OneStream ®
Studio Report Design Guide for WPF

6.6.0 Release

OneStream Studio Report Design Guide for WPF

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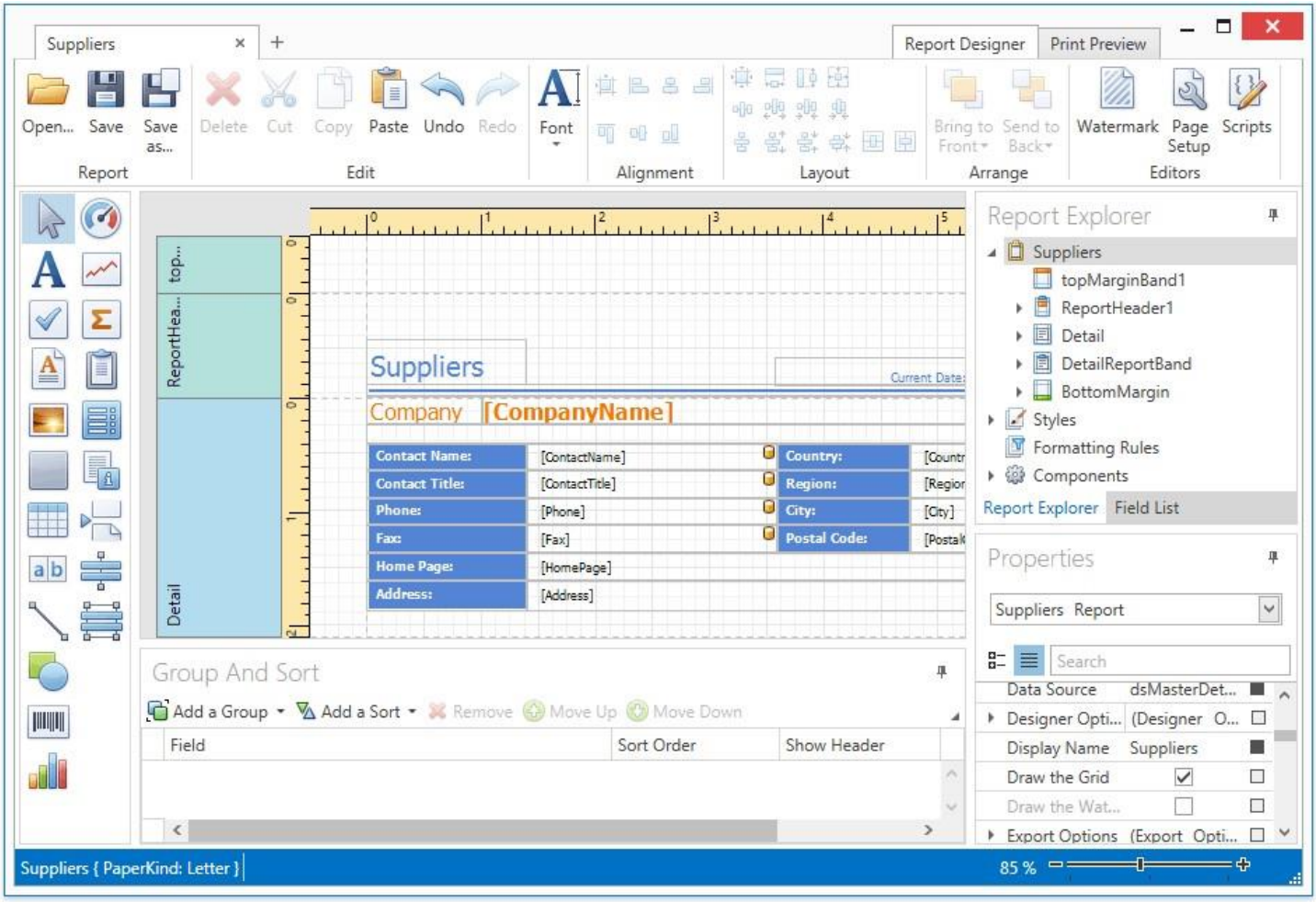
Report Designer for WPF

This guide contains information about the basic principles of creating reports with the Report Designer.

The Report Designer allows you to create new reports from scratch, bind them to data and fully customize them. In addition to report editing capabilities, it allows you to display a report's Print Preview, send its outputs to a printer or export it to various formats.



Different aspects of using the Report Designer are covered in the following documentation sections.

- Creating Reports

  The tutorials in this section provide step-by-step instructions on both basic and advanced report customization. Report Types
- The documents in this section describe how to create reports of different types with the Report Designer. Report Elements
- The topics in this section provide information about report controls and bands used in the Report Designer. Interface Elements
- The documents in this section are dedicated to the elements of the Report Designer user interface. Report Wizard
- This documentation section describes the Report Wizard, which allows you to create reports based on built-in templates. Document Preview

The topics in this section describe the capabilities provided by the Print Preview.

Report Types

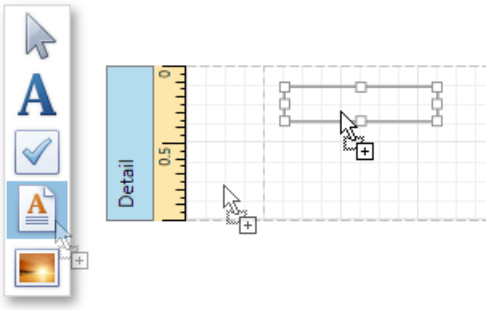
The tutorials in this section provide detailed instructions on how to create reports of different types with the Report Designer.

Static Report

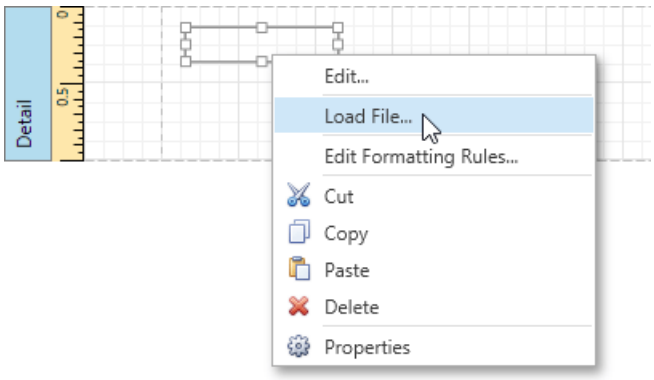
This tutorial describes the steps needed to create a *static report*, which means that the report is not bound to a data source. This example demonstrates how to create a report with the one-page content repeated 20 times.

To create a static report, do the following.

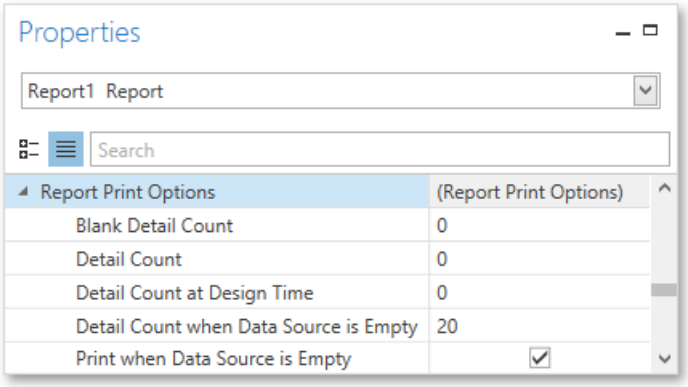
1. Create a new report.
2. Drop the Rich Text control from the Toolbox onto the Detail band.



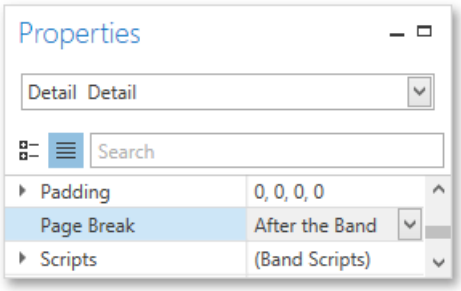
3. Right-click the created control and select **Load File...** in the invoked context menu.



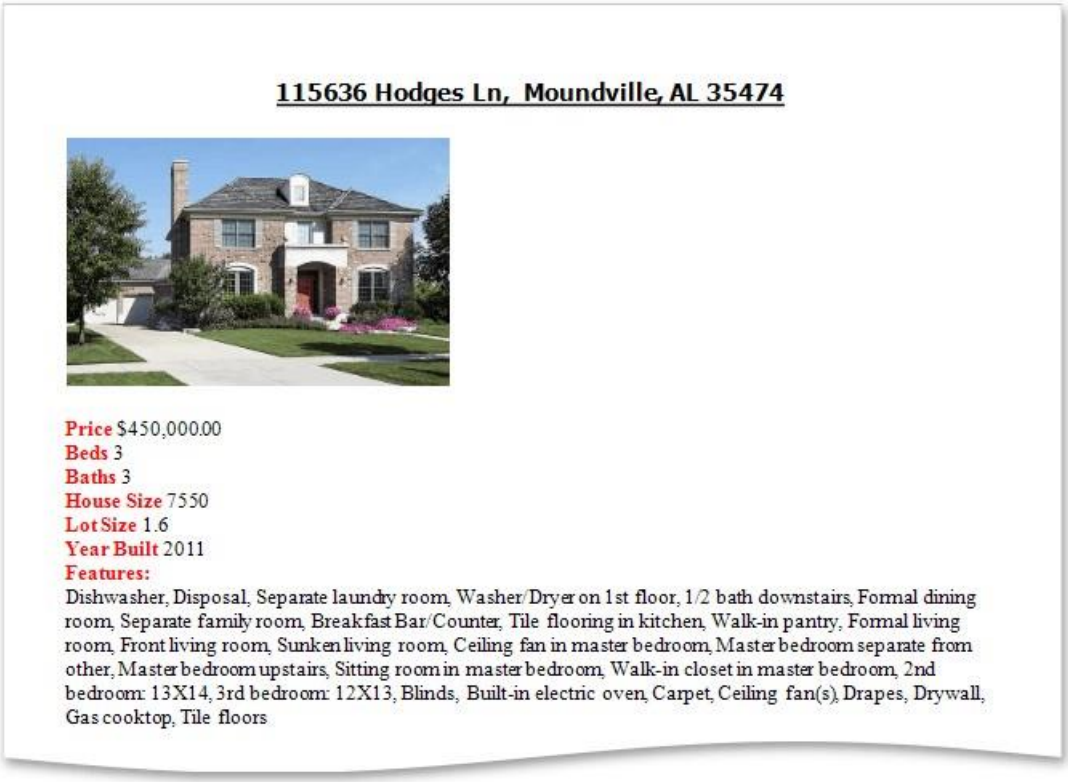
4. In the invoked dialog, use the drop-down list to define the file's extension (**.rtf**, **.docx**, **.txt**, **.htm** or **.html**), select the file, and click **Open**.
5. Select the report, and in the Properties Panel, expand the **Report Print Options** property. Make sure that the **Print when Data Source is Empty** option is enabled, i.e., the report is allowed to be printed when it has no data source. To repeat the created report 20 times, set the **Detail Count when Data Source is Empty** property to **20**.



6. To print the report content on separate pages, set the band's **Page Break** property to **After the Band**.



The static report is now ready. Switch to the Print Preview tab and view the result.



115636 Hodges Ln, Moundville, AL 35474

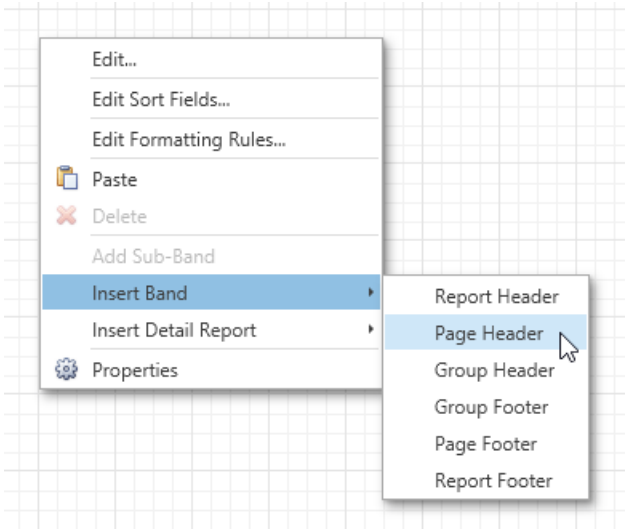
Price $450,000.00
Beds 3
Baths 3
House Size 7550
Lot Size 1.6
Year Built 2011
Features:
Dishwasher, Disposal, Separate laundry room, Washer/Dryer on 1st floor, 1/2 bath downstairs, Formal dining room, Separate family room, Breakfast Bar/Counter, Tile flooring in kitchen, Walk-in pantry, Formal living room, Front living room, Sunken living room, Ceiling fan in master bedroom, Master bedroom separate from other, Master bedroom upstairs, Sitting room in master bedroom, Walk-in closet in master bedroom, 2nd bedroom: 13X14, 3rd bedroom: 12X13, Blinds, Built-in electric oven, Carpet, Ceiling fan(s), Drapes, Drywall, Gas cooktop, Tile floors

Table Report

This tutorial describes how to create a *table report*, which means that the report's data is arranged into a table-like layout. This feature should not be confused with the master-detail report or cross-tab report.

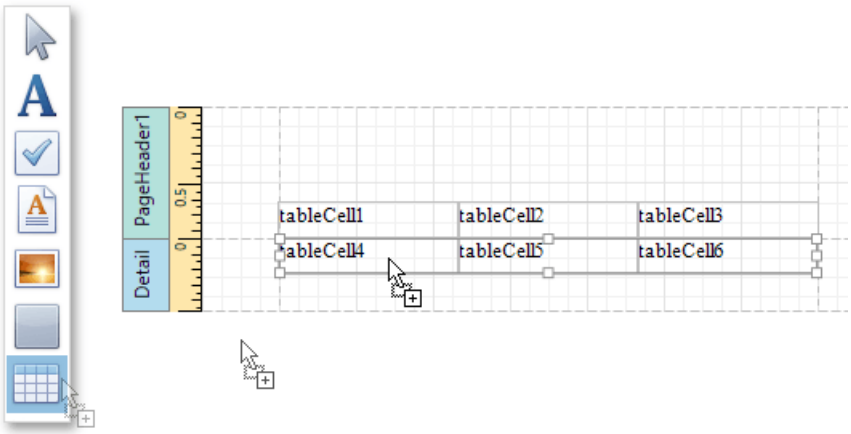
To create a table report, follow the steps below.

1. Create a new report and bind it to a data source.
2. To add a Page Header to the report, right-click on the report's surface, and in the invoked context menu, select **Insert Band** and then **Page Header**.



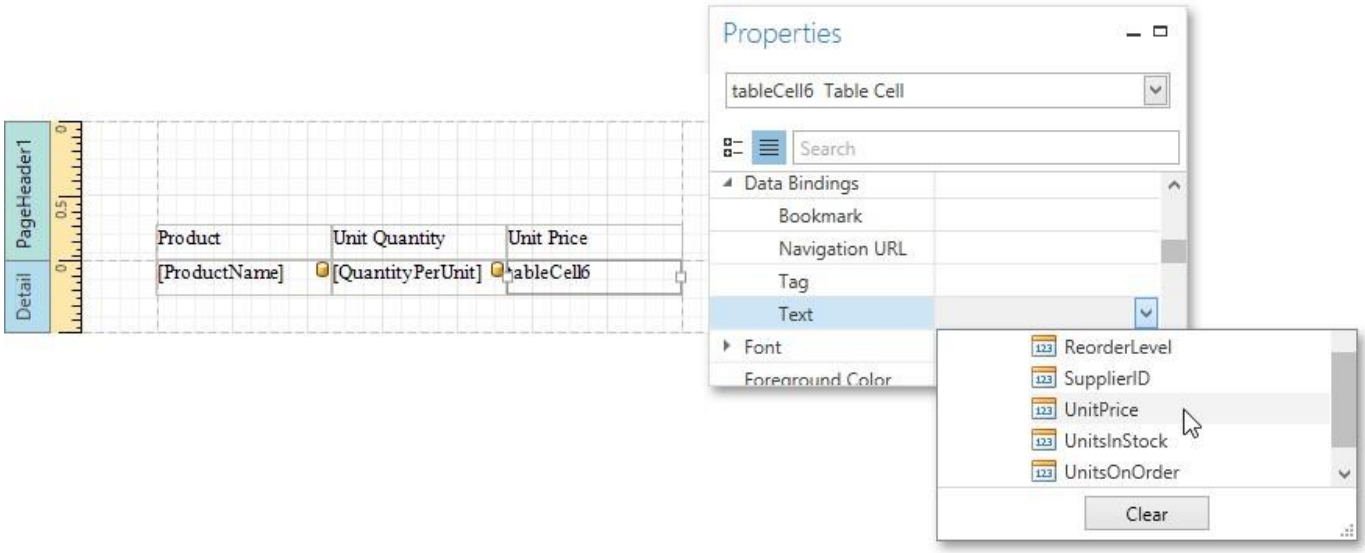
3. Next, add two Table controls to the report's Page Header and Detail band.

   To do this, drag the Table control from the Toolbox and drop it onto the Page Header Band. Then, add a table to the Detail band in the same way.



   One table will be used as a header, and the other one - for the report's detail information.

4. Type the headers into the upper table's cells. Then, bind the corresponding cells in the detail section to the appropriate data fields by expanding the **Data Bindings** option and setting the **Text** property.



5. Finally, you can customize various properties of the tables to improve their appearance. For example, in the Properties Panel, you can define the **Borders** property, as well as the **Background Color** property. To customize cell text options, specify the **Font** property.

   A noteworthy feature is the capability to specify odd and even styles for the detail table.

The table report is now ready. Switch to the Print Preview tab, and view the result.

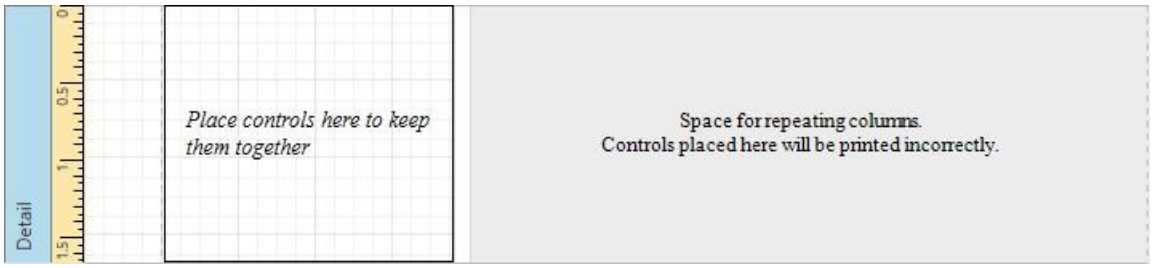
Product	Unit Quantity	Unit Price
Chai	10 boxes x 20 bags	$18.00
Chang	24 - 12 oz bottles	$19.00
Aniseed Syrup	12 - 550 ml bottles	$10.00
Chef Anton's Cajun Seasoning	48 - 6 oz jars	$22.00
Chef Anton's Gumbo Mix	36 boxes	$21.35
Grandma's Boysenberry Spread	12 - 8 oz jars	$25.00
Uncle Bob's Organic Dried Pears	12 - 1 lb pkgs.	$30.00
Northwoods Cranberry Sauce	12 - 12 oz jars	$40.00
Mishi Kobe Niku	18 - 500 g pkgs.	$97.00
Ikura	12 - 200 ml jars	$31.00
Queso Cabrales	1 kg pkg.	$21.00
Queso Manchego La Pastora	10 - 500 g pkgs.	$38.00

Label Report

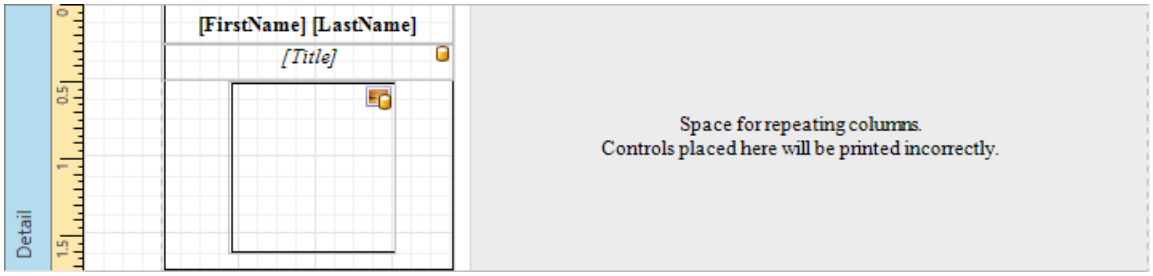
This tutorial describes the steps required to create a label report containing

employee badges. To accomplish this task, do the following.

1. Click the **New** button on the Toolbar or the plus button next to the report tab headers to create a new report.
2. The invoked Report Wizard will guide you through the process of creating a label report. For detailed instructions on wizard steps, refer to Label Report.
3. After performing the above steps you will see that the report's Detail band is divided into three different areas. The first area at the left-hand side indicates the actual available band area for controls to be placed within it. The gray area at the right- hand side is intended for the columns in which labels will be displayed, so it cannot be occupied by controls. Finally, the white area specifies an indent between the available and reserved areas.



4. Bind a report to a data source containing information about employees.
5. Then, drop the required fields from the Field List onto the available Detail band's area, and adjust the layout.



The label report is now ready. Switch your report to the Print Preview tab and view the result.

Nancy DaH11io *S a.les Represen.lative* 	**Andl"e w F ull e r** *Vice Presiden.l, Saks* 	**J anet Lev ling** *Sa.les Represen.lative* 
Stev .n Bue-hanan *Sales Manager* 	**_.fie ha el Suyama** *Sa.les Represen.lative* 	
bert Kin g *Sa.les Represen.lative* 	**Laura Calla han** *Inside Sales Coordinawr* 	**Anne Dods" orth** *Sa.les Represen.lative* 

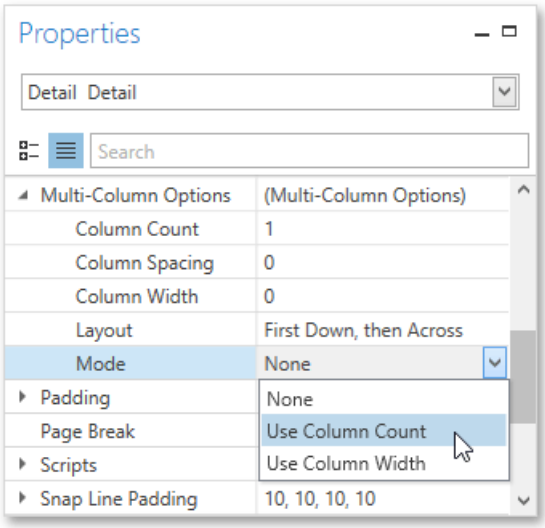
Multi-Column Report

This tutorial describes the steps to create a *multi-column report*, meaning that each page of the report document is laid out in a specified number of columns.

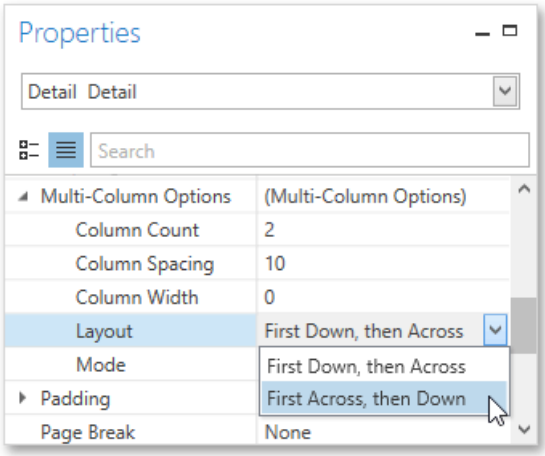
To demonstrate the multi-column feature, use a report with grouping, similar to the one created in the following tutorial: Grouping Data.

1. Select the Detail band, and in the Properties Panel, expand the **Multi-Column Options** section.

   Set the required **Mode**, which determines whether the number of columns is manually specified or if it depends on the fixed column width.



2. Then, if you've chosen to **Use Column Count**, set the **Column Count** to **2**, and **Column Spacing** to **10**. The **Layout** property determines the order in which records of the same group are processed.



3. Now, on the Detail band's surface, a gray area appears, delimiting the available column's width. Adjust the control width, so that they fit within the effective borders.

The multi-column report is now ready. Switch to the Print Preview tab and view the result.

Products by Categories

Category: 1

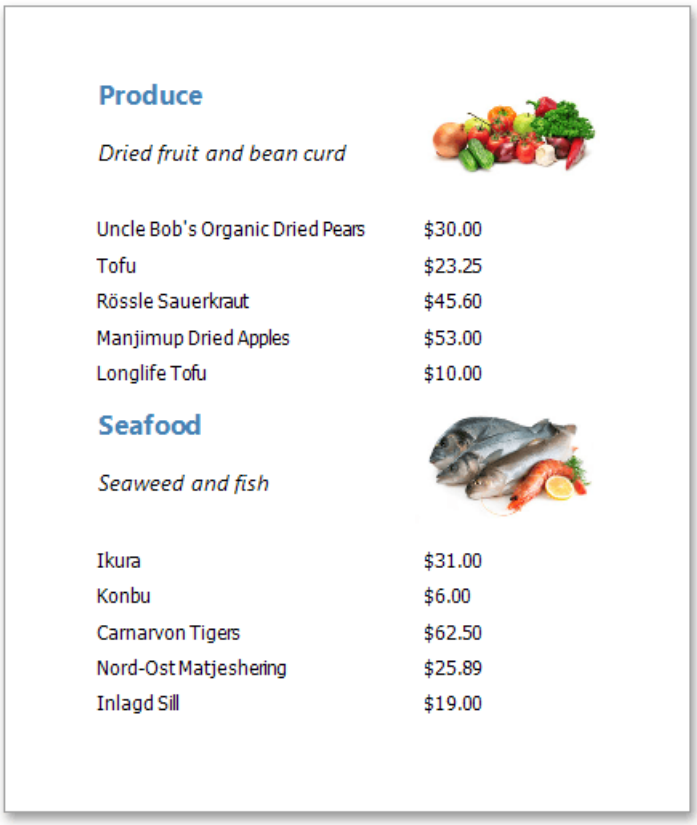
Chai	$18.00	Chang	$ 19.00
C:hartrem e verte	$ 18.00	Cote de Blaye	$26 3.50
Gu.Man i Fan t:istira	$4.50	Ipoh Coffee	$46.00
Lahl::ali k oori	$18.00	Lau ghing Lum berjack Lager	$1 4.00
Outb ack Lager	$15.00	Rh onbra.u Klostemier	$7 .75
Sasq uatd:i Ale	$14.00	Steeley e Stout	$18 .00

Category: 2

Aniseed Syrup	$10.00	Chef Anton's Cajun Se&>oning	$ 22.00
Chef An ton's Gumbo Mix	$21.35	Gen en Shouyu	$ 15.50
Grandm a's Boysenbeny Spread	$25.00	Guía MaJa cra	$19.45
Louisiana Fiery Hot Pepper Swee	$21.05	Louisiana Hot Spiced Olmi.	$17 .00
Nocthw ood s Cranberry Sauce	$40.00	Original Frankforter grune &ille	$13 .00
Sirnp d' ernble	$28.50	Vegie-.sp read	$43.90

Master-Detail Report

A report is usually called *Master-Detail* if it is used to display data from a hierarchical data source.



There are two main approaches for creating a master-detail report. The first approach is based on using the Detail Report band. The second approach is to create two different reports and incorporate the detail report into the master report as a subreport.

To see a detailed step-by-step demonstration of how detail report bands and subreports are used to create a master-detail report, refer to the following tutorials.

Master-Detail Report (Detail Report Bands)

This tutorial describes the steps needed to create a *master-detail report* with hierarchically linked data using the Detail Report band. For an alternative approach, refer to Master-Detail Report (Subreports).

To start with this tutorial, create a new report and bind it to a data source. For this tutorial, in the Report Wizard, select the table that will be used as the principal table in the master-detail relation.

The topic consists of the following sections.

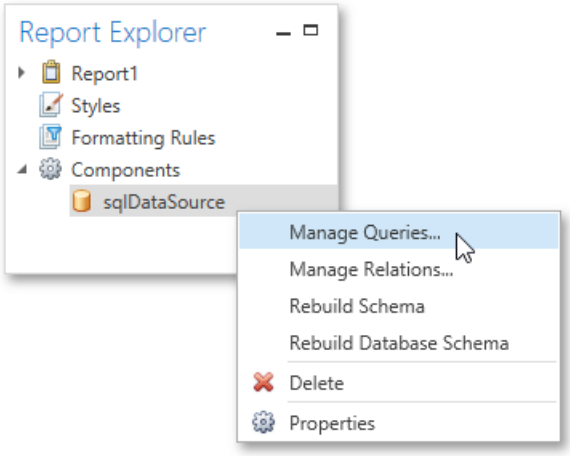
- Provide a Report Data Source with a Master-Detail Relation Design a Master-Detail Report
- View the Result

Provide a Report Data Source with a Master-Detail Relation

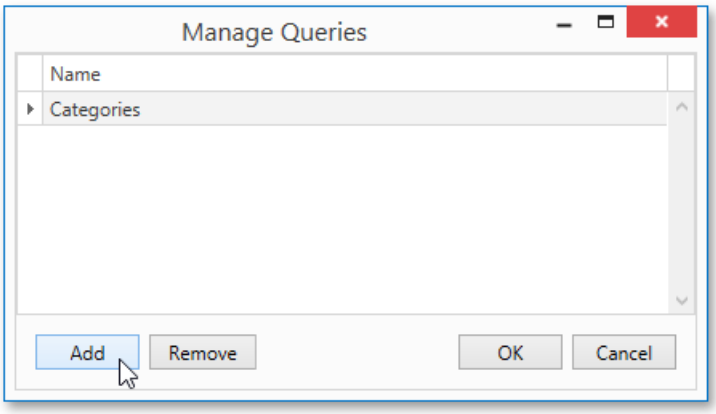
This section of the tutorial describes how to provide an SQL data source with a master-detail relation. If you are using an Entity Framework data source that contains data members with master-detail relations between them, the existing relations will be used automatically. In this case, you can skip this section of the tutorial and proceed to the next section: Design a Master-Detail Report.

To add a master-detail relation to an SQL data source, do the following.

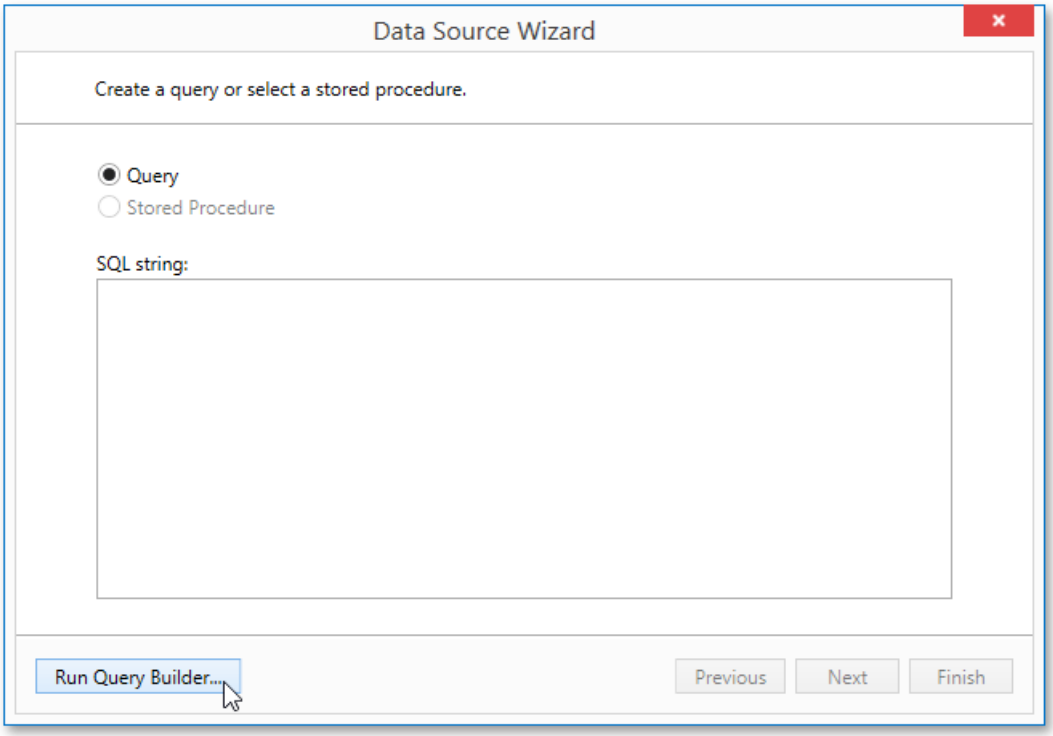
1. Add a detail table to the report data source. To do this, right-click the data source in the Report Explorer, and select **Manage Queries...** in the invoked context menu.



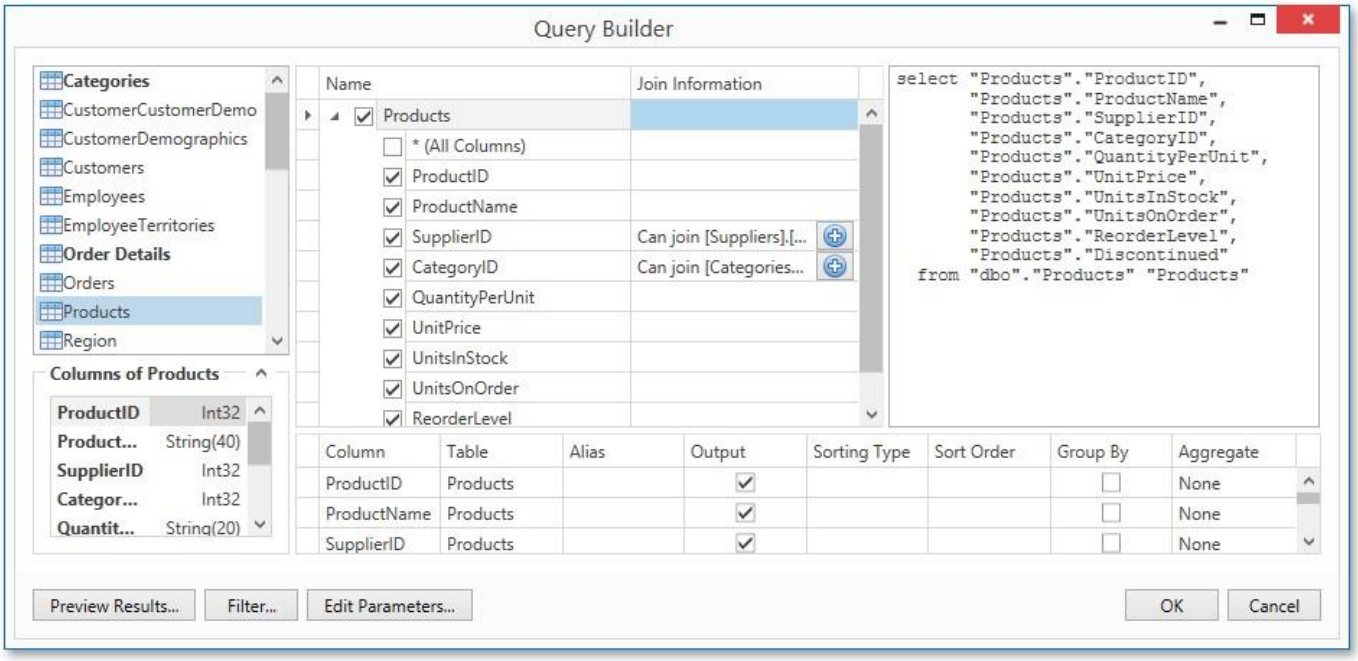
2. In the invoked **Manage Queries** dialog, click **Add**.



3. Then, in the invoked **Data Source Wizard**, click **Run Query Builder.**

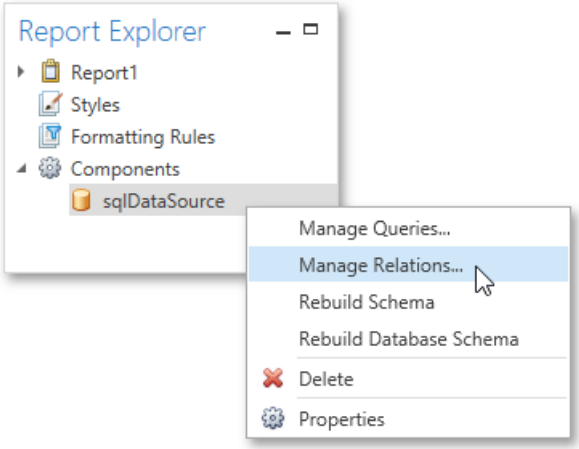


4. Add the detail table to the query and click **OK**.

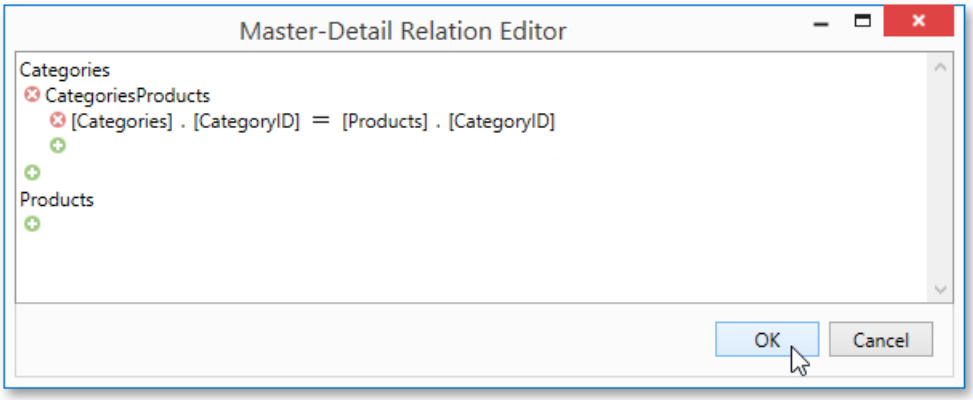


5. Click **Finish** to exit the **Data Source Wizard**. Then, click **OK** to exit the **Manage Queries** dialog.

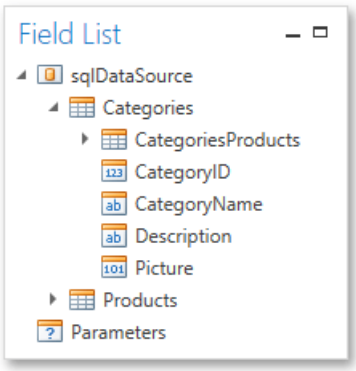
6. Next, specify the relation between the data source tables. To do this, right-click the data source in the **Report Explorer**, and select **Manage Relations...** in the invoked context menu.



7. In the invoked **Master-Detail Relation Editor**, click the plus button next to the master query to add a new relation. Specify a relation condition as shown in the following image and click **OK** to exit the dialog.



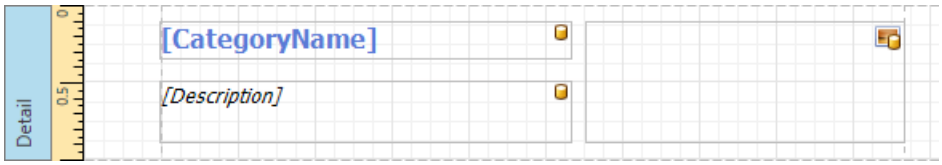
8. The **Field List** will be updated to reflect the added relation.



Design a Master-Detail Report

To create the layout of a master-detail report, do the following.

1. Allocate parts of a master report on the report's Detail band.

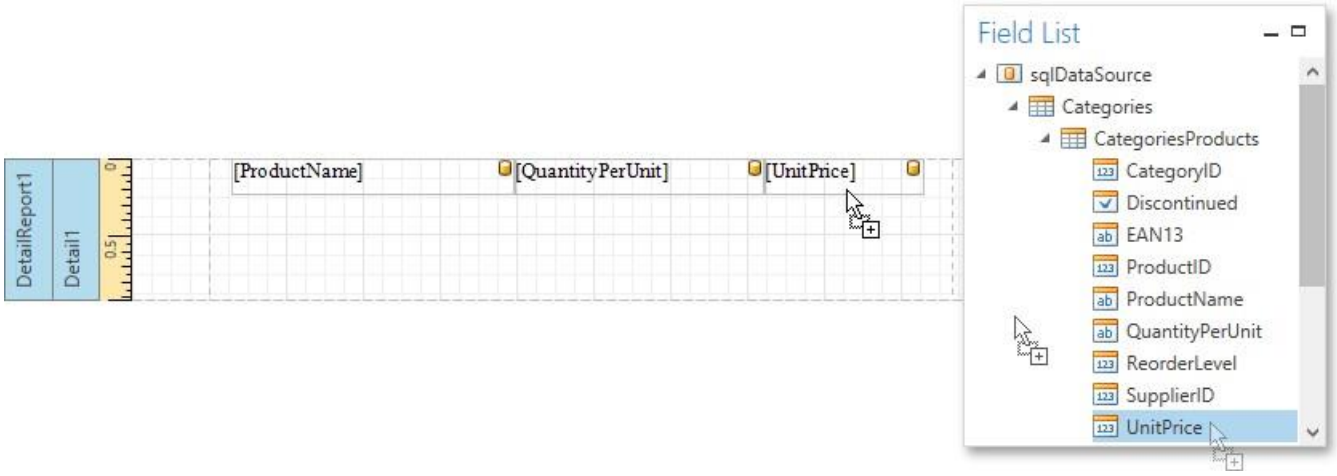


For the master report to be generated properly, the report's **Data Member** should be set to the master query. If you added the master query first, this property is set to the required value automatically. Otherwise, you should manually specify the data member (for instance, in the Properties Panel).

2. To add a detail report band, right-click anywhere on the report's surface, and in the invoked context menu, select **Insert Detail Report**. When the report's data source contains a data relationship, it is displayed in the context menu.

3. Then, drop the required data fields from the Field List onto the Detail Report band.

Note that you should drop items from the *relation node* (in this example it is the **CategoriesProducts** section) for the detail report to be generated correctly.



View the Result

The master-detail report is now ready. Switch to the Print Preview tab and view the result.Master-Detail

Report (Subreports)

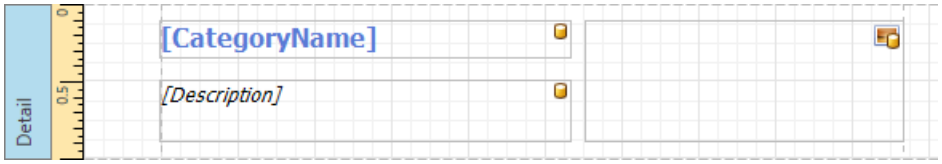
This tutorial describes the steps needed to create a master-detail report with hierarchically linked data using the Subreport control. For an alternative approach, refer to Master-Detail Report (Detail Report Bands).

To create a master-detail report using the subreport controls, do the following.

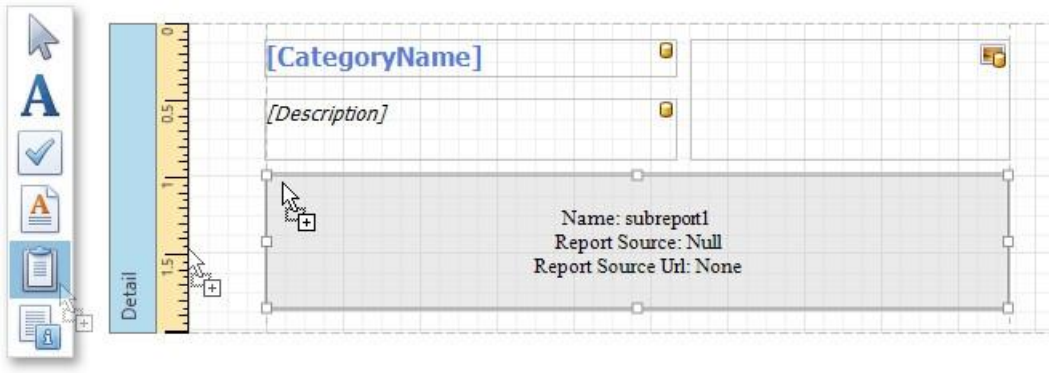
- Create a Master Report
- Create and Customize a Detail Report
- Embed the Subreport
- Get the Result

Create a Master Report

1. Create a new report and bind it to a data source. This report will be used as the master report.
2. Drop the required fields from the Field List panel onto the Detail band. In this example, the following report layout is used.

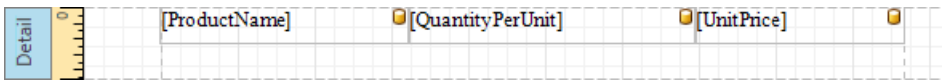


3. Drag the Subreport control from the Toolbox and drop it onto the Detail band.

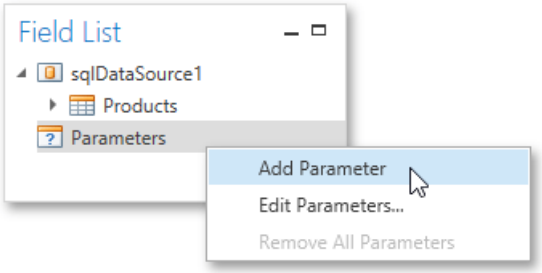


Create and Customize the Detail Report

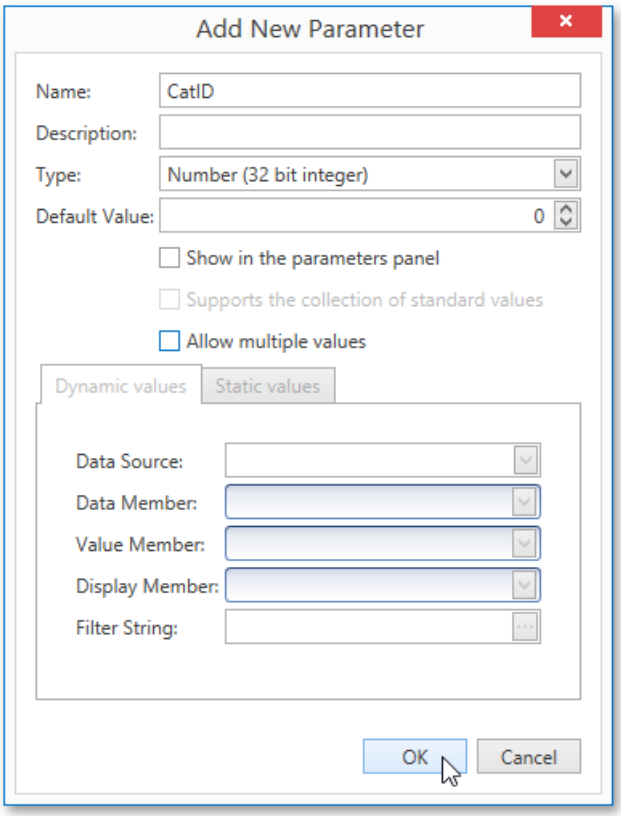
1. Next, add one more blank report and bind it to the same data source. It will be used as a detail report.
2. Drop the required fields from the Field List panel onto the Detail band. This tutorial uses the following layout for the detail report.



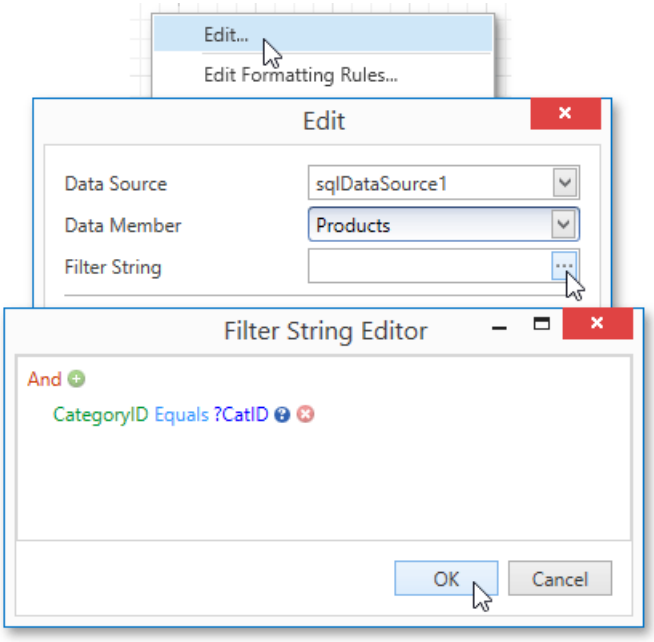
3. To add a parameter to the report, right-click the **Parameters** section in the **Field List** and choose **Add Parameter** in the invoked context menu.



4. In the invoked **Add New Parameter** dialog, specify its options as shown in the image below.



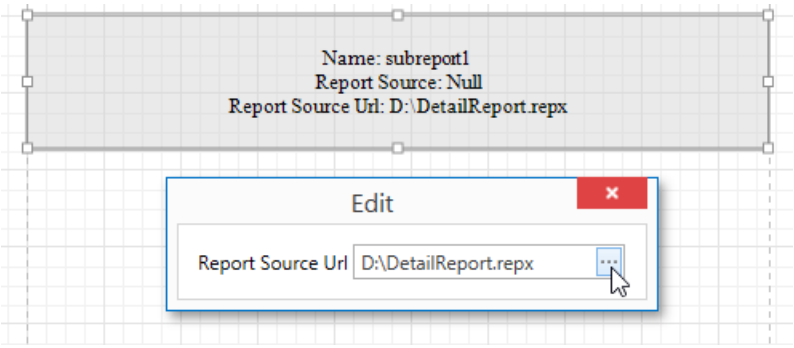
5. Select **Edit** in the report's context menu. Then, in the **Edit** dialog, click the ellipsis button for the **Filter String** property. In the invoked **Filter String Editor**, construct an expression where the **Category ID** data field is compared to the **CatID** parameter. To access the parameter, click the icon on the right until it turns into a question mark.



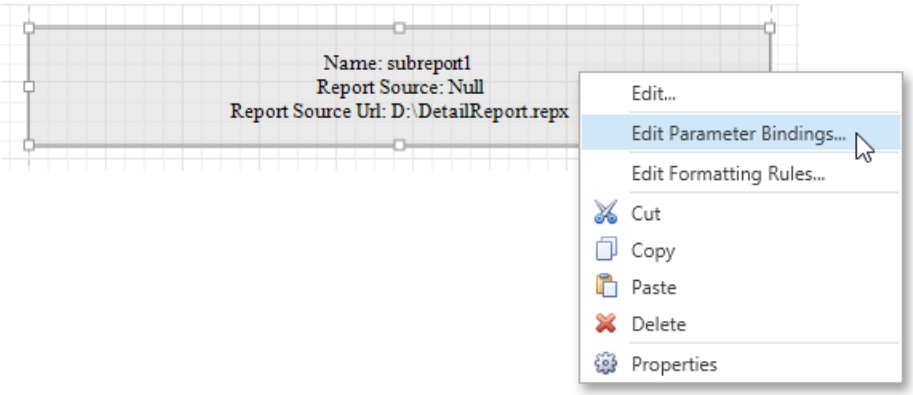
6. To save the detail report, click the **Save As** button in the Toolbar. Then, in the invoked standard **Save** dialog, specify the folder and file name.

Embed the Subreport

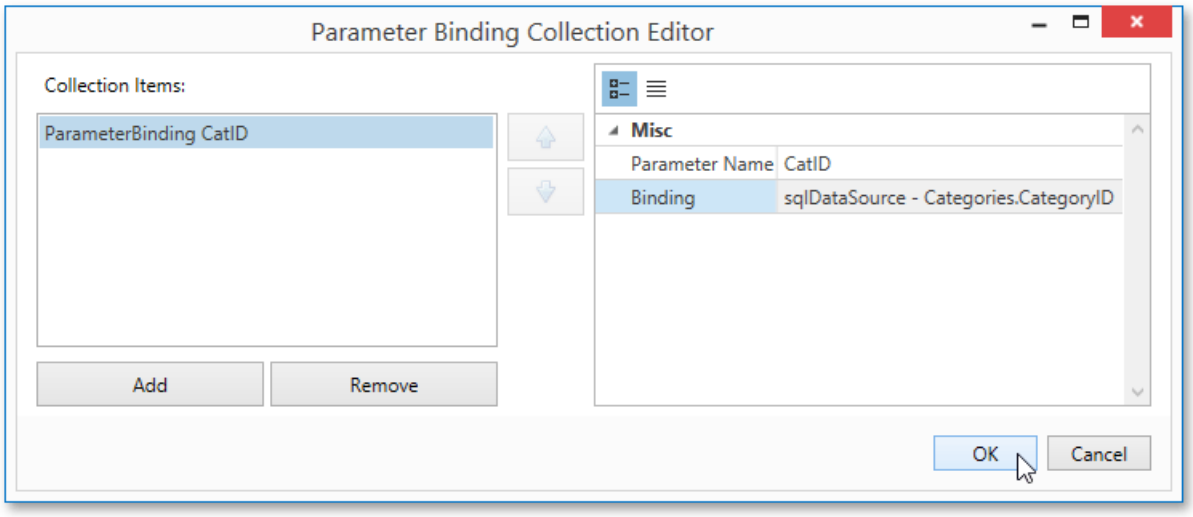
1. Next, switch back to the master report. Right-click the subreport and select **Edit...** in the invoked context menu. In the **Edit** dialog, click the ellipsis button for the **Report Source URL** property and select the previously saved detail report.



2. Then, bind the subreport's **CatID** parameter used as a filtering criterion to the master report's **CategoryID** data field, which will serve as a source of the parameter value. To do this, select **Edit Parameter Bindings...** in the subreport's context menu.



This will invoke the **Parameter Binding Collection Editor**. Click **Add** to add new binding. In the binding properties list, specify the data field to which you want to bind a subreport parameter and the name of the parameter that you want to bind.



Get the Result

The master-detail report is now ready to be generated. You can view the result by switching to the Print Preview tab.

Beverages

Soft drinks coffees teas Beers and ales

Chai	10 box e; x 20 bag;	$13.00
Chang	24 - 12 oz bottles	$19.00
Guarani Fanta&ica	12 - 3Y\ ml cam	$4 50
Sa ; quaich Al;,	24 - 12 oz bottles	$14.00
Steeley e Stout	24 - 12 oz bottles	$1S.OO
Coie de Blaye	12 - n d boitles	$263 50
Chartreme Veru-	no cc per botti;,	$ 18.00
lp oh Coffee	16 - '\00 g tim	$46 .00
Laughing Lumberjack Lager	24 - 12 oz bottles	$14.00
Ouibad t Lager	24 - 3 '\'\ ml bottles	$1'\ .00
Rhcin brau Klosierbia-	24 - 05 1 boitles	*$ 11'*
Lakkaliko fui	'\00 mi	$1S.OO

Condiments

Sweet and savory sauces, relishes, spreads

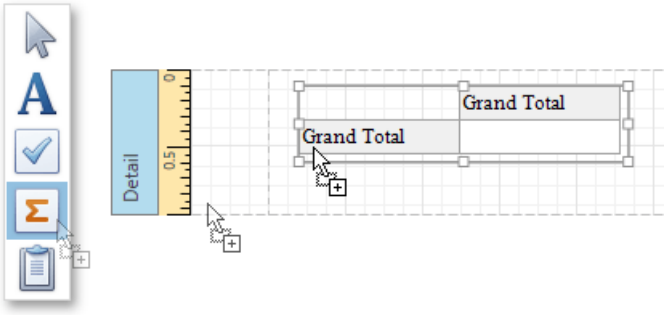
Cross-Tab Report

This tutorial describes the steps needed to create a *cross-tab report* using the Pivot Grid control. This feature should not be confused with the master-detail report or table report. Additionally, the document demonstrates how to visualize data displayed in the Pivot Grid by linking it with the Chart control.

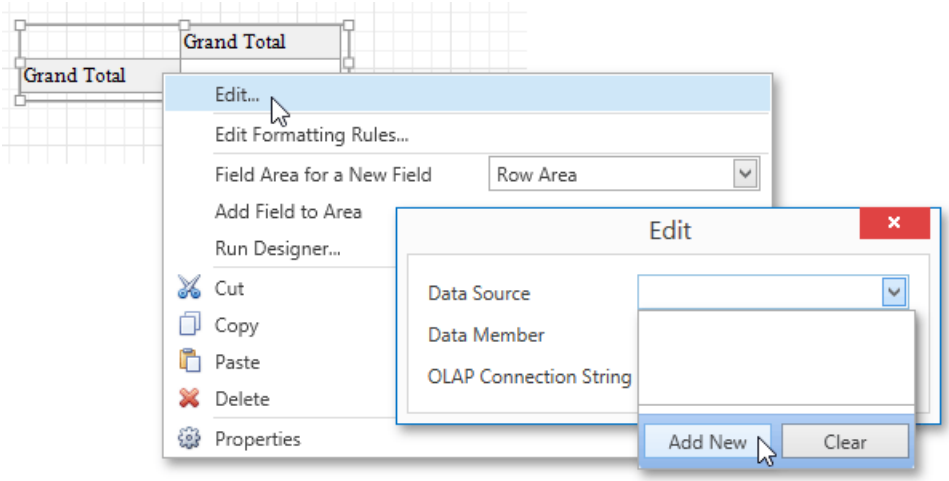
Create a Cross-Tab Report

To create a cross-tab report, do the following.

1. Create a new empty report.
2. Drop the Pivot Grid control from the Toolbox onto the report's Detail band.

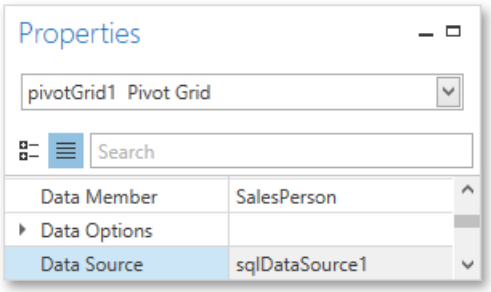


3. To bind the Pivot Grid to a data source, right-click it and select **Edit...** in the context menu. In the invoked dialog, expand the **Data Source** drop-down and click the **Add New** button.



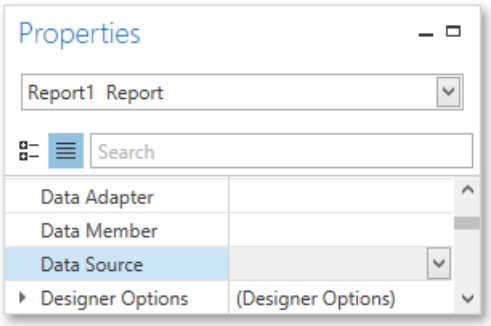
4. The invoked **Data Source Wizard** will guide you through the process of assigning a data source to the grid. For detailed instructions on the Wizard's steps, refer to Binding a Report to Data, as this process is similar.

   After the data source is created, it is assigned to the pivot grid's **Data Source** property. Its **Data Member** property defines from which table or view of the data source the grid obtains its data.

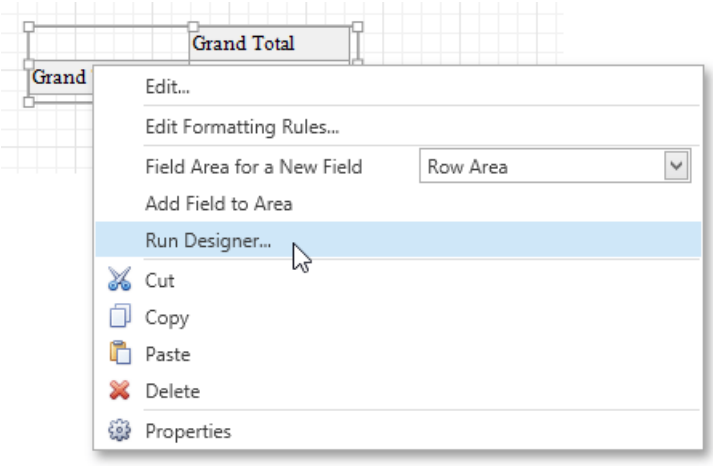


O Not e

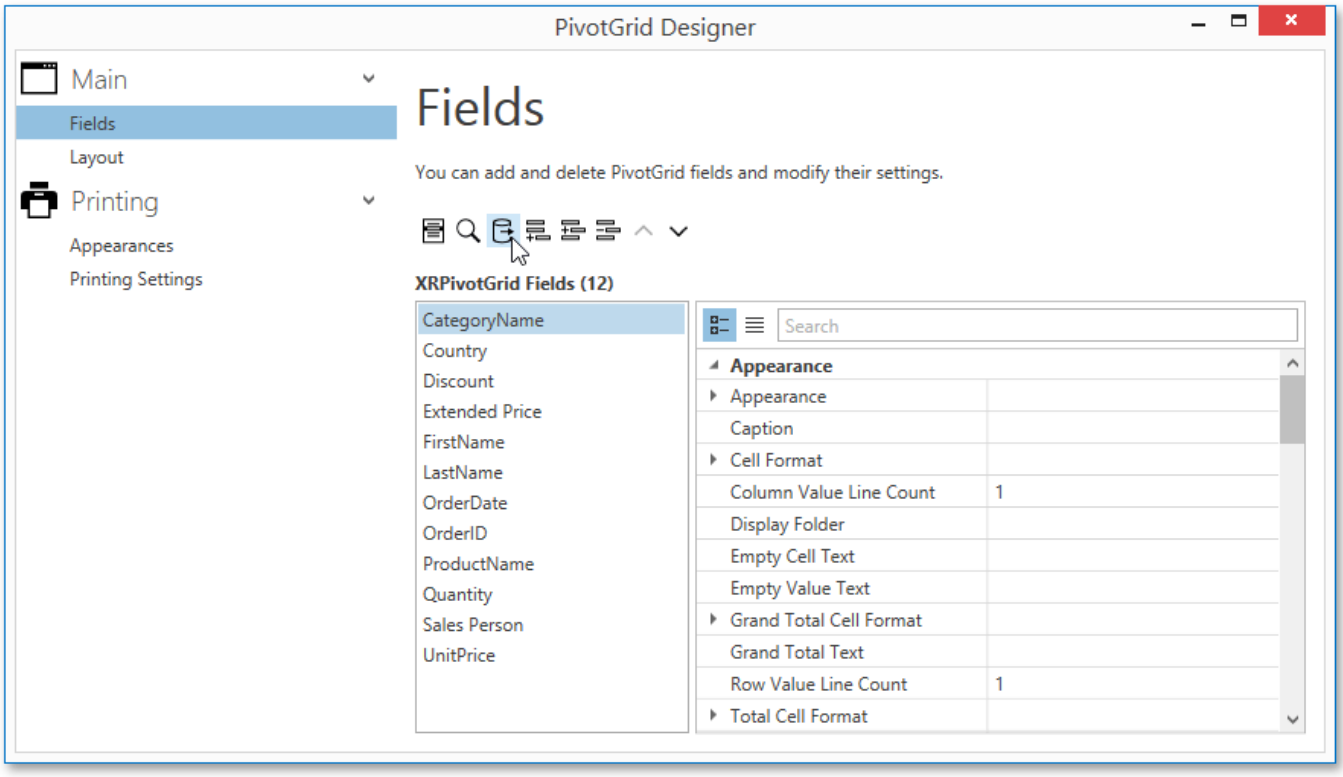
Since you have placed a Pivot Grid in the Detail band, the report's **Data Source** property should not be set. Otherwise, the Pivot Grid will be repeated at the preview as many times as there are records in the data source.



5. Once again, right-click the Pivot Grid and select **Run Designer...** in the invoked context menu.

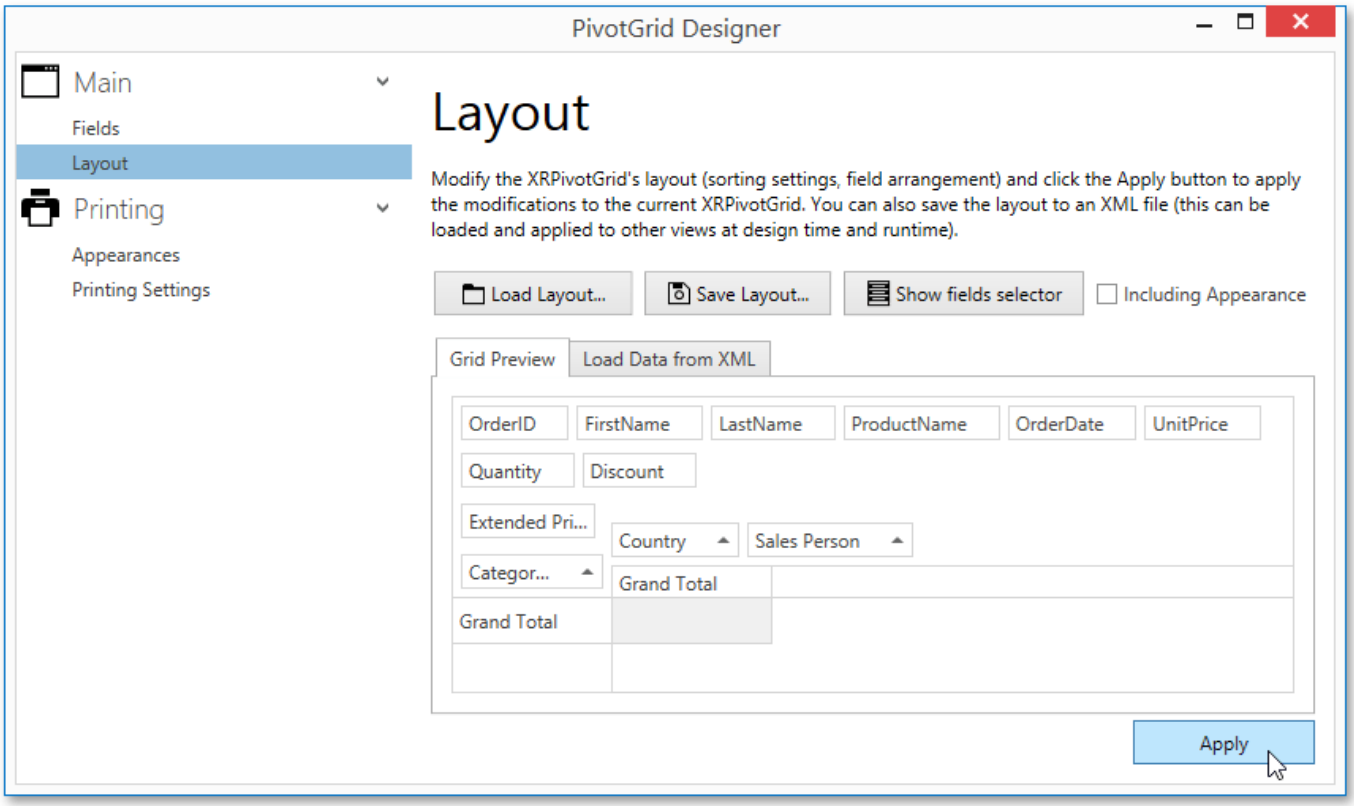


6. In the invoked **PivotGrid Designer**, click **Retrieve Fields**.



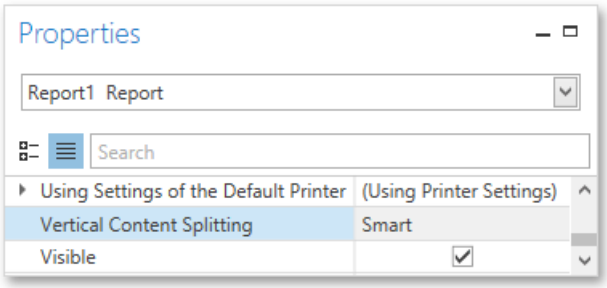
7. Then, switch to the **Layout** section in the navigation bar on the left.

   Drag and drop the required fields to the **Row Fields**, **Column Fields** and **Data Items** areas.



   Click **Apply** and close the editor.

8. In the last step, you can set your report's **Vertical Content Splitting** option to **Smart**. This will split the grid's columns precisely by their borders in the Print Preview.



The cross-tab report is now ready. Switch to the Print Preview tab and view the result.

Order ID	First Name	Last Name	Product Name	Order Date	Unit Price	Quantity	Discount

Extended Price	Country	Sales Person

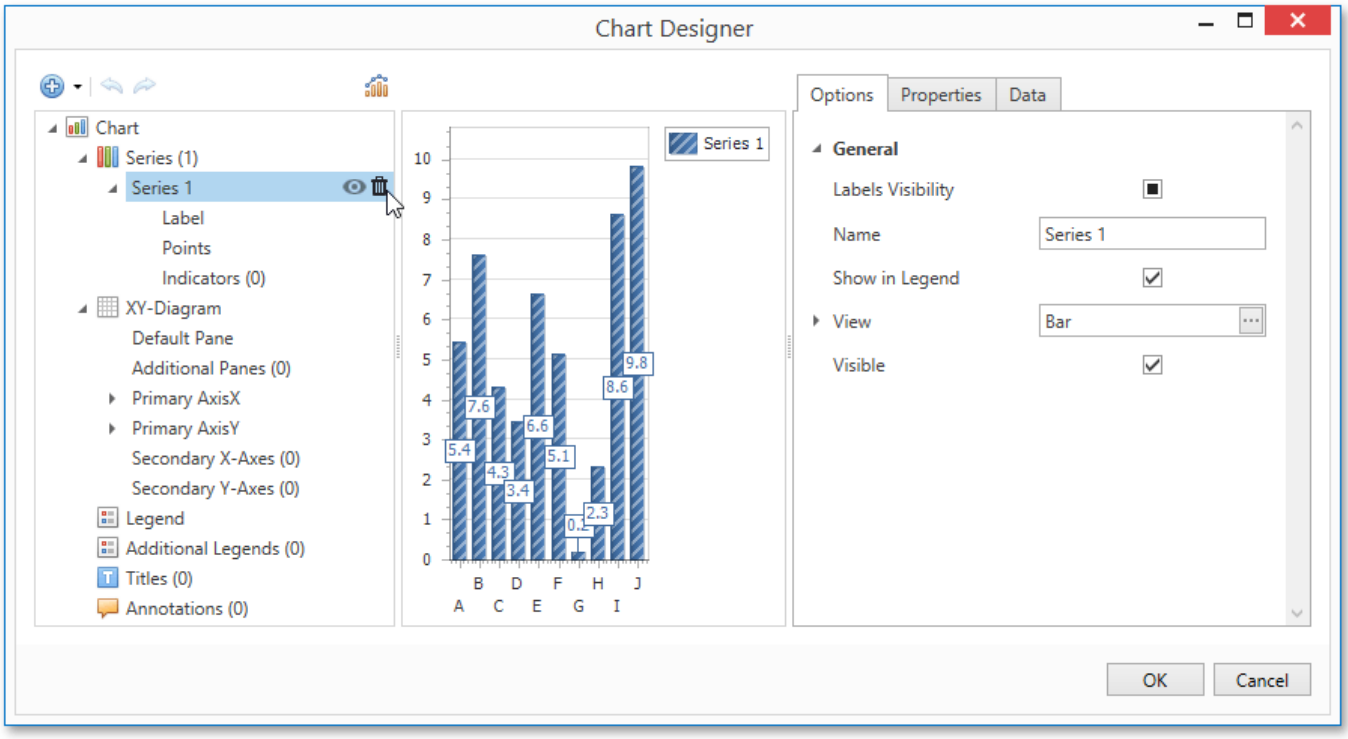
	UK				UK Total
Category Name	Anne Dodsworth	Michael Suyama	Robert King	Steven Buchanan	
Beverages	$19,642.55	$9,450.20	$27,963.83	$11,000.52	$68,057.10
Condiments	$10,125.54	$4,648.47	$8,851.37	$2,675.29	$26,300.67
Confections	$8,053.16	$6,859.63	$14,518.98	$4,809.80	$34,241.57
Dairy Products	$21,101.12	$17,039.04	$27,621.86	$21,937.61	$87,699.63
Grains/Cereals	$1,245.30	$9,410.70	$6,535.50	$4,027.56	$21,219.06
Meat/Poultry	$8,676.66	$9,003.69	$21,176.72	$11,488.20	$50,345.27
Produce	$314.81	$11,560.70	$10,753.38	$7,109.02	$29,737.91
Seafood	$8,148.90	$5,940.70	$7,146.58	$5,744.25	$26,980.43
Grand Total	$77,308.04	$73,913.13	$124,568.22	$68,792.25	$344,581.64

Integrate with a Chart Control

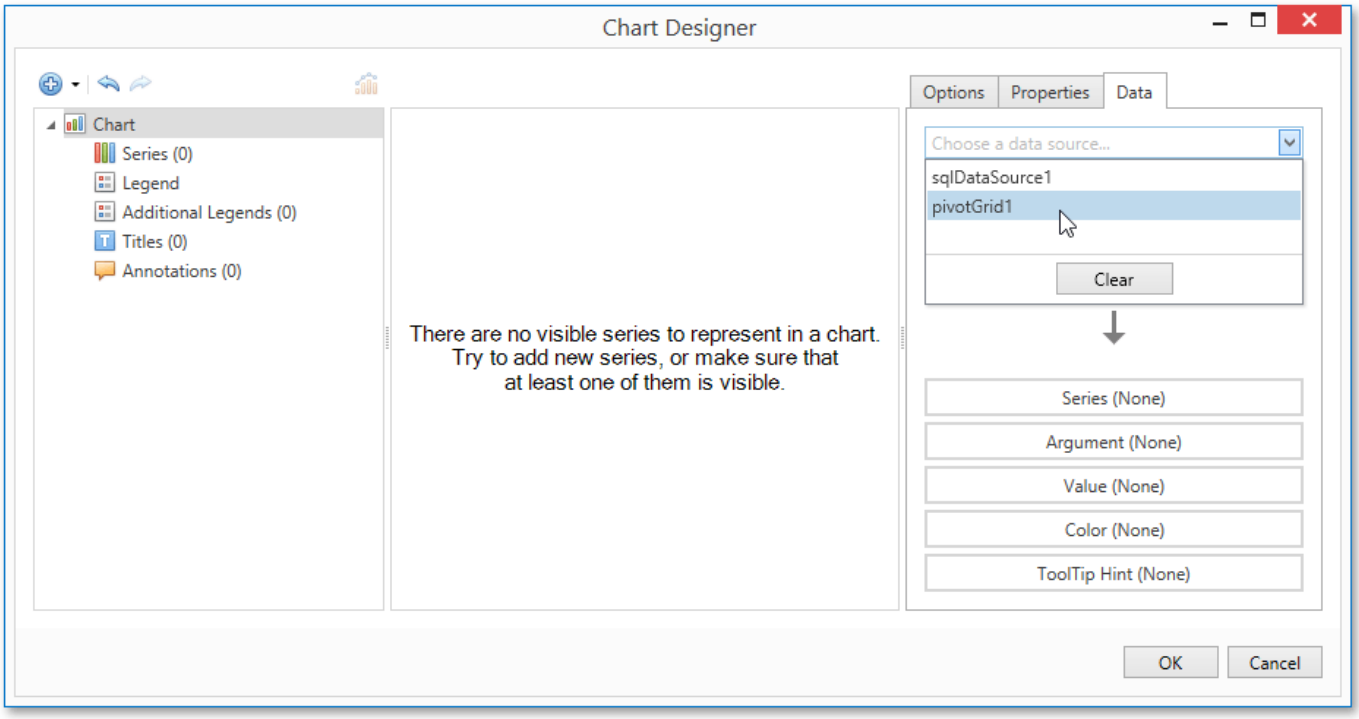
The next step is to visualize data displayed in the Pivot Grid using a Chart control. To accomplish this, perform the following steps.

1. Drop the Chart control from the Toolbox onto the report's Detail band below the Pivot Grid. After you drop the Chart, the **Chart Designer** is automatically invoked.

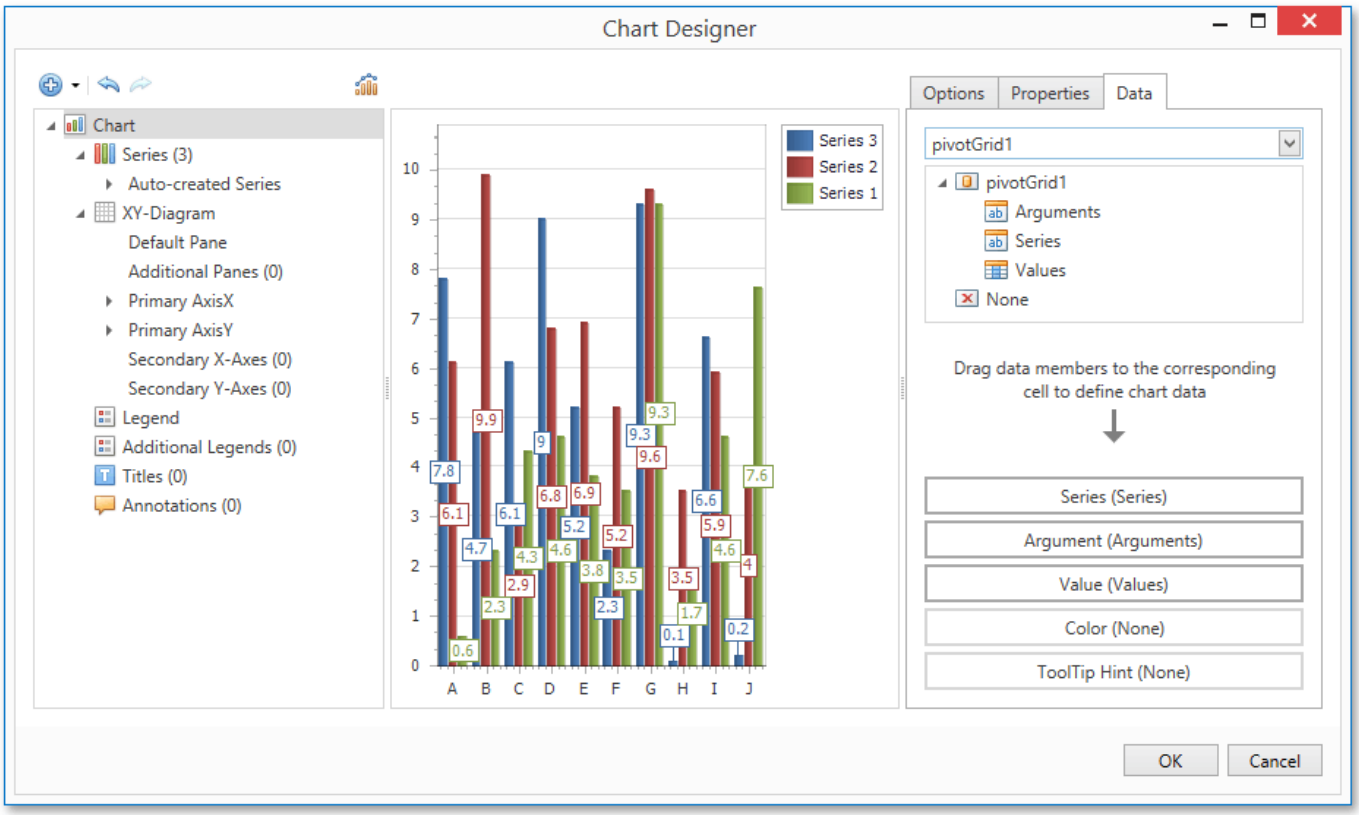
2. In the Designer, remove an already existing series by clicking the corresponding button.



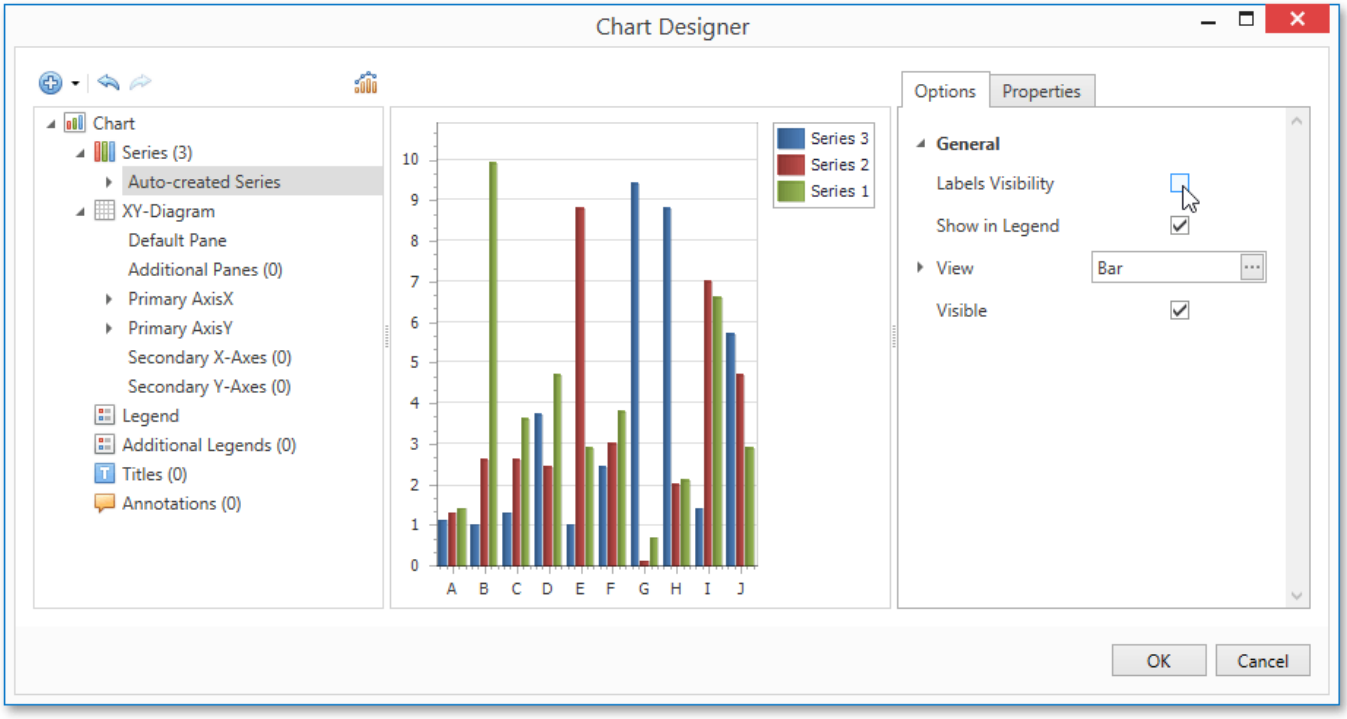
3. Then, go to the **Data** tab at the right of the Designer's window and choose the Pivot Grid in the dedicated drop-down list.



4. After this, all the Chart's binding and layout settings are automatically adjusted. Make sure that **Series**, **Argument** and **Value** cells have been automatically filled with the corresponding fields. Note, values for these fields are generated based on the Pivot Grid's columns, rows and data items, respectively.

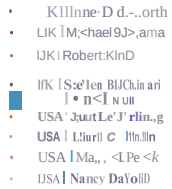


5. To avoid the overlapping of series labels, select the auto-generated series in the chart elements tree, and in the **Options** tab, disable the **Labels Visibility** check box.



6. If required, you can customize various settings that determine the common behavior for a bridged Chart and Pivot Grid pair. To do this, use the Chart's **Pivot Grid Data Source Options** property. This property, in turn, is linked to the **Options Chart Data Source** property of the associated Pivot Grid.

7. Finally, reset the report's **Vertical Content Splitting** option and switch to the Preview Tab to see the result.



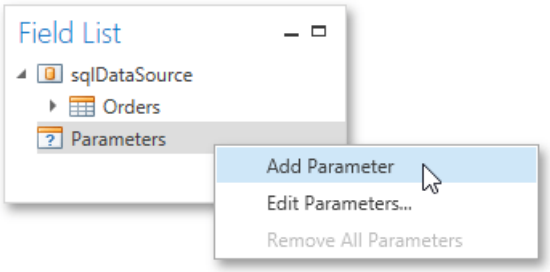
Parametrized Report

This tutorial describes the steps needed to create a report with parameters. In this example, two date-time parameters are created to filter out orders that don't fall in the specified range from the report.

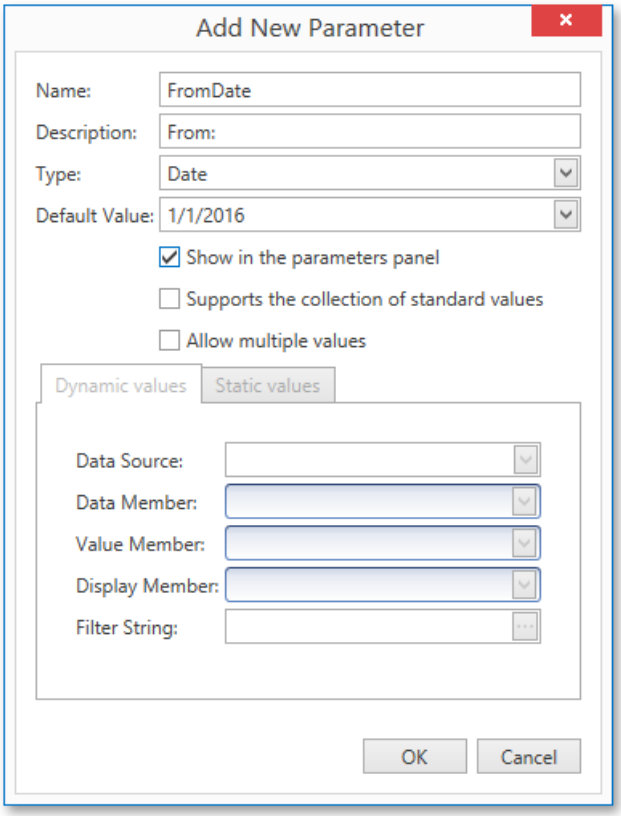
To create report parameters, follow the steps below.

1. Create a new report and bind it to a data source.

2. In the Field List panel, right-click the **Parameters** section and in the invoked menu, click **Add Parameter**.



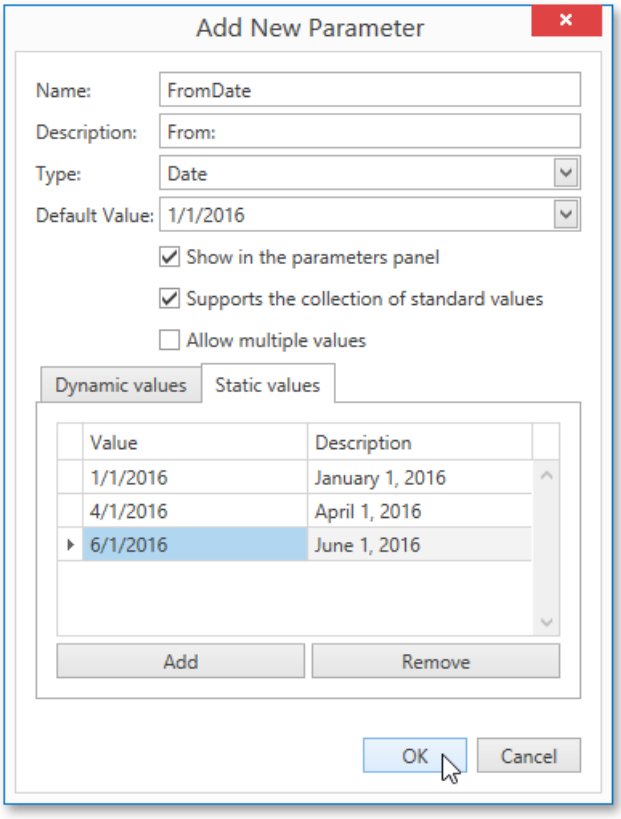
3. In the invoked **Add New Parameter** dialog, set the created parameter's **Name** and **Description** properties and make sure to set its **Type** to an appropriate value. To display this parameter in the Print Preview, enable the **Show in the parameters panel** option.



4. To assign a list of values to this report parameter, enable the **Supports the collection of standard values** option.

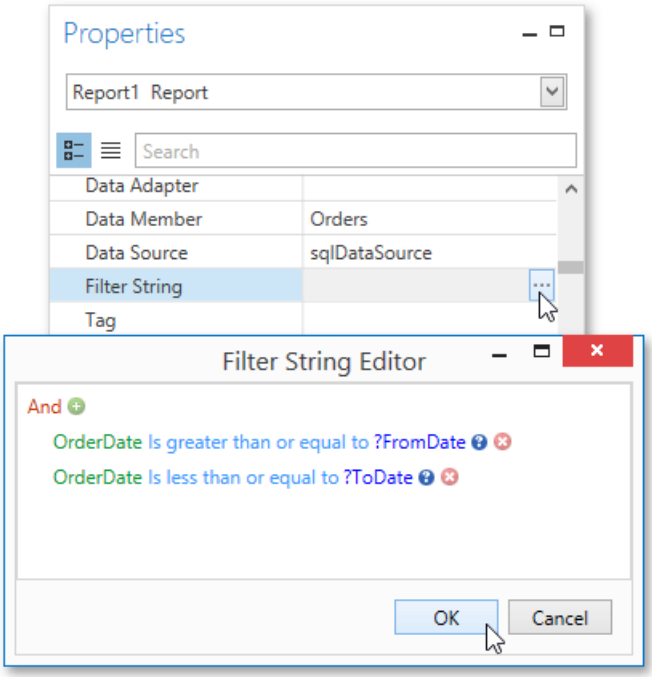
   In the **Dynamic values** tab, you can specify a parameter's data source, data member, value member and display member. The value member defines a data field that provides values to the parameter. The display member defines a data field that provides display names for parameter values, i.e., how these values appear in the user interface available in a Print Preview.

   In the **Static values** tab, you can manually fill the list of parameter values. Each parameter value has an individual description specifying how this value appears in the Parameters Panel.



5. Then, repeat the previous steps to create the second parameter, so that every time your report is previewed, you will be asked to specify two dates.

6. Next, use parameters to filter your report's data. Select report, and in the Properties Panel, click the ellipsis button for the **Filter String** property. Then, in the invoked **Filter String Editor**, construct an expression where a data field is compared with the created parameters. To access parameters, click the icon on the right until it turns into a question mark.



The Parametrized report is now ready. Switch to the Print Preview tab, define the required values in the **Parameters** panel and click **Submit**.

Paramete rs - □ X

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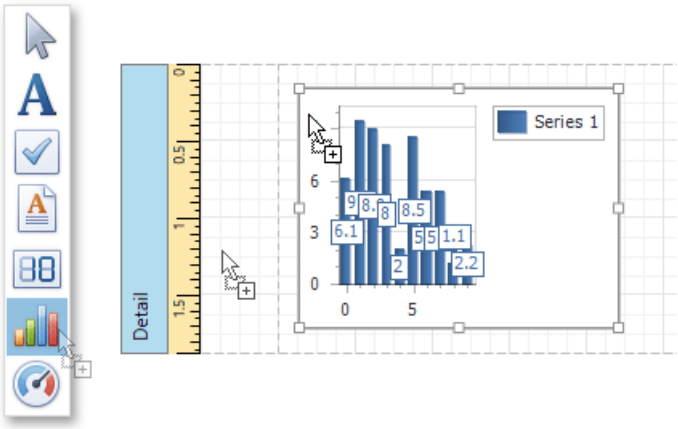
Chart with Static Series

This document describes how to create a report with a Chart control bound to data, so that a particular series has its own data source, and other settings. To simplify the example, both series obtain their data from the same data source. However, different data sources can be used for different series, if necessary.

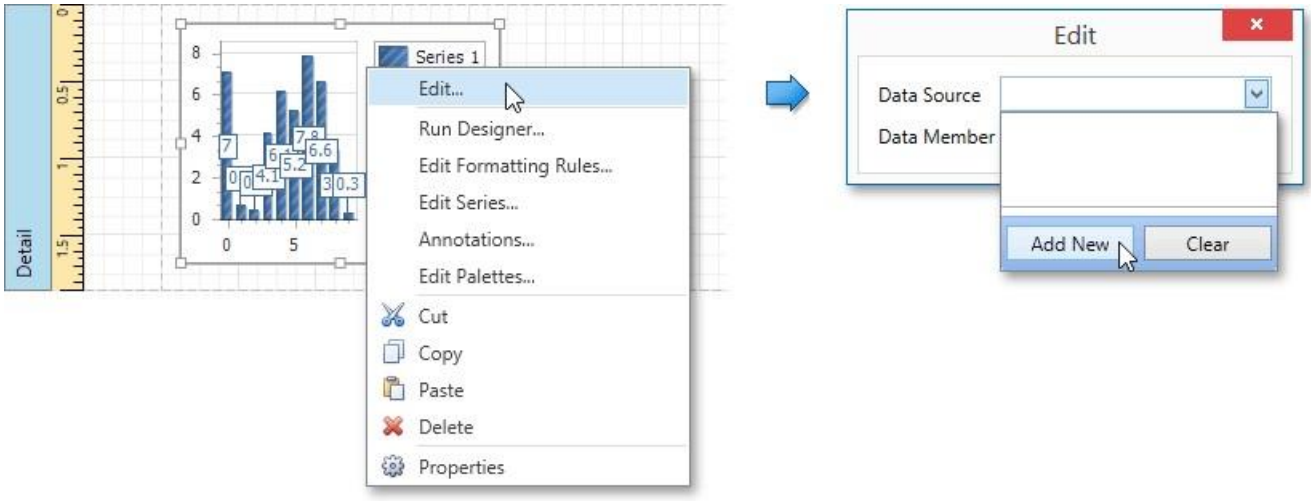
This example describes how to construct a chart of products and their prices for a chosen category. To adjust a Chart by manually creating its series, do the following.

1. Create a new blank report.
2. Drop the Chart control from the Toolbox onto the report's Detail band.



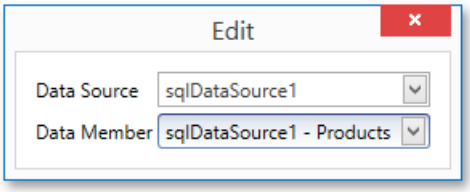
After you drop the Chart, the **Chart Designer** is automatically invoked. At this step, click **Cancel** to close the Designer, it will be used later.

3. To bind the Chart to a data source, right-click it and select **Edit...** in the context menu. Then, in the invoked dialog, expand the **Data Source** drop-down and click **Add New**.



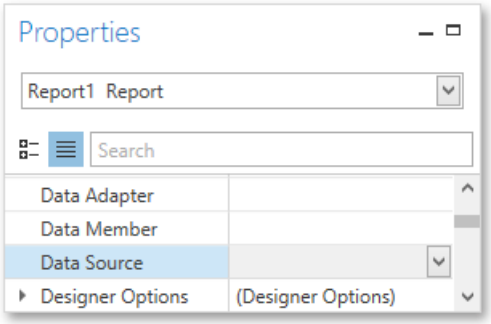
The invoked **Data Source Wizard** will guide you through the process of assigning a data source to the Chart. For detailed instructions on the Wizard's steps, refer to Binding a Report to Data, as this process is similar.

After the data source is created, it is assigned to the Chart's **Data Source** property. Its **Data Member** property defines from which table or view of your data source the Chart obtains its data.

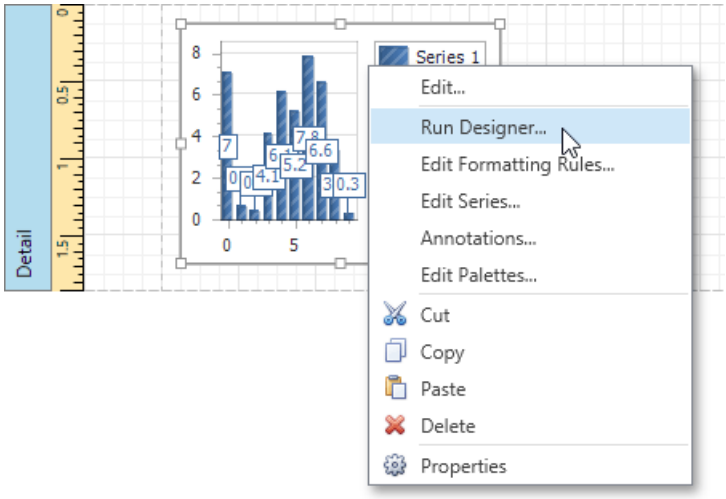


O Not e

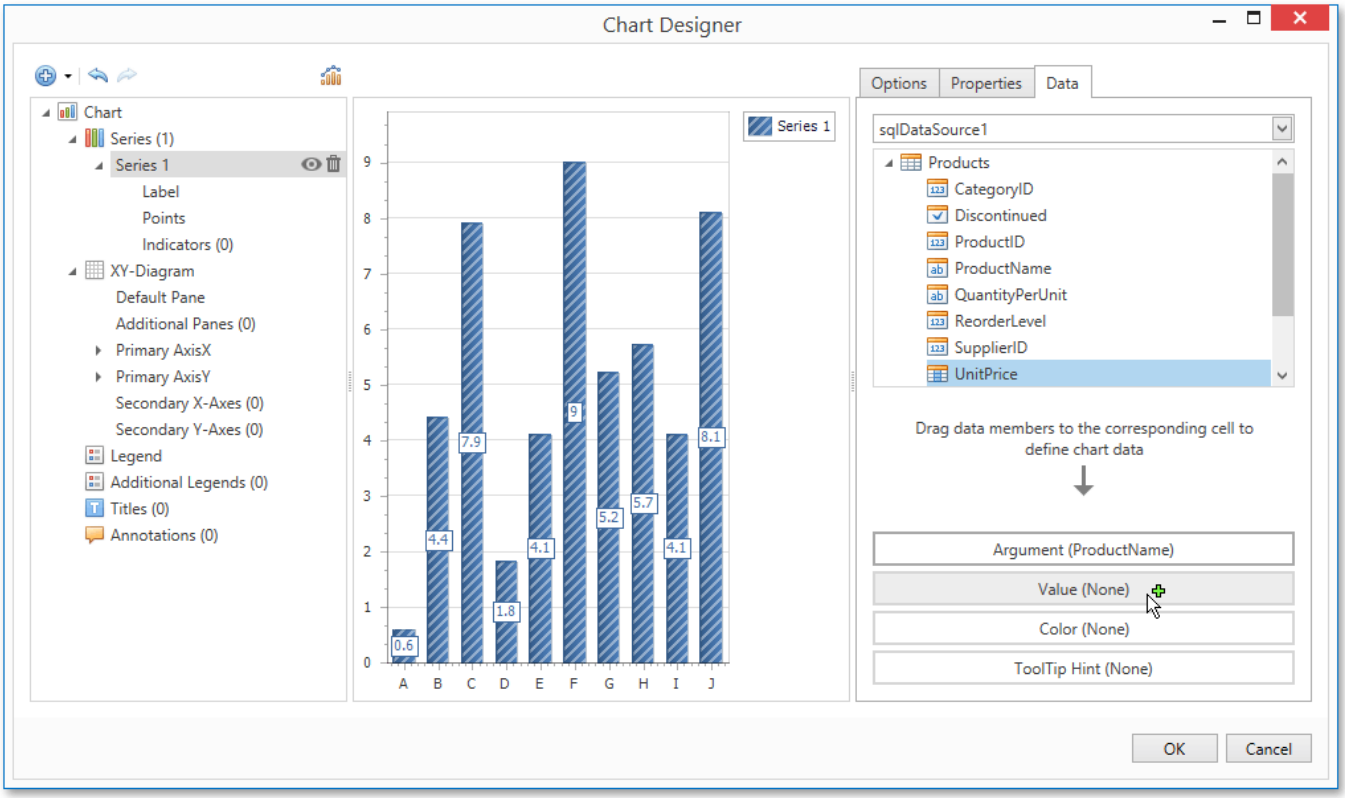
Since you have placed the Chart in the Detail band, the report's **Data Source** property should not be set. Otherwise, the Chart will be repeated at the preview as many times as there are records in the data source.



4. Once again, right-click the Chart and select **Run Designer...** in the context menu.

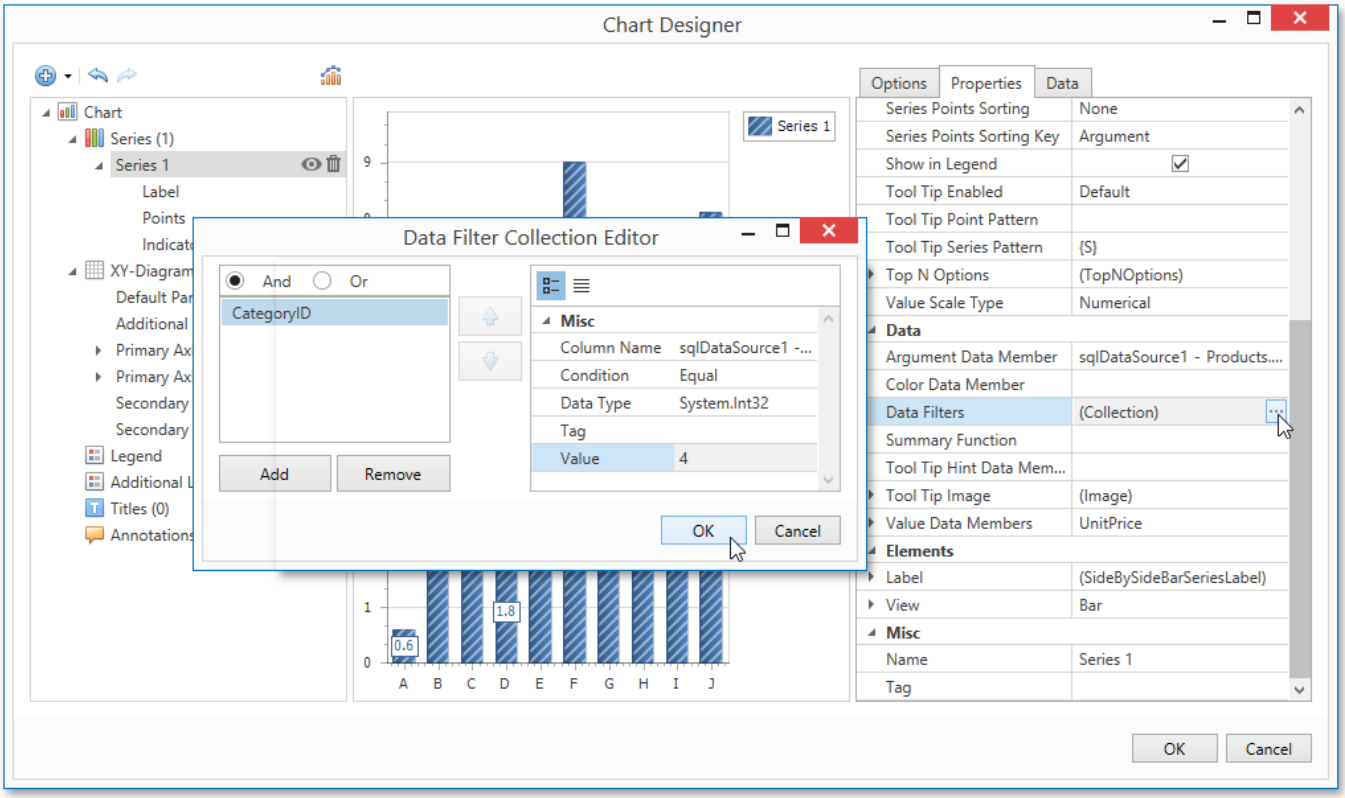


5. The invoked **Chart Designer** already contains one series of the **Bar** view type. To populate the series with points, select it in the tree and switch to the **Data** tab at the right of the designer's window. Choose an existing data source in the dedicated drop-down list. Then, drag-and-drop the required data fields to the **Argument** and **Value** cells to define the coordinates for series points.



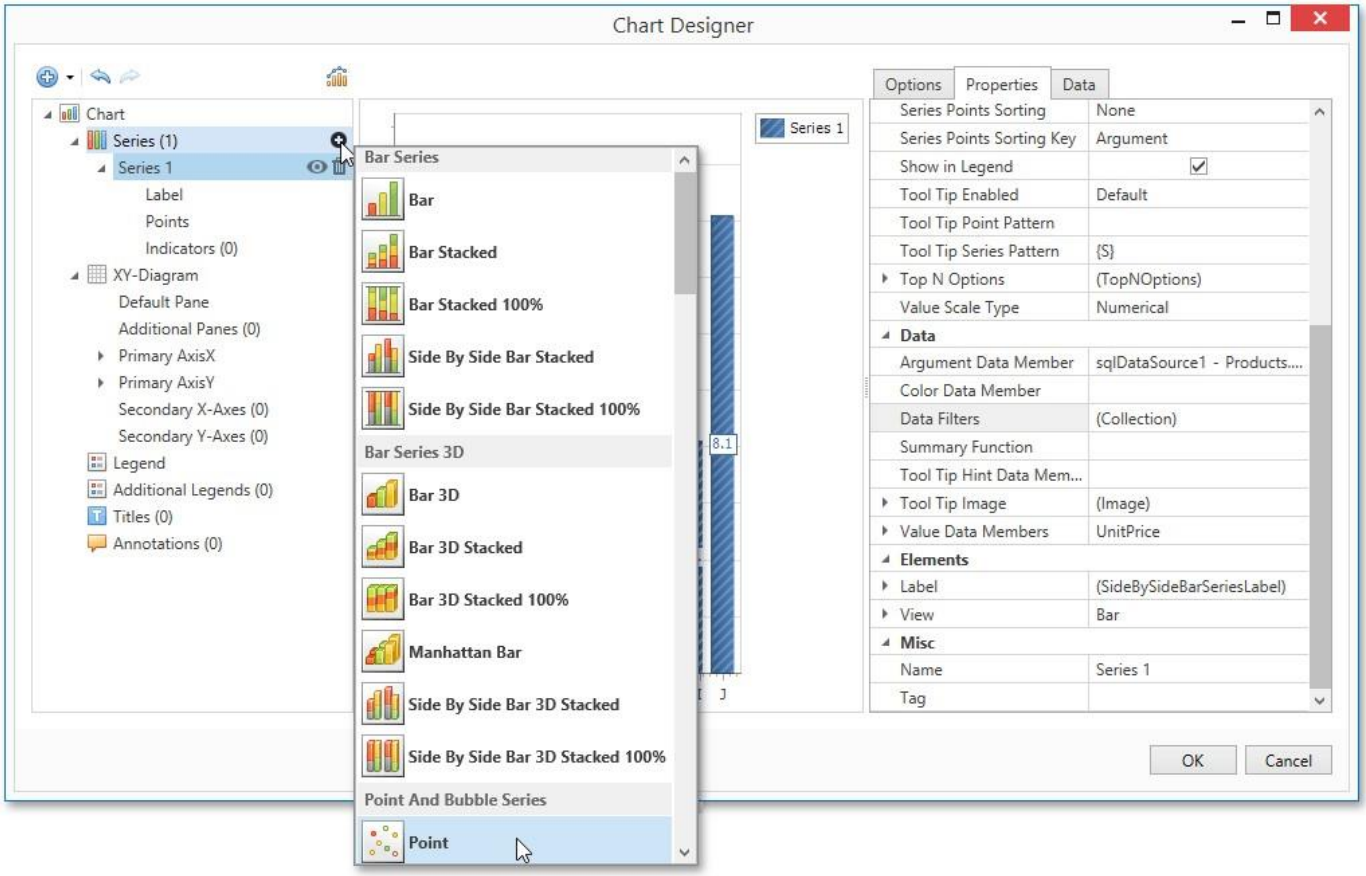
6. Go to the **Properties** tab to see that the **Argument Data Member** and **Value Data Members** settings are automatically assigned to the corresponding fields.

   In addition, you can filter the series data. To do this, click the ellipsis button for the **Data Filters** property, and in the invoked dialog, create and adjust the filtering criteria.



To save the changes and quit the dialog, click **Close.**

7. Create one more series with the same settings, but select the **Point** view type. To do this, locate the **Series** element in the chart elements tree and click the plus button. In the invoked list of series types, select the required type.

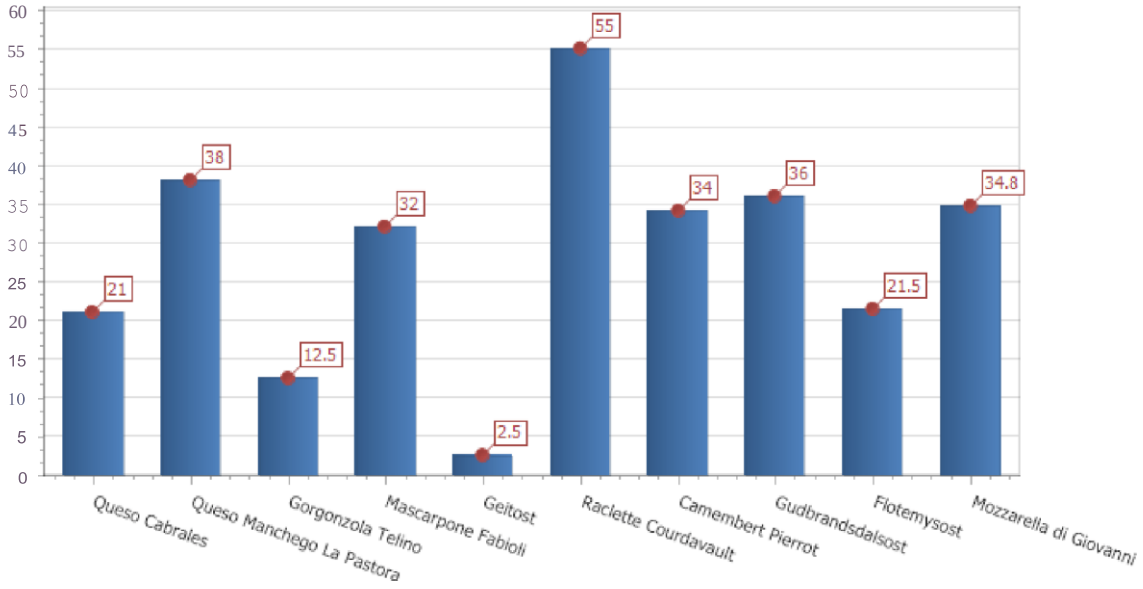


8. Finally, to improve your Chart's appearance, you can make the following adjustments.

   - Remove the Chart's legend as it shows the same data for both series. To do this, select the Legend in the chart elements tree, and in the **Options** tab, set the **Visibility** property to **No**.
   - The point labels for **Series 1** are unnecessary, so select the **Label** node under this series and disable the **Labels Visibility** check box.
   - Rotate the X-axis labels for better readability. To do this, select the **Axis X** item, and in the **Properties** tab, adjust settings for labels using the **Label** property. For instance, set the **Angle** property to **20** and the **Antialiasing** property to **Yes**.

     If required, it is possible to customize many other properties for the Chart, which are not described here.

The chart is now ready. Switch to the Print Preview and view the result.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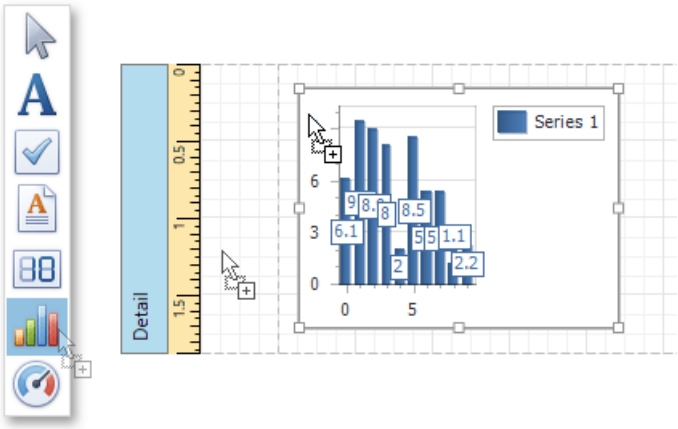
Queso Cabrales
Queso Manchego La Pastora
Gorgonzola Telino
Mascarpone Fabioli
Geitost
Raclette Courdavault
Camembert Pierrot
Gudbrandsdalsost
Flotemysost
Mozzarella di Giovanni

Chart with Dynamic Series

This document describes how to create a report with a Chart control bound to data, so that all series are auto-created based on a common template, which specifies universal options for all series. This is possible when data for all series (their names, along with point arguments and values) is stored in the same data table.

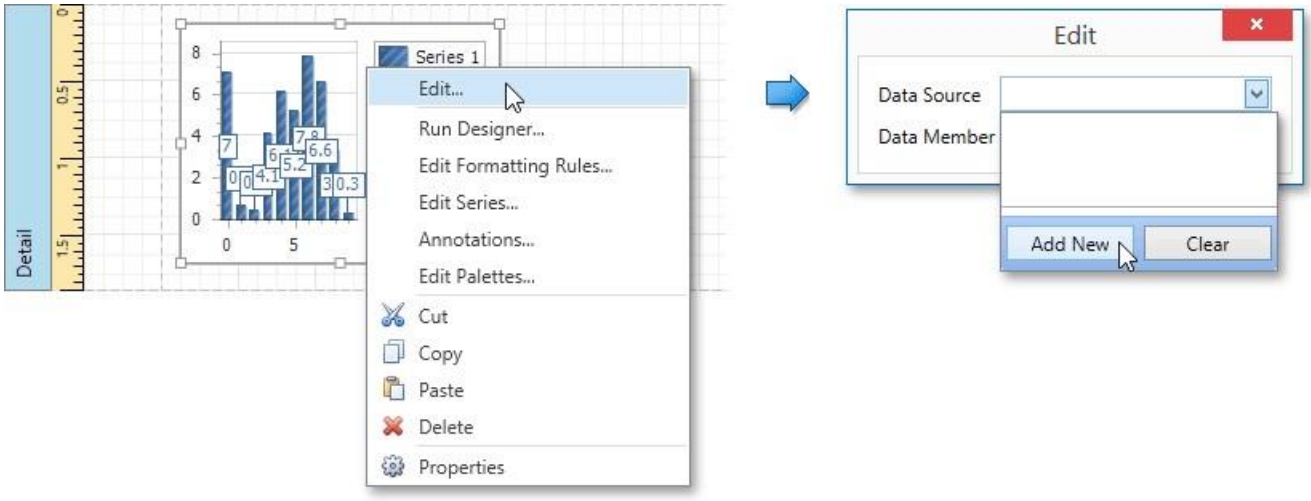
Note that in this scenario, the view type and certain other settings will be the same for all series. To adjust a Chart with automatically created series, do the following.

1. Create a new empty report.
2. Drop the Chart control from the Toolbox onto the report's Detail band.



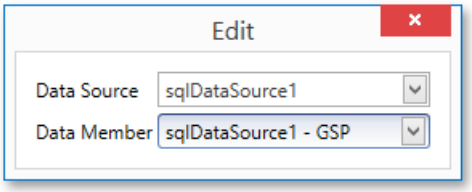
After you drop the Chart, the **Chart Designer** is automatically invoked. At this step, click **Cancel** to close the Designer, it will be used later.

3. To bind the Chart to a data source, right-click it and select **Edit...** in the context menu. Then, in the invoked dialog, expand the **Data Source** drop-down and click **Add New**.



The invoked **Data Source Wizard** will guide you through the process of assigning a data source to the Chart. For detailed instructions on the Wizard's steps, refer to Binding a Report to Data, as this process is similar.

After the data source is created, it is assigned to the Chart's **Data Source** property. Its **Data Member** property defines from which table or view of your data source the Chart obtains its data.



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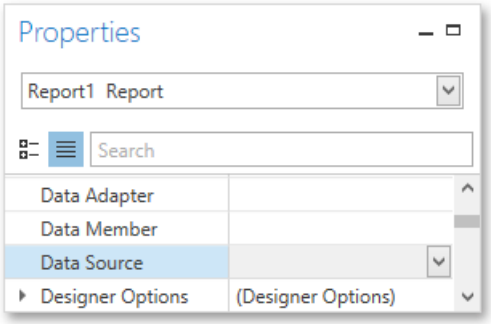
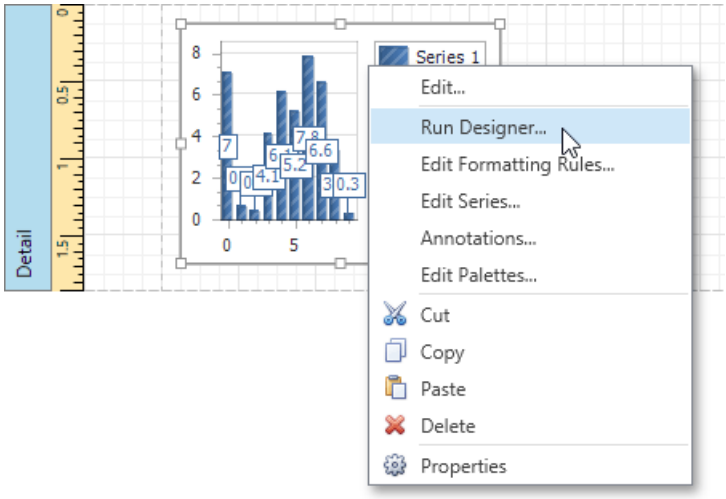
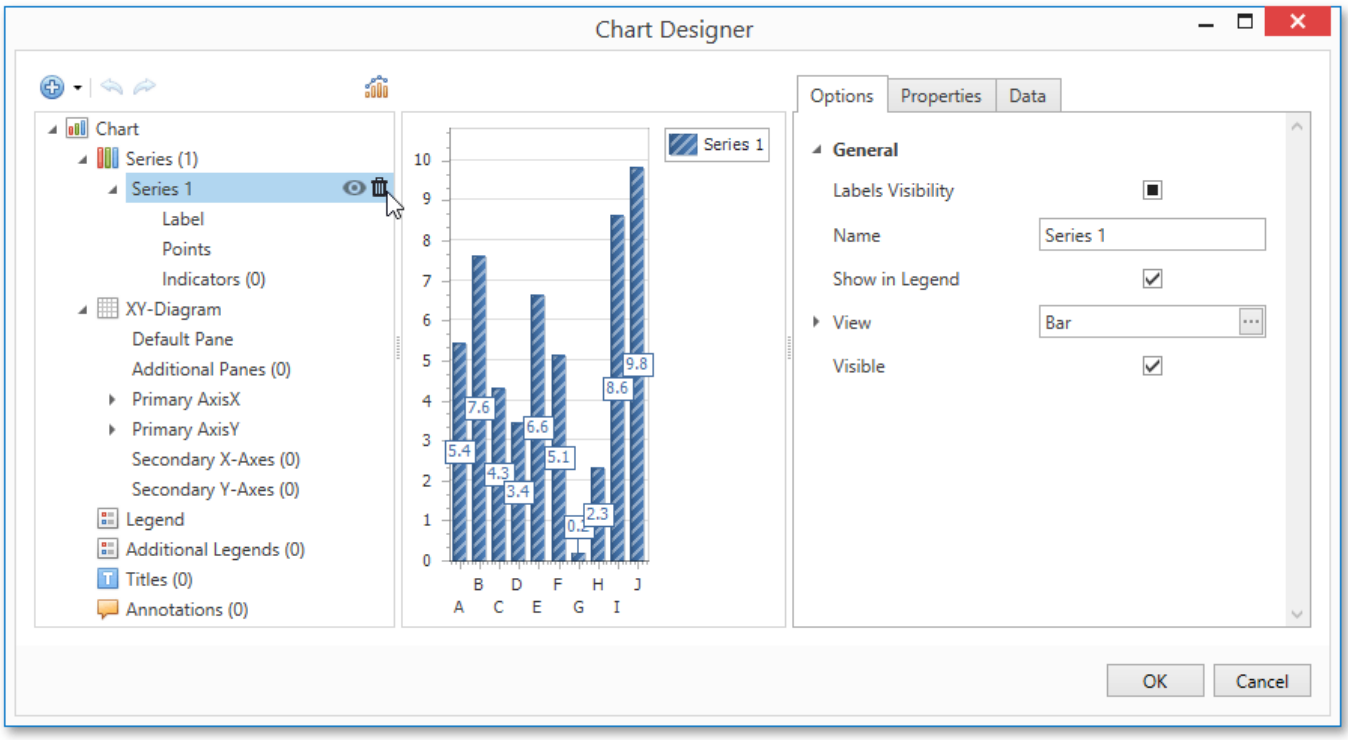
Since you have placed a Chart in the Detail band, the report's **Data Source** property should not be set. Otherwise, the Chart will be repeated at the preview as many times as there are records in the data source.



4. Once again, right-click the Chart and select **Run Designer...** in the context menu.

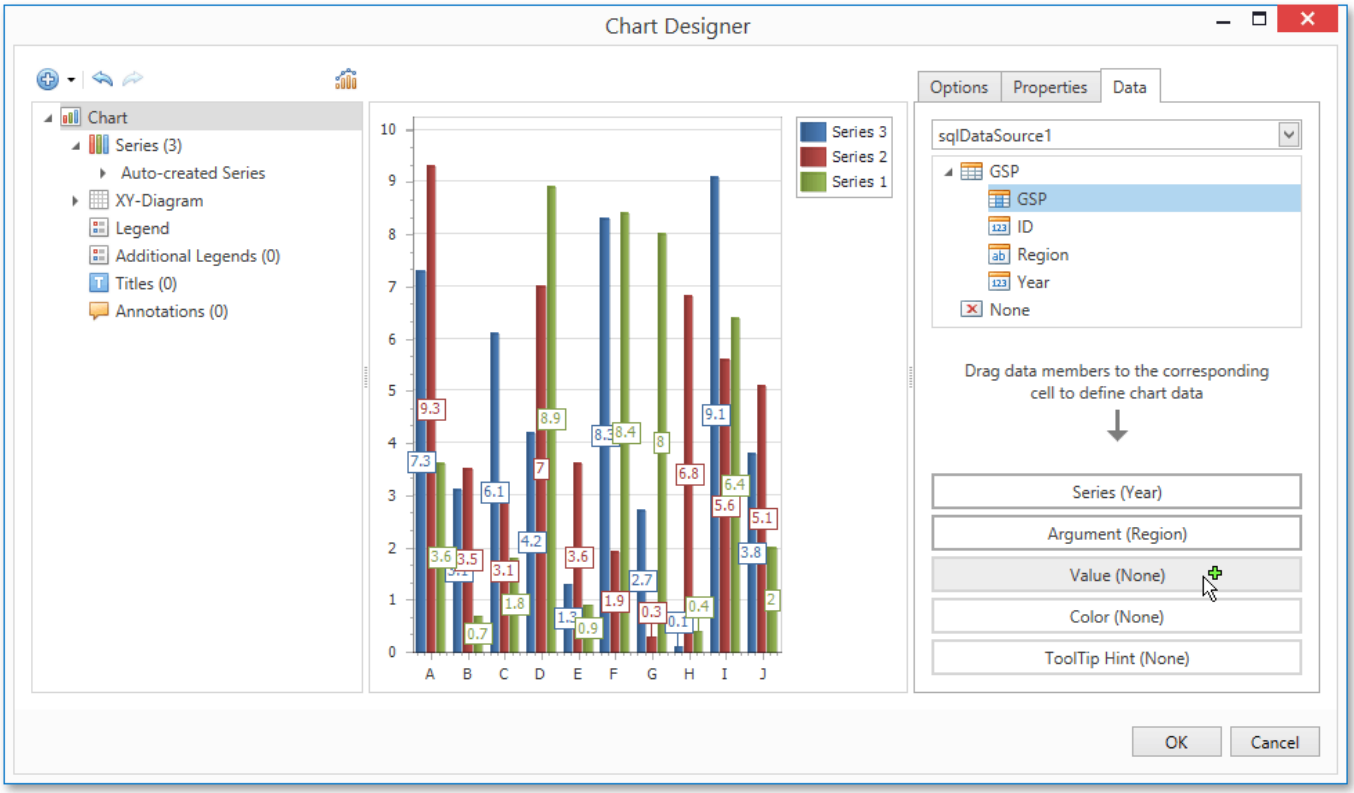


5. When the chart is added to the report, a new static series is created automatically. In the invoked **Chart Designer**, remove this series by clicking the corresponding button.



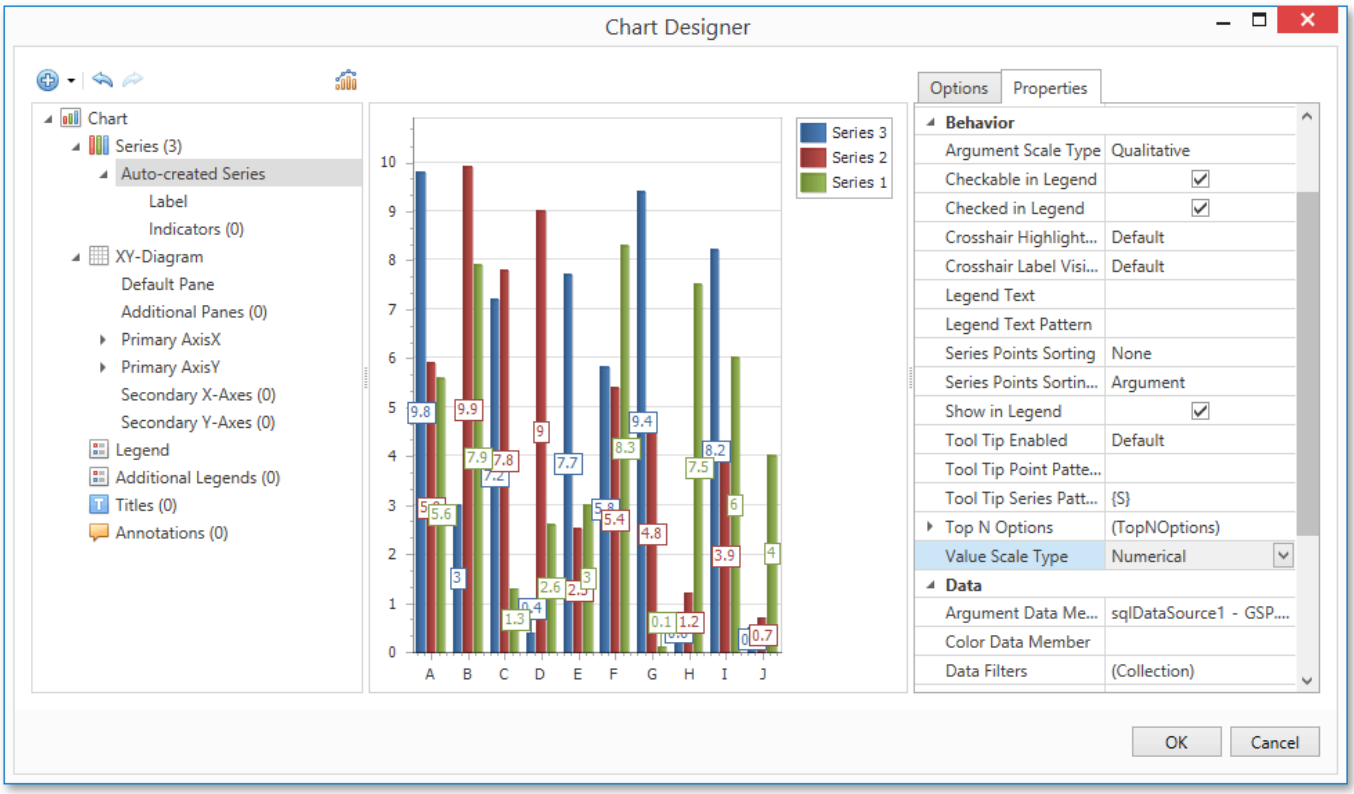
6. Then, go to the **Data** tab at the right of the Designer's window. Choose an existing data source in the dedicated drop-down list and drag-and-drop the required data fields to the corresponding cells.

   The **Series** cell specifies the data field, which should provide data for the series names, so that a new series is created for each record in that data field. Use the **Argument** and **Value** cells to define from where data for point arguments and values is obtained.



7. Switch to the **Properties** tab and expand the **Series Template** option. As you can see, the **Argument Data Member** and **Value Data Members** properties have been automatically assigned to the corresponding data fields. Make sure that the **Argument Scale Type** and **Value Scale Type**

properties are set to appropriate values.



8. At this point, the chart's data options are completely defined, so in this step, certain additional customization capabilities are described.

   - **Adjust the Series Name Template**

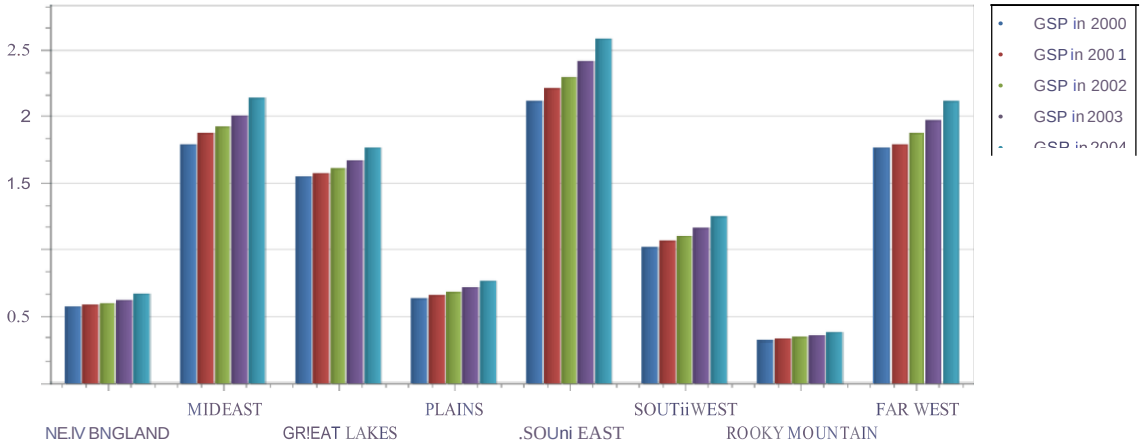
     By default, the name for every auto-created series is obtained directly from an appropriate data field in the bound data source. However, you can add some text to the beginning or to the end of every series name using the Chart's **Series Name Template** property. For instance, set the **Begin Text** property to "GSP in ".

   - **Customize Series Labels**

     To avoid the overlapping of series labels, expand the Chart's **Series Template** property and set the **Labels Visibility** property to **No**.

     If required, it is possible to customize many other properties for the Chart, which are not described here.

The chart is now ready. Switch to the Print Preview tab and view the result.


2.5
2
1.5
0.5
GSP in 2000
GSP in 200 1
GSP in 2002
GSP in 2003
MIDEAST
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SOUTiiWEST
FAR WEST
NE.IV BNGLAND
GR!EAT LAKES
.SOUni EAST
ROOKY MOUNTAIN

Creating Reports

With the **Report Designer**, you can edit existing reports, as well as create your own reports from scratch. The following sections contain tutorials providing step-by-step instructions on both basic and advanced report customization.

- Basic Operations

  The topics in this section cover the basics of working with reports in the Report Designer.
- Providing Data

  The documents in this section describe how to connect reports to various kinds of data sources and provide data to report elements.
- Shaping Data

  The topics in this section detail various data shaping tasks that you can perform with your reports.
- Appearance Customization

  The topics in this section describe how to customize the appearance of a report or any of its elements using specific appearance options, visual styles and conditional formatting.
- Report Navigation and Interactivity

  The tutorials in this section cover the navigation-related features of the Report Designer.
- Adding Details about a Report

  The documents in this section describe how to add technical information about a report to a generated document.
- Scripting

  This topic provides basic information about scripting and contains an example of using scripts to customize a report.

Basic Operations

The topics in this section cover the basics of working with reports in the

Report Designer. This section consists of the following topics.

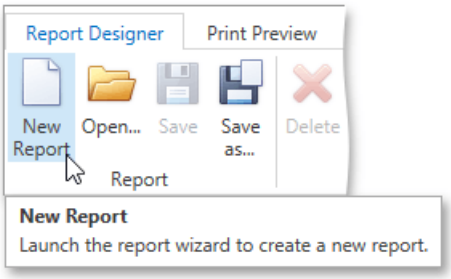
- Create a New Report
- Change Measurement Units of a
- Report Create and Delete Report
- Elements Adjust the Layout of
- Report Elements Control
- Positioning
- Adjust Page Layout
- Settings Back Up the
- Report Layout

Create a New Report

This topic explains how to create a new report in the Report Designer.

To create a new report, do one of the following depending on the Report Designer's View.

- In the Classic View, click the **New** button in the Toolbar.



- In the Browser View, click the plus button located inside the tab panel next to report headers.

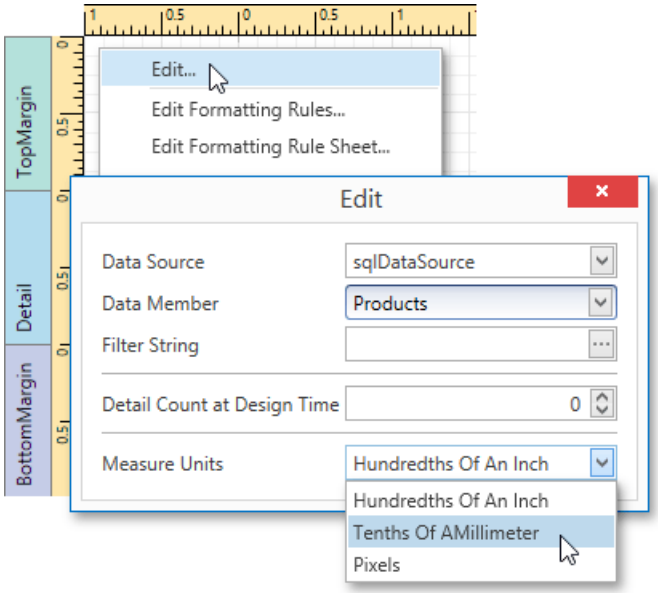
As a result, the Report Wizard is automatically invoked allowing you to create the required report based on built-in templates.

Change Measurement Units of a Report

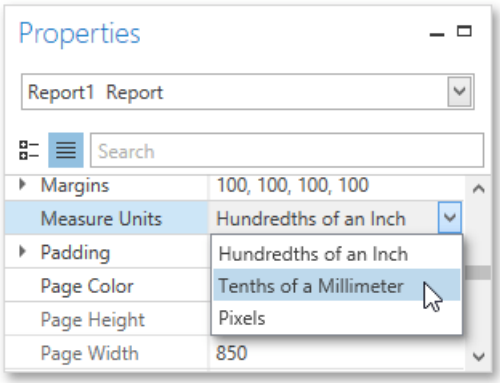
For your report, you can choose its global **Measure Units**, which can be **Hundredths of an Inch**, **Tenths of a Millimeter** or
Pixels.

To specify the **Measure Unit** property, do one of the following.

- Right-click the report and select **Edit...** in the context menu. In the invoked dialog, set this property to the required value.



- Select the report and switch to the Properties Panel. Expand the **Measure Units** drop-down and select the required value.



This defines the basic measurement unit for all the unit-related options of a report and its bands and controls (such as location, size, border width, etc.) as well as the measurement unit of the report's Snap Grid.

Create and Delete Report Elements

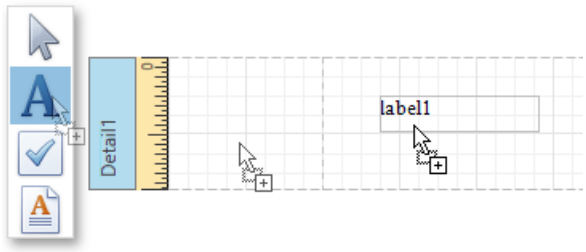
This document describes how to add and delete report controls and bands in the

Report Designer. The topic consists of the following sections.

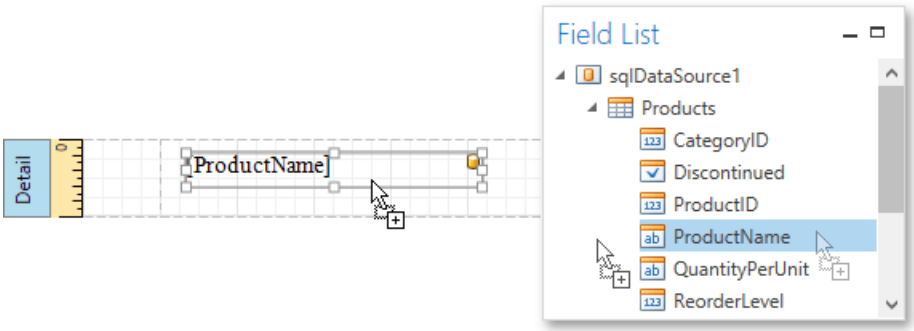
- Creating Report
- Controls Creating
- Report Bands Deleting
- Controls and Bands

Creating Report Controls

All available controls are listed in the Control Toolbox. To add a control to the currently opened report, you can drag and drop it onto an appropriate report band.

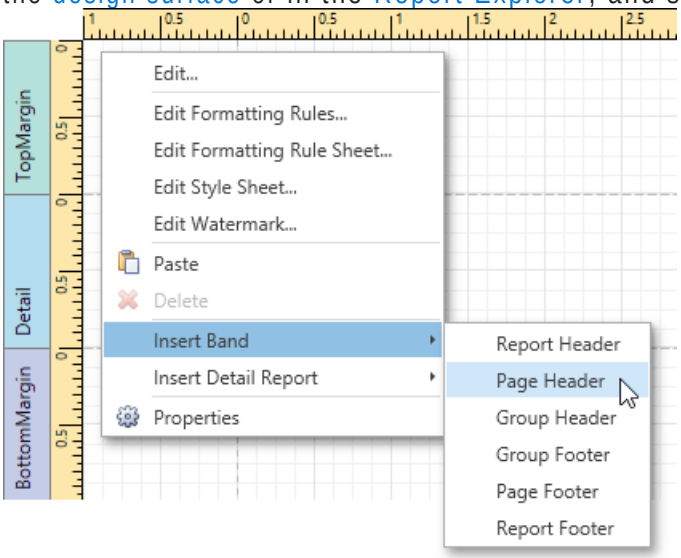


Report controls of appropriate types are created automatically, after you drag items from the Field List and drop them onto the report surface.



Creating Report Bands

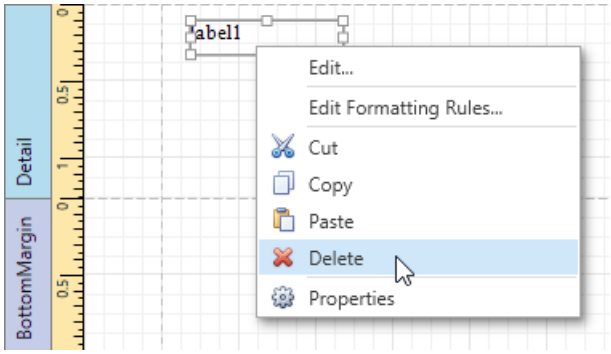
To add a new band of a particular type, use the context menu of the report or bands. Right-click a report on the design surface or in the Report Explorer, and select a band to be inserted in the report.



Deleting Controls and Bands

To delete a report control or band, select it on the design surface or Report Explorer, and then do one of the following.

- Press the DELETE key.
- Right-click the report element, and in the invoked context menu, select **Delete**.



- Click the **Delete** button on the Toolbar.

Note that certain elements cannot be deleted (such as the Detail band).

Adjust the Layout of Report Elements

This document describes how to customize the report elements layout and consists of the following sections.

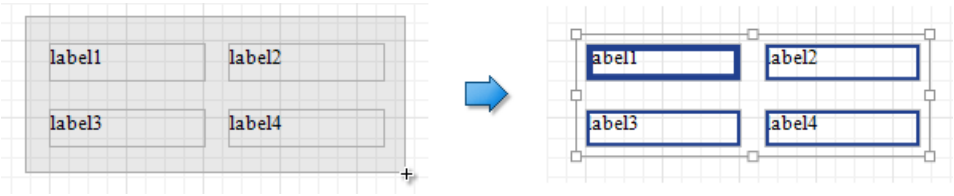
- Selecting Report
- Elements Moving Report
- Elements Resizing
- Report Elements

Selecting Report Elements

To select a report control or band, click it. To select the next element in the tab order, press TAB. To select the previous element in the tab order, click SHIFT + TAB.

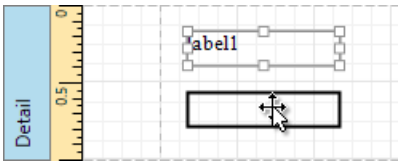
To select multiple elements, do one of the following.

- Click report elements while holding down the CTRL or SHIFT key.
- Click on a blank space and drag the mouse to create a selection frame. When the mouse button is released, all controls within the selection frame's boundaries will be selected. In this case, the previous selection is cleared.



Moving Report Elements

To move a report control, select it and drag to the new location. To move it using the keyboard, press the arrow keys.

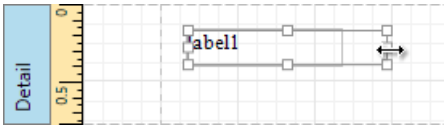


You can also move multiple selected report controls in the same way as individual controls.

The report controls can be precisely aligned to each other using the **Snap Gird** and/or **Snap Lines**. For details on this, refer to Control Positioning .

Resizing Report Elements

To resize a control using the mouse, select it and then drag a rectangle drawn on its edge or corner.

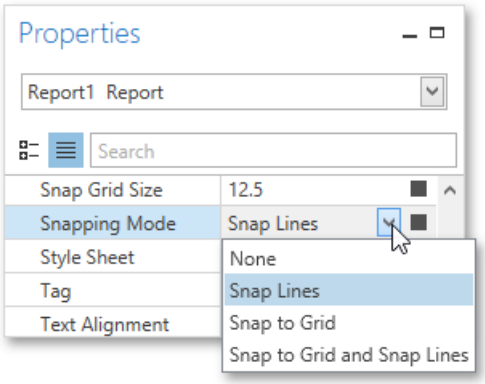


You can also select multiple controls and resize them in the same way as individual controls. To resize a report band, drag its bottom border.

Control Positioning

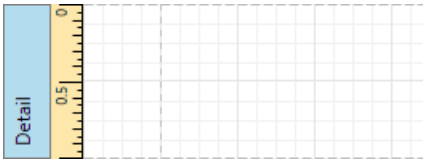
This document describes how to easily construct professionally looking reports by precisely aligning their elements to each other. These are useful when creating new reports from scratch or when fixing cluttered report layouts with dozens of randomly scattered controls.

To select an appropriate alignment mode for report elements, use a report's **Snapping Mode**.



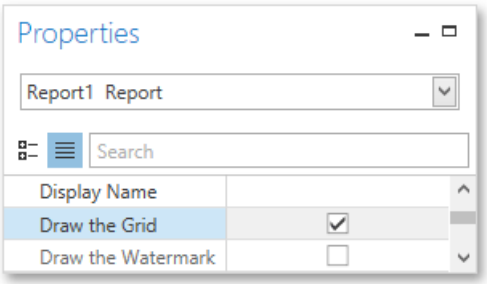
Snap Grid

When a report is being edited in the Report Designer, it is lined up by the snap grid. This helps to establish the distance between report elements and align them to each other.



In the **Snap to Grid** mode, a report control that is being relocated using the mouse or the ARROW keys is automatically aligned with the nearest grid cell. When resizing the report control, its size is discretely changed by one grid cell. You can temporarily ignore snapping to the grid when moving and resizing controls. For this, hold down the CTRL key when using the mouse and the ALT key when using the keyboard.

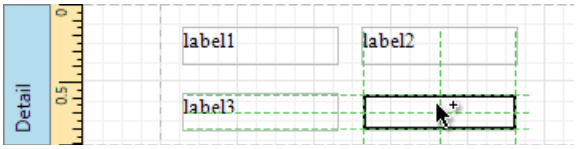
You can select whether the snap grid should be drawn over a report surface by setting the **Draw the Grid** option in the Properties Panel.



You also can adjust the **Snap Grid Size**, which is measured in the measurement units set for your report.

Snap Lines

If the **Snap Lines** mode is selected, report elements are aligned using snap lines. These are special guide lines, which appear around the report control that is being moved or resized and indicate this control's bounds and the distance to other report elements (controls and bands).



To disable snapping using snap lines for controls being relocated or resized, additionally hold down the ALT key.

Snap Lines and Snap Grid

The **Snap to Grid and Snap Lines** mode enables snapping to both the snap grid and snap lines.

No Snapping

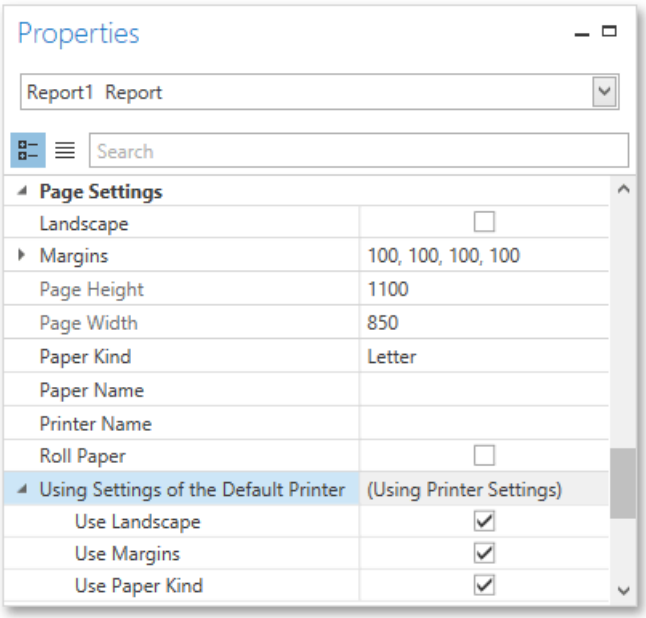
To disable snapping in your report, set the **Snapping Mode** property to **None**. In this case, report controls are moved and resized by one measurement unit defined by the **Report Unit** property.

Adjust Page Layout Settings

In the Report Designer, page settings of a report can be specified in one of two ways. The first approach forces the default printer settings to be used when the report is printed, while the other one enables you to alter page settings independently.

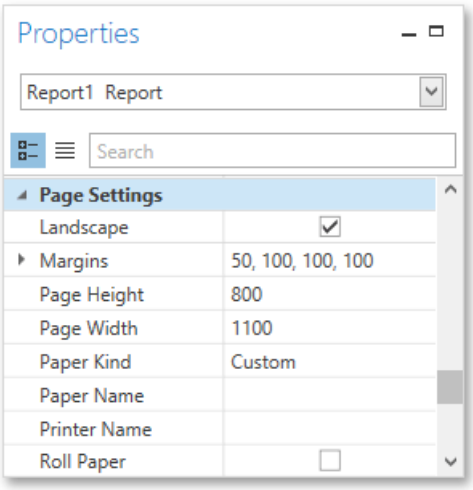
Using Settings of the Default Printer

For the orientation, margins and paper size, you can specify a requirement that applies the corresponding printer settings instead of the report's. This may be useful when the report is printed in several places with different printers and printer settings. To do this, go to the Properties Panel, expand the **Using Settings of the Default Printer** property and enable required options.



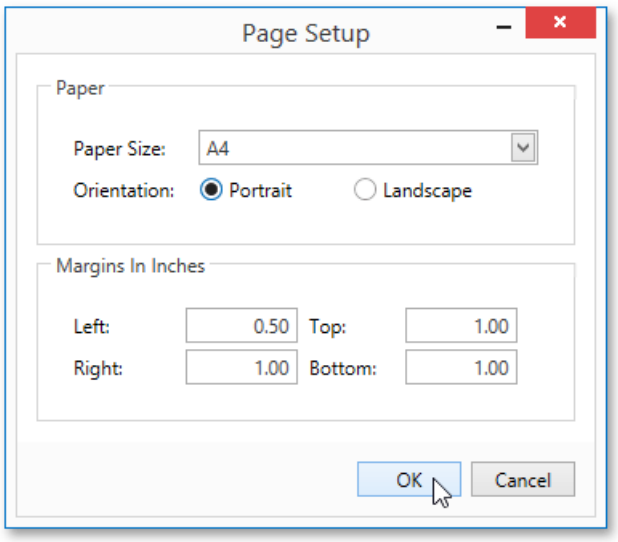
Specify the Report's Page Settings

While designing the report, you can specify the page settings using the Properties Panel.



You can select one the predefined paper sizes or specify a custom paper size. To create your own paper size, set the **Paper Kind** property to **Custom**, and then specify the **Page Width** and **Page Height** properties. You can also use the **Paper Name** property to select a custom paper that is used in the printer that the document is going to be printed on.

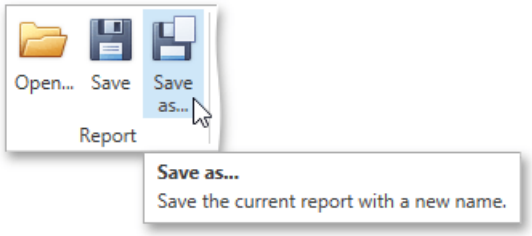
To modify page margins, specify the **Margins** property. The margin values are expressed in the report's measurement units. In addition, you can set the page orientation using the **Landscape** property and specify whether the document is supposed to be printed on roll paper.
You can also modify the paper size, orientation and margins in the **Page Setup** dialog, which can be invoked by clicking the **Page Setup** button on the Toolbar.



Back Up the Report Layout

To guarantee that you will be able to revert your report to its original state, you can to create a *backup copy*. Then, you can apply changes without worrying that it will be hard to restore your report, in case something breaks.

- To save a copy of your report, click the **Save As** button in the Toolbar.



  Then, in the invoked standard **Save** dialog, specify the folder and file name.

- To save the current layout of your report, click the **Save** button in the Toolbar, or press CTRL+S. When you click this button for the report for the first time, it invokes the **Save** dialog, which allows you to specify where the report should be saved. The subsequent clicking of this button for the same report will silently save the report to the previously specified file.

- To load a previously saved report, click the **Open** button in the Toolbar or press CTRL+O. This invokes the standard **Open** dialog, which allows you to locate and open report files.

Providing Data

The topics in this section describe the basic concepts of providing data for reports and their elements in the Report Designer.

- Binding a Report to Data
- Binding Report Controls to Data Using Mail Merge
- Report Parameters
- Query Parameters
- Calculated Fields

Binding a Report to Data

The Report Designer is primarily designed to work with *data-aware reports*, meaning that a report obtains its general dynamic data from an external data source.

The documents in this section describe how to connect reports to various kinds of data sources.

- Bind a Report to a Database
- Bind a Report to an Entity Framework Data Source Bind a Report to an Object Data Source
- Bind a Report to an Excel Data Source

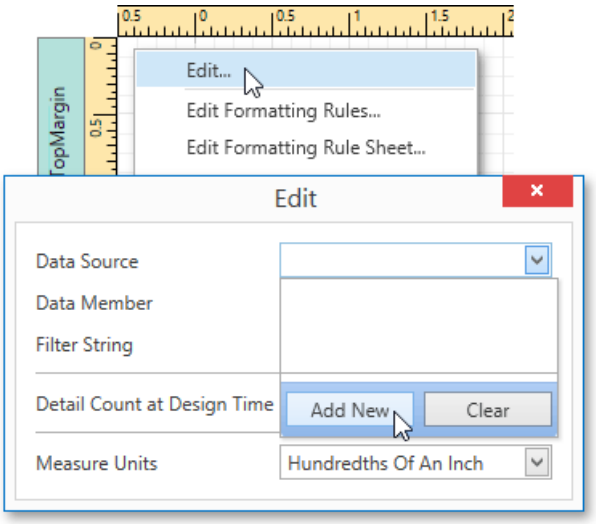
Bind a Report to a Database

This document describes the steps required to connect a report

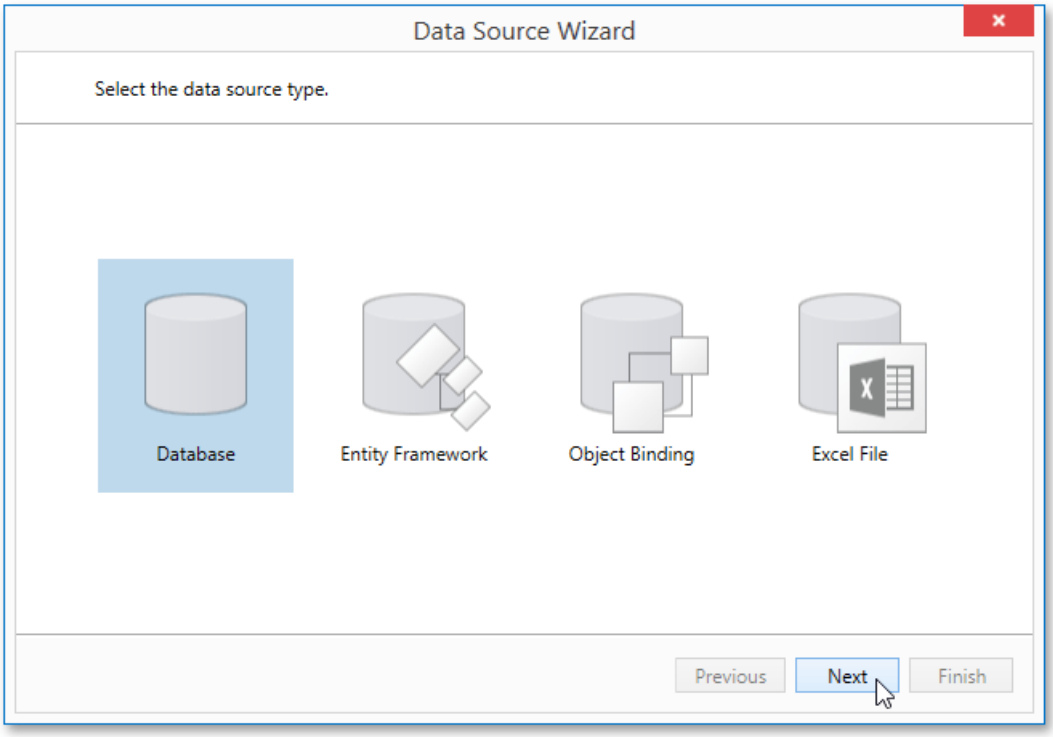
to a database. To bind a report to a database, do the following.

1. Create a new report.

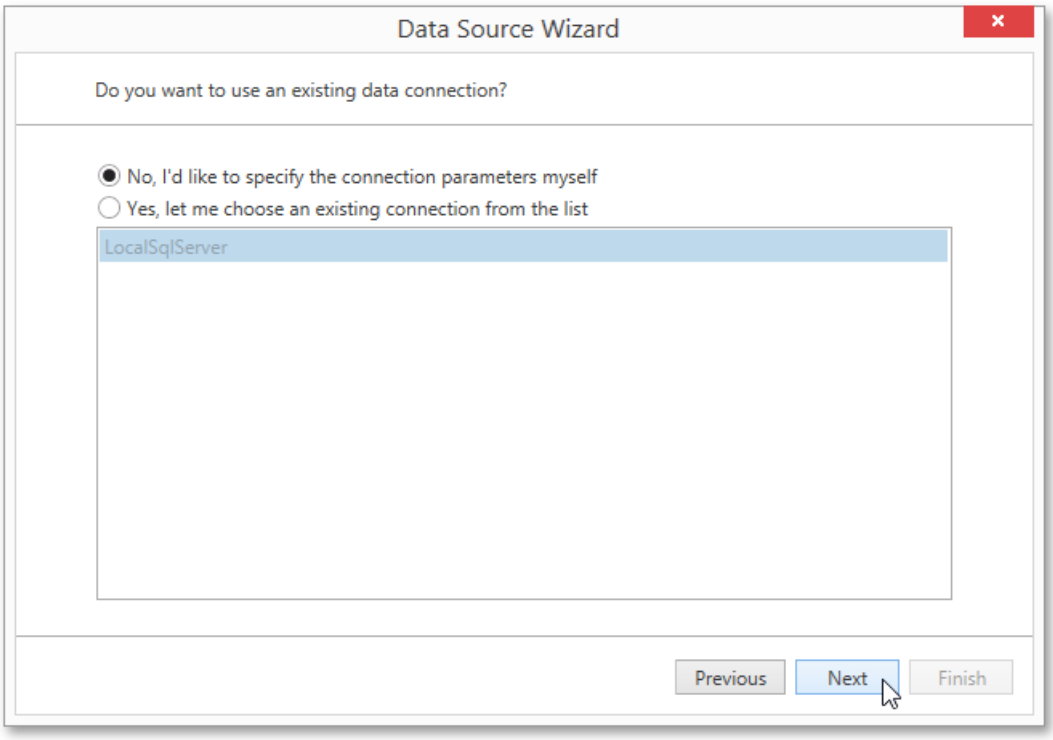
2. Right-click the report and select **Edit...** in the context menu. In the invoked dialog, expand the **Data Source** drop-down and click the **Add New** button.



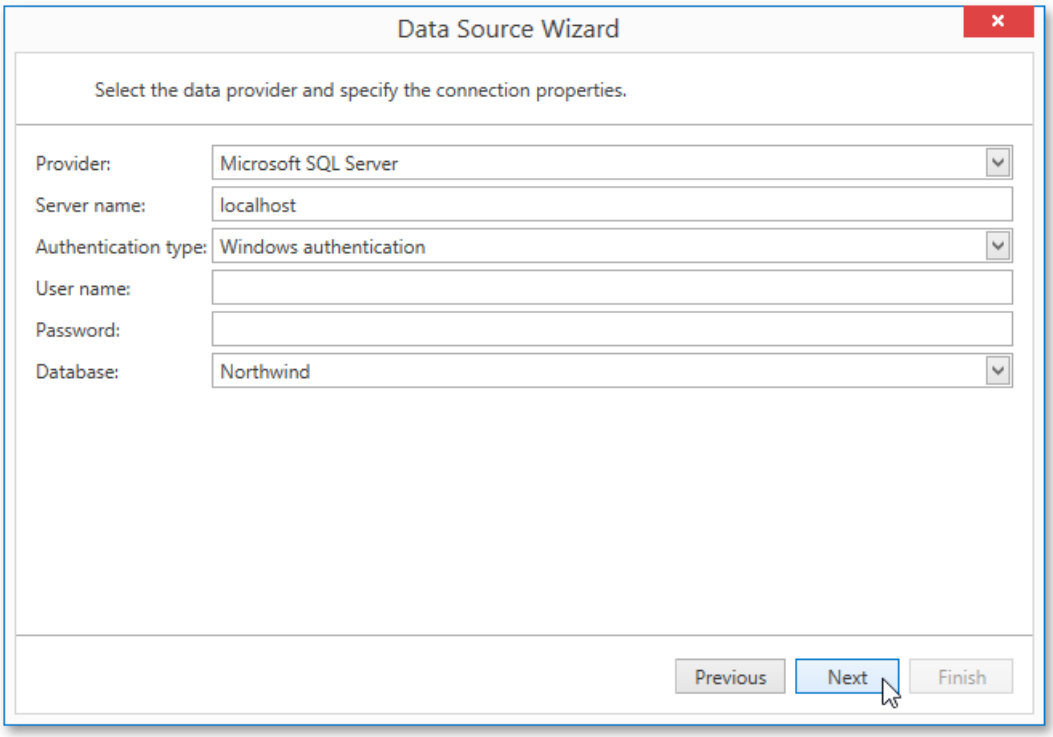
3. The first page of the invoked **Data Source Wizard** allows you to specify the data source type. Select **Database** and click
Next to proceed.



4. On the next page, specify the data connection to be used. If it is absent in the list containing existing connections, select **No, I'd like to specify the connection parameters myself** and click **Next**.



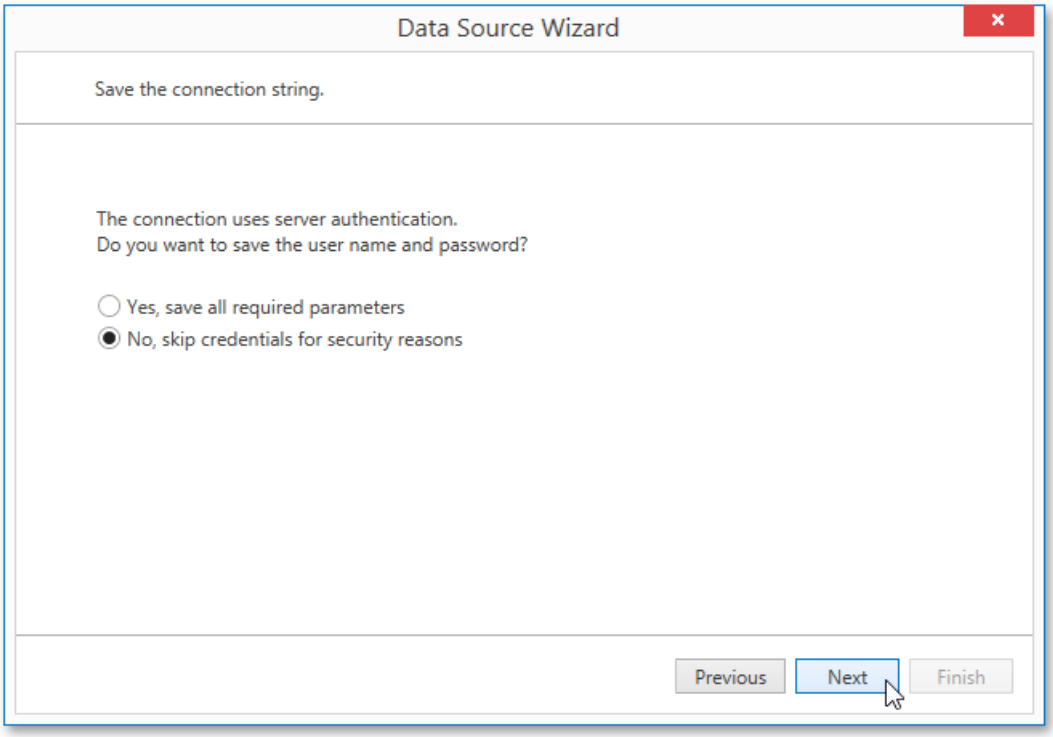
5. On the next wizard page, define a custom connection string, or select from the supported data source types. Depending on the data provider selected, it may be necessary to specify additional connection options (such as authentication type and database name) on this page.



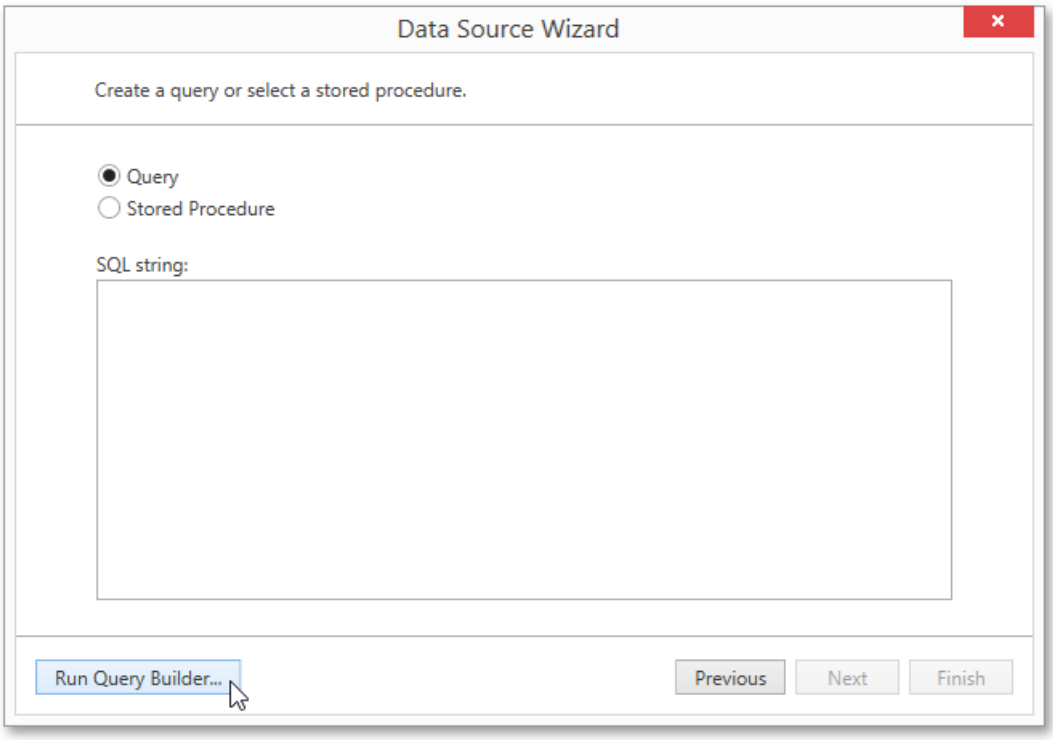
Click **Next** to proceed.

6. If server authentication is required for the selected database type, the next page will prompt you to specify whether or not you want to save the user credentials along with the connection string.

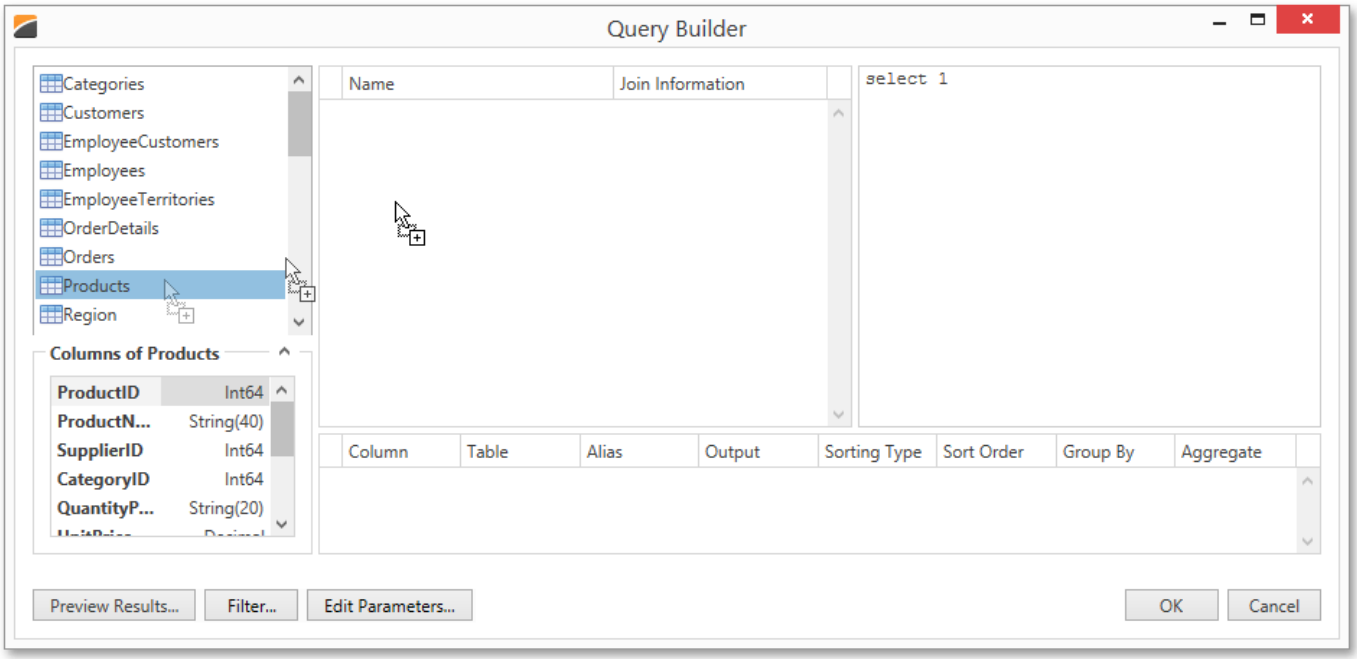
   Select the required option and click **Next**.



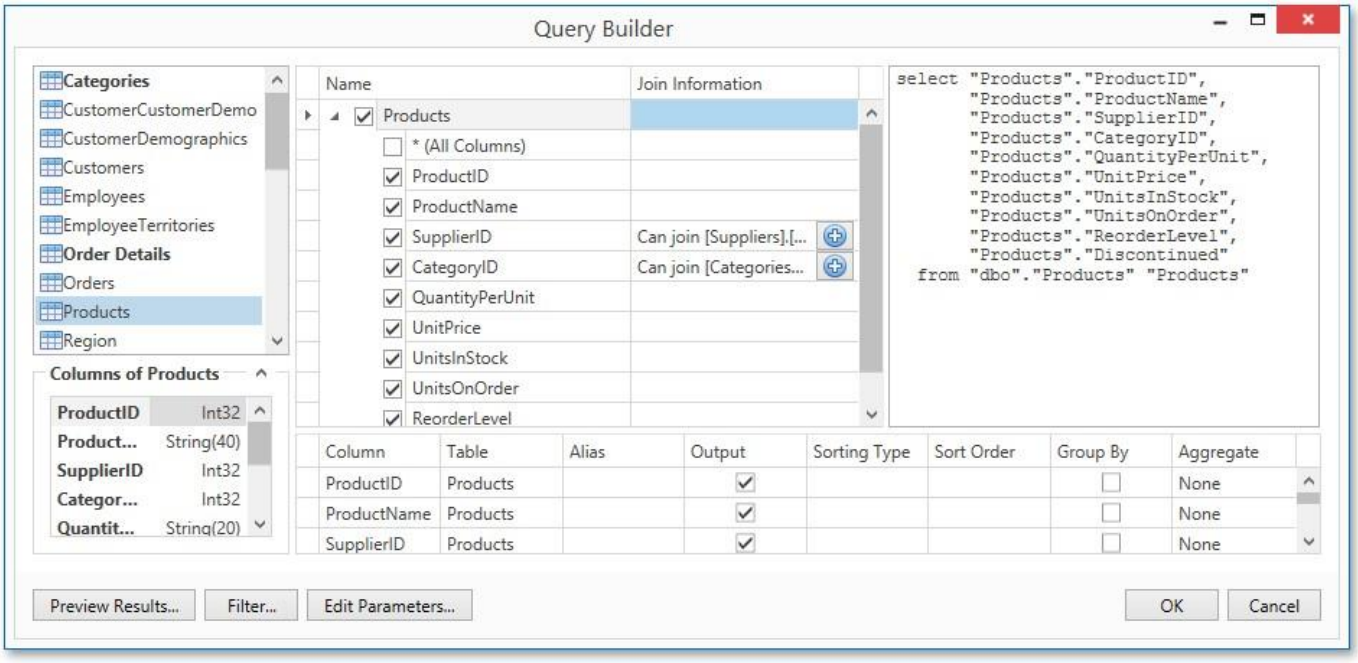
7. On the next page, you can construct an SQL query to obtain data from the database, or select a stored procedure. To construct an SQL query, click **Run Query Builder...**



8. In the invoked Query Builder window, select an item from the list of available tables on the left and drop it onto the list of data tables to be used.

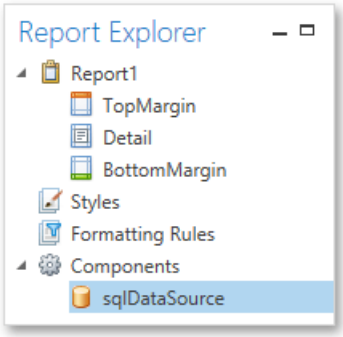


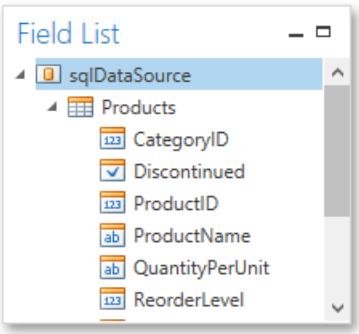
9. Enable the check box near the added table to include all of its fields in the data view.



Click **OK** to exit the **Query Builder**. Click **Finish** to exit the **Data Source Wizard**.

The newly created SQL data source will be displayed in the **Components** node of the Report Explorer. Additionally, the hierarchy of the data source will be reflected by the Field List.

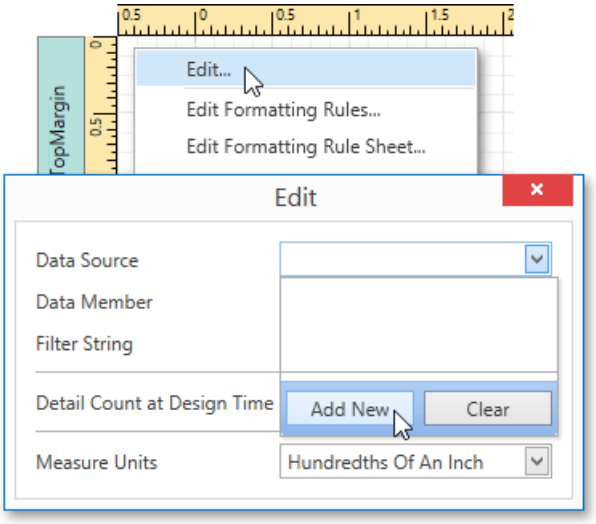




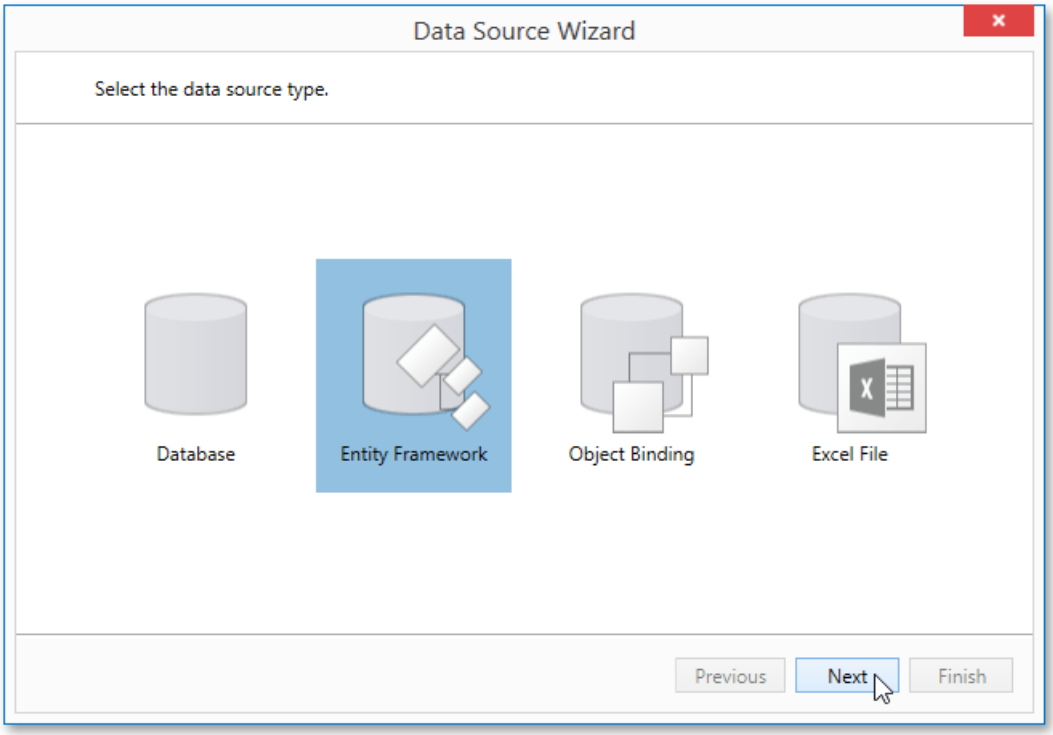
Bind a Report to an Entity Framework Data Source

This document describes the steps required to connect a report to data provided by an Entity Framework data context. To bind a report to an Entity Framework data source, do the following.

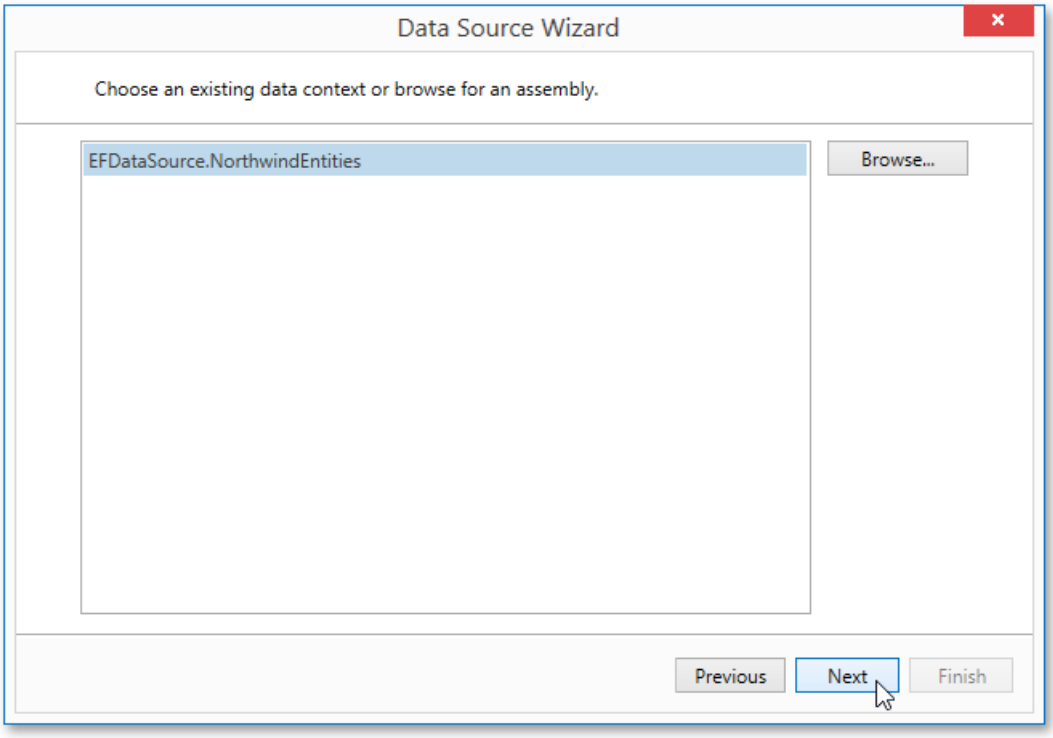
1. Create a new report.
2. Right-click the report and select **Edit...** in the context menu. In the invoked dialog, expand the **Data Source** drop-down and click the **Add New** button.



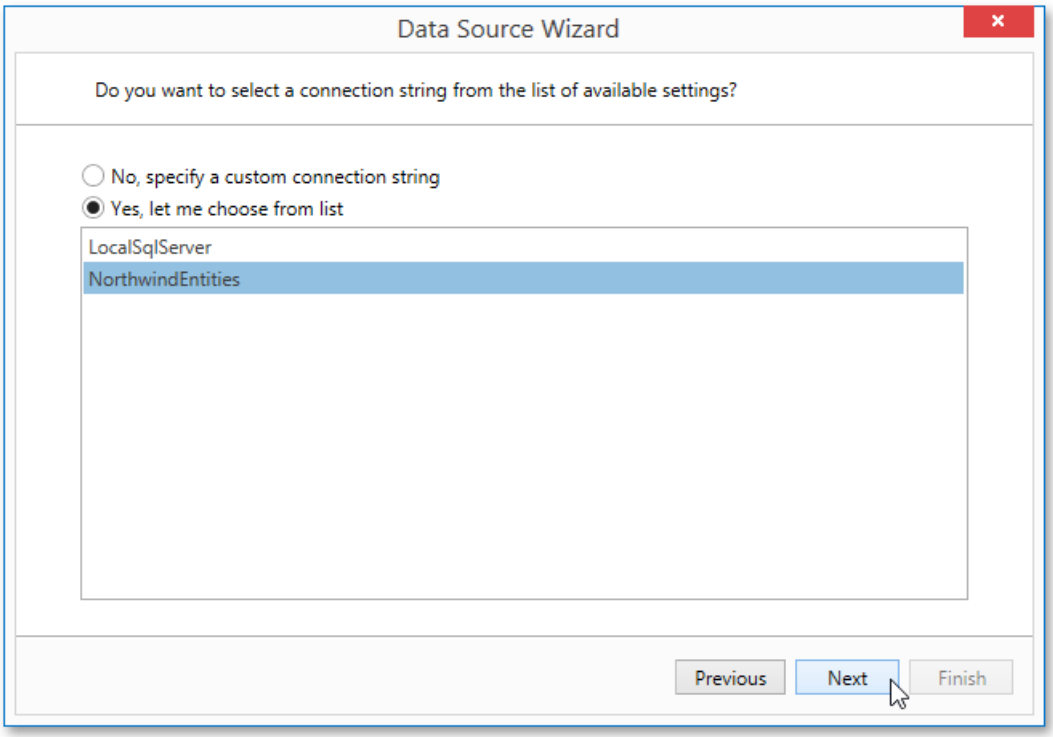
3. The first page of the invoked **Data Source Wizard** allows you to specify the data source type. Select **Entity Framework** and click **Next** to proceed.



4. On the next page, select the required data context from the list of available data contexts and click **Next**.

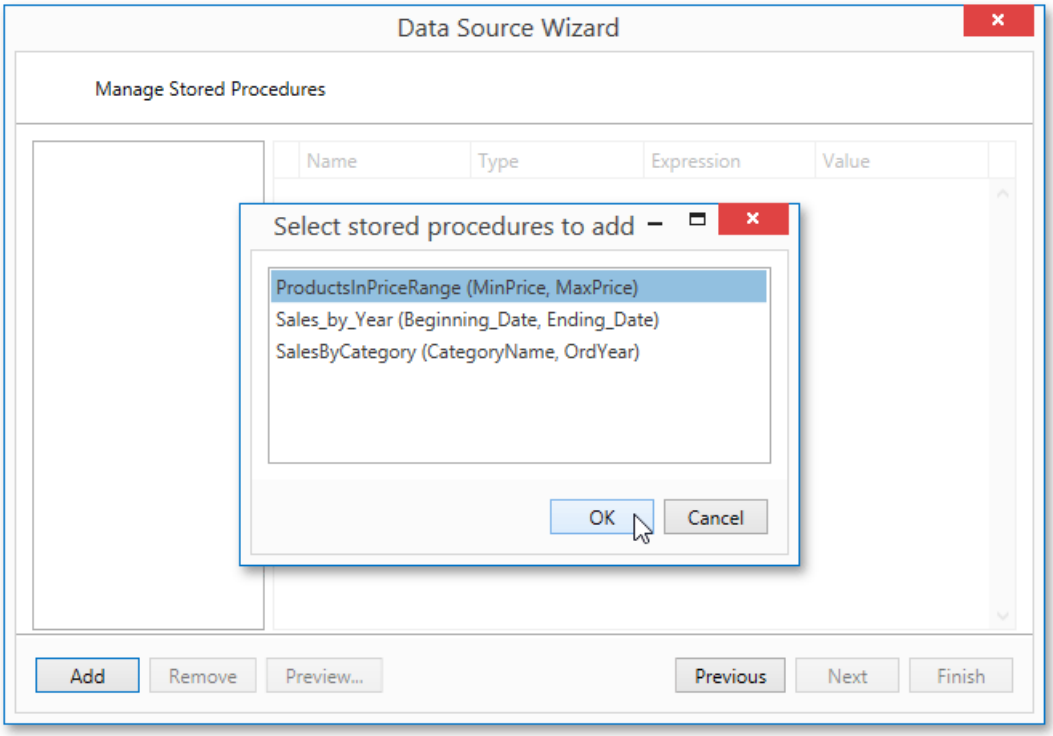


5. Select a connection string to be used to establish a data connection.

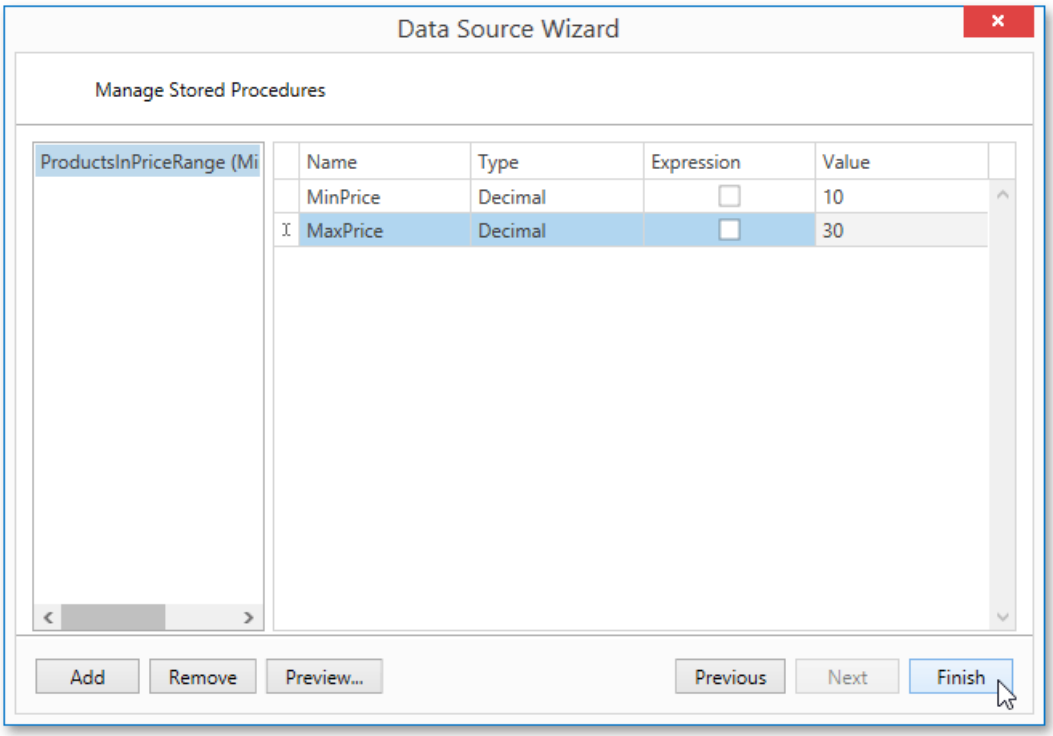


Click **Next** to proceed to the next page.

6. The following wizard page is available only if the current entity data model contains stored procedures. To bind to a stored procedure, click **Add**. Then, in the invoked window, select a required stored procedure and click **OK**.



7. Configure the parameters to be passed to the selected stored procedure. Be sure to specify the correct parameter **Type**. Click **Finish** to exit the wizard.

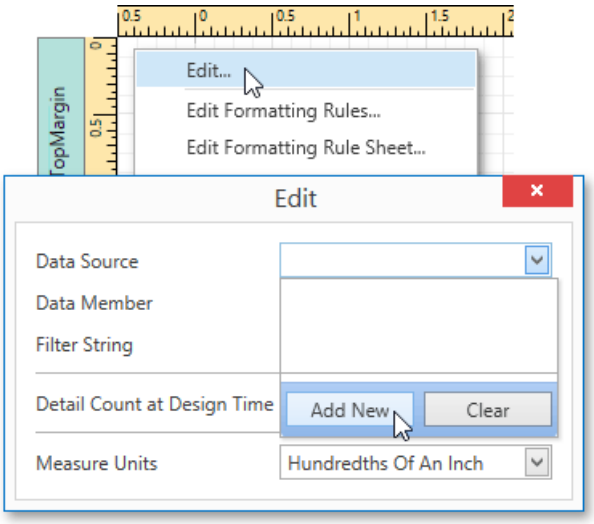


The newly created Entity Framework data source will be displayed in the **Components** node of the Report Explorer. Additionally, the hierarchy of the data source will be reflected by the Field List.

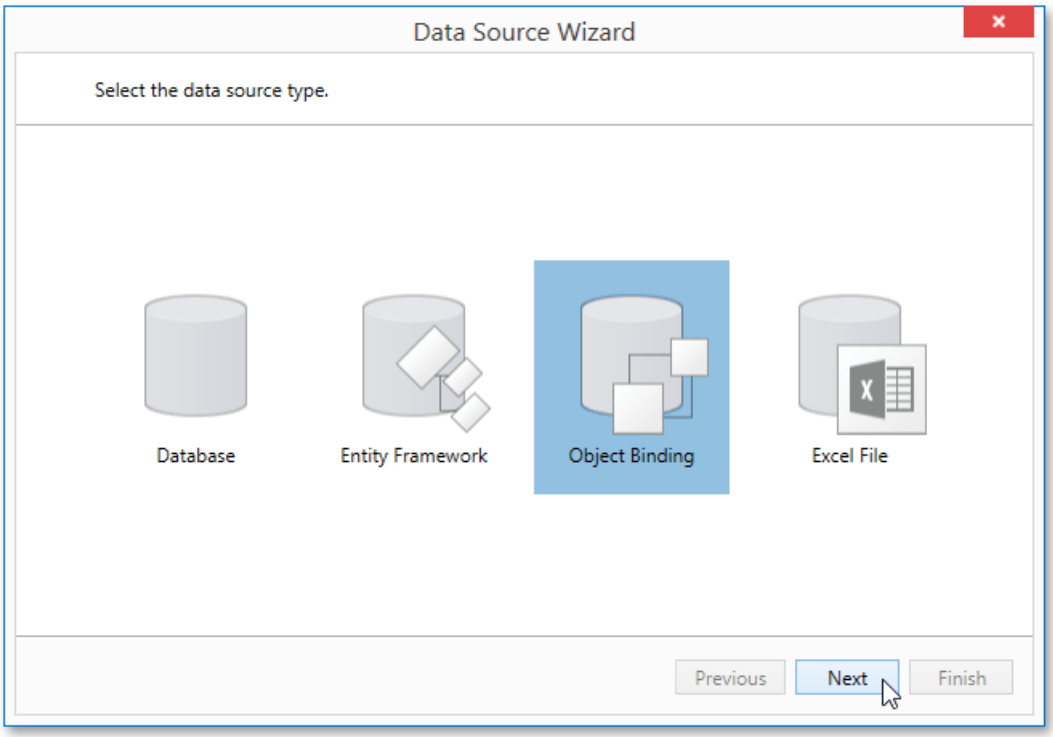
Bind a Report to an Object Data Source

This document describes the steps required to connect a report to an object data source. To bind a report to an object data source, do the following.

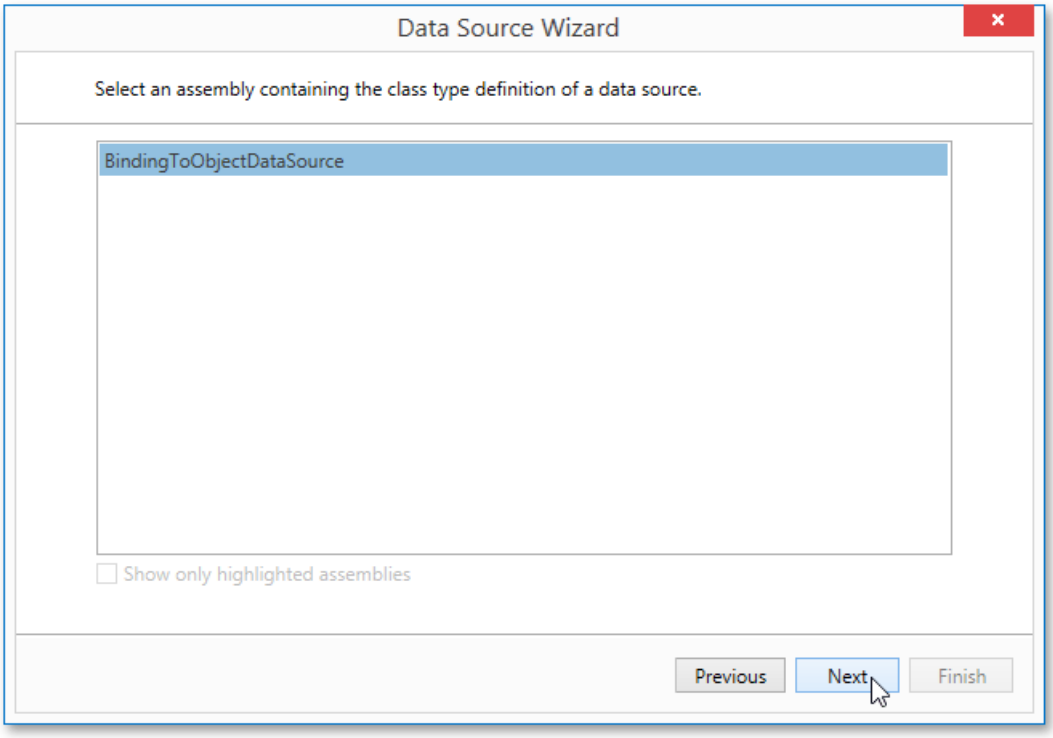
1. Create a new report.
2. Right-click the report and select **Edit...** in the context menu. In the invoked dialog, expand the **Data Source** drop-down and click the **Add New** button.



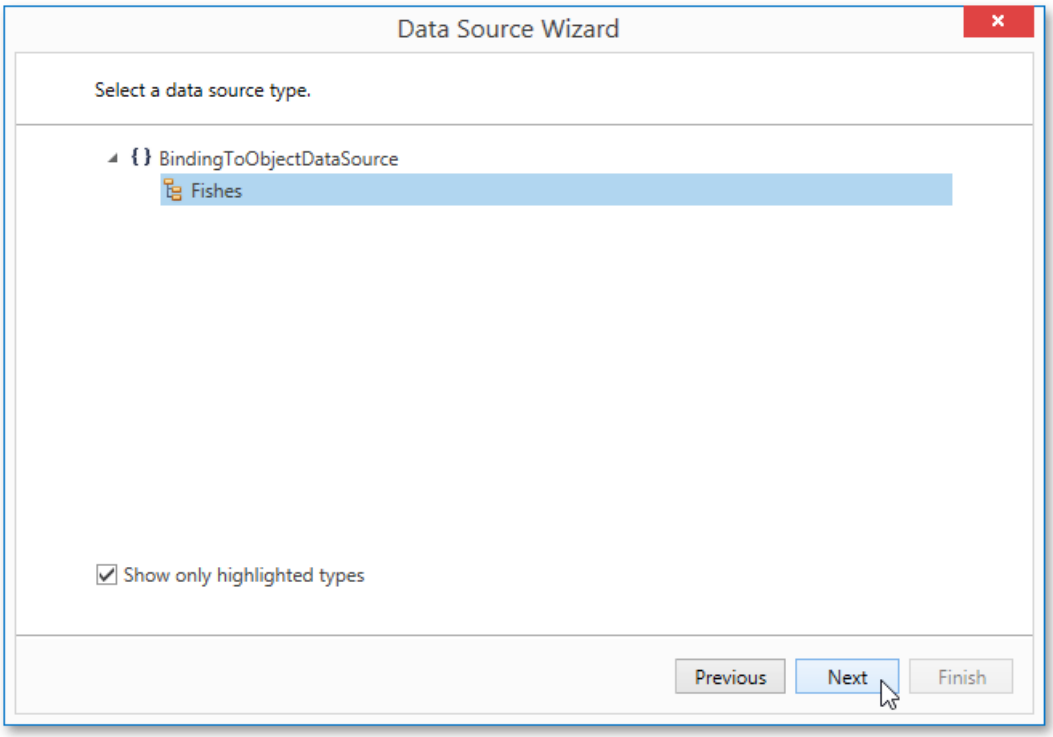
3. The first page of the invoked **Data Source Wizard** allows you to specify the data source type. Select **Object Binding** and click **Next** to proceed.



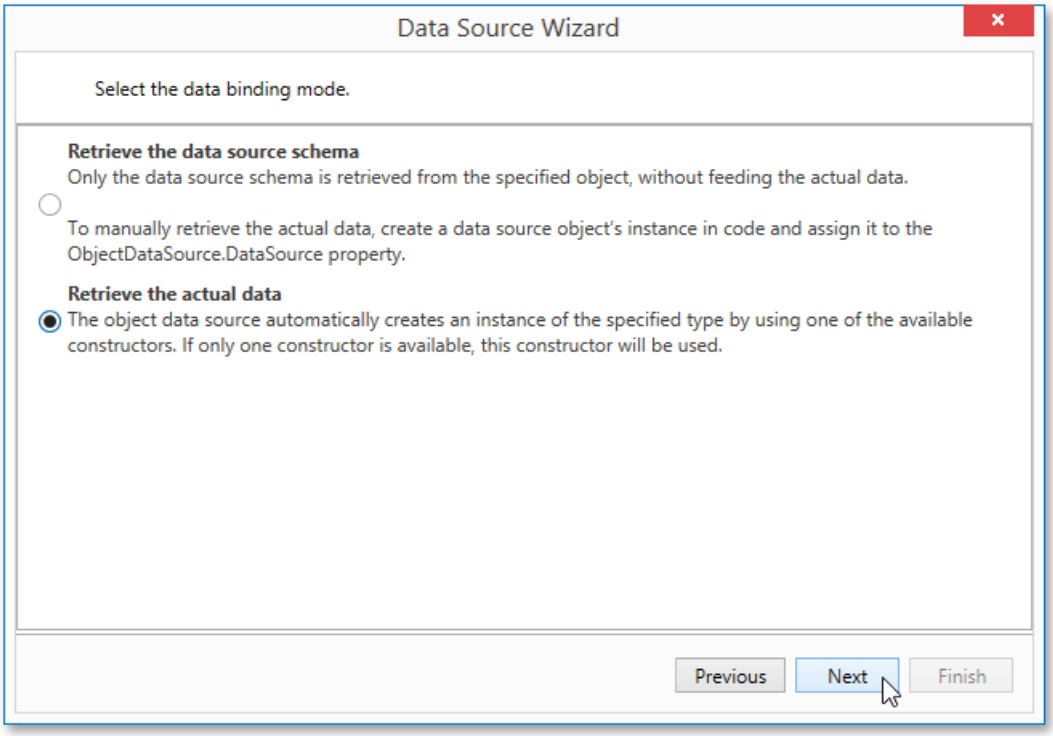
4. Next, select an assembly that contains the class type definition of the data source. To exclude irrelevant assemblies from this list, select the **Show only highlighted assemblies** check box.



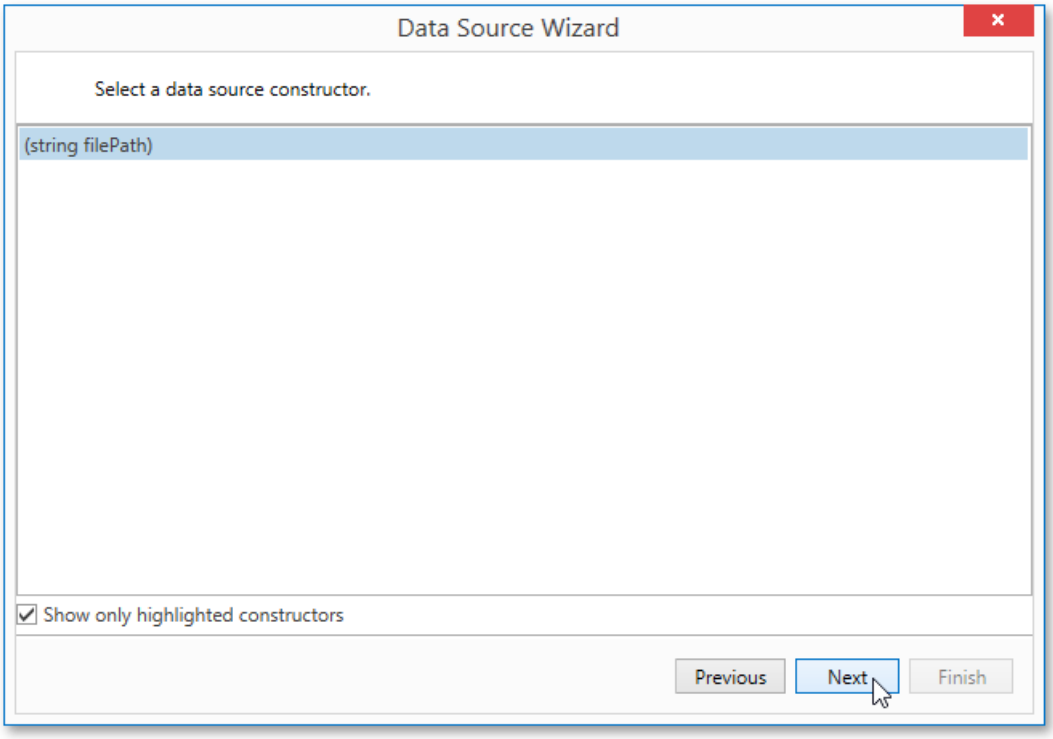
5. On the following wizard page, select a data source type. To exclude irrelevant classes from this list, select the **Show only highlighted types** check box.



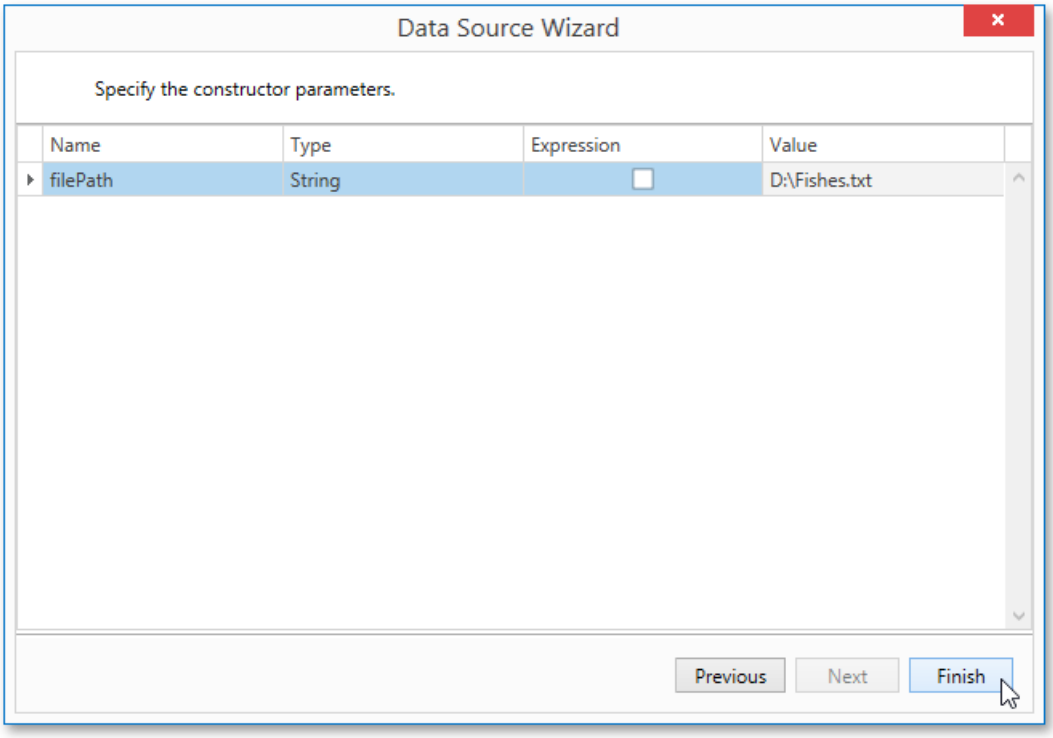
6. On the next wizard page, select whether you need to retrieve the actual data from the data source or obtain the data source schema (enabling you to edit the report layout without having access to the actual underlying data). Select the second option and click **Next** to proceed.



7. The following page allows you to select a data source constructor to be used to create an instance of the data source. To exclude irrelevant constructors from the list, select the **Show only highlighted constructors** check box.

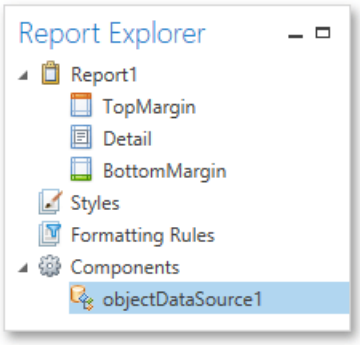


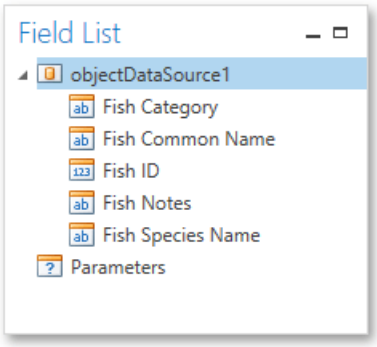
8. On this wizard page, you can specify the parameters for the selected constructor. To specify the constructor parameter's value, use the **Value** column. Enable the check box in the **Expression** column to make it possible to specify the parameter expression using the **Expression Editor**. In this case, you can pass an existing report parameter to the member or even create a new report parameter using the in-place editor.



Click **Finish** to exit the wizard.

The newly created object data source will be displayed in the **Components** node of the Report Explorer. Additionally, the hierarchy of the data source will be reflected by the Field List.

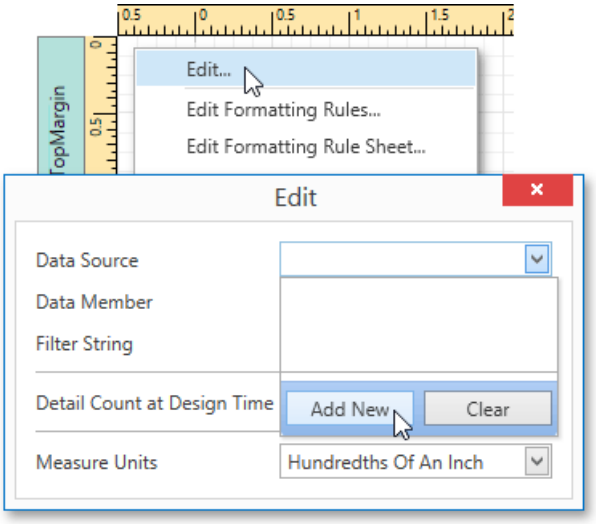




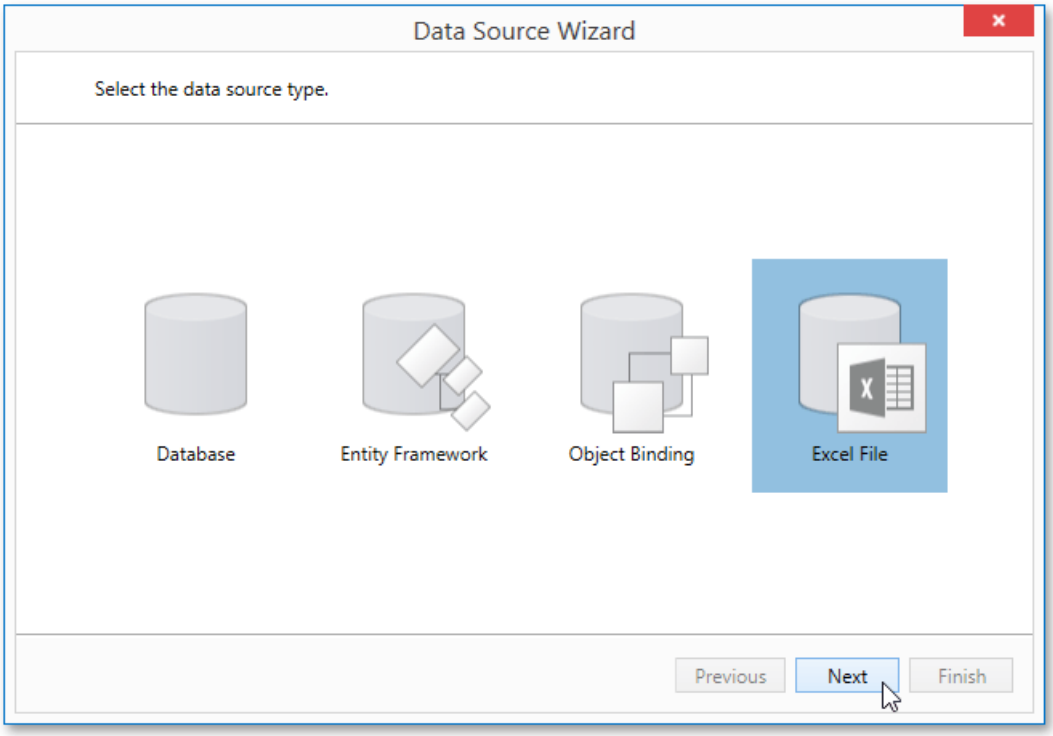
Bind a Report to an Excel Data Source

This document describes the steps required to connect a report to data obtained from a Microsoft Excel workbook. To bind a report to an Excel data source, do the following.

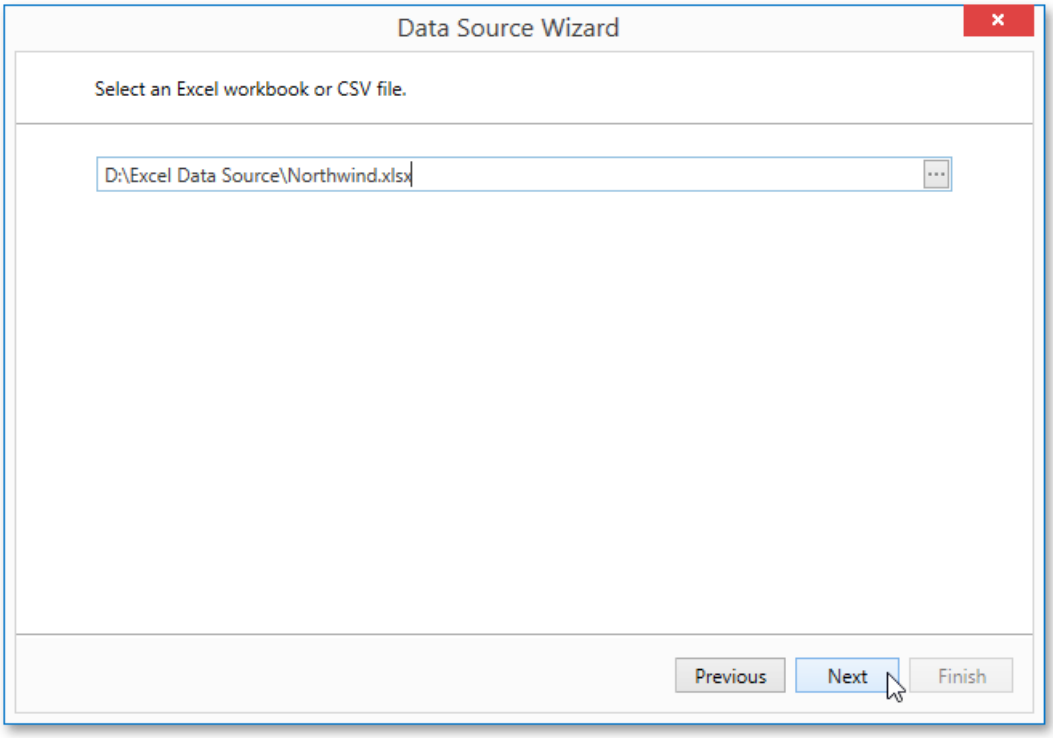
1. Create a new report.
2. Right-click the report and select **Edit...** in the context menu. In the invoked dialog, expand the **Data Source** drop-down and click the **Add New** button.



3. The first page of the invoked **Data Source Wizard** allows you to specify the data source type. Select **Excel File** and click **Next** to proceed.



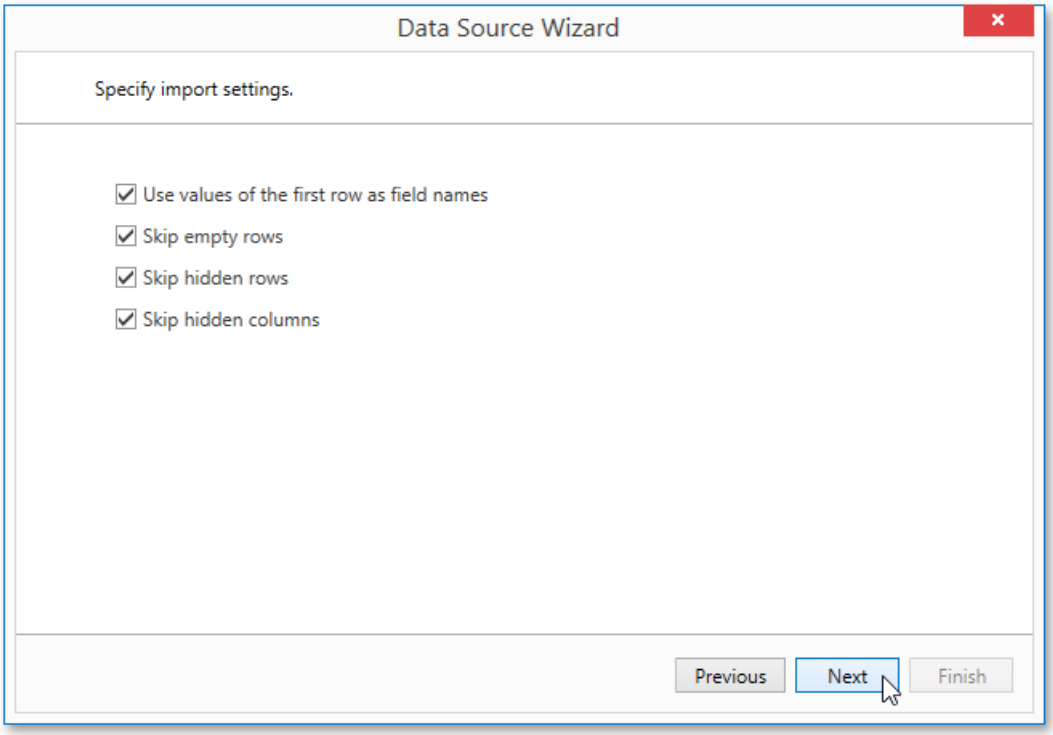
4. On the next wizard page, select a required Excel workbook. To do this, click the ellipsis button and locate the source file or enter the full path to this file. The XLS, XLSX and XLSM formats are supported.



Click **Next** to proceed to the next wizard page.

5. The next wizard page allows you to specify import settings.

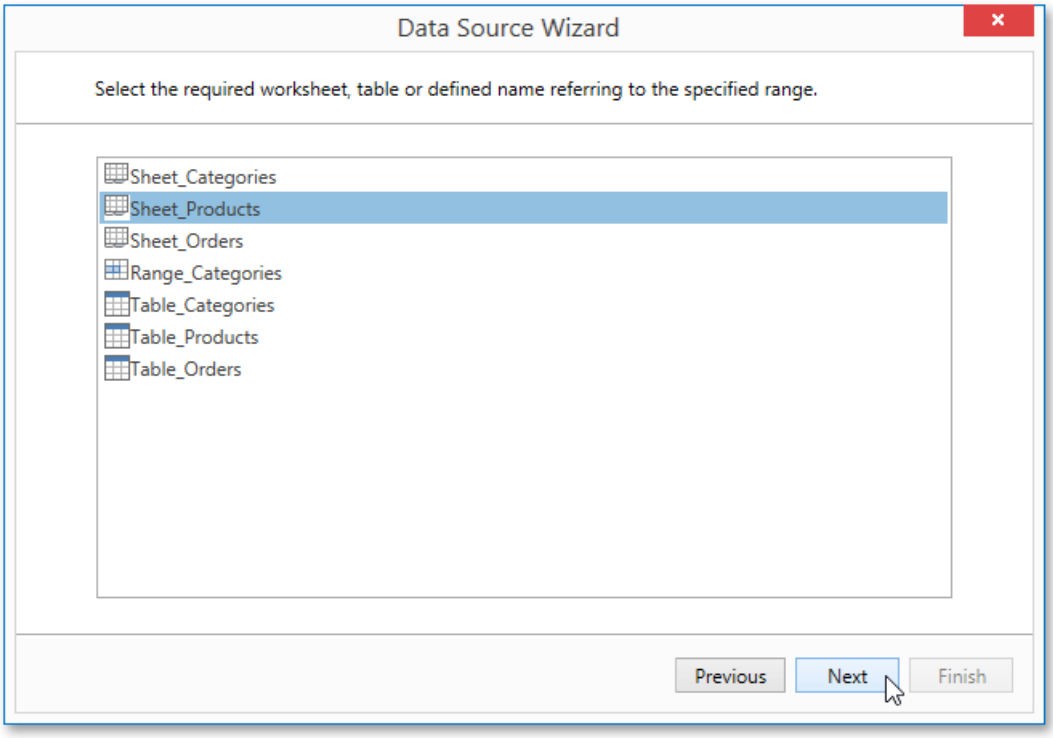
   Enable the first check box to use values of the first row as field names. If you disable this option, values of the first row will be imported as data and field names will be generated automatically. You can also specify whether to include empty rows to the result data source, and whether to skip hidden rows and columns.



Specify required settings and click **Next**.

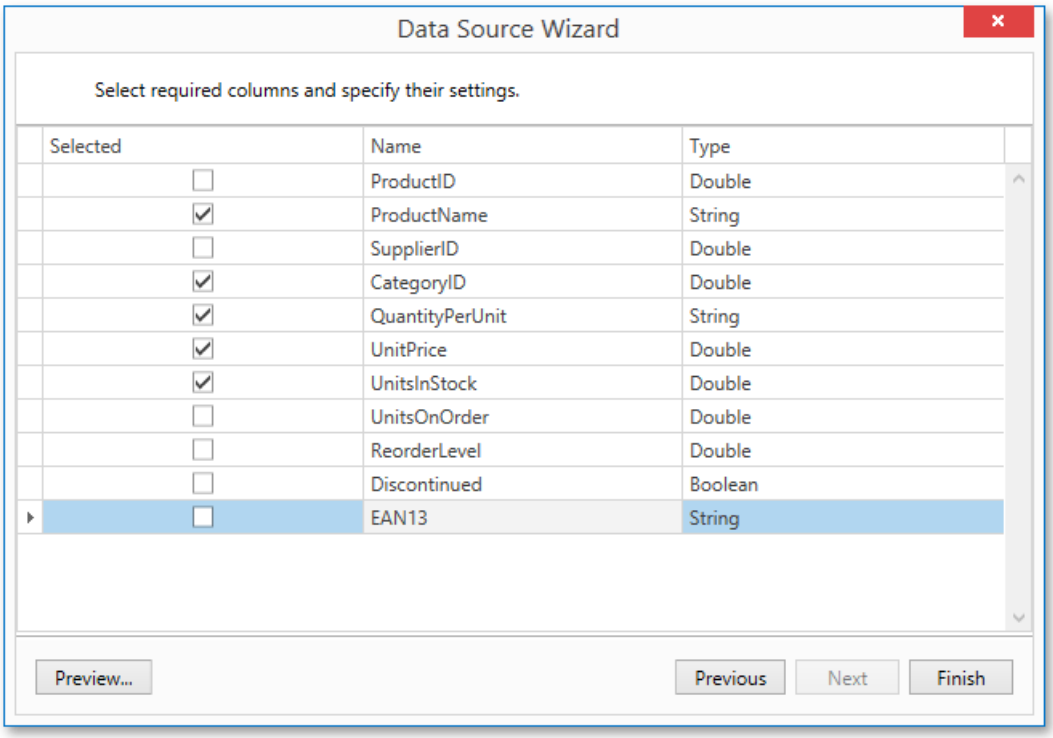
6. On the next wizard page specify from which part of the workbook to extract data. All worksheets, tables

and named regions existing in the workbook are listed here.

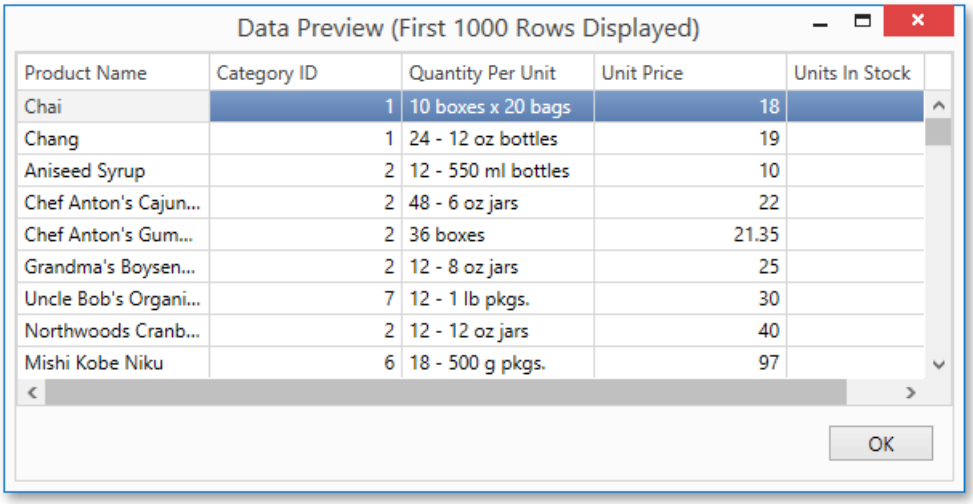


7. The next wizard page allows you to select required columns and specify their settings.

   To select a column, enable the corresponding **Selected** check box. Use **Name** to specify the custom column name and
   Type to choose the column type.

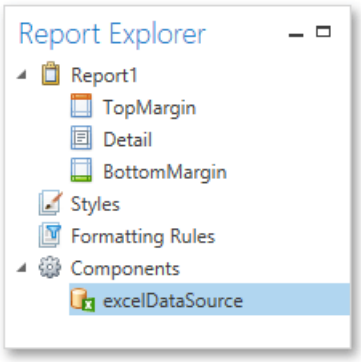


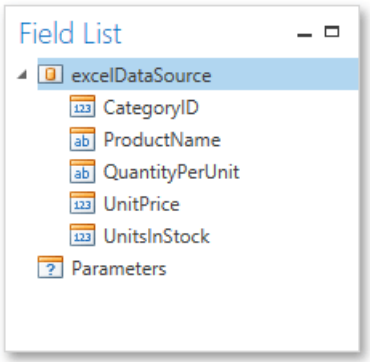
   On this page, you can also preview the resulting data by clicking the **Preview...** button.



Click **Finish** to complete the wizard.

The newly created data source will be displayed in the **Components** node of the Report Explorer. Additionally, the hierarchy of the data source will be reflected by the Field List.

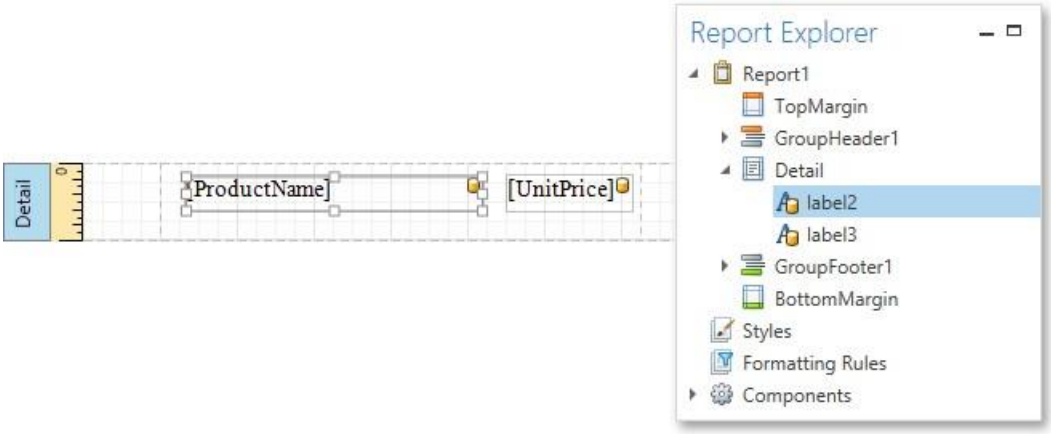




Binding Report Controls to Data

Report controls can either display static information or dynamic data obtained from the bound data source.

Data-bound controls are indicated by a yellow database icon, both on the Design Surface and in the Report Explorer.



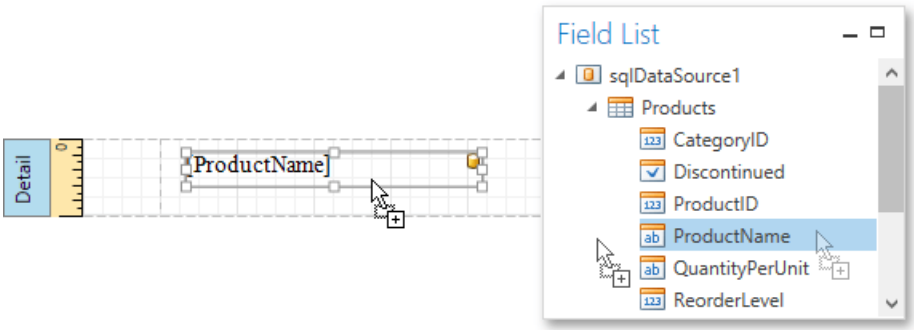
To embed dynamic information to a report, if this information is contained in the report data source, you can use one of the following approaches.

- Using the Field List
- Using the Context Menu
- Using the Properties Panel

After a control is bound to data, you can employ additional features that are listed in the Special Capabilities section of this document.

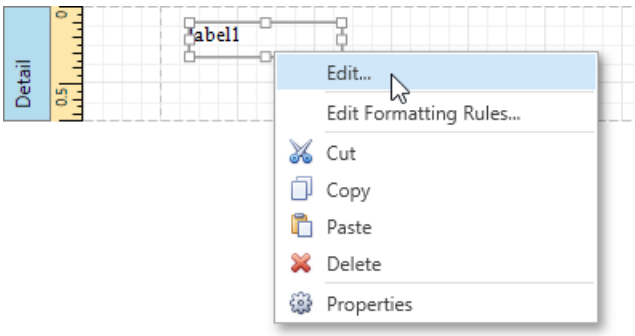
Using the Field List

The Report Designer allows you to create a data-aware element using the Field List. To do this, switch to the Field List panel, click the desired field item and drop it onto the report band. This automatically creates a control bound to the selected data field.

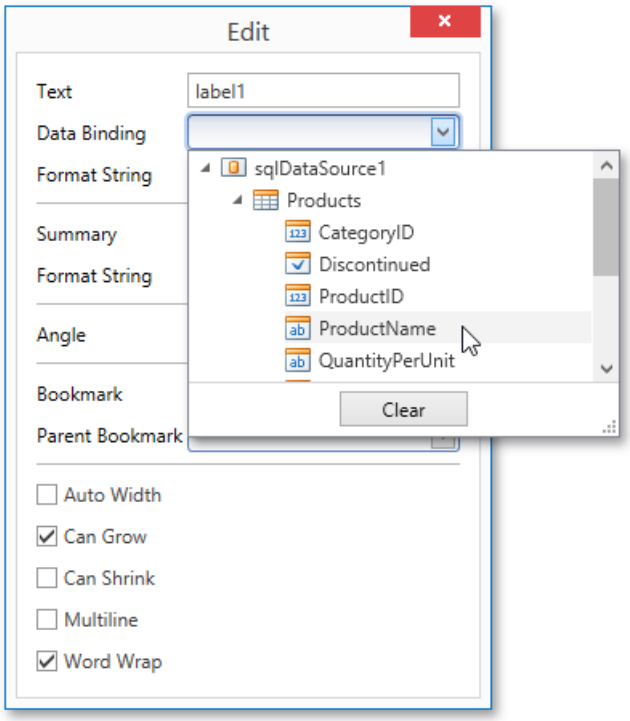


Using the Context Menu

Right click an existing report control, and in the invoked context menu, click the **Edit...** link.



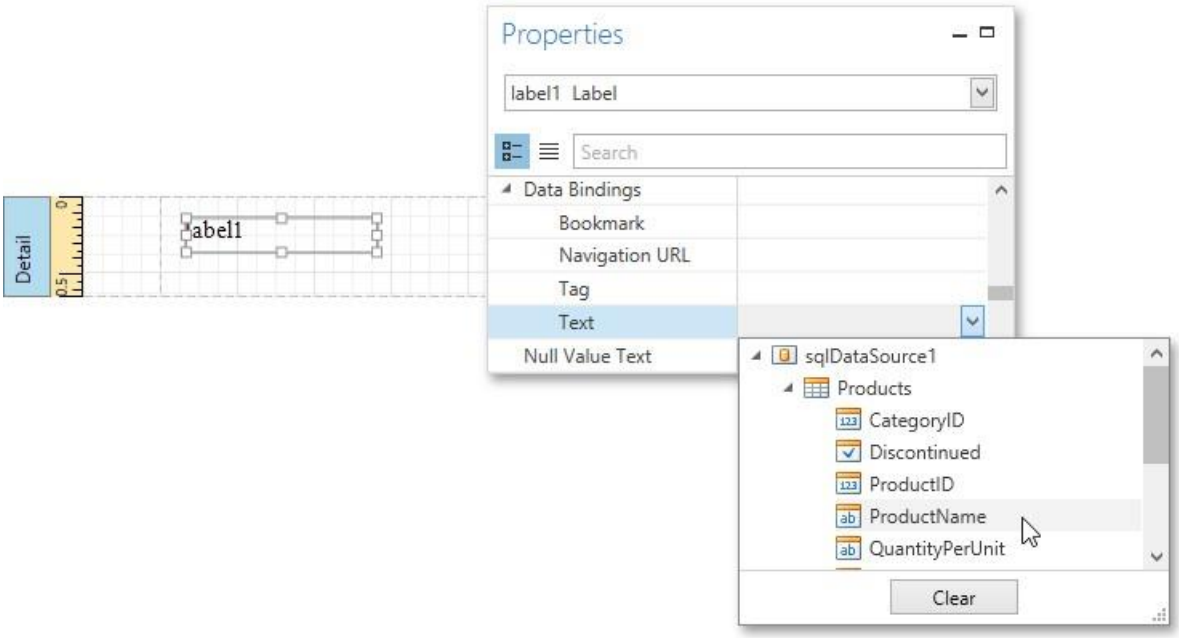
In the invoked **Edit** dialog, expand the **Data Binding** drop-down and select the required data field.



To unbind a control's property, expand the **Data Binding** drop-down and click the **Clear** button.

Using the Properties Panel

Select a control (e.g., on the Design Surface) and switch to the Properties Panel. Expand the **Data Bindings** option and specify a data field for the required property (e.g., **Text**).



To unbind a control's property, expand the corresponding drop-down and click the **Clear** button.

Special Capabilities

After a control is bound, you can apply formatting to its dynamic content (e.g., for it to be treated as currency, or date-time content). For details on this, refer to Formatting Data.

It is possible to force a control to display a result of a summary function calculated across the data field to which it is bound. For more information, see Calculating Summaries.

Another noteworthy option is to combine both static and dynamic content within the same control (e.g., to append some text prefix or postfix to a value obtained from a database), or even bind a control to multiple data fields at one time. This is detailed in Using Mail Merge.

If you are required to perform pre-calculations over the data field to which a control is bound, you can do so by creating a
calculated field, and binding the control to it. This is detailed at Calculated Fields.

In turn, a calculated field may contain both dynamic and static *parameters*, which can be requested each time a report is being previewed. For more information, refer to Report Parameters.

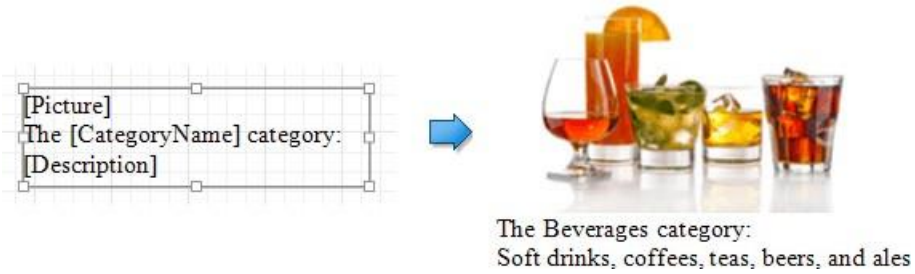
Using Mail Merge

The *mail merge* feature allows you to combine both static and dynamic content within the same report control. For instance, you can append some text prefix or postfix to a value obtained from a database, or even bind a control to multiple data fields at one time.

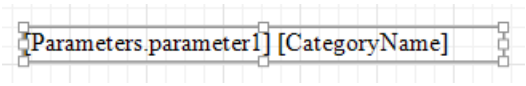
Mail merge is available for the following controls.

- Label
- Table
- Cell
- Check
- Box Bar
- Code
- Zip Code

To embed dynamic data into a control's static content, type in data field names surrounded by **[**square brackets**]**. If this field is valid in the current data context, it will be replaced with an appropriate data value when a report is previewed or exported. Since this data field is inserted into a label's text, you may also use any prefix or postfix. Moreover, you can insert several embedded fields into the **Text** of a single control, and all these embedded fields should be processed correctly.



To embed a parameter's value into a control's content, use the **Parameters.ParameterName** syntax.



Report Parameters

This document describes the main concepts of using parameters in the Report Designer and provides information on how to create parameters and pass their values.

The document consists of the following sections.

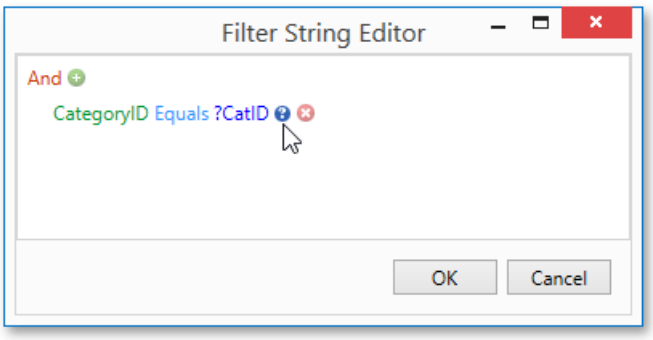
- Using Parameters
- Creating Parameters
- Passing Parameter
- Values

Using Parameters

Report parameters provide the capability to pass data of a certain type to a report and can be used in different ways listed below.

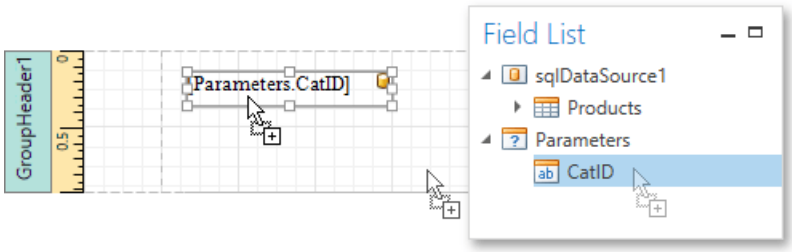
- **Filtering**

  You can use a report parameter to filter report data according to the current parameter value by specifying the report's
  Filter String. For more information, see the Filtering Data topic.



- **Data Binding**

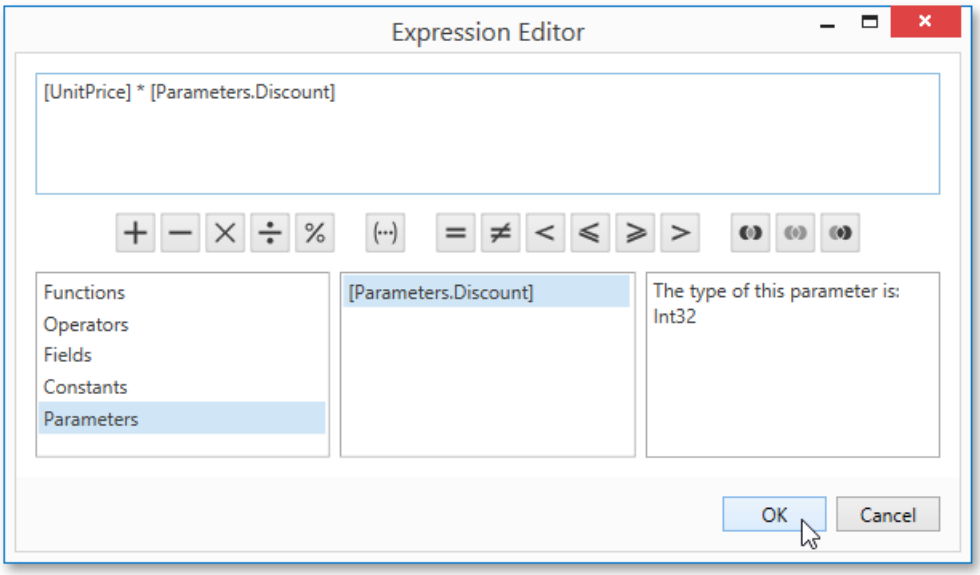
  To show a parameter's value in a report, drag the parameter from the Field List panel and drop it onto the required band. This creates a **Label** bound to the parameter, as with an ordinary data field.



  For more information, see the Binding Report Controls to Data topic.

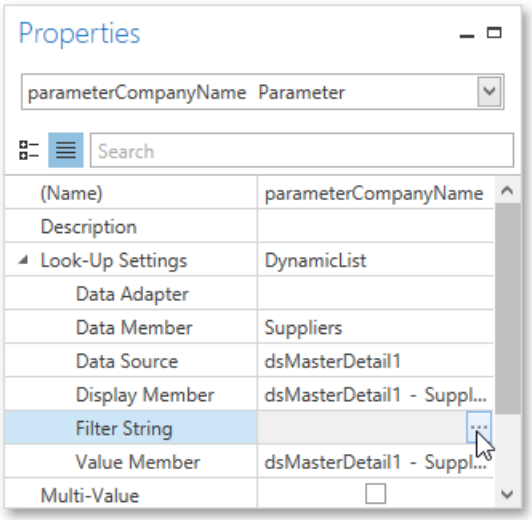
- **Calculated Fields and Conditional Formatting**

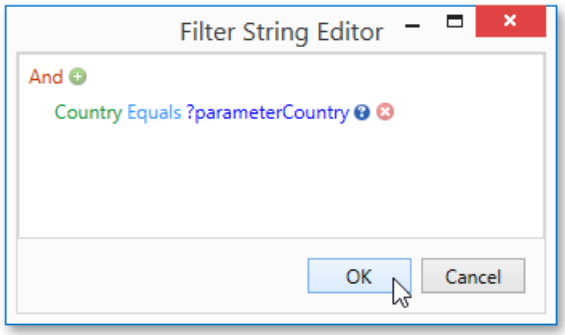
  Parameters can participate in constructing expressions for calculated fields and formatting rules, as well as standard data fields. The only difference is that a parameter is inserted into the expression's text using the "**Parameters.**" prefix before its name.



- **Cascading Parameters**

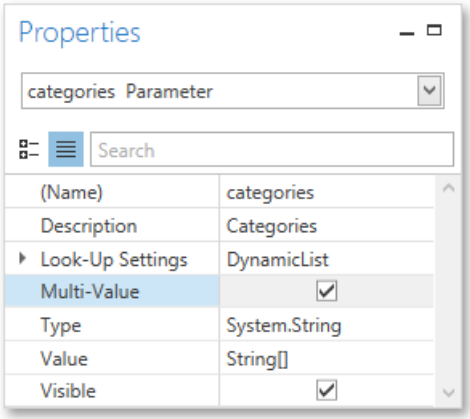
  You can filter parameter values by specifying the filtering expression that can also include other parameter values. To construct this filtering expression, set the parameter's **Look-Up Settings Type** property to **StaticList** or **DynamicList** and then specify its **Filter String** property.



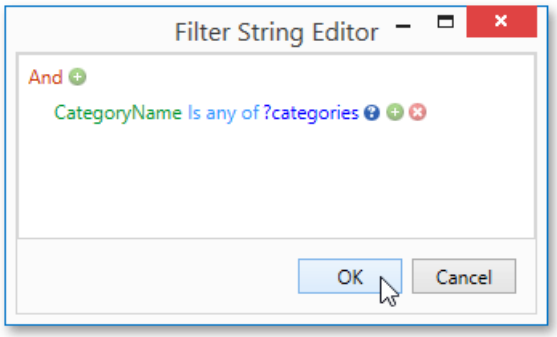


- **Multi-Value Parameters**

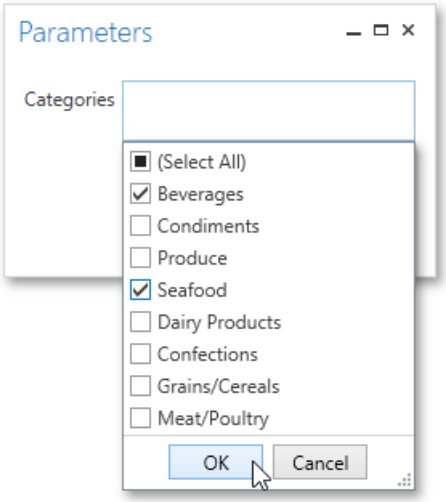
  If a parameter is bound to a collection of standard values, it is possible to store more than one value in it. To do this, enable the parameter's **MultiValue** property.



Multi-value parameters are useful when you need to filter report data against a list of values. The image below
demonstrates a correct filtering expression that incorporates a multi-value parameter.



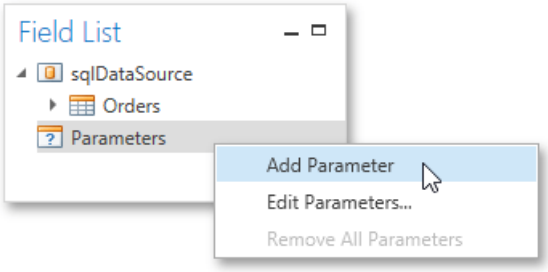
The following image demonstrates an editor for a multi-value parameter in a Print Preview.



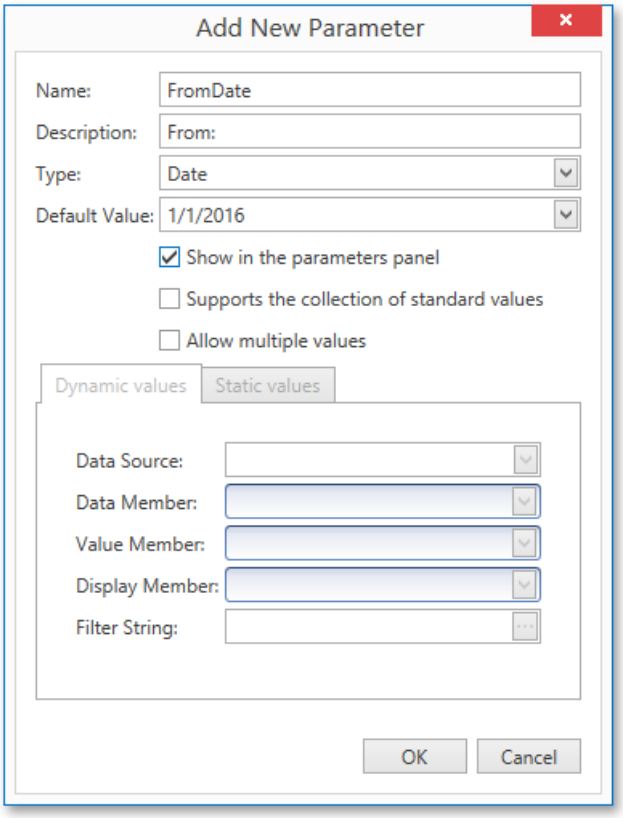
Creating Parameters

To create report parameters, follow the steps below.

1. Create a new report and bind it to a data source.
2. In the Field List panel, right-click the **Parameters** section and in the invoked menu, click **Add Parameter**.



3. In the invoked **Add New Parameter** dialog, set the created parameter's **Name** and **Description** properties and make sure to set its **Type** to an appropriate value. To display this parameter in the Print Preview, enable the **Show in the parameters panel** option.

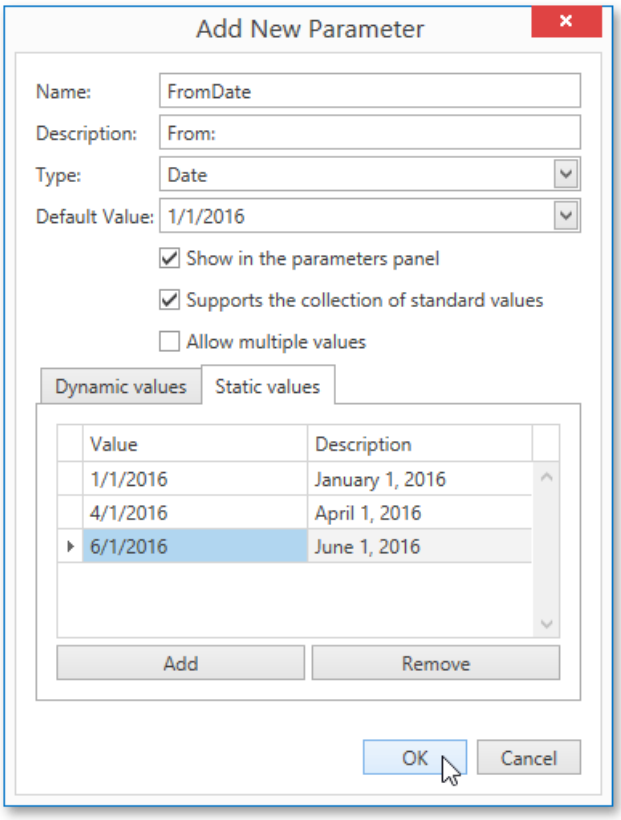


4. To assign a list of values to this report parameter, enable the **Supports the collection of standard values** option.

   In the **Dynamic values** tab, you can specify a parameter's data source, data member, value member and display member. The value member defines a data field that provides values to the parameter. The display member defines a data field that provides display names for parameter values, i.e., how these values appear in the user interface available in a Print Preview.

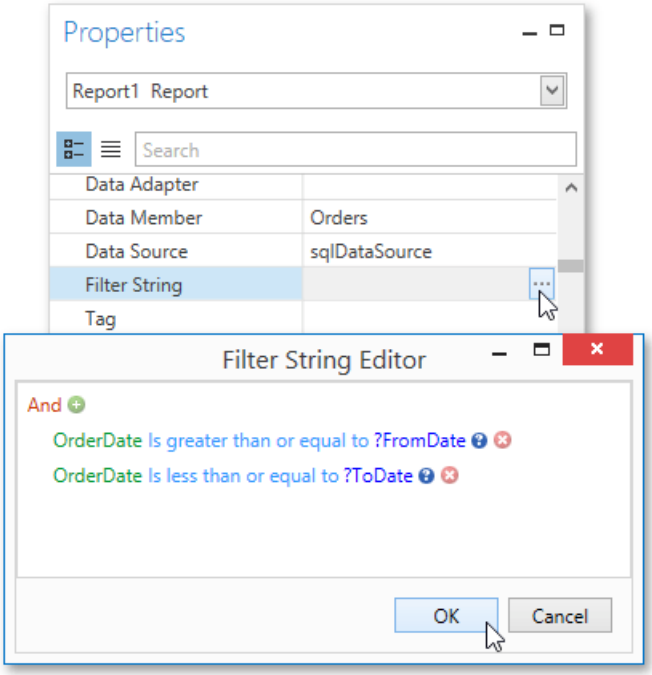
   In the **Static values** tab, you can manually fill the list of parameter values. Each parameter value has an

individual description specifying how this value appears in the Parameters Panel.



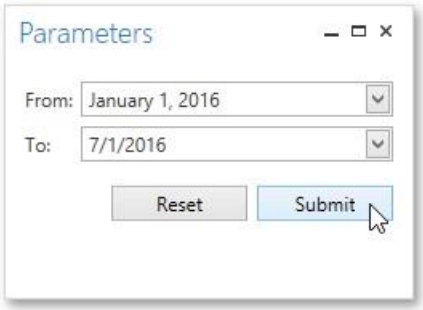
5. Then, repeat the previous steps to create the second parameter, so that every time your report is previewed, you will be
   asked to specify two dates.

6. Next, use parameters to filter your report's data. Select report, and in the Properties Panel, click the ellipsis button for the **Filter String** property. Then, in the invoked **Filter String Editor**, construct an expression where a data field is compared with the created parameters. To access parameters, click the icon on the right until it turns into a question mark.



Passing Parameter Values

To view the resulting report in the Report Designer, switch to the Print Preview tab. For a report containing at least one visible parameter, the dedicated Parameters Panel is automatically created in the Preview. This panel provides appropriate editors based on parameter types. To pass parameter values to the report, specify the required values and click **Submit**.



1/1/2016	10264	Sweden
1/2/2016	10265	France
1/3/2016	10266	Finland
1/6/2016	10267	Germany
1/7/2016	10268	Venezuela
1/8/2016	10269	USA
1/9/2016	10270	Finland
1/9/2016	10271	USA
1/10/2016	10272	USA
1/13/2016	10273	Germany
1/14/2016	10274	France
1/15/2016	10275	Italy
1/16/2016	10276	Mexico
1/17/2016	10277	Germany
1/20/2016		

Query Parameters

A query parameter holds an external value that is inserted into an SQL statement before query execution. This value can be either static or dynamically generated by an associated expression.

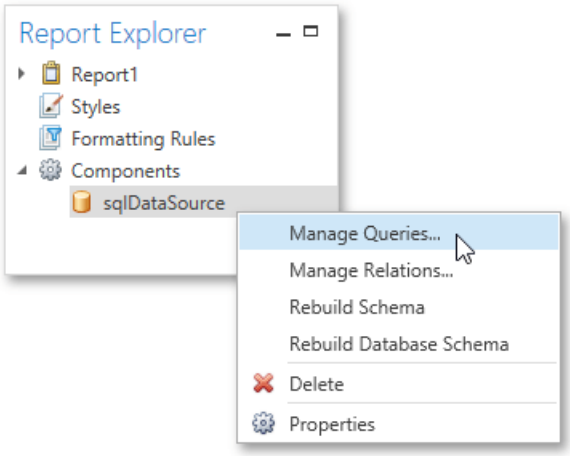
In the Report Designer, query parameters are typically used in the following scenarios.

- Passed as criteria to the **WHERE** part of an SQL statement to perform data source level filtering. The query parameter's value is inserted into the resulting SQL query string in the position of the corresponding placeholder, which has the "**@QueryParameterName**" form.
- Passed as actual parameters to a stored procedure. See the Customize the Query topic to learn more.

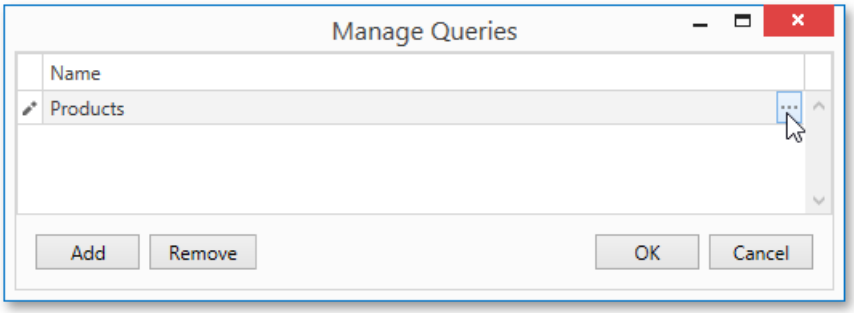
To create and configure query parameters to filter report data, do the following.

1. When creating a new data-bound report using the Report Wizard or binding an existing one to an SQL data source, go to the query customization page.

   To open this page to customize an existing data source, right-click this data source in the Report Explorer and select
   Manage Queries in the context menu.

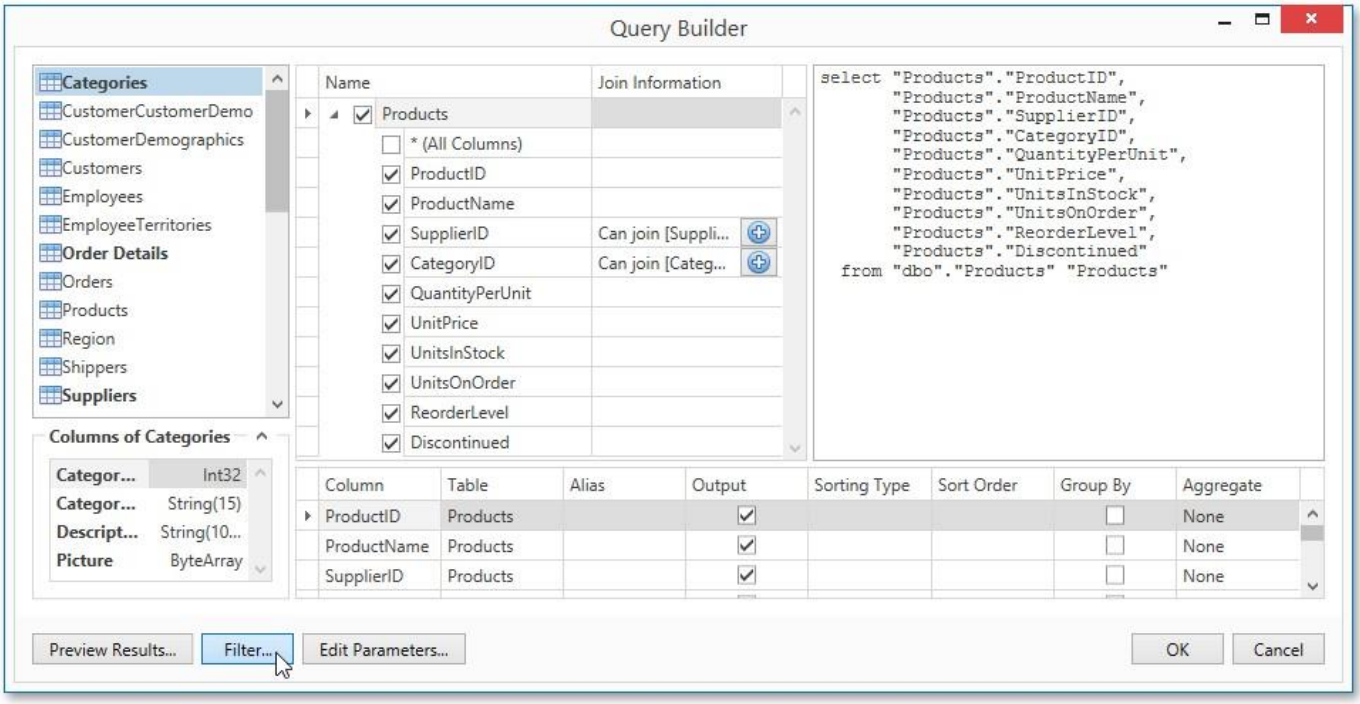


   Then, in the invoked **Manage Queries** dialog, click the ellipsis button for the required query.

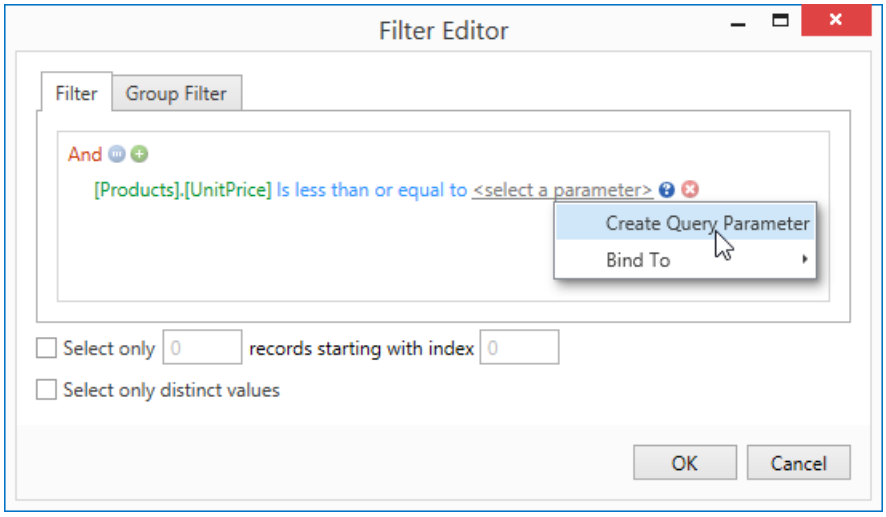


2. In the invoked **Data Source Wizard**, click the **Run Query Builder...** button.

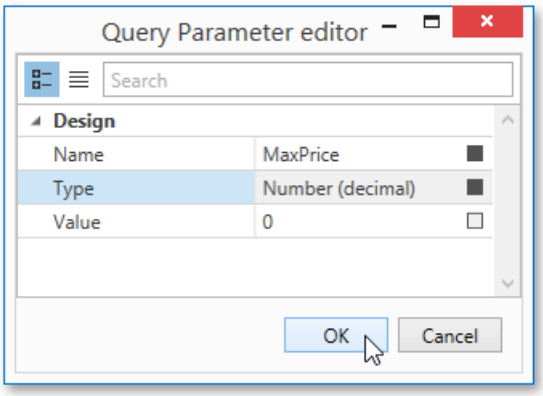
3. In the **Query Builder**, construct the query, and then, click the **Filter...** button.



4. In the invoked **Filter Editor**, construct a filtering expression that will be used to filter resulting data at the data source level. To access parameters, click the icon on the right until it turns into a question mark. Then, click the parameter placeholder and select **Create Query Parameter**.



5. In the invoked **Query Parameter Editor**, specify the parameter's name and appropriate value type, and click **OK**.



Close the **Filter Editor**, and then, complete the **Query Builder**.

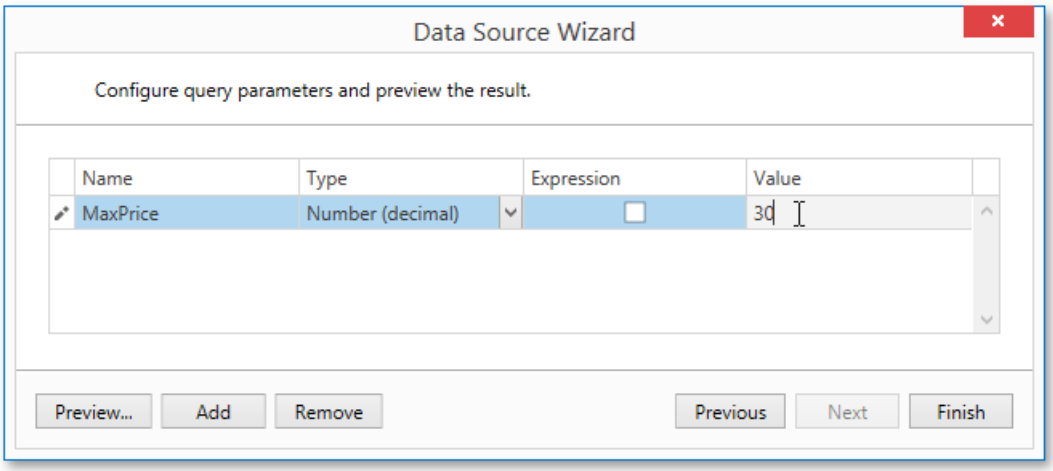
6. Now, the newly constructed SQL query appears in string form on this wizard page. The query parameter is passed to the
WHERE part of the SQL string and has the "**@QueryParameterName**" form.

Then, click **Next** to proceed to the next wizard page.

7. The next wizard page provides access to query parameters and allows you to add, configure and remove it. On this page, specify the actual value (either static or dynamic) for a query parameter.

   - **Specifying a static value**

     To specify a static value for a query parameter, select the parameter's value type, and then specify its actual value in the **Value** column according to the selected type.

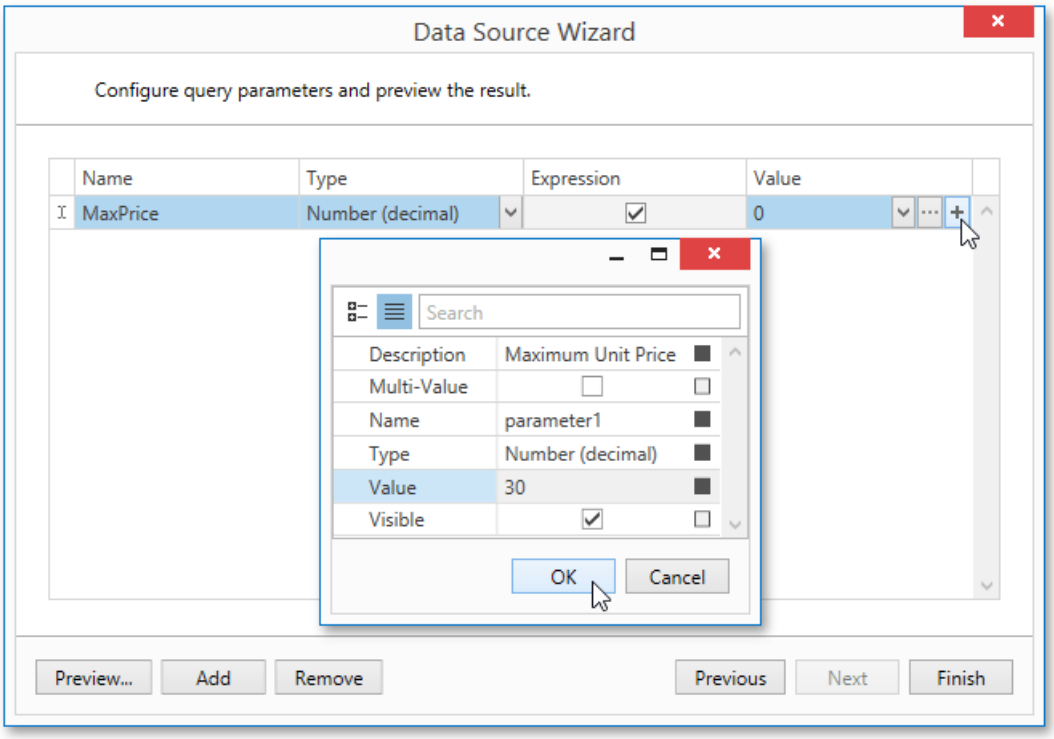


   - **Specifying a dynamic value**

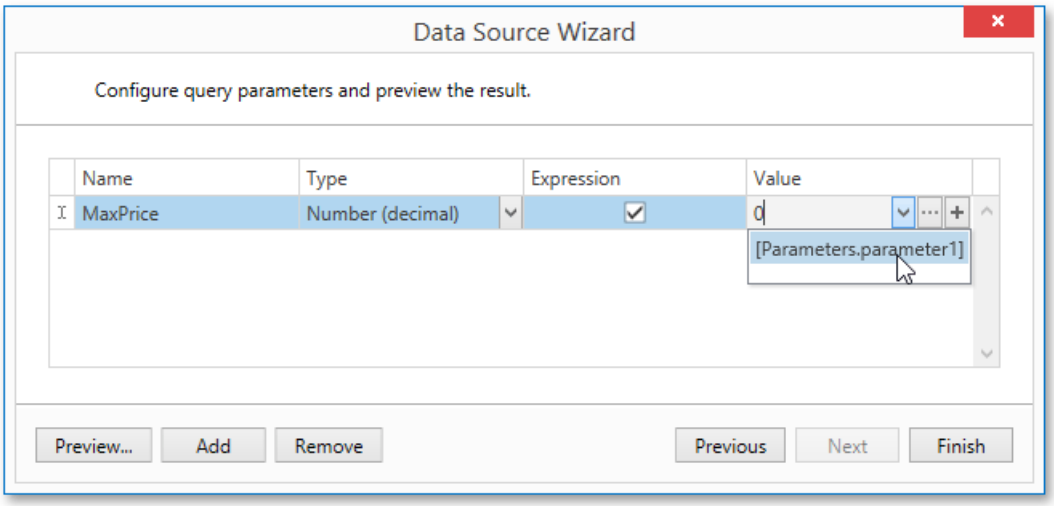
     To use a dynamically generated value, do the following.

     First, activate the **Expression** check box for the required parameter. This allows you to use an expression to dynamically calculate the parameter's actual value.

     To map the query parameter to a new report parameter, click the plus button for the **Value** property, and in the invoked dialog, specify the required report parameter settings. Be sure to specify the report parameter type according to the type of the respective query parameter.



Then, expand the drop-down list for the **Value** property and select the created report parameter. This list also contains report parameters that already exist in a report.



You can also create a complex expression for a query parameter. To do this, click the ellipsis button for the **Value**
property and construct the required expression in the invoked **Expression Editor**.

8. Click **Finish** to exit the wizard.

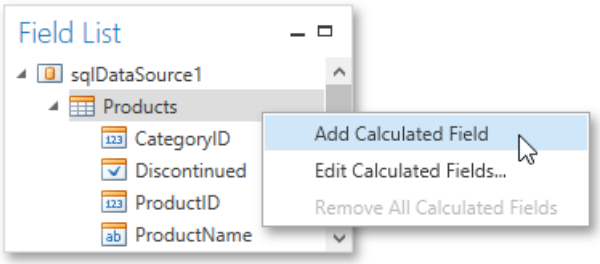
Calculated Fields

This document demonstrates how to add a *calculated field* to a report. The main purpose of calculated fields is to perform pre- calculations of virtually any level of complexity over data fields based on a specific expression.

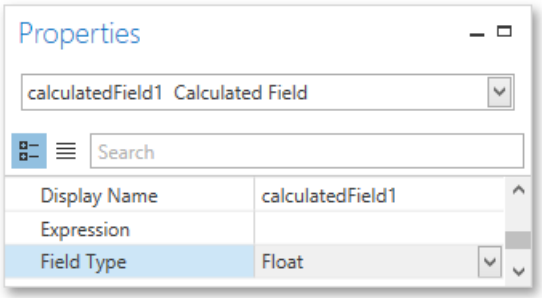
In the Report Designer, a calculated field is similar to an ordinary data field (e.g., you can bind controls to it, and group, sort and filter your report against it).

To add a calculated field to your report, follow the instructions below.

1. To create a calculated field, in the Field List, right-click any item inside the data source, and in the invoked menu, select **Add Calculated Field**.

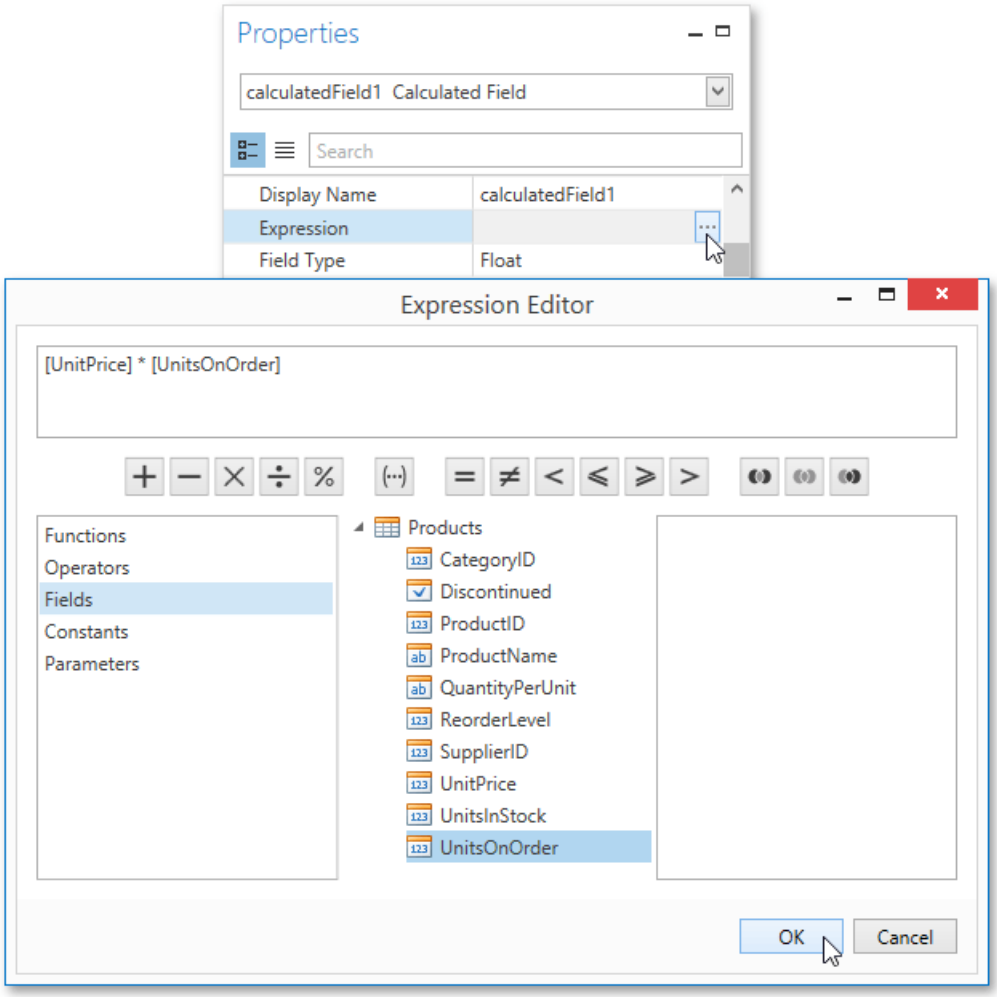


2. In the Field List, select the created field and switch to the Properties Panel. Make sure to change the **Field Type** property to an appropriate value.



3. Then, create an expression for the calculated field.

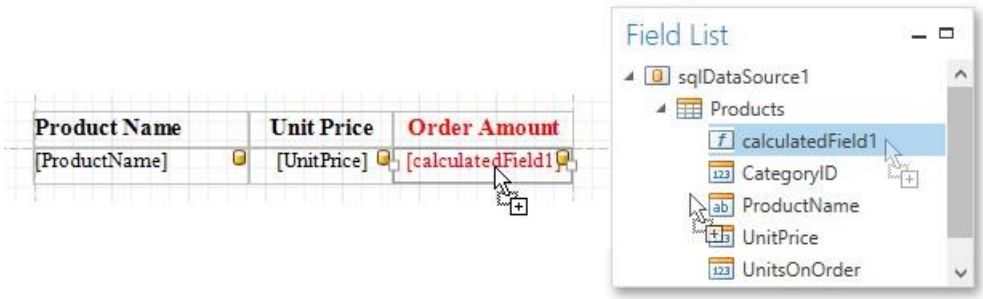
   Click the ellipsis button for the **Expression** property to invoke the **Expression Editor**. You can also invoke this dialog by right-clicking the calculated field within the Field List and selecting **Edit Expression.**



   Click **Fields** to see the field list. To add a data field or report parameter to this expression, double-click the required name. A data field is inserted into the expression's text using its name in **[**square brackets**]**, and parameters are inserted using the "**Parameters.**" prefix before their names. Use the toolbar to add operators between field names.

   To close the dialog and save the expression, click **OK**.

4. Finally, drag the calculated field from the Field List onto the required band like an ordinary data field.



The report with a calculated field is now ready. Switch to the Print Preview tab and view the result.

P rnduct Name	nit Price	Order Amount
Chan g	5 19 .0 0	$ 760 00
Ani;;eed Syrup	510 .0 0	$ 700 00
Que; o Cabral e;	521.0 0	$630 00
Sir Rodn e ,;; S co n e;	5 10 00	$400 00
Gorgonz ola Telino	5 125 0	$8 7) 00
Ma;;c arpon e Fabi oli	53 2 .0 0	51280 00
Gravad lax	526 .00	51300 00
lp oh Coffee	546 .0 0	$46000
Rogede .sild	*$95 0*	**$66)00**
Choco la de	5 12 .n	$8 92 .SO
Maxilaku	520.0 0	51200 00

Shaping Data

The topics in this section illustrate how to shape data in reports in various ways using the Report Designer.

- Grouping
- Data Sorting
- Data
- Filtering
  Data
- Calculating Summaries
- Formatting Data
-

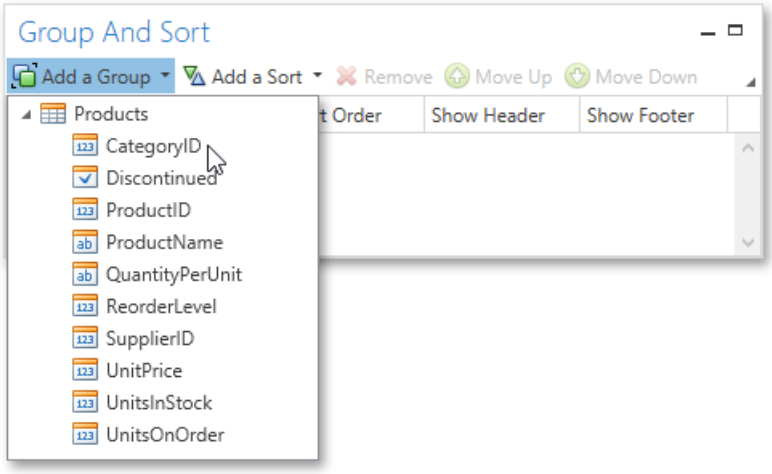
Grouping Data

This document demonstrates how to group report data. Grouping allows you to split data into groups based on identical values in a field or fields. Note that data grouping can be performed only if a report is bound to a data source.

To group records in a report, do the following.

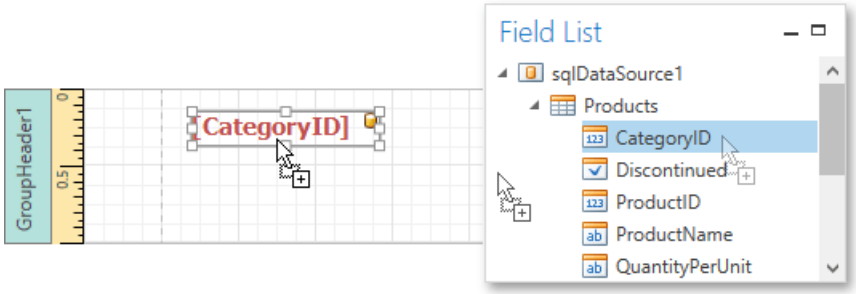
1. Create a new report and bind it to a data source. This tutorial starts with the following report.

2. Next, switch to the Group and Sort Panel, and click **Add a Group**. In the invoked drop-down list, select a data member across which the report is to be grouped.

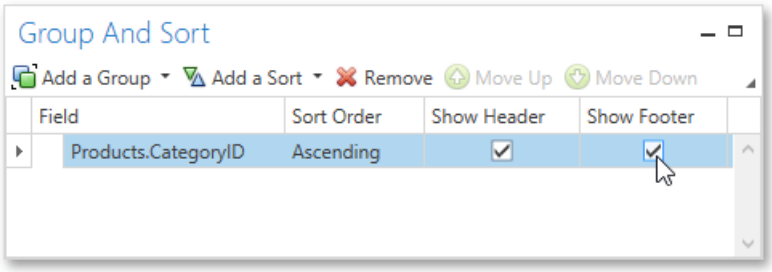


3. After this, the Group Header band is added to the report with the specified data member set as its grouping criterion.

   Drop the data field, which is specified as the grouping criterion, from the Field List panel onto the Group Header band. This data field will be displayed as a header for each group.

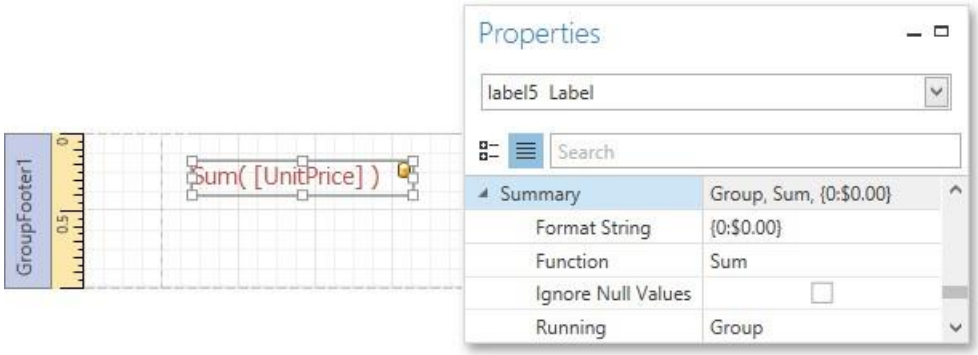


4. In addition, you can enable the corresponding Group Footer band by enabling the **Show Footer** option in the Group and Sort Panel.



Use the **Sort Order** drop-down list to manage the sorting order of the group's items (ascending or descending) or to disable sorting in grouped data. If multiple groups are created, you can specify the priority for each group by selecting it in the Group and Sort Panel and using the **Move Up** and **Move Down** buttons.

5. Then, you can calculate a total across the group by placing a Label onto the Group Footer band and specifying its **Summary** properties in the following way.



Note also that value formatting is applied to a summary independently of the general formatting, and has a greater priority.

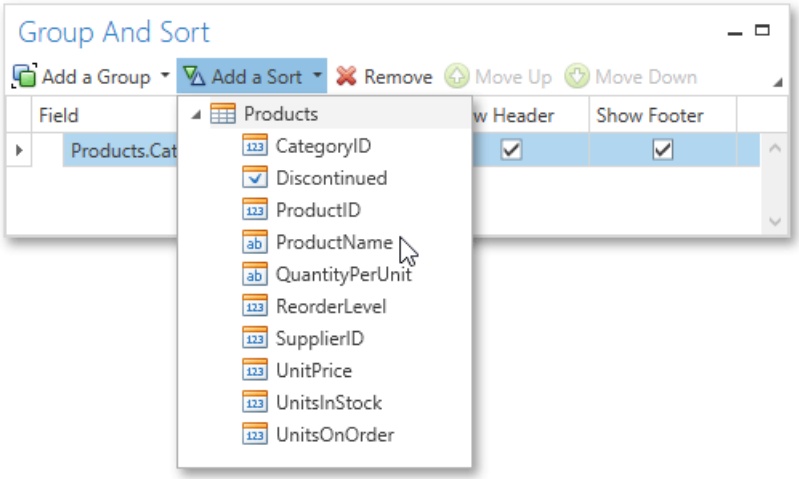
The report is now ready. Switch to the Print Preview tab and view the result.

Sorting Data

This document demonstrates how to sort report data. Note that as with data grouping, sorting can be performed only if a report is bound to a data source. This example uses the report created in the following tutorial: Grouping Data.

To sort records in a data-aware report, do the following.

1. Switch to the Group and Sort Panel, and click **Add a Sort**. In the invoked drop-down list, choose a data field across which the report is to be sorted.



2. To manage the sorting order, use the **Sort Order** drop-down list.

   If multiple sorting criteria are specified, you can define the priority for each one by selecting it in the Group and Sort Panel and using the **Move Up** and **Move Down** buttons.

The report is now ready. Switch to the Print Preview tab and view the result.

Filtering Data

If a report is bound to a data source that contains far more data rows than are necessary for processing report creation, you can exclude excessive or undesired data. To accomplish this, construct a filtering expression using single or multiple data fields.

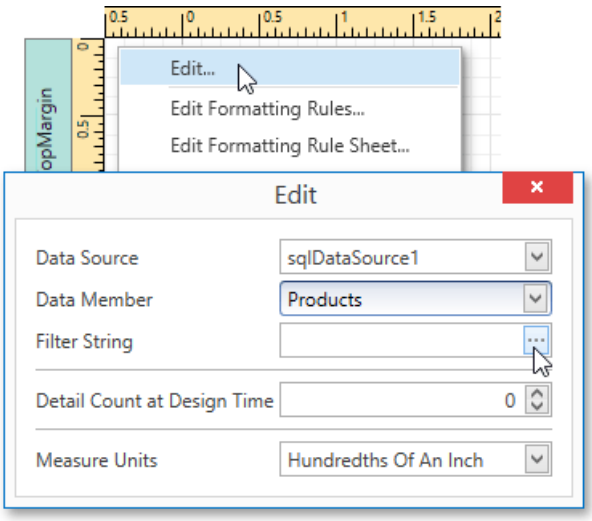
This document describes two approaches to filtering data in the Report Designer.

- Filter Data at the Report Level
- Filter Data at the Data Source Level

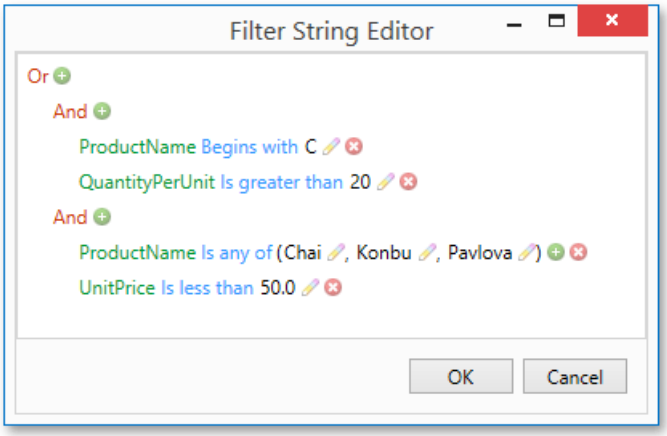
Filter Data at the Report Level

To filter a report's data, do the following.

1. Right-click the report and select **Edit...** in the context menu. In the invoked dialog, click the ellipsis button for the **Filter String** property.

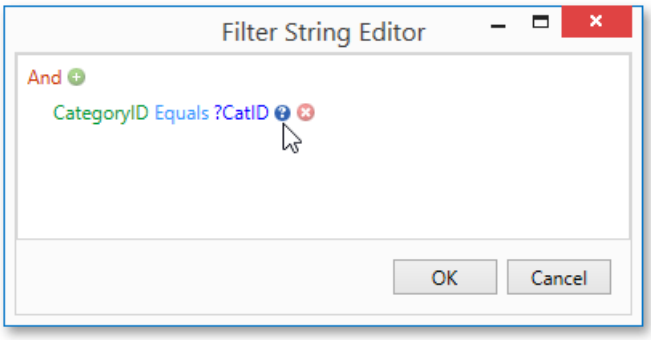


2. Then, in the invoked Filter String Editor, specify the filtering expression.



When creating a filter criteria, you can create and edit logical expressions, and also join the expression groups with And, Or, NotAnd, and NotOr operators. In every filter condition, the left part contains either the data field name, or the name of the calculated field, which exists in this data source at the same level. The right part of the condition contains either a certain numerical or string value, or the name of the report parameter.

To access parameters, click the icon on the right, until it turns into a question mark.

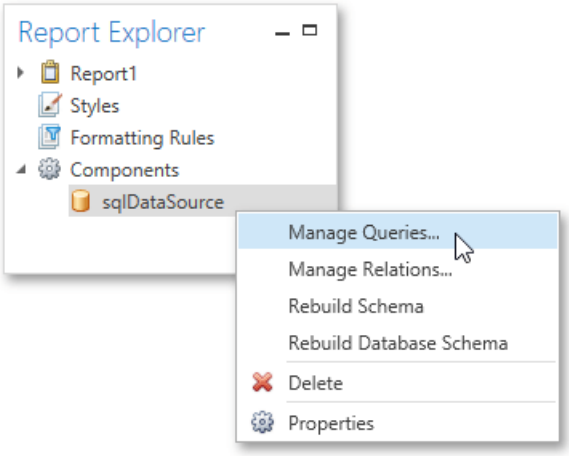


To quit the dialog and save the changes, click **OK**.

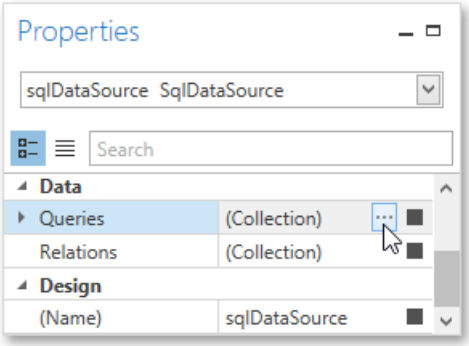
Filter Data at the Data Source Level

To filter data before it has been supplied to a report, you can modify a query of an SqlDataSource assigned to the report's **Data Source** property. To do this, perform the following steps.

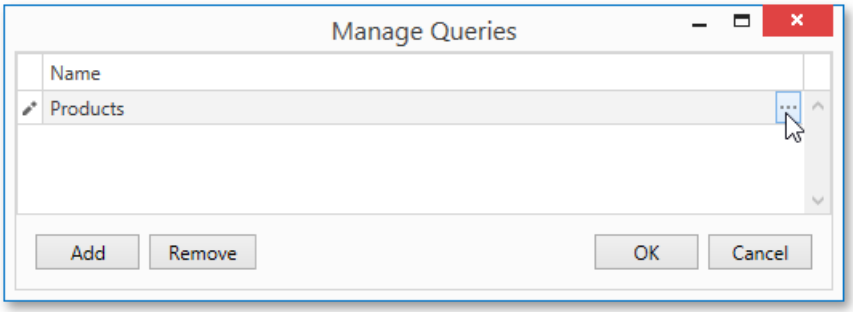
1. Invoke the **Manage Queries** dialog using one of the following ways.
   - Switch to the Report Explorer and right-click the data source item under the **Components** node. In the invoked context menu, select the **Manage Queries...** command.



   - Select a data source, and in the Properties Panel, click the ellipsis button for the **Queries** property.

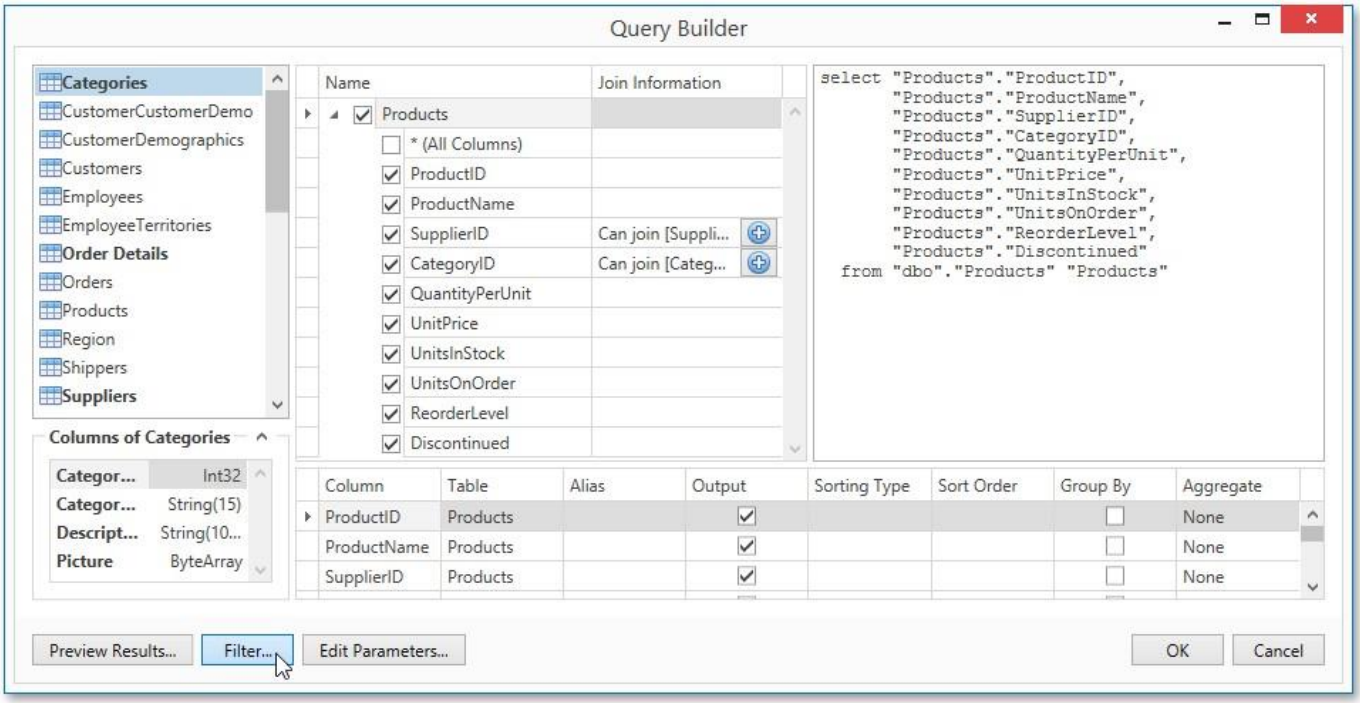


2. In the invoked dialog, click the ellipsis button corresponding to the required query.

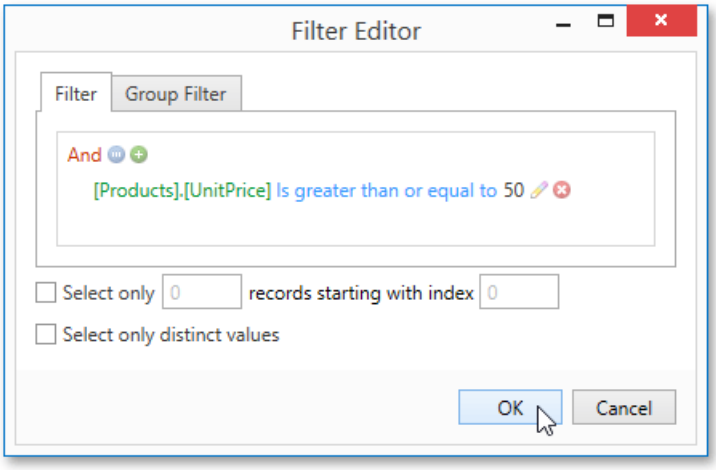


3. Next, in the invoked **Data Source Wizard**, click the **Run Query Builder...** button.

4. In the **Query Builder**, click the **Filter...** button.



5. In the invoked **Filter Editor**, construct a filtering expression that will be used to filter resulting data at the data source level.



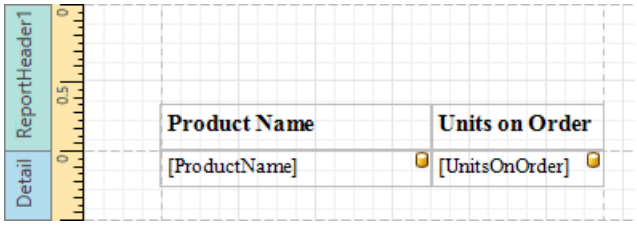
Note that it is possible to embed query parameters into the expression.

Calculating Summaries

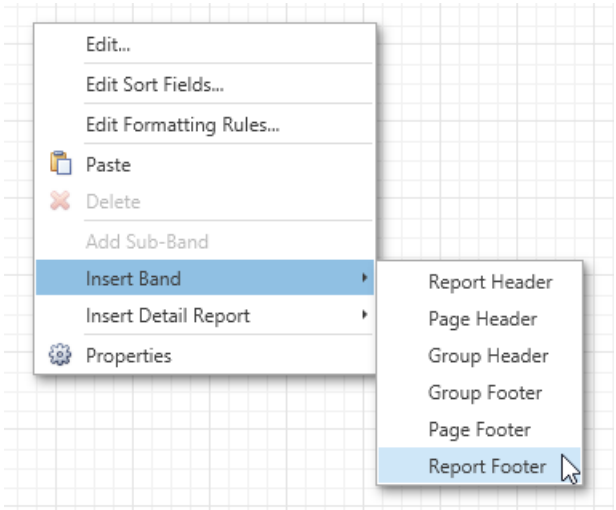
With the Report Designer, you can force a data-bound control to calculate one of the standard summary functions (**Average**,
Sum, **Count**, **Max**, **Min**, etc.).

To calculate summaries (totals) within a report, follow the instructions below.

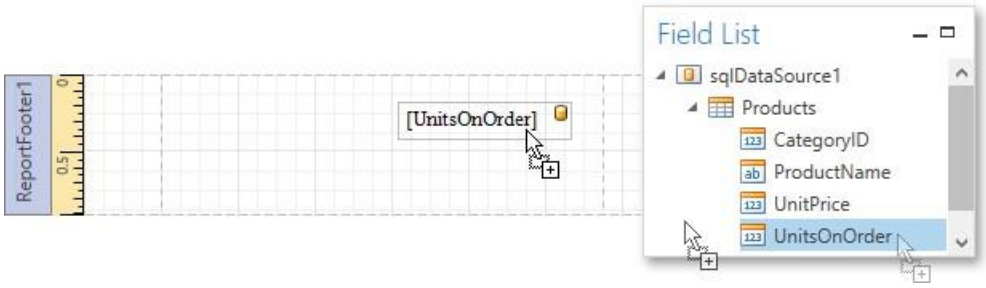
1. Create a new report and bind it to a data source. This tutorial starts with the following report layout.



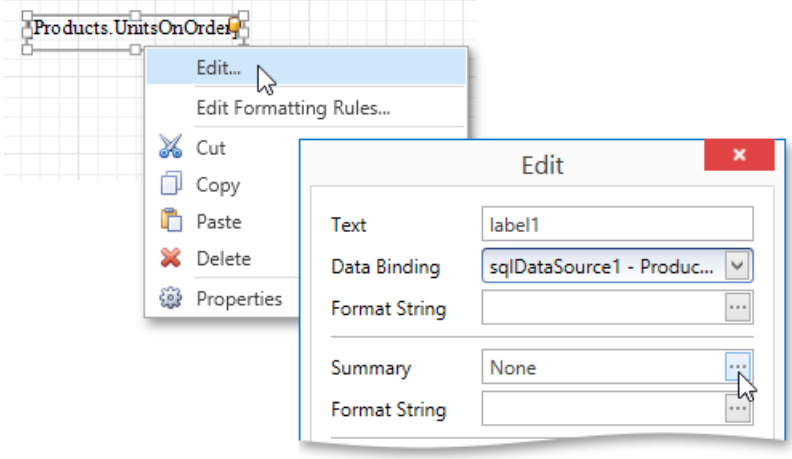
2. To display a summary at the bottom of the report, add the Report Footer band. To do this, right-click the report's area and in the invoked context menu, select **Insert Band**, and then **Report Footer**.



3. Switch to the Field List panel, select the field for which a summary will be calculated and drop it onto the created Report Footer band.



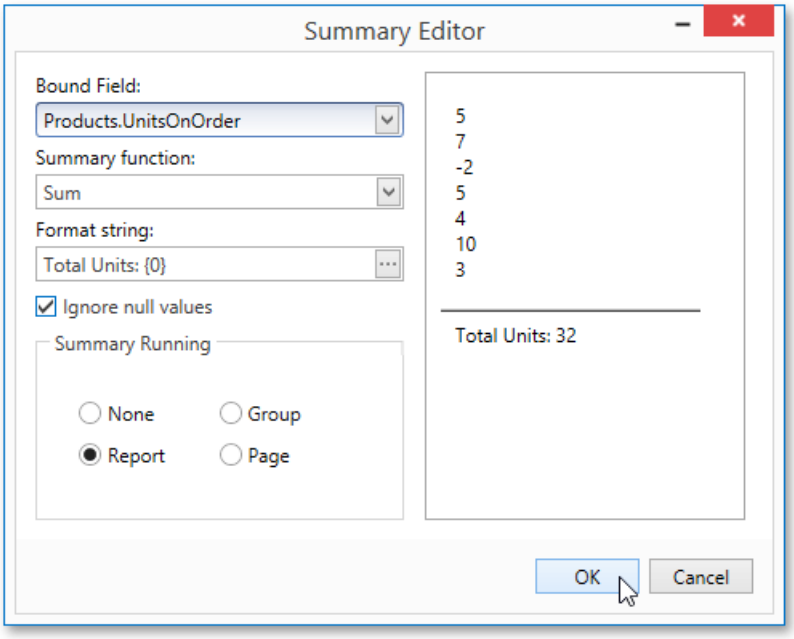
4. Right-click the newly created Label and select **Edit...** in the context menu. In the invoked dialog, click the ellipsis button for the **Summary** property.



5. In the invoked **Summary Editor**, specify the summary options. In the **Summary function** drop-down, select **Sum**. Note that in addition to a simple summary, you can choose among numerous built-in functions (such as **Count** and **Average**).

   The **Summary Running** option is set to **Report** to ensure that all values from the specified data field are taken into account. You can also define a summary function's **Format string**. Note that value formatting is applied to a summary independent of general formatting and has a greater priority.

   The **Ignore NULL values** option would not affect the result in this example, since NULL values are treated like zeros by default. This option makes sense for functions like **Count** or **Average**, because the number of elements counted will depend on this option.



To save the settings and close the dialog, click **OK**. Switch your report to the Print Preview tab to view the result.

Pr oduct Name	nits on Orde,r
a	
Aniseed Syrup	0
Que;o C abra les	,:,0
Sir Ro dne y, 1 S cone ,	40
Gorgonz ola Telino	70
Masca rpone Fabicli	40
Gra v ad lax	50
Ipoh Coffee	10
R ogede sild	0
Cho colade	0
Maxil aku	60
Gnocchi din onn a AJ, ice	10
Wumn ers guie Sernmelkn cida	8 0
Louisiana Hoi Spiced Cl=	100
Sco ttish Longbrea ds	10
Ouiback Lager	10
Longlife Io fu	20

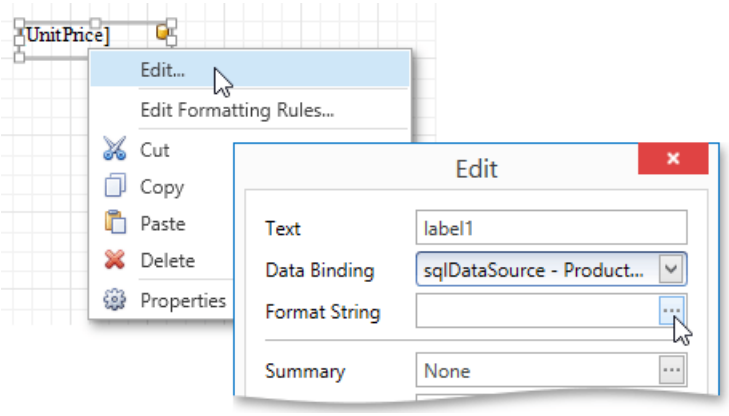

Tot
Units: 780

Formatting Data

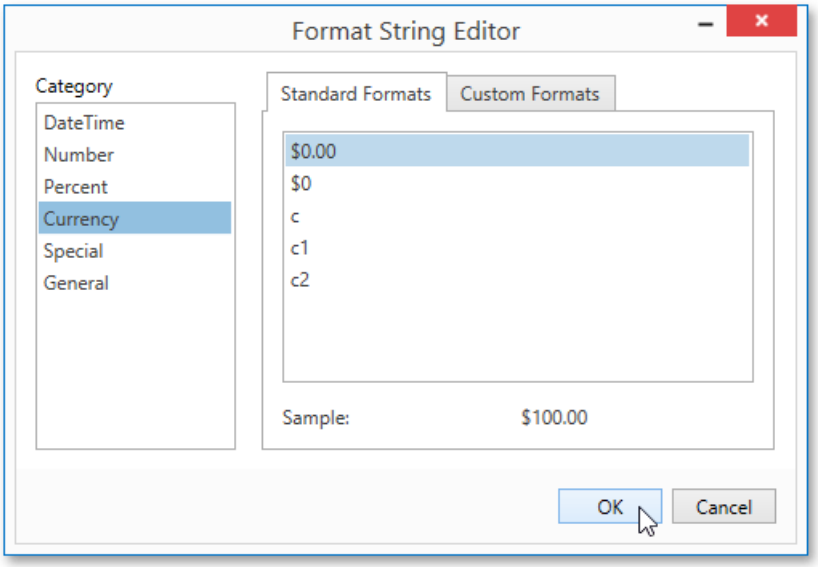
This topic describes how to change value formatting of report elements in the Report Designer. For instance, you can format a numeric value as a currency, display a date/time value in one of the standard forms depending on the culture, etc.

To apply value formatting for a data-bound control's content, do the following.

1. Right-click the control, and select **Edit...** in the context menu. In the invoked dialog, click the ellipsis button for the **Format String** property.

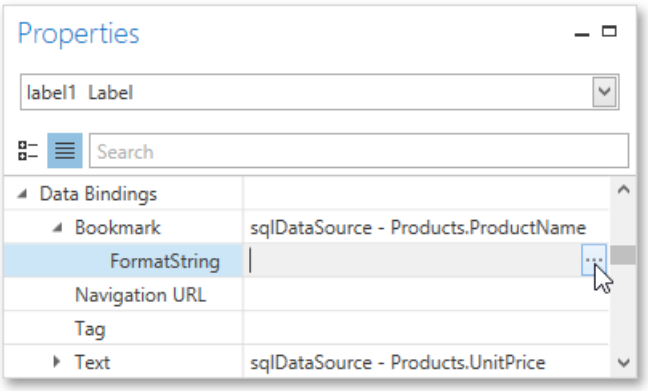


2. In the invoked **Format String Editor**, select one of the predefined standard formats or specify a custom one.



   To quit the dialog and apply the changes, click **OK**.

In a similar way, you can apply formatting to a control's **Bookmark**, **Navigation URL** and **Tag** properties using the Properties Panel. Note that the set of bindable properties depends on the control type.



When a summary function is applied to a control's dynamic content, value formatting is specified separately as described in the Calculating Summaries document.

Independently from general and summary value formatting, you can specify a native XSLX format string, which is preserved when the report is exported to XLSX. You can do this using a control's **Xlsx Format String** property.

Appearance Customization

The topics in this section describe how to customize the appearance of a report or any of its elements using specific appearance options, visual styles and conditional formatting.

This section consists of the following topics.

- Understanding Style
- Concepts Use Odd and
- Even Styles
- Conditionally Change a Control's
- Appearance Conditionally Hide Bands
- Conditionally Change a Label's Text

Understanding Style Concepts

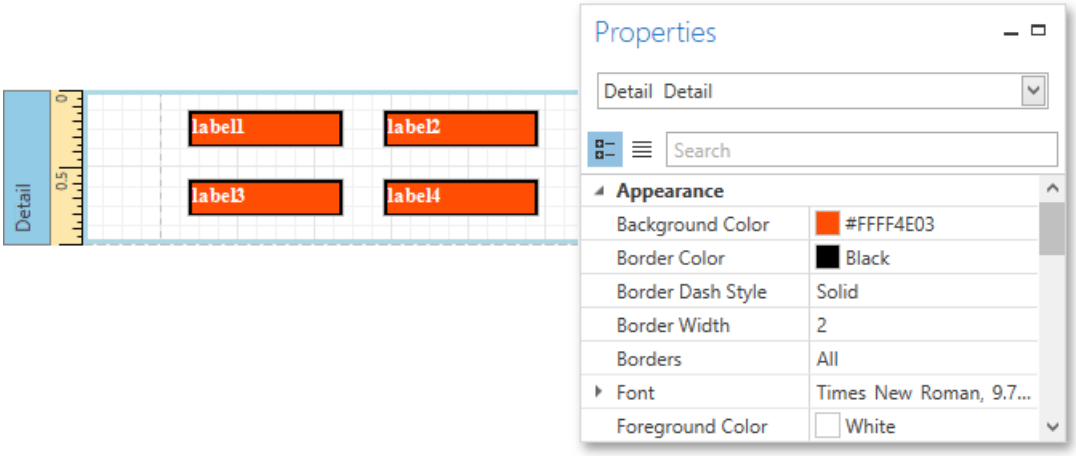
This document describes how you can provide a professional look to your reports by effectively adjusting the appearance of its elements.

This document consists of the following sections.

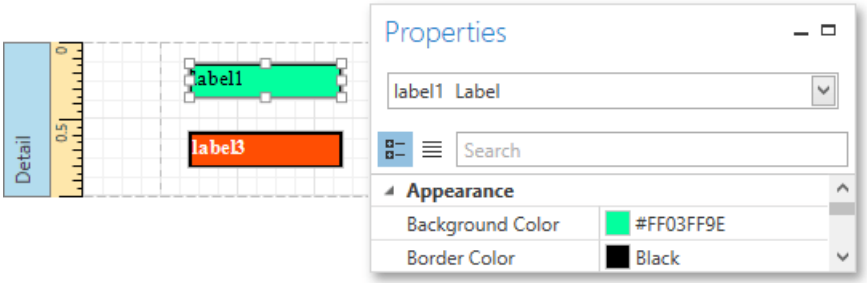
- Appearance Properties
- Visual Styles
- Styles Priority

Appearance Properties

In the Report Designer, a report and each of its elements (bands and controls) has a complete set of appearance options (such as **Background Color**, **Borders**, **Font**, **Foreground Color**, **Text Alignment**, etc.). By default, these properties are not specified, meaning that their real values are obtained from a control's (or band's) *parent*, which is the report itself. So, the appearance specified for a report is distributed to all its child elements. Similarly, the appearance of a band is translated to the controls it contains.



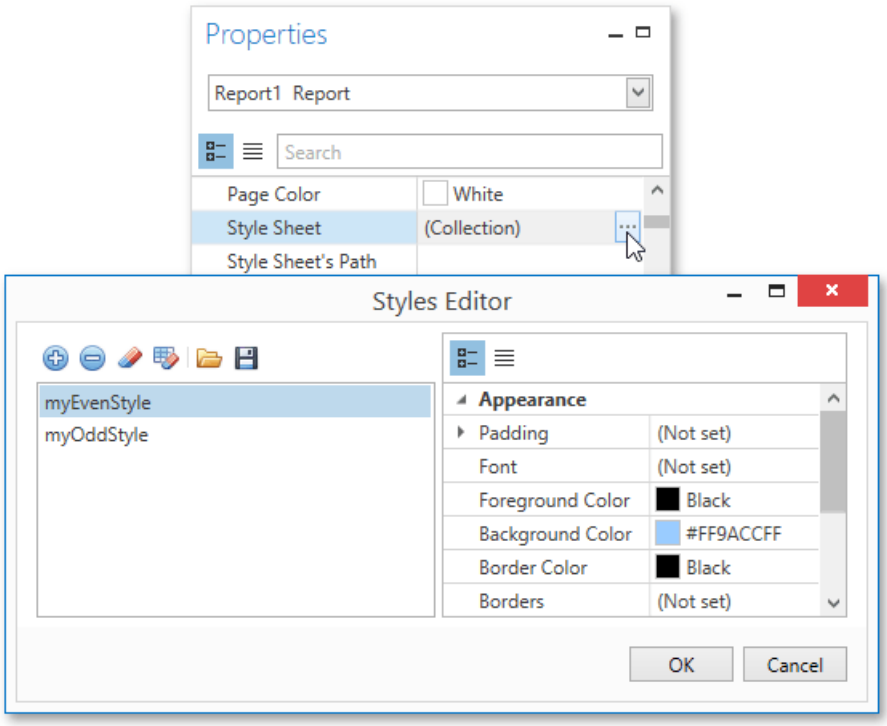
In turn, a control's appearance can be adjusted independently from its parent.



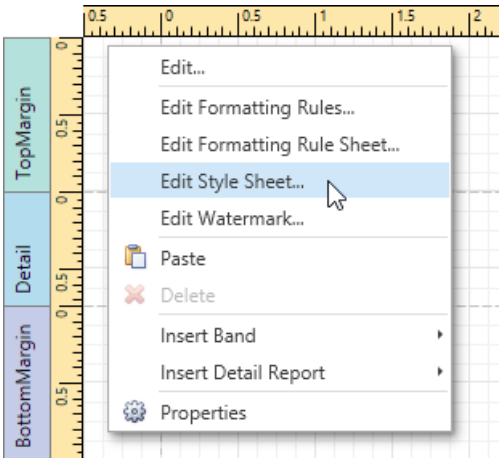
Visual Styles

In addition to the capability to specify appearance property values for every control and band, you can create comprehensive global *styles* (which are stored in the report's *style sheet*), and then assign them to individual report elements.

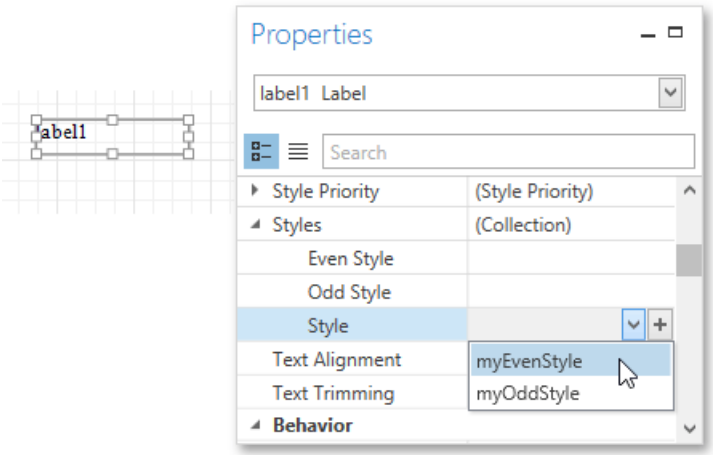
Click the ellipsis button for the report's **Style Sheet** property to invoke the **Styles Editor**, which allows you to manage a report's style sheets, customize them, save them to a file and load from it.



You can also invoke the **Styles Editor** by right-clicking the report and selecting **Edit Style Sheet...** in the context menu.

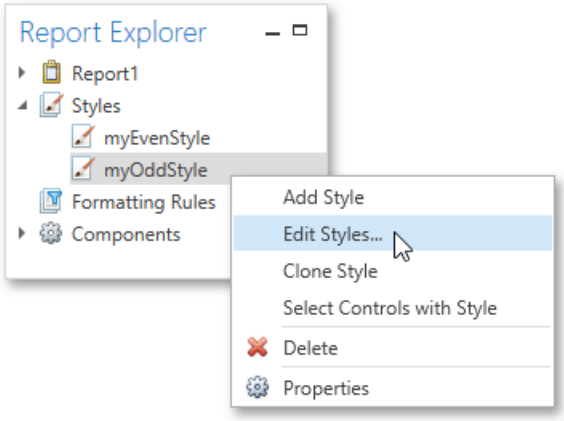


To assign a particular style to a control, invoke the drop-down list for its **Style** property. Then, select one of the styles stored in a report's sheet collection or click the plus button to create a new style sheet.



Note that if a style is assigned to a band, it is applied to all controls that the band contains.

You can also use the Report Explorer to access the style collection. Commands of the context menu allow you to add, edit, clone or delete a style.

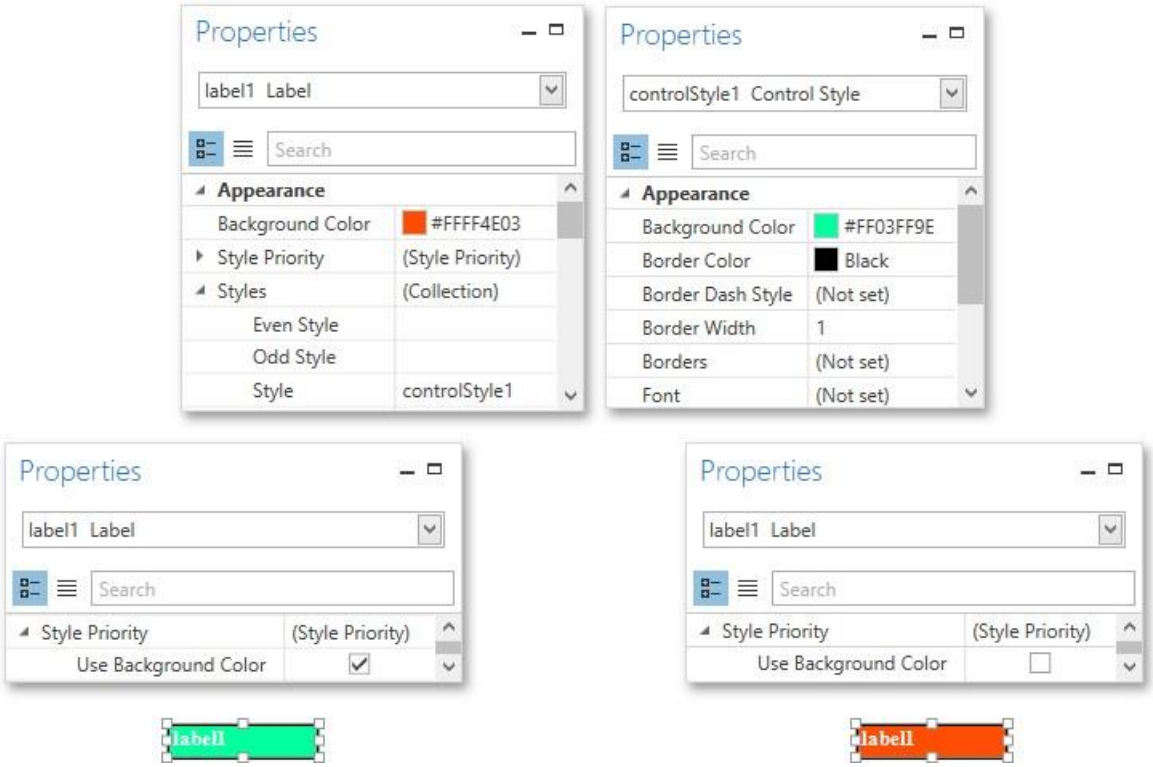


Styles Priority

A style defines the same appearance properties that are defined by a control's (or band's) appearance properties. When both styles and individual appearance settings are assigned to an element, you can control the priority of their options using an element's **Style Priority** property.

By default, most of the **Style Priority**'s options (**Use Background Color**, **Use Border Color**, etc.) are set to **Yes**. This means that if any style is assigned to a control, its properties will have a higher priority than the appearance properties of this element or its parent. You can assign a higher priority to an element's appearance property by disabling the corresponding **Use*** property.

The following image demonstrates how the **Style Priority** property works.



The same principles are applied to the *odd-even styles* feature, which allows you to alternate the appearance of consecutive data rows in your report. For details on this, refer to Use Odd and Even Styles.

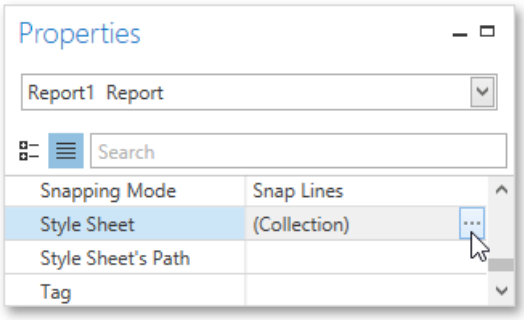
O Not e

When conditional formatting is applied to an element, its appearance definition has the highest priority.

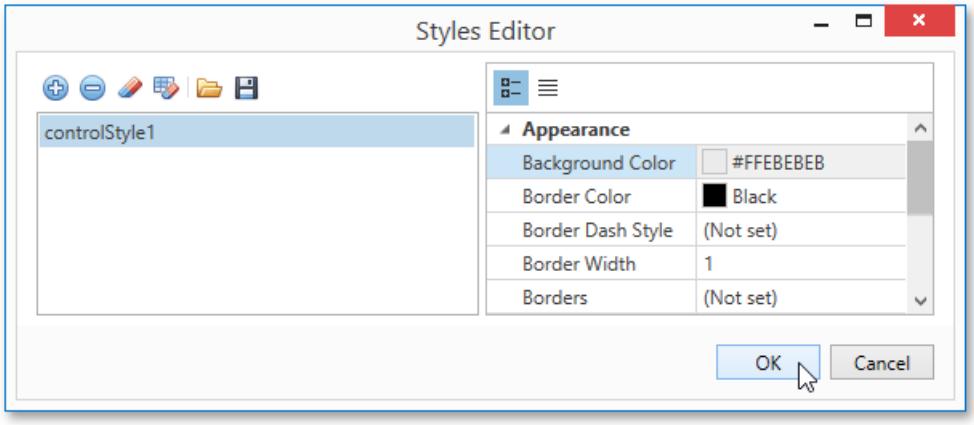
Use Odd and Even Styles

This tutorial describes how to apply *odd and even styles* to report controls, e.g., to alternate the background color for each record. To utilize odd and even styles, do the following.

1. Create a table report.
2. In the Properties Panel, click the ellipsis button for the report's **Style Sheet** property.

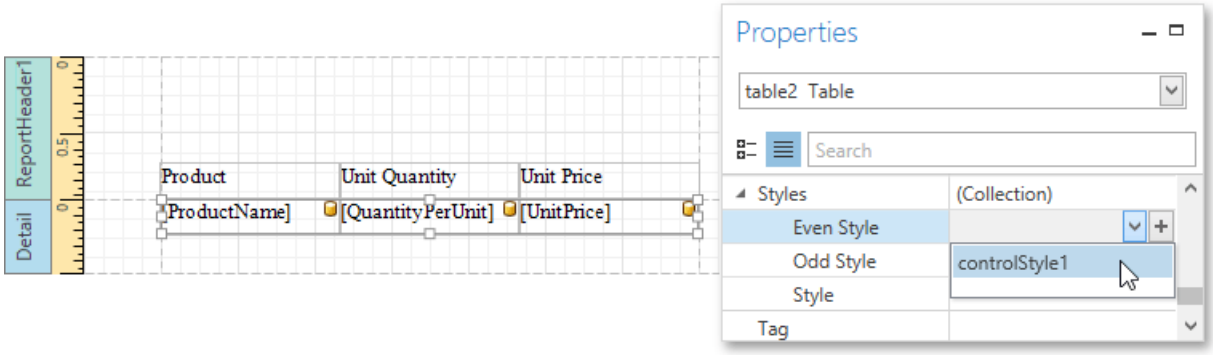


3. In the invoked **Styles Editor**, click the plus button to add a new style. Then, adjust the required options, e.g., set the **Background Color**.



Click **OK** to apply changes and quit the dialog.

4. Select the detail table, and in the Properties Panel, expand its **Styles** option. Invoke the drop-down list for the **Even Style** property and select the created style.



If required, perform the same steps to create and assign an odd style. Switch to the Print Preview tab and view the result.

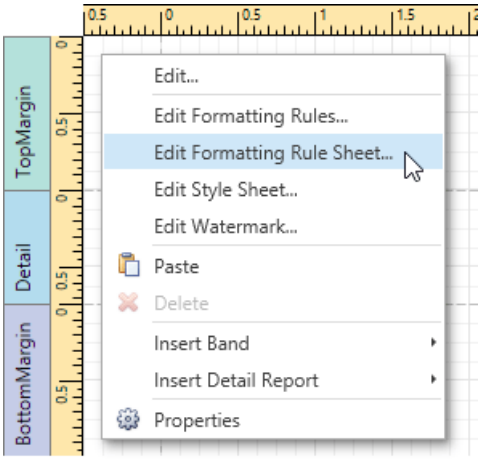
Product	Unit Quantil)'	Unit Price
Chai	10 boxes x 20 bags	$18
Cli.ang	24 - 12 oz bottles	$19
Aniseed Syrup	12 - 550 ml bonles	$10
Chef Anton's Cajun Seasoning	48 - 6 oz jars	$22
Chef Anton's Gumbo Mix	36 boxes	$2L
Grnmlma's Boysenberry Spread	12 - 8 oz jars	$25
Uncle Bob's Organic Dfi.ed Pears	12 - I lb pkgs	$30
:Nor,th voods Cranberry Sauce	12 - 12 oz jars	$40
"1l.shi. Kobe iNiku	18 - 500 g pkgs	$
Tk t.rra	12 - 200 ml jars	$31
Queso Cabrales	I kg pkg	$2
Queso Manchego La Pastora	1n	

Conditionally Change a Control's Appearance

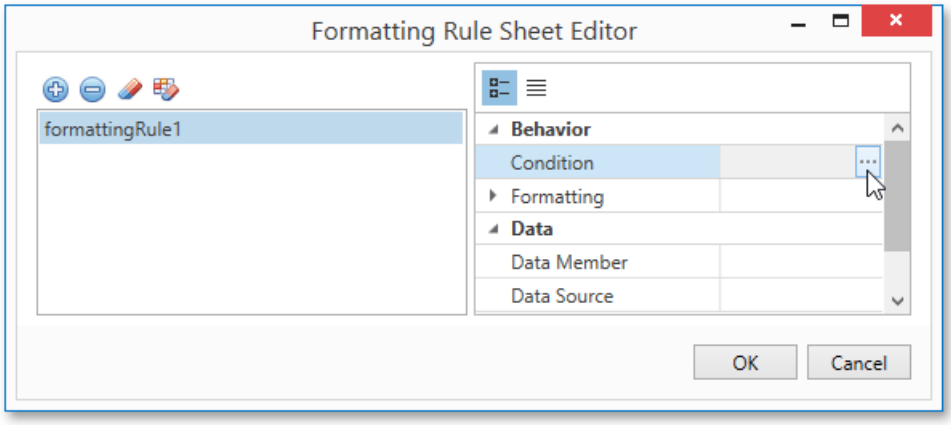
This tutorial describes how to conditionally change a control's appearance (e.g., make a Label's text red if its value exceeds a certain threshold). Thanks to the *formatting rules* feature, no scripts are required to complete this task, so you should not have to write any code.

To conditionally change a control's appearance, do the following.

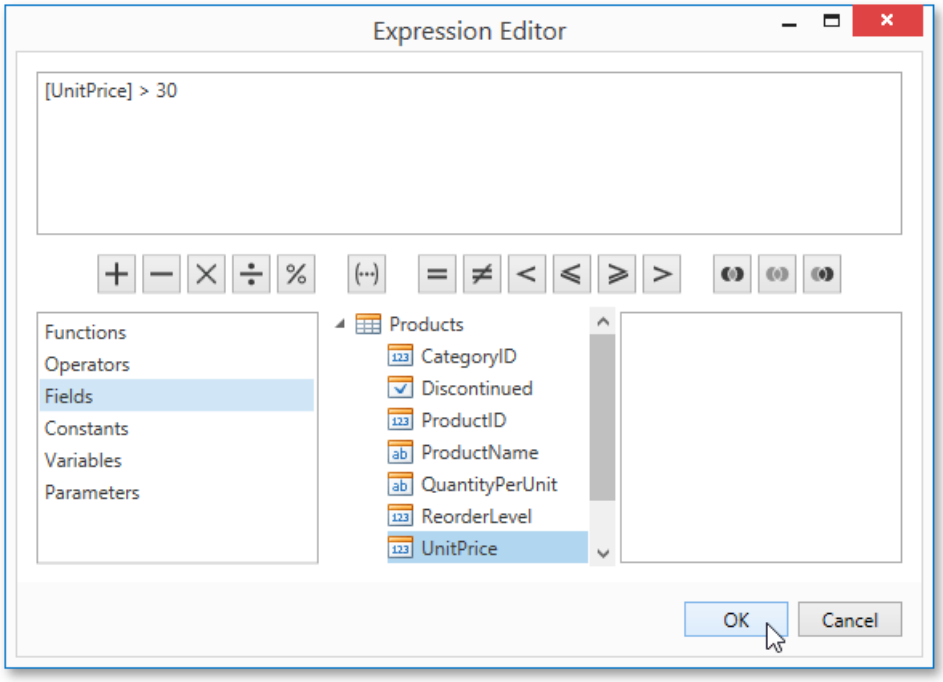
1. Create a new report and bind it to a data source.
2. Right-click the report and select **Edit Formatting Rule Sheet...** in the invoked context menu.



3. In the invoked **Formatting Rule Sheet Editor**, create a new formatting rule using the plus button, and then, click the ellipsis button for its **Condition** property.

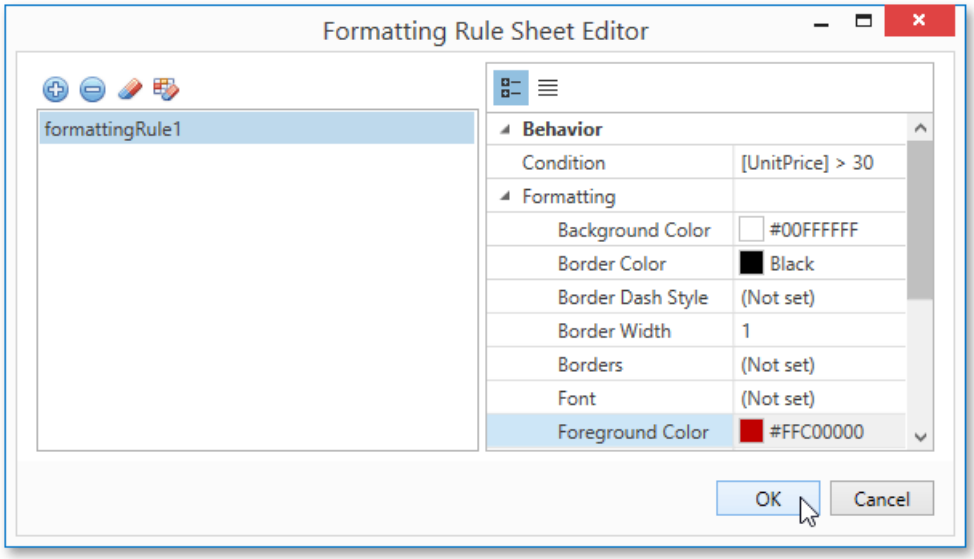


4. In the invoked **Expression Editor**, define the required Boolean condition (which means that its result is returned as either
true or **false**). This tutorial demonstrates how to format fields if the **UnitPrice** value is greater than **30**.



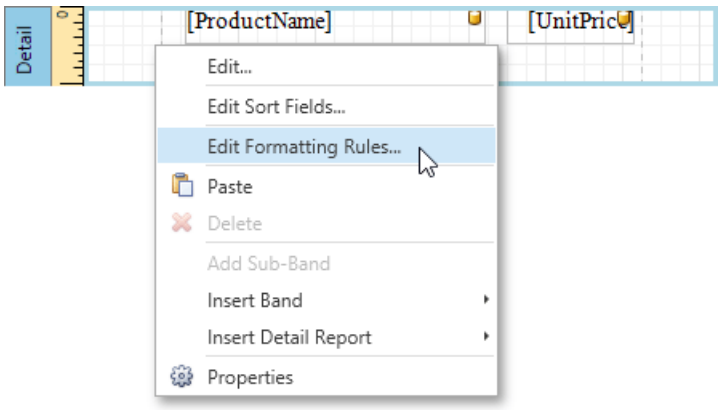
To save the condition and close the dialog, click **OK**.

5. Return to the **Formatting Rule Sheet Editor** and define the formatting to be applied, e.g., specify the desired foreground color.

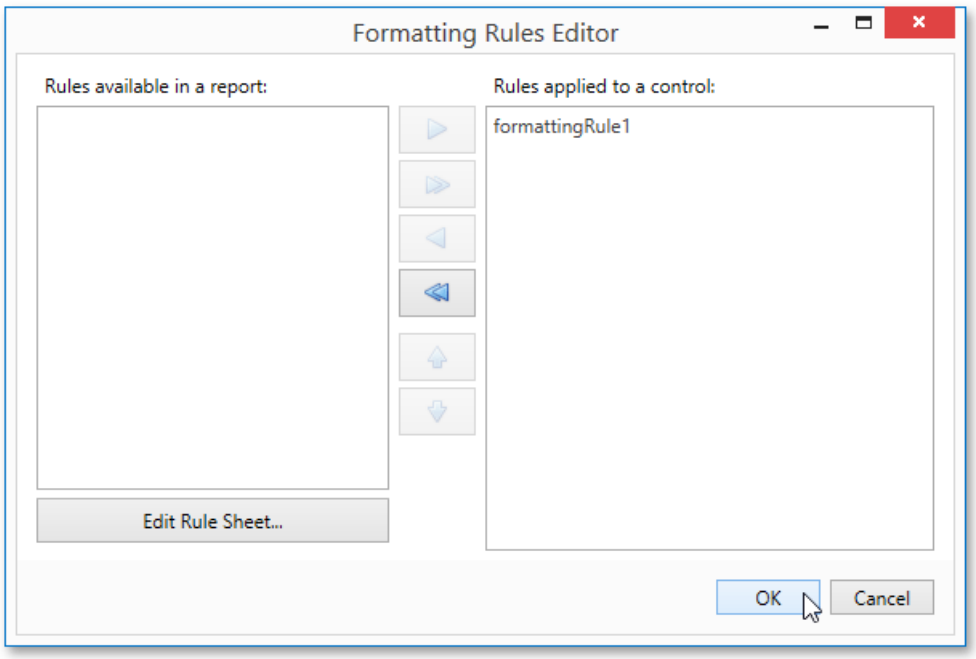


To save the changes and quit the dialog, click **OK**.

6. Finally, select the band or control to which the formatting rule should be applied (in this example, it is the Detail band), and select **Edit Formatting Rules...** in the context menu.



7. In the invoked **Formatting Rules Editor**, move the rule from left to right using the right arrow button so that you can apply the rule for this band.



If multiple rules are applied, it is possible to customize their precedence using the up and down arrow buttons. So, the rules are applied in the same order that they appear in the list, and the last rule in the list has the highest priority.

Switch your report to the Print Preview tab and view the result.

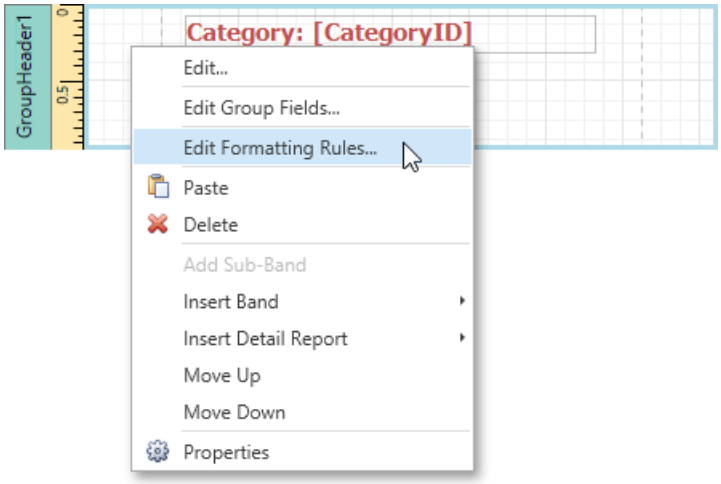
Product Name	Unit Prfr.e
Chai	$ 18.00
Chang	$ 19 00
Aniseed Syrup	$ 10 00
Chef Anion's Cajun Searoning	$22.00
Chef Anton' Gumbo Mix	*$213 5*
Gran dma'; Boysenbeny Spread	$2) 00
Und e Bob's Organic Dried Pean	$30 00
Northwoods Cranbeny SaUDe	$4000
]\.!j_fili Kobe Niku	$97 00
Ikura	$3 100
Que;o Cabra!eS	$21.00
Que;o Manch ego La Partora	$3!-! 00
Konbu	$6.00
Tofu	*$23.25*
Genen Shouyu	$ 15.50
Pavlova	$1 *-45*
Alice Mutton	$39 00
Cam ar"on Tigm	$62) 0
Teatnn e Ch oco la te	

Conditionally Hide Bands

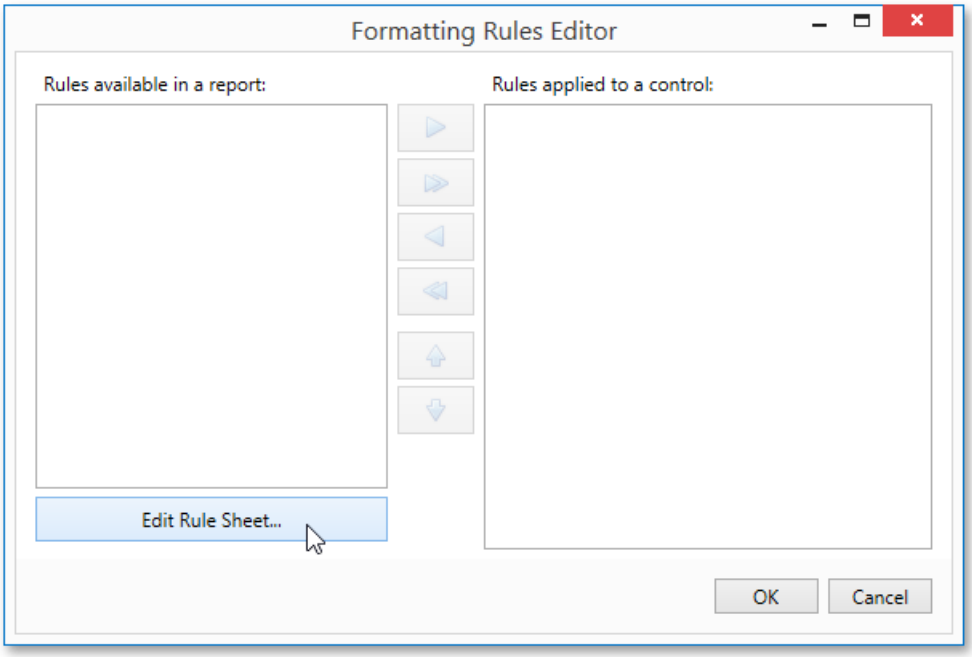
This tutorial describes how to hide bands if a certain logical condition is met. Note that no scripts are required to accomplish this task.

To demonstrate this feature, use a report with grouping similar to the one created in the following tutorial: Grouping Data. To conditionally hide bands in a report, do the following.

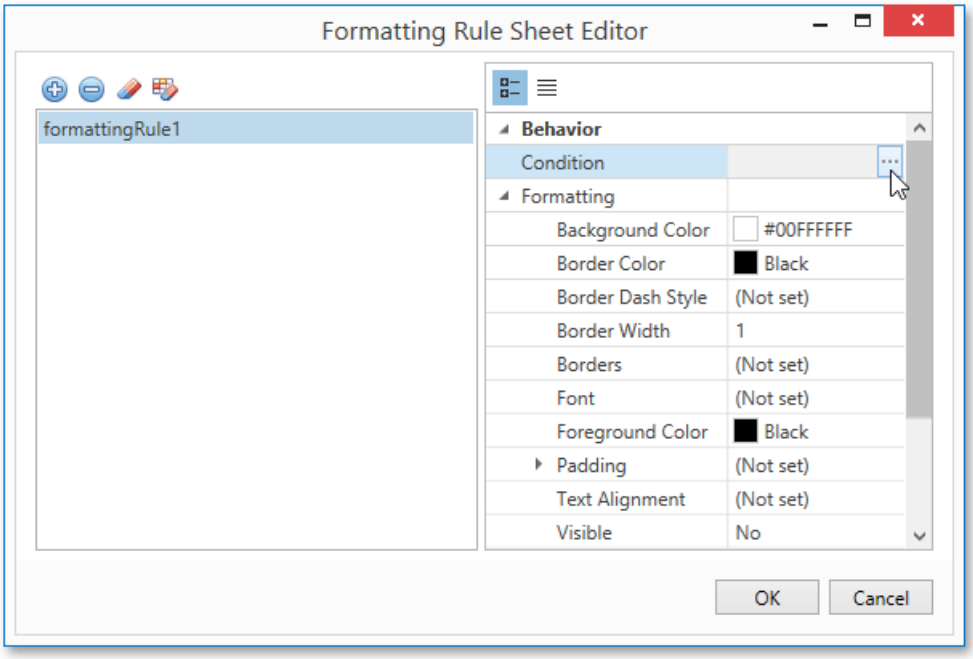
1. Right-click the Group Header and select **Edit Formatting Rules...** in its context menu.



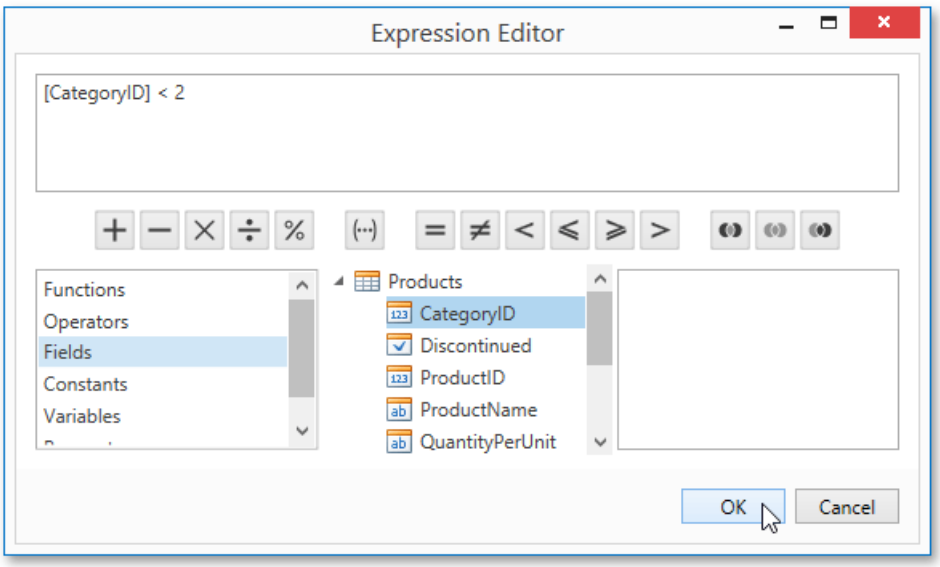
2. In the invoked **Formatting Rules Editor**, click the **Edit Rule Sheet...** button.



3. Then, in the invoked **Formatting Rule Sheet Editor**, click the plus button to create a new rule. Set its **Visible** property to **No**, and click the ellipsis button for the **Condition** property.

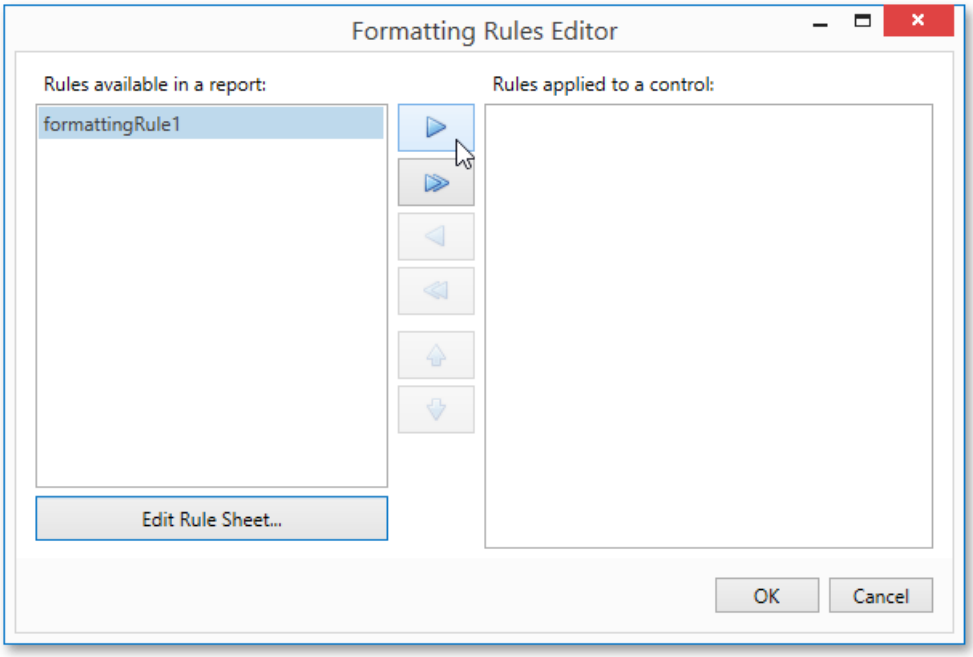


4. Construct the required logical expression (e.g., **[CategoryID] < 2**), and click **OK**.



To quit the **Formatting Rule Sheet Editor** and save changes, click **OK**.

5. Return to the **Formatting Rules Editor** and move the created rule to the dialog's right section using the right arrow button to make it active.



6. Apply the same formatting rule to the report's Detail band.

Switch to the Print Preview and view the result. In this example, you can see that the first category is not shown. So, the conditional formatting was applied properly.

Products by Categories

Category: 2

Aniseed Syrup	$10.00
Chef Anton's Cajun Seasoning	$22.00
Chef Anton's Gumbo Mix	$21.35
Genen Shouyu	$15.50
Grandma's Boysenberry Spread	$25.00
Gula Malacca	$19.45
Louisiana Fiery Hot Pepper Sauce	$21.05
Louisiana Hot Spiced Okra	$17.00
Northwoods Cranberry Sauce	$40.00
Original Frankfurter grüne Soße	$13.00
Sirop d'érable	$28.50
Vegie-spread	$43.90

Category: 3

Chocolade	$12.75

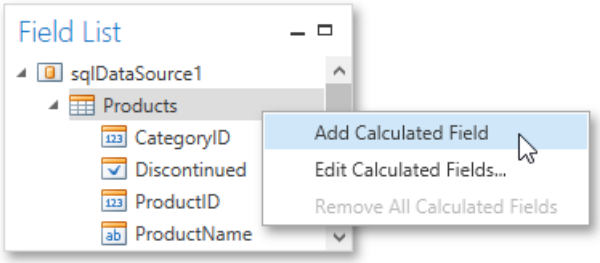
Conditionally Change a Label's Text

This tutorial demonstrates how to change a label's text if a certain condition is met. No scripts are required to accomplish this task.

To conditionally change a label's text, do the following.

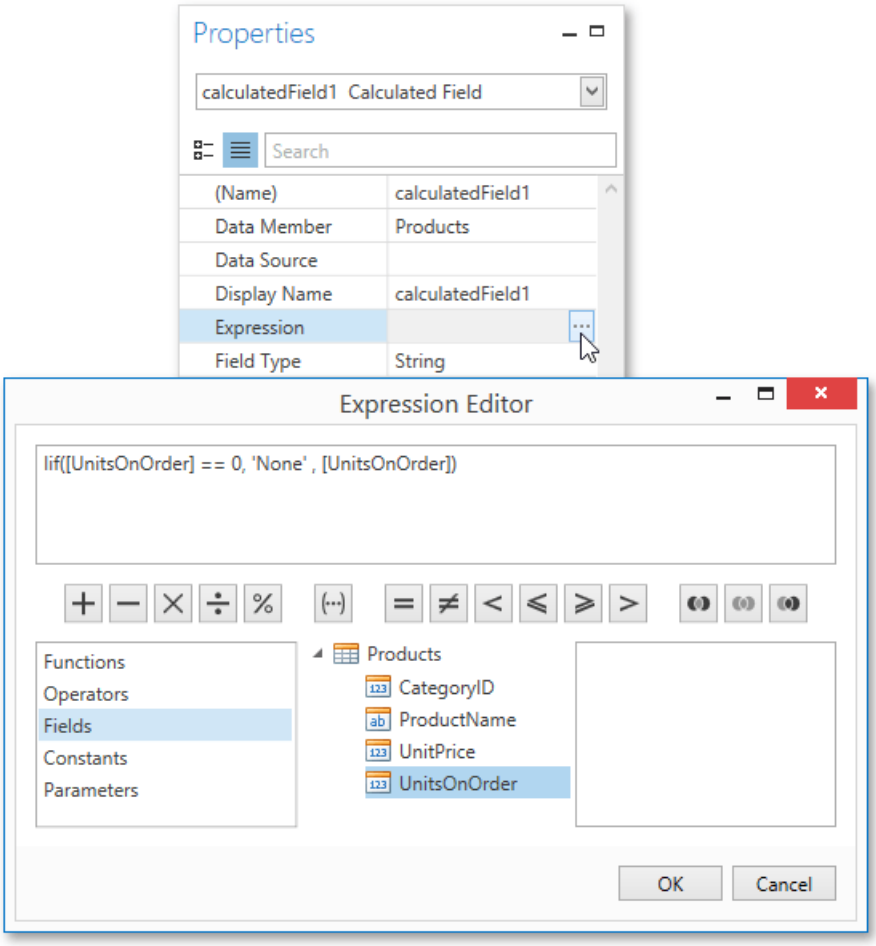
1. Create a new report and bind it to a data source.

2. Next, add a calculated field. To do this, in the Field List, right-click any item inside the created data source, and in the invoked context menu, select **Add Calculated Field**.



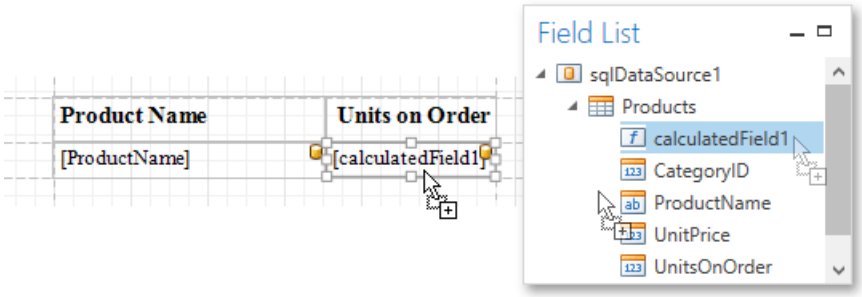
3. Select the calculated field, and in the Properties Panel, set its **Field Type** to **String**. Then, click the ellipsis button for the **Expression** property.

   In the invoked **Expression Editor**, specify the required logical condition for the calculated field (e.g., **Iif([UnitsOnOrder] == 0, 'None', [UnitsOnOrder])**, which means that if the **UnitsOnOrder** data field's value is equal to **0**, the control's text will be replaced with **None**).



To save the changes and close the dialog, click **OK**.

4. Finally, drop the required data fields and the created calculated field from the Field List onto the report's Detail band.



The report is now ready. Switch to the Print Preview tab and view the result.

Product Name	Units on Order
Chai	None
Chang	40
Aniseed Syrup	70
Chef Anton's Cajun Seasoning	None
Chef Anton's Gumbo Mix	None
Grandma's Boysenberry Spread	None
Uncle Bob's Organic Dried Pears	None
Northwoods Cranberry Sauce	None
Mishi Kobe Niku	None
Ikura	None
Queso Cabrales	30
Queso Manchego La Pastora	None
Konbu	None

Report Navigation and Interactivity

The topics in this section explain how to establish navigation through a report in different ways and enable editing reports in Print Preview.

This section consists of the following topics.

- Add Bookmarks
- Create a Table of Contents
- Create Hyperlinks
- Add a Cross-Reference
- Enable Content Editing in Print Preview

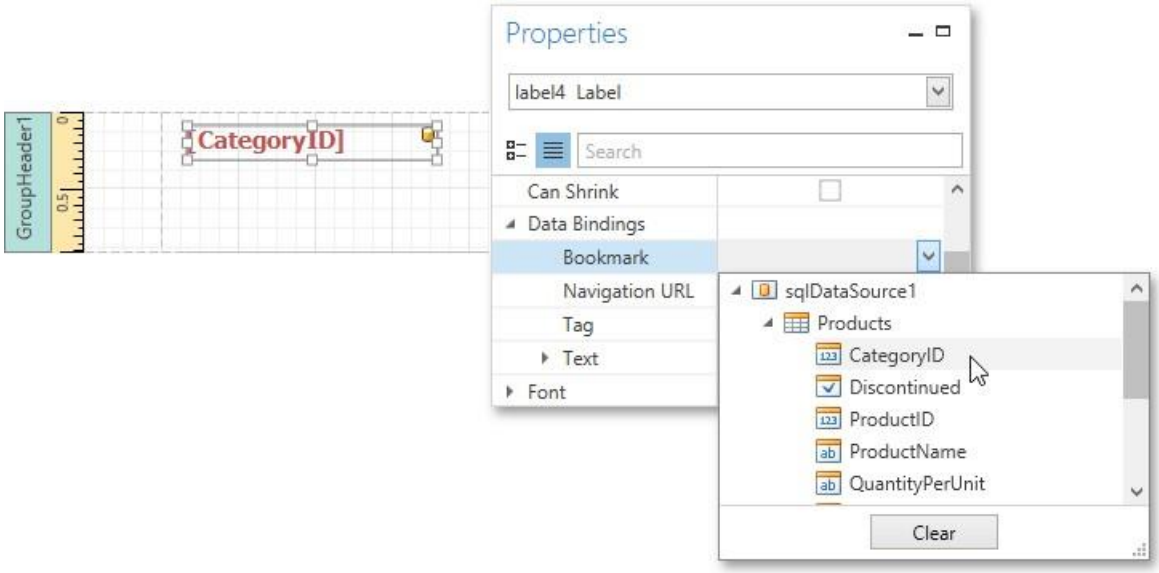
Add Bookmarks

This tutorial describes the steps to create a report with *bookmarks* (a so-called *Document Map*). This feature allows you to easily navigate through the report during print preview.

To demonstrate the Document Map feature, use a report with grouping, similar to the one created in the following tutorial: Grouping Data.

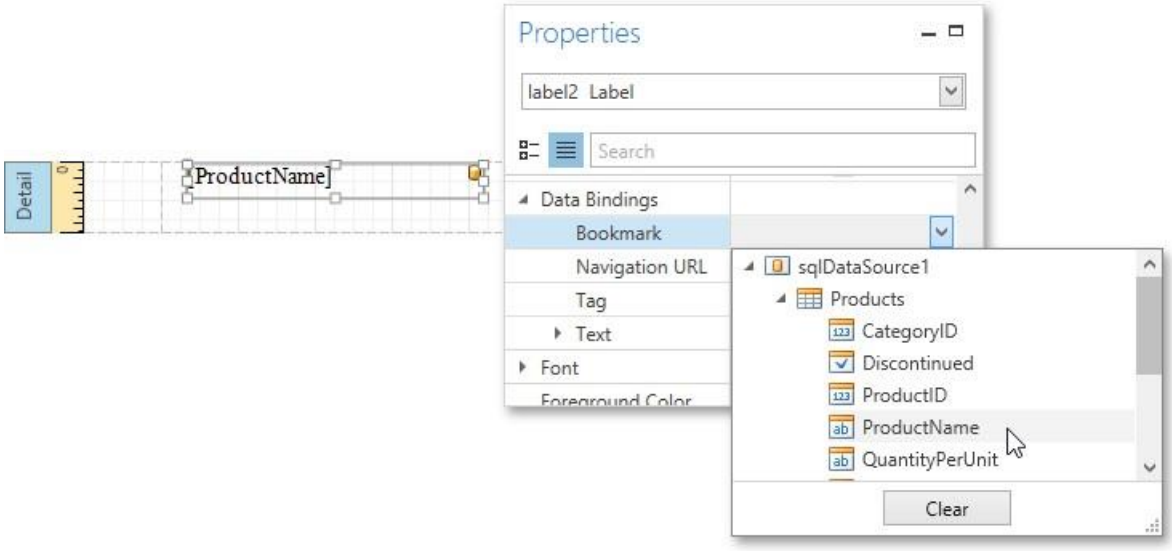
To create a report with bookmarks, do the following.

1. Select the label placed in the Group Header band, and in the Properties Panel, expand the **Data Bindings** property. As this control is bound to data, bind its **Bookmark** property to the same data field (in this example, **CategoryID**).

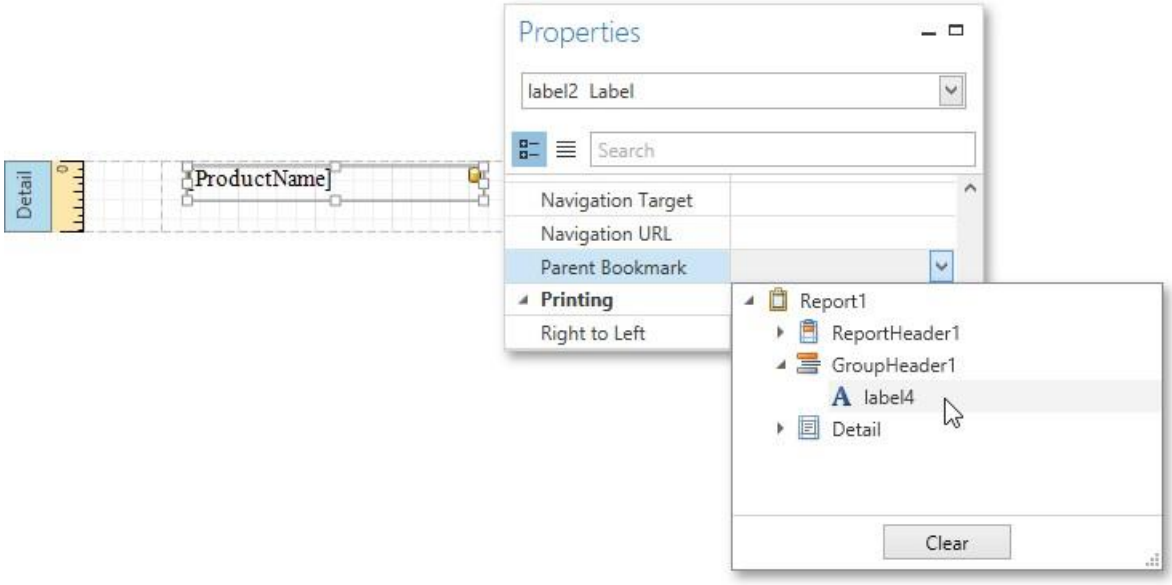


   Note that as with other bindable properties, you can also apply value formatting to the **Bookmark** property (e.g., **Category: {0}**).

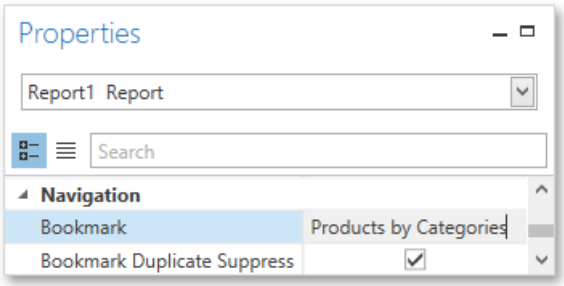
2. In the same way, select the label in the Detail band and set its **Bookmark** property to the **ProductName** data field.



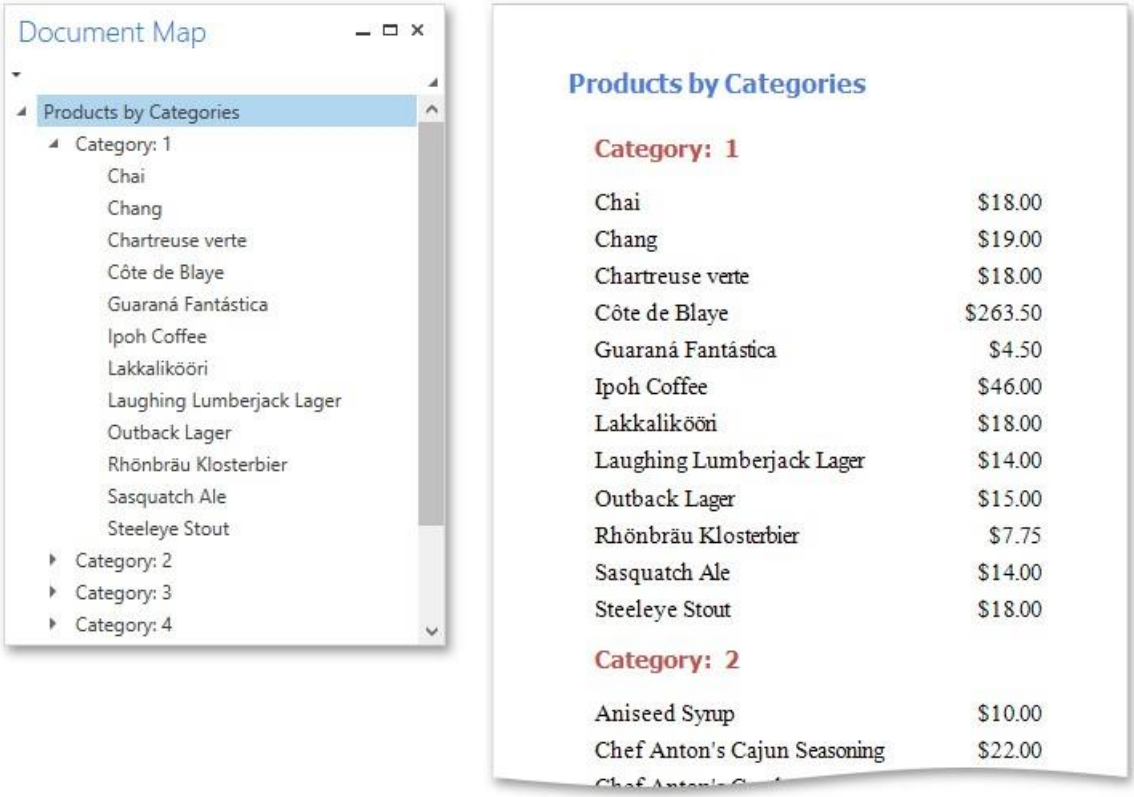
3. Then, for the same label, set the **Parent Bookmark** property to the Group Header's label to define the Document Map's hierarchy.



4. Finally, select the report itself and assign text to its **Bookmark** property, which determines the caption of the root node of the Document Map.



The report with bookmarks is now ready. Switch to the Print Preview tab and use the Document Map Panel to navigate through the report.

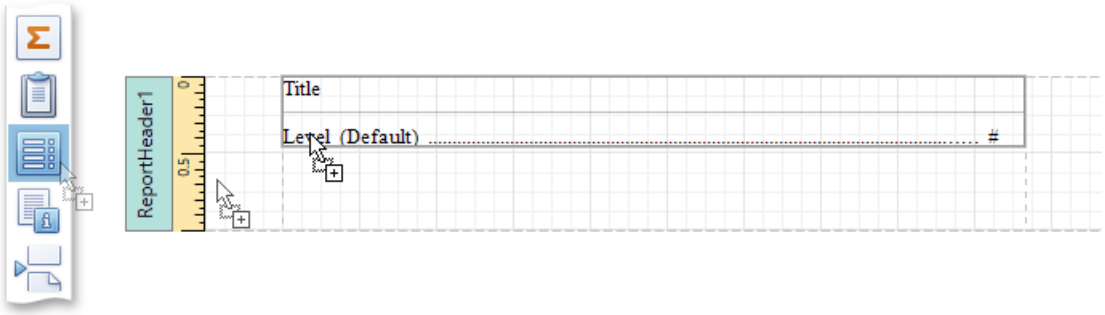


Create a Table of Contents

This tutorial describes how to create a report with a table of contents, which is automatically created based on the bookmarks existing in a report.

To insert a table of contents into a report, do the following.

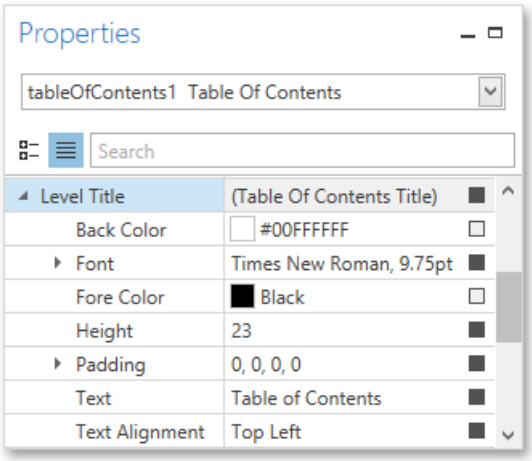
1. Drop the Table Of Contents control from the Toolbox onto the Report Header Band.



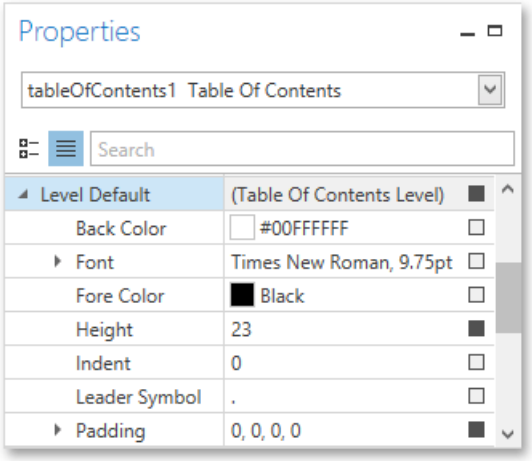
Alternatively, you can double-click the control in the Toolbox. In this case, if the report does not contain a Report Header, it will be created automatically, so that the table of contents can be added to it.

2. Double-click the title of the table of contents and specify its text.

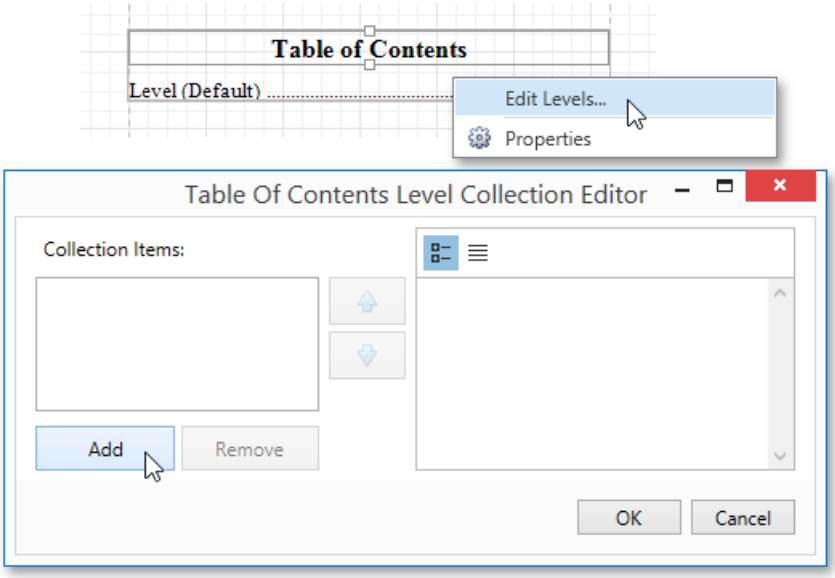
3. To customize the title's appearance, use the **Level Title** option's settings available in the Properties Panel.



4. To customize the appearance of all other levels, use the **Level Default** option's settings.



5. To customize a specific level individually, add a corresponding item to the **Levels** collection of the table of contents.



After adding a new level, you can access and customize its properties.

The table of contents are now ready. Switch to the Print Preview and view the result.

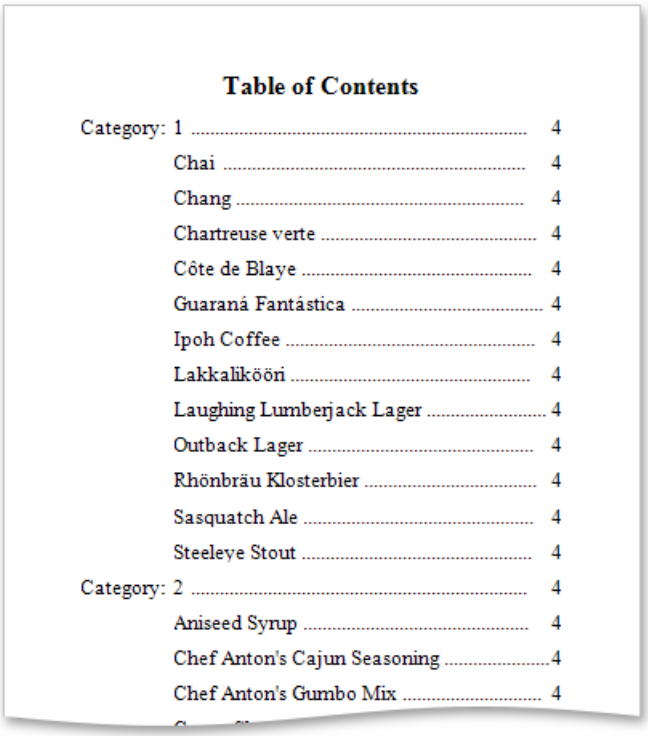


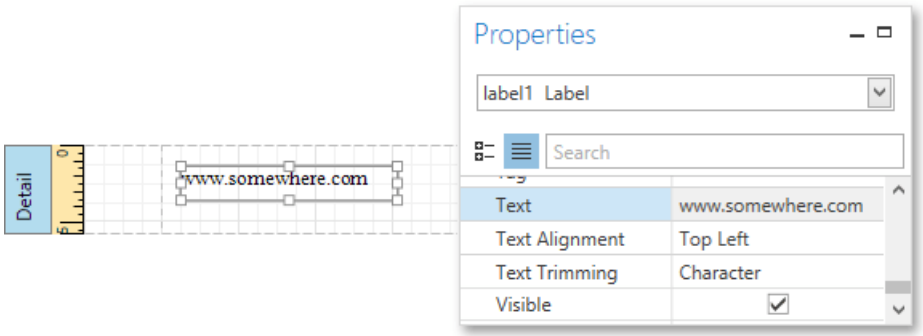
Table of Contents

Create Hyperlinks

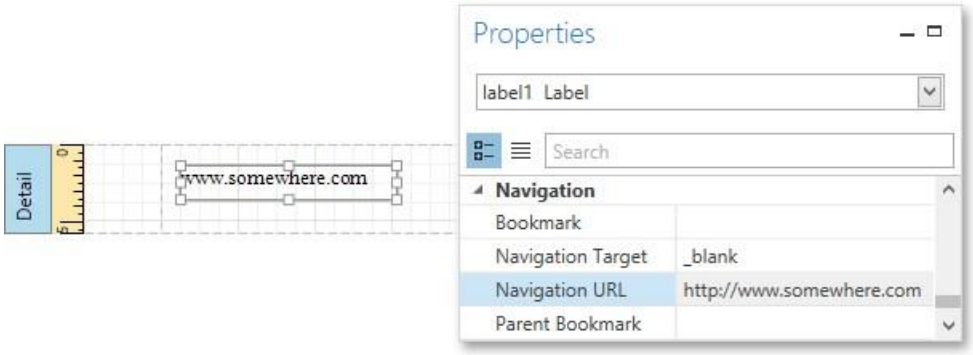
This tutorial demonstrates how to embed a *hyperlink* into your report. In this case, a label behaves as a hyperlink in a report's Print Preview, and when the report is exported to PDF, HTML, MHT, RTF, XLS and XLSX formats.

To insert a hyperlink into your report, do the following.

1. Create a new report.
2. Drop a Label onto the report, and in the Properties Panel, change its **Text** to the one required for the link.



3. Then, set the **Navigation Target** to the required value (*_blank*, *_parent*, *_search*, *_self*, or *_top*), and define the required
Navigation URL.



4. In addition, to make the label look like a typical link, you can change its appearance appropriately (e.g., make it blue and underlined).

The hyperlink is now ready. Switch to the Print Preview tab and view the result.

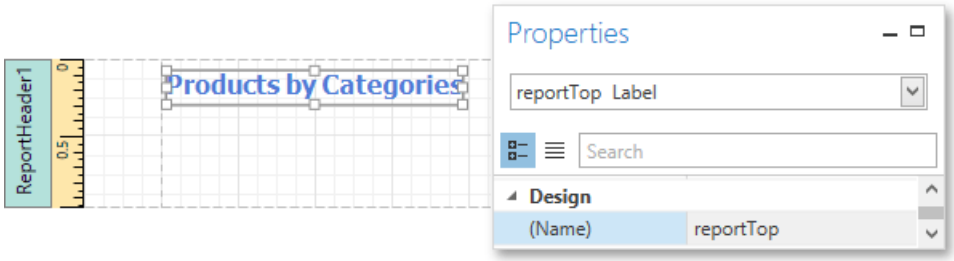
Add a Cross-Reference

This tutorial demonstrates how to add a *cross-reference* to your report. A cross-reference is a link whose target is located within the current document and which allows you to establish easy navigation through a report. In this example, a link is placed at the bottom of each group, leading to the beginning of the report.

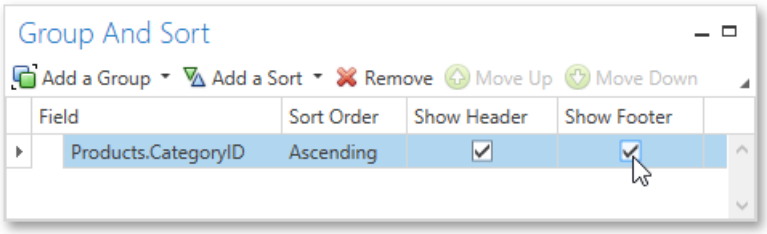
To demonstrate this feature, use a report with grouping similar to the one created in the following tutorial:

Grouping Data. To create a report with cross-references, do the following.

1. Drop a label onto the created Report Header band, which will serve as the report's headline. Click the label to type the desired contents into it. Then, in the Properties Panel, set its **Name** property to **reportTop**.

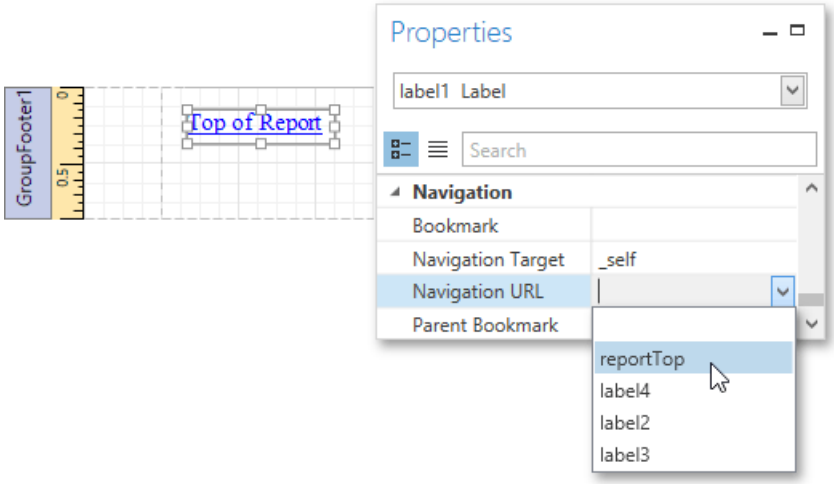


2. To accompany the existing Group Header with the corresponding Footer, in the Group and Sort Panel, enable the **Show Footer** option.

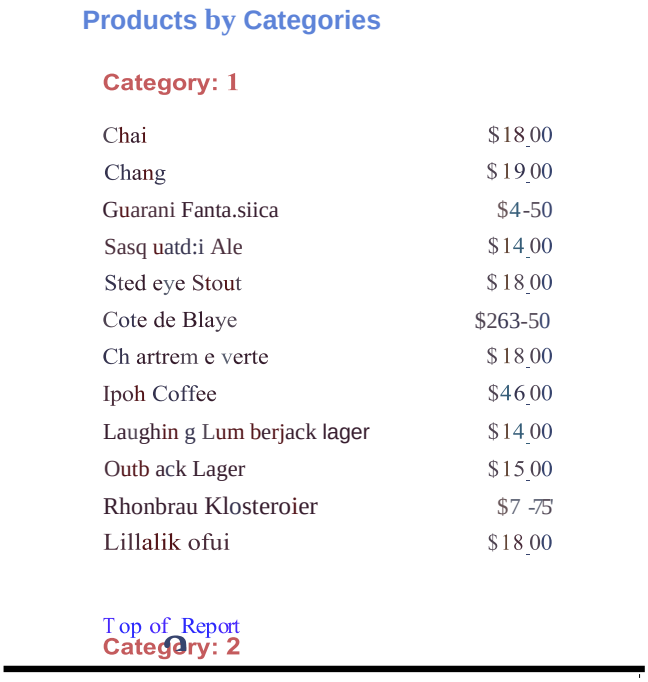


3. Then, drop a label onto the Group Footer band. Change the label's **Text** to **Top of Report** and apply the desired formatting to it (e.g., the blue color and underlined text).

   Set its **Navigation Target** property to **_self**. Then, if you click the drop-down list of the **Navigation URL** property, you can see the controls available in your report. Choose the one named **reportTop**.



The report with cross-references is now ready. Switch to the Print Preview tab and view the result.



Enable Content Editing in Print Preview

This document describes how to enable editing the content of specific controls

in Print Preview. This topic consists of the following sections.

- Text Editing
- Check Box
- Editing

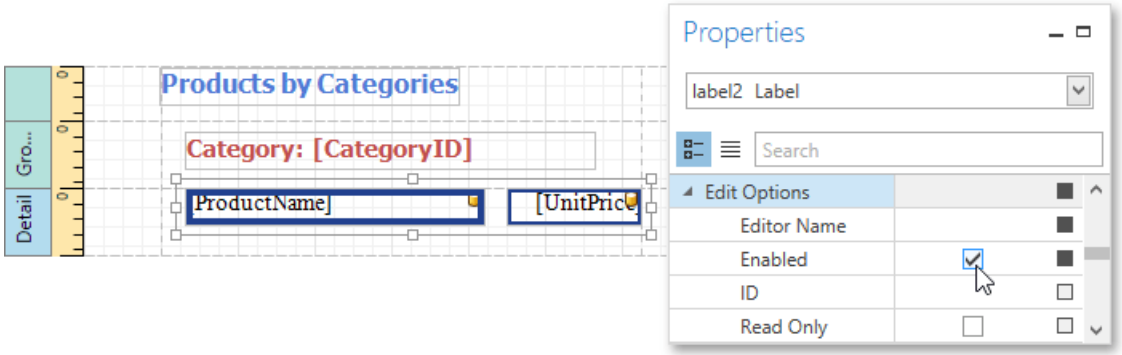
Text Editing

The **Label**, **Table Cell** and **Character Comb** report controls can be assigned editors to customize their content in Print Preview. To demonstrate this feature, use the report similar to one created in the following tutorial: Grouping Data.

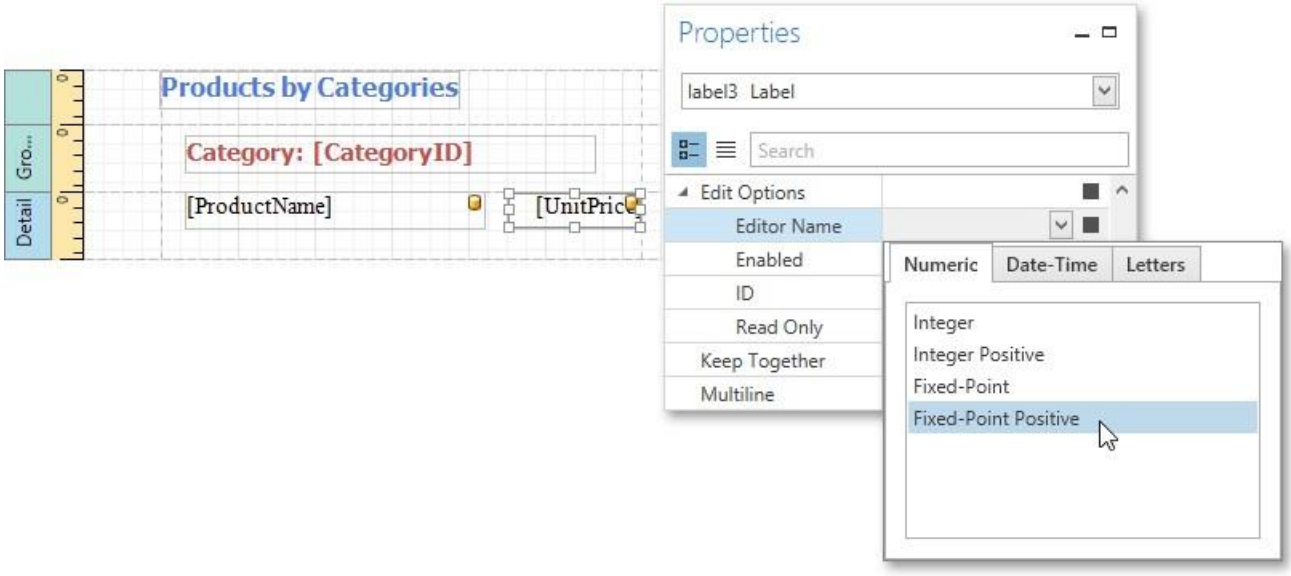
To enable content editing, do the following.

1. Select one or more controls that you want to become editable in Print Preview (to select multiple controls, click them while holding down CTRL or SHIFT).

   Switch to the Properties Panel, expand the **Edit Options** property and select the check box for the **Enabled** property.



2. To provide a mask for editing decimal values of the **UnitPrice** field, set the **Editor Name** property to **Fixed-Point Positive**
   to assign the required editor with a corresponding mask.

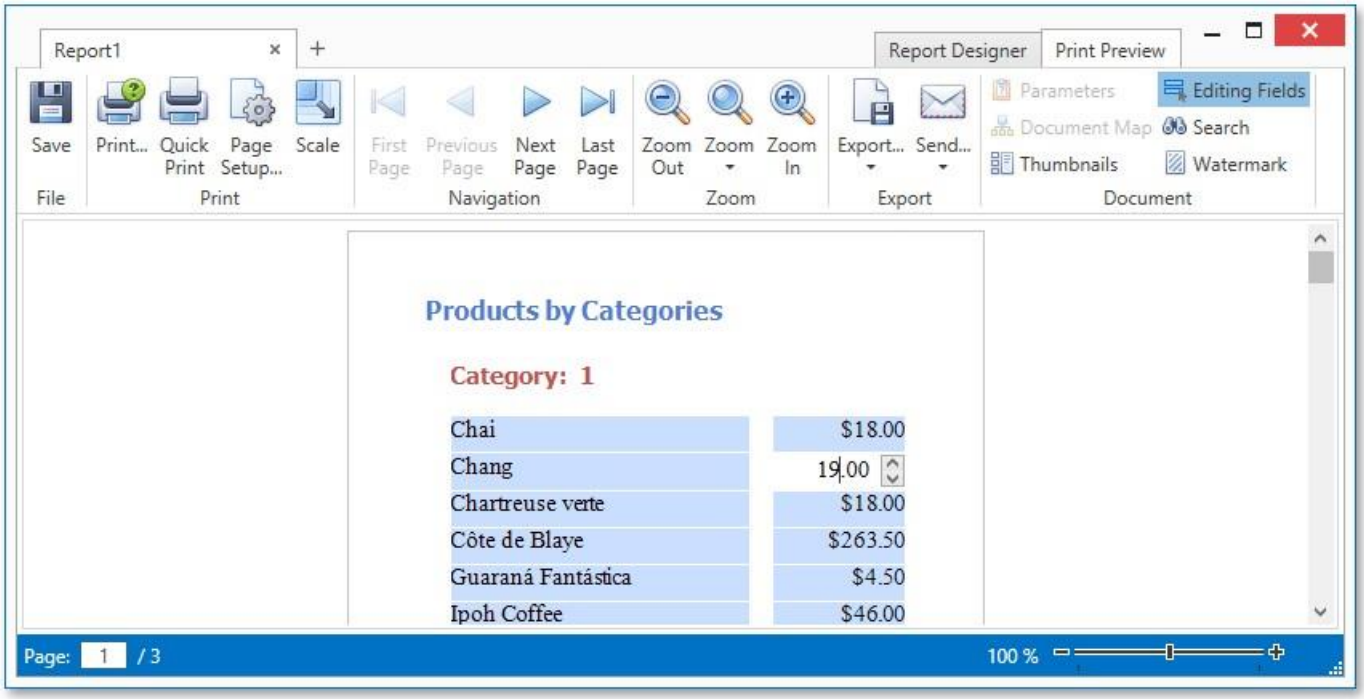


Switch to the Print Preview tab. To highlight all editing fields available in the document, click the **Editing Fields** button in the Print Preview toolbar.

Clicking a field will invoke the appropriate editor. To apply the entered values and navigate between editing

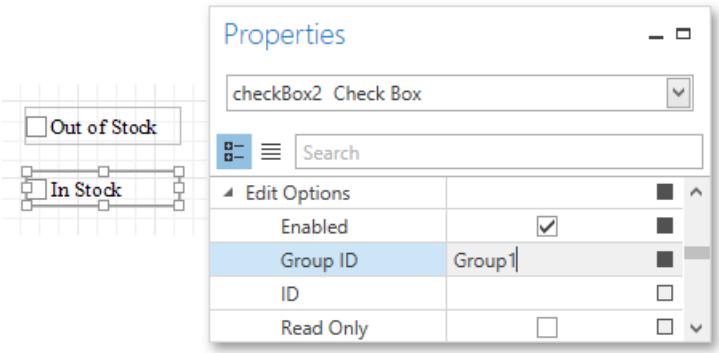
fields, use the TAB

and SHIFT+TAB keys.



Check Box Editing

In addition to editing text, you can enable switching Check Box states in Print Preview. When two or more check boxes have identical **Group ID** values, the corresponding editors belong to a single logical group (i.e., only one option can be selected within a group at a time).



O Not e

The changes made to a control's content in Print Preview have no effect on other parts of the document (e.g., the related summary results, grouping, sorting, bookmarks and other settings that have already been processed before generating the document).

Adding Details about a Report

This document lists topics that describe how to add technical information about a report to a generated document. This information includes the report's creation date, the author's name, as well as text and/or image watermarks.

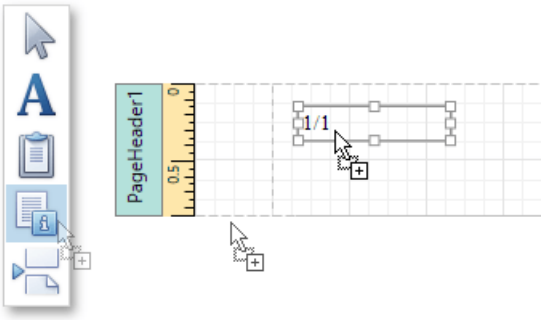
This section consists of the following examples.

- Add Page Numbers and System Information to a Report
- Create or Modify Watermarks of a Report

Add Page Numbers and System Information to a Report

This document describes how to insert *page numbers* or other system information (e.g., *current date and time*, *user name*, etc.) into a report.

Generally, this information is displayed within the Page Header and Footer or Page Margin bands. To add page numbers or system information to a report, drop the Page Info control from the Control Toolbox onto a band.



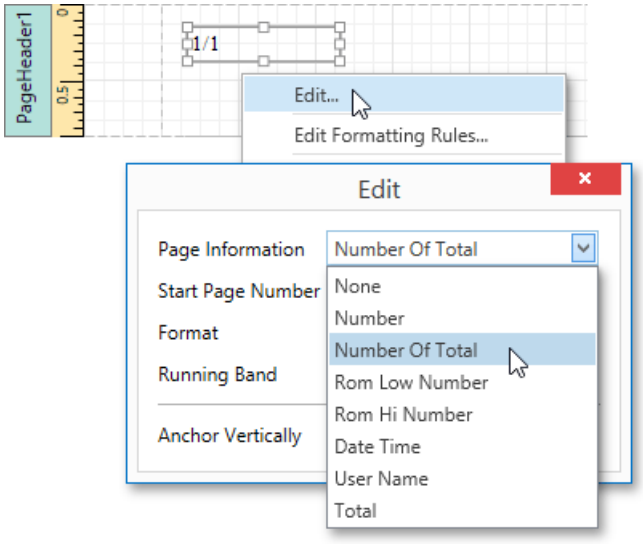
Then, follow the instructions below for your specific task.

- Add Page Numbers
- Add System Date and Time Add the User Name

Add Page Numbers

To insert page numbers in a report, do the following.

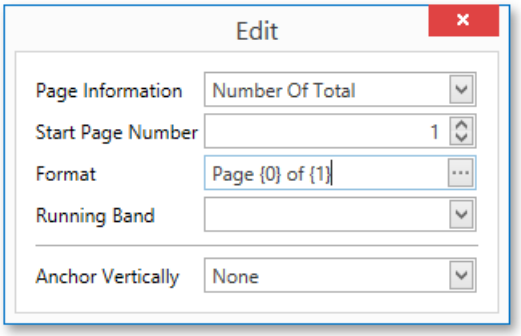
1. Right-click the **Page Info** control, and in the context menu, click the **Edit...** link. Then, in the invoked dialog, specify the **Page Information** property.



   You can choose one of the following formats for displaying page numbers.

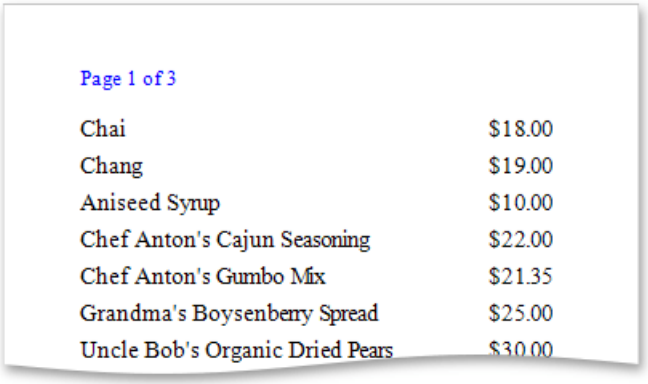
   - **Number** - displays the current page number only.
   - **Number of Total** - displays the current page number with total pages.
   - **Rom Low Number** - the current page number is written in lowercase Roman letters. **Rom Hi Number** - the current page number is written in uppercase Roman letters. **Total** - displays the total number of pages.
   -

2. To format the control's text, in the **Edit** dialog, specify the required format (e.g., **Page {0} of {1}**).



3. You can also specify the **Start Page Number** and **Running Band** properties. For instance, the latter is available when there are groups in a report, and you are required to apply independent page numbering for them.

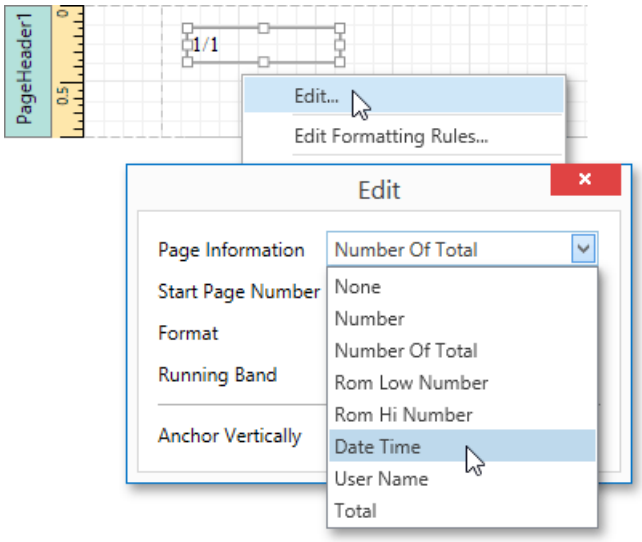
The result is shown below.



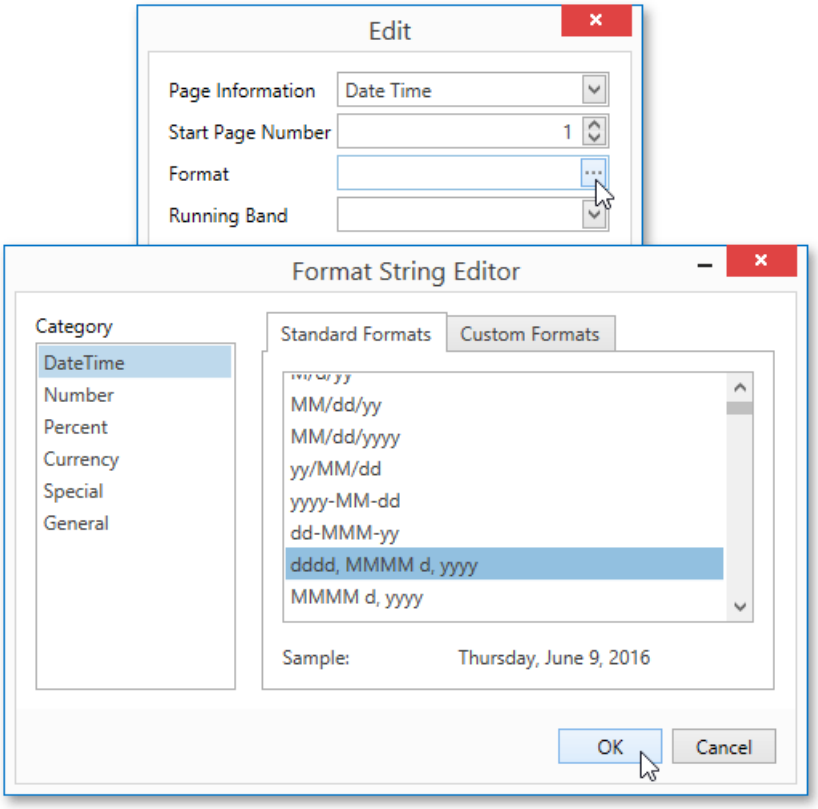
Add System Date and Time

To insert the current system date and time into a report, perform the steps below.

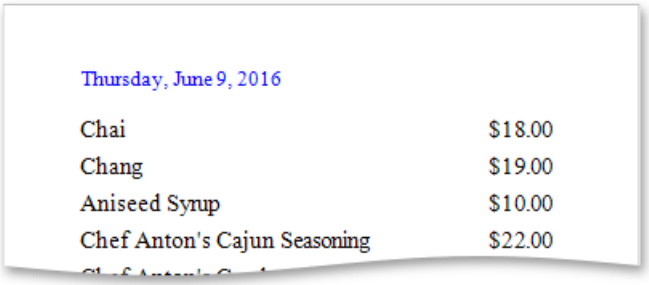
1. Right-click the **Page Info** control and select **Edit...** in the context menu. In the invoked dialog, expand the **Page Information** drop-down and select **Date Time**.



2. To format the control's text, you can either type it in the **Format** property, or click its ellipsis button and use the **Format String Editor**.



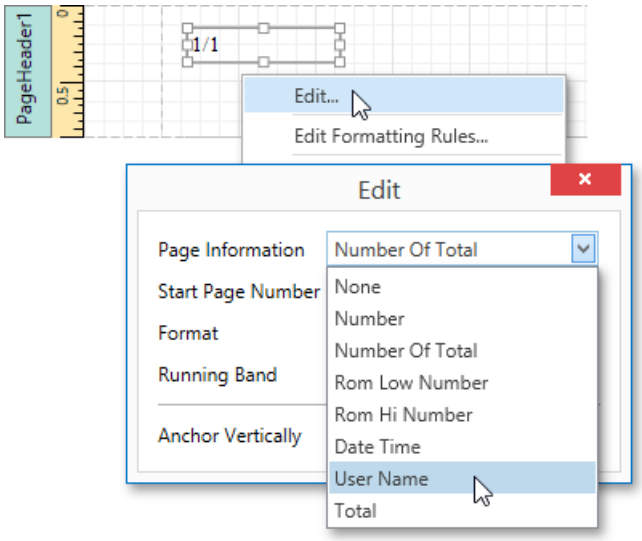
The result is shown below.



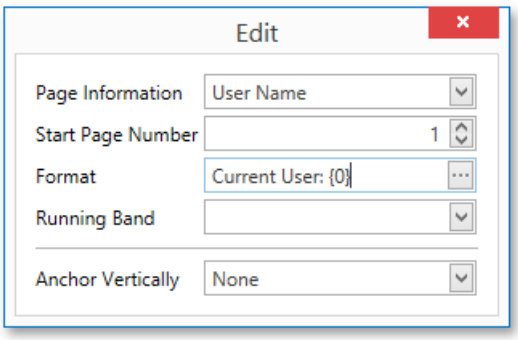
Add the User Name

To display the current user name in a report, do the following.

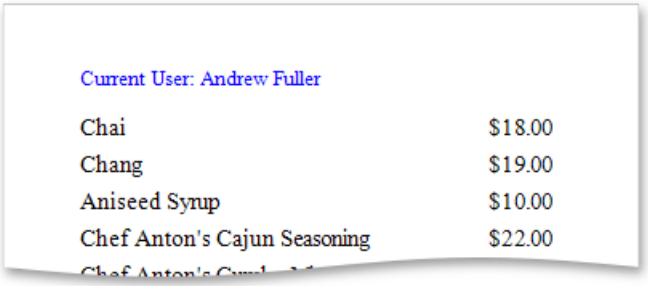
1. Right-click the **Page Info** control and select **Edit...** in the context menu. In the invoked dialog, expand the **Page Information** drop-down and select **User Name**.



2. To format the control's text, in the **Edit** dialog, specify the required format (e.g., **Current User: {0}**).



The following image demonstrates the result.

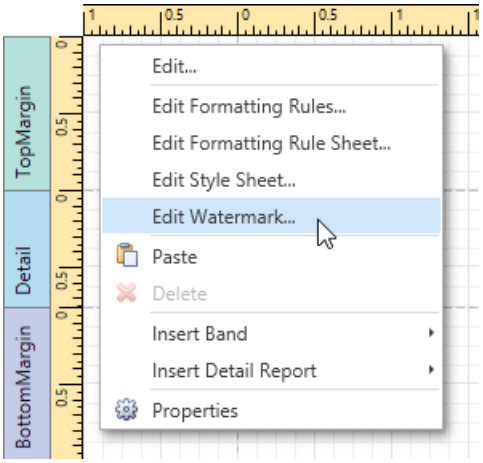


Create or Modify Watermarks of a Report

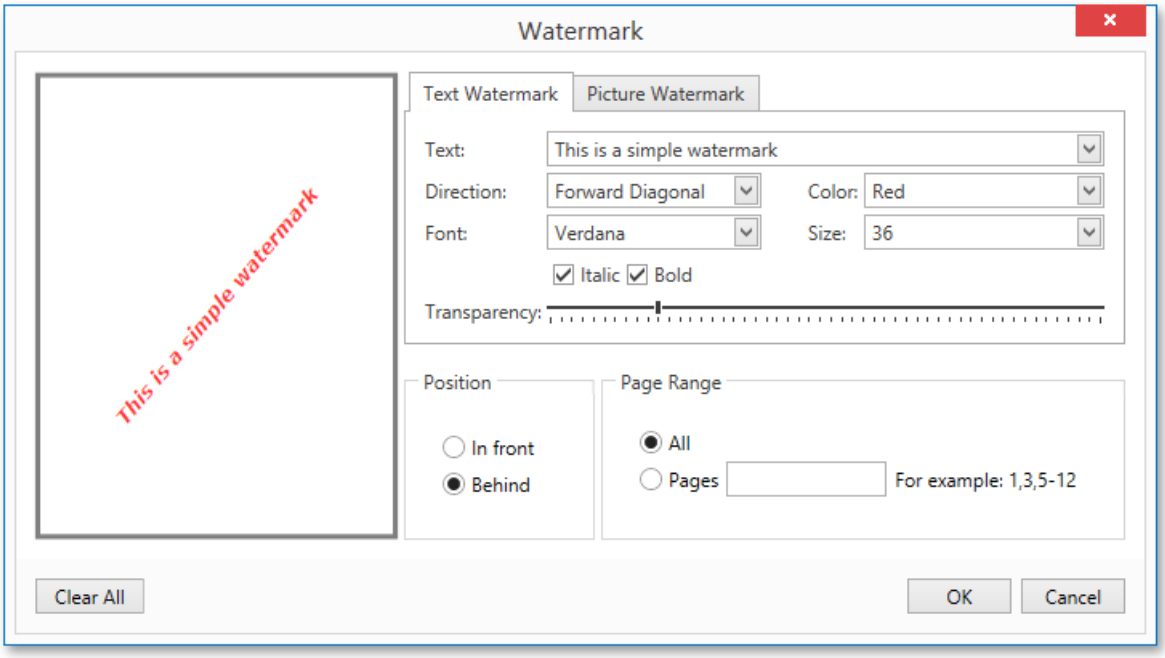
This document describes how to add a text *watermark* in a report, or turn a picture into a report's *background*. Note that watermarks are visible only in the Preview mode.

To create a new watermark in a report (or to modify the existing one), do the following.

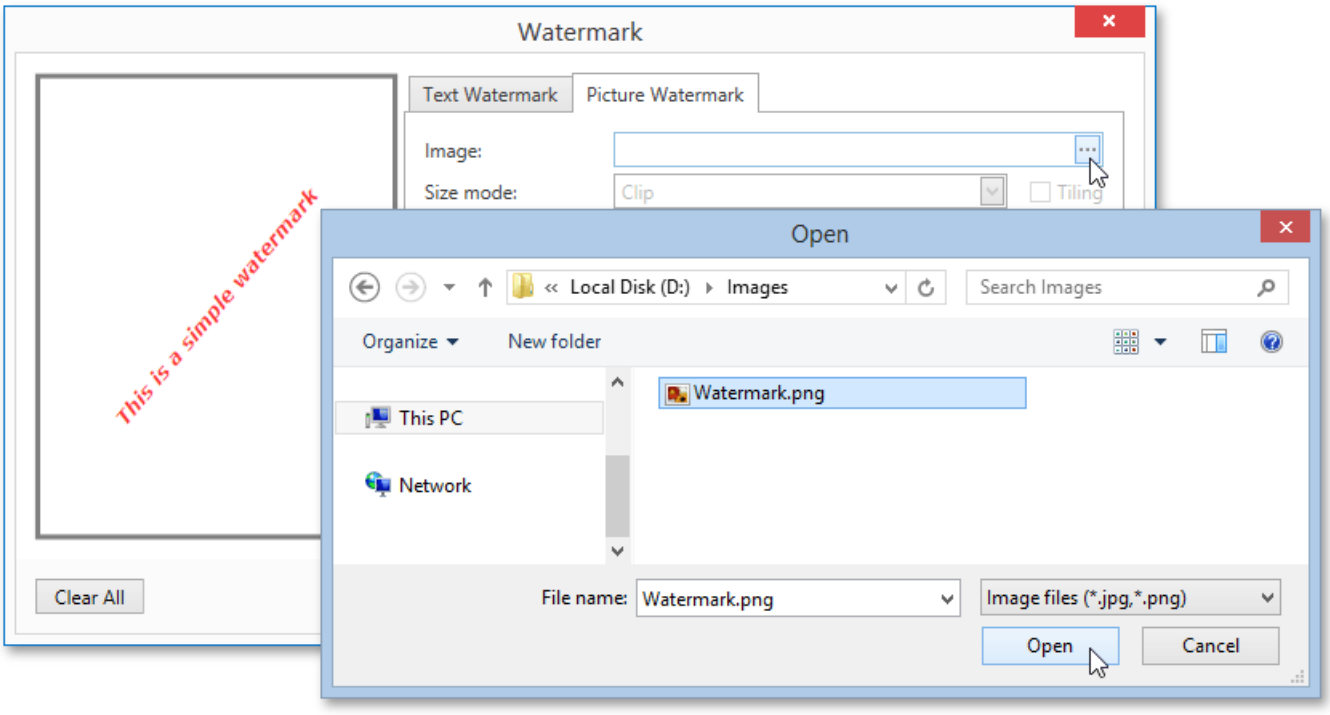
1. Right-click the report, and in the invoked context menu, click the **Watermark...** link.



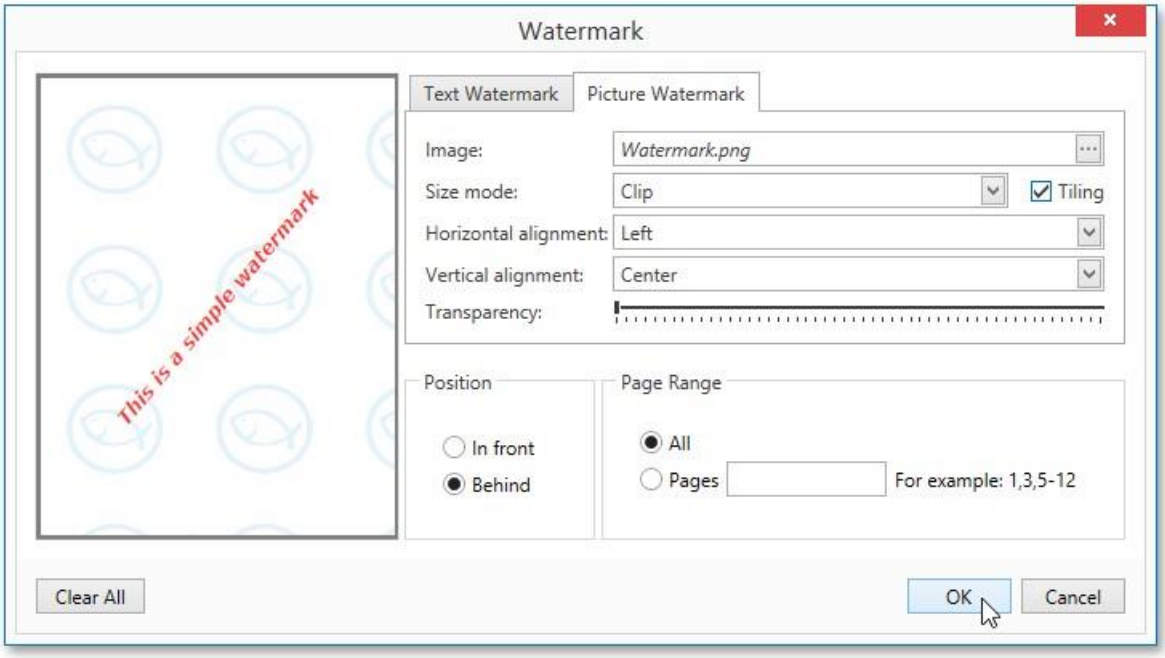
2. In the **Text Watermark** tab of the invoked **Watermark** dialog, enter the watermark's text and specify the required properties such as the **Direction**, **Transparency**, **Color**, etc.



3. Then, switch to the **Picture Watermark** tab to load the image to be used as a watermark. To do this, click the ellipsis button for the **Image** property. In the invoked dialog, select the file containing the image that you wish to load and click **Open**.

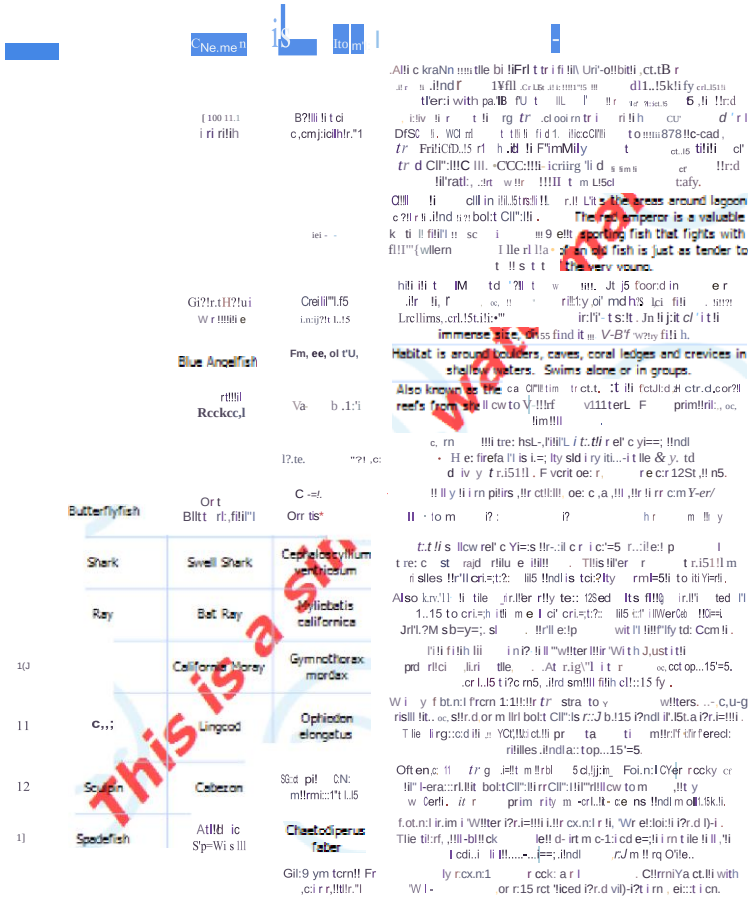


4. Next, define the picture's properties, such as the **Size mode**, **Alignment** , **Transparency**, etc.



5. In addition, you can select a watermark position behind or in front of the document, and specify the page range in which the watermark will be printed.

As you can see, it is possible to use both textual and image watermarks simultaneously. The report with watermark is now ready. Switch to the Print Preview tab and view the result.


Blue Angelfish
Butterflyfish
Shark
Swell Shark
Ray
Bat Ray
California Moray
Lingcod
Scorpion
Cabezon
Spadefish
This is a sa

Scripting

This document describes the basic principles of *scripting*, which can be performed by handling the events of a report, and its bands and controls.

This documents consists of the following sections.

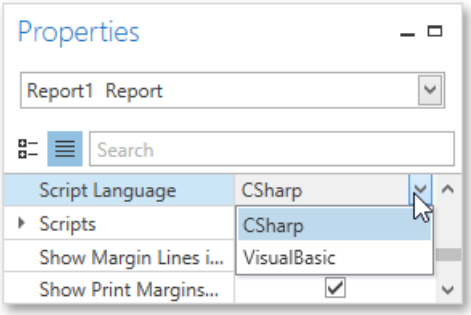
- Scripting Overview
- Maintaining Scripts
- Example: Custom
- Summary

Scripting Overview

Scripts are program commands, placed within the *event handlers* of the required report elements. And when the corresponding event occurs (e.g., a mouse click), the script code runs. Scripting is made available to extend the standard functionality as far as may be required.

You can write *scripts* for a report or any of its elements (bands and controls) to be executed when the report is being previewed, printed or exported.

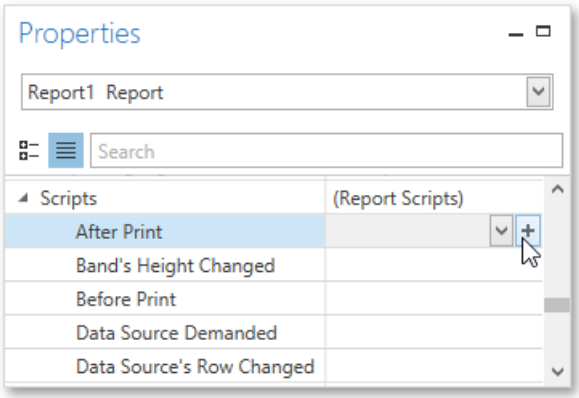
The Report Designer allows you to write scripts using the Script Editor. This editor supports **C#** and **Visual Basic .NET** scripting languages. This means that the scripting language is independent from the language used to create the report. The language is specified by the **Script Language** property of a report. The selected scripting language must be the same for all scripts used in a report.



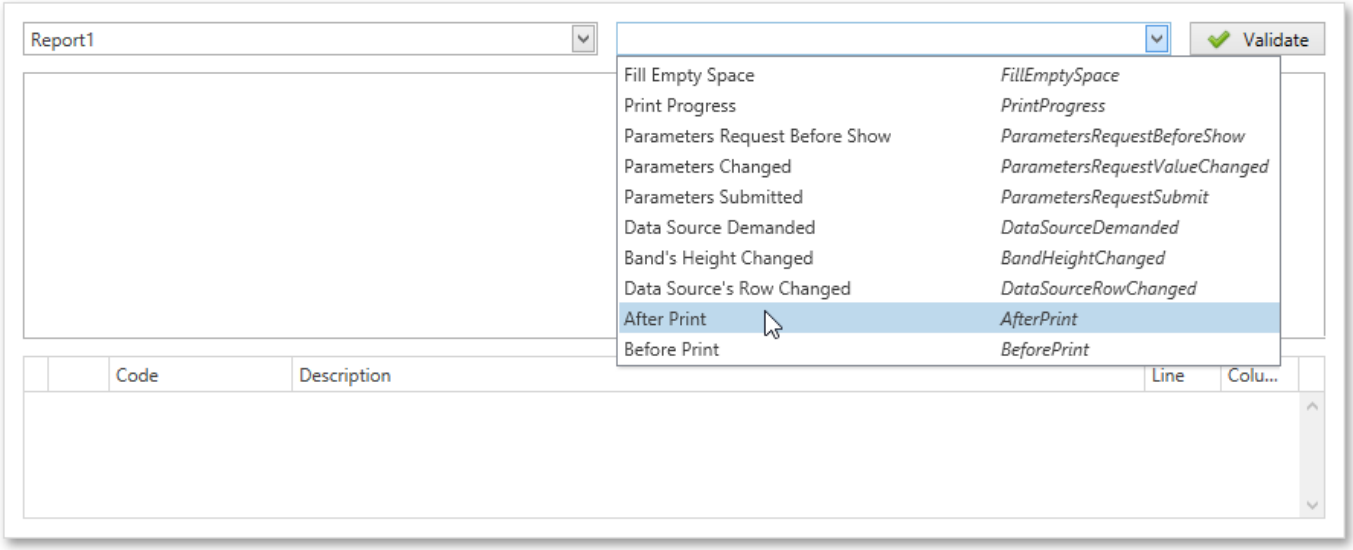
Maintaining Scripts

Each report element has its own set of events, which are individual for each element type. To handle an event of a report element, do one of the following.

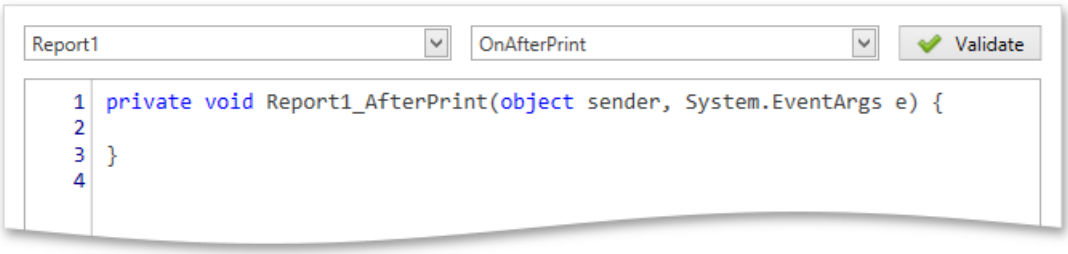
- Select the required report element (e.g., on the Design Surface). In the Properties Panel, expand the **Scripts** property and click the plus button for the event.



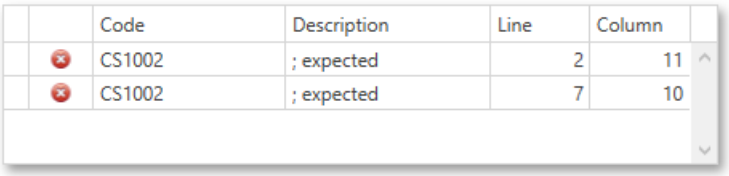
- Click the **Scripts** button ( ) in the Toolbar to display the Script Editor. Choose the required report element in the dedicated drop-down list at the left top of the Script Editor. Then, select one of the available events in another list at the right top.



After the event is specified, a code template is automatically generated in the current scripting language and added in the Script Editor.



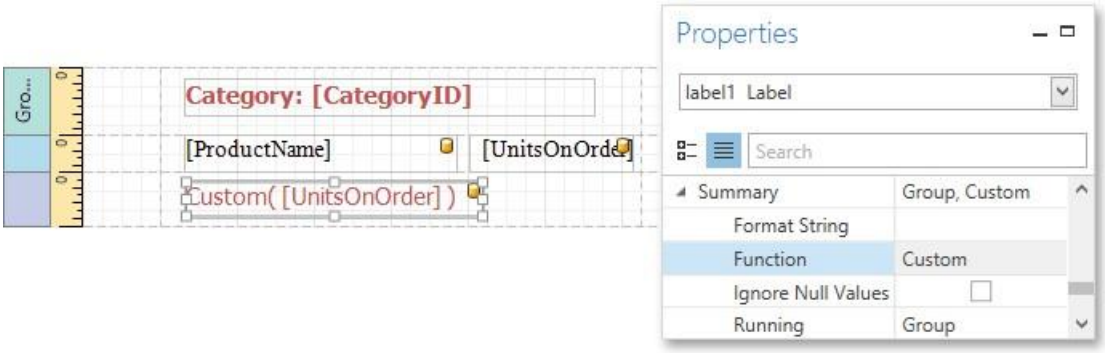
To check for errors in the report's script, click the **Validate** button. The validation result is displayed in the errors panel at the bottom of the Script Editor. Double-click the error item in the panel's list to go to the corresponding line of code. If all scripts are valid, the errors panel is empty.



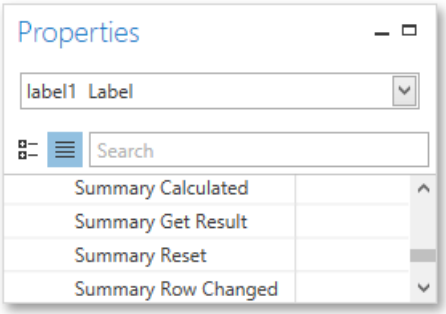
Example: Custom Summary

This example demonstrates how to display the total number of product unit packs in a group.

To perform this, execute steps similar to the ones described in Calculating Summaries, except that for the summary field, you should set the **Function** property to **Custom**.



Then, the additional events are added to the label's **Scripts** property.



You can handle these events in the following way.

C#

```
// Declare a summary and a pack.
double totalUnits = 0;
double pack = 15;

private void label1_SummaryReset(object sender, System.EventArgs e) {
    // Reset the result each time a group is printed.
    totalUnits = 0;
}

private void label1_SummaryRowChanged(object sender, System.EventArgs e) {
    // Calculate a summary.
    totalUnits += Convert.ToDouble(GetCurrentColumnValue("UnitsOnOrder"));
}

private void label1_SummaryGetResult(object sender,
DevExpress.XtraReports.UI.SummaryGetResultEventArgs e) {
    // Round the result, so that a pack will be taken into account
    // even if it contains only one unit.
    e.Result = Math.Ceiling(totalUnits / pack);
    e.Handled = true;
}
```

VB.NET

Finally, switch to the Print Preview tab and view the result.

Category: 1

C:hang	40
Ipoh Coffee	10
Outback Lager	10

Total Packs : 4

Category: 2

Anis eed $ yrnp	70
Loui siana Hot Spiced Olm;	100

Total Packs : 12

Category: 3

Cl:w colade	70
Maxilaku	60
Scottish Longbreads	10
Sir Rodn ey' s Scones	40

Total Packs : 12

Report Elements

In the Report Designer, a report is built from *controls* (text labels, images, zip codes, charts, etc.) spread across report sections called *bands* (various headers, footers, and content sections).

To learn more about these report elements, see the following documents.

- Report Controls
- Report Bands

Report Controls

In general, *report controls* allow you to present information of different kinds (e.g., simple or formatted text, pictures, tables, etc.) in your static and dynamic reports, and to adjust your report's layout (by organizing controls within panels, and inserting page breaks at the required positions).

The following table lists the available controls (in the same order as in the Toolbox).

ICON	DESCRIPTION
	The most basic **Label** control is intended to display static or dynamic text or both in your report. In addition, it can be used to calculate standard summary functions across a data field.
	The **Check Box** control is intended to display True/False or Checked/Unchecked/Indeterminate states in a report by displaying (or not) a check mark, which can be accompanied by a text description.
	The **Rich Text** control allows you to display formatted text in your report. It can display static or dynamic text or both. You can also load content to the Rich Text from an external TXT or RTF file (which can contain images).
	The **Picture Box** control is intended to display images of numerous formats in a report. An image can be loaded from an external file, from a bound data source, or from a web location using the specified URL.
	The **Panel** control is a container that frames separate report controls to allow them to be easily moved, copied and pasted, and visually unite them in the report's preview (with borders or a uniform color background).
	The **Table** control is designed to arrange information in a tabular layout. It may contain any number of **rows** comprised of individual **cells**. Both rows and cells can be selected and customized individually. In most aspects, a cell is similar to a Label, but can also contain other controls (e.g., Picture Box or Rich Text).
	The **Character Comb** control displays text so that each character is printed in an individual cell.
	The **Line** control draws a line of a specified direction, style, width and color. It can be used for both decoration and visual separation of report sections. The Line cannot cross report bands, as opposed to the Cross-band Line control.
	The **Shape** control allows you to embed simple graphic objects into your report. You can choose one of the multiple predefined shapes (e.g., rectangles, ellipses, arrows, polygons, crosses and brackets of various kinds).
	The **Bar Code** control transforms its content into a bar code of the specified type. Multiple standard bar code types are supported.
	The **Zip Code** control renders a numeric postal code that is used to identify the mail address in some countries. This control is not related to the Zone Improvement Plan (ZIP) code used by the United States Postal Service.

	The **Chart** is a sophisticated control used to embed graphs into your report. It graphically represents a series of points using numerous 2D or 3D chart types. A Chart can be populated with points both manually (by specifying arguments and values for each point) and dynamically (by connecting it to the report's data source or binding it to a separate one). See Chart with Static Series and Chart with Dynamic Series for more information.
	The **Gauge** control provides you with the capability to embed graphic gauges into your report.
	The **Sparkline** control displays a compact chart that is commonly used to reflect the flow of data for every row in a report.

ICON	DESCRIPTION
	The **Pivot Grid** control represents dynamic data (obtained from an underlying data source) in a cross-tabulated form to create cross-tab reports, similar to Pivot Tables in Microsoft Excel®. Column headers display unique values from one data field, and row headers - from another field. Each cell displays a summary for the corresponding row and column values. By specifying different data fields, you can see different totals. This allows you to get a compact layout for a complex data analysis.
	The **Subreport** control allows you to include other reports in your current report. To learn more, see Master-Detail Report (Subreports).
	The **Table Of Contents** control generates a table of contents based on bookmarks specified for report elements.
	The **Page Info** control is intended to add page numbers and system information to a report (the current date and time or the current user name) into your report. As with many other controls, you can format this control's content.
	The **Page Break** control's sole purpose is to insert a page delimiter at any point within a report.
	The **Cross-band Line** control allows you to draw a line through several report bands. This can be useful if you need to visually emphasize a section consisting of multiple band areas. In other aspects, it is similar to a regular Line.
	The **Cross-band Box** control allows you to draw a rectangle through several report bands. This can be useful if you need to visually encompass a section consisting of multiple band areas.

To learn how to create report controls and change their layout, refer to Create and Delete Report Elements and Adjust the Layout of Report Elements.

Report Bands

A *Report Band* is a specific area on a report page, used to define how to render report controls that belong to it, their rendering order and how many times they are rendered. In the Report Designer, every report consists of a number of bands, each of a different type.

This document consists of the following sections.

Available Bands

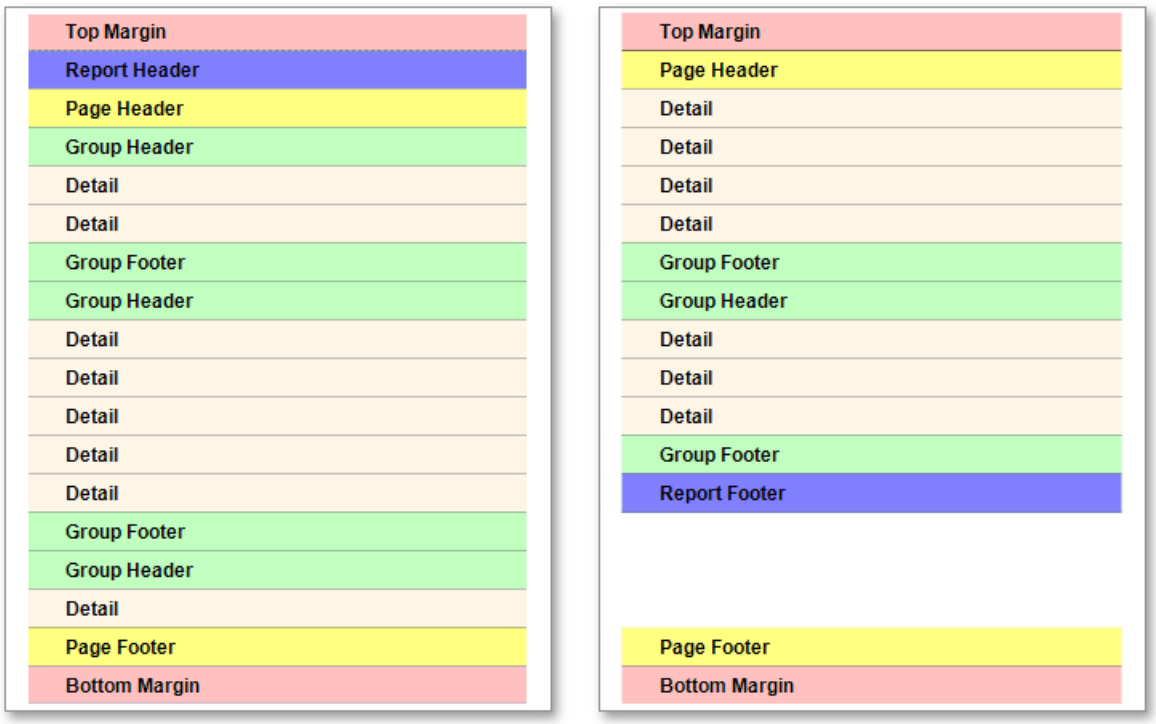
The following table lists all available band types.

BAND	DESCRIPTION
Top Margin Band	Located on the top margin of every page, above the **Page Header** and **Report Header**. This band is intended for displaying page numbers or certain supplementary information (e.g., current system time or the user name).
Report Header Band	Located at the beginning of a report. This band is intended to display some introductory information, e.g., the report's name, company logo, date of creation and user name, etc.
Page Header Band	Located at the top of every page, below the **Top Margin** and **Report Header**. This band is the best place for information that should be printed on every page. For example, use it to display the header of a table which is continued from the previous page.
Group Header Band	Located at the beginning of every group or at the top of the page in case it is split across pages. This band specifies grouping criteria and is used to display information at the beginning of a group of records. To learn more, refer to Grouping Data.
Detail Band	Located in the central part of a report between all other bands. This band cannot be deleted since the present report structure includes the **Detail** band in its core. This band displays a single record at a time from the bound data source, or simply holds unbound controls if there is no data source assigned to a report. For more information on data binding, refer to Providing Data.
Detail Report Band	Located below the **Detail** band and used to incorporate one report into another in master-detail reports. It is quite different from the **Detail** band, since it holds the whole detail report in a master-detail report layout, and therefore can contain other types of bands within it. To learn more about detail reports, refer to Master-Detail Report (Detail Report Bands).
Group Footer Band	Located at the end of every group or at the bottom of the page if its group is split across pages. This band is primarily intended to show summary information for a group. To learn more, refer to Grouping Data.
Report Footer Band	Located at the end of the report, before the **Page Footer** and **Bottom Margin** on the report's last page. This band is intended to display some final information, e.g., report totals.
Page Footer Band	Located at the bottom of every page, below the **Report Footer** and above the **Bottom Margin**. This band is intended to display page numbers or a table footer, which is continued on the following page.

BAND	DESCRIPTION
Bottom Margin Band	Located on the bottom margin of every page, below the **Page Footer**. This band is intended for displaying page numbers or certain supplementary information (e.g., current system time or the user name).
Sub-Band	This band provides a functional copy of the source band below which it is located. A sub-band's behavior, as well as its position within the report band hierarchy, is dictated by the source band type. Any number of sub-bands can be added to the report band of any type except for the **Top Margin** and **Bottom Margin** bands and the sub-band itself. Using sub-bands, it is possible to create multiple versions of a band within a single report and choose an appropriate version later based on a specific condition.

Band Positions

The following image illustrates the relative positions of different band types, and how many times they are rendered in a report.



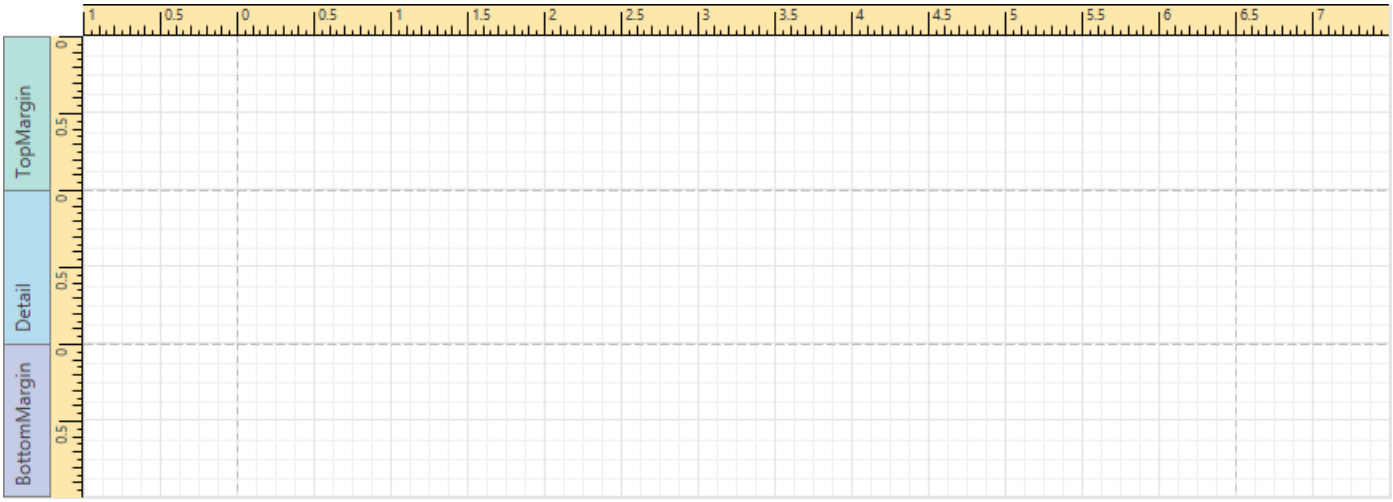
The **Page Header**, **Page Footer**, **Top Margin** and **Bottom Margin** bands are rendered in the report preview on every page. The **Report Header** and **Report Footer** bands are rendered in the report preview only once.

The **Group Header** and **Group Footer** bands are rendered for every group of records in a report.

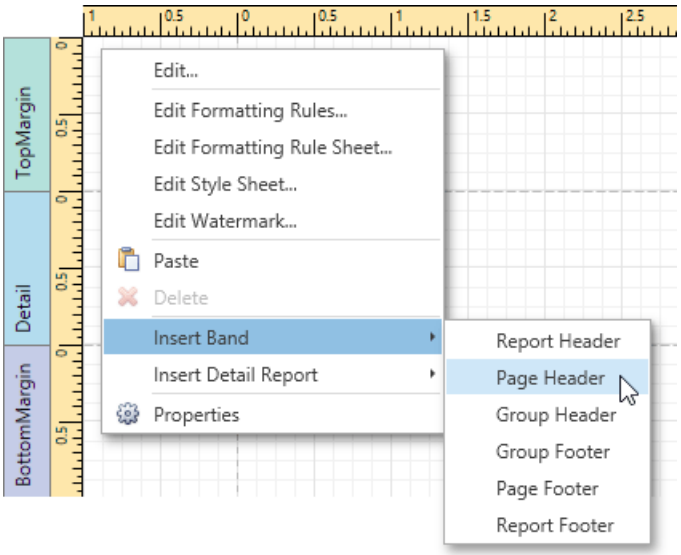
The number of times the **Detail** band is rendered in a report depends upon the number of records returned from the bound data source - one band per record.

Editing Bands

The following image shows the default report layout. It is divided into three basic bands (**Top Margin**, **Detail** and **Bottom Margin** bands) that provide space for placing different report controls on them.



To add a new band of a particular type, use the context menu of the report or bands. Right-click a report on the design surface or in the Report Explorer, and select a band to be inserted in the report.



For more information on adding and removing bands in the Report Designer, refer to the Create and Delete Report Elements document. To learn how to change the band layout, see Adjust the Layout of Report Elements.

Interface Elements

The topics in this section describe the main elements that make up the user interface of the Report Designer. This section consists of the following topics.

- Toolbar
- Control
- Toolbox Field
- List Report
- Explorer
- Group and Sort
- Panel Properties
- Panel Design
- Surface Script
- Editor
- Query Builder

Toolbar

The **Toolbar** allows you to easily perform various report commands, which are divided into the following sections.

- Report Commands Edit
- Commands Font
- Commands
- Arrange Commands
- Editors Commands

Report Commands

Use these commands to save and load report layouts.

ICON	COMMAND	DESCRIPTION
	New	Creates a new report using the Report Wizard.
	Open	Invokes the **Open** dialog that allows you to select the report layout to be opened.
	Save	Saves the current report to the default file.
	Save as	Invokes the **Save** dialog that allows you to select a file to which the current report layout should be saved.

Edit Commands

Use the following commands to delete the selected report elements, place them to the clipboard, paste them onto report bands and cancel previous actions.

ICON	COMMAND	DESCRIPTION
	Delete	Deletes the selected report elements.
	Cut	Cuts the selected report elements to the clipboard.
	Copy	Copies the selected report elements to the clipboard.
	Paste	Pastes the contents of the clipboard to the selected report band.
	Undo	Cancels the last change made to the report.
	Redo	Reverses the results of the last undo action.

Font Commands

Use these commands to easily customize font, color, formatting and alignment settings.

ICON	COMMAND(S)	DESCRIPTION
	Font Name	Specifies the font name of the selected elements.
	Font Size	Specifies the font size of the selected elements.
	Foreground Color	Specifies the foreground color of the selected elements.
	Background Color	Specifies the background color of the selected elements.
	Bold, Italic, Underline, Strikeout	Applies/removes bold formatting, italic formatting, underlining and strike through to/from the selected elements.
	Left, Center, Right, Justify	Specifies the horizontal text alignment of the selected elements.
	Top, Center, Bottom	Specifies the vertical text alignment of the selected elements.

Arrange Commands

These commands allow you to change the order of stacked elements.

ICON	COMMAND	DESCRIPTION
	Bring to Front	Brings the selected elements to the front of a group of stacked elements or moves the selected elements one step closer to the front.
	Send to Back	Sends the selected elements to the back of a group of stacked elements or moves the selected elements one step toward the back.

Editors Commands

Use the following commands to invoke the **Watermak** dialog, **Page Setup** dialog or **Script Editor**.

ICON	COMMAND	DESCRIPTION
	Watermark	Invokes the Watermark dialog that allows you to add a text watermark to a report or turn a picture into a report's background.
	Page Setup	Invokes the Page Setup dialog that allows you to modify the paper size, orientation and margins.
	Scripts	Shows or hides the Script Editor that allows you to write code for specific event handlers.

Control Toolbox

The **Control Toolbox** contains all available report controls and allows end-users to add them to the report being edited. Report controls can display both static and dynamic information of different kinds (simple or formatted text, pictures, tables, etc.) and adjust a report layout (organize controls within panels, insert page brakes, etc.)

The available report controls can be divided into the following categories.

- General
- Content
- ExtendedData
- Report Layout
- Document
- Statistics

To learn how to add a control from the **Toolbox** to a report, see the Adding Controls to a Report section.

General Content

The following controls are most commonly used to display data in a report.

ICON	CONTROL NAME
	Label
	Check Box
	Rich Text
	Picture Box
	Table
	Character Comb
	Bar Code
	Zip Code
	Gauge

Extended Data

The following controls are connected to data individually, without accessing a report's data source.

ICON	CONTROL NAME

ICON	CONTROL NAME
	Chart
	Pivot Grid
	Sparkline

Report Layout

The following controls allow you to draw shapes in a report and customize the report layout.

ICON	CONTROL NAME
	Line
	Shape
	Page Break
	Cross-Band Line
	Cross-Band Box
	Panel
	Subreport

Document Statistics

The dynamic content of the following controls is not obtained from a data source.

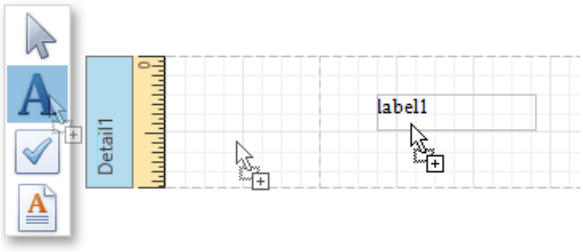
ICON	CONTROL NAME
	Page Info
	Table Of Contents

Adding Controls to a Report

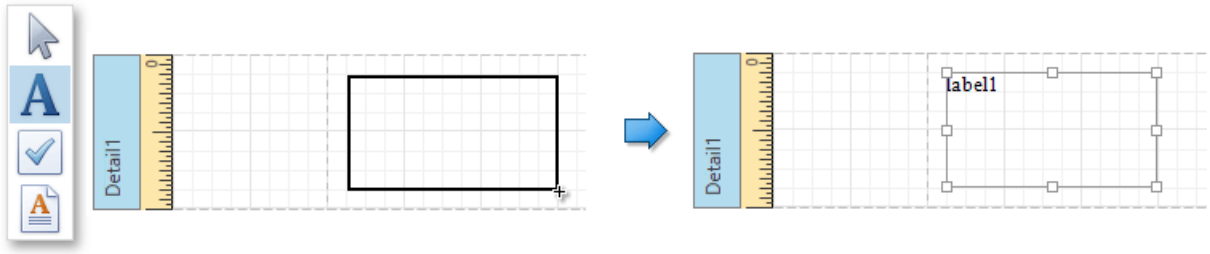
To add a control from the Toolbox to a report, do one of the following.

- Double-click an item in the Toolbox to create the corresponding control at the default position.

- Drag-and-drop an item from the Toolbox onto the required position within a report.



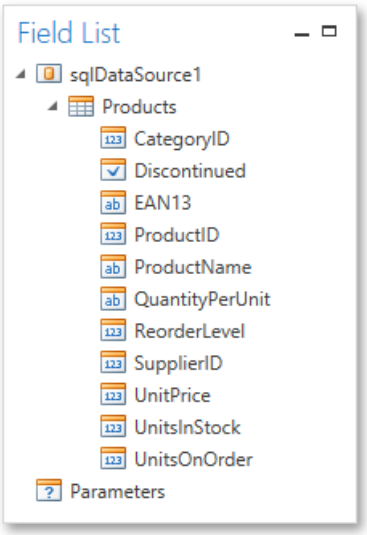
- Select an item in the Toolbox, and then indicate the bounding rectangle by holding down the left mouse button.



If you need to perform selection, re-arranging or resizing operations, select the **Pointer** item ( ).

Field List

The **Field List** panel is intended to display the structure of the data source to which a report is currently bound. This panel can also be used to create new bound report controls, manage calculated fields and parameters.



This document consists of the following sections.

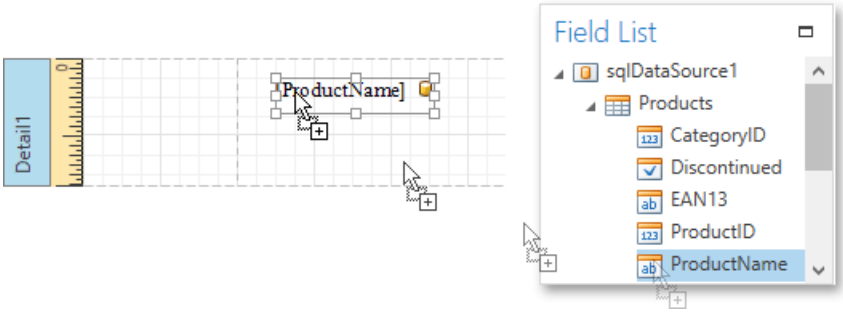
- Creating Bound Report Elements
- Managing Calculated Fields
- Managing Report Parameters

Creating Bound Report Elements

After binding a report to data, the Field List shows the structure of the report's data source assigned to the

Data Source property. Then, the Field List can be used to add new bound controls.

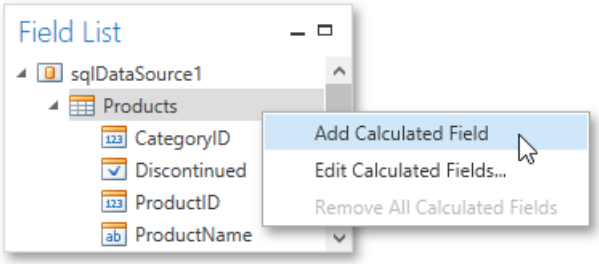
To add a new bound report element, click a desired field item in the Field List, and then drag-and-drop it onto the report band. This creates an appropriate control bound to the selected data field.



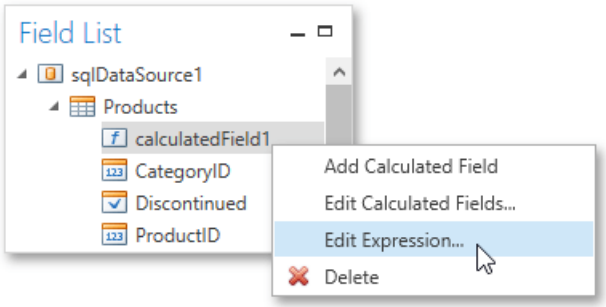
Managing Calculated Fields

The Field List allows you to create calculated fields by building expressions based on the values of data fields, report parameter values, etc.

To add a calculated field to a report, right-click any item inside the data member node, and in the invoked context menu, select **Add Calculated Field**.



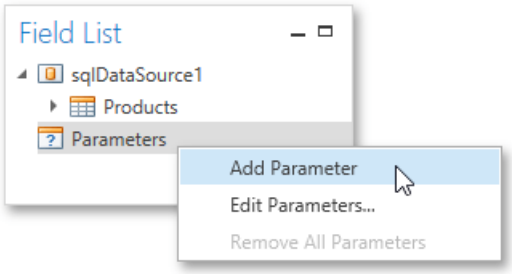
To edit settings of the created calculated field, select them and go to the Properties Panel. You can also right-click the calculated field and use commands available in the context menu.



Manging Report Parameters

The Field List shows existing report parameters and allows you to add new ones to the report.

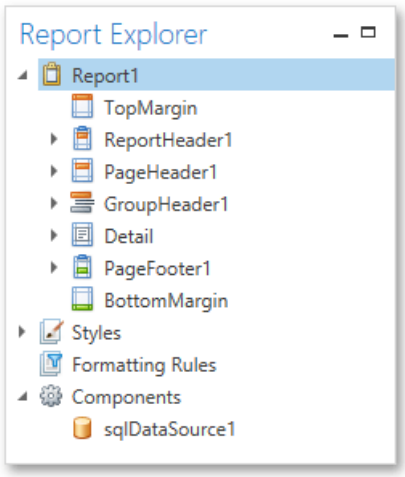
To create a parameter, right click the **Parameters** node or any of its sub-nodes, and in the context menu, select **Add Parameter**.



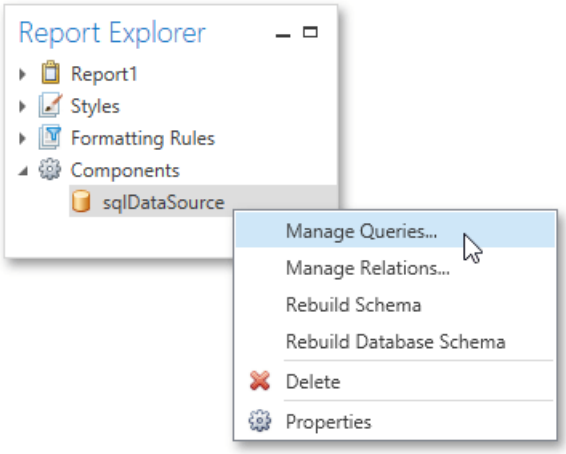
You can customize report parameters using the Properties Panel or commands available in the context menu in the same way as you customize calculated fields.

Report Explorer

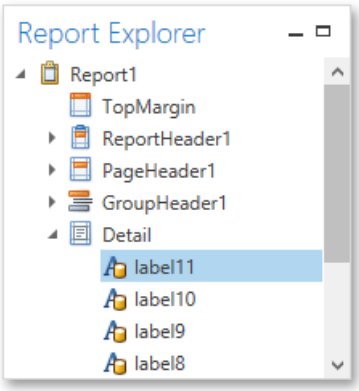
The **Report Explorer** reflects a report's structure in a tree-like form providing easy access to report elements. Additionally, the Report Explorer contains the **Components** node, which displays non-visual report components such as data objects created when binding a report to a data source. You can also use the Report Explorer to manage styles and formatting rules available for a report.



To access and edit settings of a report element or component, select it in the Report Explorer and switch to the Properties Panel. You can also right-click elements and components to invoke their context menu.



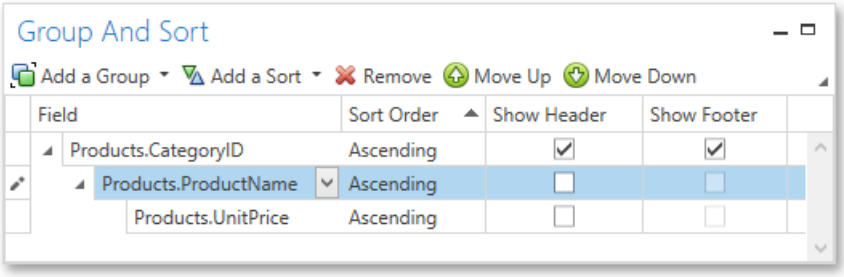
In the Report Explorer, data-aware controls are marked with a special database icon.



You can manage styles and formatting rules using commands available in context menus. To invoke a context menu, right-click the corresponding root node or its sub-node.

Group and Sort Panel

The **Group and Sort Panel** allows you to quickly apply grouping and sorting to report data.



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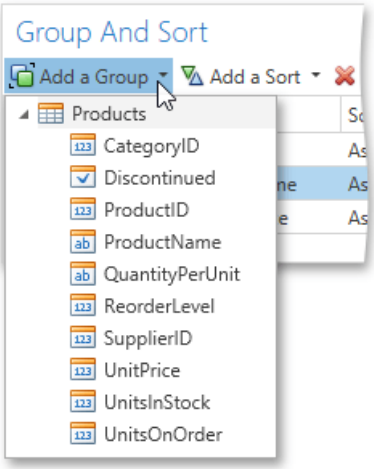
If a report is not bound to a data source, the **Group and Sort Panel** is inactive.

To create a new sorting or grouping criterion, click the **Add a Sort** or **Add a Group** buttons, respectively. Then, select the desired data source field in the invoked drop-down list.



After adding the grouping criterion, the Group Header band is automatically created. You can manually specify whether to display the corresponding Group Header and Group Footer using the **Show Header** and **Show Footer** check boxes.

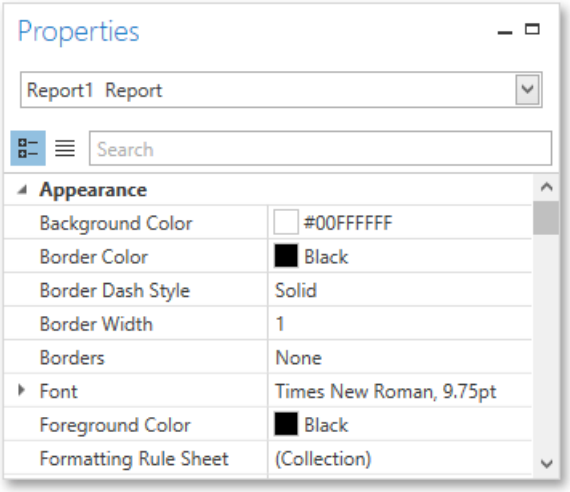
You can choose the sorting mode (ascending or descending) or disable sorting in the **Sort Order** drop-down list.

The **Group and Sort Panel** also allows you to change the precedence of multiple grouping and sorting criteria using the **Move Up** and **Move Down** buttons.

To remove a grouping or sorting criterion, select it and click the **Remove** button.

Properties Panel

The **Properties** panel allows you to access and customize settings of a report and its elements.



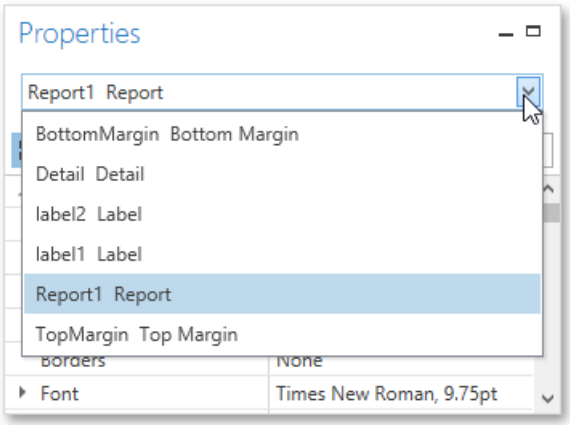
This document describes different aspects of using the Properties panel and consists of the following sections.

- Selecting a Report Element
- Display Modes
- Changing Property Values
- Searching for Properties

Selecting a Report Element

To select an element and show its properties in the Properties panel, do one of the following.

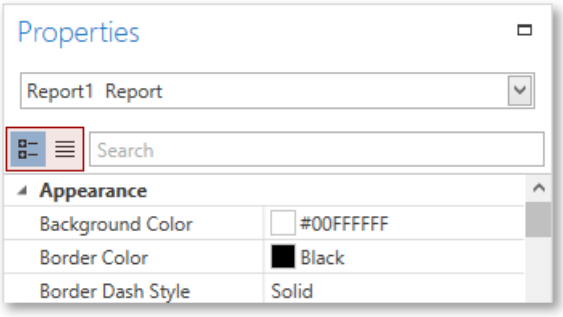
- Select a required element in the drop-down list at the top of the Properties panel.



- Click a required element in the Report Design Surface.
- Select a required element in the Report Explorer.

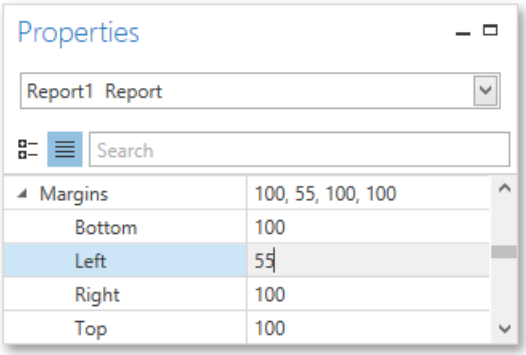
Display Modes

The Properties panel can display element properties in alphabetical flat order or combine them into categories depending on their purposes. To switch between these display modes, use the dedicated buttons.



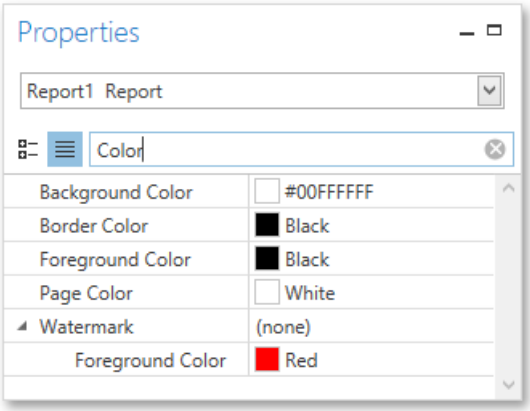
Changing Property Values

In the Properties panel, each row consists of two cells: the header cell showing the property caption and the value cell. To set a property value, locate the property and specify its value using the corresponding cell editor. Specific properties contain nested properties, which can be accessed by clicking the expand button for the property captions.



Searching for Properties

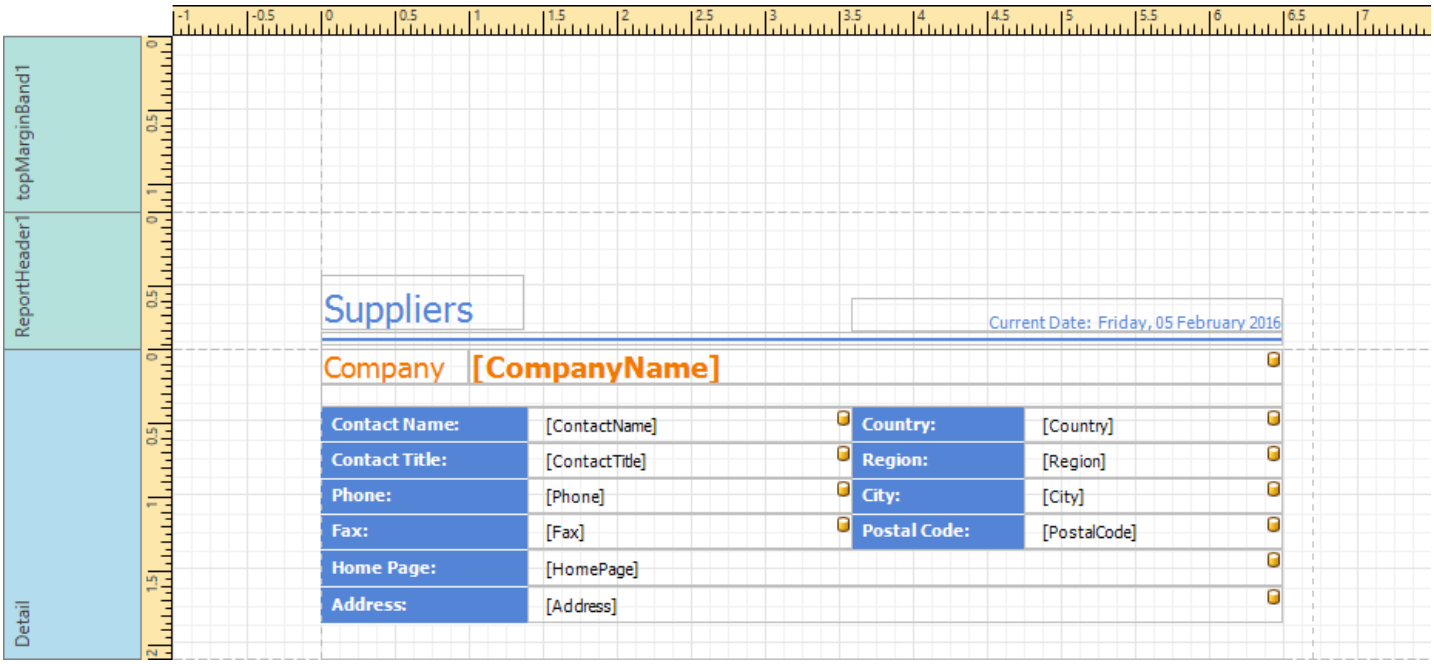
The Properties panel includes the search box that allows you to search for a required property. When you type within the search box, the Properties panel automatically creates a search criteria based on the entered text and filters the list of available properties.



If you type two substrings separated by the space character, these substrings are considered as individual conditions combined by the **OR** logical operator. To find properties that contain both substrings (i.e., to use the **AND** logical operator), type "+" before the second substring. Similarly, type "-" to exclude properties that contain a specific substring. To search for a property that contains a space character, enclose the entered string in quotation marks. You can also combine several logical operators and quotation marks.

Design Surface

The **Design Surface** displays a report that is currently being edited in the Report Designer.



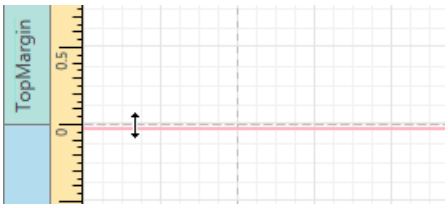
The Design Surface includes the following principal elements.

- Rulers
- Band Captions
- Context Menus In-place Editors

Rulers

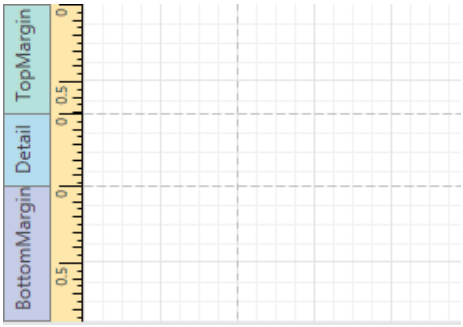
The horizontal and vertical rulers display tickmarks in the measurement units specified for a report. Click an element to evaluate its size and location using the rulers.

The vertical ruler also allows you to change the band height by moving its top and bottom sliders.



Band Captions

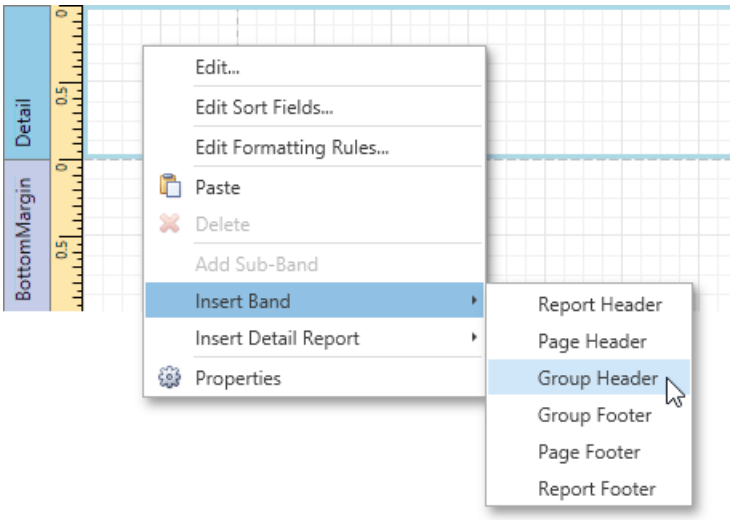
In the Report Designer, each report band carries a caption, tab title and color, which depend on the band kind. These captions are not printed in the resulting report document and are only visible at design time.



To access band properties, select the band by clicking its caption, and then switch to the Properties Panel.

Context Menus

The context menu provides quick access to the most commonly used actions that depend on the element for which it is invoked. For example, it allows you to insert new bands, cut/copy/paste/delete report controls, etc. For certain report controls, the context menu also includes the **Edit...** option, which invokes the dialog with complex settings (such as data binding settings, formatting, etc.) To invoke this menu, right-click a report element or the report editing surface.



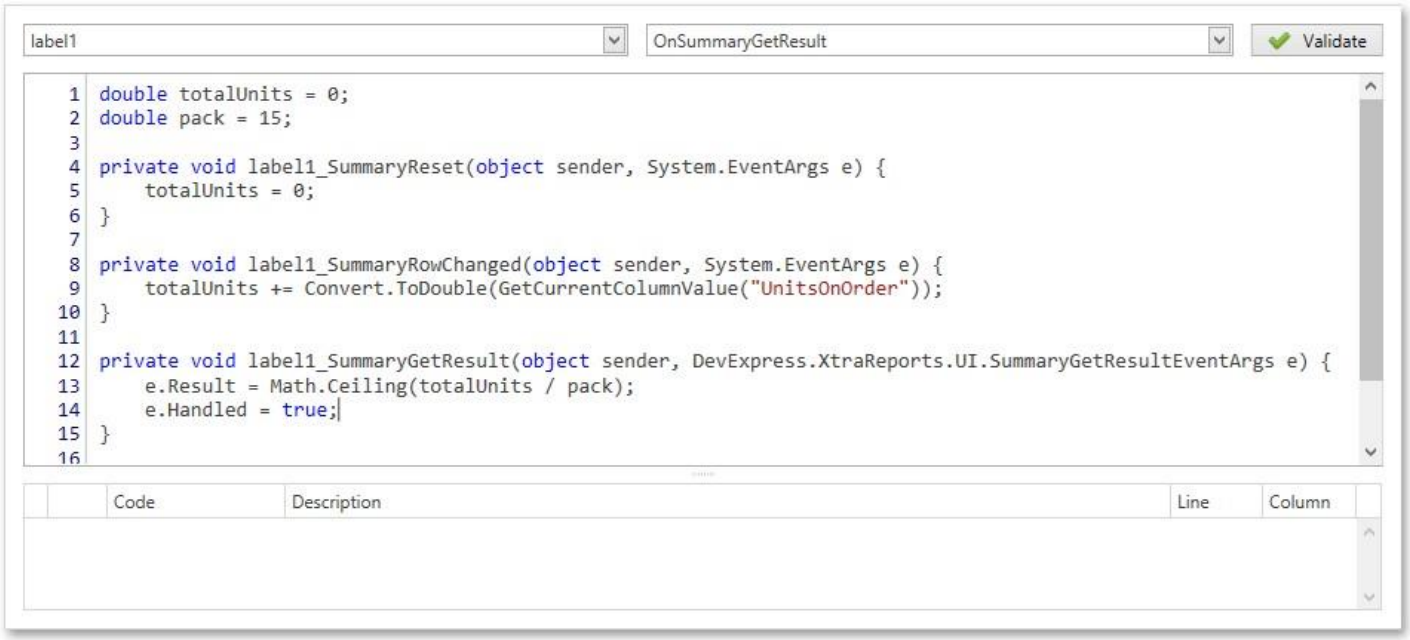
In-place Editors

An in-place editor allows you to edit the content of a text-oriented control (Bar Code, Check Box, Label, Table Cell or Zip Code) by double-clicking it.

To learn how to use the in-place editor to supply dynamic data to a control, see Using Mail Merge.

Script Editor

The **Script Editor** allows you to write code for specific event handlers in the Report Designer to adjust the behavior of report controls, bands or the report itself.



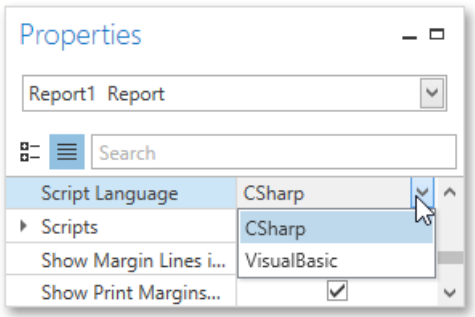
This topic describes the basics of using scripts, the Script Editor interface and shows how to use scripting in a report. The document consists of the following sections.

- Scripting Overview
- Maintaining Scripts

Scripting Overview

The Script Editor provides you with the capability to write and execute scripts at runtime when a report is generated. Scripting is made available to extend the standard functionality as far as may be required.

The Script Editor supports **C#** and **Visual Basic .NET** scripting languages. This means that the scripting language is independent from the language used to create the report. You can specify the language using the **Script Language** property. The selected scripting language should be the same for all scripts used in a report.

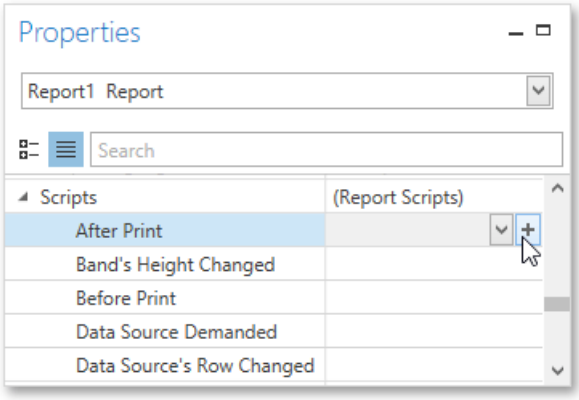


Maintaining Scripts

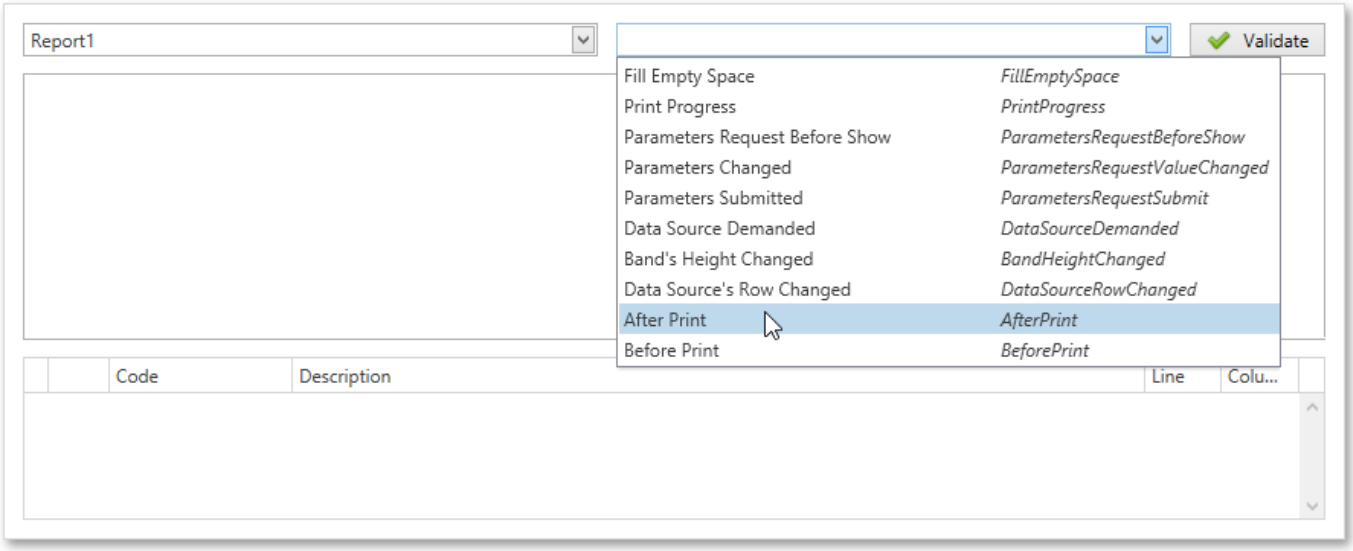
Each report element has its own set of events, which are individual for each element type. To handle an event of a report element, do one of the following.

- Select the required report element (e.g., on the Design Surface). In the Properties Panel, expand the

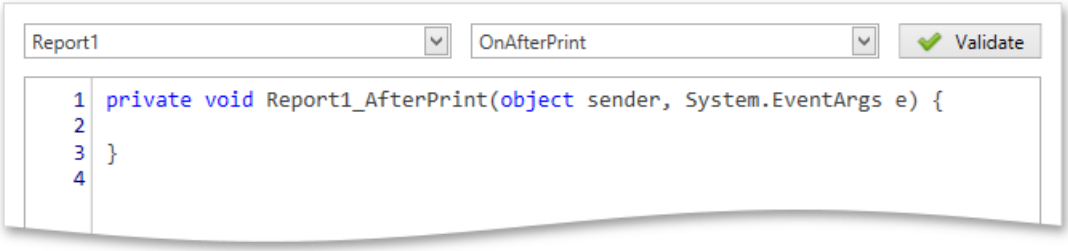
Scripts property and click the plus button for the event.



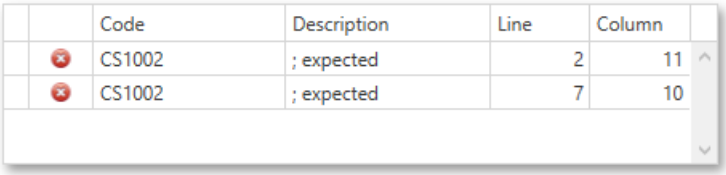
- Click the **Scripts** button ( ) in the Toolbar to display the Script Editor. Choose the required report element in the dedicated drop-down list at the left top of the Script Editor. Then, select one of the available events in another list at the right top.



After the event is specified, a code template is automatically generated in the current scripting language and added in the Script Editor.

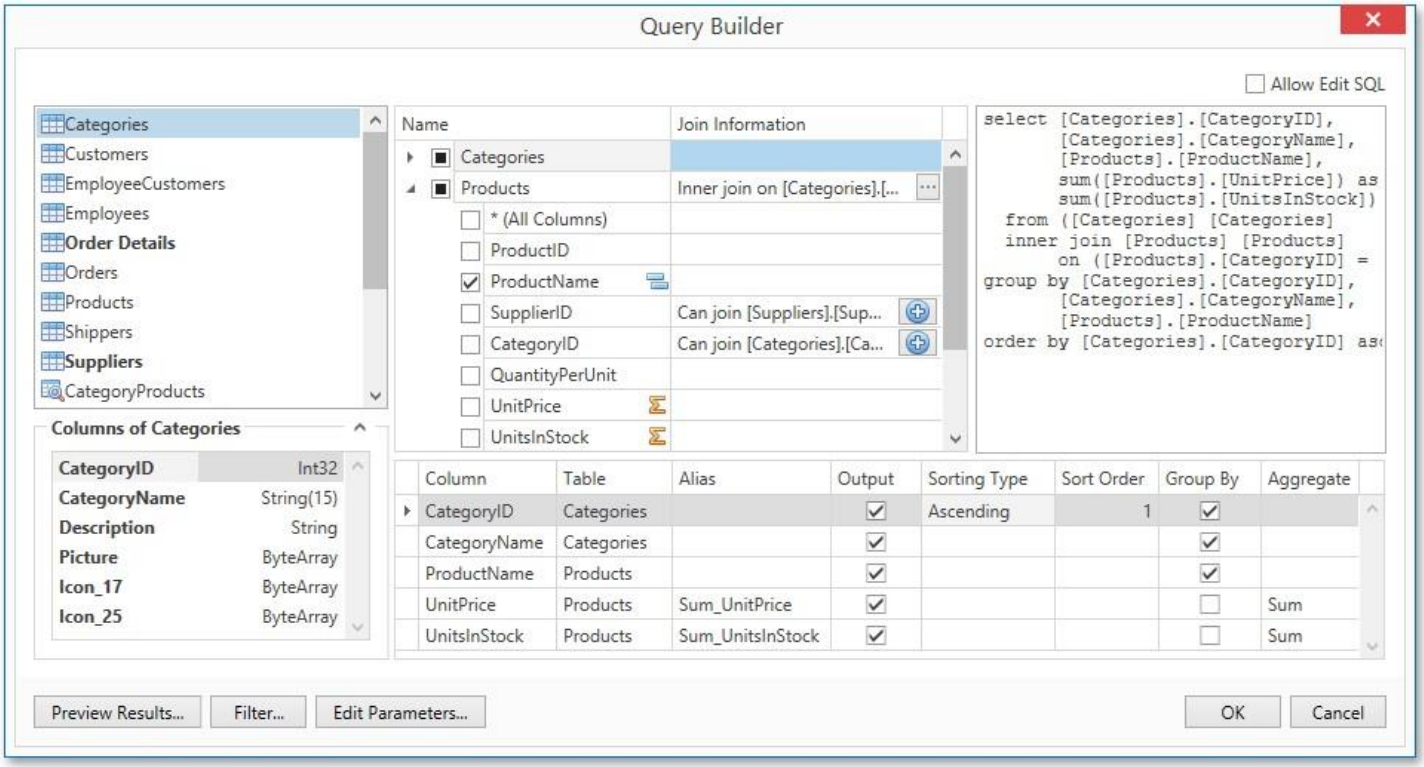


To check for errors in the report's script, click the **Validate** button. The validation result is displayed in the errors panel at the bottom of the Script Editor. Double-click the error item in the panel's list to go to the corresponding line of code. If all scripts are valid, the errors panel is empty.



Query Builder

The **Query Builder** provides a visual interface for constructing SQL queries and enables you to solve a variety of tasks.



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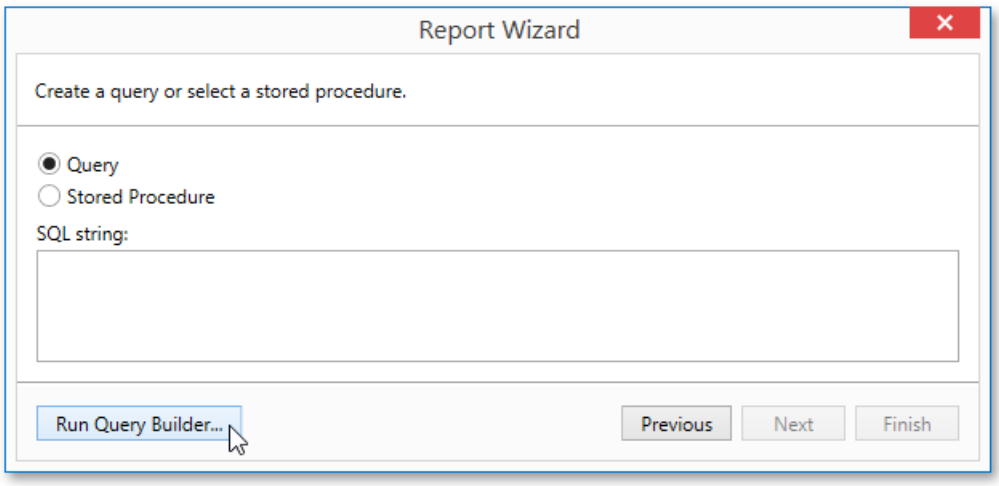
The Query Builder is not available for object, Entity Framework and Excel data sources. The document consists of the following sections.

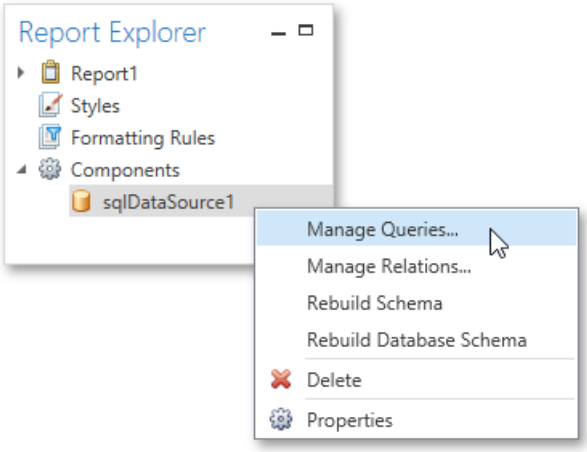
- Run the Query Builder Select Tables
- Join Tables
- Edit Parameters
- Filter Data
- Shape Data
- Enable Custom SQL
- Editing Preview Results

Run the Query Builder

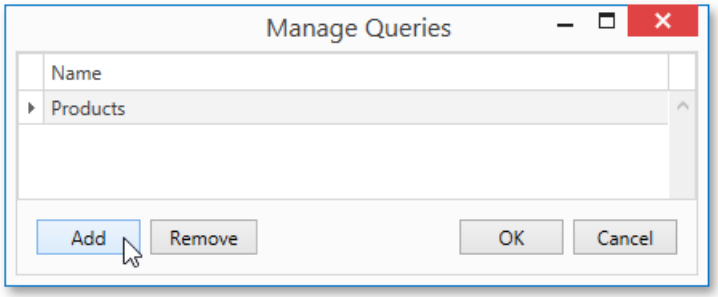
You can invoke the **Query Builder** from the query customization page of the Report Wizard when creating a new data-bound report or when binding an existing one to a database. To do this, select the **Query** item and click the **Run Query Builder** button.



You can also use the Query Builder to add queries to an existing SQL data source, as well as to edit existing queries. To do this, right-click the data source in the Report Explorer and select **Manage Queries** in the context menu.



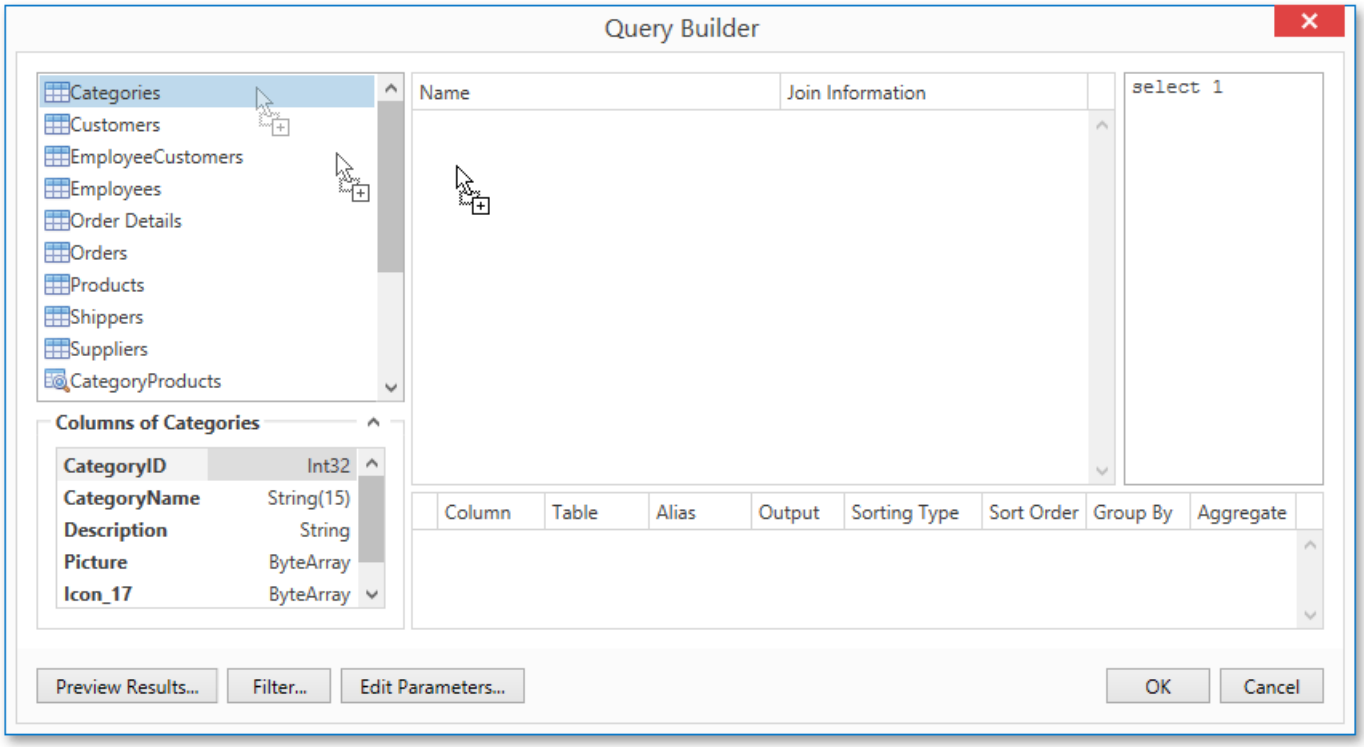
In the invoked **Manage Queries** dialog, click **Add** to add a new query. To edit an existing query, click the ellipsis button.



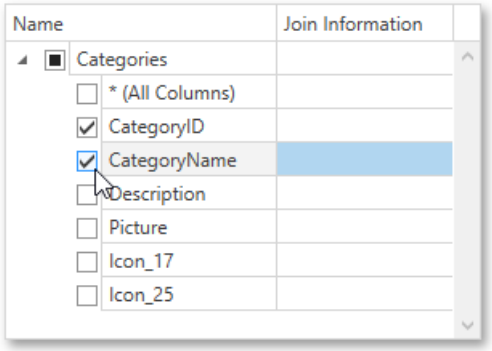
Finally, click the **Run Query Builder** button in the invoked **Data Source Wizard**.

Select Tables

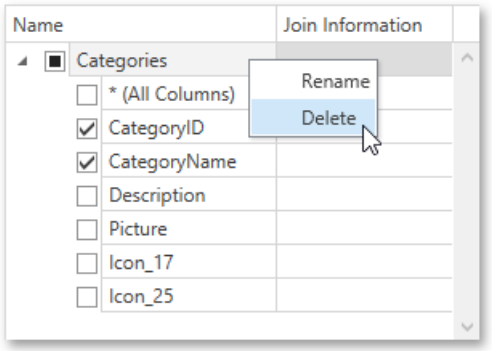
To add a specific data table or view to a query, drag the corresponding item from the list of available tables and drop it onto the list of data tables to be used.



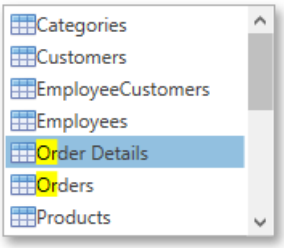
Enable check boxes for the table fields that you want to include in the query result set.



Each table provides the context menu, which allows you to rename the table or remove it from the query.

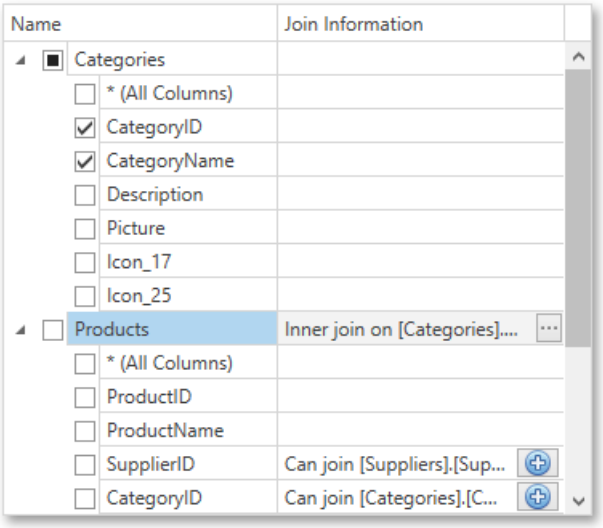


To search for a specific table or view, click the list of available tables on the left and start typing the search name.



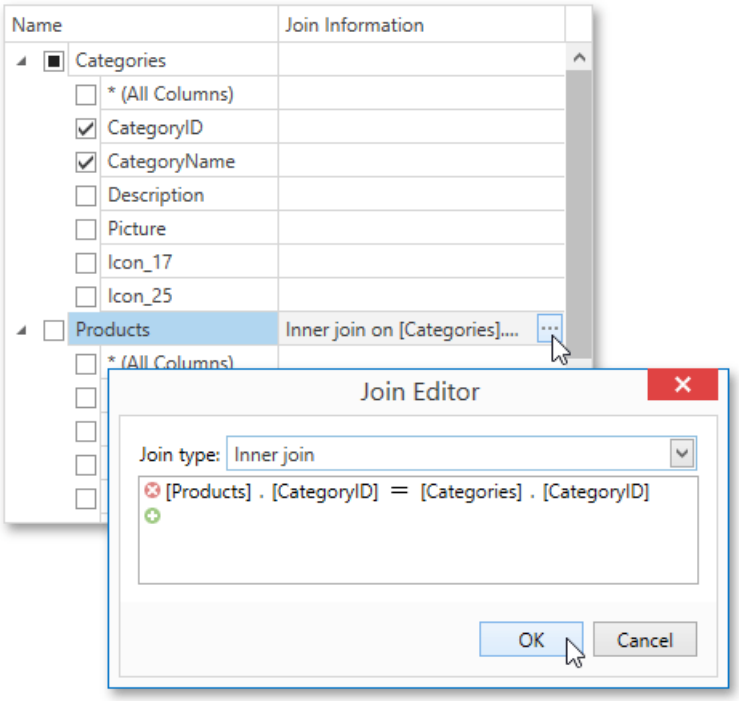
Join Tables

You can join multiple tables within the same query. The Query Builder automatically highlights tables related to any of the previously added tables. Drag-and-drop a subordinate table in the same way as a principal table to include it in a query and automatically create an inner join relation based on a key column.



Another way to join tables is to click the  button in a row corresponding to a key column.

To customize the relationship, click the corresponding ellipsis button. Use the **Join Editor** to select the join type (**Left Outer** or
Inner), applied logical operator (**Equals to**, **Is less than**, etc.) and column key fields.



A left outer join returns all the values from an inner join along with all values in the "left" table that do not match to the "right" table, including rows with NULL (empty) values in the key field.

If tables do not have a relationship at the database level, you can manually join tables. In this case, when you drag-and-drop the required table onto the list of tables to be used, the **Join Editor** is automatically invoked allowing you to construct a custom **join** relationship.

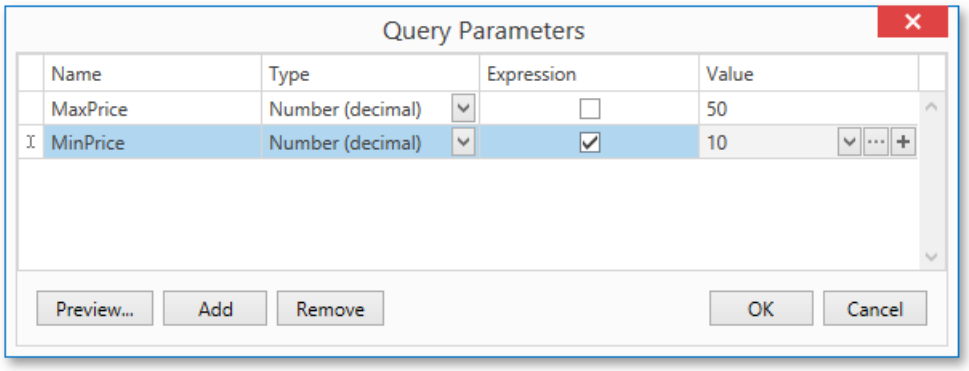
After executing the query, it will return a "flat" table composed of data records selected based on the specified join options.

O Not e

Although joining different tables within a single query may be required in some scenarios, creating hierarchical data sources generally results in better performance (in general, master-detail reports are generated faster than similar-looking reports created by grouping "flat" data sources).

Edit Parameters

Click the **Edit Parameters** button to invoke the **Query Parameters** dialog, which allows you to add and remove query parameters as well as specify parameter settings.



For each query parameter, the following properties are available.

- **Name** - specifies the name used to refer a parameter.
- **Type** - specifies the data type of the parameter's value.

- **Expression** - determines whether the actual parameter value is static or generated dynamically.
- **Value** - specifies the actual value of a query parameter. If the **Expression** option is enabled, the actual parameter value is produced dynamically by calculating an associated expression, which is particularly useful when you need to map the query parameter value to the value of a report parameter.

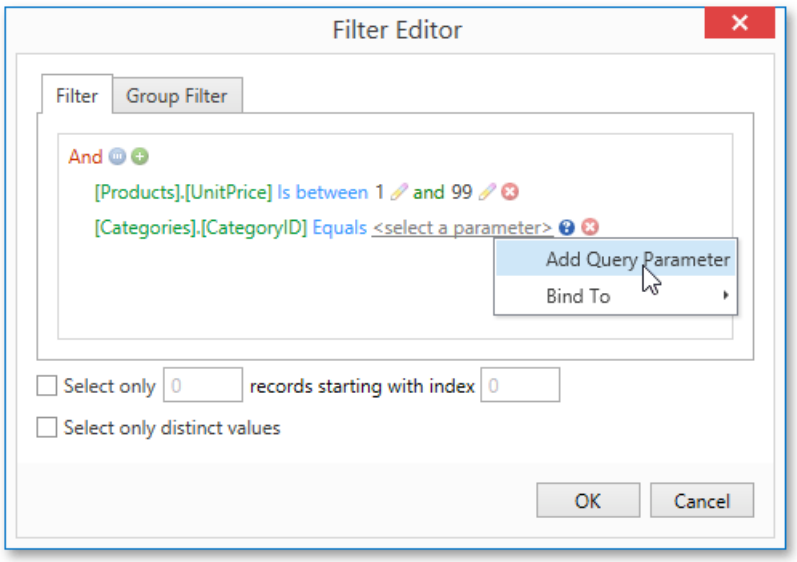
The created parameters will be then available on the Configure Query

Parameters wizard page. For general information on query parameters, see

Query Parameters.

Filter Data

To specify filter criteria, click the **Filter...** button in the Query Builder. This invokes the **Filter Editor**, which provides the following capabilities.



- **Filter Tab**
  The editor contains the **Filter** tab allowing you to specify filter conditions for resulting data. Filter criteria can be assigned query parameters or bound to report parameters.
- **Group Filter Tab**

  The **Group Filter** tab allows you to specify filter conditions for grouped and aggregated data. If data is not grouped, the second tab is disabled.
- **Other Options**

  Using this editor, you can limit the number of resulting data rows. If data is sorted, you can specify how many rows to skip before retrieving the specified number of rows.

  O Not e

  Depending on the selected data provider, it can be impossible to take into account the skip setting in the provider-specific SQL string.

  Another option enables you to include only distinct values into the resulting set.

Shape Data

The Query Builder displays the column list under the data source editor, which provides various shaping options.

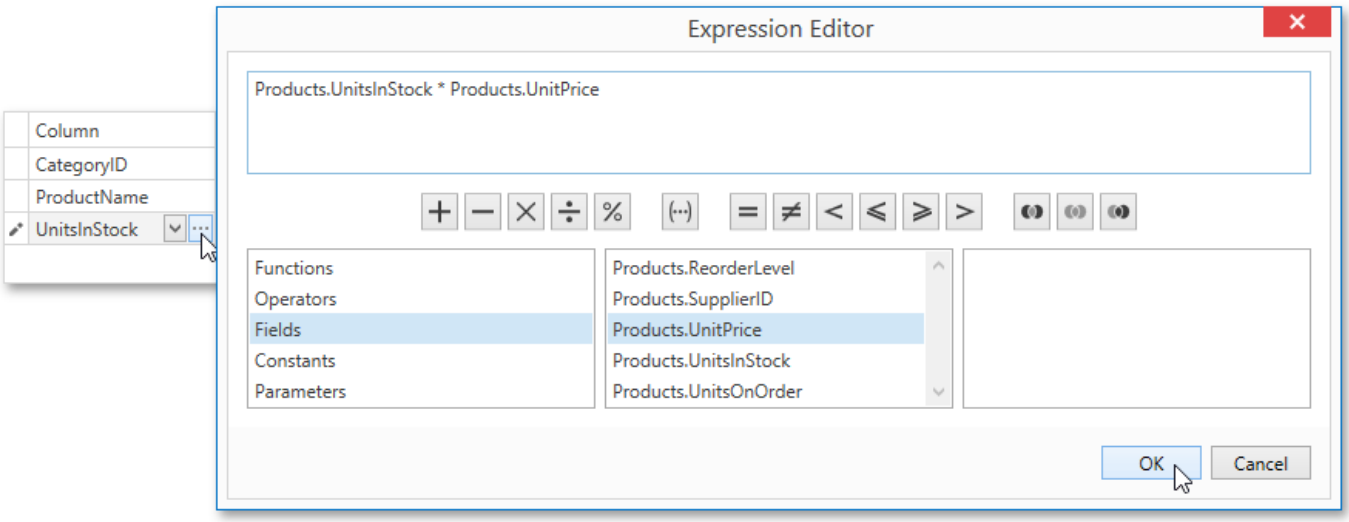
Column	Table	Alias	Output	Sorting Type	Sort Order	Group By	Aggregate
CategoryID	Categories		☑	Ascending	1	☑	
CategoryName	Categories		☑			☑	
ProductName	Products		☑			☑	
UnitsInStock	Products	Sum_UnitsInStock	☑			☐	Sum
UnitsOnOrder	Products	Sum_UnitsOnOrder	☑			☐	Sum

The following options are available.

- **Column**

  Specifies the selected column.

  You can choose a required column in the drop-down list or create a column expression by clicking the ellipsis button for the corresponding column.



- **Table**
  Specifies the table containing the selected column.

  This option indicates **(All Tables)** if an expression is specified for the corresponding column.

- **Alias**

  Specifies a custom column name (alias).

  This option is available only for columns that are included in a query.

- **Output**

  Specifies whether or not the column is included into the query's resulting set.

- **Sorting Type**

  Specifies whether to preserve the original order of data records within the column, or sort them (in ascending or descending order).

  O Not e

  When binding to XML files, the Query Builder does not support sorting by aggregate functions, DISTINCT and SELECT ALL statements, and custom SQL.

- **Sort Order**

This option becomes available after applying sorting to the data column records.

It defines the priority in which sorting is applied to multiple columns (the less this number is, the higher the priority).

For example, if column **A** has the sort order set to **1** and column **B** has it set to **2**, the query will be first sorted by column **A**
and then by the column **B**.

Changing this setting for one column automatically updates the sort order of other columns to avoid a conflict of priorities.

- **Group By**

  Specifies whether or not the query's result set should be grouped by this column.

- **Aggregate**

  Specifies whether or not the column's data records should be

  aggregated. The following aggregate functions are

  supported.

  - Coun
    t
  - Max
  - Min
  - Avg
  - Sum
  - Count
  - Distinct Avg
    Distinct
  - Sum Distinct

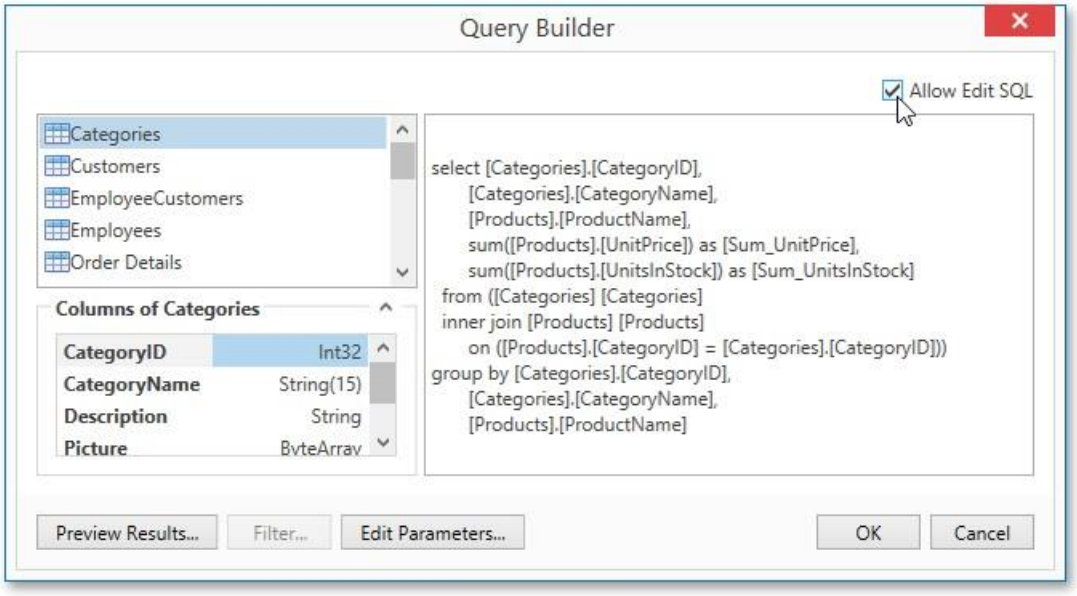
    Applying any of these functions to a column will discard individual data records from the query result set, which will only include the aggregate function result.

O Not e

You should apply aggregation/grouping to either all columns or to none of them.

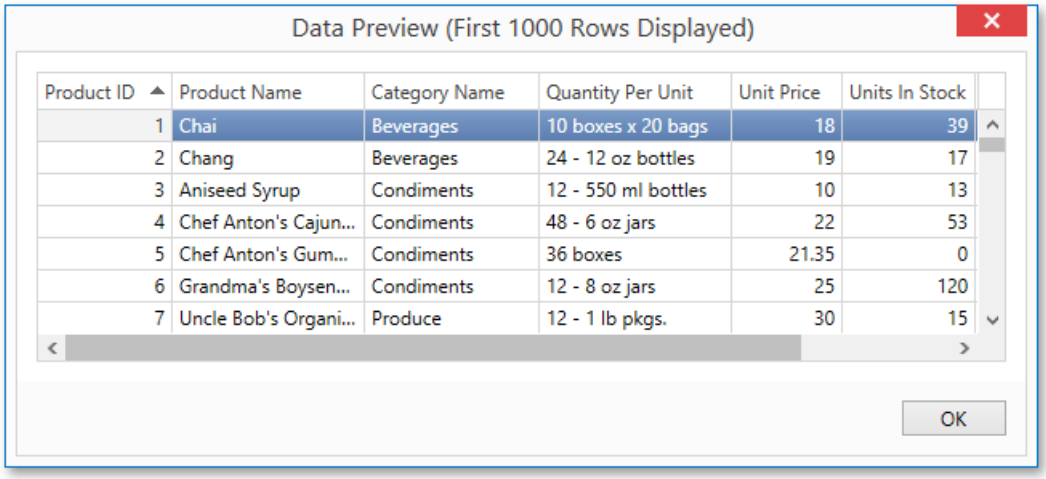
Enable Custom SQL Editing

If custom SQL editing is enabled by your software provider, the Query Builder contains the **Allow Edit SQL** check box. Selecting this option disables the visual features of the Query Builder and allows users to specify the custom SQL string manually.



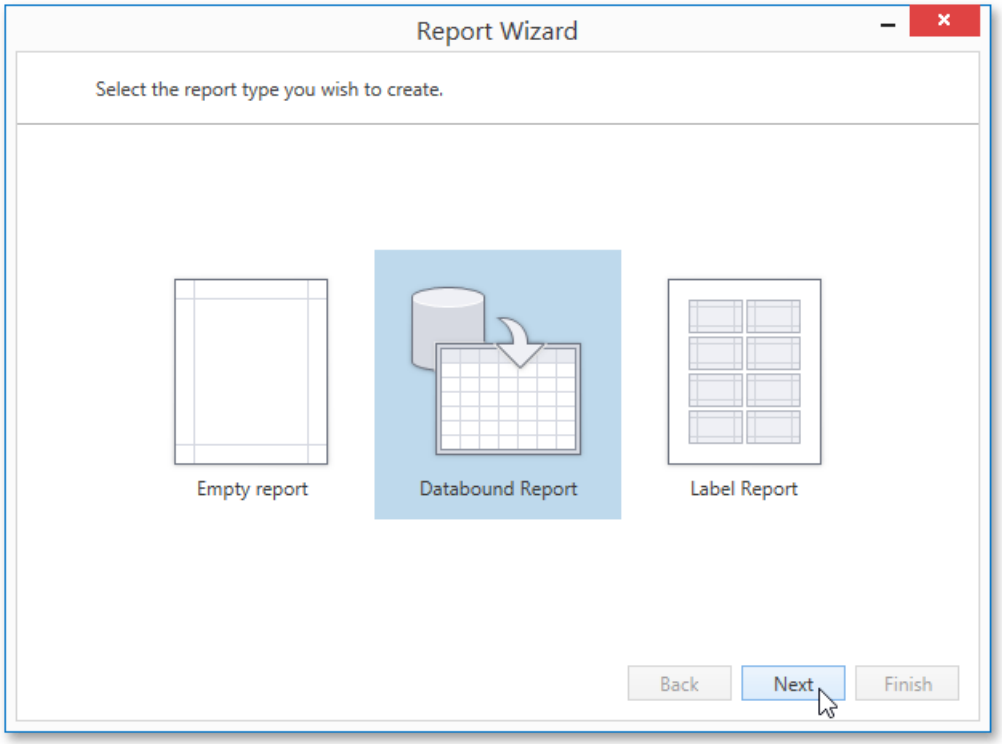
Preview Results

You can preview the result of the query execution in the form of a tabular data sample by clicking the **Preview Results** button. This opens the **Data Preview** window displaying the query result set limited by the first 1000 data records.



Report Wizard

The Report Wizard is a powerful tool that allows you to easily create reports based on built-in templates. It is automatically invoked when adding a new report in the Report Designer.



The Report Wizard provides three different ways to setup your report.

- Empty Report

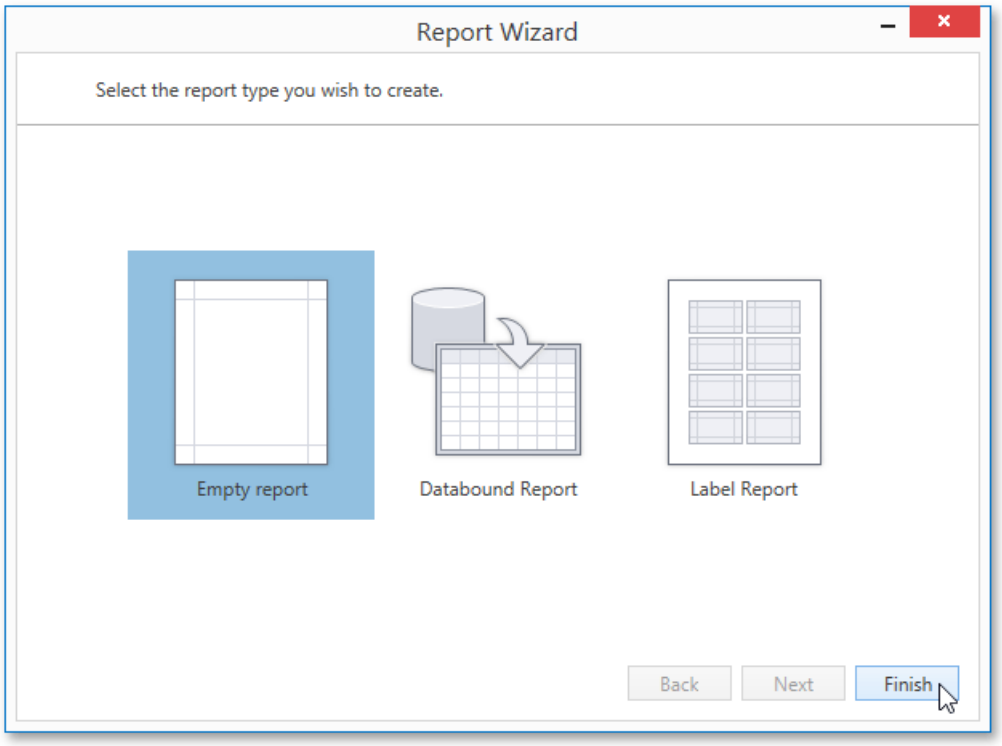
  Choose this option to create a new blank report that is not bound to data and doesn't contain any report controls.
- Data-bound Report

  This option allows you to easily create a report bound to a desired data source (database, Entity Framework, object data source or excel data source) and generate its layout from scratch. While setting up the report, you can group and sort data, add totals, apply one of the predefined report style, etc.
- Label Report

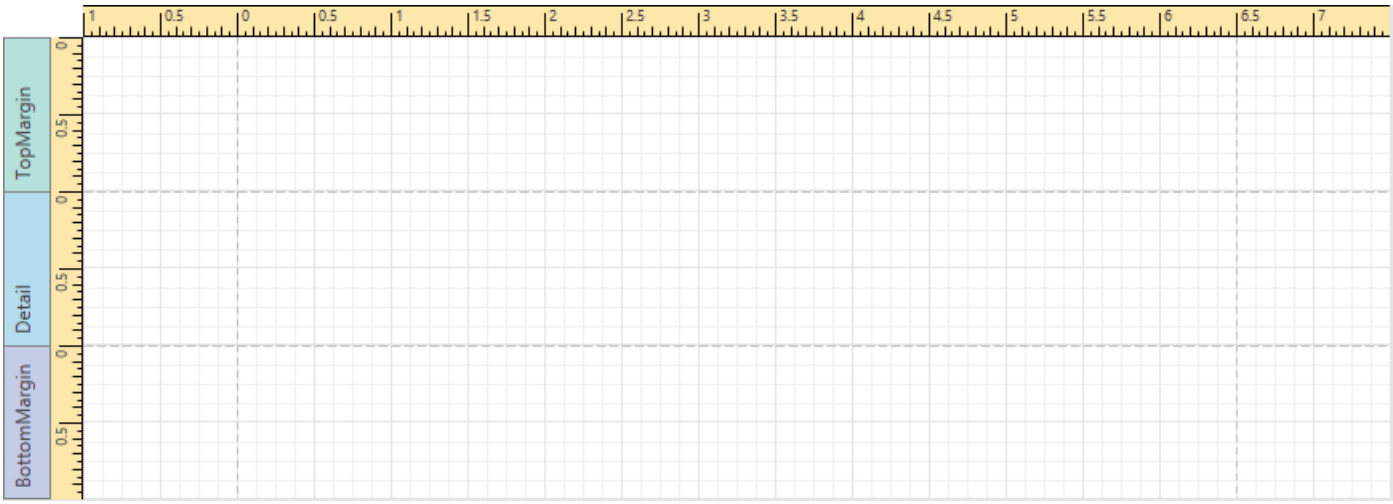
  Select this report type if you need to print out labels. In the Label Report Wizard, choose a required paper supplier and label type, and the report will be adjusted automatically. After completing the wizard, you get an empty report that clearly indicates label boundaries and properly positions labels within paper sheets.

Empty Report

The **Report Wizard** allows you to create reports of three kinds: **empty reports**, data-bound reports and label reports. To create a new blank report, select **Empty Report** and click **Finish**.



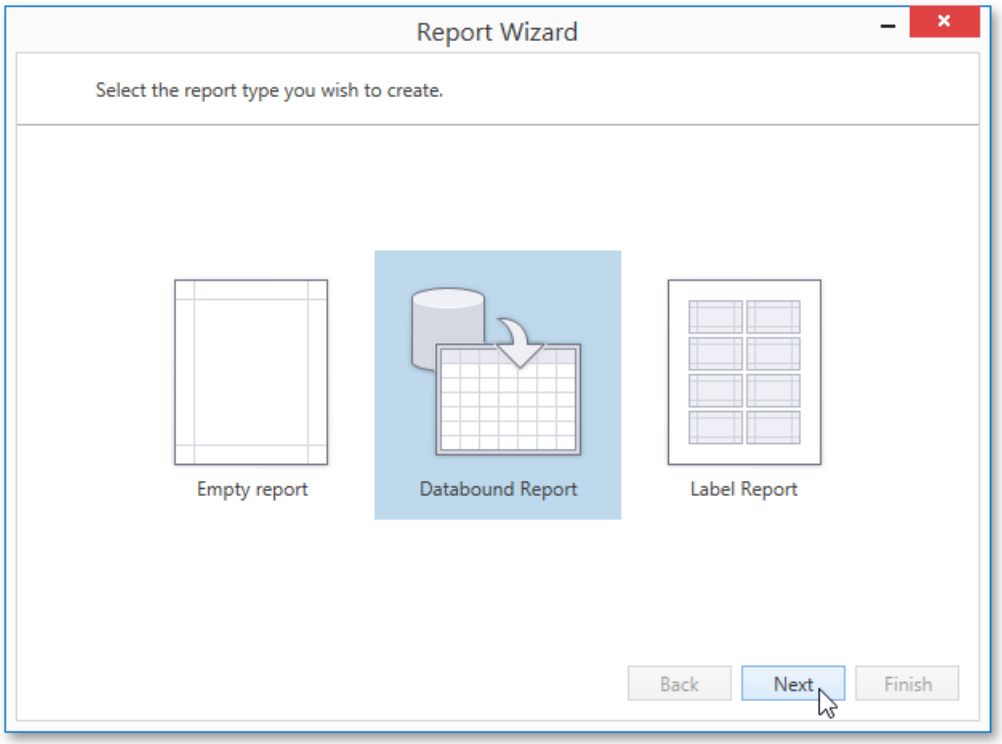
The created report is not bound to a data source and doesn't contain any report controls. The following image demonstrates the default layout of this report.



You can then bind the report to a required data source and construct the report layout.

Data-bound Report

The **Report Wizard** allows you to create three kinds of reports : empty reports, **data-bound reports** and label reports. To create a data-bound report and generate its layout, select **Databound Report**.



Click **Next** to proceed to the next wizard page: Select the Data Source Type.

After completing the Data-bound Report Wizard, you get a tabular banded report. Depending on how many wizard steps you complete, you can apply data grouping, display totals, select one of the predefined style sheets, etc.

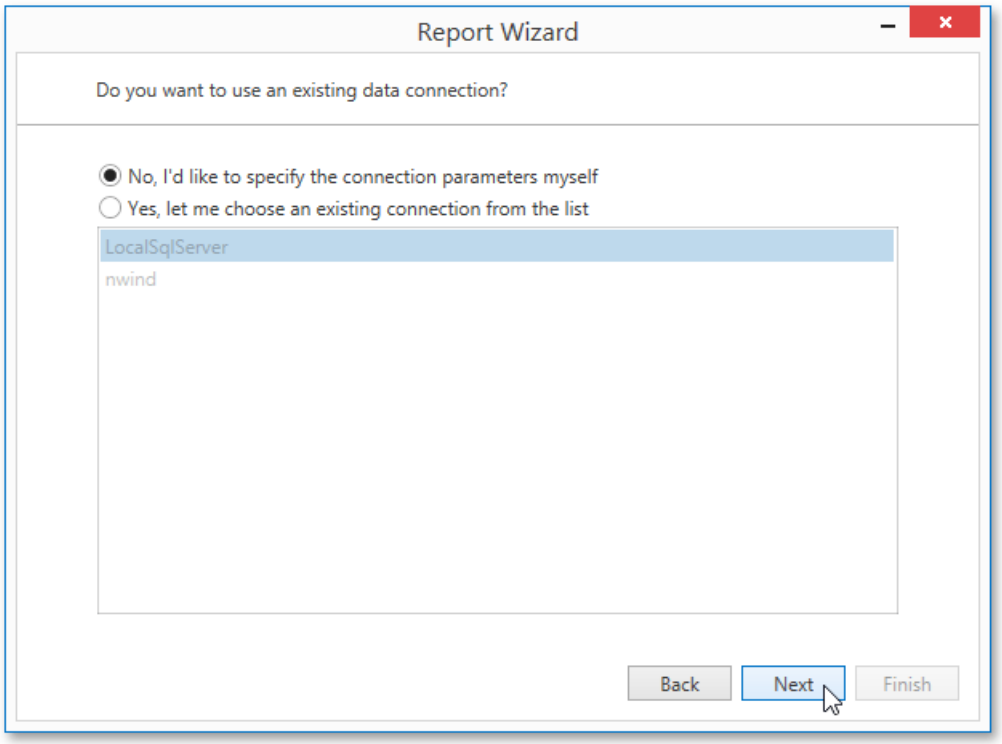
Connect to a Database

The topics in this section describe the steps required to connect a report to a database using the Report Wizard. This task includes the following steps.

- Select a Data Connection
- Specify a Connection String
- Save the Connection String
- Customize the Query
- Configure Query Parameters

Select a Data Connection

On this page, you can choose whether to use one of the existing data connections or create a new one.

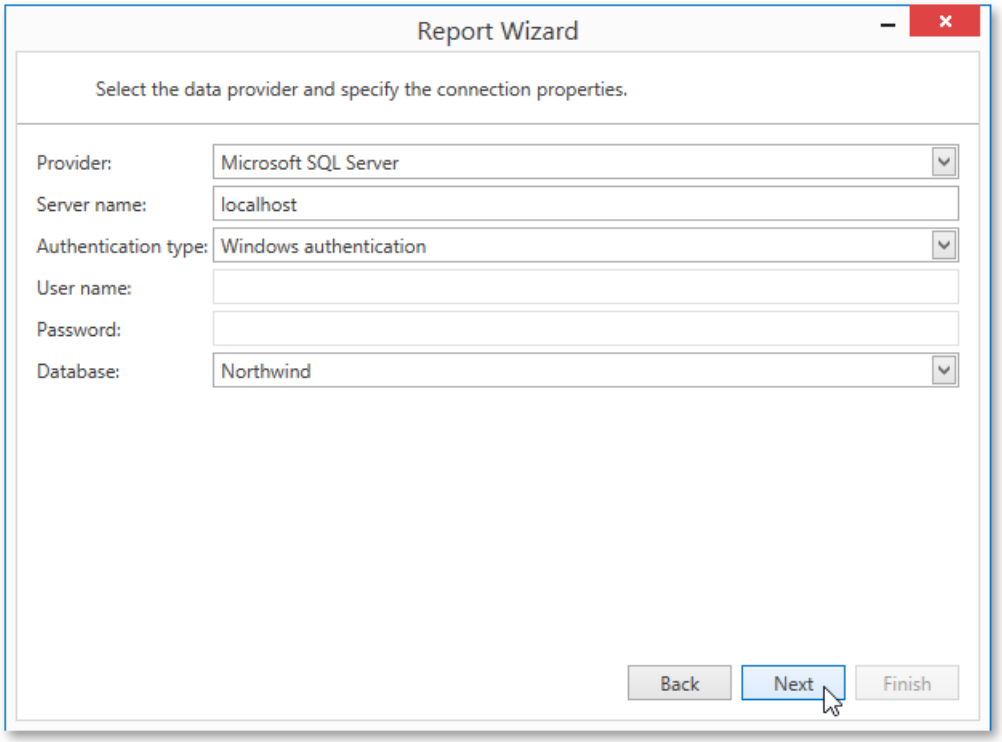


Click **Next** to proceed to the next wizard page. If you select one of the available connections from the list, go to the Customize the Query page. Otherwise, proceed to the Specify a Connection String page to create a custom connection string and manually specify its parameters.

Specify a Connection String

On this page, define a custom connection string or select one of the supported data providers.

Select the provider type in the **Provider** drop-down list. Next, specify the connection options required for the selected provider type (e.g., authentication type and database name).



The following data source types are supported.

- Microsoft SQL Server
- Microsoft Access 97
- Microsoft Access 2007
- Microsoft SQL Server CE
- Oracle
- Amazon Redshift
- Google BigQuery
- Teradata
- Firebird
- IBM DB2
- MySQL
- Pervasive PSQL
- PostgreSQL
- SAP Sybase Advantage
- SAP Sybase ASE
- SQLite
- VistaDB
- VistaDB5
- XML file

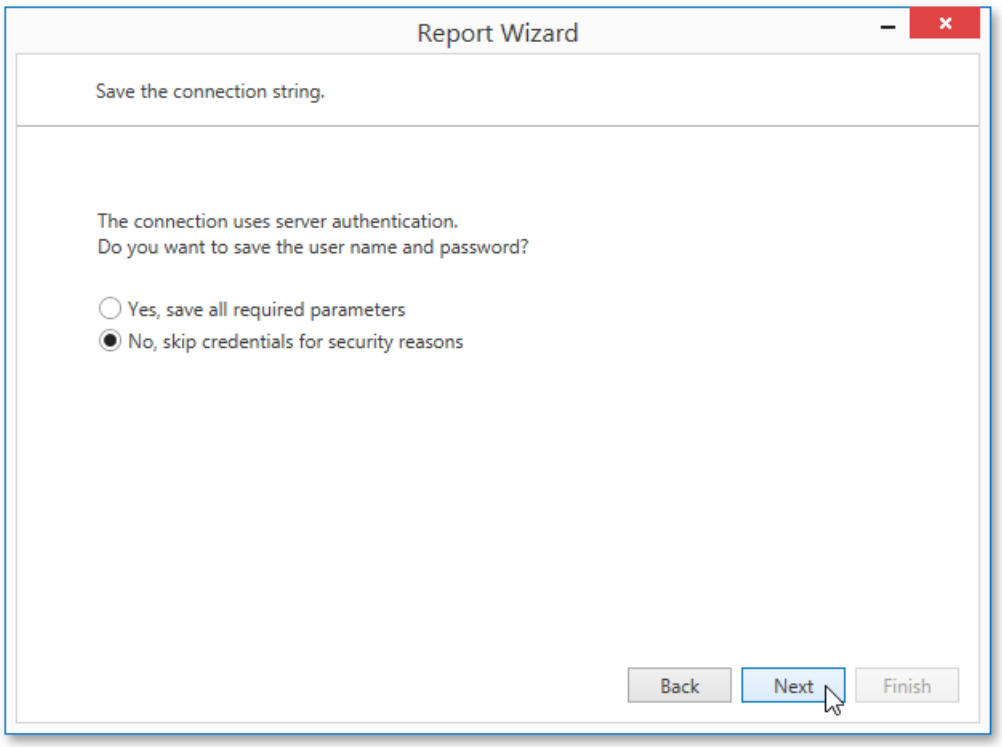
Click **Next** to proceed to one of the next wizard pages, depending on whether or not the created connection uses server authentication.

- Save the Connection String - if server authentication is required, this page allows you to specify whether or not to save user credentials along with the connection string.

- Customize the Query - if server authentication is not required, proceed to constructing the query.

Save the Connection String

If the data connection uses server authentication, this wizard page allows you to choose whether to save the user credentials along with the connection string.



Click **Next** to proceed to the next wizard page: Customize the Query.

Customize the Query

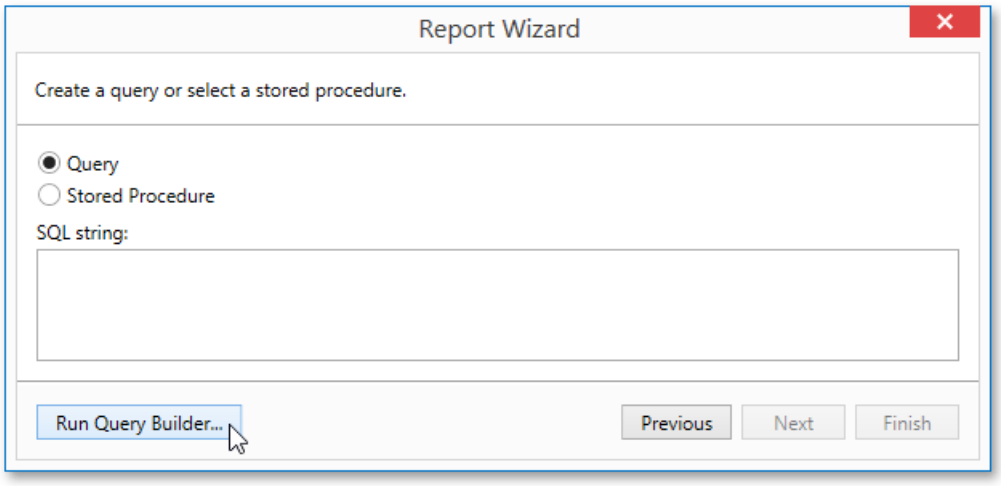
On this page, you can construct an SQL query to obtain data from the database or select a stored procedure.

- Construct a Query
- Select a Stored Procedure

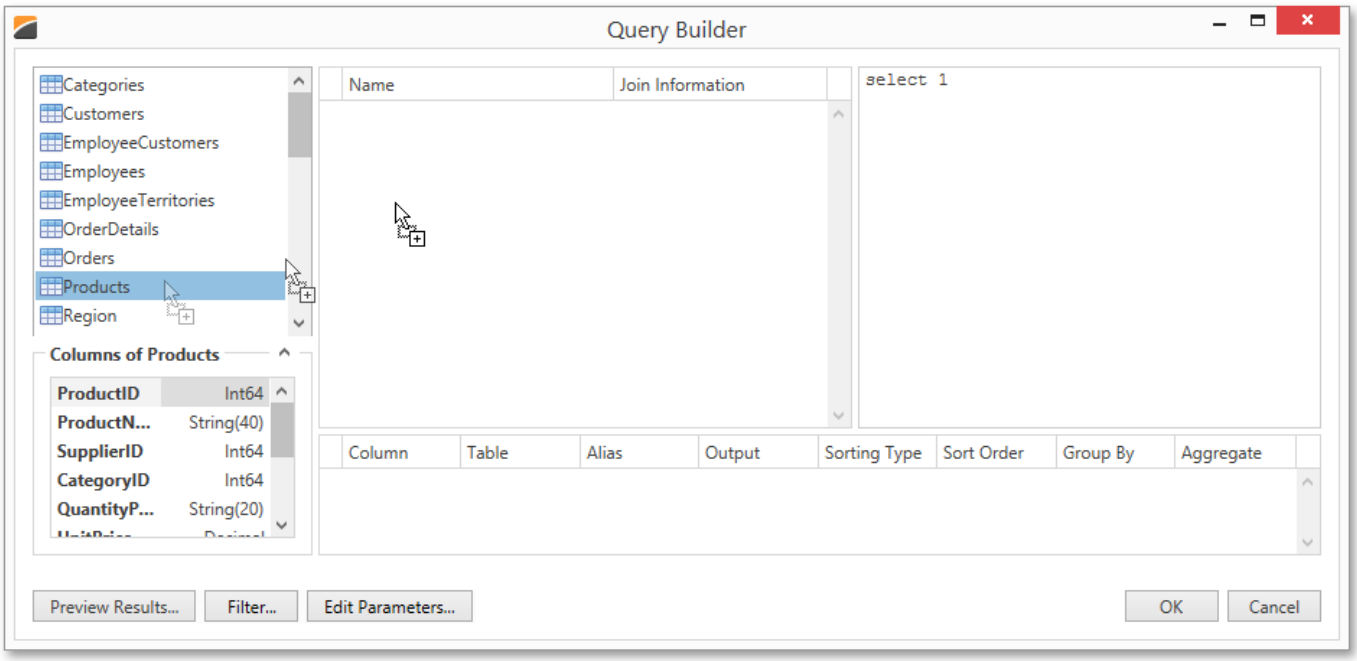
Construct a Query

To construct an SQL query, do the following.

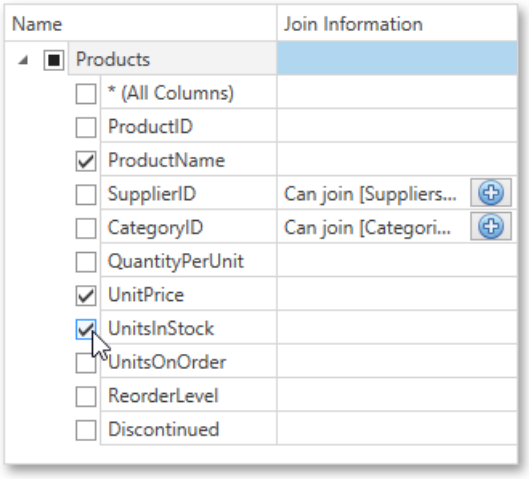
1. Select the **Query** option and click the **Run Query Builder** button.



2. In the invoked Query Builder window, select an item from the list of available tables on the left and drop it onto the list of data tables to be used.



3. Enable the check box near the added table to include all of its fields in the data view.

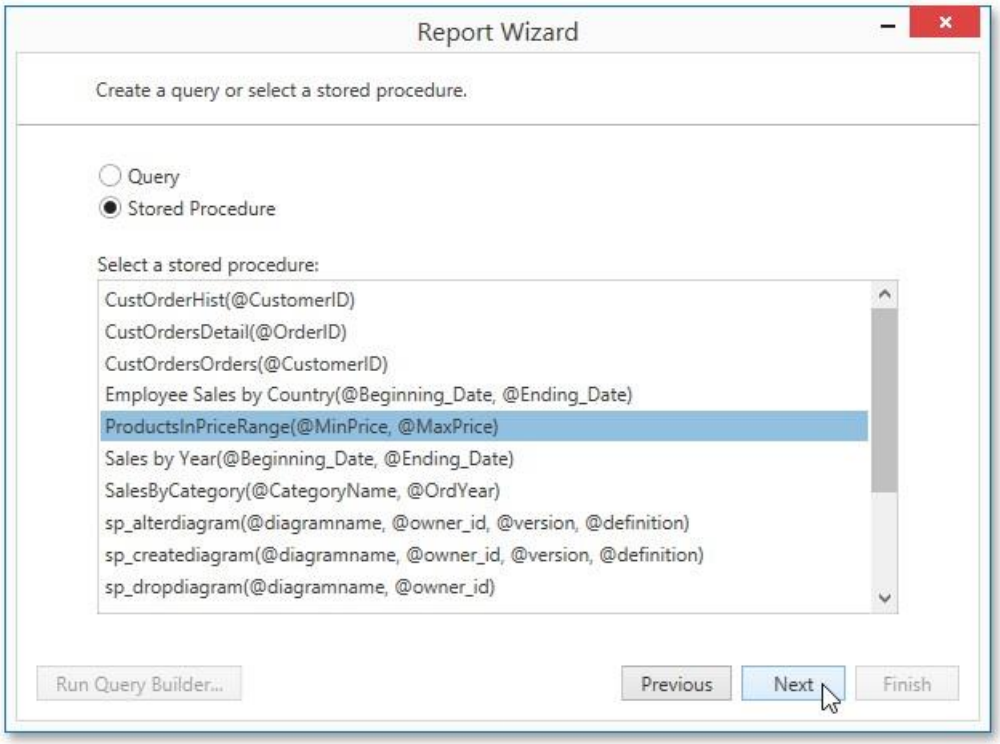


Click **OK** to exit the **Query Builder**.

For more information on the Query Builder, refer to the Query Builder document.

Select a Stored Procedure

To use a stored procedure, choose the **Stored Procedure** option and then select the required stored procedure from the list.

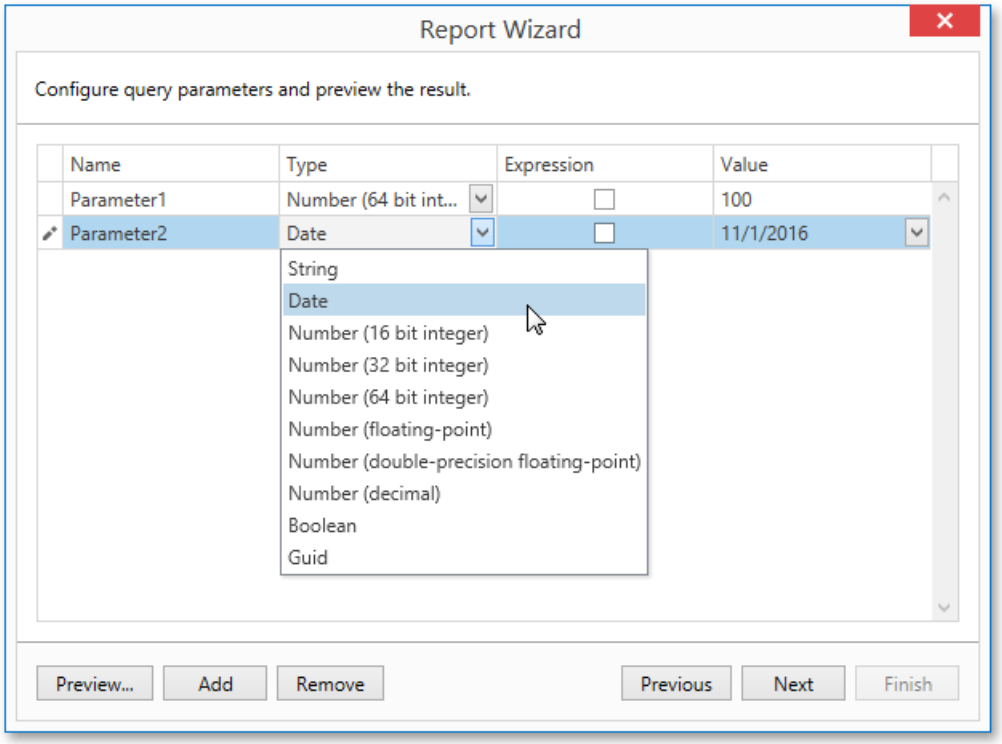


If the selected query or stored procedure contains any parameters, you will be required to define their values on the next wizard page: Configure Query Parameters.

Otherwise, clicking **Next** will open the next Report Wizard page: Choose Columns to Display in a Report.

Configure Query Parameters

On this wizard page, you can manage parameters that are used in queries and/or stored procedures selected on the previous wizard page, as well as specify parameter values.



Click **Next** to proceed to the next wizard page: Choose Columns to Display in a Report.

Connect to an Entity Framework Data Source

The topics in this section describe the wizard steps required to connect a report to data provided by an Entity Framework data context.

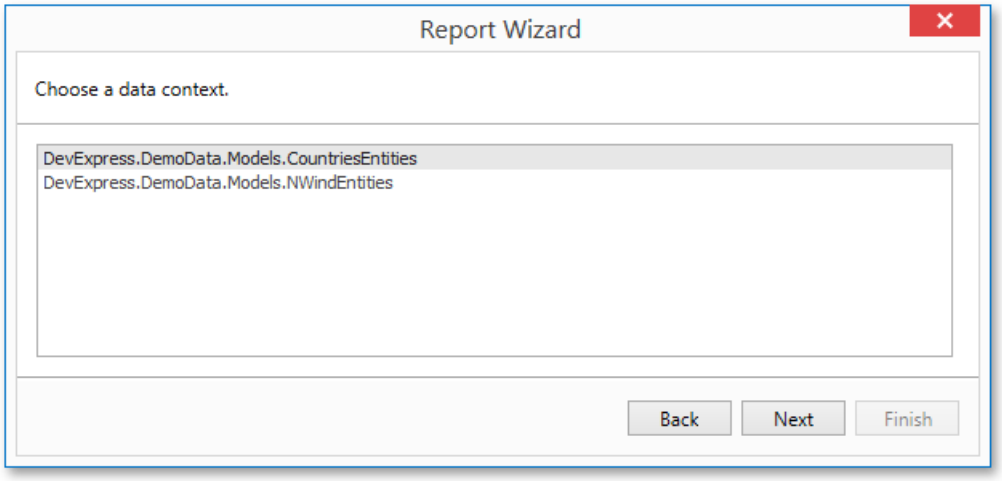
This task includes the following steps.

- Select the Data Context
- Select the Connection String Specify a
- Connection String Bind
- to a Stored Procedure
- Select a Data Member

Select the Data Context

This page allows you to select a required Entity Framework data context that will provide data to a report.

On this page, select a data context from the list of existing data contexts. You can also populate this list with data contexts from a separate assembly. To do this, click **Browse...**, and in the invoked **Open** dialog, select the required assembly.

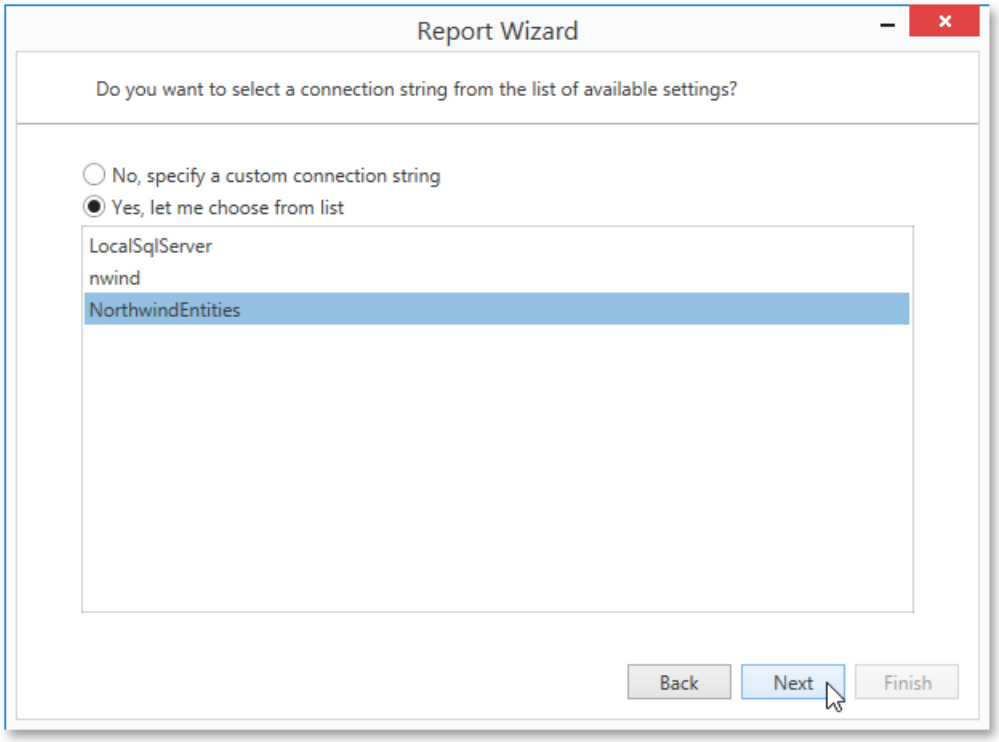


Click **Next** to proceed to the next wizard page: Select the Connection String.

Select the Connection String

This page allows you to specify a connection string to be used to establish a data connection. The following two options are available.

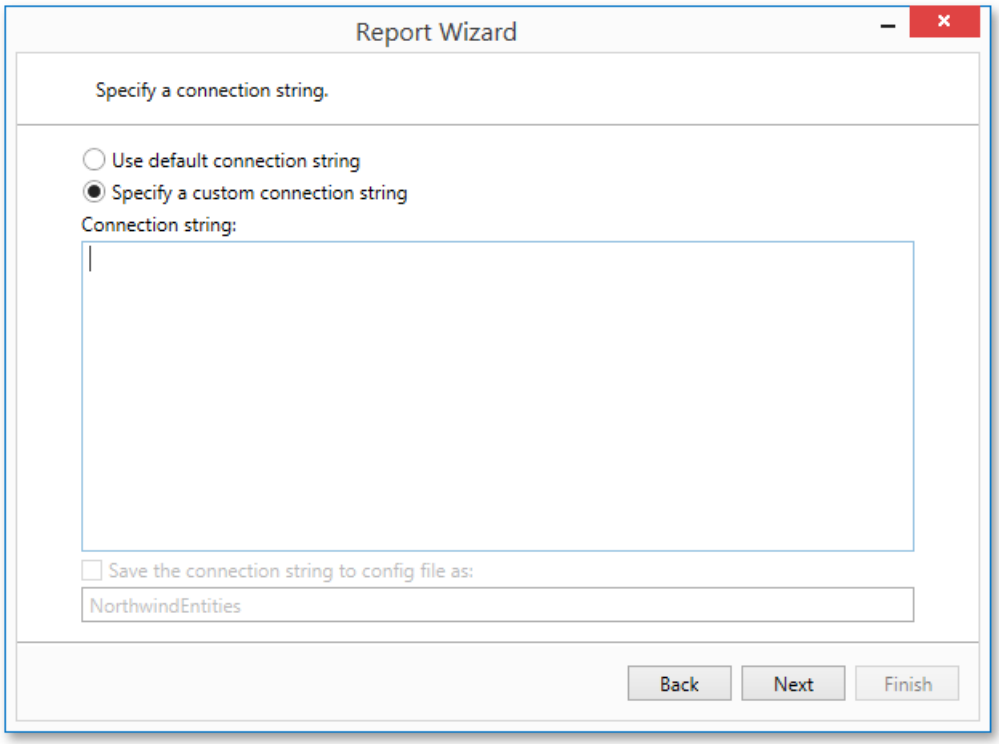
- **No, specify a custom connection string** - Select this option to specify a connection string manually.
- **Yes, let me choose from the list** - Select this option to use one of the existing connection strings from the list.



Click **Next** to proceed to the next wizard page. If you select the first option, proceed to the Specify a Connection String page. If you choose one of the available connection strings, go to the Bind to a Stored Procedure or Select a Data Member page, depending on whether or not the current Entity Framework model provides stored procedures.

Specify a Connection String

On this wizard page, specify a connection string. Additionally, this page requires you to specify whether or not to store the connection string in the application configuration file.

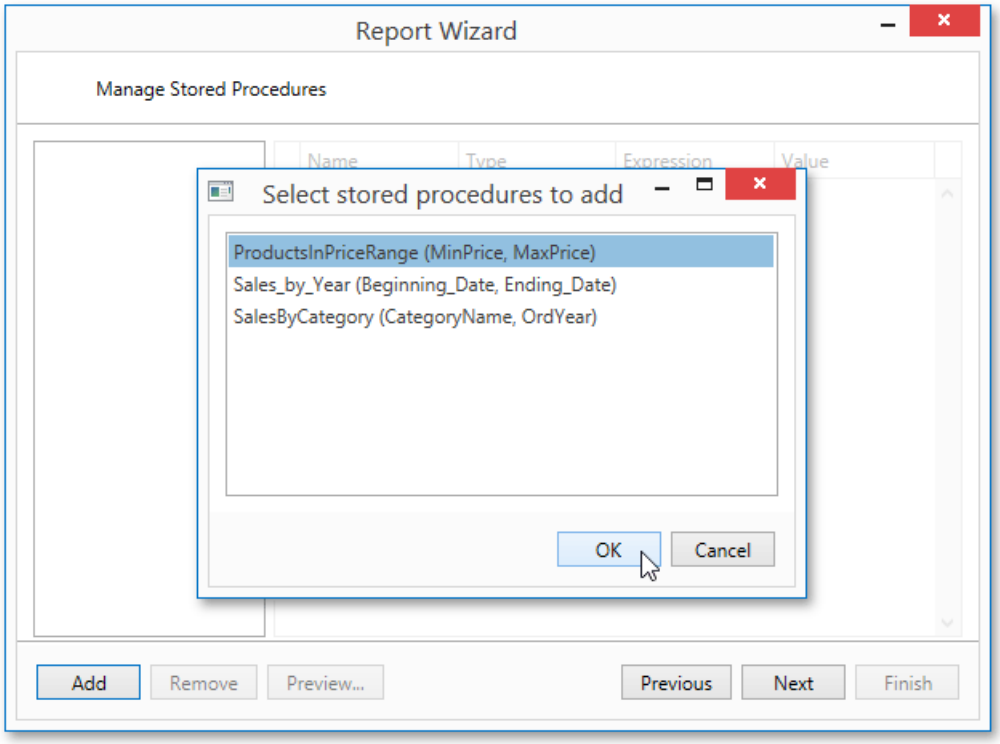


Click **Next** to proceed to the next wizard page. If the current Entity Framework model provides stored procedures, go to the Bind to a Stored Procedure page; otherwise, proceed to the Select a Data Member page.

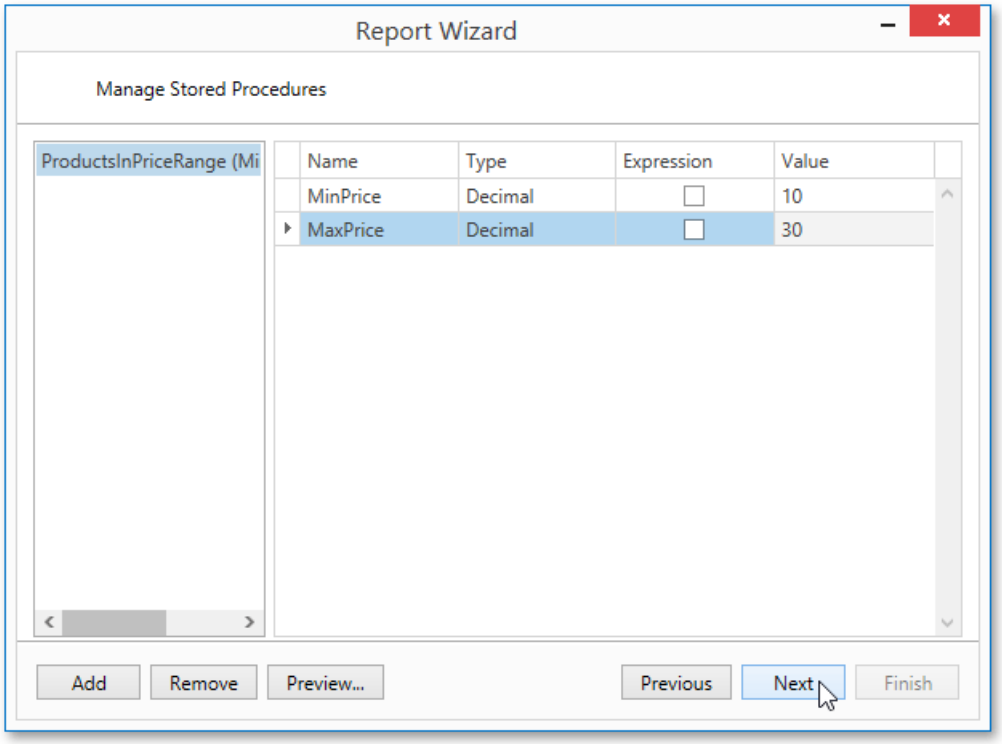
Bind to a Stored Procedure

This wizard page allows you to add stored procedures to the data source and configure their parameters. Note that this page is available only if the current Entity Framework model provides at least one stored procedure.

To add a stored procedure, click **Add** and in the invoked dialog, select the required stored procedure from the list of available procedures.



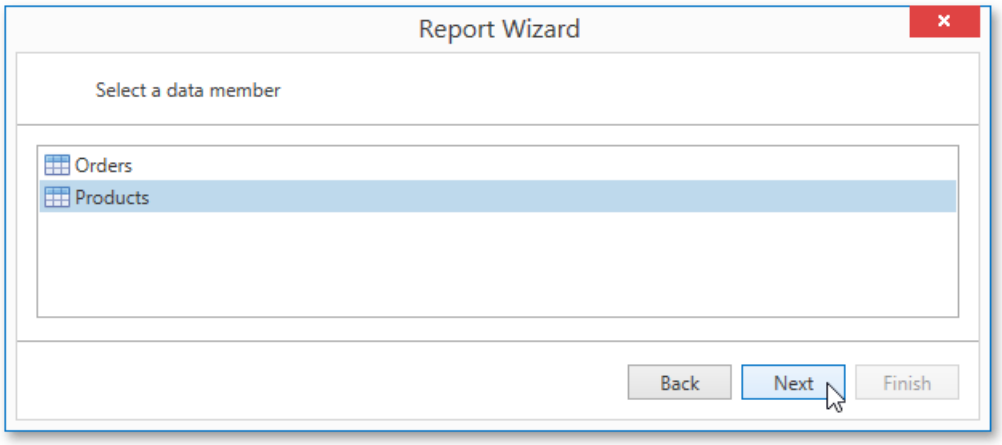
Next, specify stored procedure parameter values, which can be either static or generated by appropriate expressions.



Click **Next** to proceed to the next wizard page. If you have added more than one stored procedures on this page or if the current Entity Framework model additionally provides data tables, go to the Select a Data Member page. Otherwise, proceed to the Choose Columns to Display in a Report page.

Select a Data Member

This wizard page allows you to select one of the available data members that will provide data to your report.



Click **Next** to proceed to the next wizard page: Choose Columns to Display in a Report.

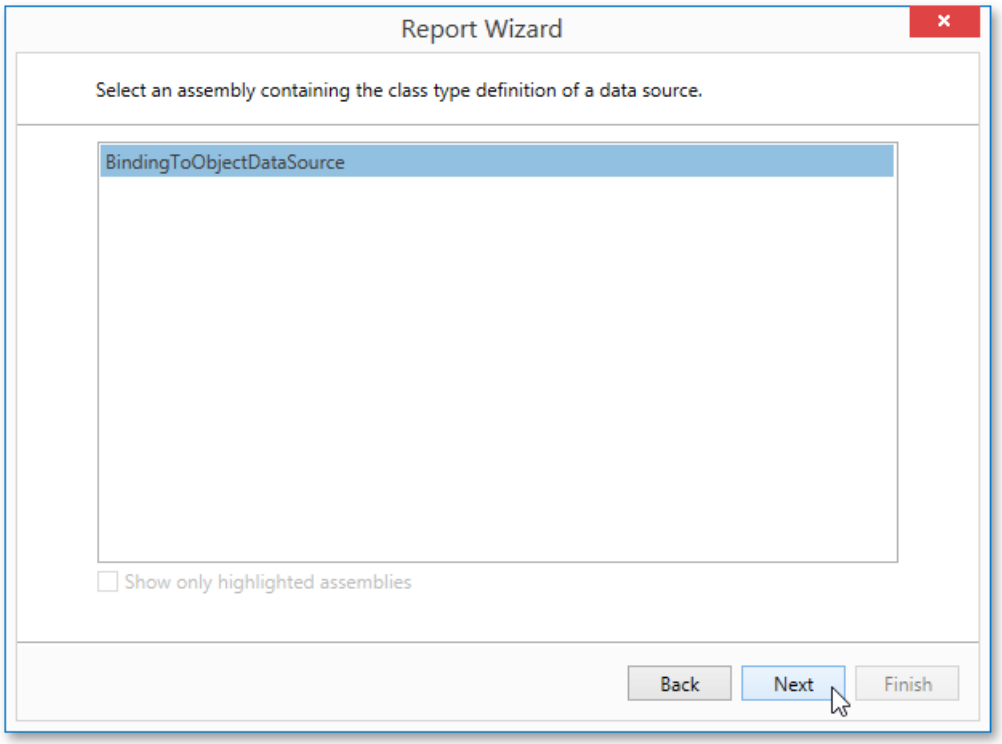
Connect to an Object Data Source

The topics in this section describe the wizard steps required to connect a report to an object data source. This task includes the following steps.

- Select an Assembly
- Select a Data Source Type
- Select a Data Source Member
- Specify the Member Parameters
- Select the Data Binding Mode
- Select a Data Source Constructor
- Specify the Constructor Parameters

Select an Assembly

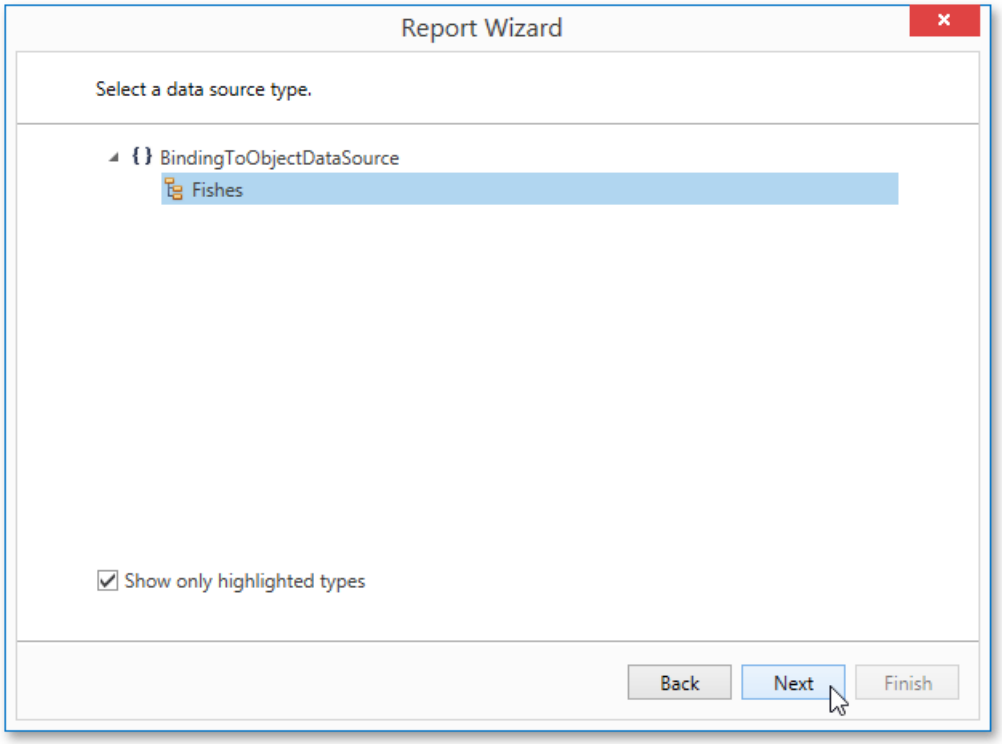
On this wizard page, select an assembly that contains the class type definition of the data source.



To exclude irrelevant assemblies from the list, select the **Show only highlighted assemblies** check box. If you disable the check box, all available data source types will be shown.

Click **Next** to proceed to the next wizard page: Select a Data Source Type.

Select a Data Source Type



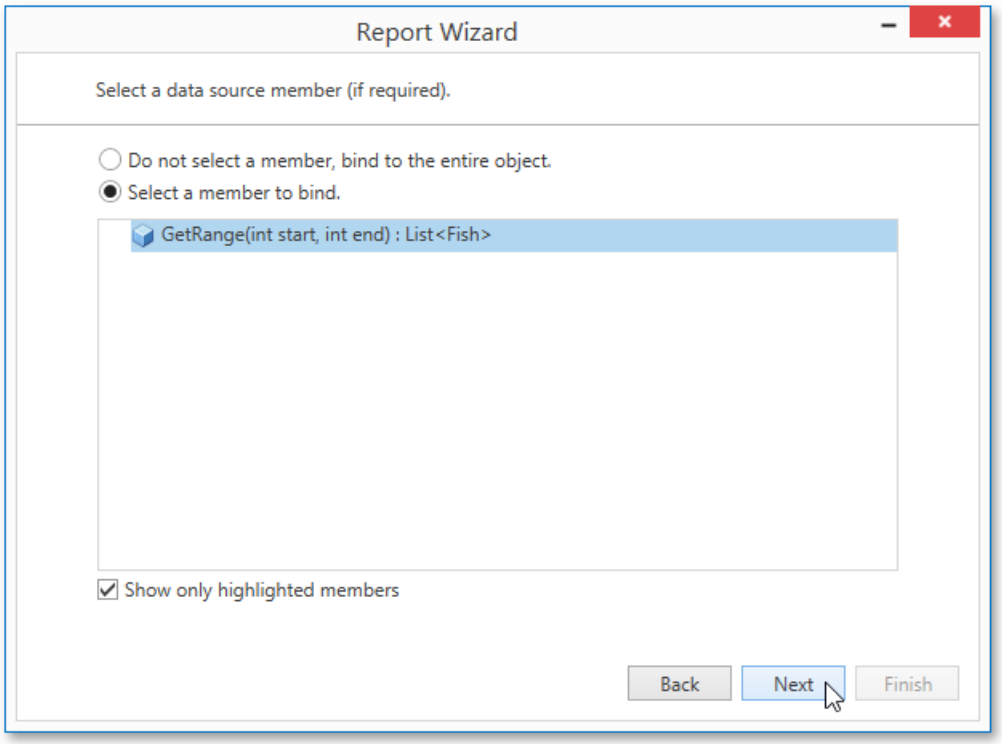
On this wizard page, select a required data source type.

To exclude irrelevant classes from the list, select the **Show only highlighted types** check box. If you disable this check box, all available data source types will be shown.

Click **Next** to proceed to the next wizard page: Select a Data Source Member.

Select a Data Source Member

This wizard page allows you to select whether you want bind to the entire object or to its public member (method or property).



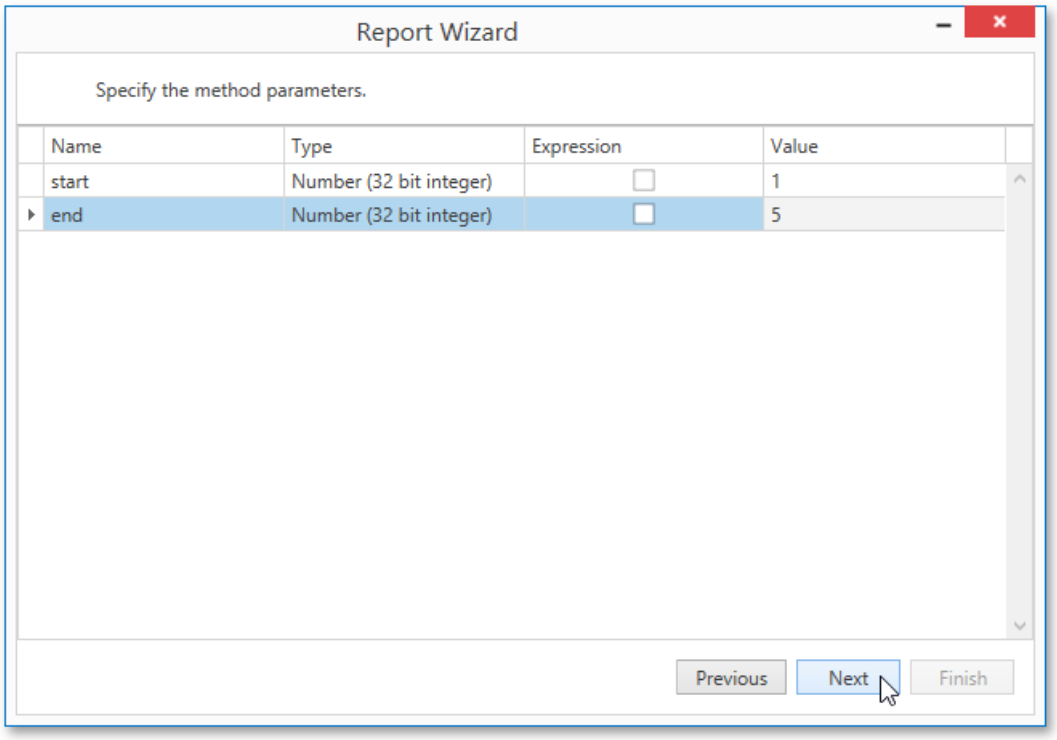
Select the **Show only highlighted members** check box to exclude irrelevant members from the list. Otherwise, all available members will be shown.

Click **Next** to proceed to the next wizard page. If you select binding to the entire object, proceed to the Select the Data Binding Mode page. If you choose one of the available public members, go to the Specify the Member Parameters page.

Specify the Member Parameters

On this wizard page, you can specify the member parameters.

To specify the member parameter's value, use the **Value** column. Enable the check box in the **Expression** column to make it possible to specify the parameter expression using the **Expression Editor**. In this case, you can pass an existing report parameter to the member or create a new one using the in-place editor.

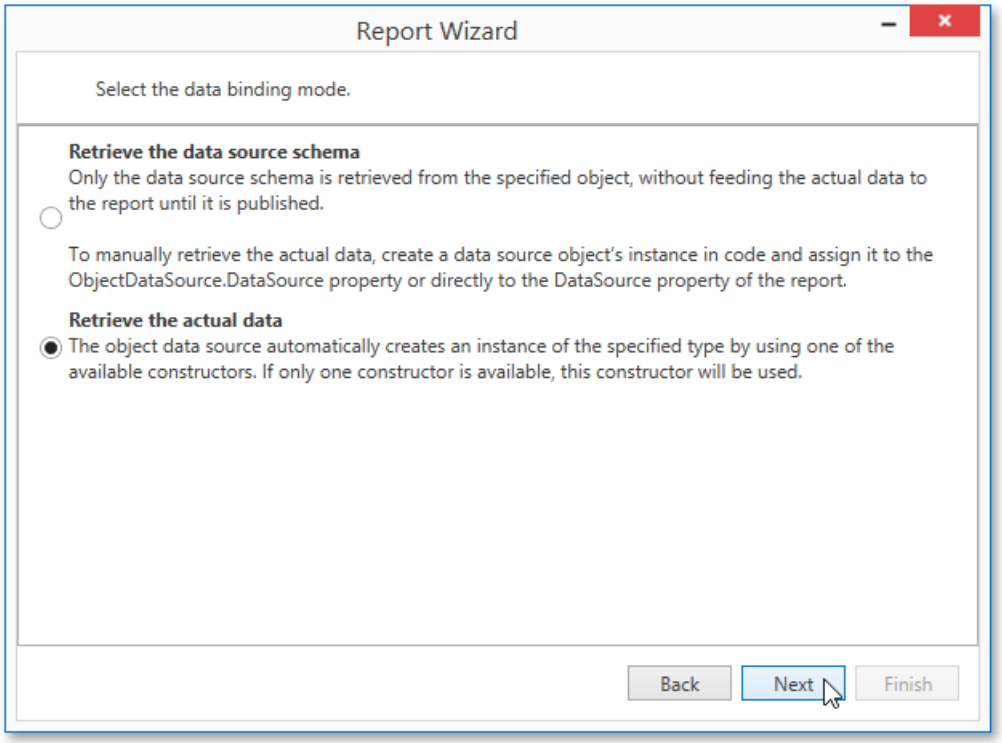


Click **Next** to proceed to the next wizard page: Select the Data Binding Mode.

Select the Data Binding Mode

On this wizard page, you can choose one of the following data binding modes.

- **Retrieve the data source schema** - Select this option to retrieve only the data source schema from the specified object and edit the report layout without having access to the actual underlying data.
- **Retrieve the actual data** - Select this option to automatically create an instance of the data source type and obtain its actual data.

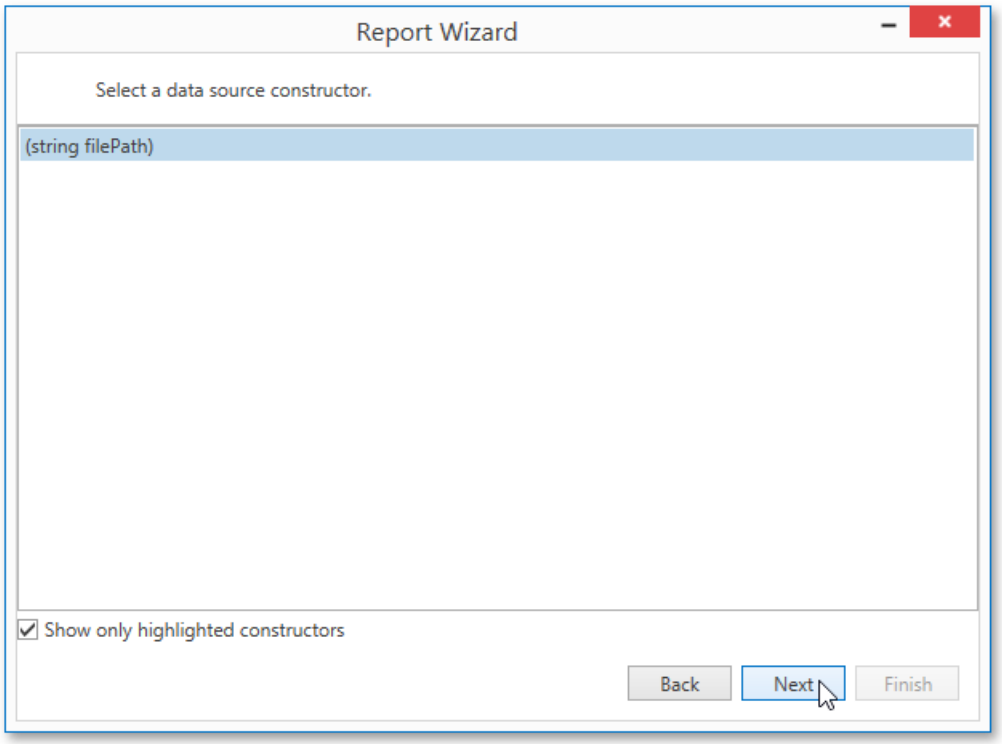


Click **Next** to proceed to the next wizard once you select the data binding mode.

- Choose Columns to Display in a Report - if you select the first option, go to choosing columns to display in a report. Select a Data Source Constructor - this page allows you to choose a required constructor to create an instance of the data source.

Select a Data Source Constructor

On this wizard page, select a data source constructor to be used to create an instance of the data source.



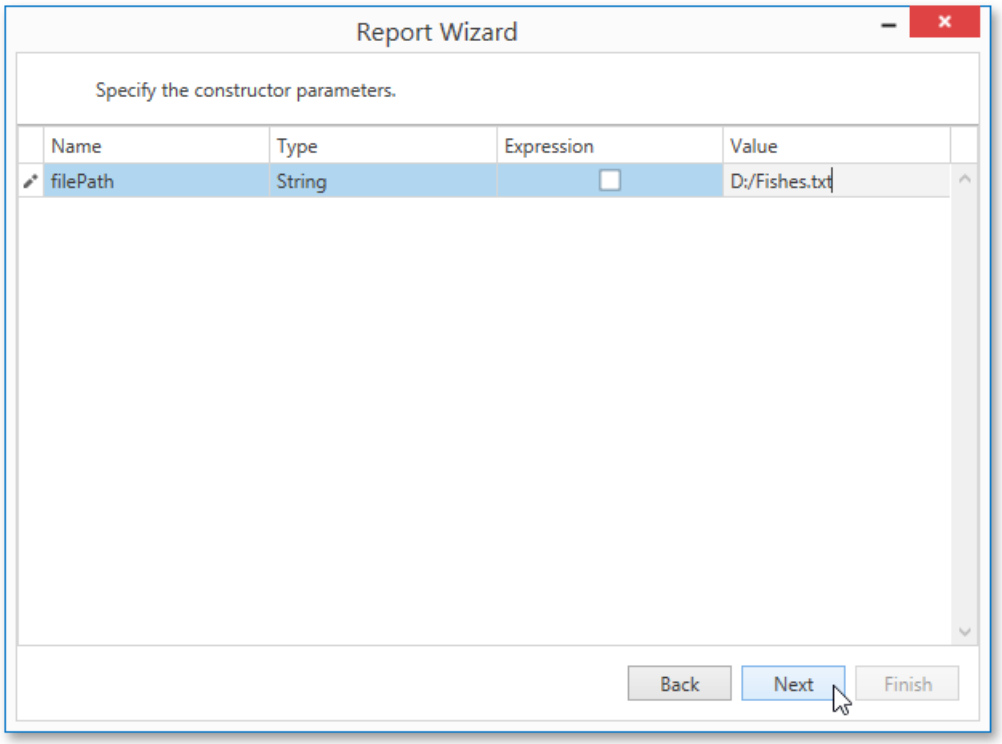
Enable the **Show only highlighted constructors** check box to exclude irrelevant constructors from the list. Otherwise, all available constructors will be shown.

Click **Next** to proceed to the next wizard page: Specify the Constructor Parameters.

Specify the Constructor Parameters

On this wizard page, you can specify the constructor parameters.

To specify the constructor parameter's value, use the **Value** column. Enable the check box in the **Expression** column to make it possible to specify the parameter expression using the **Expression Editor**. In this case, you can pass an existing report parameter to the constructor or create a new one using the in-place editor.



Click **Next** to proceed to the next wizard page: Choose Columns to Display in a Report.

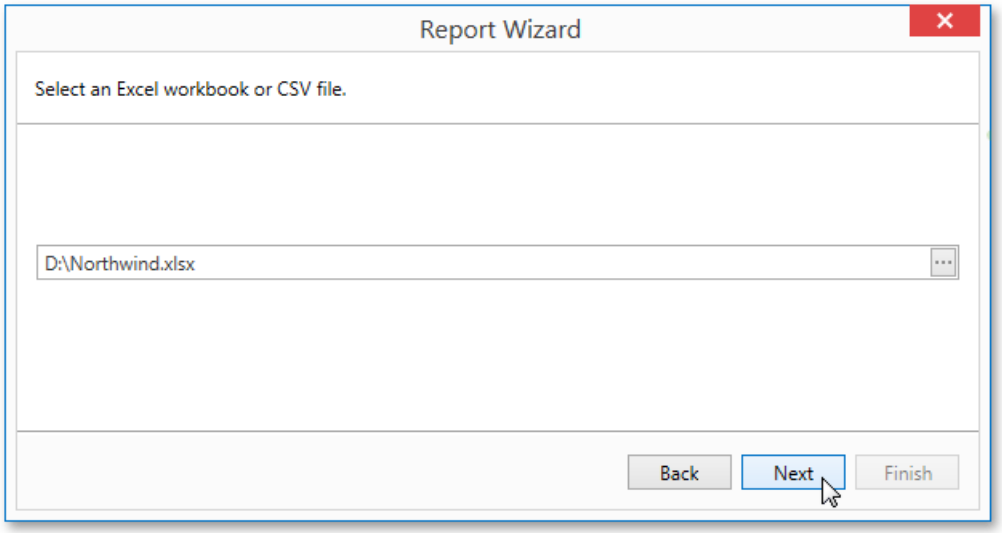
Connect to an Excel Data Source

The topics in this section describe the wizard steps required to connect a report to an Excel data source. This task includes the following steps.

- Select an Excel Workbook or CSV file Specify Import Settings
- Select a Worksheet, Table or Named Region Choose columns

Select an Excel Workbook or CSV file

On this wizard page, select a required Microsoft Excel workbook (the XLS, XLSX and XLSM formats are supported) or CSV file. To do this, click the ellipsis button and locate the source file, or enter the full path to this file.



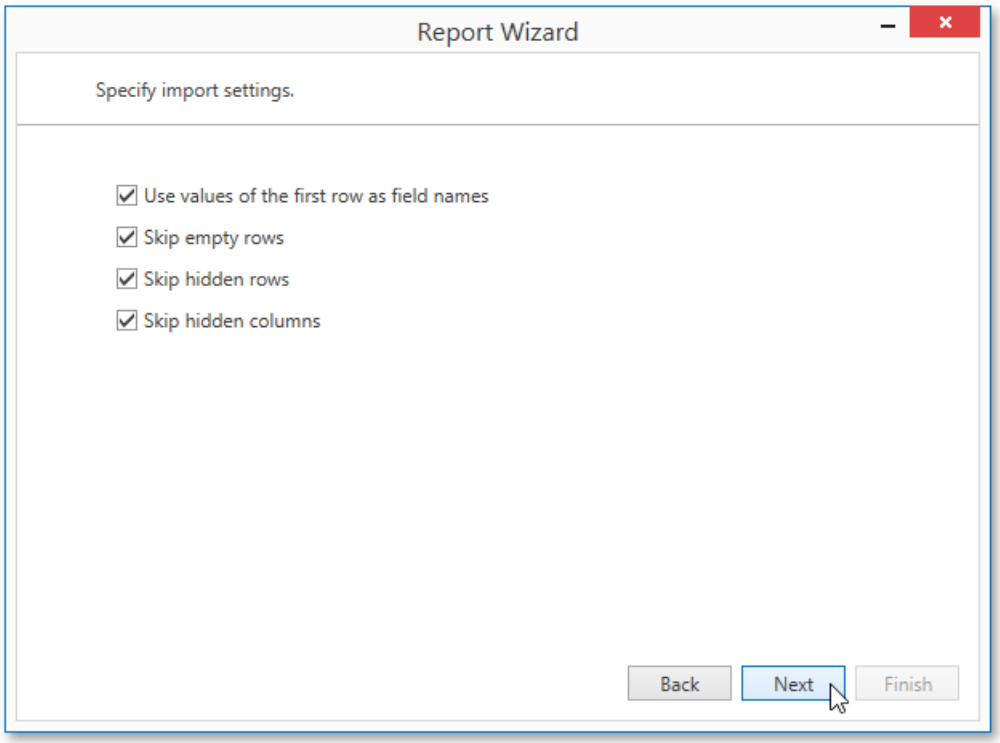
Click **Next** to proceed to the next wizard page: Specify Import Settings.

Specify Import Settings

On this wizard page, you can specify required import settings. This page provides access to different settings depending on whether you have selected an Excel Workbook or CSV file.

Import Settings for an Excel Workbook

The following settings are available if an Excel workbook has been selected.

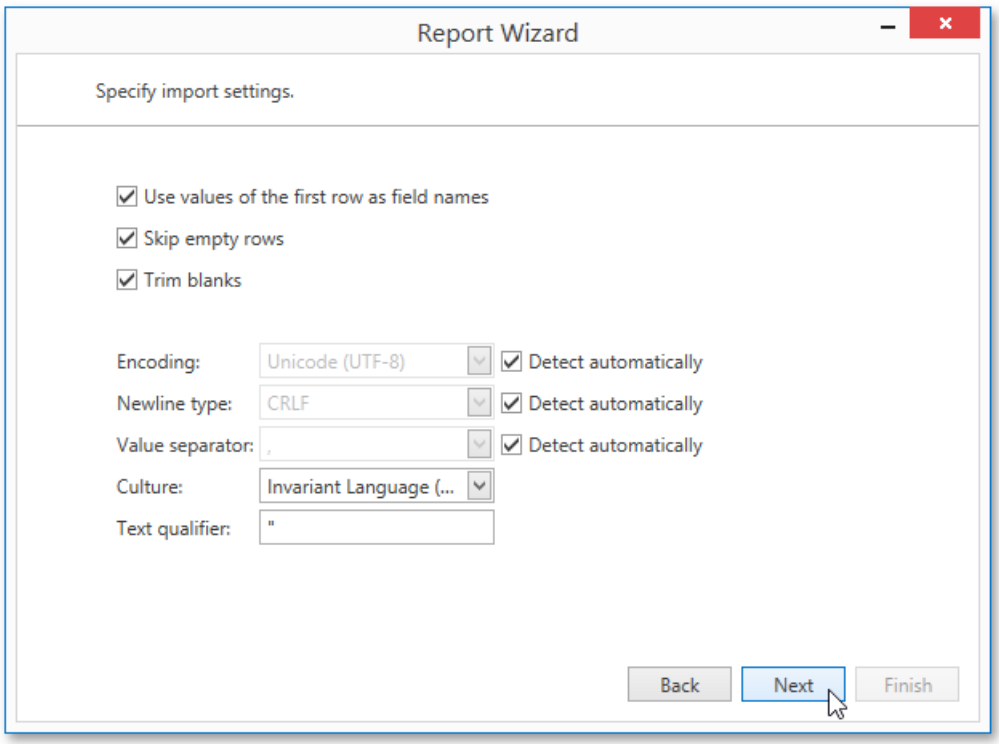


- **Use values of the first rows as field names** - Specifies whether values of the first row should be imported as field names. If this option is disabled, values of the first row will be imported as data and field names will be generated automatically.
- **Skip empty rows** - Specifies whether or not to include empty rows to the resulting data source.
- **Skip hidden rows** - Specifies whether or not to include hidden rows to the resulting data source.
- **Skip hidden columns** - Specifies whether or not to include hidden columns to the resulting data source.

Click **Next** to proceed to the next wizard page: Select a Worksheet, Table or Named Region.

Import Settings for a CSV file

The following settings are available if a CSV file has been selected.



- **Use values of the first rows as field names** - Specifies whether or not values of the first row should be imported as field names. If this option is disabled, values of the first row will be imported as data and field names will be generated automatically.
- **Skip empty rows** - Specifies whether or not to include empty rows to the resulting data source.
- **Trim Blanks** - Specifies whether to delete all leading and trailing empty spaces from each value in the source CSV file. **Encoding** - Specifies the character encoding in the source CSV file. If the corresponding **Detect automatically** check box is enabled, this setting's value is automatically determined.
- **Newline type** - Specifies the line break type in the source CSV file. If the corresponding **Detect automatically** check box is enabled, this setting's value is automatically determined.
- **Value separator** - Specifies a character used to separate values in the source CSV file. If the corresponding **Detect automatically** check box is enabled, this setting's value is automatically determined.
- **Culture** - Specifies culture information used to import data from the source CSV file.
- **Text Qualifier** - Specifies the character that encloses values in the source CSV file.

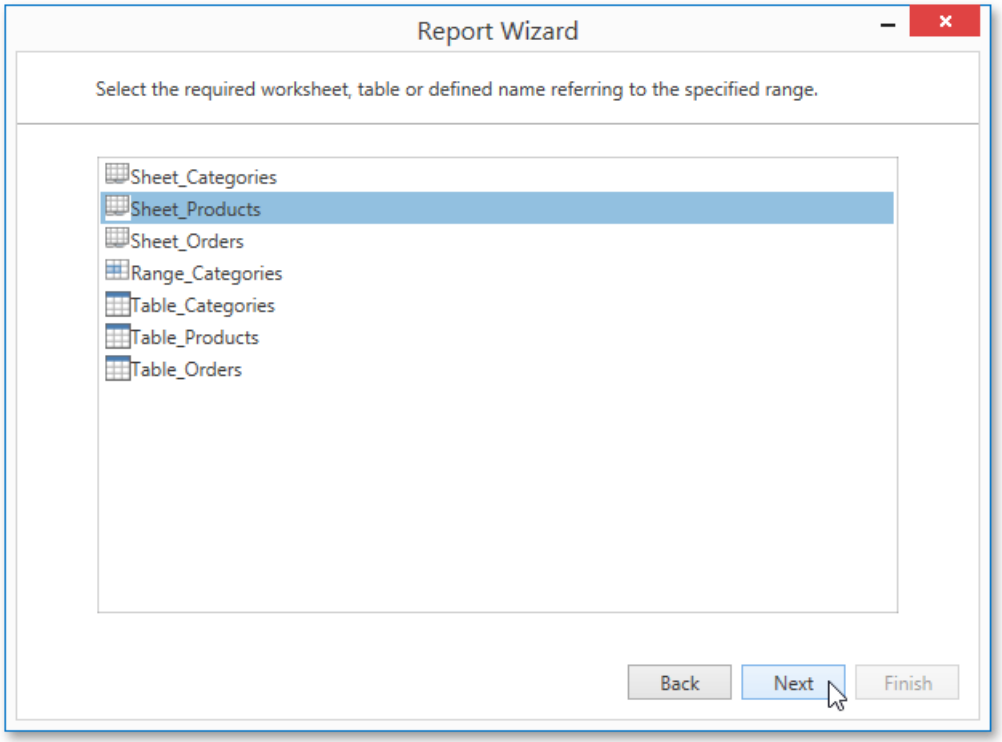
Click **Next** to proceed to the next wizard page: Choose columns.

Select a Worksheet, Table or Named Region

O Not e

This wizard page appears only if you selected a Microsoft Excel Workbook on the previous page.

This wizard page allows you to select one of the available worksheets, tables or named regions that will provide data for a report.

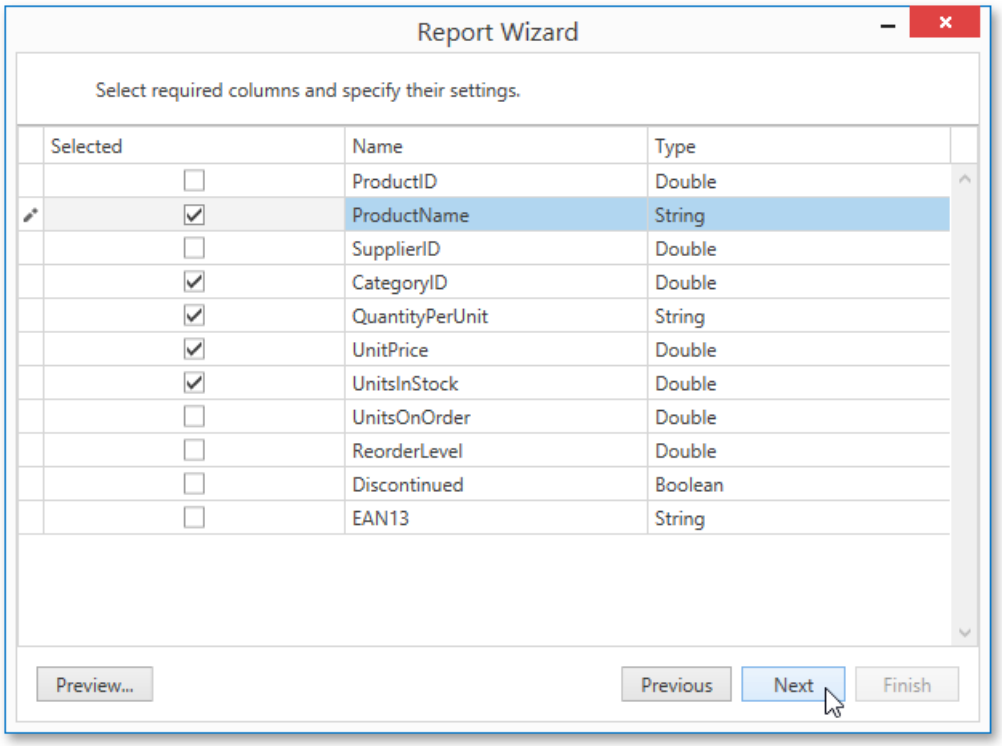


Click **Next** to proceed to the next wizard page: Choose columns.

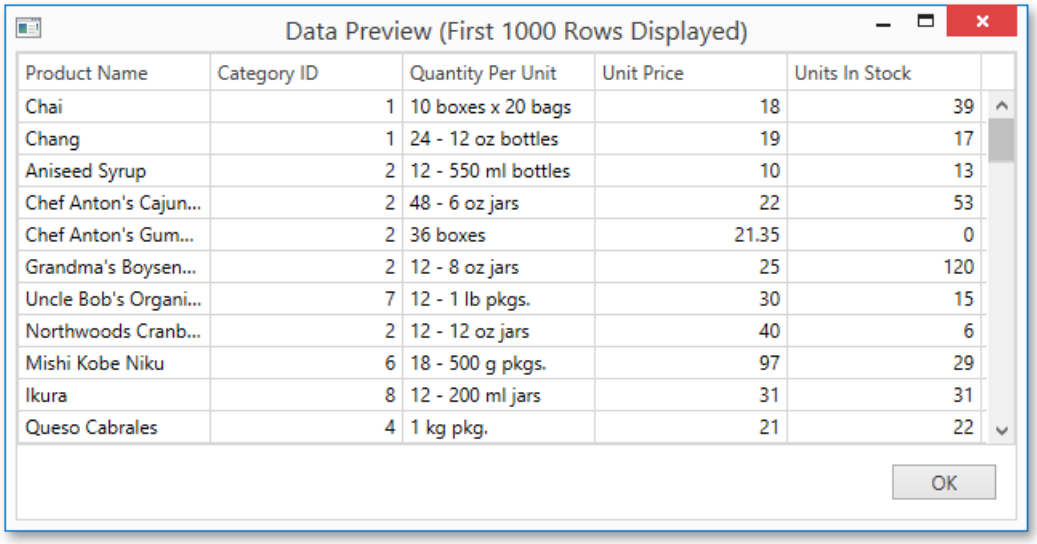
Choose columns

On this wizard page, you can select required columns and specify their settings.

To select a column, enable the corresponding **Selected** check box. Use **Name** to specify the custom column name and **Type** to choose the column type.



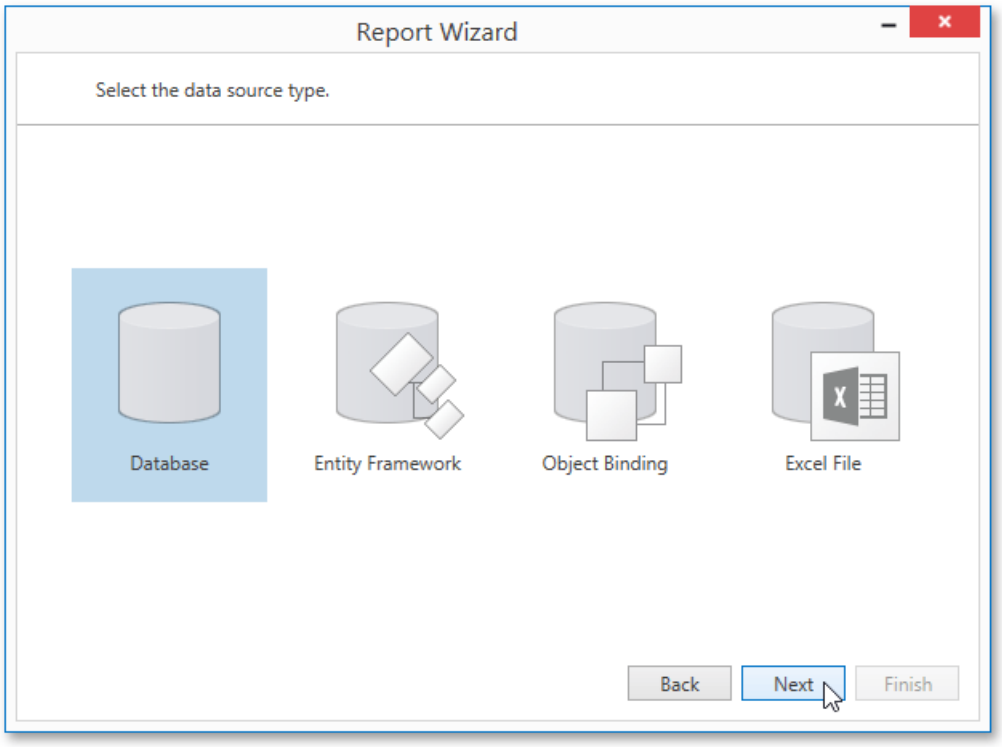
This page also allows you to preview the resulting data by clicking the **Preview...** button.



Click **Next** to proceed to the next wizard page: Choose Columns to Display in a Report.

Select the Data Source Type

This wizard page allows you to select the required data source type.



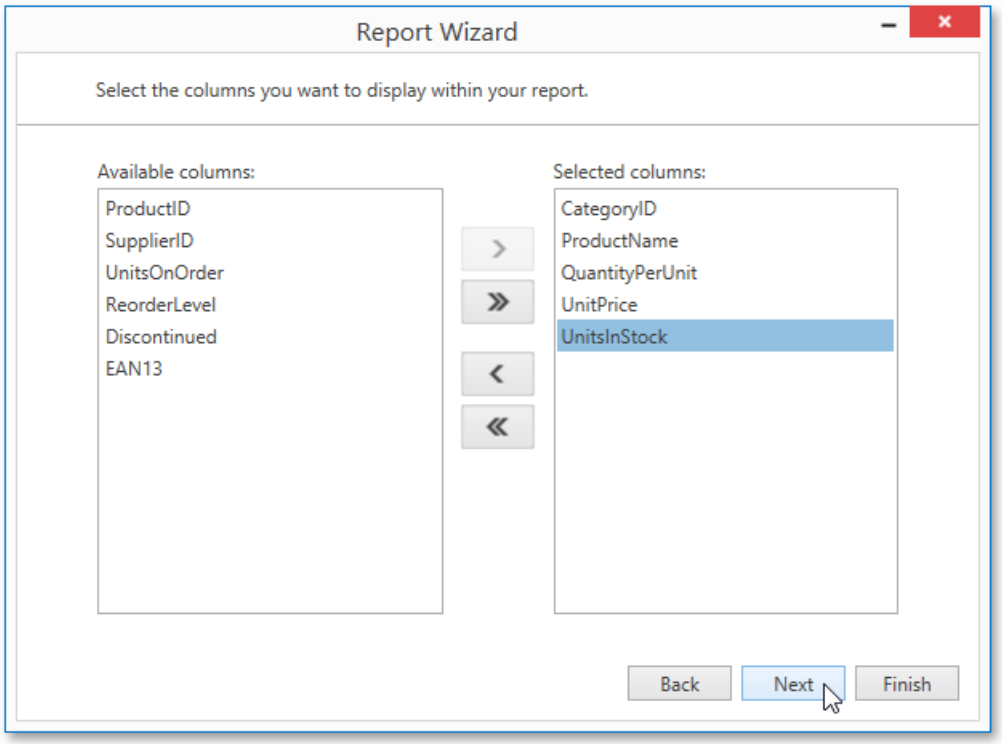
Click **Next** to proceed to the next wizard page once you select the data source type.

- Connect to a Database
- Connect to an Entity Framework Data Source Connect to an Object Data Source
- Connect to an Excel Data Source

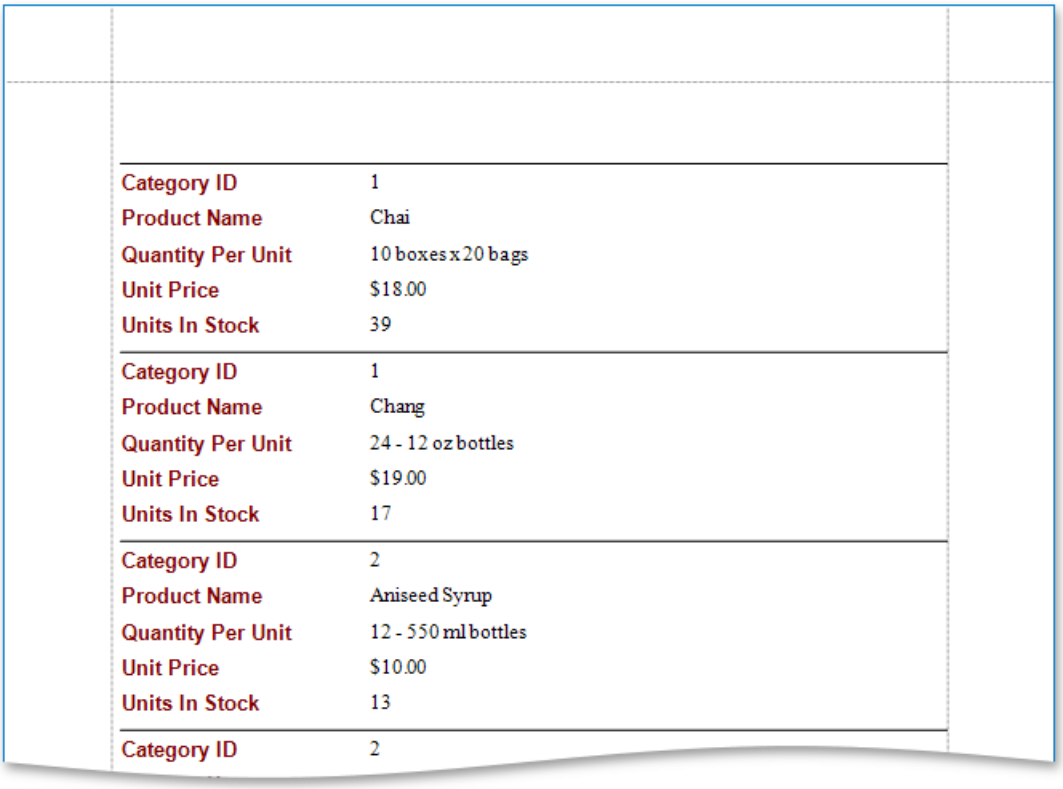
Choose Columns to Display in a Report

This wizard page allows you to select fields (attributes) whose data will be displayed in a report.

The list on the left-hand side shows all available fields (attributes). To select the required fields to be displayed in the report, move them to the right-hand side. Use the dedicated arrow buttons to move fields back and forth.



The selected fields and corresponding captions will be automatically added to your report and arranged one under another. You can stop the wizard at this step by clicking **Finish**. In this case, the report will



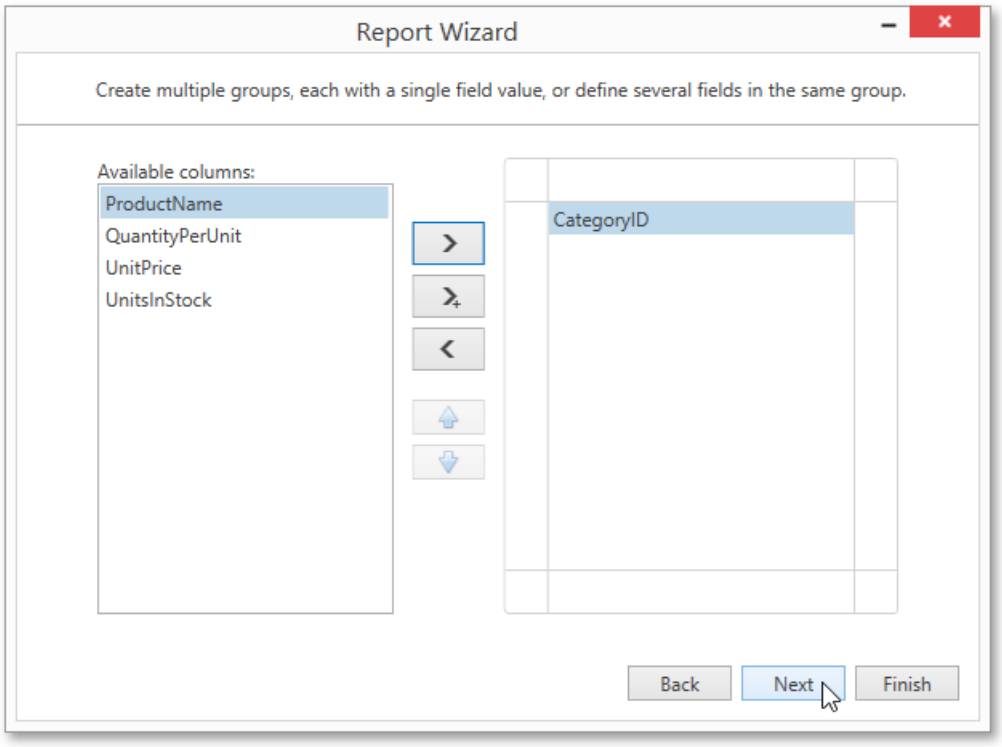
Category ID	1
Product Name	Chai
Quantity Per Unit	10 boxes x 20 bags
Unit Price	$18.00
Units In Stock	39
Category ID	1
Product Name	Chang
Quantity Per Unit	24 - 12 oz bottles
Unit Price	$19.00
Units In Stock	17
Category ID	2
Product Name	Aniseed Syrup
Quantity Per Unit	12 - 550 ml bottles
Unit Price	$10.00
Units In Stock	13
Category ID	2

look similar to the image below.

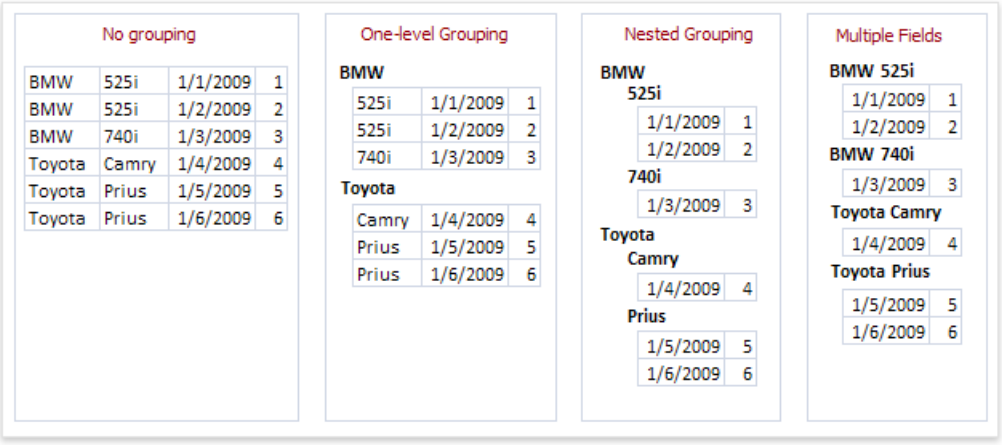
If you want to customize your report further, click **Next** to proceed to the next wizard page: Add Groping Levels. Note that you
should select at least one field to continue creating the report.

Add Groping Levels

This wizard page allows you to group data in a report. If you don't need to group your data, click **Next** to skip this step.



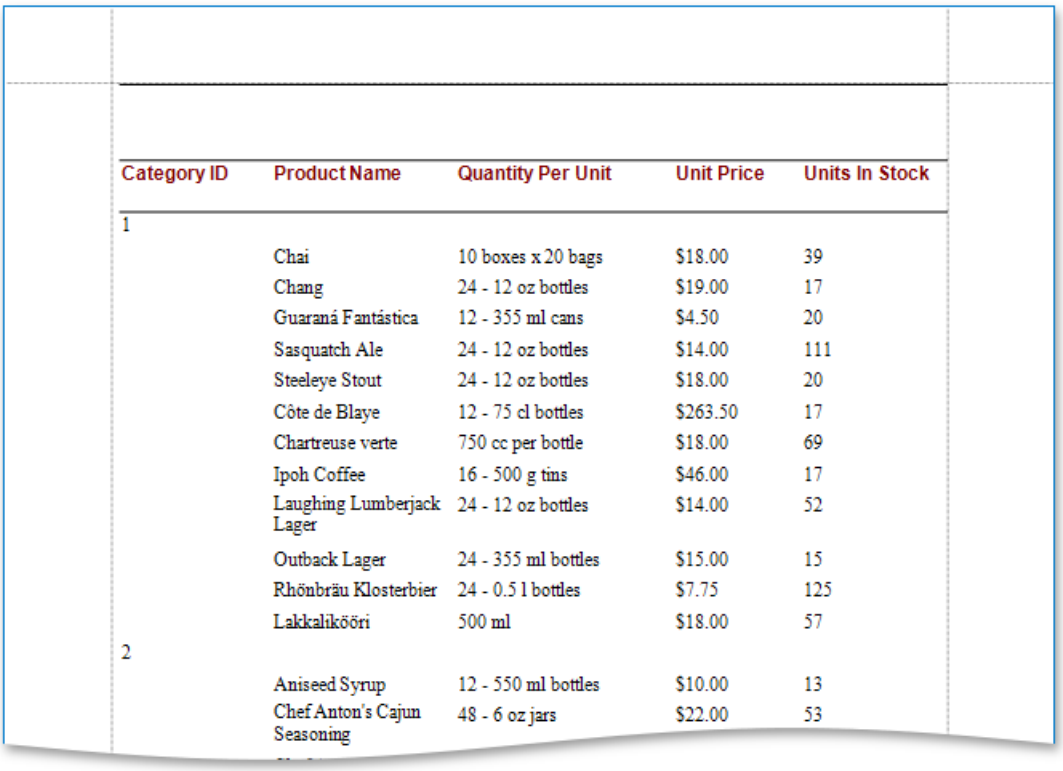
Nested grouping and grouping against multiple fields are fully supported. The following image illustrates all basic grouping types.



The list on the left-hand side displays data fields that can be used to group data. To apply grouping, select the required field and click the right arrow button. To group data against multiple columns, use the  button.

To remove a grouping field, select it in the list on the right-hand side and click the left arrow button. You can also change the order of grouping fields using the up and down arrow buttons.

You can stop the wizard on this step by clicking **Finish**. In this case, the report will look similar to the one in the image below.



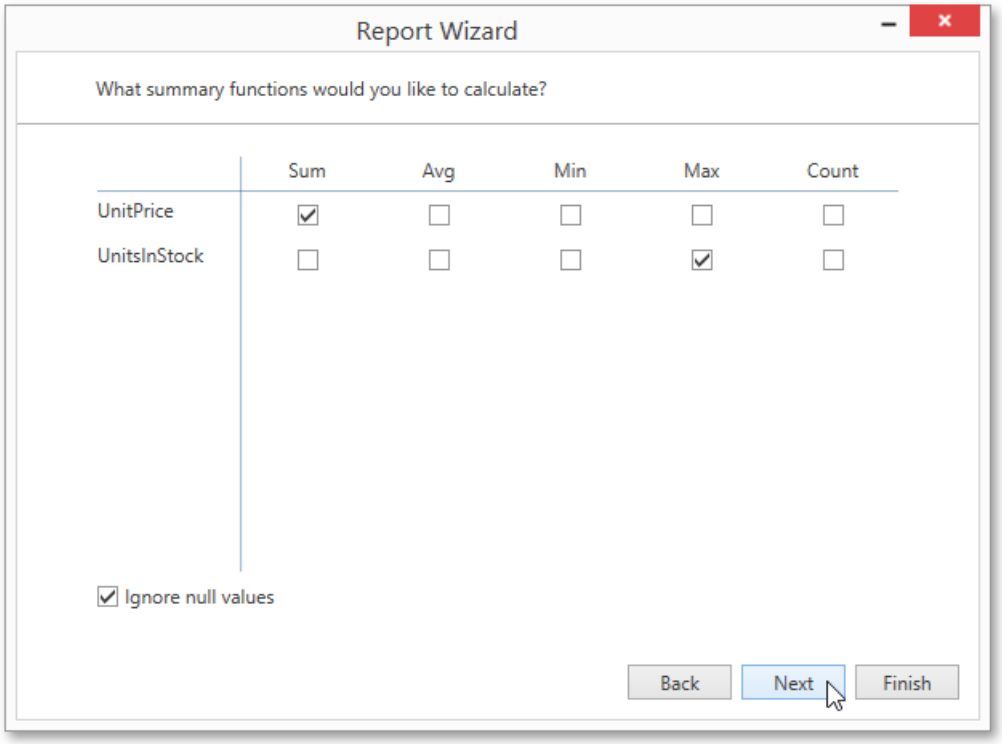
Category ID	Product Name	Quantity Per Unit	Unit Price	Units In Stock
1				
	Chai	10 boxes x 20 bags	$18.00	39
	Chang	24 - 12 oz bottles	$19.00	17
	Guaraná Fantástica	12 - 355 ml cans	$4.50	20
	Sasquatch Ale	24 - 12 oz bottles	$14.00	111
	Steeleye Stout	24 - 12 oz bottles	$18.00	20
	Côte de Blaye	12 - 75 cl bottles	$263.50	17
	Chartreuse verte	750 cc per bottle	$18.00	69
	Ipoh Coffee	16 - 500 g tins	$46.00	17
	Laughing Lumberjack Lager	24 - 12 oz bottles	$14.00	52
	Outback Lager	24 - 355 ml bottles	$15.00	15
	Rhönbräu Klosterbier	24 - 0.5 l bottles	$7.75	125
	Lakkalikööri	500 ml	$18.00	57
2				
	Aniseed Syrup	12 - 550 ml bottles	$10.00	13
	Chef Anton's Cajun Seasoning	48 - 6 oz jars	$22.00	53

If you want to customize your report further, click **Next**. If data grouping has been applied on this page, proceed to the Specify Summary Options page. If you haven't grouped your data, skip the Summaries step and go to the Choose a Report Layout page.

Specify Summary Options

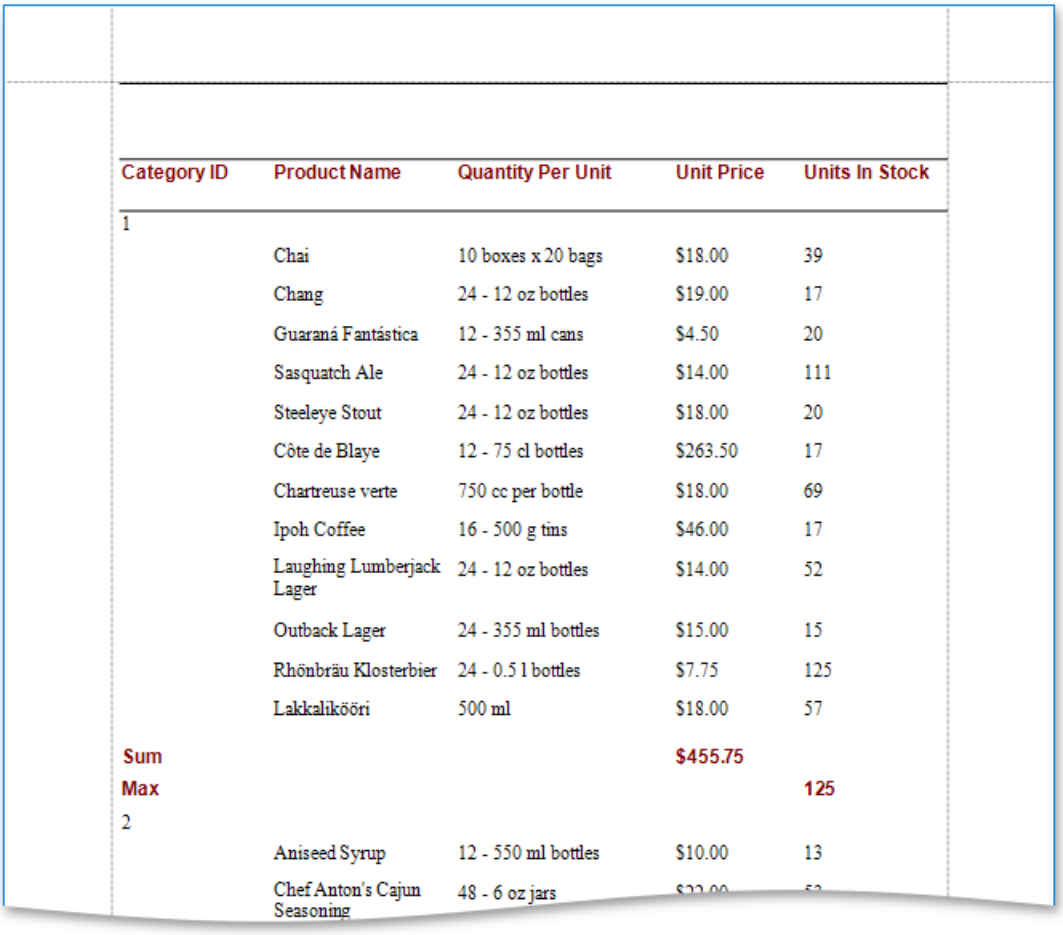
This wizard page allows you to specify totals for each data group or for the entire report. The specified totals will be displayed after corresponding groups and in the report footer.

The page displays all available numerical and date-time fields that are not used to group data. You can select desired functions using the check box table.



There are instances when data fields contain empty values. If you don't want to take these values into account when calculating totals, select the **Ignore NULL values** check box. Otherwise, these values will be treated as zeros for numeric fields and the earliest system date for date-time fields.

You can stop the wizard at this step by clicking **Finish**. If you do so, your report will look similar to the one in the image below.



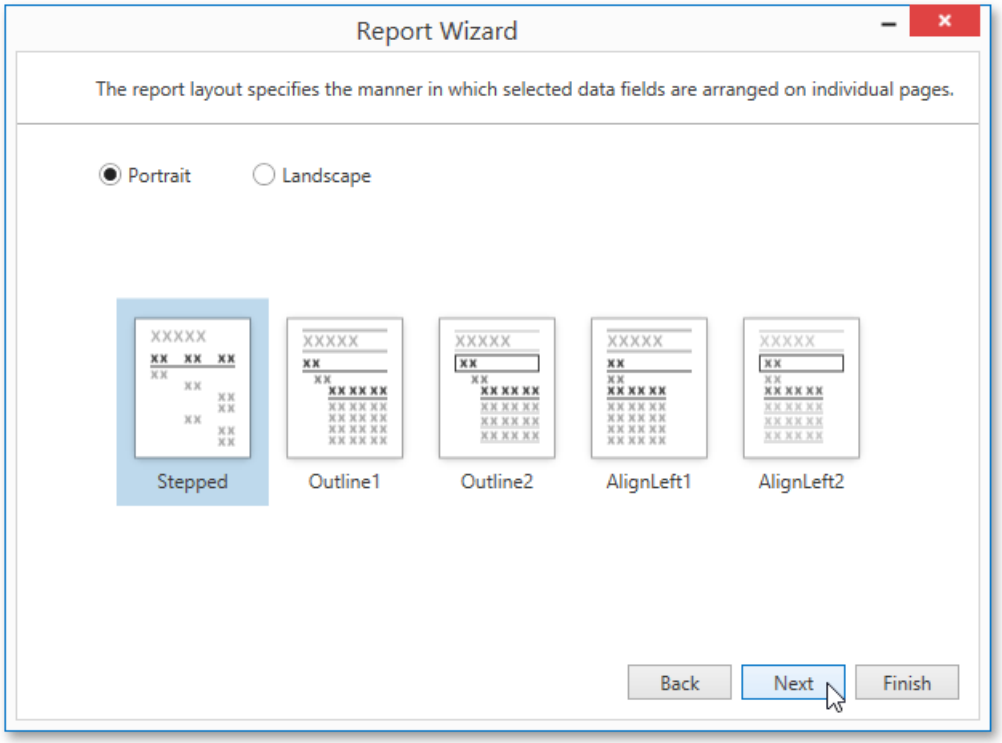
Category ID	Product Name	Quantity Per Unit	Unit Price	Units In Stock
1				
	Chai	10 boxes x 20 bags	$18.00	39
	Chang	24 - 12 oz bottles	$19.00	17
	Guaraná Fantástica	12 - 355 ml cans	$4.50	20
	Sasquatch Ale	24 - 12 oz bottles	$14.00	111
	Steeleye Stout	24 - 12 oz bottles	$18.00	20
	Côte de Blaye	12 - 75 cl bottles	$263.50	17
	Chartreuse verte	750 cc per bottle	$18.00	69
	Ipoh Coffee	16 - 500 g tins	$46.00	17
	Laughing Lumberjack Lager	24 - 12 oz bottles	$14.00	52
	Outback Lager	24 - 355 ml bottles	$15.00	15
	Rhönbräu Klosterbier	24 - 0.5 l bottles	$7.75	125
	Lakkalikööri	500 ml	$18.00	57
Sum			$455.75	
Max				125
2				
	Aniseed Syrup	12 - 550 ml bottles	$10.00	13
	Chef Anton's Cajun Seasoning	48 - 6 oz jars	$22.00	53

If you want to further customize your report, click **Next** to proceed to the next wizard page: Choose a Report Layout.

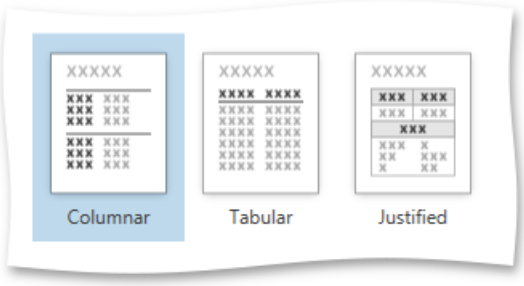
Choose a Report Layout

This page allows you to specify the layout of elements in your report. If you haven't applied data grouping, you can specify how data field values are arranged - into a table, one under another, etc. If report data is grouped, you can choose one of the available indentation styles for nested elements.

Additionally, this page allows you to specify the page orientation for your report. The following options are available if data grouping has been applied.



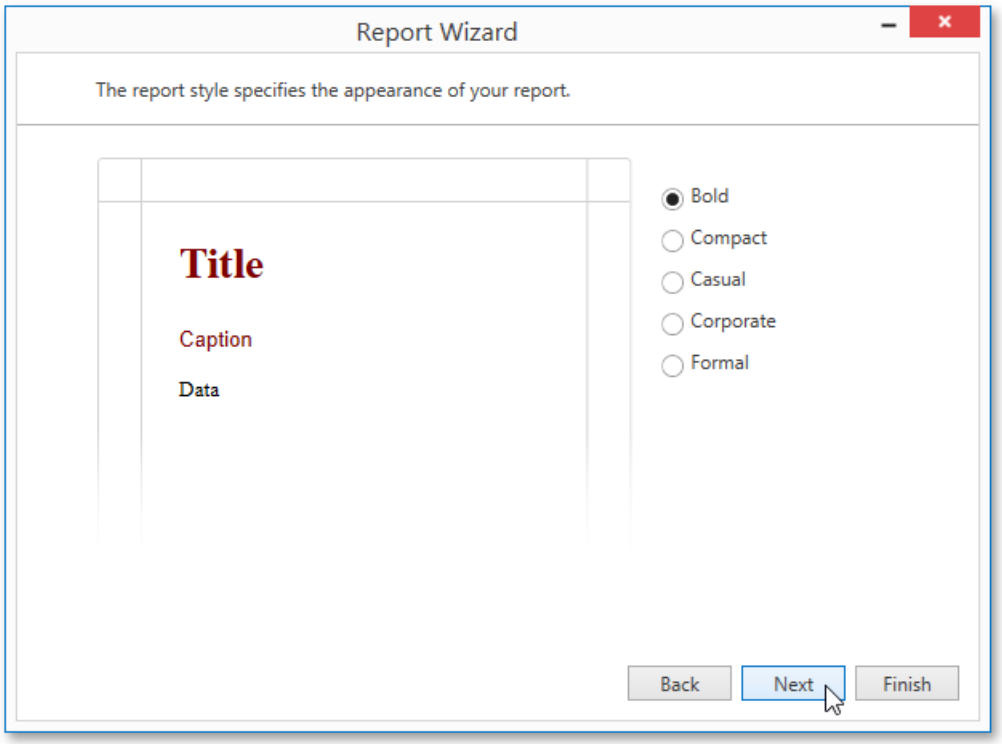
If data hasn't been grouped, you will see the following report layout options.



You can stop the wizard at this step by clicking **Finish**. If you want to customize your report further, click **Next** to proceed to the next wizard page: Choose a Report Style.

Choose a Report Style

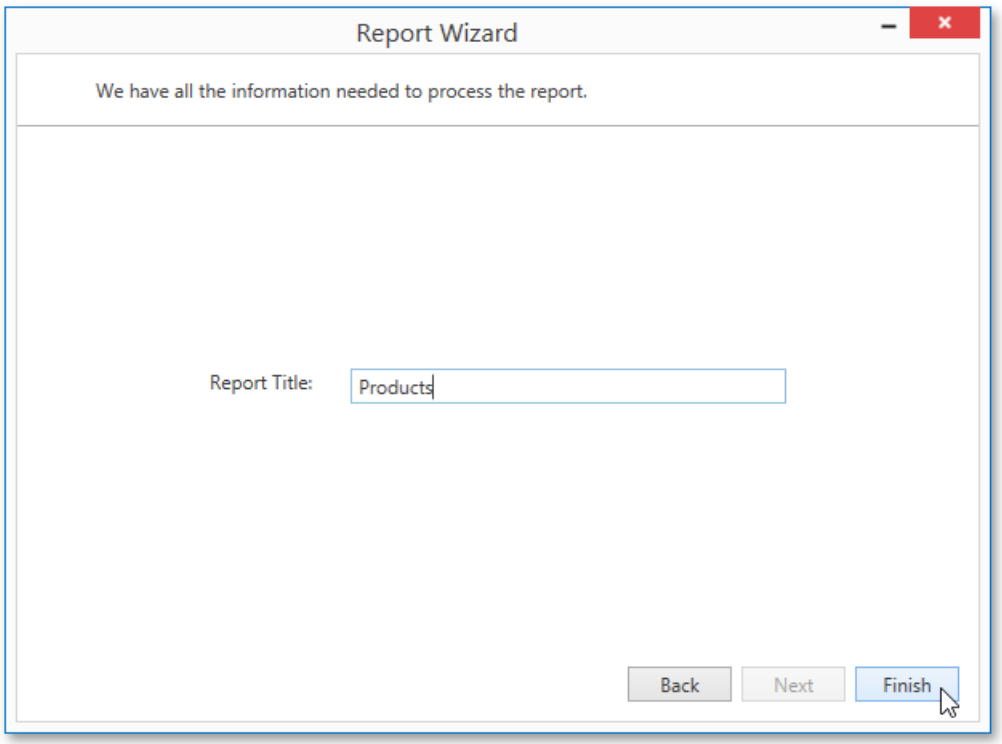
On this wizard page, you can specify one of the predefined visual styles for the report.



You can stop the wizard at this step by clicking **Finish**. If you want to customize your report further, click **Next** to proceed to the next wizard page: Enter the Report Title.

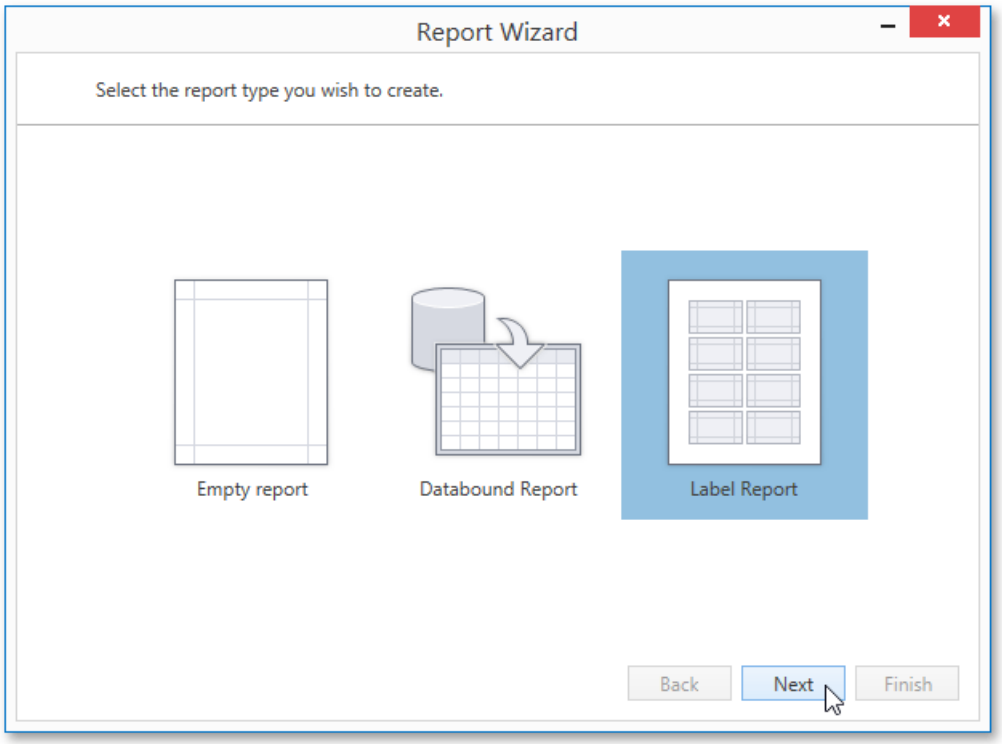
Enter the Report Title

On this page, specify the title for the report and click **Finish** to exit the wizard.



Label Report

The **Report Wizard** allows you to create reports of three kinds: empty reports, data-bound reports and **label reports**. To generate a label report, select **Label Report** and click **Next**.



After completing the Label Report Wizard, you will get a blank report that generates labels of a specifc size. The report designer will indicate the label boundaries and properly position labels within paper sheets. You can then populate the label area with the required content and print out your labels.

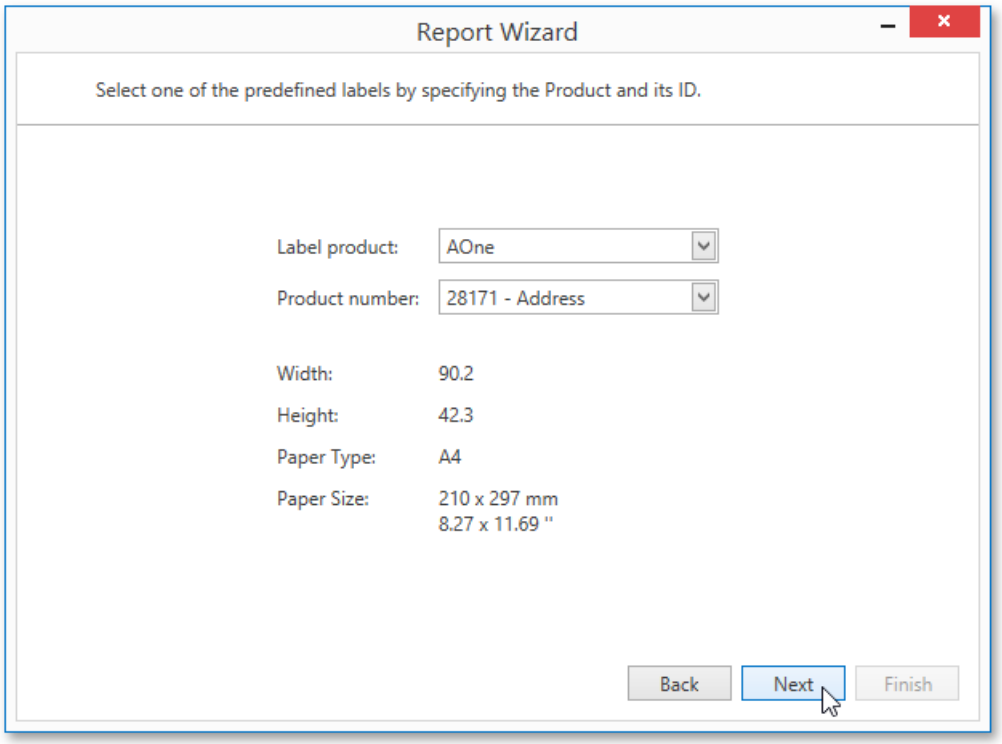
Label creation consists of the following two steps.

- Select the Label Type
- Customize the Label Options

Select the Label Type

This wizard page is intended to select one of the numerous predefined label types.

On this page, you can choose the proper supplier from the **Label product** combo box and a particular product from the **Product number** list. The selected type defines the label's size and layout, as well as the default page type for this label.

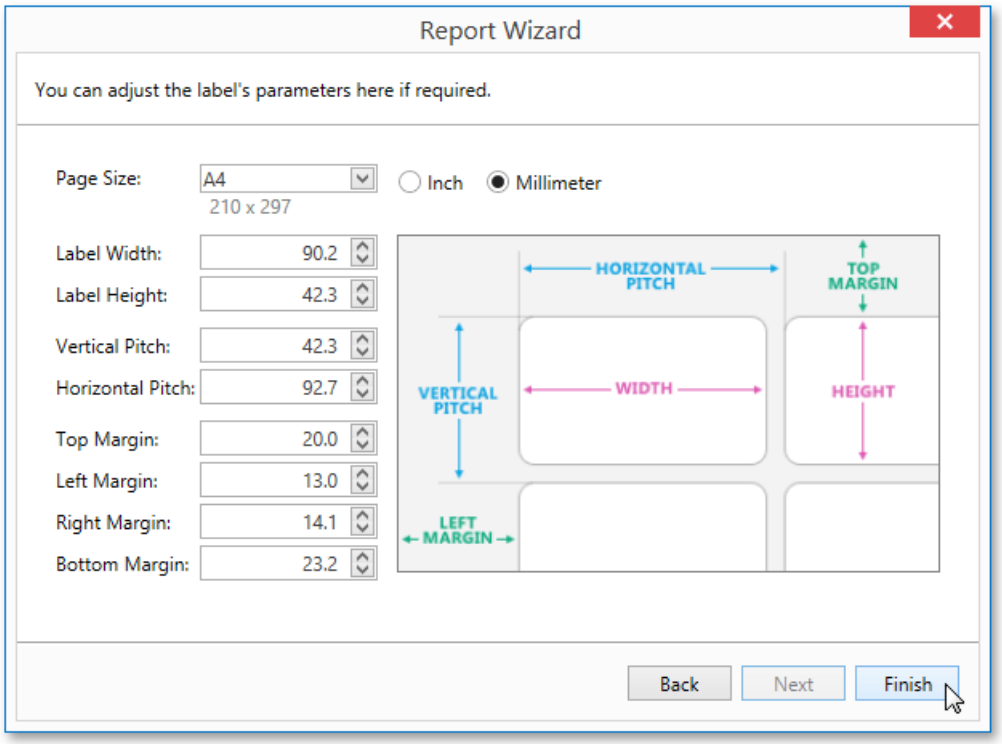


Click **Next** to proceed to the next wizard page: Customize the Label Options.

Customize the Label Options

This wizard page is intended to manually adjust label settings that were automatically specified in the previous step based on the selected supplier and product.

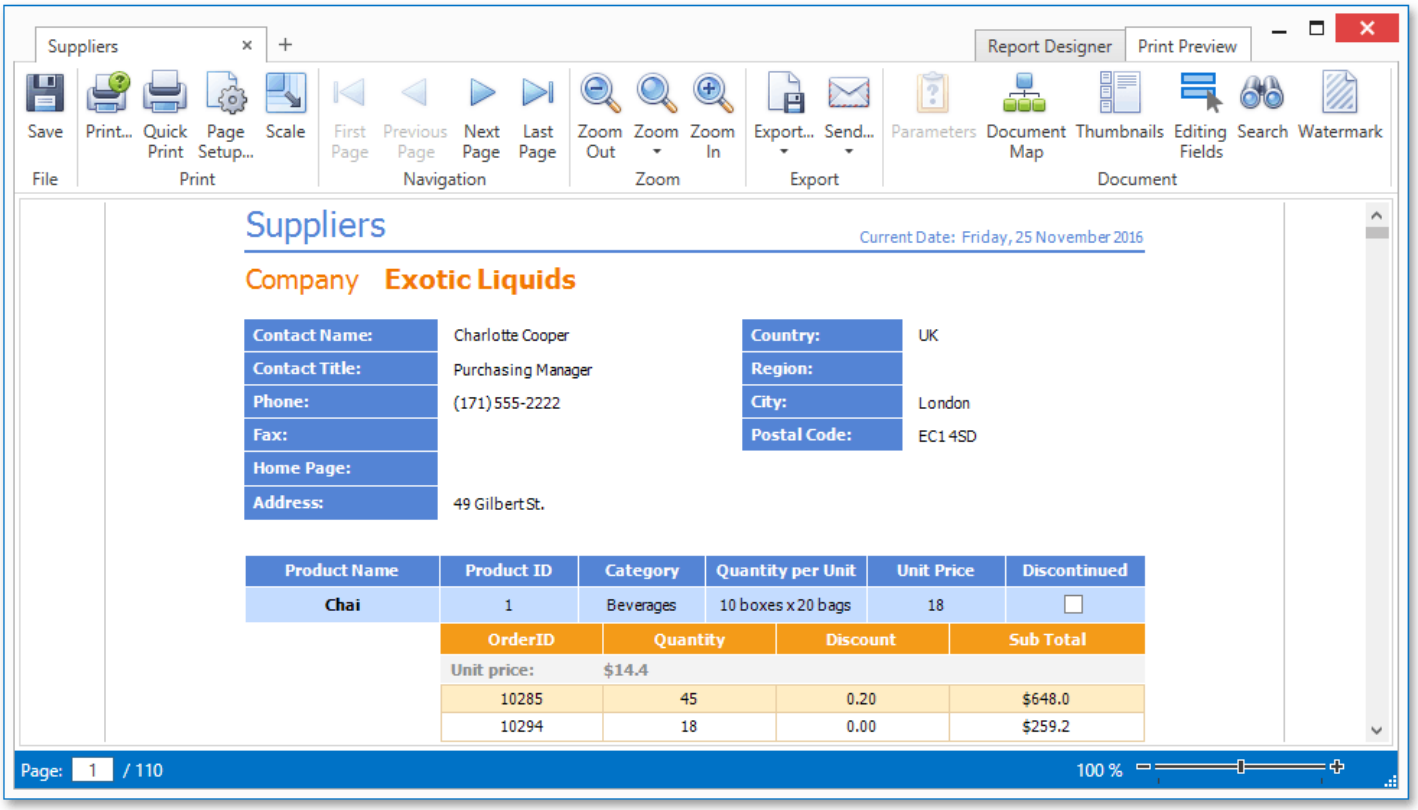
Editors on this page allow you to choose the **Page Size** and freely customize label parameters. The pane on the right-hand side provides a label dimensions preview.



Click **Finish** to complete report creation.

Document Preview

To display a preview for the report currently being opened in the Report Designer, switch to the **Print Preview** tab. You will see the report populated with data and divided into pages.



The document preview allows you to check the print output of a report and customize its additional options using the Preview Toolbar. The report can be then exported to different third-party formats, sent using e-mail or printed.

Different elements of the Report Designer's preview are covered in the following documents.

- Preview Toolbar
- Export Document
- Dialog Parameters
- Panel Search Panel
- Document Map Panel

O Not e

To learn more about the options available in the preview mode, refer to the Print Preview for WPF section of this documentation.

Preview Toolbar

The **Preview Toolbar** provides quick access to commands related to report viewing, editing and publishing.

All available commands can be divided into the following sections.

- File Command
- Print Commands
- Navigation Commands Zoom
- Commands Export
- Commands Document Commands

File Command

Use the following command to save a report to the file.

ICON	COMMAND	DESCTIPTION
	Save	Invokes the **Save As** dialog allowing you to save a report document to a file.

Print Commands

The following commands allow you to change a report page's settings and print a report document.

ICON	COMMAND	DESCRIPTION
	Print	Invokes the **Print** dialog allowing you to specify the necessary settings and print a report document.
	Quick Print	Prints a report document using the default settings.
	Page Setup	Invokes the **Page Setup** dialog allowing you to adjust report page settings.
	Scale	Invokes the **Scale** dialog allowing you to stretch or shrink report content to a percentage of its normal size or the number of pages.

Navigation Commands

Use these commands to navigate through a report document.

ICON	COMMAND	DESCRIPTION

	First Page	Switches to the first report page.

ICON	COMMAND	DESCRIPTION
	Previous Page	Switches to the previous report page.
	Next Page	Switches to the next report page.
	Last Page	Switches to the last report page.

Zoom Commands

Use these commands to zoom a report document.

ICON	COMMAND	DESCRIPTION
	Zoom Out	Decreases a report document's current zoom factor.
	Zoom In	Increases a report document's current zoom factor.
	Zoom	Zooms a report document to a specific zoom factor from the drop-down list.

Export Commands

Use these commands to export a report document to one of the supported third-party formats.

ICON	COMMAND	DESCRIPTION
	Export	Invokes the Export Document dialog allowing you to export a report document into one of the supported third- party formats and save the resulting file on a hard drive.
	Send	Invokes the Send via E-Mail dialog allowing you to export a report document into one of the supported third-party formats, save the resulting file on a hard drive and attach this file to a new empty message in the default mail program.

Document Commands

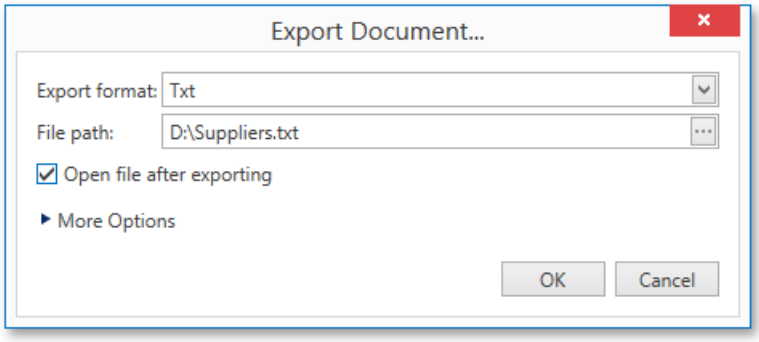
Use these commands to change the visibility state of the Designer's panels and dialogs.

ICON	COMMAND	DESCRIPTION
	Parameters	Shows/hides the Parameters Panel where you can specify report parameters before report preview generation is started.
	Document Map	Shows/hides the Document Map Panel, which reflects a report document's structure in a tree-like form.
	Thumbnails	Shows/hides report thumbnails used to quickly navigate between document pages.

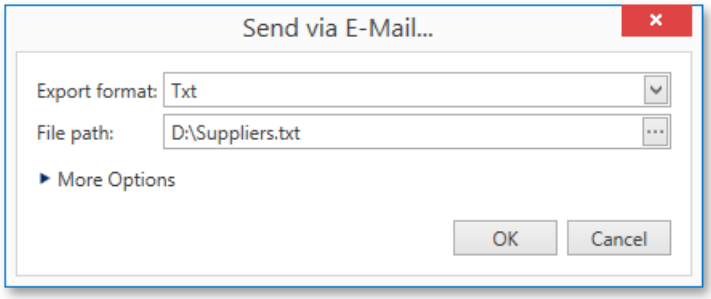
ICON	COMMAND	DESCRIPTION
	Editing Fields	Highlights all editing fields to quickly discover which of the document elements are editable.
	Search	Shows the Search Panel, which allows you to find a specified text throughout a report document.
	Watermark	Invokes the **Watermark** dialog that allows you to add a text watermark to a report or turn a picture into a report's background.

Export Document Dialog

The Print Preview allows you to view and edit various format-specific options, and then export a report to one of the supported third-party formats. There are two options for exporting a document. The first way is to export a document to a file on disk using the **Export Document** dialog.



Another approach is to utilize the **Send via E-Mail** dialog to export a document and send the resulting file via e-mail.



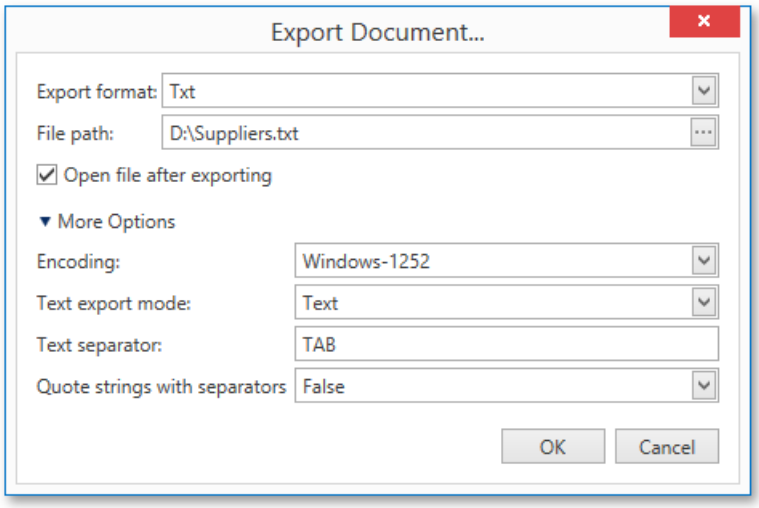
To invoke these dialogs, click the arrow for the **Export...** or **Send...** button, respectively, and choose the required format from the drop-down list. If you simply click one of these buttons, the dialogs will provide settings for the PDF format. Then, you can always change the export format directly in the dialogs using the dedicated **Export Format** drop-down lists.

The following third-party export formats are supported.

- PDF (Portable Document Format)
- HTML (HyperText Markup Language)
- MHT (Web archive, single file)
- RTF (Rich Text Format)
- XLS (Microsoft® Word® 97 - 2003 document)
- XLSX (Office® Open XML document)
- CSV (Comma-Separated Values file format)
- TXT (Plain text)
- Image (BMP, GIF, JPEG, PNG, TIFF, EMF or WMF format)

In the dialogs, you need to specify the path where the resulting file should be saved. The **Export Document** dialog additionally prompts you to choose whether or not to open the file after exporting.

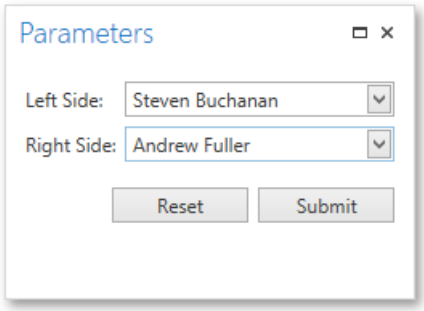
The dialogs also allow you to specify advanced export options for the selected format. To access and customize these format- specific options, click the **More Options** link.



Specify the required options and click **OK** to initiate the export of a report and save the resulting file. After closing the **Send via E- Mail** dialog, the saved file will be attached to a new empty message in the default mail program.

Parameters Panel

The **Parameters** panel allows you to specify report parameters before generating a report preview.

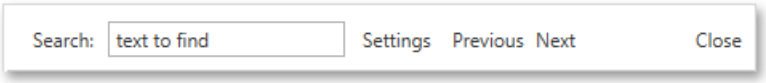


Specify values of the required report parameters using the corresponding parameter editors and click **Submit** to view the resulting report preview. After changing the current values, you can revert back the previously selected values by clicking **Reset**.

If a report contains at least one visible parameter, this panel is displayed by default. To manually change the panel's visibility state, click the **Parameters** button in the Toolbar. If a report doesn't contain any visible parameters, the **Parameters** panel cannot be shown.

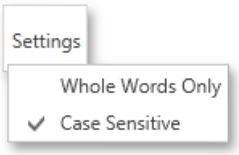
Search Panel

The **Search** panel allows you to find specific text throughout a report document.



To invoke the **Search** panel, click the **Search** button in the Toolbar or press CTRL+F.

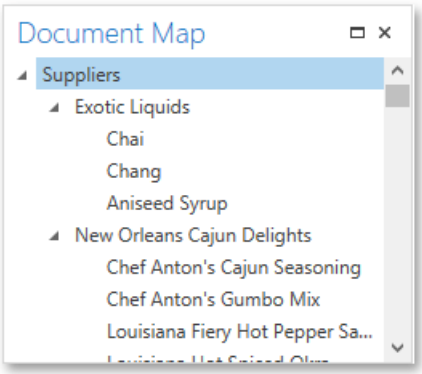
In the search box on the left, input the text to find. Click the **Settings** button to invoke the dedicated submenu allowing you to specify whether or not to use case-sensitive search, and whether you are required to match the whole word during the search.



To start searching, or search down again, click **Next**, or press ENTER or CTRL+G. To search backward, click **Previous** or press CTRL+SHIFT+G.

Document Map Panel

The **Document Map** panel is an interactive table of contents, which reflects a report's structure in a tree-like form and provides quick navigation through its bookmarks.



If a report contains at least one control with a specified bookmark, the **Document Map** is displayed by default. You can then toggle this panel's visibility state using the **Document Map** button in the Toolbar. If a report does not contain bookmarks, this panel cannot be shown.

Click a bookmark in the **Document Map** to navigate the Print Preview to the corresponding element in a report document. Note that after exporting a report to the

PDF format, the **Document Map** is exported as well.