textual information.

Dashboard Item	Image	Description															
Chart		Displays data graphically using bars, lines, points, etc.															
Scatter Chart		Visualizes relationships between numeric variables.															
Grid	<table border="1"> <thead> <tr> <th>State</th> <th>Sales</th> <th>Sales vs Target</th> </tr> </thead> <tbody> <tr> <td>Alabama</td> <td>\$121M</td> <td>+7.13 % ▲</td> </tr> <tr> <td>Arizona</td> <td>\$73M</td> <td>+0.80 % ▲</td> </tr> <tr> <td>California</td> <td>\$91M</td> <td>+3.00 % ▲</td> </tr> <tr> <td>Colorado</td> <td>\$105M</td> <td>-0.84 % ▼</td> </tr> </tbody> </table>	State	Sales	Sales vs Target	Alabama	\$121M	+7.13 % ▲	Arizona	\$73M	+0.80 % ▲	California	\$91M	+3.00 % ▲	Colorado	\$105M	-0.84 % ▼	Presents data in tabular form.
State	Sales	Sales vs Target															
Alabama	\$121M	+7.13 % ▲															
Arizona	\$73M	+0.80 % ▲															
California	\$91M	+3.00 % ▲															
Colorado	\$105M	-0.84 % ▼															
Pies		Displays a series of pies or donuts that represent the contribution of each value to the total.															

[Cards](#)



Displays a series of cards, each illustrating the difference between two values.

[Gauges](#)



Visualizes data within a series of gauges.

[Pivot](#)

Accessories		
	Units Sold	Revenue
California	36.4K	\$1.18M
Washington	20.6K	\$622K
Texas	19.1K	\$655K
Florida	12.1K	\$383K

Displays cross-tabular reports and allows you to analyze multi-dimensional data.

[Choropleth Map](#)



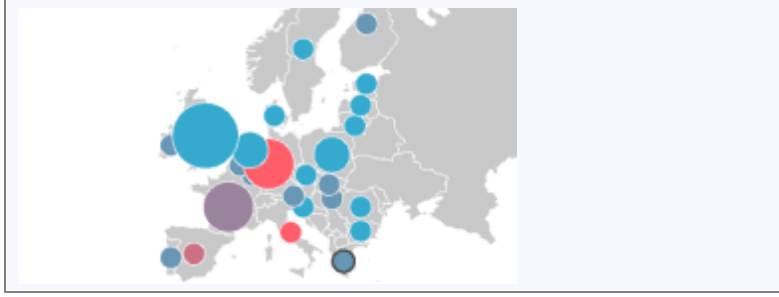
Colorizes areas in proportion to the provided values.

[Geo Point Map](#)



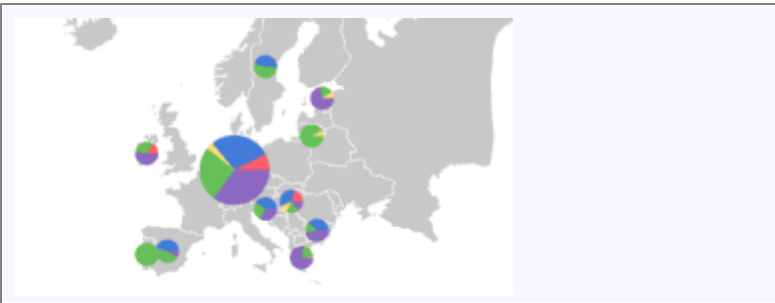
Displays callouts on the map using geographical coordinates.

[Bubble Map](#)



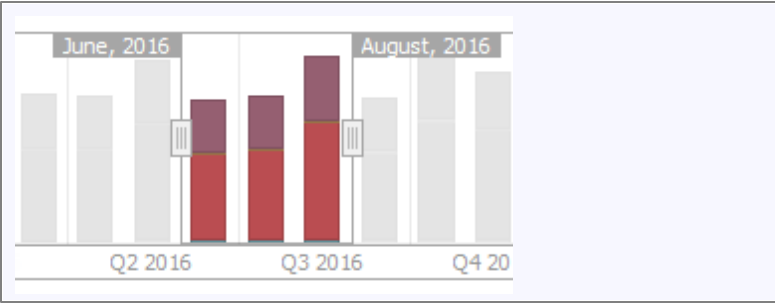
Displays bubbles on the map using geographical coordinates.

[Pie Map](#)



Places pies on the map using geographical coordinates.

[Range Filter](#)



Allows you to apply filtering by dragging selection thumbs along the argument axis.

[Images](#)



Displays images.

[Text Box](#)

Product Description

DesktopLCD 21

Production Start: **31-Mar-10**

Consumer Rating: **3 of 5**

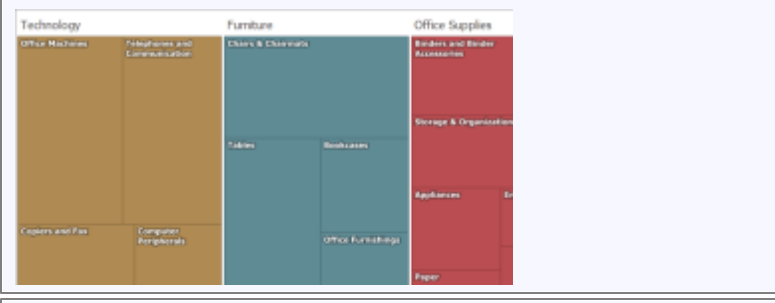
Retail Price: **\$170**

Best Sales Year: **2015**

Best Sales Company: **ACME**

Displays rich text within a dashboard.

[Treemap](#)



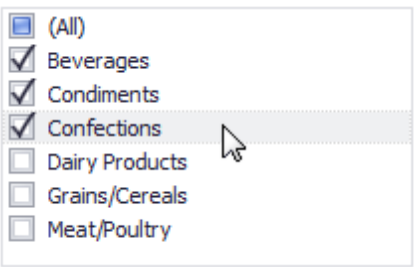
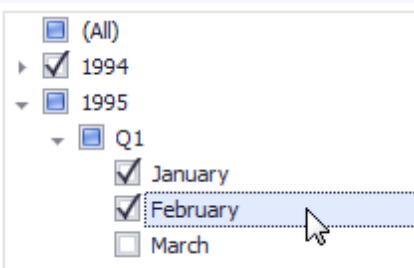
Visualizes data in nested rectangles.

[Combo Box](#)

(All) [v]

- Beverages
- Condiments
- Confections
- Dairy Products
- Grains/Cereals
- Meat/Poultry
- Produce

Allows you to select a value(s) from the drop-down list.

List Box		Allows you to select a value(s) from the list.
Tree View		Displays values in a hierarchical way and allows you to filter other dashboard items by selecting parent/child values.

The Dashboard Viewer enables interaction between various dashboard items. These features include **Master Filtering** and **Drill-Down**.

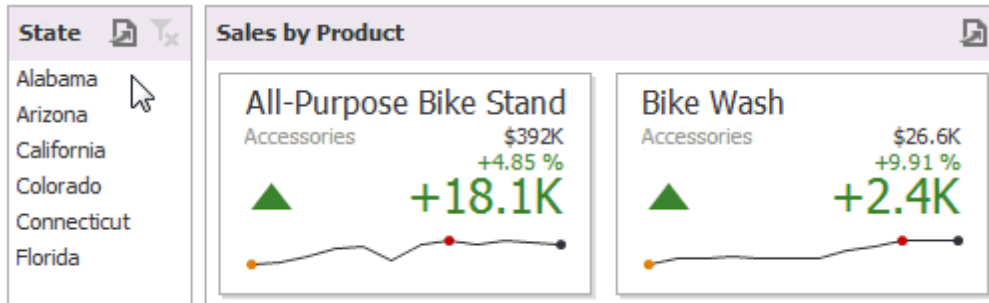
- [Master Filtering](#)
- [Drill-Down](#)

To learn more about the dashboard layout, see the [Dashboard Layout](#) topic.

Master Filtering

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Master Filtering](#)

The **Dashboard** allows you to use any data-aware dashboard item as a filter for the entire dashboard (**Master Filter**). You can select elements in a **Master Filter** item (chart bars, pie segments, grid records, etc.) to filter data in the rest of the dashboard by the selected values.



Master Filtering Modes

The Master Filter item supports two selection modes.

- **Multiple**

Allows you to select multiple elements in the Master Filter item.

To clear the selection in the Master Filter item, use the **Clear Master Filter** button in the dashboard item's [caption](#).



- **Single**

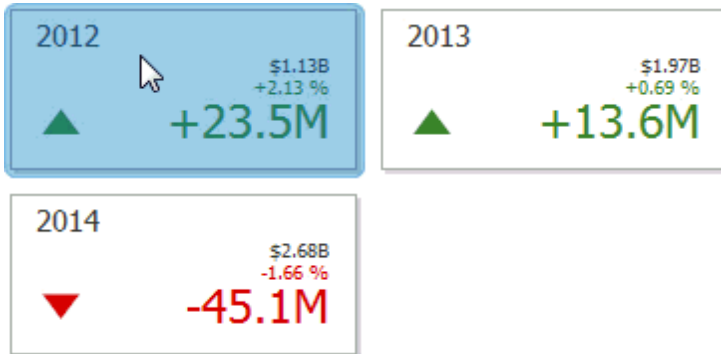
Allows you to select only one element in the Master Filter item. When this mode is enabled, the default selection will be set to a Master Filter element. You can change this selection, but cannot clear it.

To learn how to filter dashboard data via a specific dashboard item, refer to the documentation for this item in the [Dashboard Items](#) section.


Drill-Down

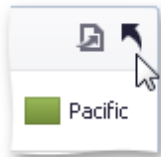
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Drill-Down](#)

Dashboard provides the **drill-down** feature, which allows you to change the detail level of data displayed in a dashboard item. This feature allows you to drill down to display the details, or drill up to view more general information.



To learn how to drill down using a particular dashboard item, refer to the documentation for this item in the [Dashboard Items](#) topic.

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the dashboard item's [caption](#), or the corresponding command in the context menu.



Dashboard Layout

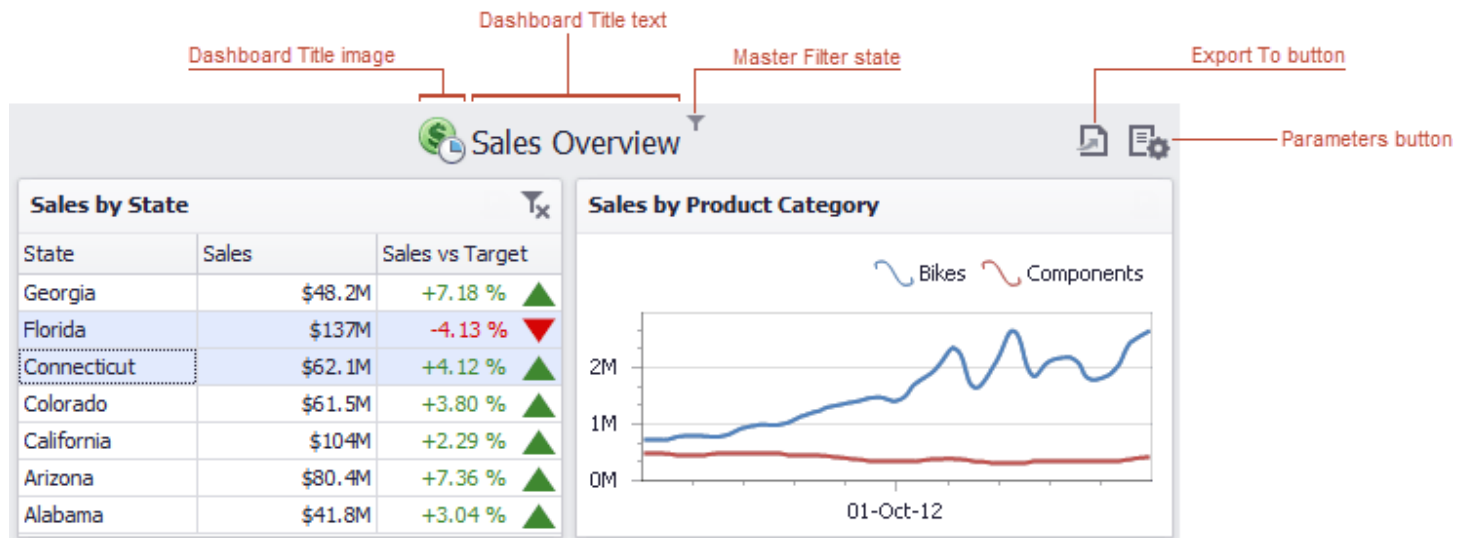
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Layout](#)

This topic describes the features related to the dashboard layout.

- [Dashboard Title](#)
- [Dashboard Item Caption](#)
- [Resizing Dashboard Items](#)

Dashboard Title



The **Dashboard Title** is located at the top of the **Dashboard**. The dashboard title can contain text or image content, elements selected in the master filter item and command buttons.



When you hover over the filter icon (▼), all master filters applied to the dashboard are displayed in the invoked popup.



The dashboard title can contain the following command buttons.

- **Export To** button (the  icon) - allows you to print/export the dashboard. To learn more about printing and exporting, see the [Printing and Exporting](#) topic.
- **Parameters** button (the  icon) - allows you to modify dashboard parameter values. To learn how to modify dashboard parameter values, see the [Requesting Parameter Values](#) topic.

Dashboard Item Caption

Each [dashboard item](#) has a caption that is displayed at the top of this item. The caption contains static text along with other information, as well as command buttons.

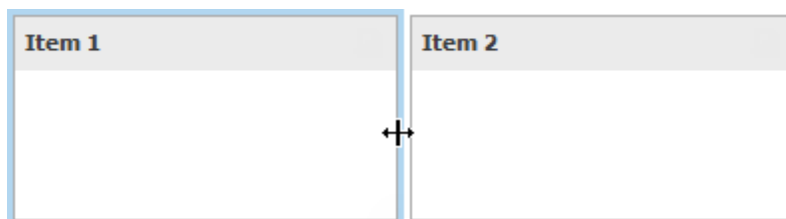


The caption of the Dashboard item contains the following information and buttons, depending on the dashboard item type:

- **Dashboard Item Name** - represents the static text within a dashboard item's caption.
- **Data Item Container Name** - represents the name of the data item container.
- **Drill-Down** value - shows value(s) from the current drill-down hierarchy. To learn more, see the [Drill-Down](#) topic.
- **Export to** button - allows you to print or export a dashboard item. To learn how to print individual dashboard items, see the [Printing and Exporting](#) topic.
- **Values** button - invokes a drop-down menu that allows you to switch between provided values (in the pie, card, gauge and map dashboard items). To learn more, see the **Data Presentation Basics** topic for the corresponding dashboard item.
- **Clear Master Filter** button - allows you to reset filtering when a dashboard item acts as the [Master Filter](#). To learn more, see the **Interactivity** topic for the corresponding dashboard item.
- **Drill Up** button - allows you to return to the previous detail level when the [drill-down](#) capability is enabled for this item. To learn more, see the **Interactivity** topic for the corresponding dashboard item.

Resizing Dashboard Items

The Dashboard Viewer provides the capability to resize dashboard items.



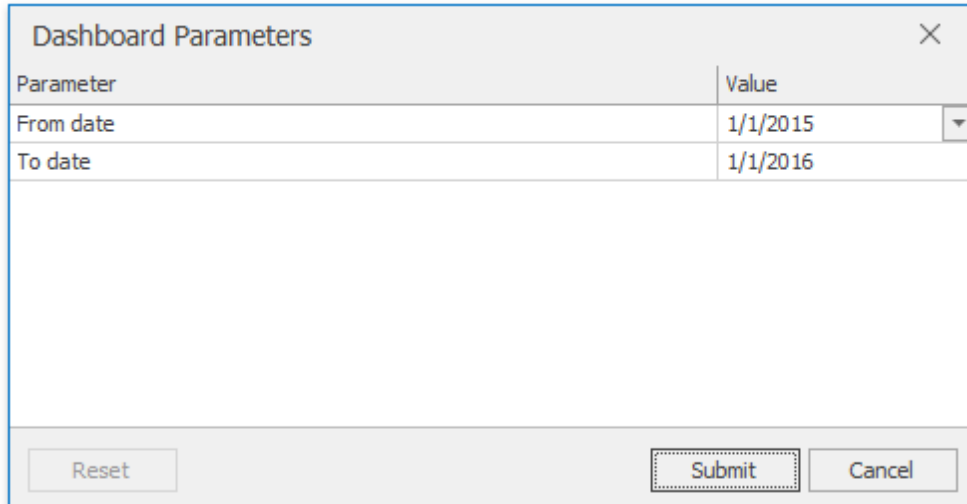
You can resize individual items (or a group of items) by dragging their edges.

Dashboard Parameters

Requesting Parameter Values


[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Requesting Parameter Values](#)

The Dashboard Viewer provides a built-in **Dashboard Parameters** dialog, which allows you to change dashboard parameter values. This dialog can be used to apply filtering to dashboard data.



Parameter	Value
From date	1/1/2015
To date	1/1/2016

Reset Submit Cancel

To invoke the **Dashboard Parameters** dialog in the Dashboard Viewer, click the **Parameters** button (the  icon) in the [dashboard title](#).

Select the required parameter values in the **Dashboard Parameters** dialog and click the **Submit** button to apply the changes.

To reset changes to the default values, click the **Reset** button.


Printing and Exporting

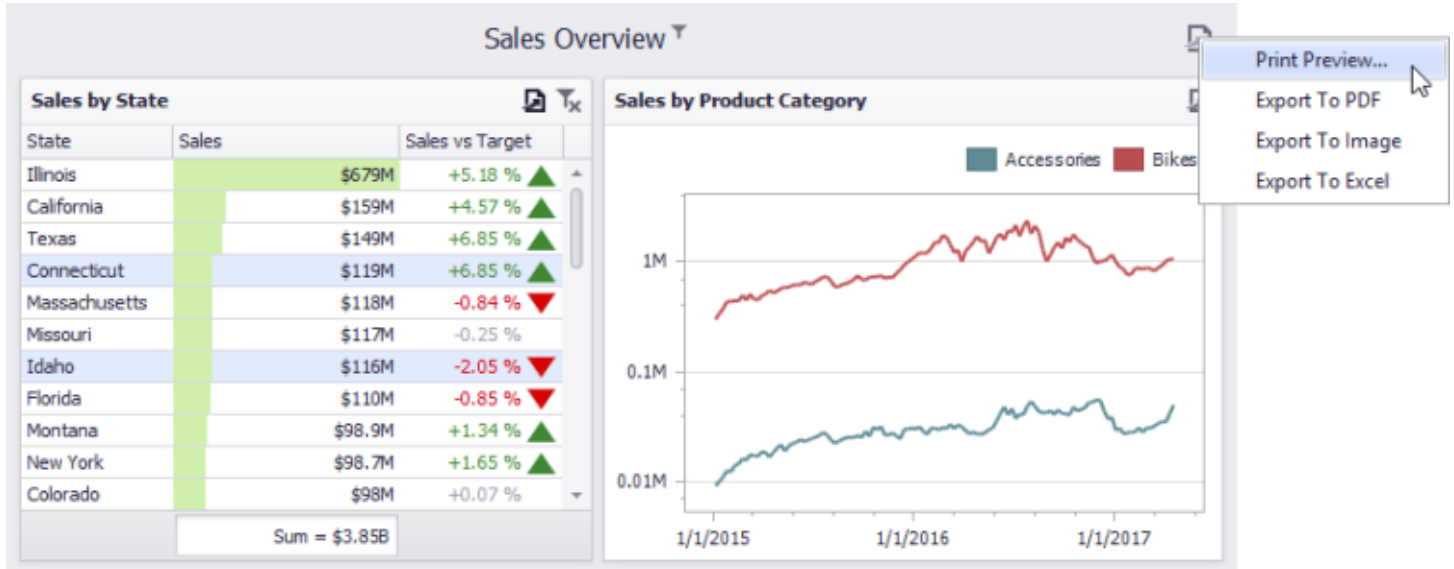
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Printing and Exporting](#)

The Dashboard Viewer provides the capability to print or export an entire dashboard and individual items.

- [Printing and Exporting Dashboards](#)
- [Printing and Exporting Dashboard Items](#)

Printing and Exporting Dashboards

To print or export the entire dashboard, click the  button in the [dashboard title](#) area and choose the required action.



Print Preview...

Allows you to customize the document before printing/exporting. For instance, the following settings can be changed: the orientation and size of the printed page, page margins, etc.

Export to PDF

Invokes a corresponding dialog that allows you to export a dashboard to a PDF file with specific options. The following options are available:

- **Page Layout** - Specifies the page orientation used to export a dashboard. You can select between *Portrait*, *Landscape*, and *Auto*. Note that in the *Auto* mode, page orientation is selected automatically depending on the horizontal and vertical sizes of a dashboard.
- **Size** - Specifies the standard paper size (for instance, *Letter* or *A4*).
- **Show Title** - Specifies whether or not to apply the dashboard title to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard.

Note that this option is in effect when **Page Layout** is set to a value different from *Auto*.

- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard is scaled.

This option is in effect if **Scale Mode** is set to *Use Scale Factor*.

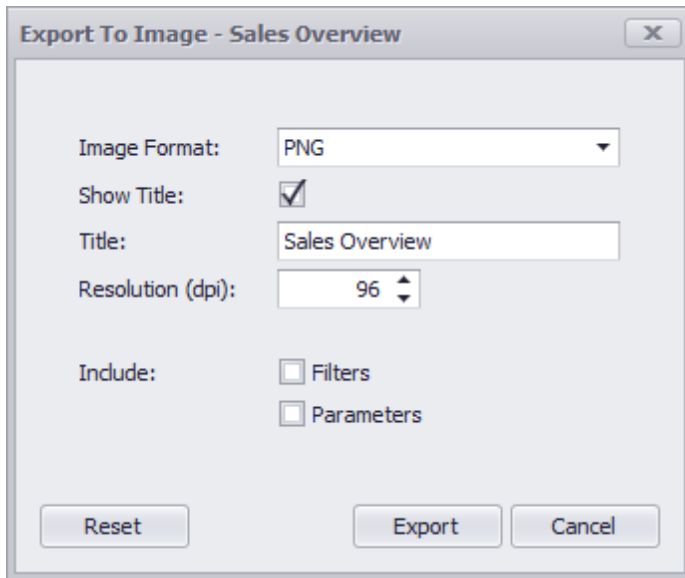
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard.

This option is in effect if **Scale Mode** is set to *Auto Fit to Page Width*.

- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Export to Image

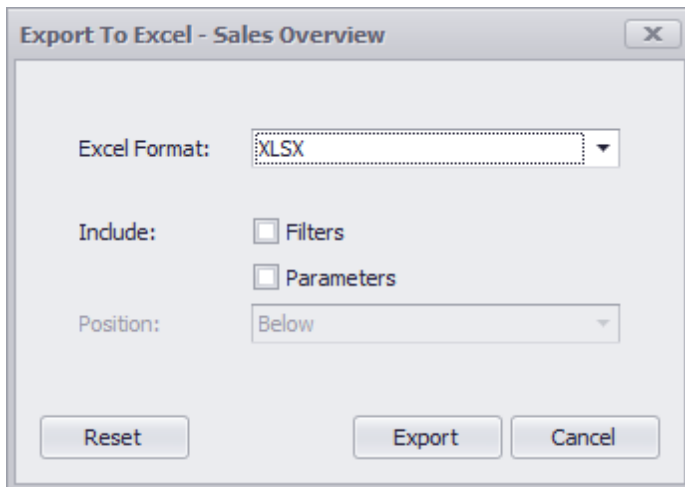
Invokes a corresponding dialog that allows you to export a dashboard to an image in the specified format. The following options are available:



- **Image Format** - Specifies the image format in which the dashboard is exported. The following formats are available: *PNG*, *JPEG*, and *GIF*.
- **Show Title** - Specifies whether or not to apply the dashboard title to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export a dashboard.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.

Export to Excel


Invokes a corresponding dialog that allows you to export dashboard's data to the Excel file. The following options are available:

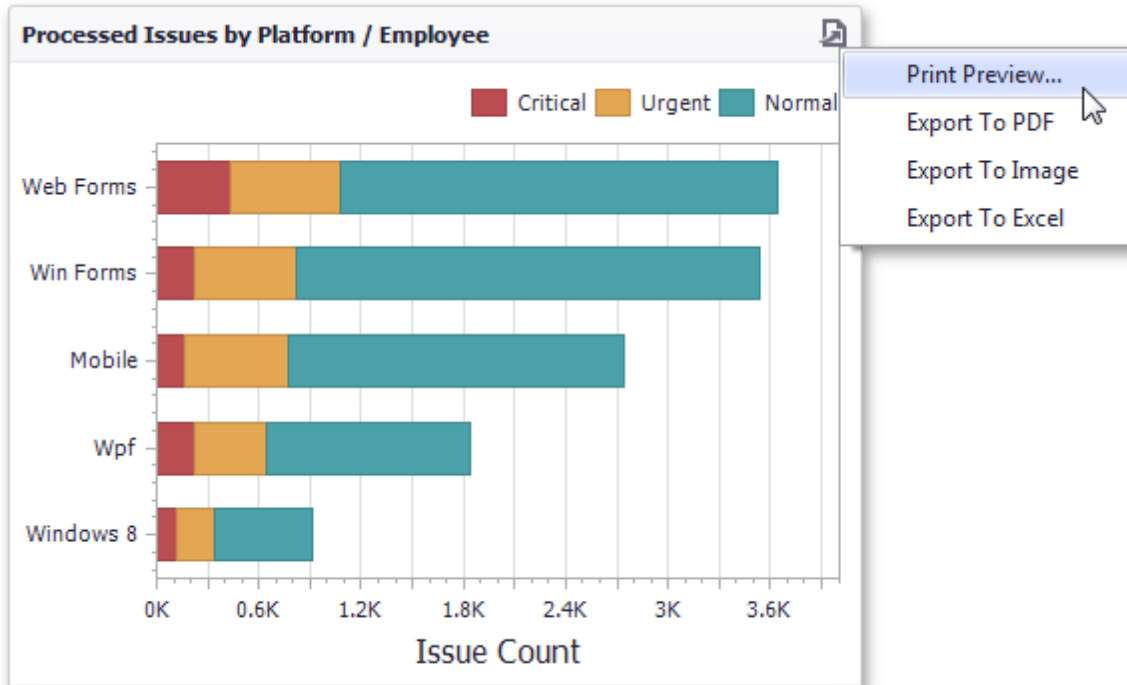


- **Excel Format** - Specifies the Excel workbook format in which the dashboard's data is exported. You can select between *XLSX* and *XLS*.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Sheet*.

Specify the required options in the invoked dialog and click the **Export** button to export the dashboard. To reset changes to the default values, click the **Reset** button.

Printing and Exporting Dashboard Items

To print or export a dashboard item, click the  button in its [caption](#) and choose the required action.



- **Print Preview...** - Allows you to customize the document before printing/exporting.
- **Export to PDF** - Invokes a corresponding dialog that allows you to export a dashboard to a PDF file with specific options.
- **Export to Image** - Invokes a corresponding dialog that allows you to export a dashboard to image in the specified format.
- **Export to Excel** - Invokes a corresponding dialog that allows you to export a dashboard item's data to the Excel workbook or CSV file.

To learn more about printing/exporting specifics of different dashboard items, see the **Printing and Exporting** topic for the required [dashboard item](#).

Dashboard Items

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#)

The **DevExpress Dashboard** provides a number of visualization elements (**dashboard items**) designed to effectively present visual or textual information in a dashboard.

This section describes the available dashboard items.

- [Chart](#)
- [Scatter Chart](#)
- [Grid](#)
- [Pies](#)
- [Cards](#)
- [Gauges](#)
- [Pivot](#)
- [Choropleth Map](#)
- [Geo Point Maps](#)
- [Range Filter](#)
- [Image](#)
- [Text Box](#)
- [Treemap](#)
- [Filter Elements](#)

Chart

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Chart](#)

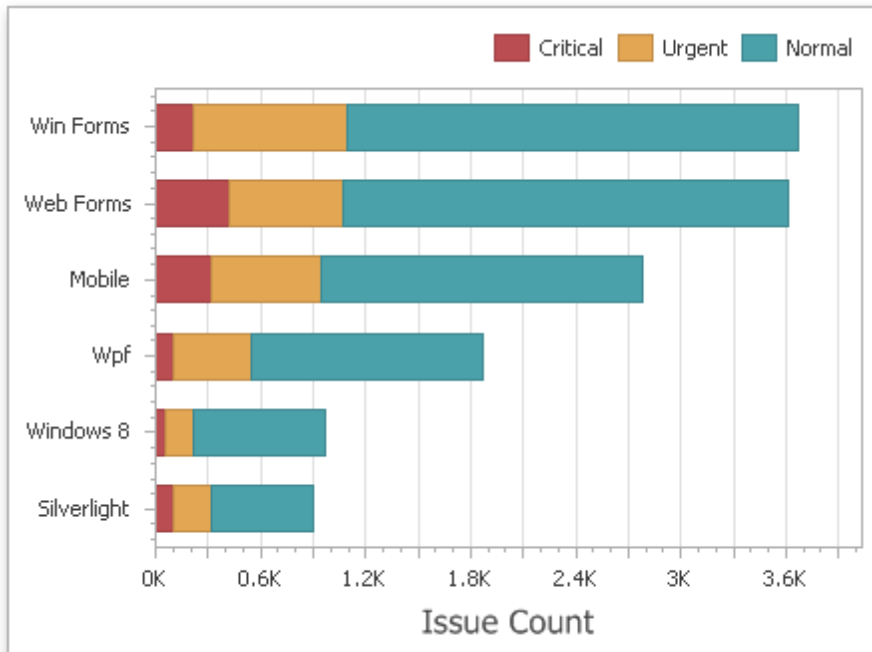
The topics in this section describe the **Chart** dashboard item, which visualizes data in XY-diagrams of different kinds - from line and bar charts to candle stick and bubble charts.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics







[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Chart](#) > [Data Presentation Basics](#)

The **Chart** dashboard item presents data visually using different types of series.



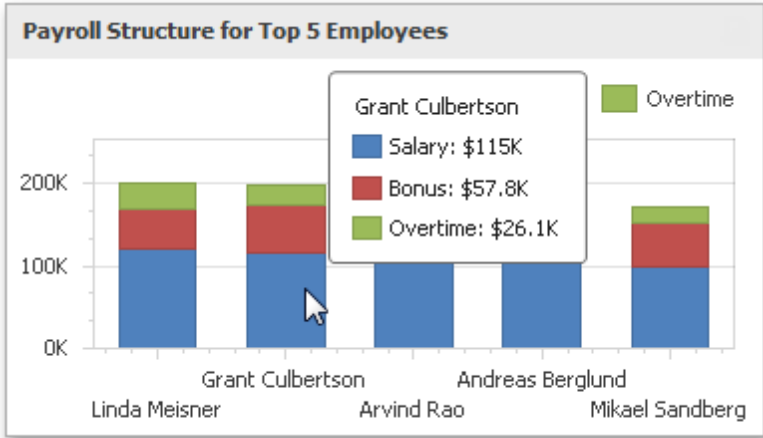
A series represents a grouping of related data points. The most important characteristic of a series is its type, which determines a particular visual representation of data.

The Chart dashboard item includes the following series types.

-  A **Bar** series displays data as sets of rectangular bars with lengths proportional to the values that they represent.
-  **Point** and **Line** series display data as standalone points or points joined by a line.
-  An **Area** series displays data by a line that joins points, and the shaded area between the line and the argument axis.
-  A **Range** series is the area between two simple series displayed as a shaded area, or bars that stretch from a point in one series to the corresponding point in another series.
-  A **Weighted** series displays data using a third dimension, expressed by a bubble's size.
-  **Financial** series are useful in analyzing stock and bond prices, as well as the behavior of commodities.

Tooltip

The Chart dashboard item can display a tooltip that shows information on a hovered series point.



Interactivity

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Chart](#) > [Interactivity](#)

This topic describes features that enable interaction between the **Chart** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

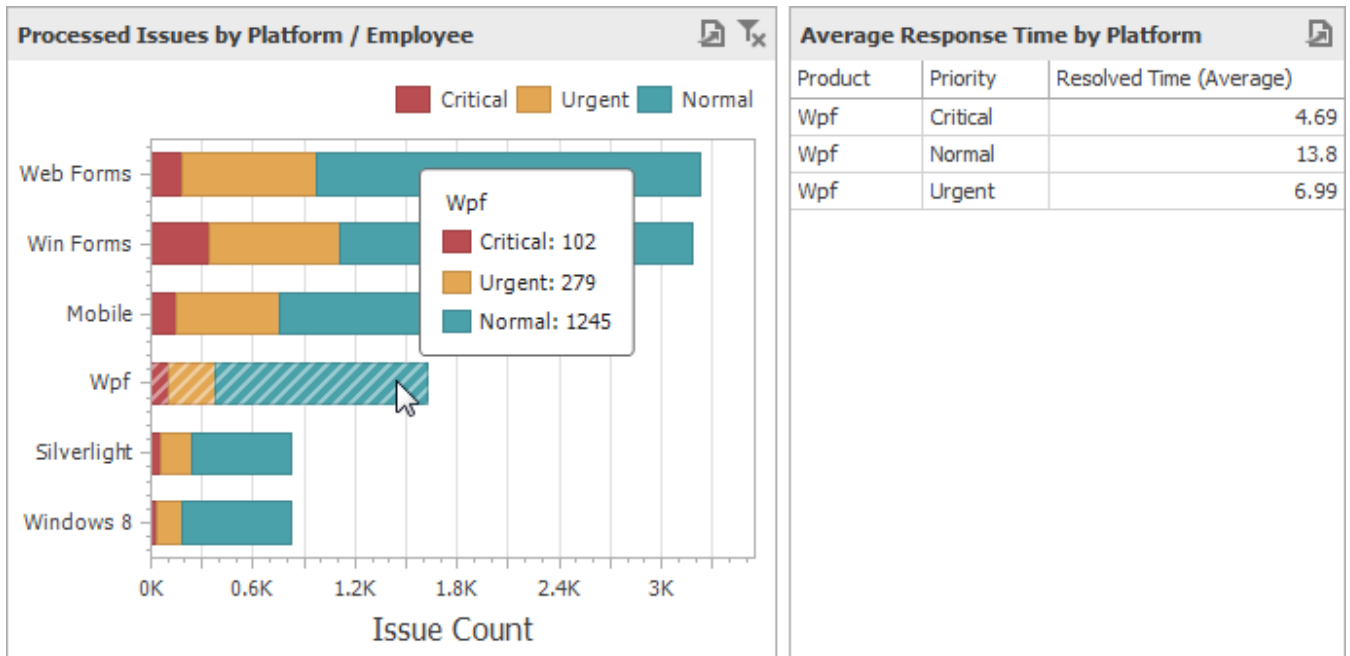
Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

The Chart dashboard item supports filtering by **argument** or **series** values.

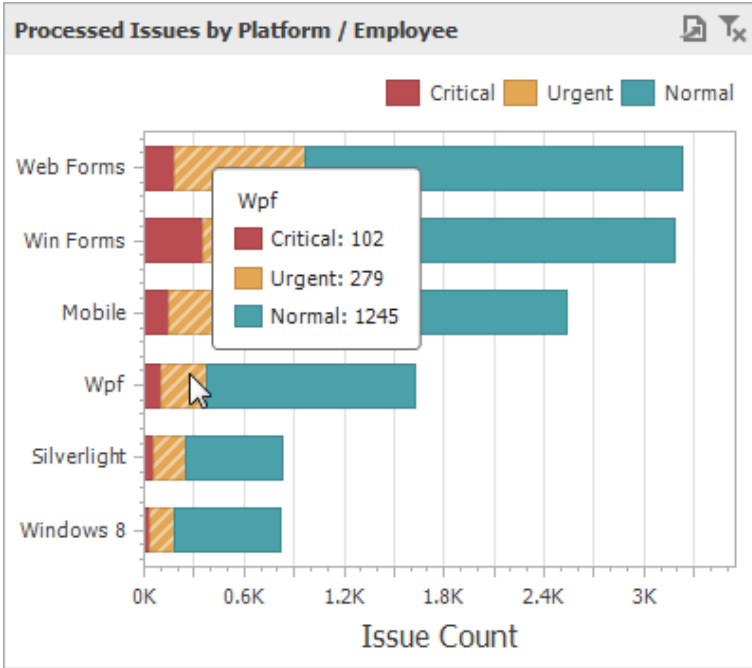
- **Filtering by Arguments**

When filtering by arguments is enabled, you can click series points to make other dashboard items display only data related to selected argument values.



- **Filtering by Series**

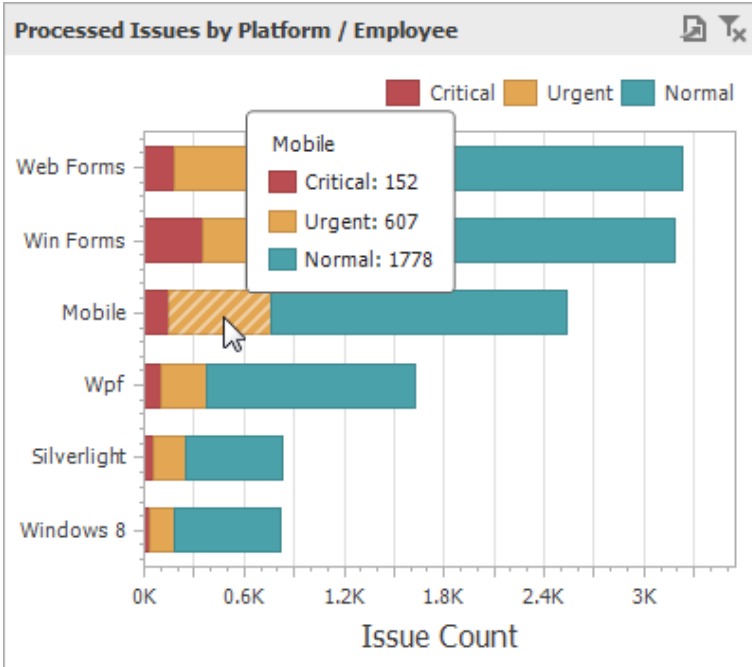
When filtering by series is enabled, you can click a series point to make other dashboard items display only data related to the selected series.



Product	Priority	Resolved Time (Average)
Wpf	Urgent	6.99
Windows 8	Urgent	7.55
Win Forms	Urgent	6.94
Web Forms	Urgent	7.54
Silverlight	Urgent	7.45
Mobile	Urgent	7.51

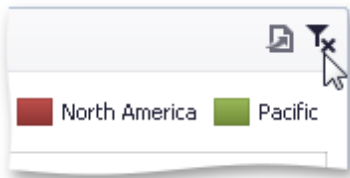
Filtering by Points

When filtering by points is enabled, you can click a individual point to make other dashboard items display only data related to the selected point.



Product	Priority	Resolved Time (Average)
Mobile	Urgent	7.51

To reset filtering, use the **Clear Master Filter** button in the Chart's [caption](#), or corresponding command in the Chart's context menu.



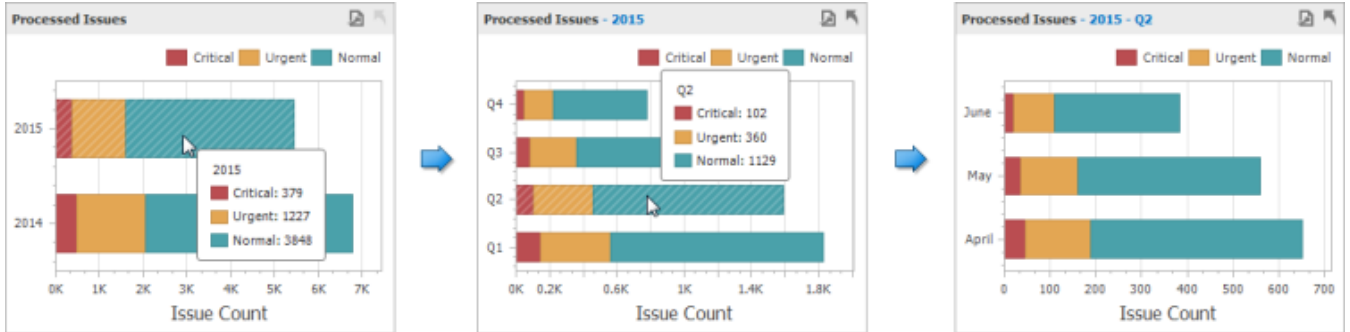
Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

The Chart dashboard item supports drill-down on argument or series values.

• Drill Down on Arguments

When drill-down on arguments is enabled, you can click a series point to view a detail chart for the corresponding argument value.

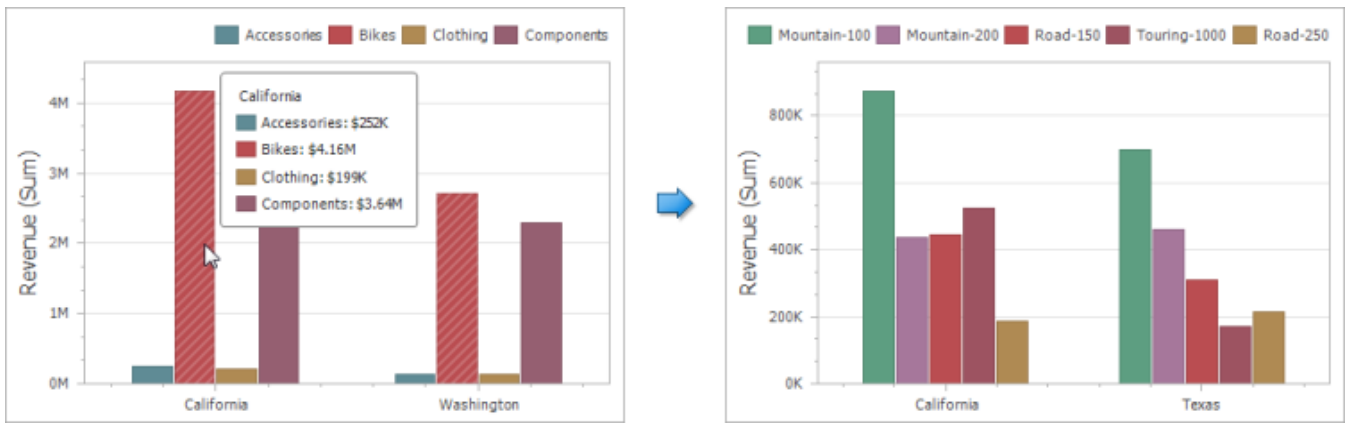


Note

When **Filtering by Arguments** is enabled, you can view the details by double-clicking a series point.

• Drill-Down on a Series

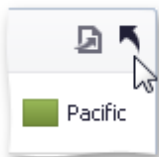
When drill-down on a series is enabled, you can click a series point (or corresponding legend item) to view a detail chart for the corresponding series.



Note

When **Filtering by Series** is enabled, you can view the details by double-clicking a series point.

To return to the previous detail level (drill up), use the **Drill Up** button within the Chart [caption](#) area, or the corresponding command in the Chart's context menu.



Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Chart](#) > [Printing and Exporting](#)

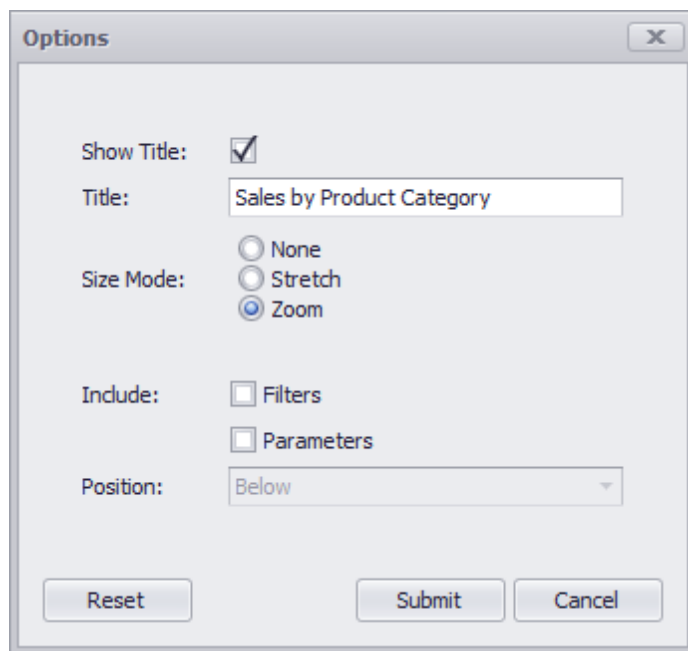
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes printing/exporting specifics for the **Chart** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Chart dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows the 'Options' dialog box with the following settings:

- Show Title:
- Title: Sales by Product Category
- Size Mode: None, Stretch, Zoom
- Include: Filters, Parameters
- Position: Below

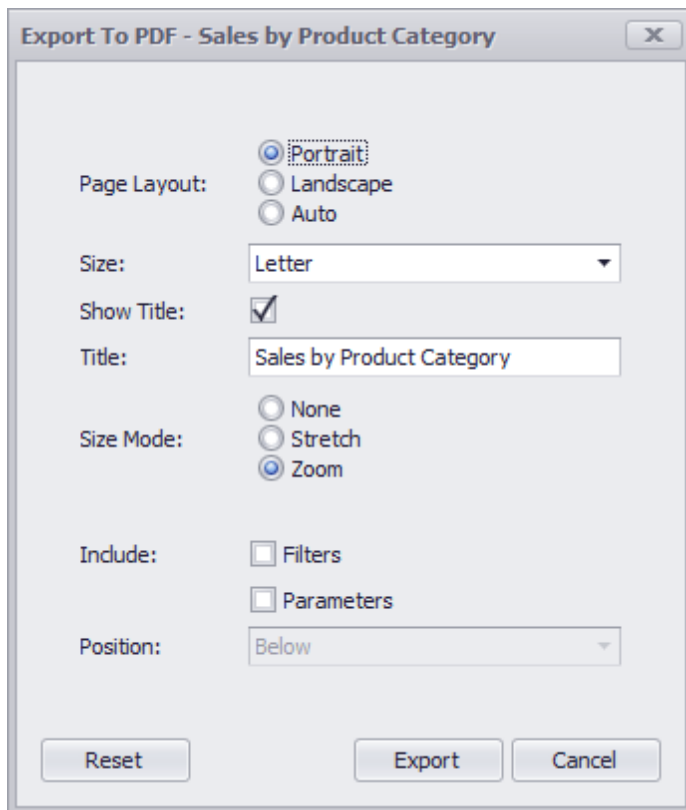
Buttons at the bottom: Reset, Submit, Cancel.

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Size Mode** - Allows you to specify the print size mode for the Chart dashboard item.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

The following options are available when exporting the Chart dashboard item to a PDF.

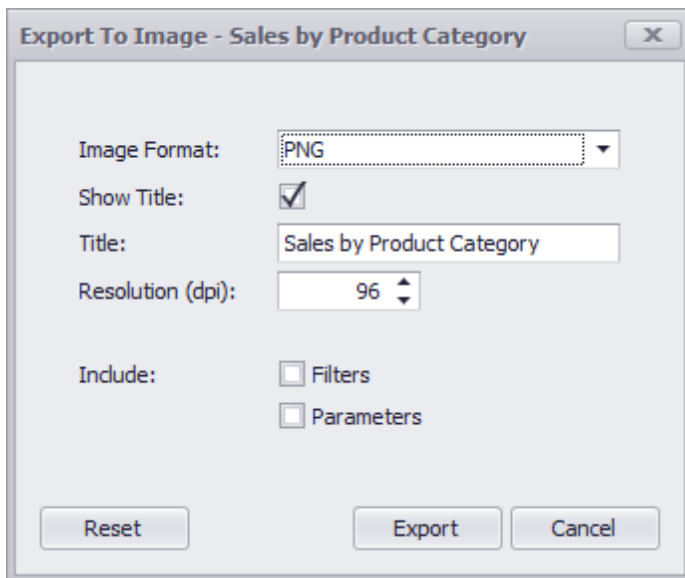


- **Page Layout** - Specifies the page orientation used to export a Chart dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Size Mode** - Specifies the export size mode for the Chart dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Chart dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

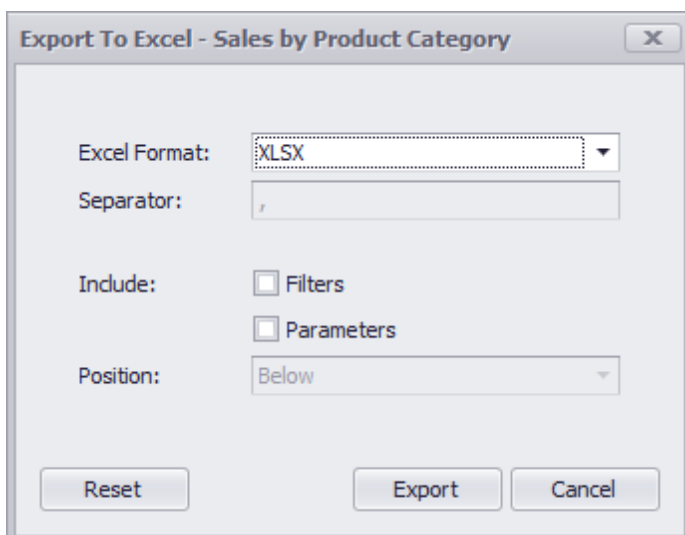


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Scatter Chart

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Scatter Chart](#)

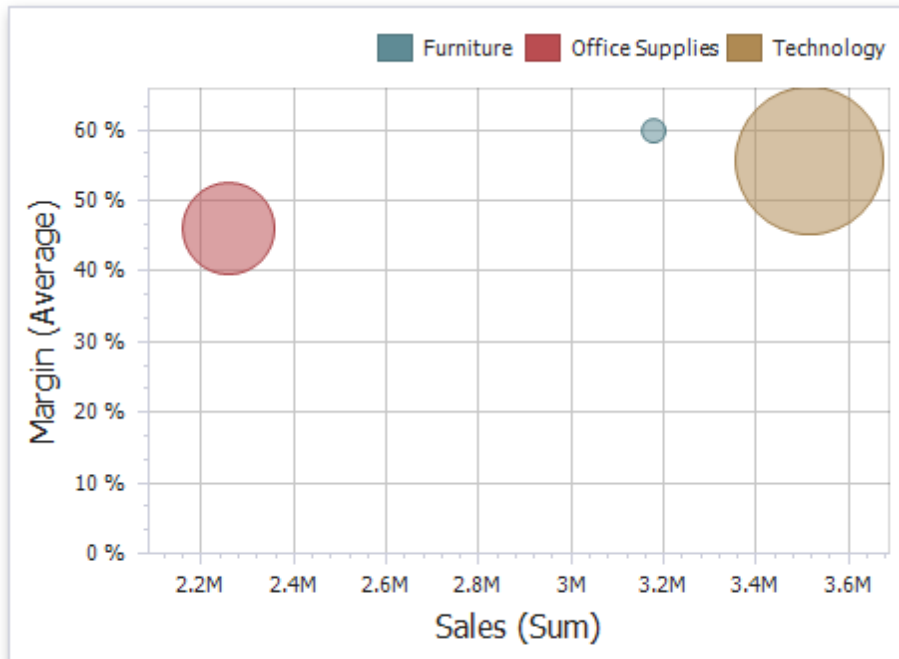
The topics in this section describe the **Scatter Chart** dashboard item, which visualizes summaries using numerical X/Y-axes and the size of data points.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

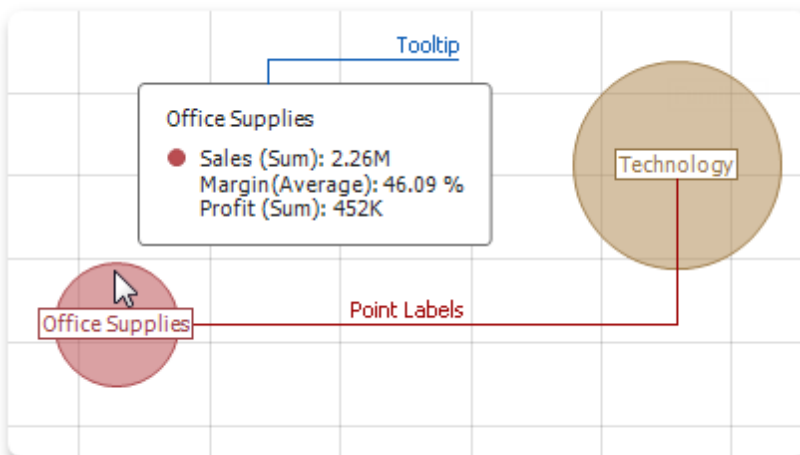
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Scatter Chart](#) > [Data Presentation Basics](#)

The **Scatter Chart** dashboard item visualizes summaries using three dimensions: the X-axis, the Y-axis and the size of data points.



Point Labels and Tooltips

The Scatter Chart dashboard item can display point labels and tooltips that show information on data points. To see a tooltip, hover over the required point.



Interactivity

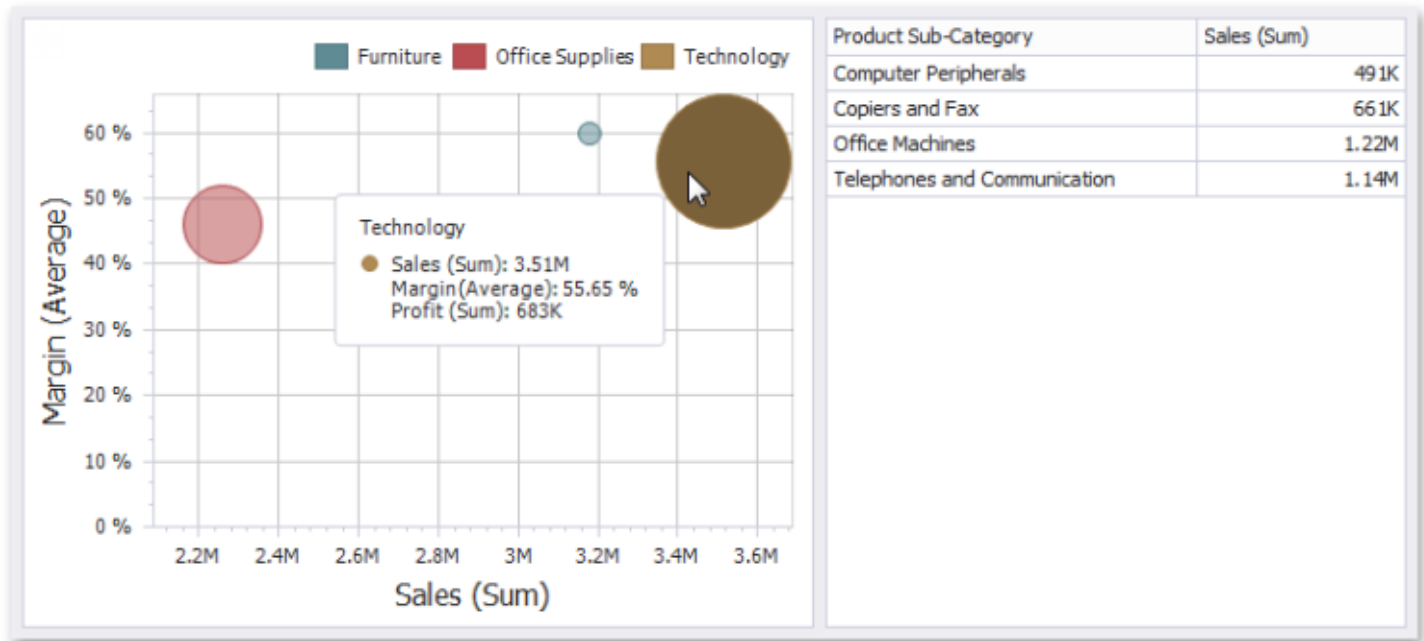
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Scatter Chart](#) > [Interactivity](#)


This topic describes features that enable interaction between the **Scatter Chart** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a point (or multiple points by holding down the **CTRL** key) to make other dashboard items only display data related to the selected point(s).

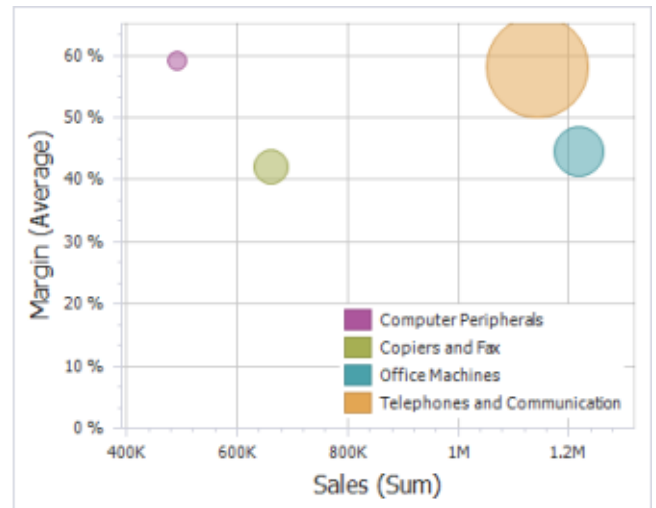
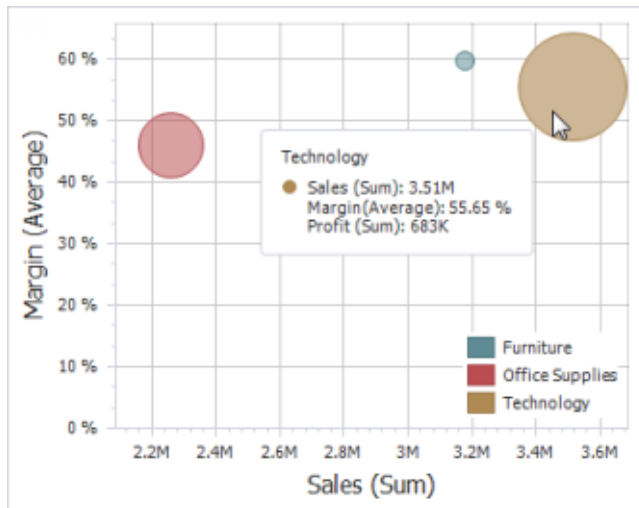


To reset filtering, use the **Clear Master Filter** button (the  icon) in the Chart's [caption](#) area, or the **Clear Master Filter** command in the Chart's context menu.

Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

When drill-down is enabled, you can click a point to view the details.



Note

When **Master Filtering** is enabled, you can view the details by double-clicking a point.

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) within the Chart's [caption](#) area or the **Drill Up** command in the Chart's context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Scatter Chart](#) > [Printing and Exporting](#)

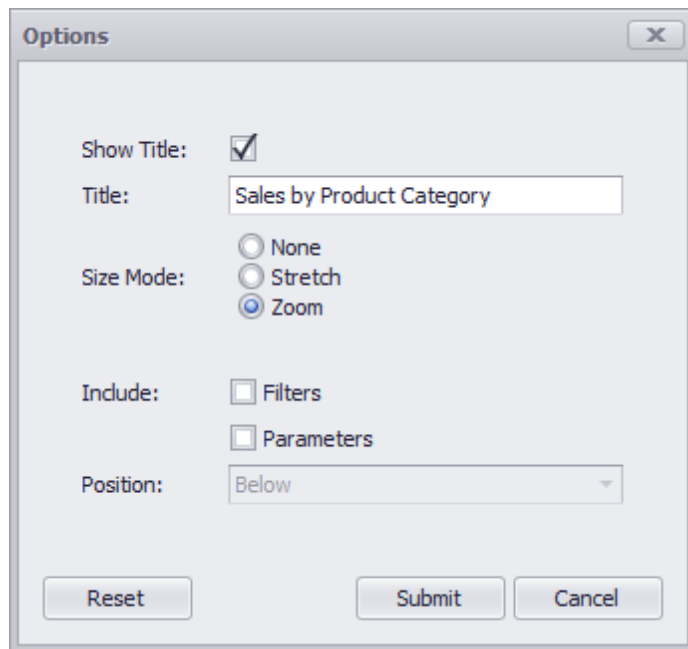
The Dashboard allows you to print/export individual dashboard items, or the entire dashboard. See the [Printing and Exporting](#) topic to learn more about printing concepts common to all dashboard items.

This topic describes printing/exporting specifics for the **Scatter Chart** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

You can customize the following options (via the **Options** button) before printing the Scatter Chart dashboard item using the [Print Preview](#):

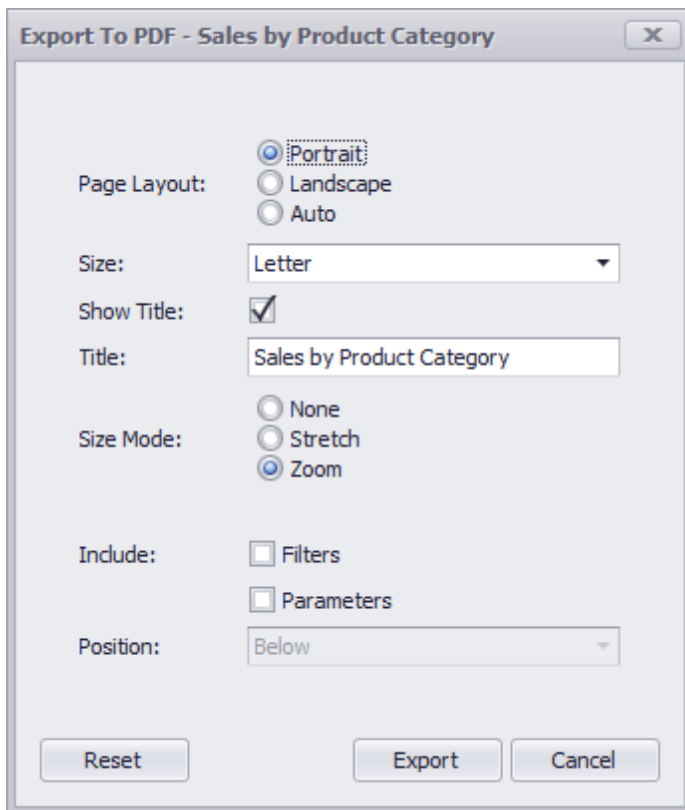


- **Show Title** - Specifies whether to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the printed document title.
- **Size Mode** - Allows you to specify the Scatter Chart dashboard item's print size mode.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the master filter and parameter values' position in the printed document. You can select from *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. Click the **Reset** button to reset changes to the default values.

Export To PDF

The following options are available when exporting the Chart dashboard item to a PDF:

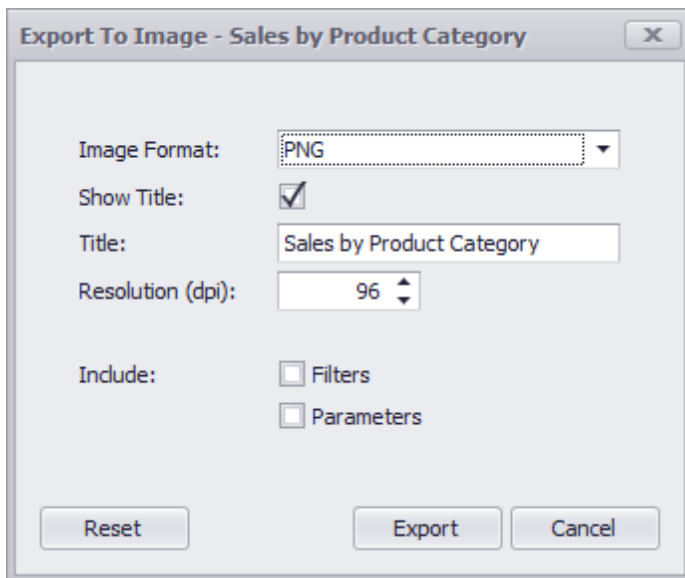


- **Page Layout** - Specifies the page orientation used when exporting a Scatter Chart dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the exported document's title.
- **Size Mode** - Specifies the Scatter Chart dashboard item's export size mode.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Scatter Chart dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

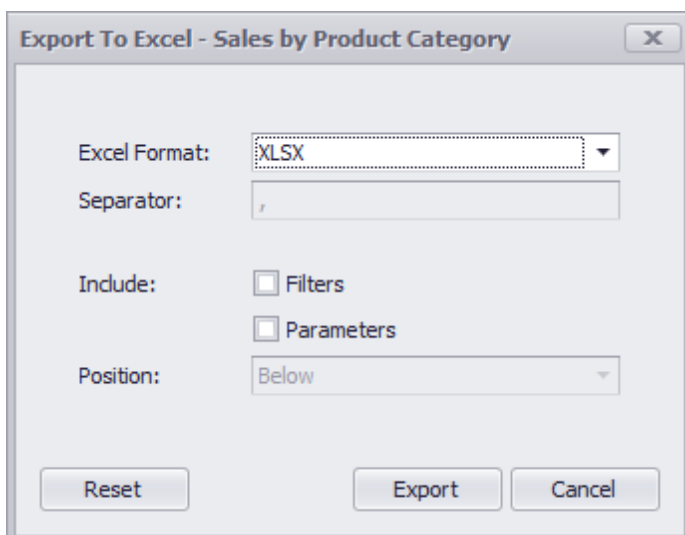


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Grid

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Grid](#)

The topics in this section describe the **Grid** dashboard item, which displays data in a two-dimensional table.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Grid](#) > [Data Presentation Basics](#)

The **Grid** displays data in a two-dimensional table that supports four types of columns.

Dimension Column	Measure Column	Delta Column	Sparkline Column
State	Sales	Sales vs Target	Sales (Sum)
Kentucky	\$339M	+9.34 % ▲	
Florida	\$234M	+2.14 % ▲	
Colorado	\$167M	+6.83 % ▲	
California	\$165M	+1.10 % ▲	

- The **dimension column** displays values from the bound data item "as is".
- The **measure column** displays summaries calculated from data in the bound data item.
- The **delta column**, bound to two measures, calculates summaries for both measures, and displays the difference between these summaries.
- The **sparkline column** visualizes the variation of summary values over time.

Sort Grid Rows

To sort records by a column's values and replace existing sort conditions that are applied to the current or other columns, click the target column's header until an *Up* or *Down* arrow icon is displayed within the header. The *Up* and *Down* arrows indicate ascending and descending sort orders, respectively.

State	Sales
Colorado	\$137M
Ohio	\$137M
Indiana	\$132M
Wisconsin	\$131M
Minnesota	\$126M

To sort records by a column's values while preserving existing sort conditions, click a column header while holding the **SHIFT** key until an *Up* or *Down* arrow icon is displayed within the header.

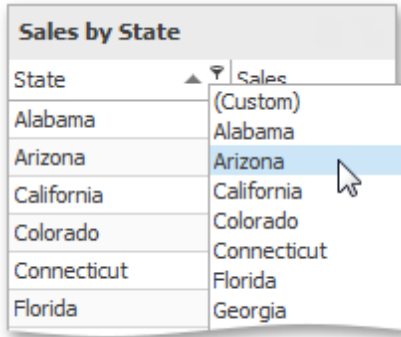
Category	Product
Accessories	Cable Lock
Accessories	Bike Wash
Accessories	All-Purpose Bike Stand
Bikes	Touring-3000
Bikes	Touring-2000
Bikes	Touring-1000

To remove sorting by a column, click a column header while holding down the **CTRL** key.

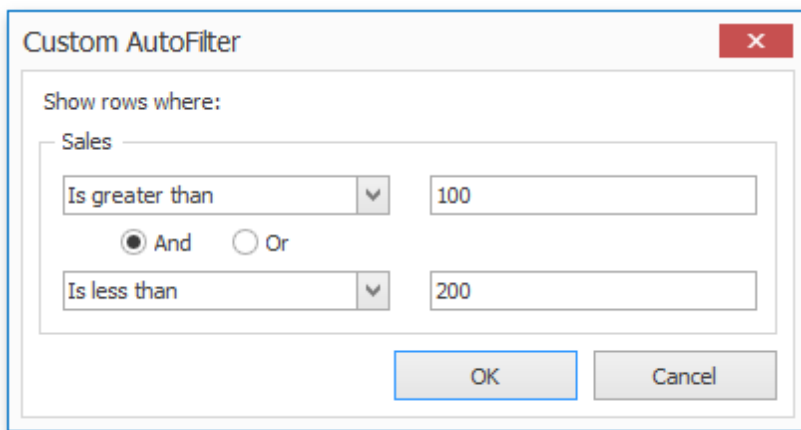
Filter Grid Data

To filter grid data, click the filter button (the ▼ icon) and select the required filter value in the invoked filter

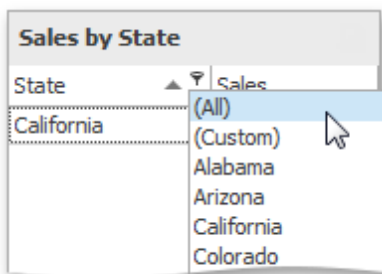
dropdown list.



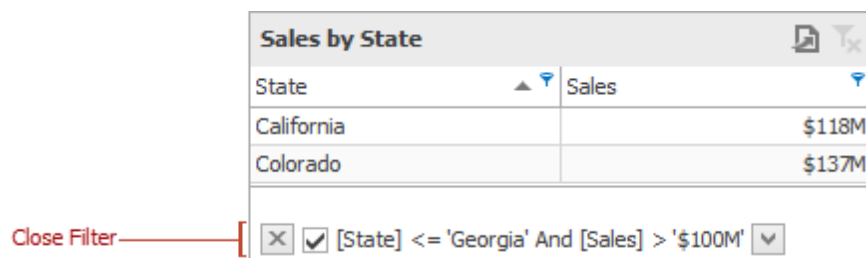
Click **Custom** to construct filter criteria involving up to two conditions. This will invoke the **Custom AutoFilter** dialog, allowing you to compare a column with one or two values.



To clear the filter applied to a specific column, invoke the filter dropdown list and click **All**.







To clear all filter criteria, click the **Close Filter** button within the Filter Panel.



Tooltips

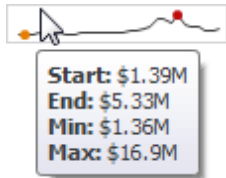
A Grid dashboard item can display a tooltip when the mouse pointer is hovered over the bar in the measure column.

Sales	Sales
	\$85.8M
	\$77.1M
	\$190M
	\$152M

A tooltip is shown over the third row's sparkline cell, displaying the value \$190M.

The tooltip shows the value in the measure column as text.

When the mouse pointer is hovered over the cell in the sparkline column, the tooltip can display start/end values and minimum/maximum values.



Interactivity

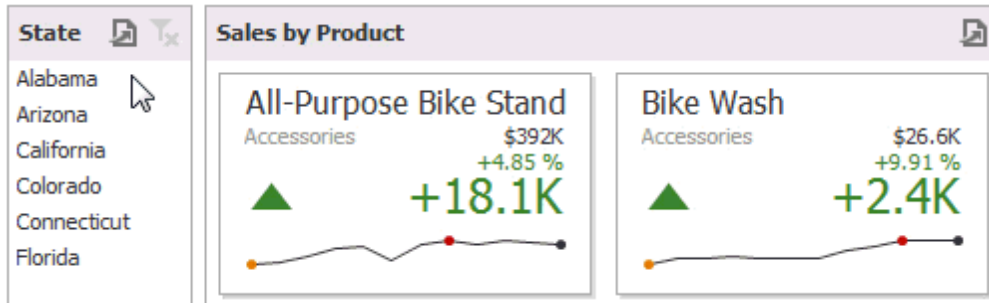
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Grid](#) > [Interactivity](#)


This topic describes features that enable interaction between the **Grid** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a grid row (or multiple rows by holding down the **CTRL** key) to make other dashboard items only display data related to the selected record(s).



To reset filtering, use the **Clear Master Filter** button (the  icon) in the Grid's [caption](#) area, or the **Clear Master Filter** command in the Grid's context menu.

Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

The Grid dashboard item supports drill-down for rows.

When drill-down is enabled, you can click a grid row to view the details.

Category	Amount (Sum)
Accessories	\$247M
Bikes	\$1.21B
Clothing	\$558M
Components	\$981M

Note

When **Master Filtering** is enabled, you can view the details by double-clicking a grid row.

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) within the Grid's [caption](#) area, or the **Drill Up** command in the Grid's context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Grid](#) > [Printing and Exporting](#)

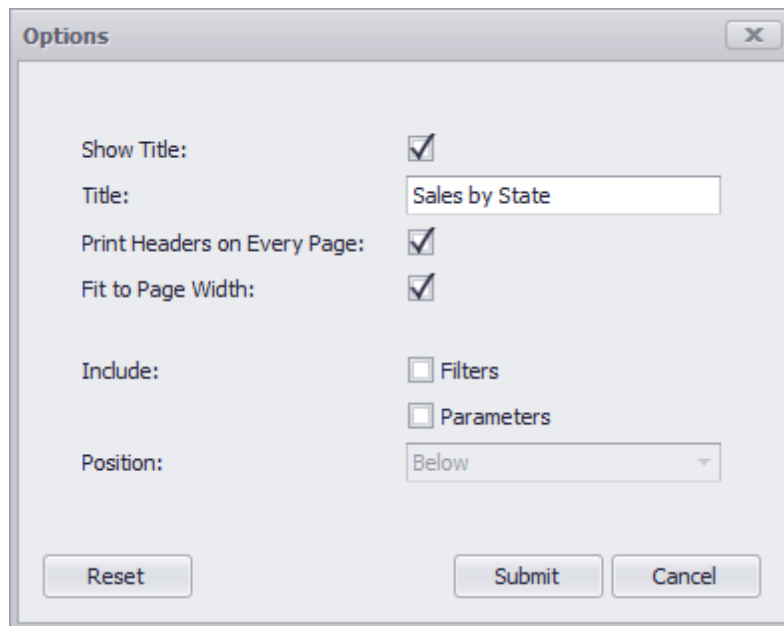
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Grid** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Grid dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows the 'Options' dialog box with the following settings:

- Show Title:
- Title: Sales by State
- Print Headers on Every Page:
- Fit to Page Width:
- Include: Filters, Parameters
- Position: Below

Buttons at the bottom: Reset, Submit, Cancel.

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Print Headers on Every Page** - Specifies whether to print column headers of the Grid dashboard item on every page.
- **Fit to Page Width** - Specifies whether the size of the grid dashboard item is changed according to the width of the exported page.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

Export To PDF - Sales by State

Page Layout: Portrait Landscape

Size: Letter

Show Title:

Title: Sales by State

Print Headers on Every Page:

Fit to Page Width:

Scale Mode: None

Scale Factor: 1

Auto Fit Page Count: 1

Include: Filters Parameters

Position: Below

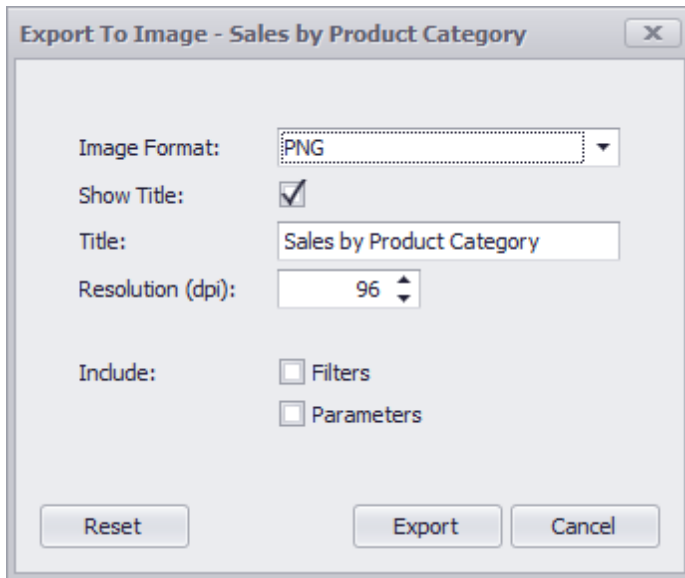
Reset Export Cancel

- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Print Headers on Every Page** - Specifies whether to print column headers of the Grid dashboard item on every page.
- **Fit to Page Width** - Specifies whether the size of the grid is changed according to the width of the exported page.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Grid dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

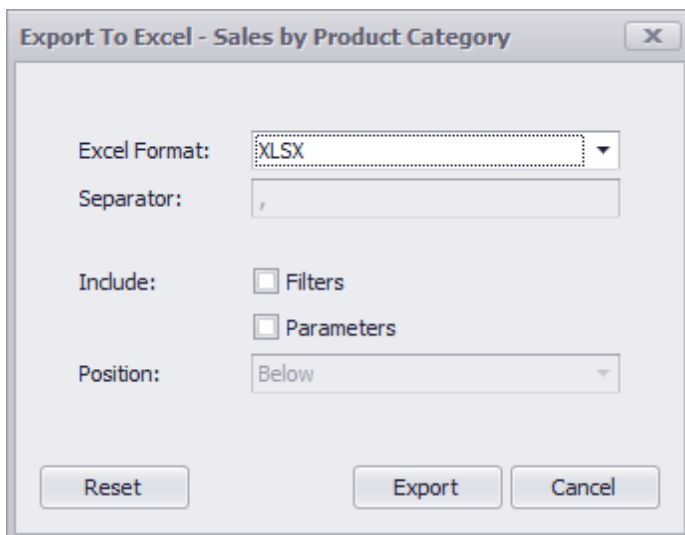


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Pies

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pies](#)

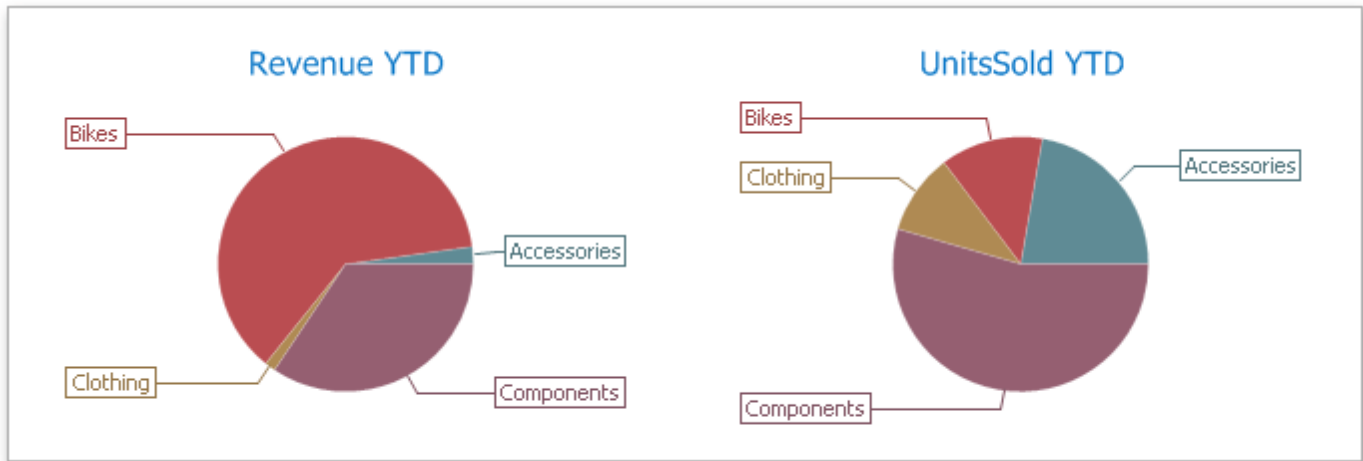
The topics in this section describe the **Pie** dashboard item, which displays a series of pies or donuts that represent the contribution of each value to a total.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

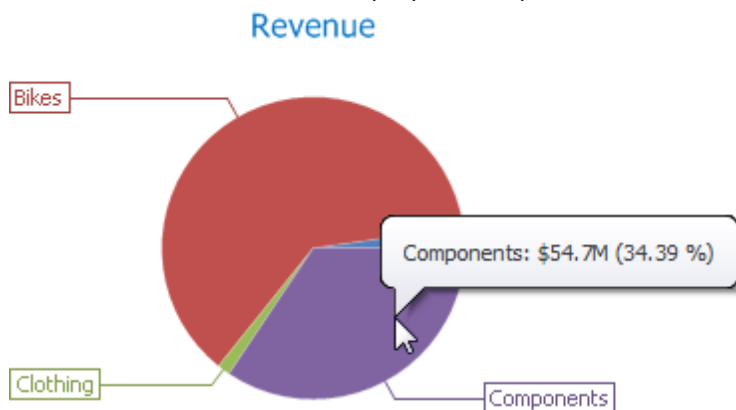
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pies](#) > [Data Presentation Basics](#)

The **Pie** dashboard item displays a series of pies or donuts that represent the contribution of each value to a total.



Tooltip

A Pie dashboard item can display a tooltip that shows information about the hovered pie segment.



Interactivity

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pies](#) > [Interactivity](#)

This topic describes features that enable interaction between the **Pie** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

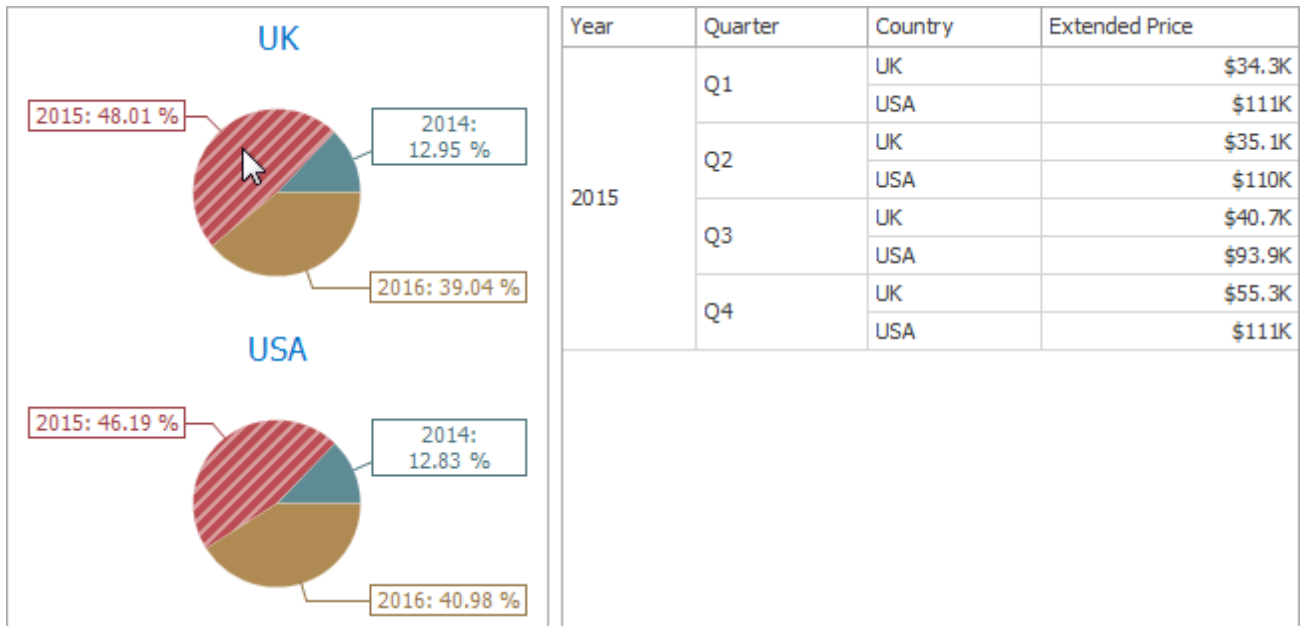
Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

The Pie dashboard item supports filtering by **argument** or **series** values.

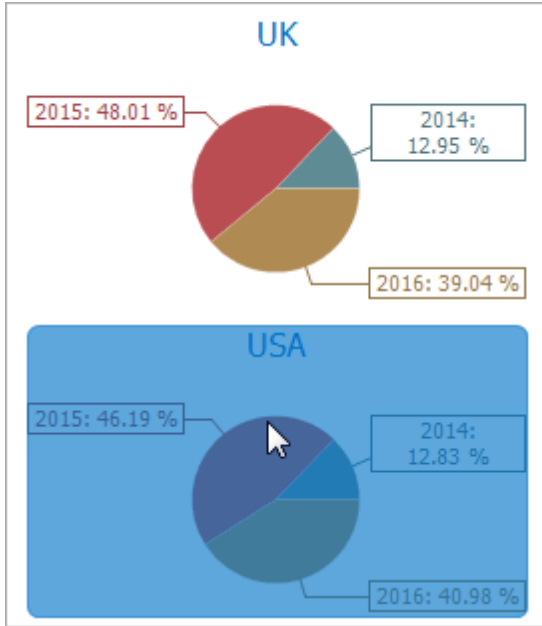
- **Filtering by Arguments**

When filtering by arguments is enabled, you can click a pie segment to make other dashboard items only display data related to the selected argument value.



- **Filtering by a Series**

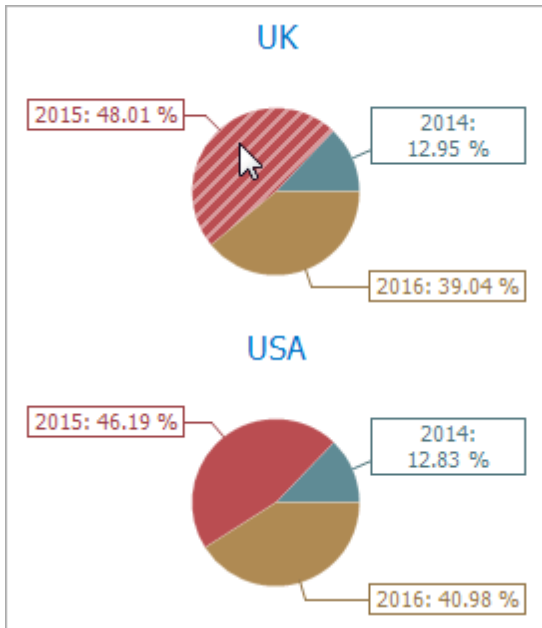
When filtering by a series is enabled, you can click a pie to make other dashboard items display only data related to the selected pie.




Year	Quarter	Country	Extended Price
2014	Q3	USA	\$41.8K
	Q4		\$76.5K
2015	Q1		\$111K
	Q2		\$110K
	Q3		\$93.9K
	Q4		\$111K
2016	Q1		\$196K
	Q2		\$182K

Filtering by a Points

When filtering by points is enabled, an you can click a single pie segment to make other dashboard items display only data related to the selected segment.



Year	Quarter	Country	Extended Price
2015	Q1	UK	\$34.3K
	Q2		\$35.1K
	Q3		\$40.7K
	Q4		\$55.3K

To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) area of the Pie dashboard item, or the **Clear Master Filter** command in the context menu.

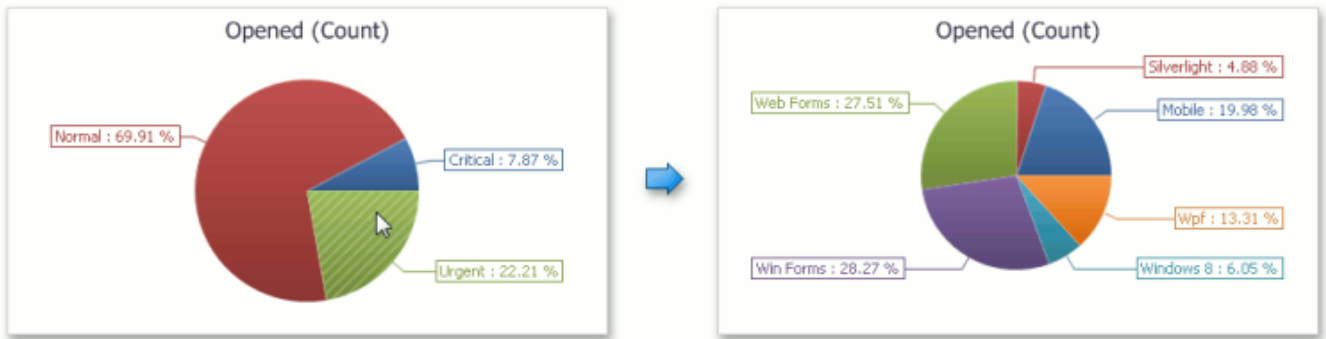
Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

The Pie dashboard item supports drill-down on argument or series values.

Drill Down on Arguments

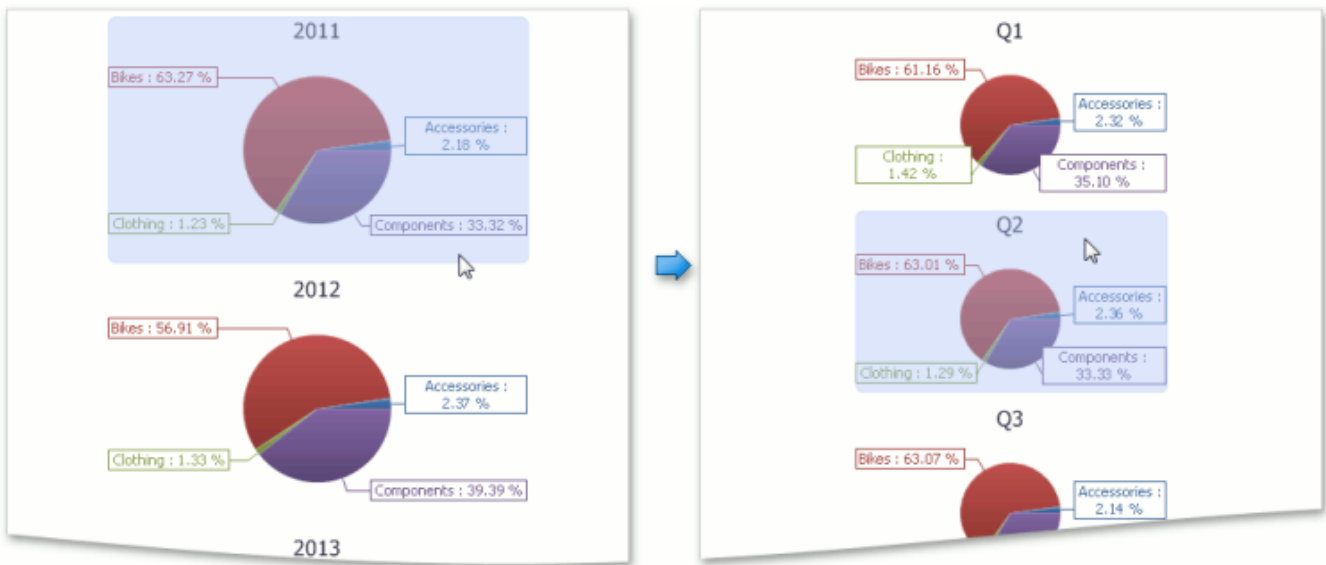
When drill-down on arguments is enabled, you can click a pie segment to view a detail diagram for the corresponding argument value.



Note
 When **Filtering by Arguments** is enabled, you can view the details by double-clicking a pie segment.

• **Drill-Down on a Series**

When drill-down on a series is enabled, you can click a pie chart to view a detail diagram for the corresponding series value.



Note
 When **Filtering by Series** is enabled, you can view the details by double-clicking a pie chart.

To return to the previous detail level (drill-up), use the **Drill Up** button (the  icon) in the [caption](#) area of the Pie dashboard item, or the **Drill Up** command in the context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pies](#) > [Printing and Exporting](#)

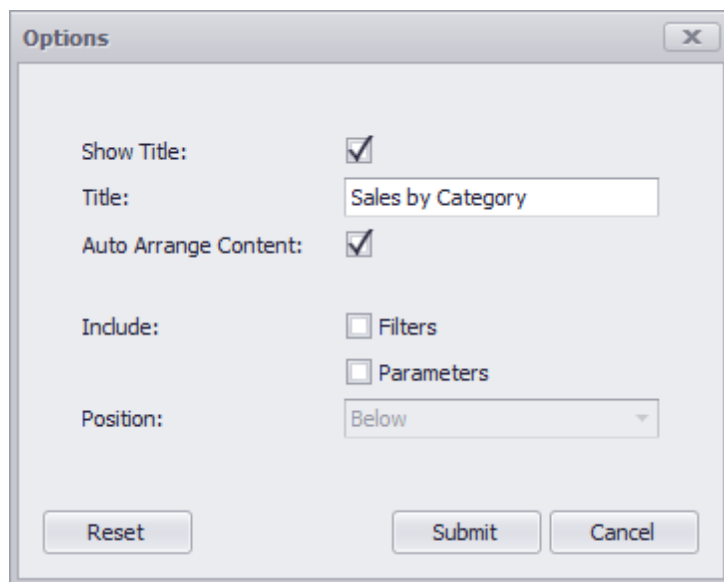
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Pie** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Pie dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

- Show Title:**
- Title:**
- Auto Arrange Content:**
- Include:**
 - Filters
 - Parameters
- Position:**

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Auto Arrange Content** - Specifies whether pies are arranged automatically on the printed document.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

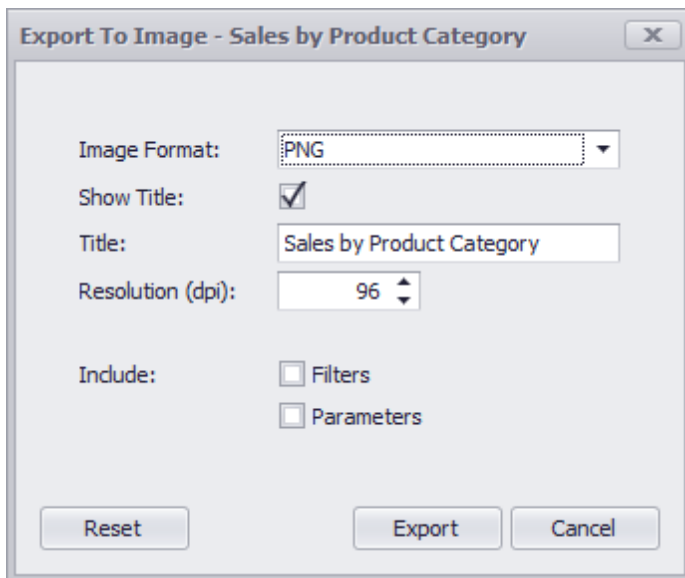
Export To PDF

- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Auto Arrange Content** - Specifies whether pies are arranged automatically in the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Pie dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

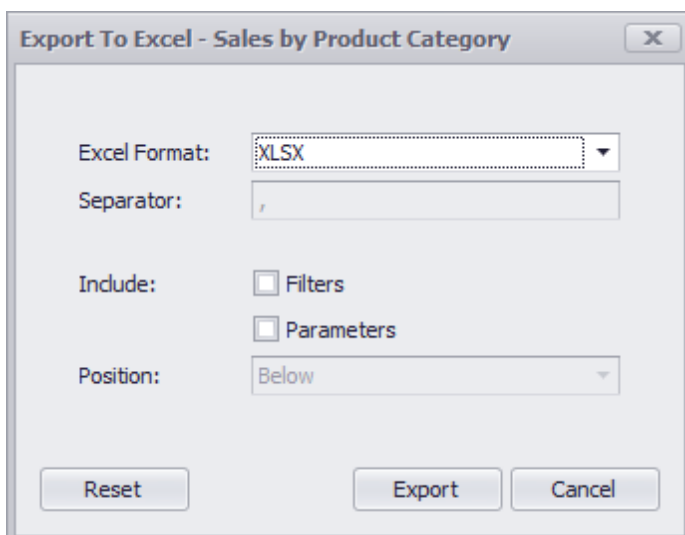


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Cards

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Cards](#)

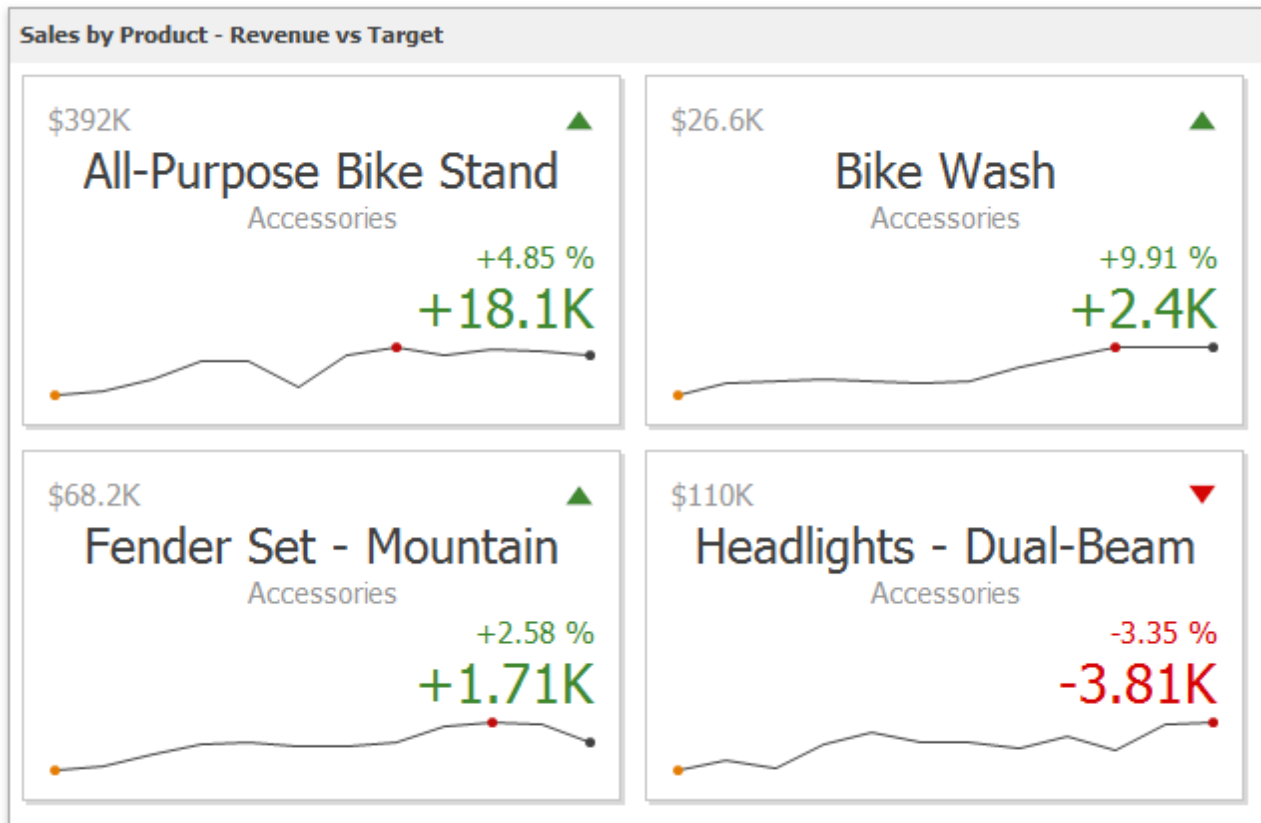
The topics in this section describe the **Card** dashboard item, which displays a series of cards. Each card can display a single value, or show the difference between two values.


- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

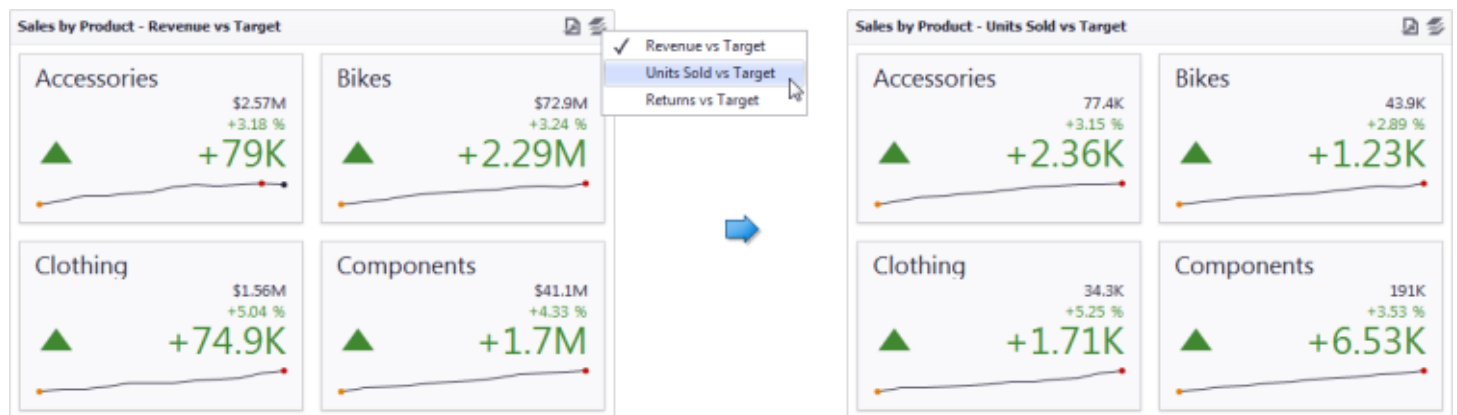
Data Presentation Basics

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Cards](#) > [Data Presentation Basics](#)

The **Card** dashboard item displays a series of cards. Each card illustrates the difference between two values. This difference can be expressed as an absolute value, an absolute variation or a percentage variation.



The **Card** dashboard item can illustrate this difference for various sets of values. You can switch between these sets using the **Values** button (the  icon) in the dashboard item [caption](#) area or in the context menu.



Tooltip

A **Card** dashboard item can display a tooltip for cards containing a sparkline. When the mouse pointer is hovered over the sparkline, the tooltip can display start/end values and minimum/maximum values.



Interactivity

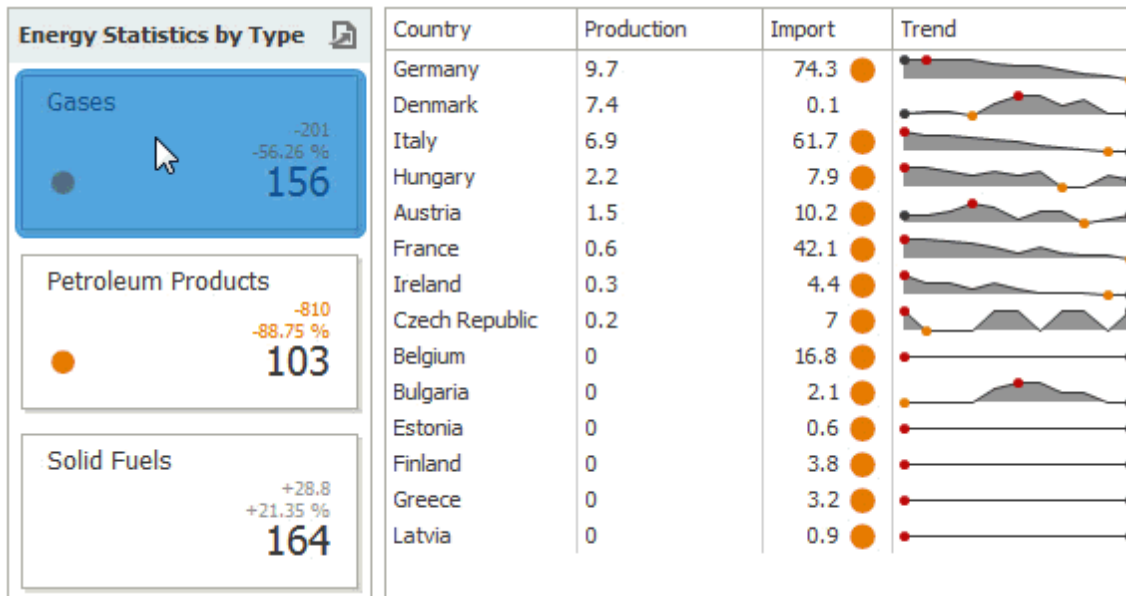
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Cards](#) > [Interactivity](#)


This topic describes features that enable interaction between the **Card** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more, see the [Master Filtering](#) topic, which describes filtering concepts common to all dashboard items.

When Master Filtering is enabled, you can click a card (or multiple cards by holding down the **CTRL** key) to make other dashboard items only display data related to the selected card(s).

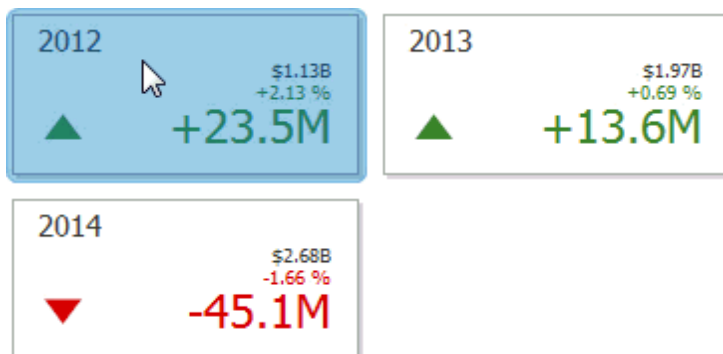


To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) area of the **Card** dashboard item, or the **Clear Master Filter** command in the context menu.

Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

When drill-down is enabled, you can click a card to view the details.



Note

When **Master Filtering** is enabled, you can view the details by double-clicking a card.

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the [caption](#) area of the **Card** dashboard item, or the **Drill Up** command in the context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Cards](#) > [Printing and Exporting](#)

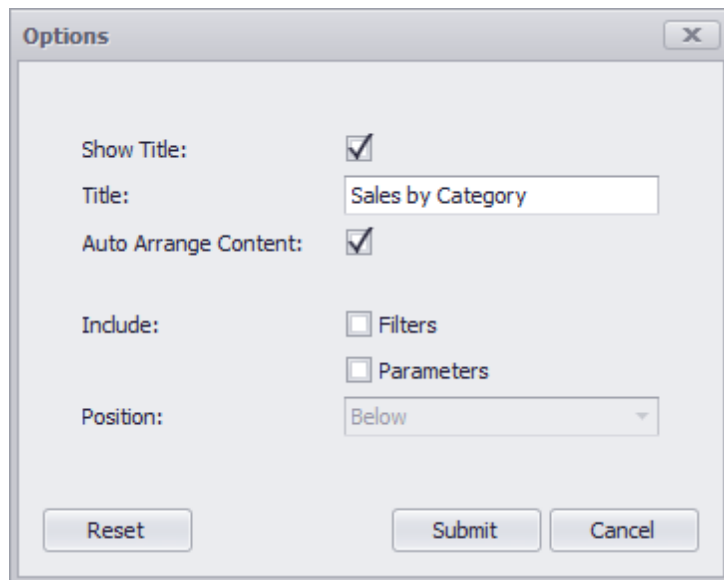
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Card** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Card dashboard item using a [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

- Show Title:**
- Title:**
- Auto Arrange Content:**
- Include:**
 - Filters
 - Parameters
- Position:**

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Auto Arrange Content** - Specifies whether or not cards are arranged automatically on the printed document.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

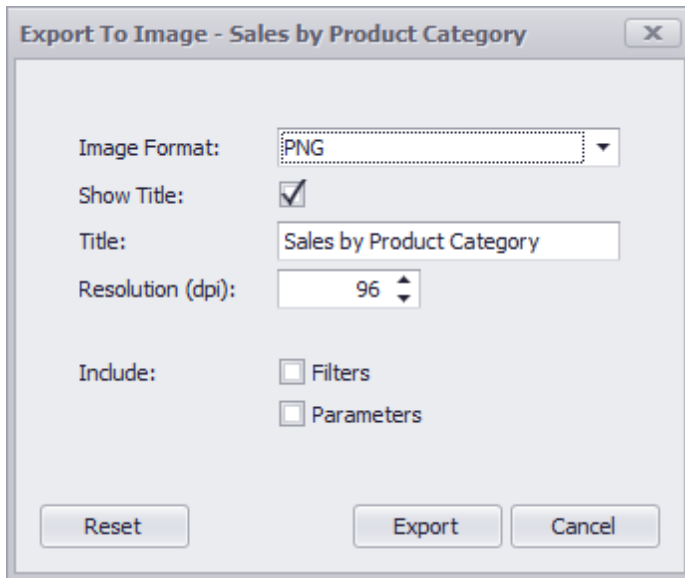
Export To PDF

- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Auto Arrange Content** - Specifies whether or not cards are arranged automatically in the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Card dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

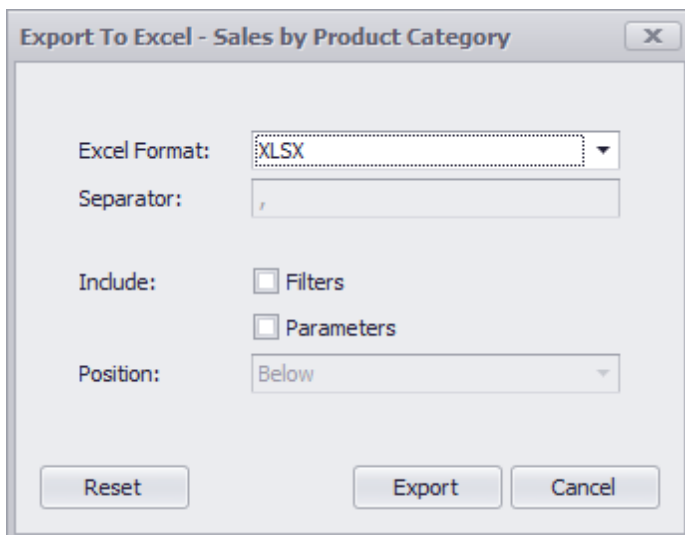


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Gauges

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Gauges](#)

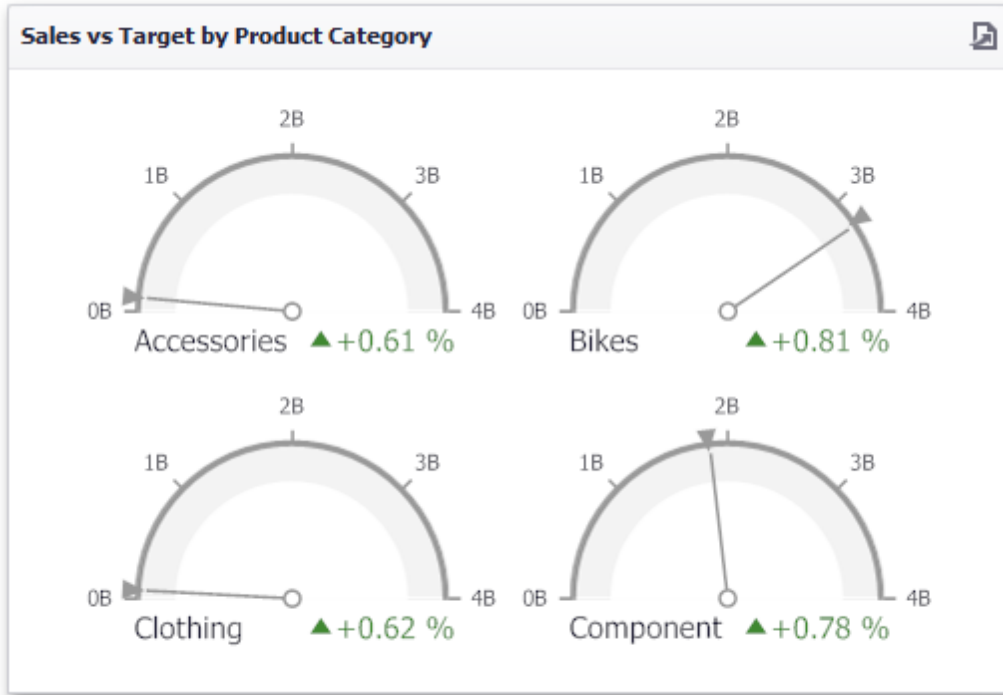
The topics in this section describe the **Gauge** dashboard item, which displays a series of gauges.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

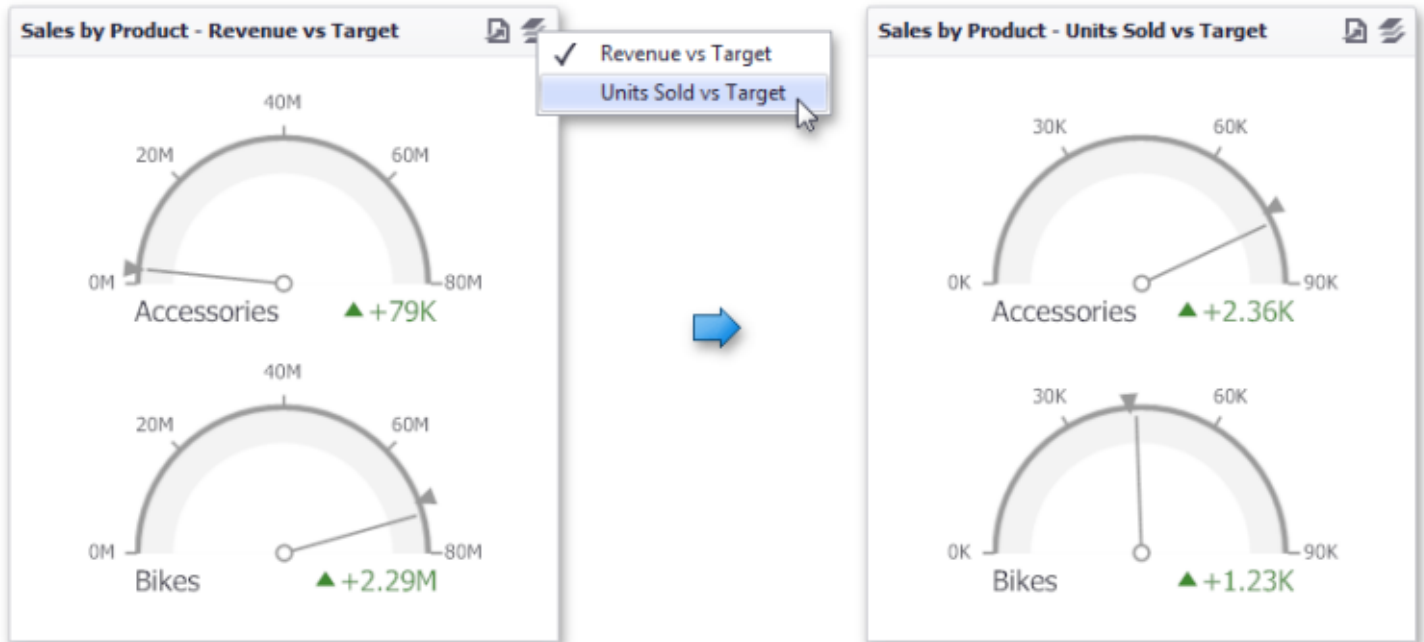
Data Presentation Basics

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Gauges](#) > [Data Presentation Basics](#)

The **Gauge** dashboard item displays a series of gauges. Each gauge can communicate two values - one with a needle and the other with a marker on the scale.



The **Gauge** dashboard item can illustrate the difference for various sets of values. You can switch between these sets using the **Values** button (the icon) in the dashboard item [caption](#) or in the context menu.



Interactivity

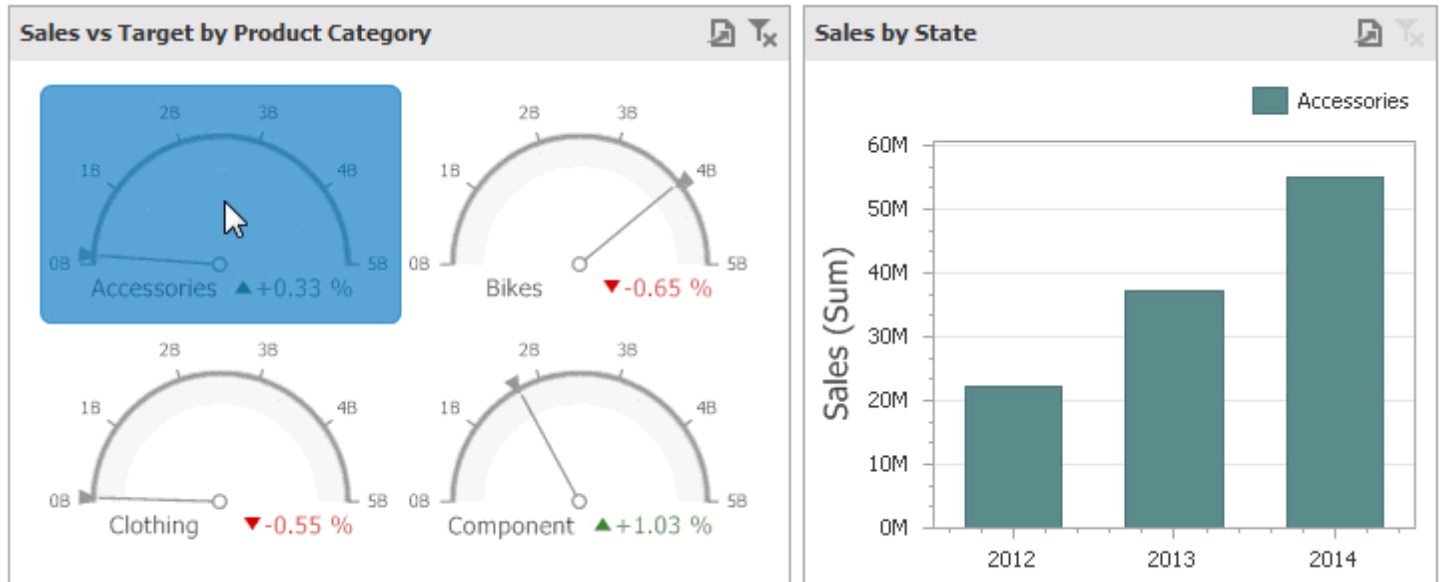
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Gauges](#) > [Interactivity](#)


This topic describes features that enable interaction between the **Gauge** and other dashboard items. These features include **Master Filtering** and **Drill-Down**.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When **Master Filtering** is enabled, you can click a gauge (or multiple gauges by holding down the **CTRL** key) to make other dashboard items only display data related to the selected gauge(s).

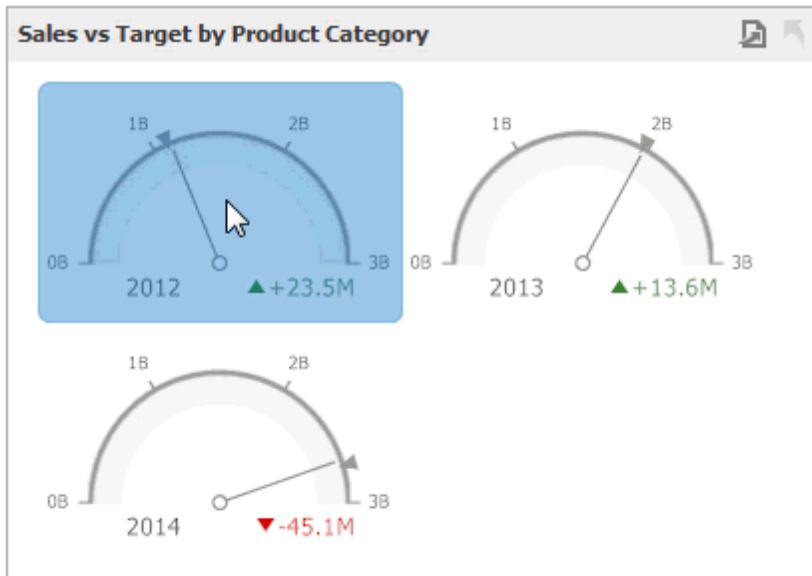


To reset filtering, use the **Clear Master Filter** button (the  icon) in the [caption](#) area of the **Gauge** dashboard item, or the **Clear Master Filter** command in the context menu.


Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more, see [Drill-Down](#).

When drill-down is enabled, you can click a gauge to view the details.

**Note**

When **Master Filtering** is enabled, you can view the details by double-clicking a gauge.

To return to the previous detail level (drill up), use the **Drill Up** button (the  icon) in the [caption](#) area of the **Gauge** dashboard item, or the **Drill Up** command in the context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Gauges](#) > [Printing and Exporting](#)

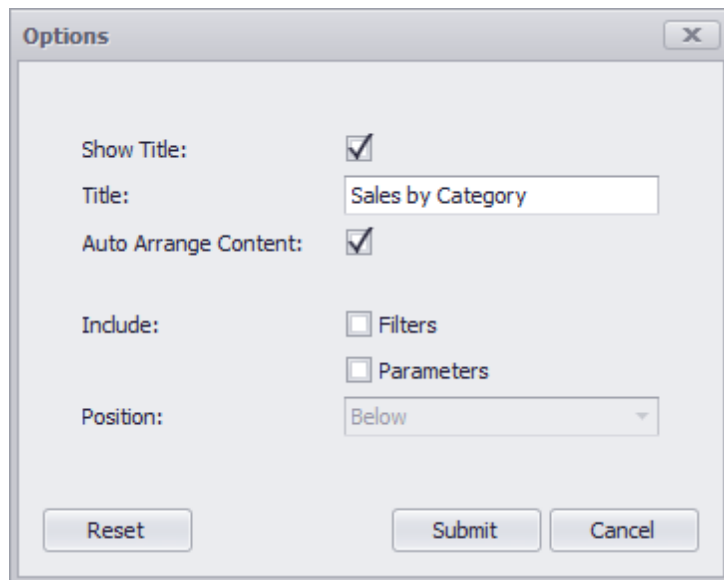
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Gauge** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing a Gauge dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

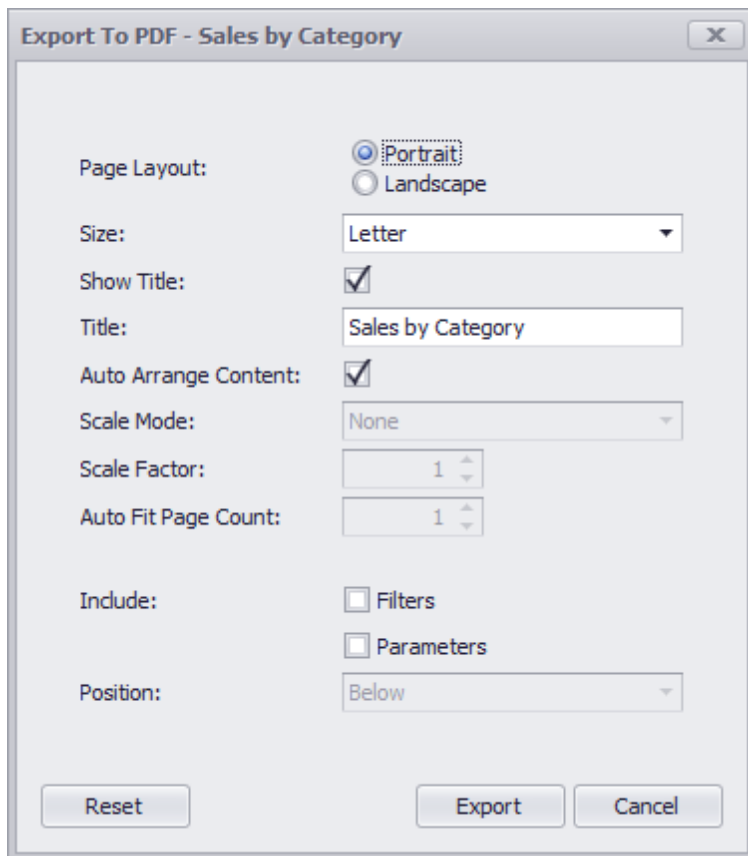
- Show Title:**
- Title:**
- Auto Arrange Content:**
- Include:**
 - Filters
 - Parameters
- Position:**

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Auto Arrange Content** - Specifies whether or not gauges are arranged automatically on the printed document.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

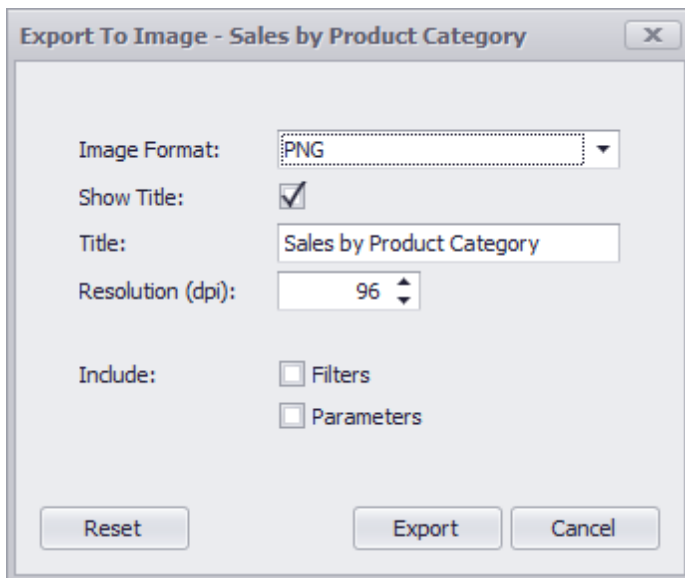


- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Gauge caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Auto Arrange Content** - Specifies whether or not gauges are arranged automatically in the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Gauge dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

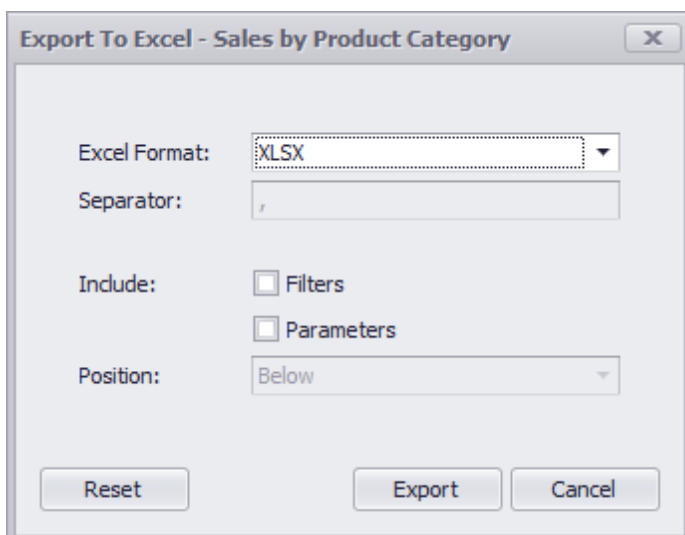


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Pivot

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pivot](#)

The **Pivot** dashboard item displays a cross-tabular report that presents multi-dimensional data in an easy-to-read format.

Sales by State								
	▶ Accessories		▶ Bikes		▶ Components		Grand Total	
	Units Sold	Revenue	Units Sold	Revenue	Units Sold	Revenue	Units Sold	Revenue
California	36.4K	\$1.18M	12K	\$18.9M	77.8K	\$15.6M	126K	\$35.7M
Washington	20.6K	\$622K	7.6K	\$11.1M	43K	\$8.64M	71.2K	\$20.3M
Texas	19.1K	\$655K	6.29K	\$9.53M	44.3K	\$8.92M	69.6K	\$19.1M
Florida	12.1K	\$383K	4.4K	\$6.86M	25.8K	\$5M	42.3K	\$12.2M
Oregon	8.51K	\$279K	3.89K	\$6.47M	19.7K	\$3.92M	32.1K	\$10.7M
Tennessee	7.9K	\$253K	3.82K	\$6.25M	19.2K	\$3.7M	30.9K	\$10.2M
Mississippi	5.46K	\$186K	3.78K	\$6.48M	13.6K	\$3.08M	22.9K	\$9.75M

Expanding and Collapsing Groups

To expand and collapse row and column groups, use the ▶ and ◀ buttons, respectively.

	UK	USA	Grand Total
▲ 2016 Total	\$124K	\$317K	\$441K
▲ Q1 Total	\$79.1K	\$219K	\$298K
▶ January	\$25.5K	\$68.7K	\$94.2K
▶ February	\$32.9K	\$66.6K	\$99.4K
▶ March	\$20.7K	\$84.2K	\$105K
▶ Q2	\$44.7K	\$97.4K	\$142K
Grand Total	\$124K	\$317K	\$441K

See Also

[Printing and Exporting](#)

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Pivot](#) > [Printing and Exporting](#)

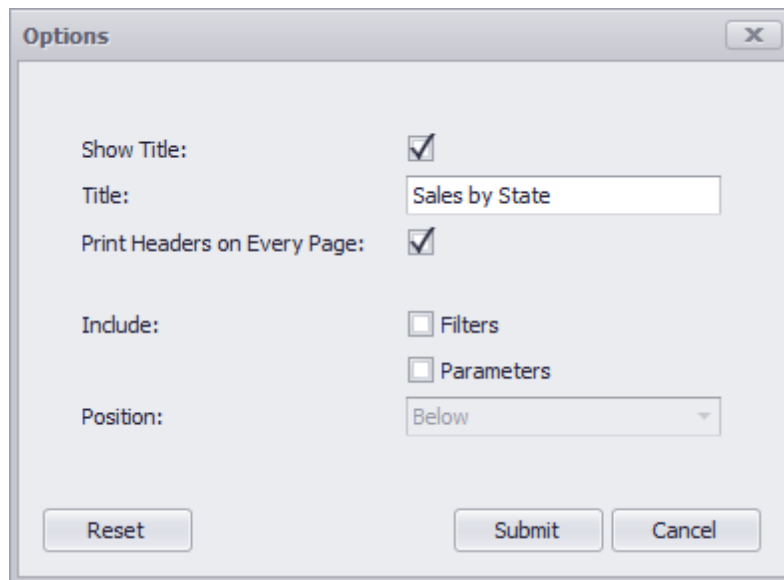
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Pivot** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Pivot dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

- Show Title:**
- Title:**
- Print Headers on Every Page:**
- Include:**
 - Filters
 - Parameters
- Position:**

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Print Headers on Every Page** - Specifies whether to print column headers of the Pivot dashboard item on every page.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

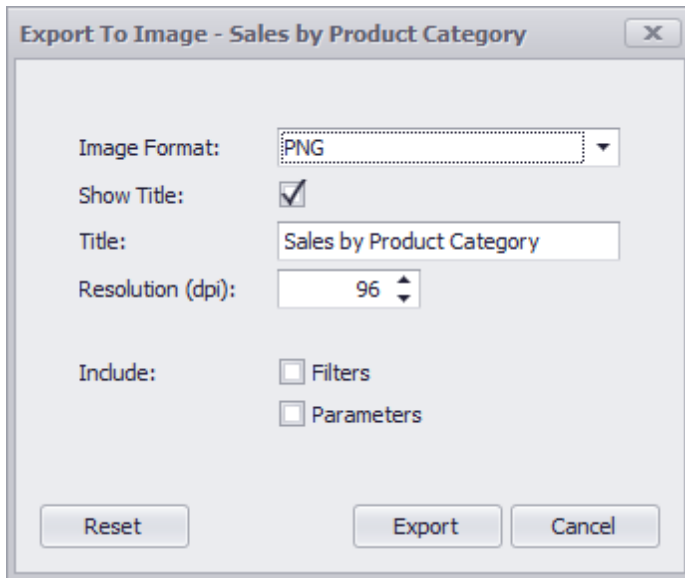
Export To PDF

- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Pivot caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Print Headers on Every Page** - Specifies whether or not to print column headers of the Pivot dashboard item on every page.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Pivot dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

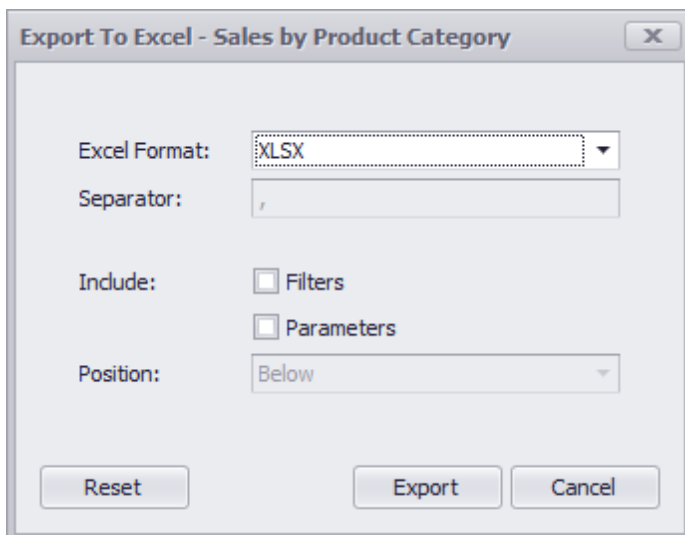


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

See Also

[Printing and Exporting](#)

Choropleth Map

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Choropleth Map](#)

The topics in this section describe the **Choropleth Map** dashboard item, which colorizes the required areas in proportion to the provided values.

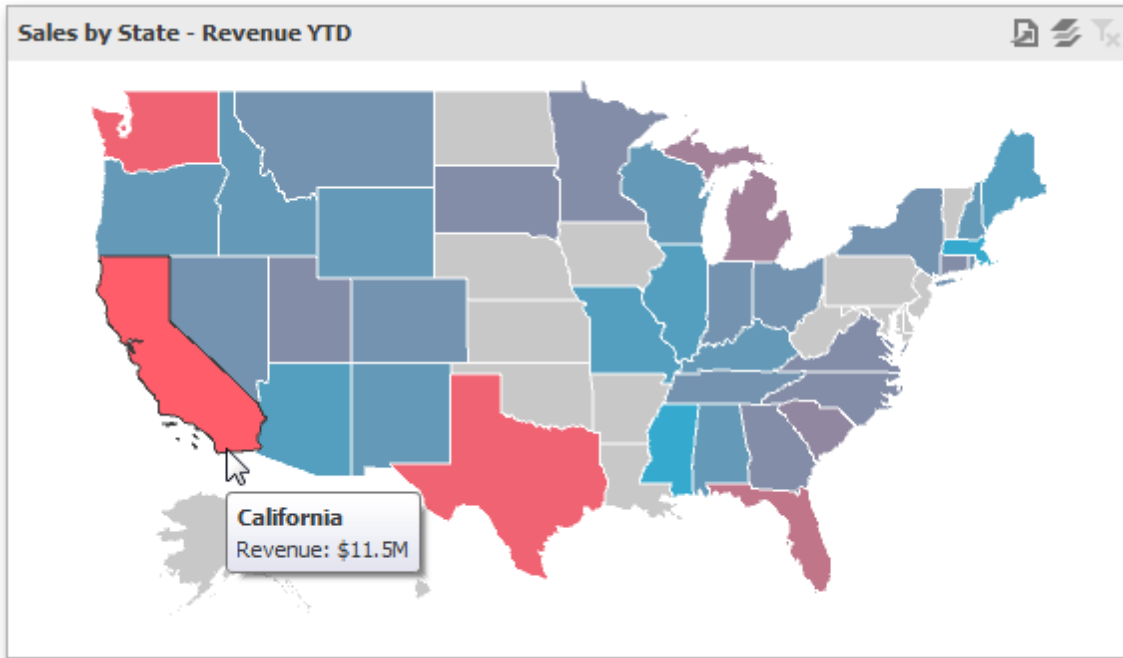
- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

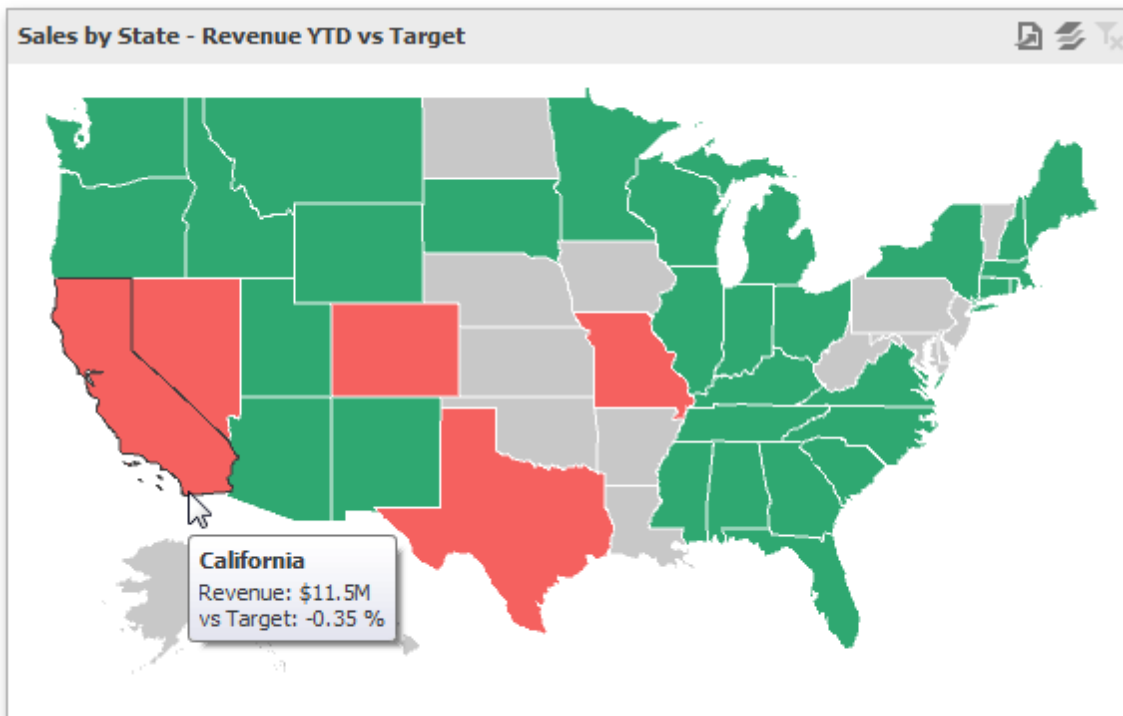
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Choropleth Map](#) > [Data Presentation Basics](#)

The **Choropleth Map** dashboard item colorizes map areas in the following two ways.

- Based on the values provided.



- By indicating the difference between the actual and target values of a particular parameter.

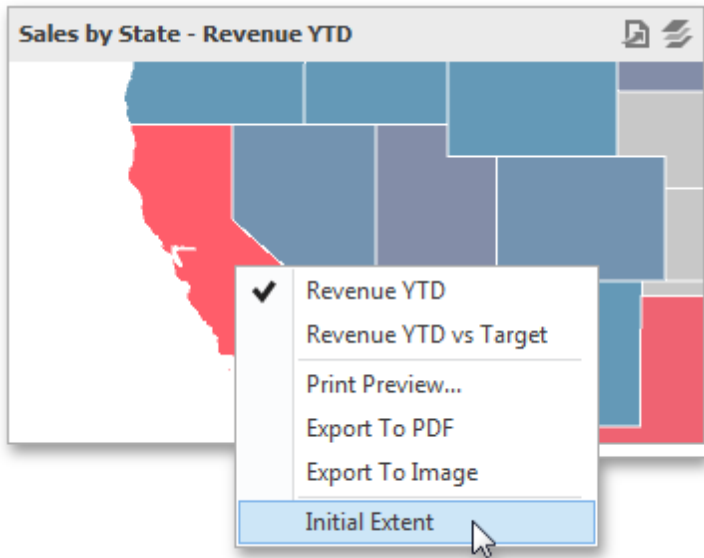


You can switch between the provided values using the **Values** button (the  icon) in the map's [caption](#) area, or by using the context menu.

Map Zooming and Scrolling

You can use the mouse wheel to change the current zoom level for the map. To scroll the map, hold down the left mouse button and drag it.

To move to the initial zooming and scrolling state, select the **Initial Extent** menu item in the map's context menu.



Tooltip

The **Choropleth Map** dashboard item can display a tooltip that shows information on a hovered area.



Interactivity

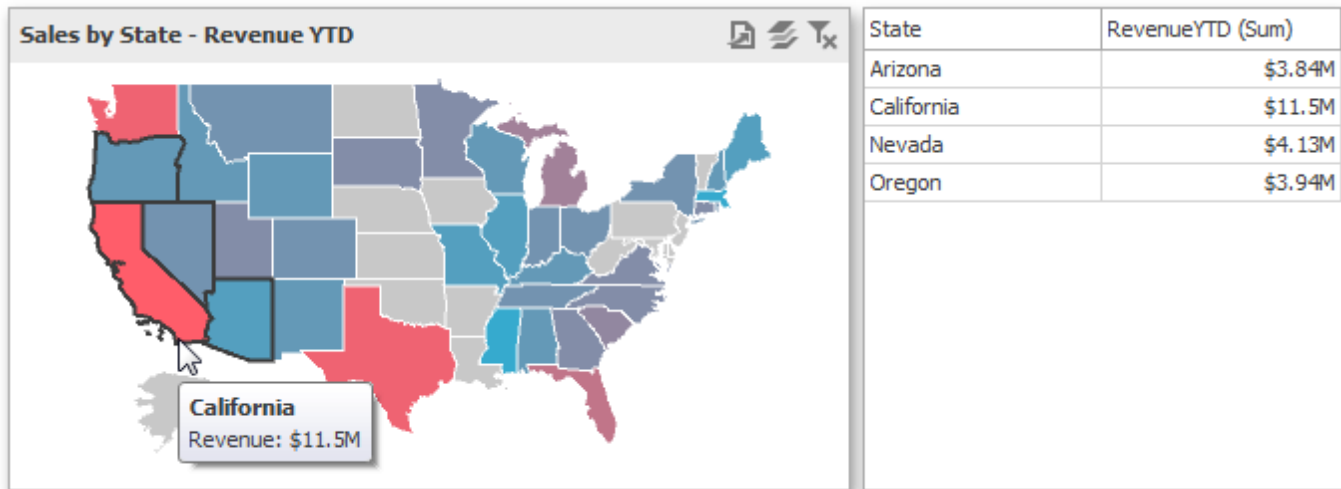
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Choropleth Map](#) > [Interactivity](#)

This document describes the features that enable interaction between the **Choropleth Map** and other dashboard items. These features include **Master Filtering**.

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a shape (or multiple shapes by holding down the **CTRL** key) to make other dashboard items only display data related to the selected shape(s).



You can also select multiple shapes in the following way.

- Hold the **SHIFT** key and the left mouse button;
- Drag the mouse pointer to mark an area that includes the desired shapes;
- Release the left mouse button. All shapes within the area will be selected.

To reset filtering, use the **Clear Master Filter** button (the **T** icon) in the Map's [caption](#), or the **Clear Master Filter** command in the context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Choropleth Map](#) > [Printing and Exporting](#)

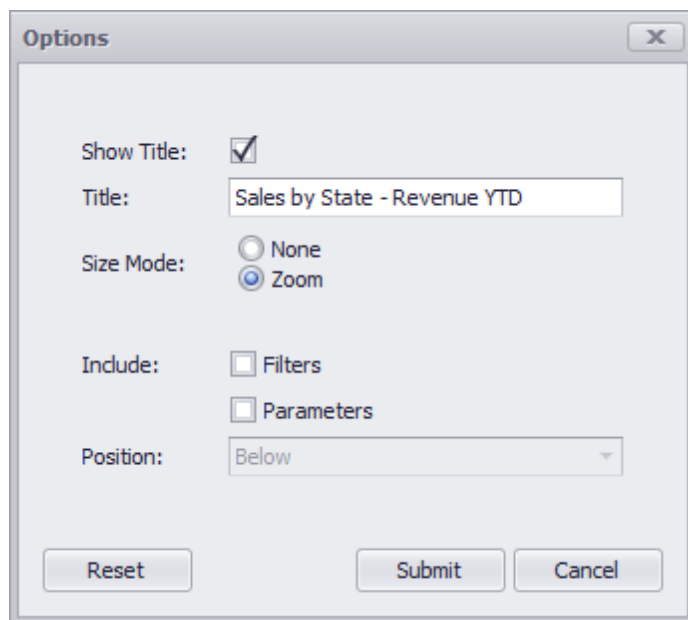
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Choropleth Map** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Choropleth Map dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

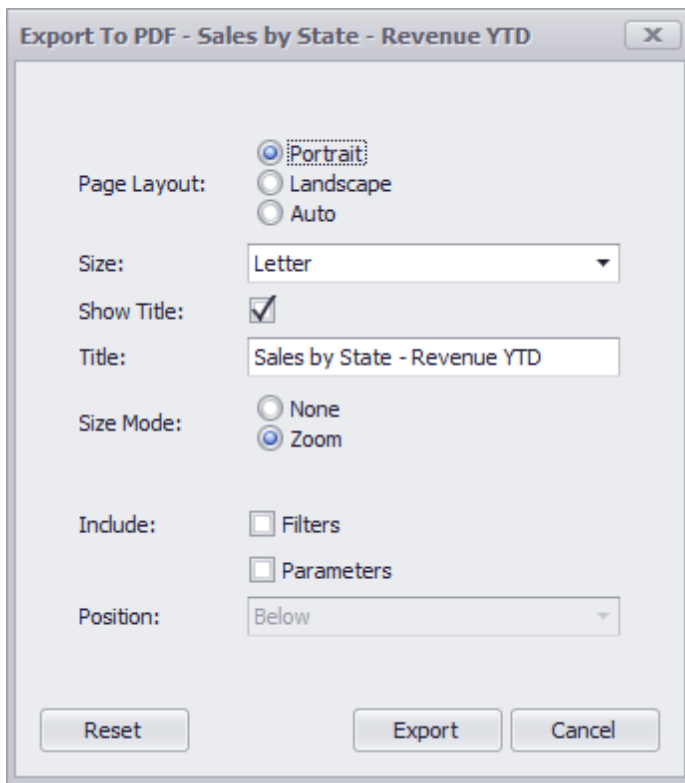
- Show Title:**
- Title:** Sales by State - Revenue YTD
- Size Mode:** None, Zoom
- Include:** Filters, Parameters
- Position:** Below

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Size Mode** - Allows you to specify the print size mode for the Choropleth Map dashboard item.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

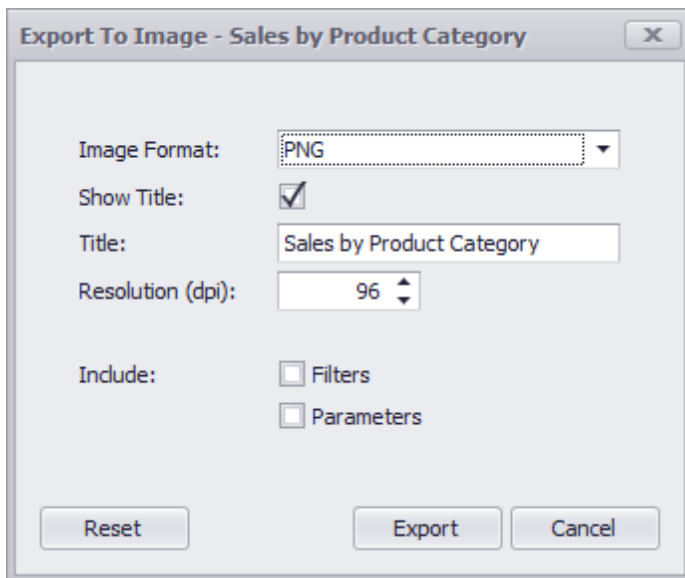


- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Choropleth Map caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Size Mode** - Specifies the export size mode for the Choropleth Map dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Choropleth Map dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

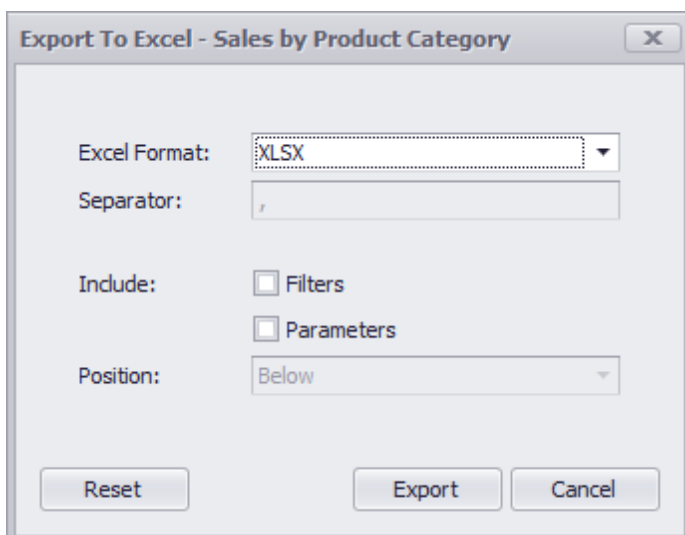


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Geo Point Maps

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Geo Point Maps](#)

The topics in this section describe various types of **Geo Point Map** dashboard items which places callouts, bubbles or pies on the map using geographical coordinates.

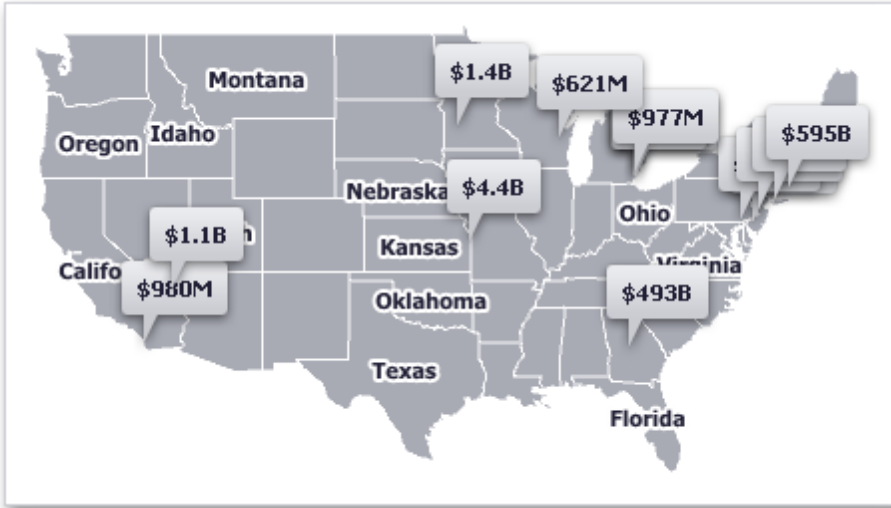
- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

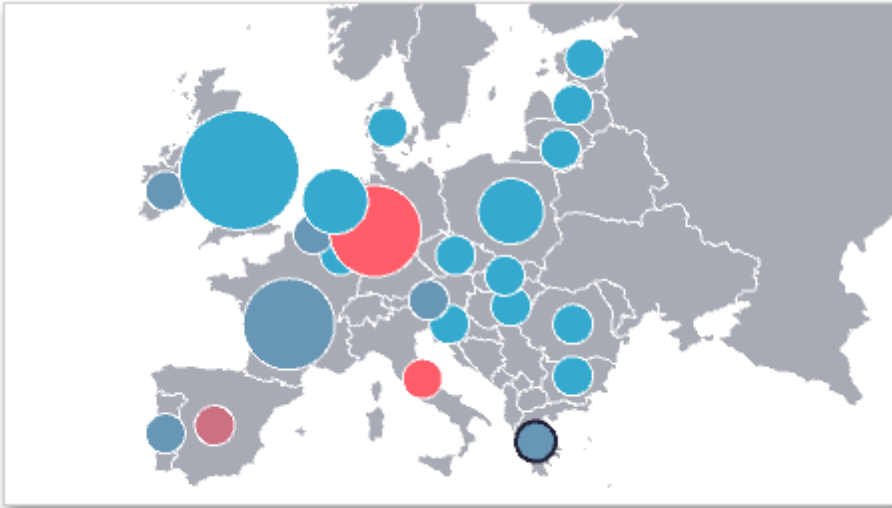
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Geo Point Maps](#) > [Data Presentation Basics](#)

The **Dashboard** supports three types of **Geo Point** maps.

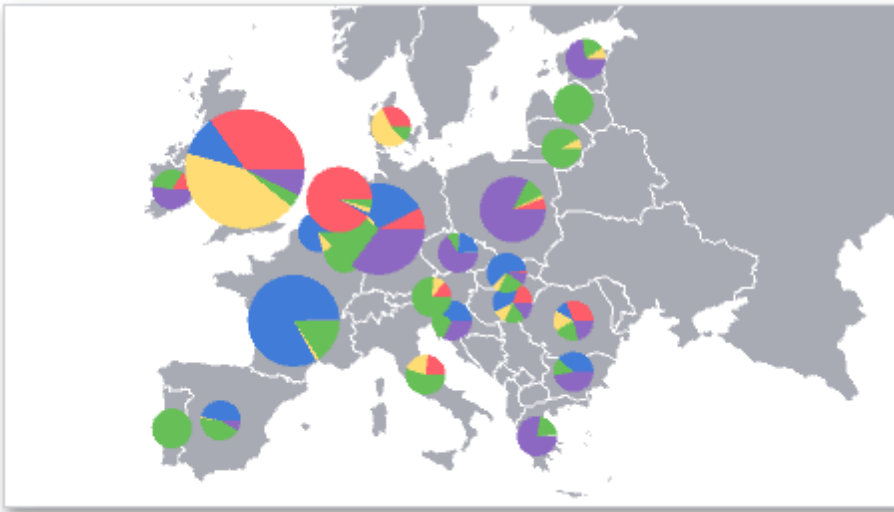
- The **Geo Point Map** dashboard item allows you to place callouts on the map using geographical coordinates.



- The **Bubble Map** dashboard item allows you to place bubbles on the map. Each bubble can represent data via its weight and color.



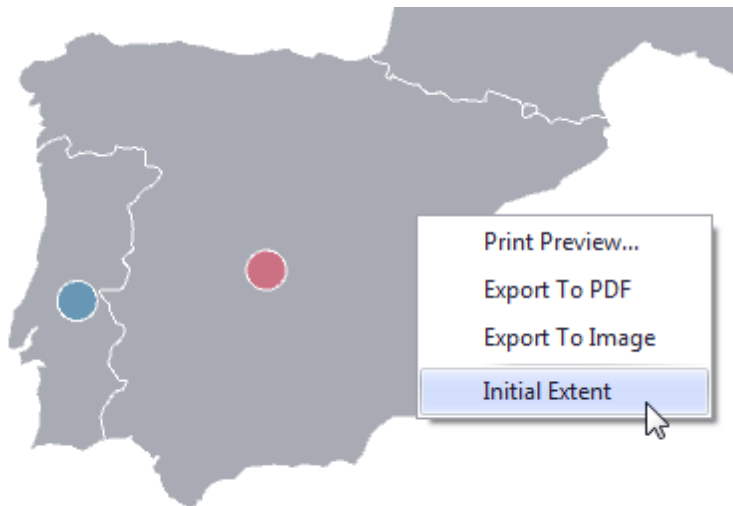
- The **Pie Map** dashboard item allows you to display pies on the map. Each pie visualizes the contribution of each value to the total.



Map Zooming and Scrolling

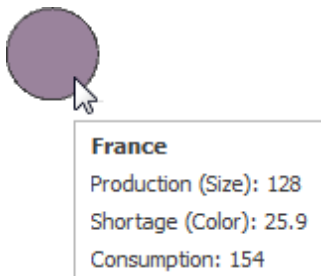
You can use the mouse wheel to change the current zoom level for a map. To scroll the map, hold down the left mouse button and drag it.

To move to the initial zooming and scrolling state, click the **Initial Extent** menu item in the map's context menu.



Tooltip

A **Geo Point Map** dashboard item can display a tooltip that shows information on a hovered callout/bubble/pie.



Interactivity

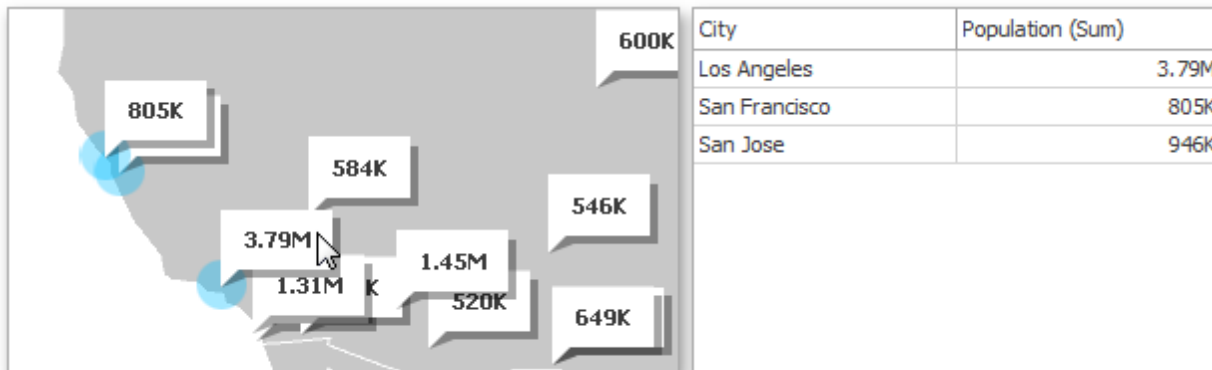
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Geo Point Maps](#) > [Interactivity](#)

This document describes the capabilities that enable interaction between **Geo Point** maps and other dashboard items. These capabilities include **Master Filtering**.

Master Filtering


The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a callout/bubble/pie (or multiple callouts/bubbles/pies by holding down the **CTRL** key) to make other dashboard items only display data related to the selected callout(s)/bubble(s)/pie(s).



You can also select multiple callouts/bubbles/pies in the following way.

- Hold the **SHIFT** key and the left mouse button;
- Drag the mouse pointer, to mark an area that includes the desired elements;
- Release the left mouse button. All elements within the area will be selected.

To reset filtering, use the **Clear Master Filter** button (the  icon) in the Map's caption area, or the **Clear Master Filter** command in the context menu.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Geo Point Maps](#) > [Printing and Exporting](#)

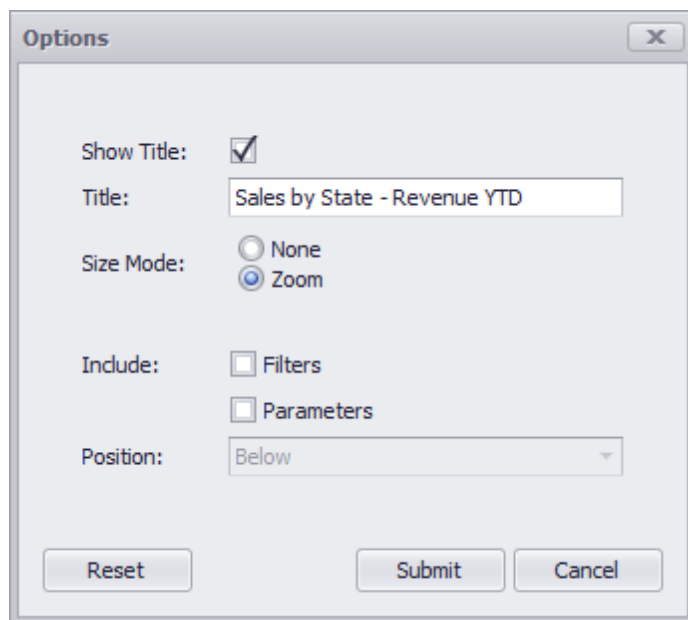
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Geo Point Map** dashboard items.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Geo Point Map dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

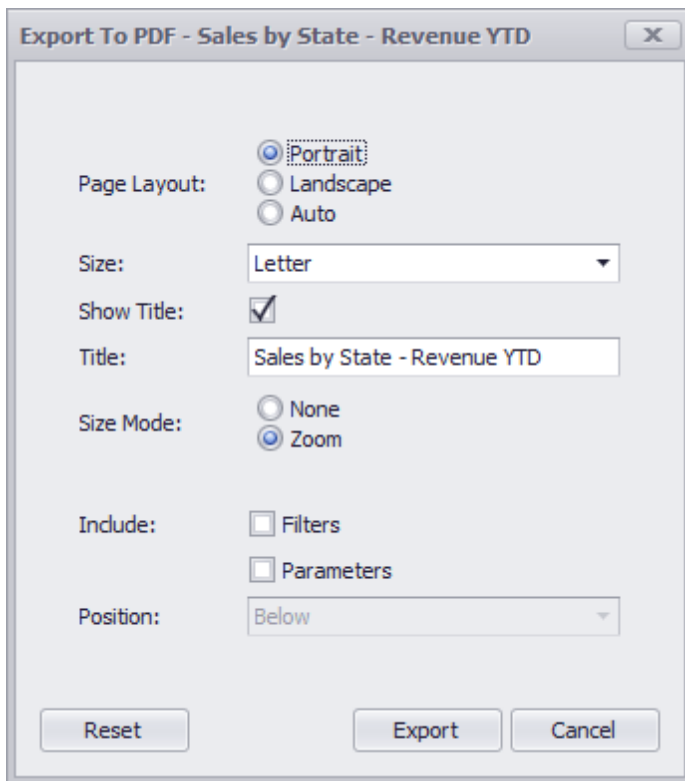
- Show Title:**
- Title:** Sales by State - Revenue YTD
- Size Mode:** None, Zoom
- Include:** Filters, Parameters
- Position:** Below

At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Size Mode** - Allows you to specify the print size mode for the Geo Point Map dashboard item.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

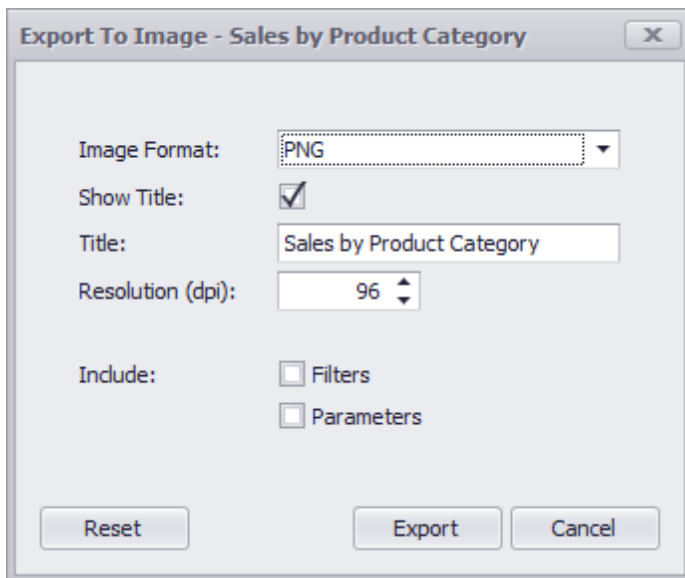


- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Geo Point Map caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Size Mode** - Specifies the export size mode for the Geo Point Map dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Geo Point Map dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

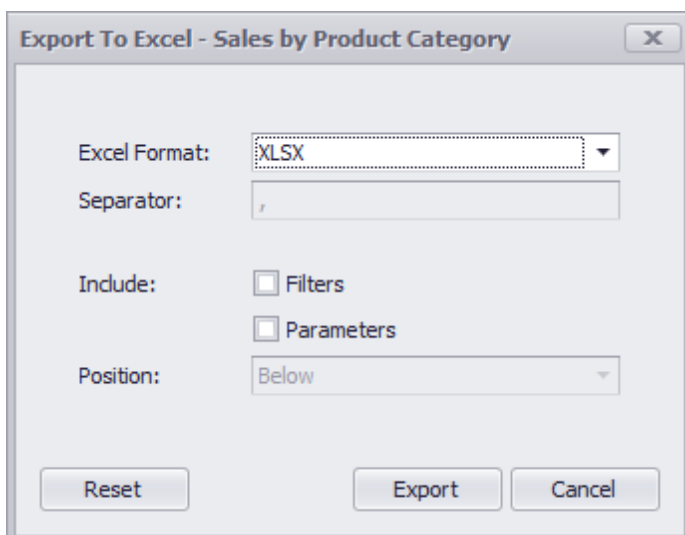


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

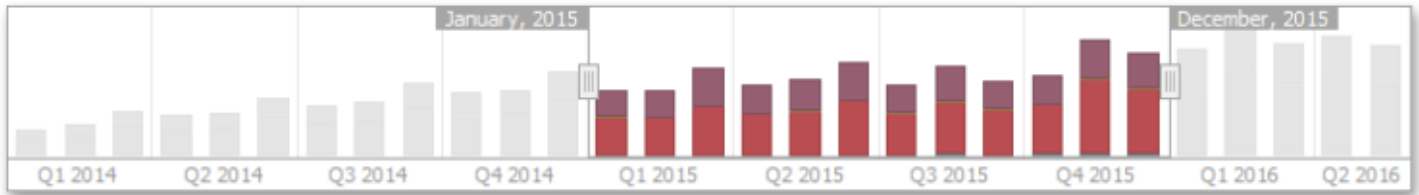
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Range Filter

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Range Filter](#)

The **Range Filter** dashboard item allows you to apply filtering to other dashboard items. This item displays a chart with selection thumbs that allow you to filter out values displayed along the argument axis.



To reset filtering, use the **Clear Master Filter** command in the context menu.

See Also

[Printing and Exporting](#)

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Range Filter](#) > [Printing and Exporting](#)

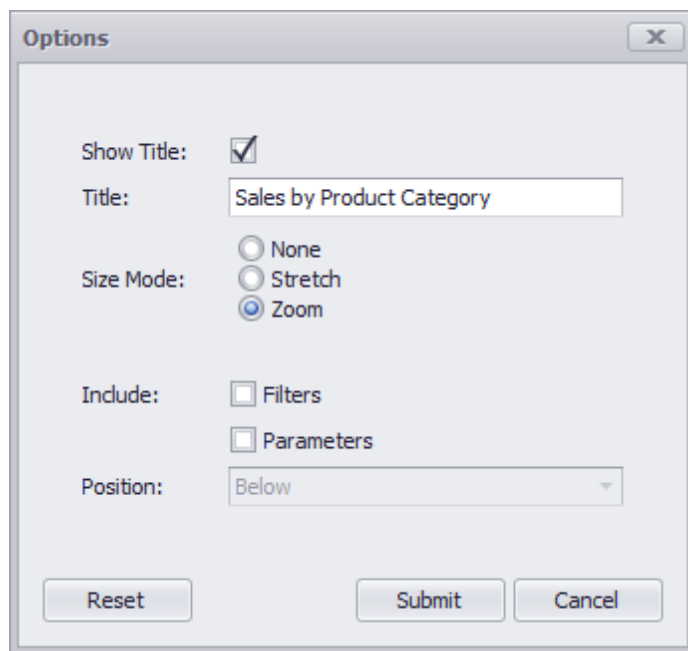
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Range Filter** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Range Filter dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows the 'Options' dialog box with the following settings:

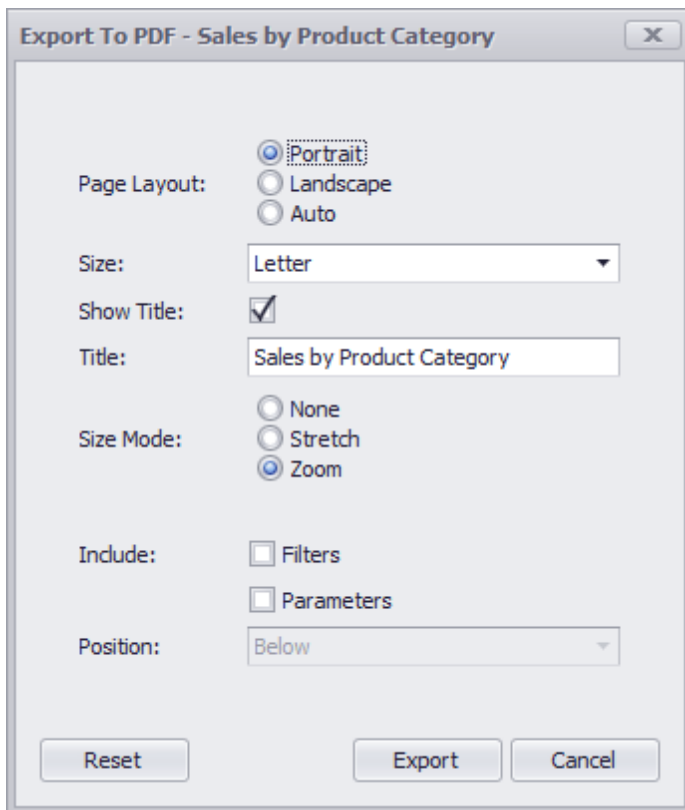
- Show Title:
- Title: Sales by Product Category
- Size Mode: None, Stretch, Zoom
- Include: Filters, Parameters
- Position: Below

Buttons at the bottom: Reset, Submit, Cancel.

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Size Mode** - Allows you to specify the print size mode for the Range Filter dashboard item.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

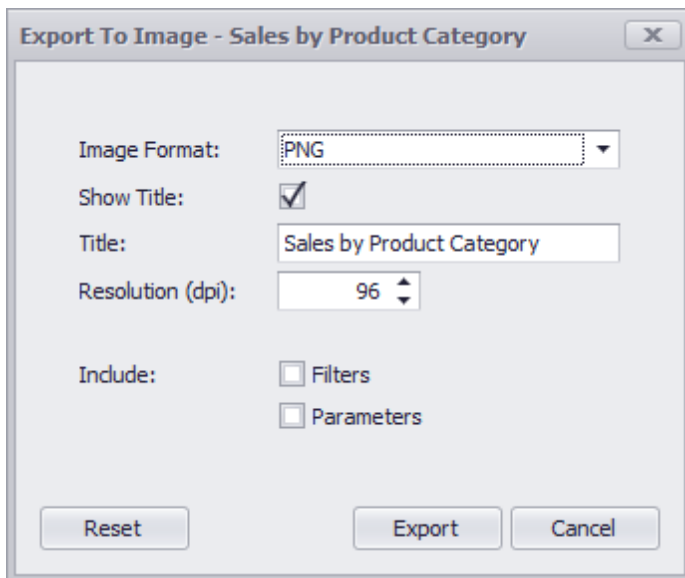


- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Range Filter caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Size Mode** - Specifies the export size mode for the Range Filter dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Range Filter dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

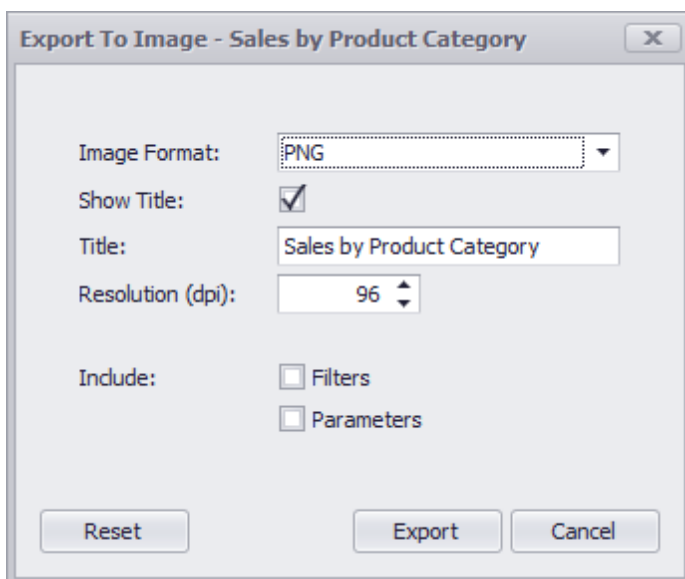


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:



- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.

- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Image

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Image](#)

The **Image** dashboard item is used to display images within a dashboard.



See Also

[Printing and Exporting](#)

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Image](#) > [Printing and Exporting](#)

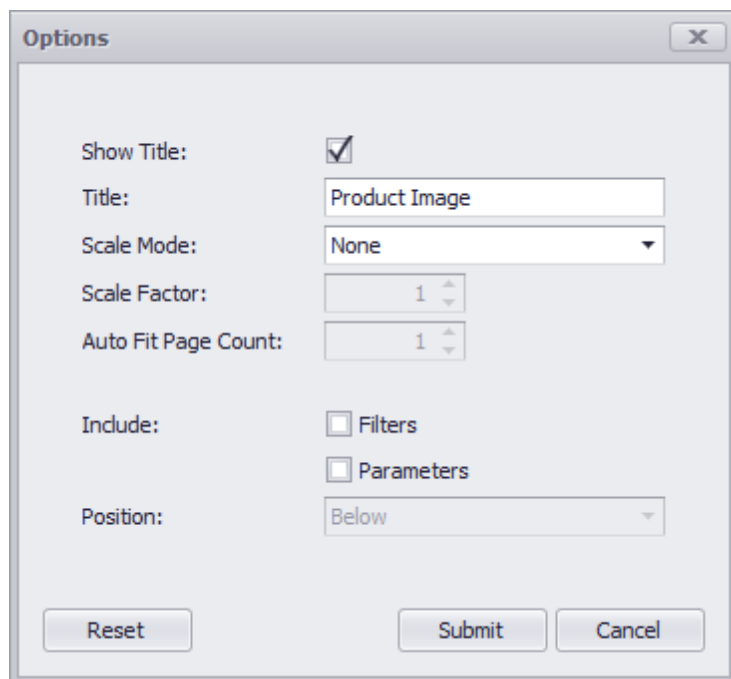
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting an **Image** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)

Printing

If you are printing the Image dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



The screenshot shows the 'Options' dialog box with the following settings:

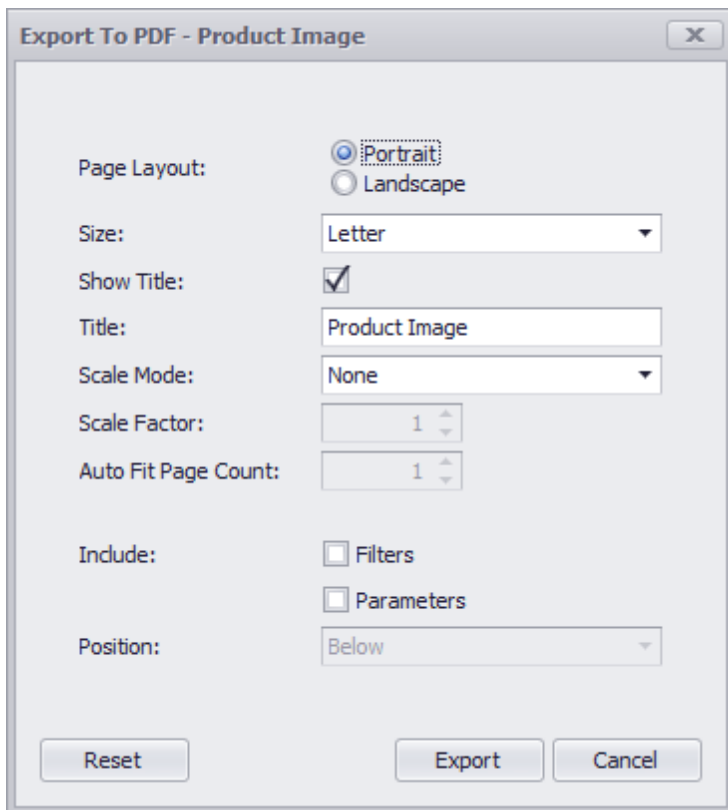
- Show Title:
- Title: Product Image
- Scale Mode: None
- Scale Factor: 1
- Auto Fit Page Count: 1
- Include: Filters, Parameters
- Position: Below

Buttons at the bottom: Reset, Submit, Cancel.

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Scale Mode** - Specifies the mode for scaling when printing an image.
- **Scale Factor** - Specifies the scale factor (in fractions of 1) by which an image is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of an image.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

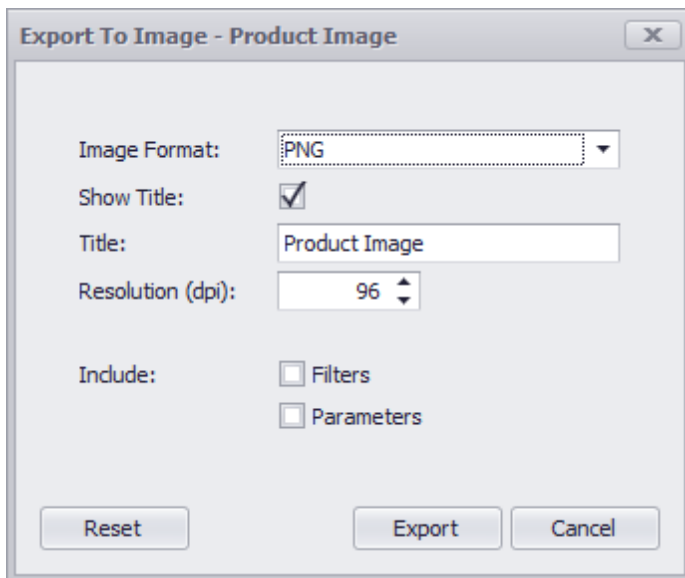
Export To PDF



- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Image caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Scale Mode** - Specifies the mode for scaling when exporting a dashboard item.
- **Scale Factor** - Specifies the scale factor (in fractions of 1), by which a dashboard item is scaled.
- **Auto Fit Page Count** - Specifies the number of horizontal/vertical pages spanning the total width/height of a dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Image dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image



- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Show Title** - Specifies whether or not to apply the Image caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.

Specify the required options in this dialog and click the **Export** button to export the Image dashboard item. To reset changes to the default values, click the **Reset** button.

Text Box

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Text Box](#)

The **Text Box** dashboard item is used to display rich text within a dashboard.



See Also

[Printing and Exporting](#)

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Text Box](#) > [Printing and Exporting](#)

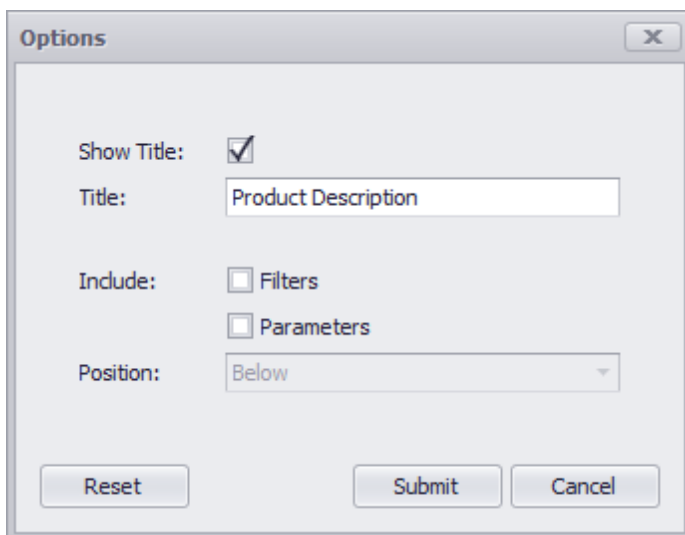
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing and exporting concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Text Box** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)

Printing

If you are printing a Text Box dashboard item using the [Print Preview](#), you can customize the following options (via the **Options** button) before printing.



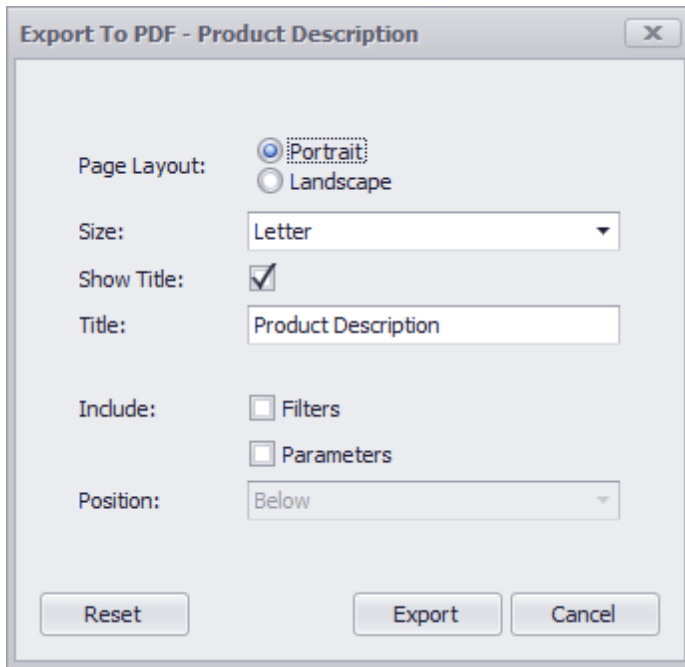
The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Show Title:** A checkbox that is checked.
- Title:** A text input field containing the text "Product Description".
- Include:** Two checkboxes, "Filters" and "Parameters", both of which are unchecked.
- Position:** A dropdown menu with "Below" selected.
- At the bottom, there are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

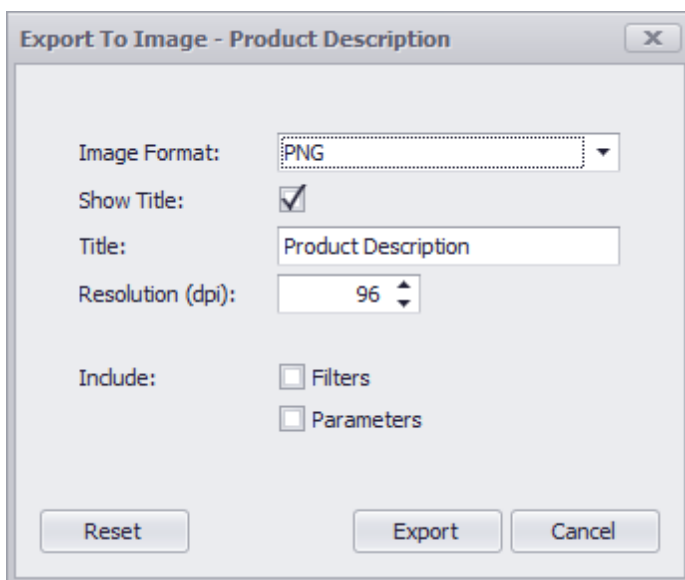
Export To PDF



- **Page Layout** - Specifies the page orientation used to export a dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the Text Box caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Text Box dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image



- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Show Title** - Specifies whether or not to apply the Text Box caption to the exported document title.

- **Title** - Specifies the title of the exported document.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.

Specify the required options in this dialog and click the **Export** button to export the Text Box dashboard item. To reset changes to the default values, click the **Reset** button.

Treemap

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Treemap](#)

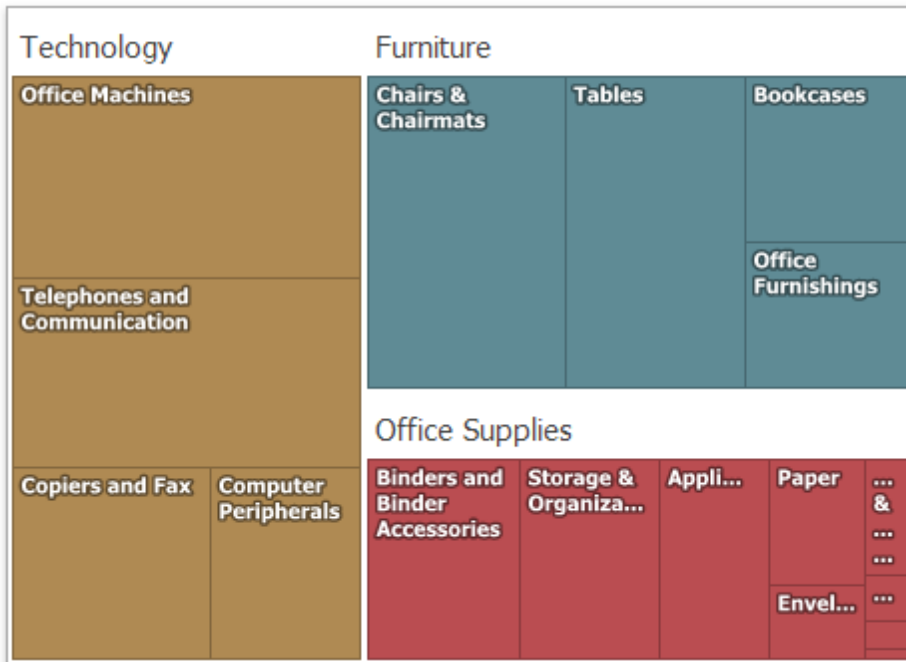
The Treemap dashboard item visualizes data in nested rectangles that are called *tiles*.

- [Data Presentation Basics](#)
- [Interactivity](#)
- [Printing and Exporting](#)

Data Presentation Basics

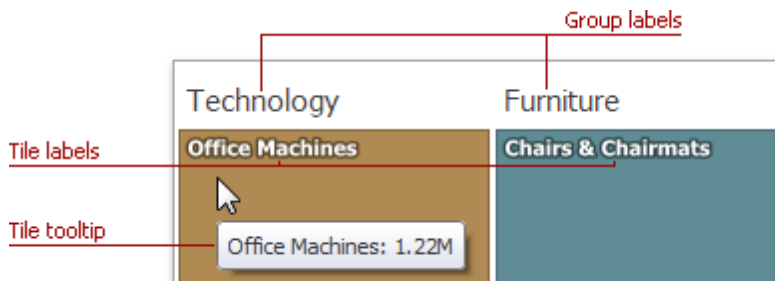
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Treemap](#) > [Data Presentation Basics](#)

The Treemap dashboard item visualizes data in nested rectangles that are called *tiles*.



Labels and Tooltips

The Treemap displays **labels** that contain descriptions for tiles and groups, and provide **tooltips** with additional information.



Interactivity

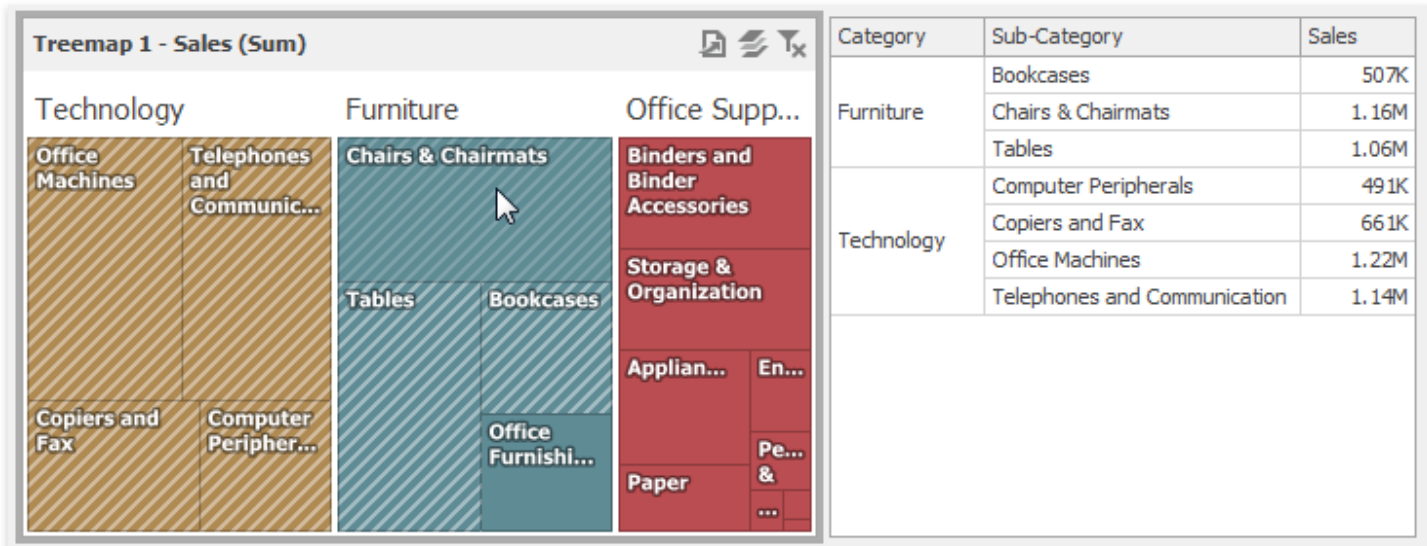
[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Treemap](#) > [Interactivity](#)


This topic describes features that enable interaction between the **Treemap** and other dashboard items. These features include **Master Filtering** and **Drill-Down**

Master Filtering

The **Dashboard** allows you to use any data aware dashboard item as a filter for other dashboard items (**Master Filter**). To learn more about filtering concepts common to all dashboard items, see the [Master Filtering](#) topic.

When Master Filtering is enabled, you can click a tile/group caption (or multiple tiles/group captions by holding down the **CTRL** key) to make other dashboard items only display data related to the selected tile(s).



To reset filtering, use the **Clear Master Filter** button (the  icon) in the Treemap's [caption](#) area, or the **Clear Master Filter** command in the Treemap's context menu.

Drill-Down

The built-in drill-down capability allows you to change the detail level of data displayed in dashboard items on the fly. To learn more about drill-down concepts common to all dashboard items, see the [Drill-Down](#) topic.

When drill-down is enabled, you can click a tile to view its details.



Note

When Master Filtering is enabled, you can view the details by double-clicking a tile.

Printing and Exporting

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Treemap](#) > [Printing and Exporting](#)

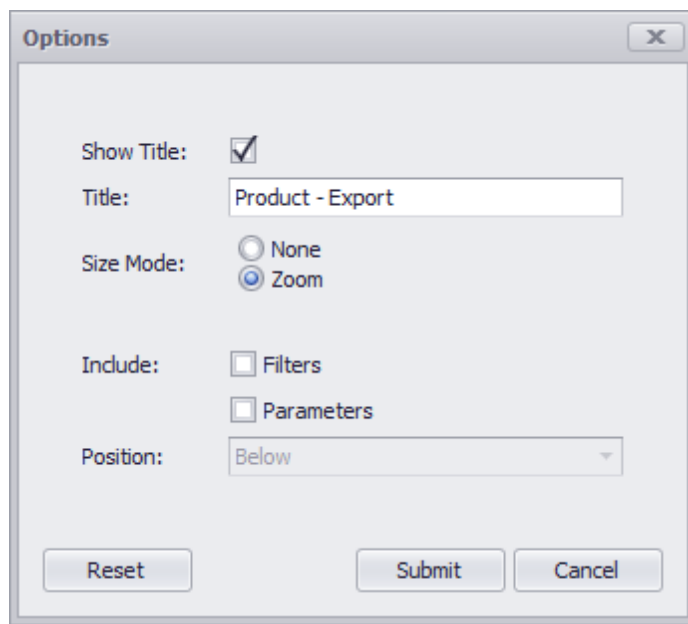
Dashboard allows you to print/export individual dashboard items, or the entire dashboard. To learn more about printing concepts common to all dashboard items, see the [Printing and Exporting](#) topic.

This topic describes the specifics of printing/exporting a **Treemap** dashboard item.

- [Printing](#)
- [Export To PDF](#)
- [Export To Image](#)
- [Export To Excel](#)

Printing

If you are printing the Treemap dashboard item using the Print Preview, you can customize the following options (via the **Options** button) before printing.



The screenshot shows a dialog box titled "Options" with a close button (X) in the top right corner. The dialog contains the following settings:

- Show Title:**
- Title:**
- Size Mode:** None, Zoom
- Include:** Filters, Parameters
- Position:** (dropdown menu)

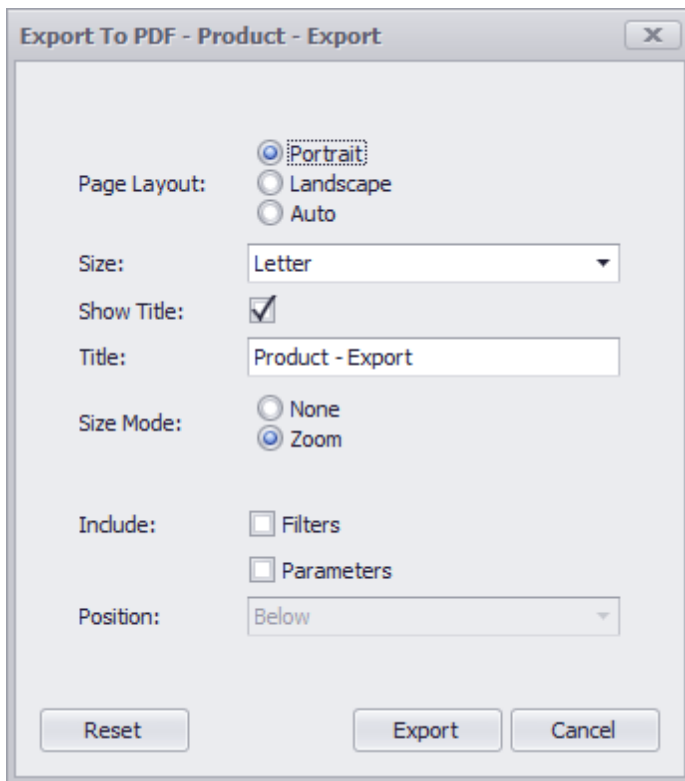
At the bottom of the dialog are three buttons: "Reset", "Submit", and "Cancel".

- **Show Title** - Specifies whether or not to apply the dashboard item caption to the printed document title.
- **Title** - Specifies the title of the printed document.
- **Size Mode** - Allows you to specify the print size mode for the Treemap dashboard item.
- **Include | Filters** - Allows you to include master filter values to the printed document.
- **Include | Parameters** - Allows you to include parameter values to the printed document.
- **Position** - Specifies the position of the master filter and parameter values in the printed document. You can select between *Below* and *Separate Page*.

Specify the required options in the **Options** dialog and click the **Submit** button to apply the changes. To reset changes to the default values, click the **Reset** button.

Export To PDF

The following options are available when exporting the Treemap dashboard item to a PDF.

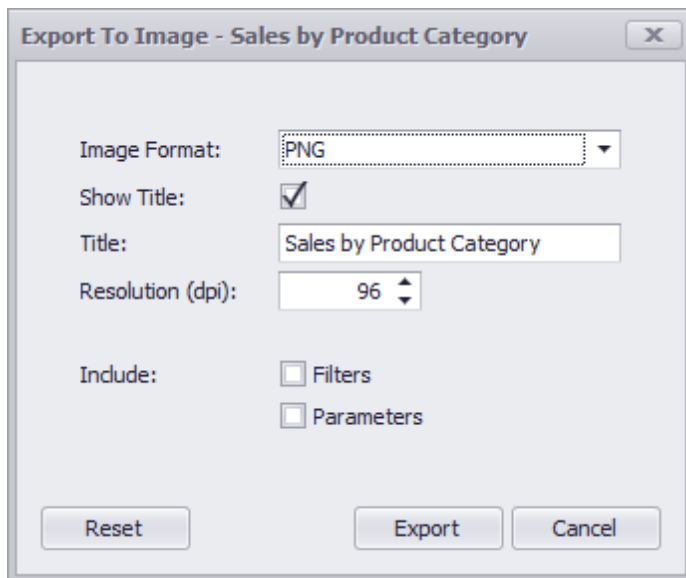


- **Page Layout** - Specifies the page orientation used to export a Treemap dashboard item.
- **Size** - Specifies the standard paper size.
- **Show Title** - Specifies whether or not to apply the dashboard item caption to the exported document title.
- **Title** - Specifies the title of the exported document.
- **Size Mode** - Specifies the export size mode for the Treemap dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the position of the master filter and parameter values in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the Treemap dashboard item. To reset changes to the default values, click the **Reset** button.

Export To Image

All data-bound dashboard items provide the same set of options when exporting them to an Image format. The following options are available:

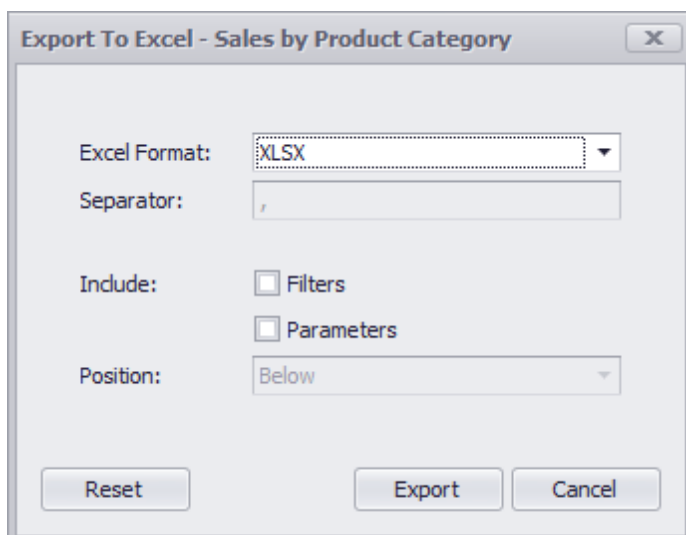


- **Show Title** - Specifies whether to apply the dashboard item caption to the exported document title.
- **Title** - Specifies of the exported document's title.
- **Image Format** - Specifies the image format in which the dashboard item is exported.
- **Resolution (dpi)** - Specifies the resolution (in dpi) used to export the dashboard item.
- **Include | Filters** - Allows you to include master filter values to the exported document.
- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select between *Below* and *Separate Page*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Export To Excel

Data visualized within all data-bound dashboard items can be exported to the required Excel format. The following options are available:



- **Excel Format** - Specifies the Excel format in which the dashboard item is exported. You can use the XLSX, XLS or CSV formats.
- **Separator** - Specifies the string used to separate values in the exported CSV document.
- **Include | Filters** - Allows you to include master filter values to the exported document.

- **Include | Parameters** - Allows you to include parameter values to the exported document.
- **Position** - Specifies the master filter and parameter values' position in the exported document. You can select from *Below* and *Separate Sheet*.

Specify the required options in this dialog and click the **Export** button to export the dashboard item. Click the **Reset** button to reset changes to the default values.

Filter Elements

[Dashboard for Desktop](#) > [Dashboard Viewer](#) > [Dashboard Items](#) > [Filter Elements](#)

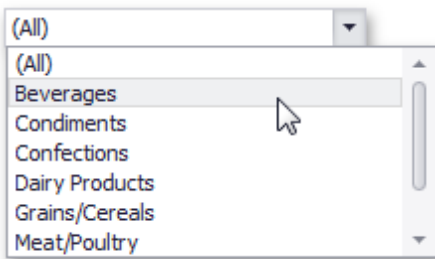
Filter elements provide the capability to [filter](#) other dashboard items.

- [Combo Box](#)
- [List Box](#)
- [Tree View](#)

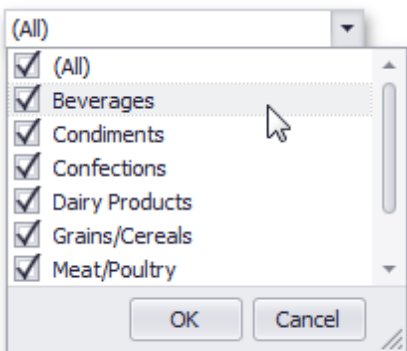
Combo Box

The **Combo Box** dashboard item allows you to select a value(s) from the drop-down list.

- The **Standard** type allows you to select only a single value.



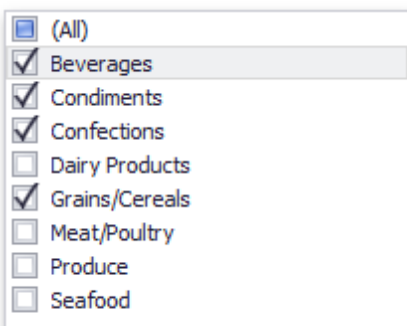
- The **Checked** type allows you to select multiple values in the invoked drop-down list.



List Box

The **List Box** dashboard item allows you to select a value(s) from the list.

- The **Checked** type allows you to select multiple values in the list box.



- The **Radio** type allows you to select only a single value in the radio group.

- (All)
- Beverages
- Condiments
- Confections
- Dairy Products
- Grains/Cereals
- Meat/Poultry
- Produce
- Seafood

Tree View

The **Tree View** dashboard item displays values in a hierarchical way and allows you to expand/collapse nodes.

- (All)
- ▼ 1994
 - August
 - September
 - October
 - November
 - December
- ▶ 1995
- ▶ 1996