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# Common Activities

This section describes the common capabilities of all ASP.NET controls:

- [Touch Support](#)

# Touch Support

DevExpress ASP.NET controls have an ability to work properly in touch device browsers. Touch is supported on the iOS browser, the default browser of Android 3+ and Internet Explorer 10+ on Windows 8+ and Windows Phone 8.

The following is a list of DevExpress ASP.NET controls with touch support (along with what can be executed using gestures):

- **Callback Panel** - scrolling;
- **Calendar** - swipe-to-page gesture, slide paging animation;
- **Combo Box** - scrolling;
- **Data View** - swipe-to-page gesture, slide paging animation;
- **Dock Panel** - dragging, resizing, scrolling;
- **File Manager** - scrolling;
- **Grid View** - record scrolling, column header dragging, column resizing, swipe-to-page gesture, slide paging animation;
- **Image Slider** - swipe-to-page gesture, slide paging animation, optional fade animation when the swipe-to-page gesture is turned off;
- **List Box** - scrolling;
- **Menu** - scrolling;
- **News Control** - swipe-to-page gesture; slide paging animation;
- **Panel** - scrolling;
- **Pivot Grid** - record scrolling, column header dragging, swipe-to-page gesture, slide paging animation, customization window resizing;
- **Popup Control** - dragging, resizing, scrolling;
- **Scheduler** - scrolling, appointment dragging, swipe-to-page gesture, slide paging animation;
- **Splitter** - pane resizing, pane scrolling;
- **Tree List** - record scrolling, column header dragging, swipe-to-page gesture, column resizing.

# Card View

This section describes the Card View capabilities. It represents data in cards, supports data editing, sorting, filtering, summary calculation, paging, scrolling, cards selection and data exporting.

Customization

	<b>First Name:</b> Nancy  <b>Last Name:</b> Davolio  <b>Title:</b> Sales Representative
	<b>First Name:</b> Andrew  <b>Last Name:</b> Fuller  <b>Title:</b> Vice President, Sales
	<b>First Name:</b> Janet  <b>Last Name:</b> Leverling  <b>Title:</b> Sales Representative
	<b>First Name:</b> Margaret  <b>Last Name:</b> Peacock  <b>Title:</b> Sales Representative

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## Data Editing

- Add and Delete Cards
- Switch to Edit Mode
- Save or Discard Changes
- Batch Editing

## Selection and Navigation

- Page Navigation
- Select Cards

## Sorting

- Sorting

## Grouping

- Grouping

## Filtering

- Header Filter
- Date Range Header Filter
- Search Panel
- Creating Complex Filter Criteria with the Filter Builder

## Data Summaries

- Data Summaries

## **Data Validation**

- [Data Validation](#)

## **Exporting**

- [Exporting](#)

# Add and Delete Cards

## Add a Card

To create a new card:

- Click **New**. A new card appears.



First Name: Andrew	Last Name: Fuller
Position: Vice President, Sales	Home Phone: (206) 555-9482
Hire Date: 8/14/2015	Birth Date: 2/19/1975
Notes: Andrew received his BTS commercial in 1974 and a Ph.D. in international marketing from the University of Dallas in 1981. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager in January 1992 and to vice president of sales in March 1993. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.	

**New** 

- Specify cell values.
- Click **Update**.



First Name: Janet	Last Name: Leverling
Position: Sales Representative	Home Phone: (206) 555-3412
Hire Date: 4/1/2015	Birth Date: 8/30/1986
Notes: Janet has a BS degree in chemistry from Boston College (1984). She has also completed a certificate program in food retailing management. Janet was hired as a sales associate in 1991 and promoted to sales representative in February 1992.	

**Update** **Cancel** 



First Name: Andrew	Last Name: Fuller
Position: Vice President, Sales	Home Phone: (206) 555-9482
Hire Date: 8/14/2015	Birth Date: 2/19/1975
Notes: Andrew received his BTS commercial in 1974 and a Ph.D. in international marketing from the University of Dallas in 1981. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager in January 1992 and to vice president of sales in March 1993. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.	

**New** 

## Delete a Card

To delete a card, click **Delete** in the card to be deleted.



First Name: Janet Last Name: Leverling [Delete](#)

Position: Sales Representative Home Phone: (206) 555-3412

Hire Date: 4/1/2015 Birth Date: 8/30/1986

Notes:

Janet has a BS degree in chemistry from Boston College (1984). She has also completed a certificate program in food retailing management. Janet was hired as a sales associate in 1991 and promoted to sales representative in February 1992.



First Name: Andrew Last Name: Fuller [Delete](#)

Position: Vice President, Sales Home Phone: (206) 555-9482

Hire Date: 8/14/2015 Birth Date: 2/19/1975

Notes:

Andrew received his BTS commercial in 1974 and a Ph.D. in international marketing from the University of Dallas in 1981. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager in January 1992 and to vice president of sales in March 1993. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.

**Note**

Cards management links may be unavailable in your application. This is the choice of the application vendor.

# Switch to Edit Mode

Click **Edit** to switch a Card View to edit mode



First Name: Nancy      Last Name: Davolio 

Position: Sales Representative      Home Phone: (206) 555-9857

Hire Date: 5/1/1992      Birth Date: 12/8/1948

Notes:

Education includes a BA in psychology from Colorado State University in 1970. She also completed "The Art of the Cold Call." Nancy is a member of Toastmasters International.





First Name:  Last Name:

Position:  Home Phone:

Hire Date:  Birth Date:

Notes:

Education includes a BA in psychology from Colorado State University in 1970. She also completed "The Art of the Cold Call." Nancy is a member of Toastmasters International.

[Update](#) [Cancel](#)

## Note

In-place editing links may be unavailable in your application. This is up to the application vendor.

# Save or Discard Changes

You can modify a card cell values and click **Update** or click **Cancel** to discard all the changes.



First Name:  Last Name:   
Position:  Home Phone:   
Hire Date:  Birth Date:   
Notes:  

Janet has a BS degree in chemistry from Boston College (1984). She has also completed a certificate program in food retailing management. Janet was hired as a sales associate in 1991 and promoted to sales representative in February 1992.

[Update](#) [Cancel](#)



First Name: Andrew Last Name: Fuller  
Position: Vice President, Sales Home Phone: (206) 555-9482  
Hire Date: 8/14/2015 Birth Date: 2/19/1975  
Notes:  

Andrew received his BTS commercial in 1974 and a Ph.D. in international marketing from the University of Dallas in 1981. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager in January 1992 and to vice president of sales in March 1993. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.

[New](#)

# Batch Editing

You can create new cards, delete existing cards, and edit individual cell values on a single page and save these changes with one click.

- To create a new card, click the **New** button and specify field values.
- To delete a card, click the **Delete** button in the card to be deleted.
- To edit a cell value, click (or double-click) the cell and edit the value.

The modified cells are highlighted in a different color. To save all changes, click **Save changes** or click **Cancel changes** to discard all the changes.

<a href="#">New</a> <a href="#">Delete</a>	<a href="#">New</a> <a href="#">Delete</a>
Product Name: Chai	Product Name: Chang
Category Name: Beverages	Category Name: Beverages
Quantity Per Unit: 10 boxes x 20 bags	Quantity Per Unit: 24 - 12 oz bottles
Unit Price: \$20.00	Unit Price: \$19.00
Units In Stock: 37	Units In Stock: 17
Discontinued: <input type="checkbox"/>	Discontinued: <input checked="" type="checkbox"/>

<a href="#">New</a> <a href="#">Delete</a>	<a href="#">New</a> <a href="#">Delete</a>
Product Name: Aniseed Syrup	Product Name: Chef Anton's Cajun Seasoning
Category Name: Produce	Category Name: Condiments
Quantity Per Unit: 12 - 550 ml bottles	Quantity Per Unit: 48 - 7 oz jars
Unit Price: \$10.00	Unit Price: \$22.00
Units In Stock: 13	Units In Stock: 53
Discontinued: <input type="checkbox"/>	Discontinued: <input type="checkbox"/>

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[Save changes](#) [Cancel changes](#)

If a Card View contains unsaved data, a confirmation message is displayed before the data is lost (e.g., when sorting the data, changing the page or closing the web page). You can choose whether to proceed and lose changes or cancel the action.

Windows Internet Explorer

**i** Are you sure you want to leave this page?

Message from webpage:

Are you sure you want to perform the action? All unsaved grid data will be lost.

[Leave this page](#) [Stay on this page](#)

Message from webpage ×

Are you sure you want to perform the action? All unsaved grid data will be lost.

[OK](#) [Cancel](#)

# Page Navigation

Use Card View's pager to switch between pages.

<a href="#">New</a> <a href="#">Delete</a>	<a href="#">New</a> <a href="#">Delete</a>
Product Name: Chai	Product Name: Chang
Category Name: Beverages	Category Name: Beverages
Quantity Per Unit: 10 boxes x 20 bags	Quantity Per Unit: 24 - 12 oz bottles
Unit Price: \$18.00	Unit Price: \$19.00
Units In Stock: 39	Units In Stock: 17
Discontinued: <input type="checkbox"/>	Discontinued: <input type="checkbox"/>

<a href="#">New</a> <a href="#">Delete</a>	<a href="#">New</a> <a href="#">Delete</a>
Product Name: Aniseed Syrup	Product Name: Chef Anton's Cajun Seasoning
Category Name: Condiments	Category Name: Condiments
Quantity Per Unit: 12 - 550 ml bottles	Quantity Per Unit: 48 - 6 oz jars
Unit Price: \$10.00	Unit Price: \$22.00
Units In Stock: 13	Units In Stock: 53
Discontinued: <input type="checkbox"/>	Discontinued: <input type="checkbox"/>

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[Save changes](#) [Cancel changes](#)

To change the number of cards displayed on one page, click the **Rows per page** selector and select the required number of rows per page.

<a href="#">1</a>   2   3   4   5   6   7   ...   21   22   23   <span>▶</span>   Rows per page: 2 ▾																					
<table><tr><td>Contact Name: Maria Anders</td><td>Contact Name: Ana Trujillo</td></tr><tr><td>Company Name: Al�eds Futterkiste</td><td>Company Name: Ana Trujillo Emparedados y helados</td></tr><tr><td>City: Berlin</td><td>City: Mxico D.F.</td></tr><tr><td>Region:</td><td>Region:</td></tr><tr><td>Country: Germany</td><td>Country: Mexico</td></tr></table>	Contact Name: Maria Anders	Contact Name: Ana Trujillo	Company Name: Al�eds Futterkiste	Company Name: Ana Trujillo Emparedados y helados	City: Berlin	City: Mxico D.F.	Region:	Region:	Country: Germany	Country: Mexico	<table><tr><td>Contact Name: Antonio Moreno</td><td>Contact Name: Thomas Hardy</td></tr><tr><td>Company Name: Antonio Moreno Taquera</td><td>Company Name: Around the Horn</td></tr><tr><td>City: Mxico D.F.</td><td>City: London</td></tr><tr><td>Region:</td><td>Region:</td></tr><tr><td>Country: Mexico</td><td>Country: United Kingdom</td></tr></table>	Contact Name: Antonio Moreno	Contact Name: Thomas Hardy	Company Name: Antonio Moreno Taquera	Company Name: Around the Horn	City: Mxico D.F.	City: London	Region:	Region:	Country: Mexico	Country: United Kingdom
Contact Name: Maria Anders	Contact Name: Ana Trujillo																				
Company Name: Al�eds Futterkiste	Company Name: Ana Trujillo Emparedados y helados																				
City: Berlin	City: Mxico D.F.																				
Region:	Region:																				
Country: Germany	Country: Mexico																				
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City: Mxico D.F.	City: London																				
Region:	Region:																				
Country: Mexico	Country: United Kingdom																				

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# Select Cards

You can select multiple cards as follows:

- Click a card while holding the CTRL key to toggle the card's selected state.
- Click **Select** to toggle the card's selected state.
- Select and clear a card's checkbox to select and unselect it.

You can select contiguous cards by clicking the first card and the last card while holding down the SHIFT key. In this case, the previous selection is cleared.



[Select](#)

First Name:  
Nancy

Last Name:  
Davolio

Title:  
Sales  
Representative



[Select](#)

First Name:  
Andrew

Last Name:  
Fuller

Title:  
Vice President,  
Sales



[Select](#)

First Name:  
Janet

Last Name:  
Leverling

Title:  
Sales  
Representative



[Select](#)

First Name:  
Margaret

Last Name:  
Peacock

Title:  
Sales  
Representative

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# Sorting

Click a column header to sort data in ascending order. If sorting has already been applied, subsequent clicks reverse the current sort order.

A click on a column header clears the sort settings on any other columns. Hold the SHIFT key down while clicking to sort against multiple columns.

Click a column's header while pressing the CTRL key to clear the column's sorting.

Baths	↑	Beds	House Size	Price
				
<b>328 S Kerema Ave, Milford, CT 06465</b>				
Baths:	2	Beds:	4	
House Size:	8356	Price:	\$350,000.00	
				
<b>5119 Beryl Dr, San Antonio, TX 78212</b>				
Baths:	2	Beds:	4	
House Size:	7980	Price:	\$455,000.00	
				
<b>8512 Tanglewood Cir, Reform, AL 35487</b>				
Baths:	2	Beds:	3	
House Size:	5600	Price:	\$250,000.00	
				
<b>1268 Bright St, Jersey City, NJ 07308</b>				
Baths:	2	Beds:	4	
House Size:	5770	Price:	\$310,000.00	

Page 1 of 7 (25 items) ◀ 1 2 3 4 5 6 7 ▶

# Grouping

Enter the name of a data column in the **Group by** box to group and sort cards by this column.

You can enter the **None** value to ungroup cards.

Brand ▾ Fit Power, MW Discount Price Group by: Brand

None

Brand

Fit

Power

Discount

Price

④ Brand: Audio Phones

④ Brand: Extra Bass

	Fit: Over ear		Fit: Over ear		Fit: On ear
Power, MW: 150		Power, MW: 230		Power, MW: 100	
Discount: 20%		Discount: 25%		Discount: 12%	
Price: \$210.00		Price: \$370.00		Price: \$320.00	

④ Brand: Sensitive Sound

	Fit: On ear		Fit: In ear		Fit: On ear
Power, MW: 200		Power, MW: 50		Power, MW: 240	
Discount: 5%		Discount: 0%		Discount: 10%	
Price: \$900.00		Price: \$20.00		Price: \$100.00	

④ Brand: Superheads

## Expand and Collapse Group Rows

Click a group row's expand button to expand or collapse the row.

Brand ▾ Fit Power, MW Discount Price Group by: Brand

④ Brand: Audio Phones

④ Brand: Extra Bass

		
---	---	---

# Header Filter

You can use the **Header Filter** to filter data or change the filter conditions in the Card View.

Click a filter button to invoke a filter drop-down list that contains unique values in a column.

You can use the check boxes in the drop-down list to select values and click **OK** to apply the filter criteria.

The screenshot shows a card view interface with a header row containing filter buttons for Company Name, Country, City, Unit Price, Quantity, Discount, and Total. The 'City' filter button is highlighted. A dropdown menu for 'City' is open, showing a list of unique city names: (Select All), Alfreds Futterkiste, Ana Trujillo Emparedados, Antonio Moreno Taquería, Around the Horn, Berglunds snabbköp, Blauer See Delikatessen, Blondesddsl père et fils, and Bólido Comidas preparadas. Several items in the list have checkboxes; 'Alfreds Futterkiste', 'Ana Trujillo Emparedados', 'Blauer See Delikatessen', and 'Blondesddsl père et fils' have checked boxes. Below the dropdown is a modal dialog with 'OK' and 'Cancel' buttons, where the 'OK' button is being clicked by a mouse cursor. The main content area displays two cards with company details:

Company Name	Country	City	Unit Price	Quantity	Discount	Total
Blondesddsl père et fils	France	Strasbourg	\$12.00	20	0 %	\$240.00
Morgenstern Gesundkost	Germany	Leipzig	\$39,40	12	0 %	\$472.80

At the bottom, there is a navigation bar with 'Page 1 of 539 (2155 items)' and a set of numbered buttons from 1 to 539.

If the drop-down list does not display check boxes, click the required value to apply the filter criteria.

Company Name	Country	City	Unit Price	Quantity	Discount	Total
(All)						
Company Name	(Blanks)					
Country:	(Non blanks)					
City:	Alfreds Futterkiste					
Unit Price:	Ana Trujillo Emparedados y helados					
Quantity:	Antonio Moreno Taquería					
Discount:	Around the Horn					
Total:	Berglunds snabbköp					
Company Name	Blondesdsl père et fils					
Country:	Blauer See Delikatessen					
City:	Bólido Comidas preparadas					
Unit Price:	Bon app'					
Quantity:	Germany					
Discount:	Leipzig					
Total:	Morgenstern Gesundkost					
Company Name	Leipzig					
Country:	\$36.40					
City:	\$39.40					
Unit Price:	20					
Quantity:	12					
Discount:	\$472.80					
Total:						

Page 1 of 539 (2155 items)

1 2 3 4 5 6 7 ... 537 538 539

The drop-down list displays values that match the applied filter criteria. To remove the filter, click **(All)**.

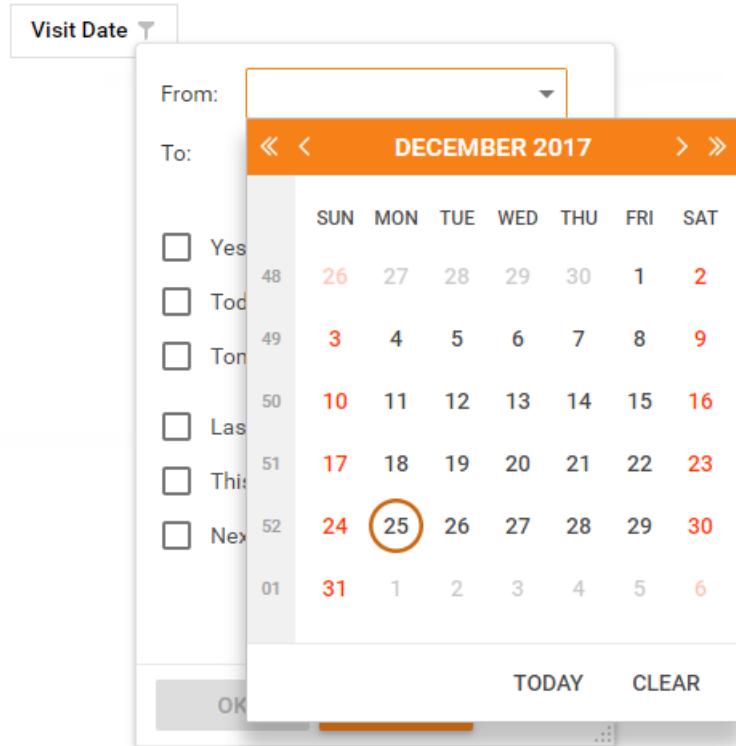
# Date Range Header Filter

The drop-down box displays a date range editor for columns containing date and time data.

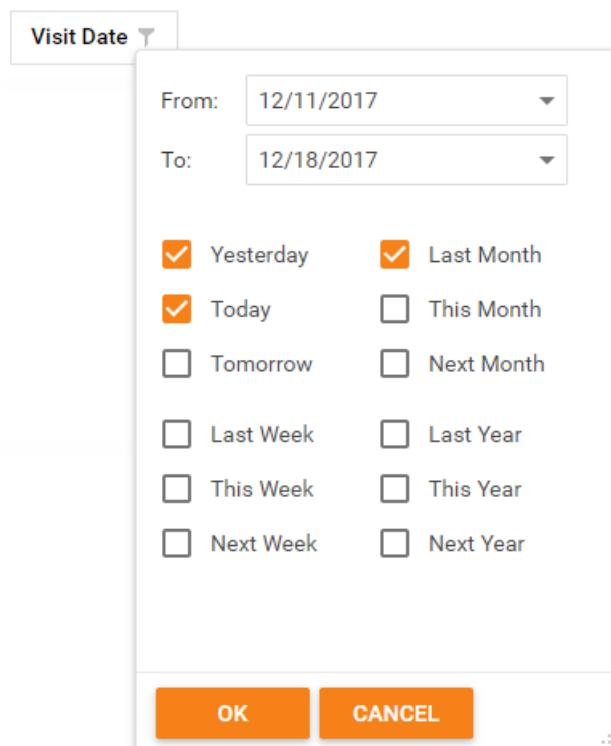
## Date Range Picker

Click a filter button to invoke a filter drop-down box that contains a date picker and a set of date range periods.

Click the drop-down button in the **From** text box to display a calendar. You can select the first date in a date range or type the date in the text box.



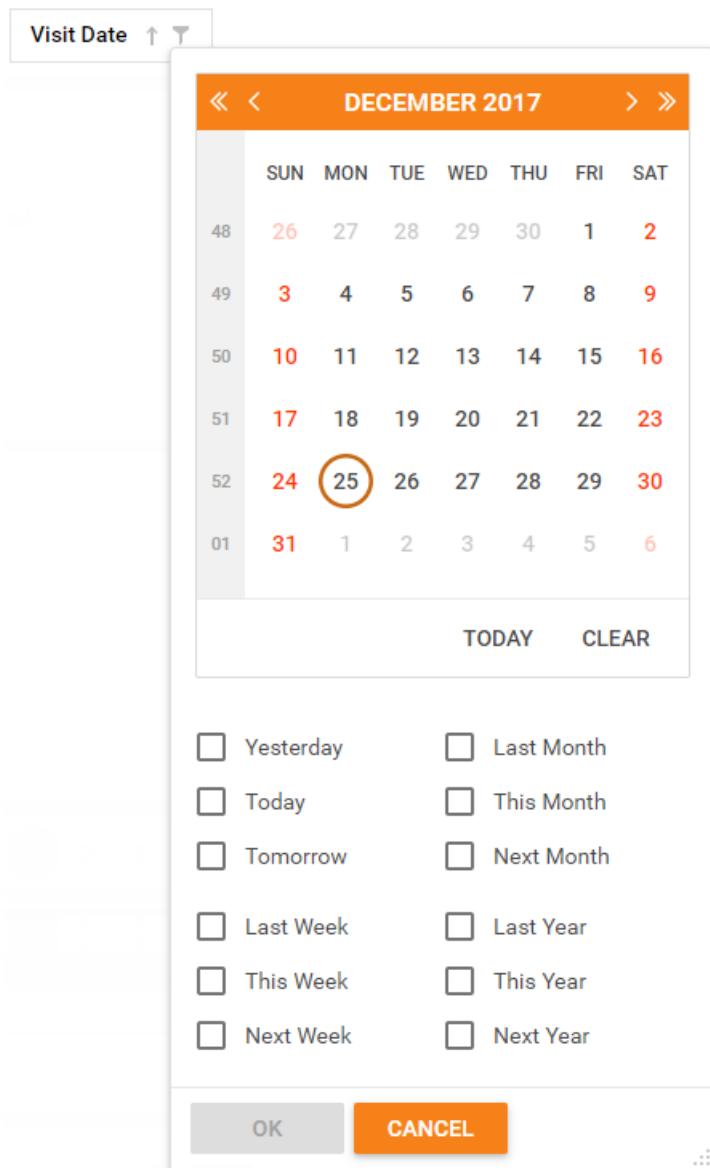
Click the drop-down button in the **To** text box to display a calendar. You can select the last date in a date range or type the date in the text box.



Select the required date periods and click **OK** to apply the filter criteria.

## Date Range Calendar

Click a filter button to invoke a filter drop-down box that contains a calendar and a set of predefined periods.



Select the required date(s) in the calendar and date periods and click **OK** to apply the filter criteria.

# Search Panel

Type a filter criterion in the search panel to filter data and highlight search results.

The screenshot shows a search panel with a search bar containing the text "ander". Below the search bar are four search results, each in a separate card:

- Contact Name:** Maria **Anders**
- Company Name:** Alfreds Futterkiste
- Address:** Obere Str. 57
- City:** Berlin
- Postal Code:** 12209
- Country:** Germany
- Phone:** 030-0074321

**Contact Name:** Alexander Feuer

**Company Name:** Morgenstern  
Gesundkost

**Address:** Heerstr. 22

**City:** Leipzig

**Postal Code:** 04179

**Country:** Germany

**Phone:** 0342-023176

**Contact Name:** Art Braunschweiger

**Company Name:** Split Rail Beer & Ale

**Address:** P.O. Box 555

**City:** **Lander**

**Postal Code:** 82520

**Country:** USA

**Phone:** (307) 555-4680

**Contact Name:** Rita Müller

**Company Name:** Die **Wandernde Kuh**

**Address:** Adenauerallee 900

**City:** Stuttgart

**Postal Code:** 70563

**Country:** Germany

**Phone:** 0711-020361

## Apply the Search Panel Filter Criterion

To apply a filter criterion typed in the search panel, press the ENTER key or click the **Search** button. Otherwise, a filter is automatically applied in 1.2 seconds.

## Clear the Search Panel Filter Criterion

To clear the search panel filter criterion, do one of the following.

- Press DELETE or BACKSPACE.
- Click the **Clear** button.
- Click the clear button that is displayed within the editor when the editor is focused and is not empty.



## Search syntax

In its simplest form, a search criterion consists of a single word. However, the search panel allows you to create composite criteria.

- **Mask:** criterion

**Example:** carlos

<input type="text" value="carlos"/> <span style="float: right;">X</span>	
Contact Name:	Carlos Hernández
Company Name:	HILARION-Abastos
Address:	Carrera 22 con Ave. Carlos Soublette #8-35
City:	San Cristóbal
Postal Code:	5022
Country:	Venezuela
Phone:	(5) 555-1340
Contact Name:	Carlos González
Company Name:	LILA-Supermercado
Address:	Carrera 52 con Ave. Bolívar #65-98 Llano Largo
City:	Barquisimeto
Postal Code:	3508
Country:	Venezuela
Phone:	(9) 331-6954

**Example description:** selects records that contain the "carlos" string in any search column.

- **Mask:** column:criterion

**Example:** city:san

<input type="text" value="city:san"/> <span style="float: right;">X</span>	
Contact Name:	Carlos Hernández
Company Name:	HILARION-Abastos
Address:	Carrera 22 con Ave. Carlos Soublette #8-35
City:	San Cristóbal
Postal Code:	5022
Country:	Venezuela
Phone:	(5) 555-1340
Contact Name:	Jaime Yorres
Company Name:	Let's Stop N Shop
Address:	87 Polk St. Suite 5
City:	San Francisco
Postal Code:	94117
Country:	USA
Phone:	(415) 555-5938

You can search against a specific column by preceding a search string with the column's caption and a colon character. Instead of the complete caption, it is possible to use the initial characters of the caption. A search will be performed against the first column whose name starts with the specified substring. If you want to search against a column whose caption contains space characters, specify the column's display caption in quotation marks.

If the search string contains multiple conditions separated by space characters, and at least one condition defines a search against a specific column, only records that match all of these conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain "san" in the column that starts with "city".

- **Mask:** criterion1 criterion2

**Example:** carlos venezuela

**Option 1**

carlos venezuela

Contact Name: Carlos Hernández	Contact Name: Carlos González
Company Name: HILARION-Abastos	Company Name: LILA-Supermercado
Address: Carrera 22 con Ave. Carlos Soublette #8-35	Address: Carrera 52 con Ave. Bolívar #65-98 Llano Largo
City: San Cristóbal	City: Barquisimeto
Postal Code: 5022	Postal Code: 3508
Country: Venezuela	Country: Venezuela
Phone: (5) 555-1340	Phone: (9) 331-6954

## Option 2

carlos venezuela

Contact Name: Carlos Hernández	Contact Name: Carlos González
Company Name: HILARION-Abastos	Company Name: LILA-Supermercado
Address: Carrera 22 con Ave. Carlos Soublette #8-35	Address: Carrera 52 con Ave. Bolívar #65-98 Llano Largo
City: San Cristóbal	City: Barquisimeto
Postal Code: 5022	Postal Code: 3508
Country: Venezuela	Country: Venezuela
Phone: (5) 555-1340	Phone: (9) 331-6954

Based on conditions provided by your application vendor, the search panel can search words separated by space characters in one of the following ways.

### Option AND

Only records that match all of the conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain both "carlos" AND "venezuela" strings in any search column.

### Option OR

If there is no column specification, records that match at least one of these conditions are shown (i.e., the conditions are combined by the OR logical operator). If at least one condition defines a search against a specific column, only records that match all of these conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain either "carlos" OR "venezuela" strings in any search column.

- **Mask:** "criterion with spaces"

**Example:** "maria anders"

"maria anders"

Contact Name:	Maria Anders
Company Name:	Alfreds Futterkiste
Address:	Obere Str. 57
City:	Berlin
Postal Code:	12209
Country:	Germany
Phone:	030-0074321

If you want to search for a string containing a space character, specify this string in quotation marks.

**Example description:** selects records that contain "maria anders" in any search column.

- **Mask:** criterion1 -criterion2

**Example:** maria -anders

maria -anders

Contact Name:	Maria Larsson
Company Name:	Folk och fä HB
Address:	Åkergratan 24
City:	Bräcke
Postal Code:	S-844 67
Country:	Sweden
Phone:	0695-34 67 21

Precede a condition with "-" to exclude records that match this condition from the resulting set. There should be no space between the "-" sign and the condition.

**Example description:** selects records that contain "maria", excluding records that contain "anders".

- **Mask:** criterion1 +criterion2

**Example:** Spain +Madrid

Spain +Madrid

X

Contact Name: Martín Sommer  
Company Name: Bólido Comidas preparadas  
Address: C/ Araquil, 67  
City: **Madrid**  
Postal Code: 28023  
Country: **Spain**  
Phone: (91) 555 22 82

Contact Name: Diego Roel  
Company Name: FISSA Fabrica Inter. Salchichas S.A.  
Address: C/ Moralzarzal, 86  
City: **Madrid**  
Postal Code: 28034  
Country: **Spain**  
Phone: (91) 555 94 44

Contact Name: Alejandra Camino  
Company Name: Romero y tomillo  
Address: Gran Vía, 1  
City: **Madrid**  
Postal Code: 28001  
Country: **Spain**  
Phone: (91) 745 6200

Precede a condition with "+" to display only records that match this condition. The "+" specifier allows you to implement the logical AND operator. There should be no space character between the "+" sign and the condition.

**Example description:** selects records that contain both "Spain" AND "Madrid" in search columns.

# Creating Complex Filter Criteria with the Filter Builder

To build complex filter criteria with an unlimited number of filter conditions, combined by logical operators, use the built-in Filter Builder.

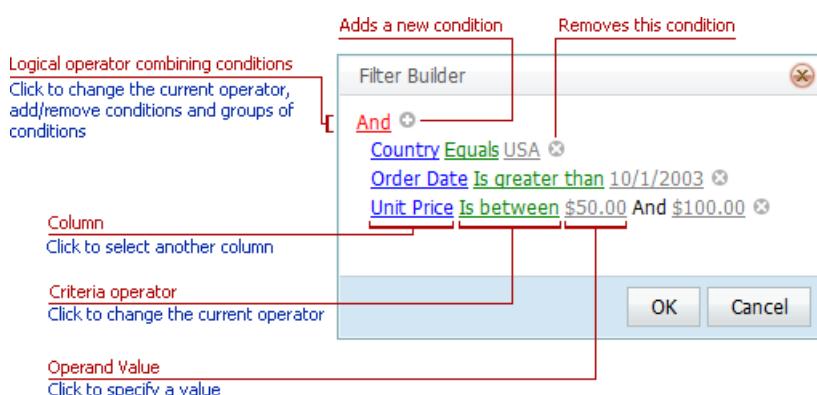
To open the Filter Builder, click the filter image displayed within the filter bar or the filter expression link.

Product Name: Chai Category Name: Beverages Company Name: Exotic Liquids Contact Name: Charlotte Cooper Unit Price: \$18.00 Units In Stock: 39 Total: \$702.00	Product Name: Chang Category Name: Beverages Company Name: Exotic Liquids Contact Name: Charlotte Cooper Unit Price: \$19.00 Units In Stock: 17 Total: \$323.00
Product Name: Aniseed Syrup Category Name: Condiments Company Name: Exotic Liquids Contact Name: Charlotte Cooper Unit Price: \$10.00 Units In Stock: 13 Total: \$130.00	Product Name: Chef Anton's Cajun Seasoning Category Name: Condiments Company Name: New Orleans Cajun Delights Contact Name: Shelley Burke Unit Price: \$22.00 Units In Stock: 53 Total: \$1,166.00

Page 1 of 20 (77 items) 1 2 3 4 5 6 7 ... 18 19 20

Create Filter

To create and customize filter criteria, use the + and x buttons.



To learn more, see the [Filter Editor](#) topic.

# Data Summaries

A summary calculates the value of an aggregate function over all the cards and is displayed in the summary panel.

The following aggregate functions are available:

- Average
- Count
- Max
- Min
- Sum

Company Name: Blöndesddsl ... Country: France Unit Price: \$31.20 Quantity: 30 Total: \$936.00	Company Name: Blöndesddsl ... Country: France Unit Price: \$12.00 Quantity: 20 Total: \$240.00	Company Name: Morgenstern ... Country: Germany Unit Price: \$36.40 Quantity: 20 Total: \$728.00
Company Name: Morgenstern... Country: Germany Unit Price: \$39.40 Quantity: 12 Total: \$472.80	Company Name: Berglunds sn... Country: Sweden Unit Price: \$3.60 Quantity: 12 Total: \$43.20	Company Name: Berglunds sn... Country: Sweden Unit Price: \$19.20 Quantity: 20 Total: \$384.00
Sum of Total is \$1,265,793.04		
Page 1 of 360 (2155 items) <span style="border: 1px solid #ccc; padding: 2px;">1</span> <span>2</span> <span>3</span> <span>4</span> <span>...</span> <span>359</span> <span>360</span> <span style="border: 1px solid #ccc; padding: 2px;">&gt;</span>		

# Data Validation

The Card View validates entered values and displays errors if a value does not pass validation.

An error icon indicating the invalid value. Hover the mouse over the icon to display a hint with the error's description.

Correct every invalid value to save data.



First Name:\*  ! Last Name:\*

Position:  Name is required (206) 555-9857

Hire Date:  Birth Date:

Notes:  
Education includes a BA in psychology from Colorado State University in 1970. She also completed "The Art of the Cold Call." Nancy is a member of Toastmasters International.

[Update](#) [Cancel](#)

# Exporting

The Card View allows you to export data in the following formats.

- DOCX
- CSV
- PDF
- RTF
- XLS
- XLSX

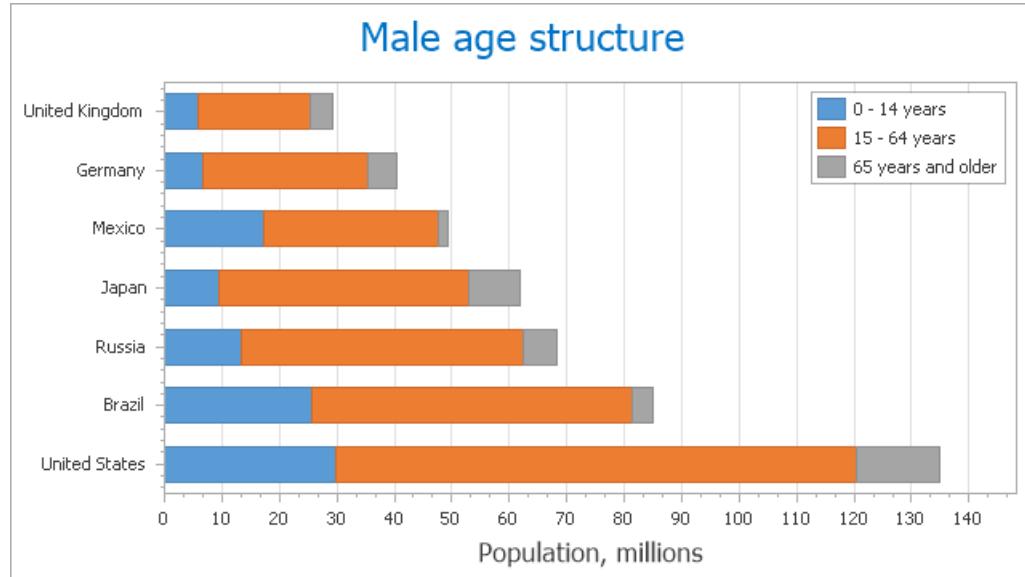
Click a toolbar button to export the data in the corresponding format.

The screenshot shows a Microsoft Excel window with two card views displayed above a data grid. The card views show details for two products: Chai and Chang. The data grid below contains 7 rows of product data with columns for Product Name, Unit Price, Quantity Per Unit, Category Name, and Discontinued status.

	A	B	C	D	E
1	Product Name	Unit Price	Quantity Per Unit	Category Name	Discontinued
2	Chai	\$18.00	10 boxes x 20 bags	Beverages	FALSE
3	Chang	\$19.00	24 - 12 oz bottles	Beverages	FALSE
4	Aniseed Syrup	\$10.00	12 - 550 ml bottles	Condiments	FALSE
5	Chef Anton's Cajun Seasoning	\$22.00	48 - 6 oz jars	Condiments	FALSE
6	Chef Anton's Gumbo Mix	\$21.35	36 boxes	Condiments	TRUE
7	Grandma's Boysenberry Spread	\$25.00	12 - 8 oz jars	Condiments	FALSE

# Charting

This section describes the capabilities provided by Charts.

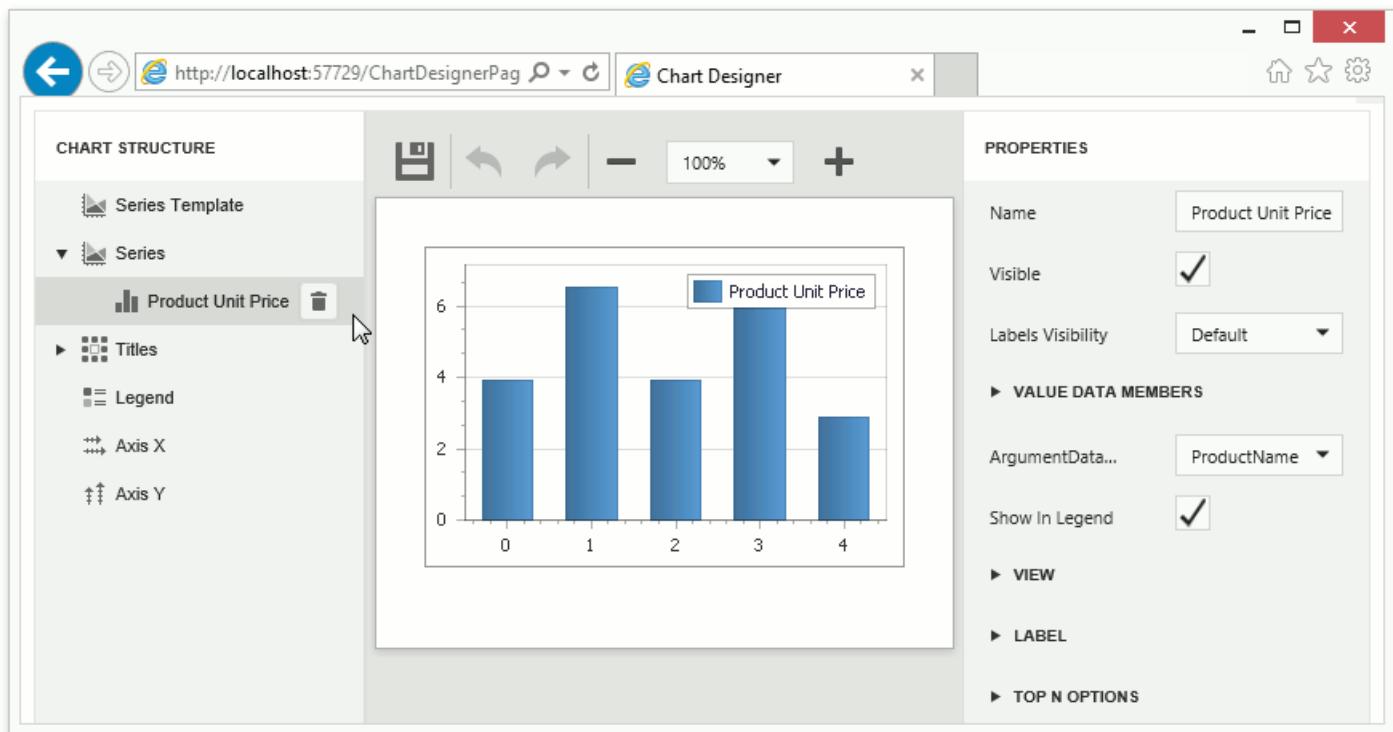


Topics in this section:

- [Chart Designer](#)
- [Series Selection](#)

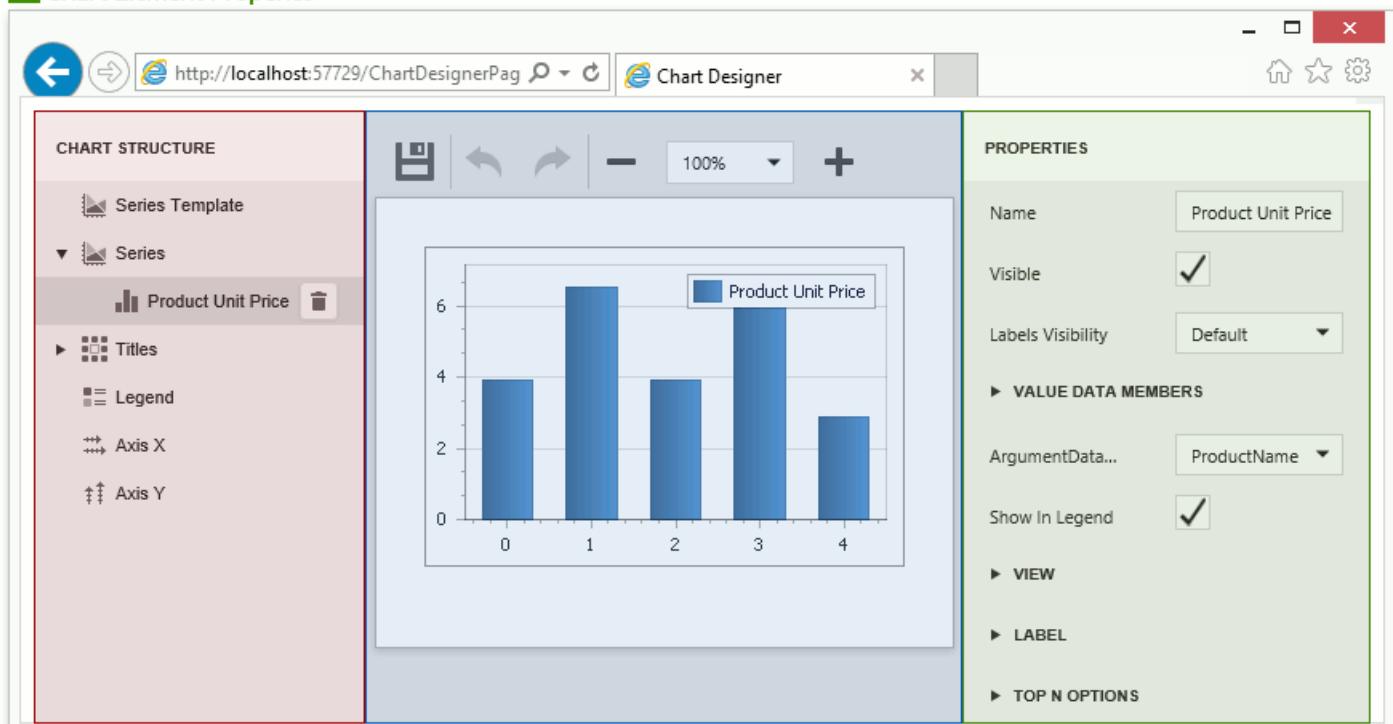
# Chart Designer

Use the Chart Designer page to quickly and easily customize a chart or create a new one.

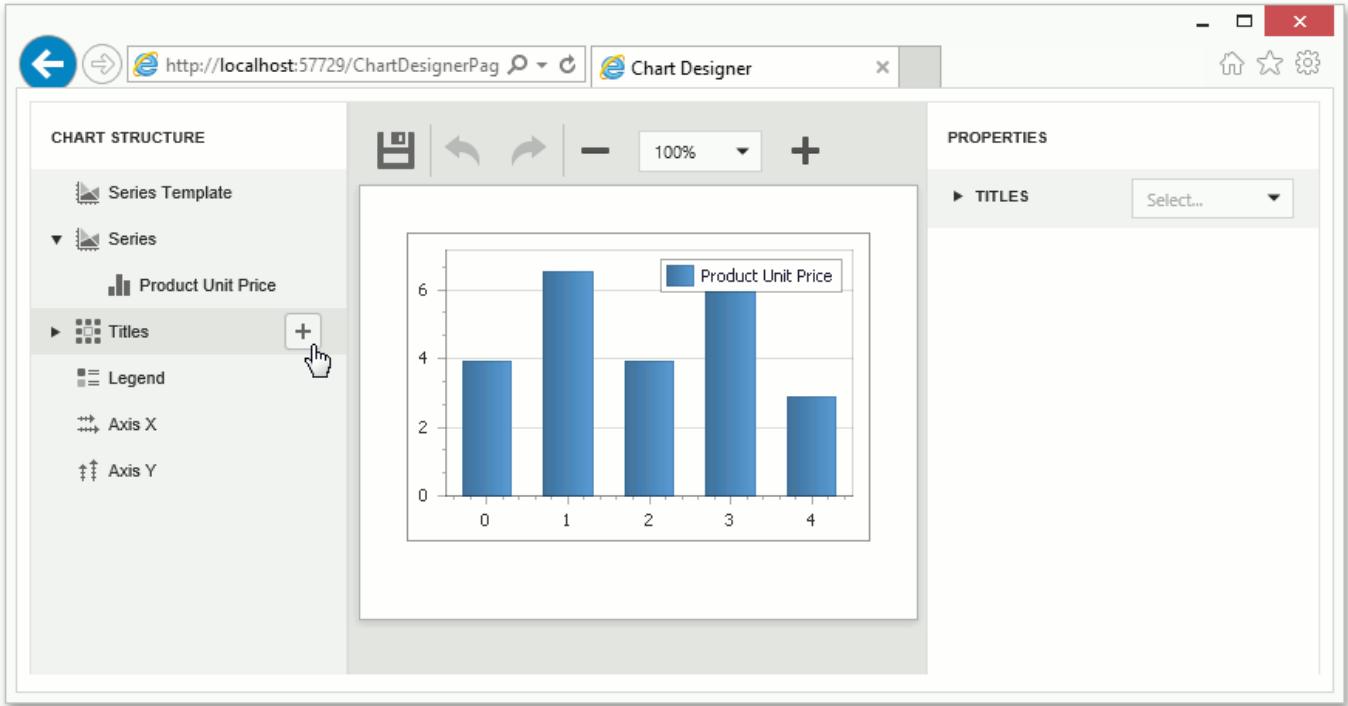


The Chart Designer is organized into three main areas, which are represented below.

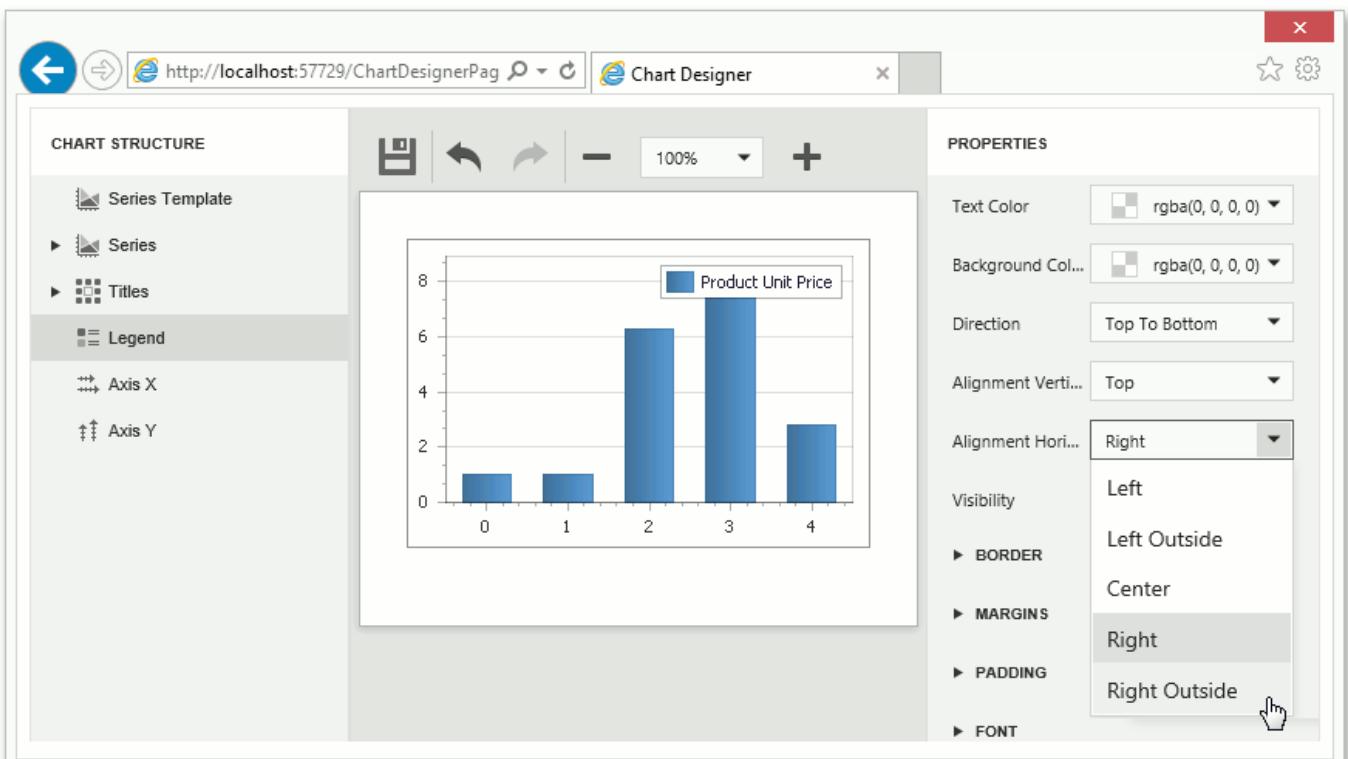
- **Chart Structure Tree**
- **Chart Layout**
- **Chart Element Properties**



- The **Chart Structure Tree** allows you to quickly select chart elements, change the structure of a chart (add or delete elements) and also represent chart structure. When you click an element, its settings will be displayed in the **Chart Element Properties** area.



- The **Chart Layout** area allows you to overview the chart's layout.
- The **Chart Element Properties** area allows you to customize a chart element's commonly used properties.



# Series Selection

If you are working with 2D charts, you can select different series or chart elements using the mouse or different gestures on your touchscreen device.

To select a particular chart element, tap it on a device supporting touchscreen or click this element using the left mouse button. The following image demonstrates how a single series is painted if it is selected using the mouse pointer.

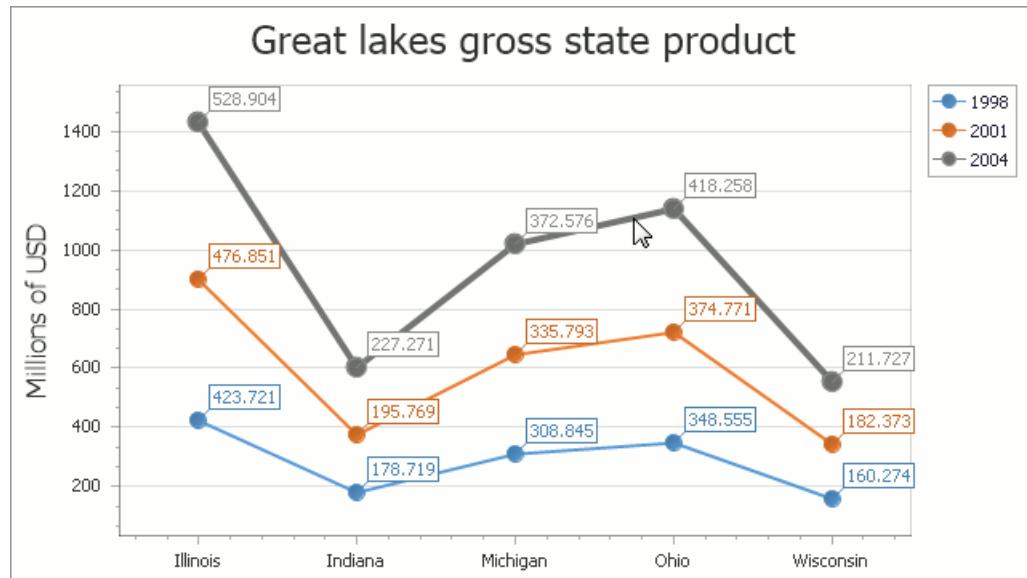
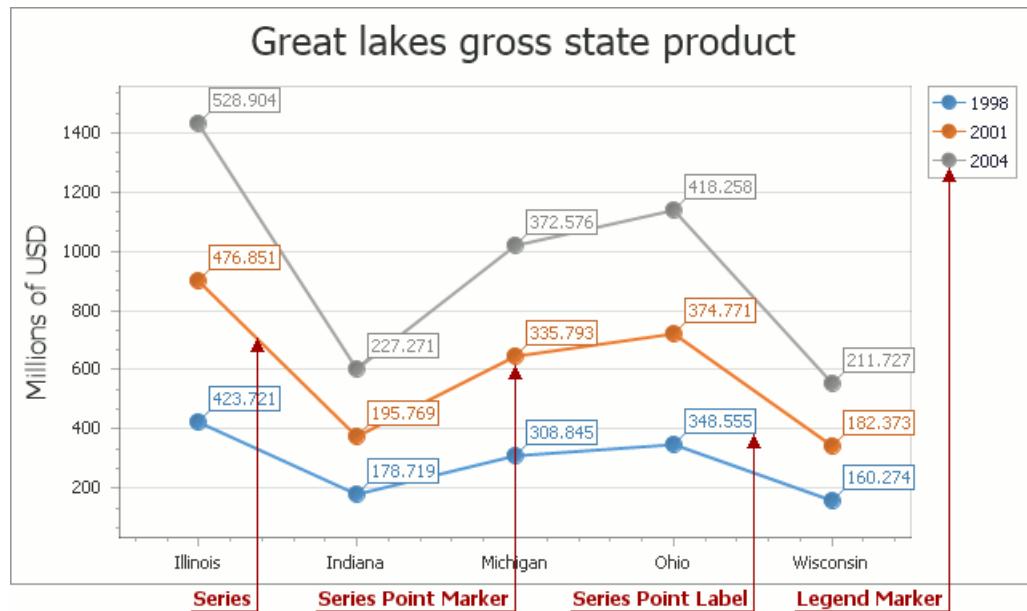


Chart elements, which can be selected, are shown in the following illustration.



# Data View

The Data View displays data in a card or list-based view.

A screenshot of a Data View interface. At the top, there is a navigation bar with the following elements: 'Previous page button' (disabled), 'First page button' (disabled), 'Current page' (highlighted in blue), 'Next page button' (disabled), 'Last page button' (disabled), and 'Number of rows on the page' (set to 1). Below the navigation bar, there are three data items, each consisting of a portrait photo and contact information. The first item is Rafael Raje, the second is Jessie She, and the third is Alfredo Gomez. At the bottom of the data area, there is a pager with the same set of buttons as the top navigation bar, and a 'Rows per page' dropdown menu set to 1.

Name: Rafael Raje Phone: 1 (11) 500 555-0	Name: Jessie She Phone: 1 (11) 500 555-0	Name: Alfredo Gomez Phone: 1 (11) 500 555-0
--	---	--

## Data View Pager

The data view pager allows you to navigate through data pages. It can be displayed at the top, bottom, or top and bottom of the data view. To navigate to a specific page, click its number in the pager. Additionally, you can use the pager buttons to navigate to the next, previous, first or last page. The current page is highlighted.

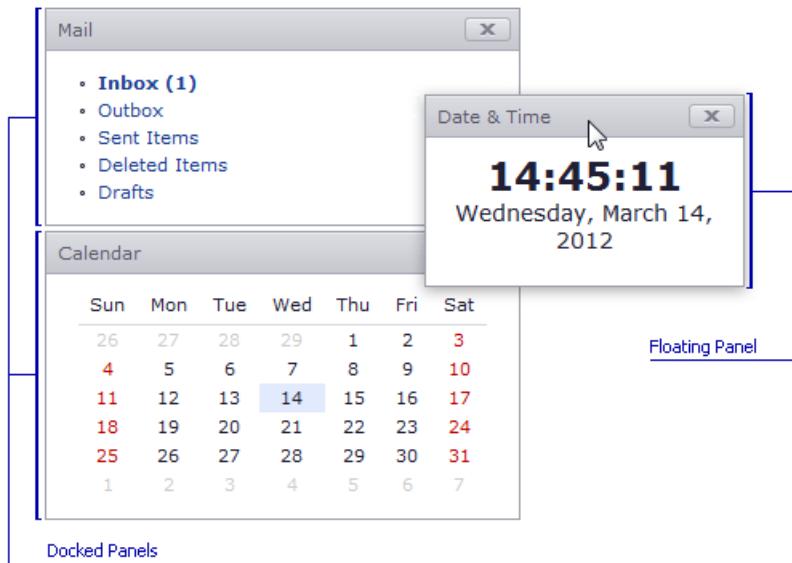
The **Rows per page** menu allows you to select the number of rows to be displayed on the page.

A screenshot of a Data View interface. It shows three items: Rafael Raje, Jessie She, and Alfredo Gomez, each with a portrait photo and contact details. Below the items, there is a 'Show more items...' link with a hand cursor icon pointing to it, indicating it can be clicked to load more items.

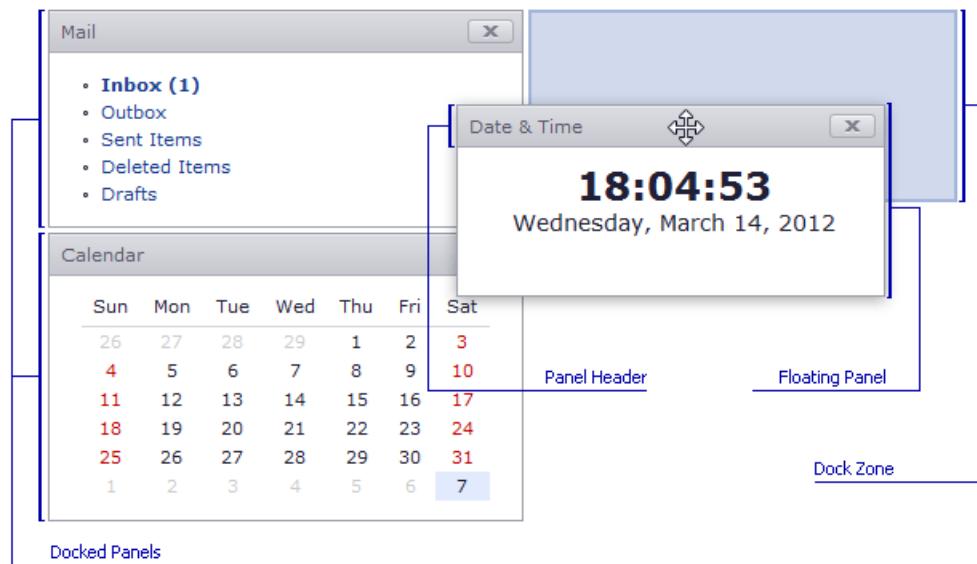
If a **Show more items...** link is displayed, click it to load more items to the data view.

# Docking Panel

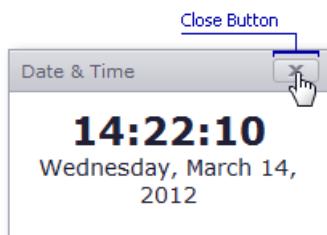
The panel can be docked to the dock zone or can be floated. To switch panel state to docked or back to float mode, double-click the panel's header.



To change the dock panel position, capture it's header, drag it and drop to the required place.



To close the dock panel, click the **Close** button.



# Document Viewer

The documents in this section provide information on the capabilities of the **Web Document Viewer**, which is used to display an interactive document preview on web pages.

This Viewer provides a toolbar that contains commands related to document viewing, navigating, exporting and printing. It also provides the **Document Map** for navigating throughout a document using bookmarks, the **Parameters** panel for editing report parameters, the **Export Options** panel for viewing and editing format-specific options, and the **Search** panel for locating required data.

The screenshot shows the Web Document Viewer interface. At the top is a toolbar with navigation buttons (back, forward, search), a page number (1 of 5), zoom controls (100%), and various document management icons (print, copy, etc.). To the right of the toolbar is a vertical sidebar with icons for settings, search, and export. The main content area displays a document titled "Suppliers". The document header includes the title "Suppliers" and the date "Current Date: Friday, 20 January 2017". Below the header, there is a section for "Company Exotic Liquids" with contact information for Charlotte Cooper. A table provides details about the company's address and location. Further down, a detailed table lists products, their quantities, unit prices, discounts, and sub-totals. The table for products has columns for Product Name, Product ID, Category, Quantity per Unit, Unit Price, and Discontinued. The table for the product "Chai" has rows for OrderID, Quantity, Discount, and Sub Total, along with specific data for unit price and two individual order entries.

Product Name	Product ID	Category	Quantity per Unit	Unit Price	Discontinued
Chai	1	Beverages	10 boxes x 20 bags	18	<input type="checkbox"/>
OrderID	Quantity	Discount	Sub Total		
Unit price:	\$14.4				
10285	45	0.20	\$648.0		
10294	18	0.00	\$259.2		

## Viewing and Navigating

- [Navigate Between Pages](#)
- [Navigate Using Bookmarks](#)
- [Search for a Specific Text](#)
- [Switch Display Mode](#)
- [Zooming](#)

## Interactivity

- [Content Editing](#)

## Parameters

- [Passing Parameter Values](#)

## **Printing**

- [Printing](#)

## **Exporting**

- [Export a Document](#)
- [CSV-Specific Export Options](#)
- [HTML-Specific Export Options](#)
- [Image-Specific Export Options](#)
- [MHT-Specific Export Options](#)
- [PDF-Specific Export Options](#)
- [RTF-Specific Export Options](#)
- [Text-Specific Export Options](#)
- [XLS-Specific Export Options](#)
- [XLSX-Specific Export Options](#)

# Navigate Between Pages

To navigate to a specific page of a document, select the required page in the dedicated dropdown list on the Document Viewer's toolbar.

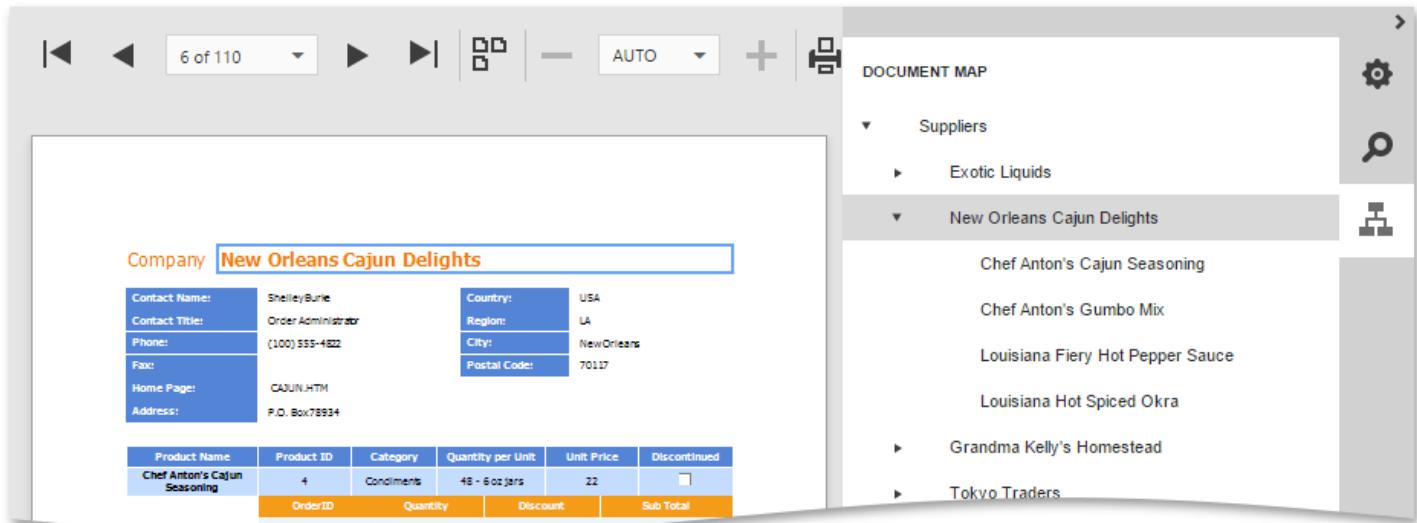


You can also use the |◀◀▶▶| buttons on the viewer toolbar to navigate to the first, previous, next or last page, respectively.

# Navigate Using Bookmarks

If a document contains bookmarks, you can use the **Document Map** panel for navigation purposes.

To switch to this panel, click the **Document Map**  button on the right side of the Document Viewer. To go to a specific bookmark, click it in the Document Map. As a result, an appropriate document page will be shown, and a document element associated with the bookmark will be highlighted.



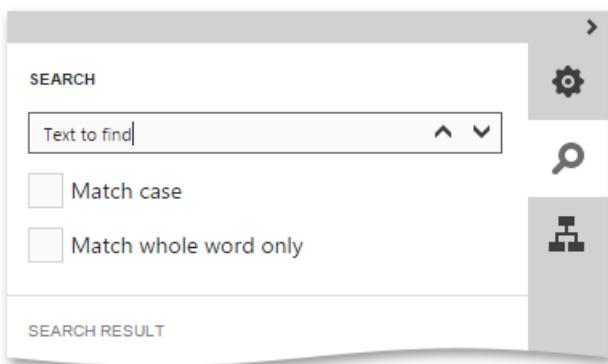
The screenshot shows the Document Viewer interface. On the left is the main content area displaying a document with contact information for 'New Orleans Cajun Delights' and a product table for 'Chef Anton's Cajun Seasoning'. On the right is the 'DOCUMENT MAP' panel. The 'Suppliers' section is expanded, showing a list of suppliers: Exotic Liquids, New Orleans Cajun Delights (which is selected and highlighted in grey), Chef Anton's Cajun Seasoning, Chef Anton's Gumbo Mix, Louisiana Fiery Hot Pepper Sauce, Louisiana Hot Spiced Okra, Grandma Kelly's Homestead, and Tokyo Traders. The 'New Orleans Cajun Delights' item in the list has its corresponding document page displayed in the main content area, with the company name highlighted in orange.

Contact Name:	Shelley Burke	Country:	USA
Contact Title:	Order Administrator	Region:	LA
Phone:	(100) 555-4822	City:	New Orleans
Fax:		Postal Code:	70117
Home Page:	CAJUN.HTM		
Address:	P.O. Box 78934		

Product Name	Product ID	Category	Quantity per Unit	Unit Price	Discontinued
Chef Anton's Cajun Seasoning	4	Condiments	48 - 6oz jars	22	<input type="checkbox"/>
OrderID	Quantity	Discount	Sub Total		
			\$17.6		

# Search for a Specific Text

To search for a specific text throughout a document, click the **Search**  button on the right side of the Document Viewer or on the Viewer's toolbar. This switches to the **Search** panel.



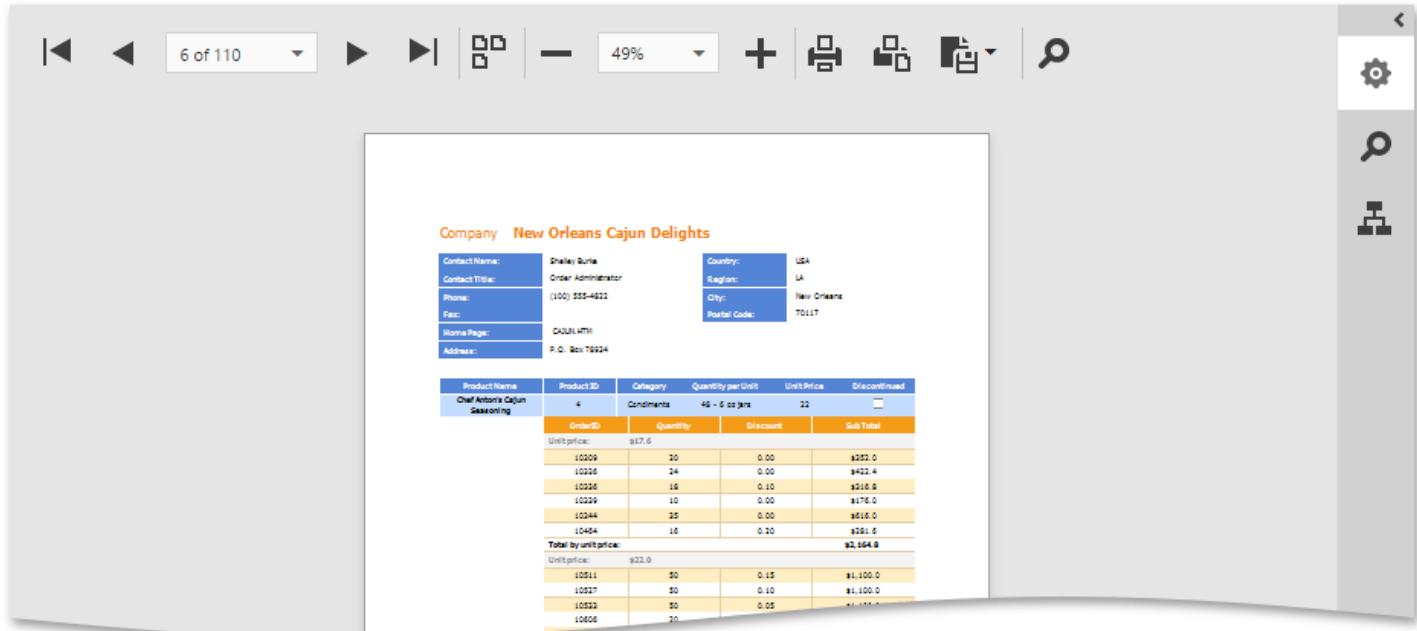
In this panel, you can input the text to find and specify whether or not to use case-sensitive search and whether it is required to match the whole word during the search. To start searching or search again, press ENTER. You can also use the   buttons to continue searching backward or forward, respectively.

In addition, the **Search** panel displays the search result. So, you can quickly locate the required text within a document by selecting the corresponding item in the **Search Result** list.

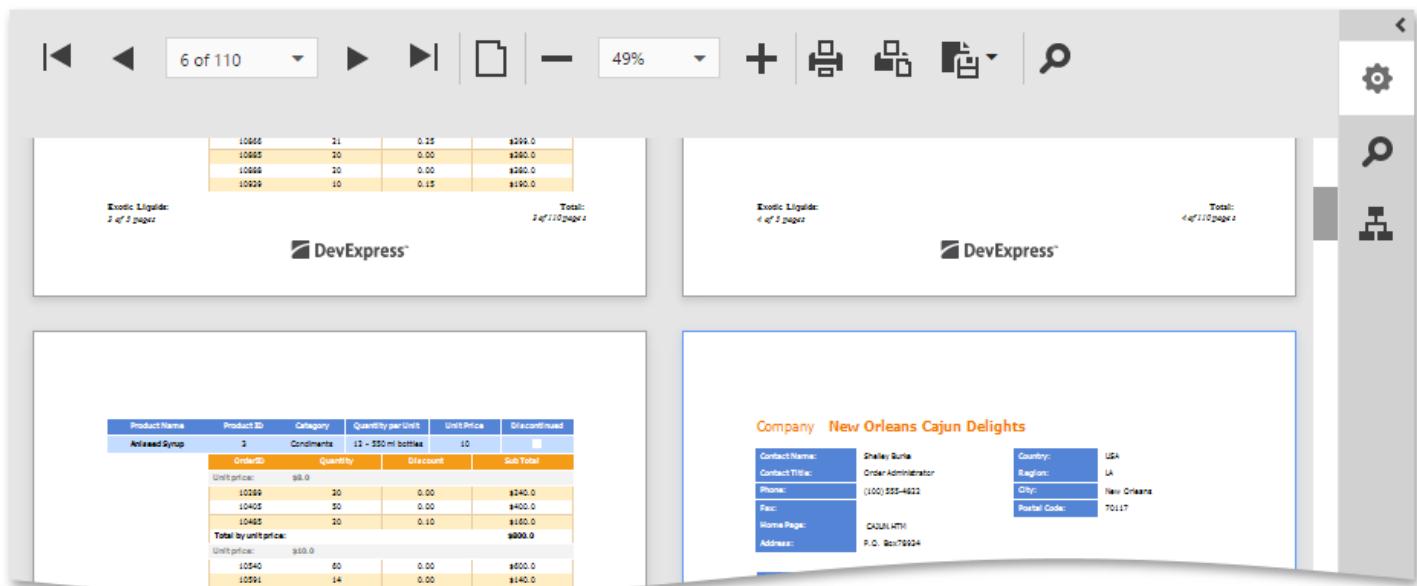
# Switch Display Mode

You can switch between the Document Viewer's display modes by clicking the **Toggle Multipage Mode**  button on the Viewer's toolbar.

In the default single page mode, document pages are displayed in the Document Viewer one at a time, thus allowing you to preserve an entire page view. You can navigate between document pages using the navigation buttons and dedicated dropdown list (see [Navigate Between Pages](#)).



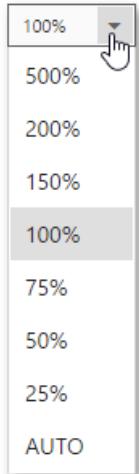
In the multipage mode, several document pages can be simultaneously displayed in the Viewer if it has sufficient space, and pages can be partially visible. In addition to the standard navigation functionality, a vertical scroll bar appears, allowing you to continuously scroll a page layout view.



# Zooming

To zoom in or out of a document, click the **Zoom In**  or **Zoom Out**  button on the Document Viewer toolbar. These buttons change the document's current zoom factor by 1 percent.

You can also zoom the document to a specific zoom factor. To do this, click the dedicated dropdown list button and choose one of the zoom factor presets from the invoked list.

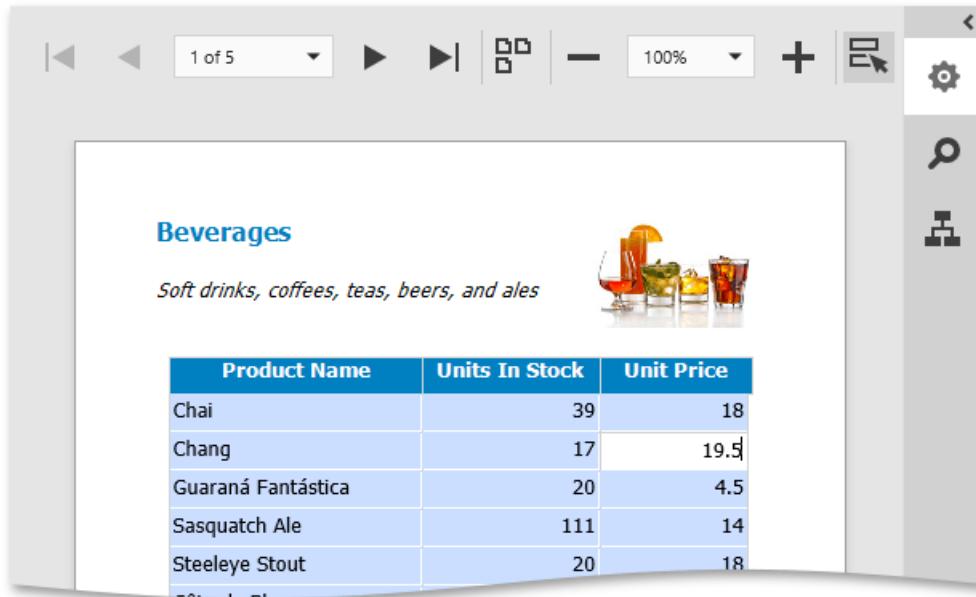


# Content Editing

If content editing is enabled for document elements, it is possible to customize the corresponding field values in the Document Viewer.

To highlight all editing fields available in the document, click the **Editing Fields**  button on the toolbar. This button is not available when there are no such fields in the document.

Clicking a field will invoke an appropriate editor. In addition to editing text, you can switch check box states.



The screenshot shows the 'Beverages' section of a document. The title 'Beverages' is in blue, and the subtitle 'Soft drinks, coffees, teas, beers, and ales' is in italicized black. Below the subtitle is a small image of various beverages. A table follows:

Product Name	Units In Stock	Unit Price
Chai	39	18
Chang	17	19.5
Guaraná Fantástica	20	4.5
Sasquatch Ale	111	14
Steeleye Stout	20	18

# Passing Parameter Values

Some documents or reports allow you to control what data is to be displayed by specifying parameter values.

To switch to the **Preview Parameters** panel, click the **Parameters**  button on the right side of the Document Viewer. This panel allows you to specify parameter values before document preview generation is started.

Enter the required values using the corresponding parameter editors and click **Submit**. After changing the current values, you can revert back the previously selected values by clicking **Reset**.



# Printing

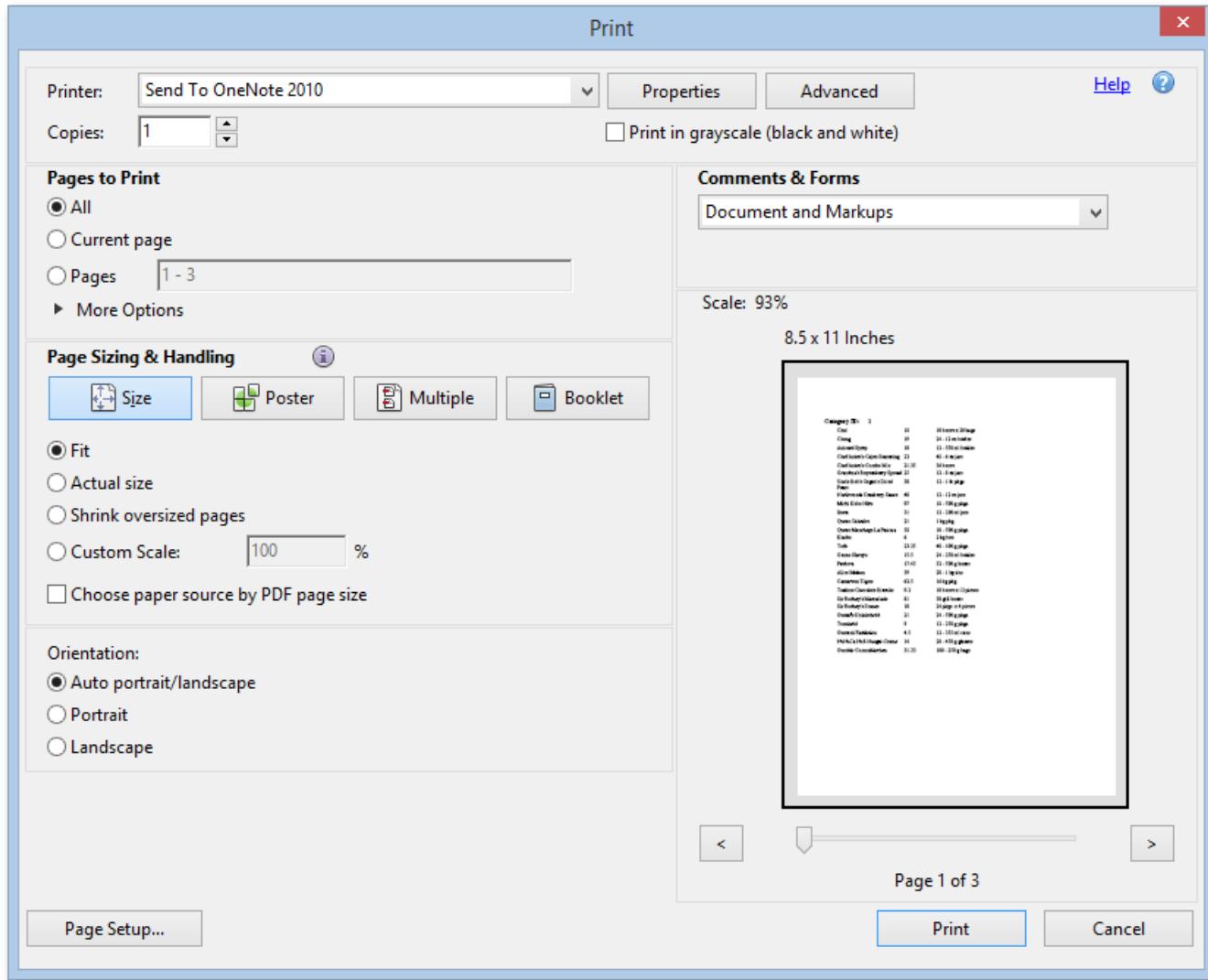
The Web Document Viewer supports pixel perfect document rendering, i.e., displays a report document exactly how it will appear on paper. The printing functionality of this Viewer is based on rendering the report in PDF with special settings and invoking the PDF plug-in's **Print** dialog.

To print the entire document, click the **Print**  button on the Viewer's toolbar. You can also print the currently displayed document page by clicking the **Print Page**  button.

When you click any of these buttons, the Document Viewer tries to use the PDF plug-in of the web browser for printing. Depending on the plug-in detection result, there are two possible scenarios.

- If the PDF plug-in is installed and enabled, its **Print** dialog is invoked. To print the document, specify the required settings in this dialog and click **Print**.
- If the PDF plug-in is disabled or is not installed, the Document Viewer exports the report document to a PDF file, and initiates its download instead of printing. The resulting PDF file contains a script that starts printing the document immediately after it is opened in a compatible viewer.

The following image shows the **Print** dialog of the **Adobe Reader®** plug-in.



To download and install the **Adobe Reader®** plug-in, use the following link: <http://get.adobe.com/reader/>. No software other than the **Adobe Reader®** should be installed on the machine for printing purposes. After finishing the installation, the plug-in should automatically be enabled in appropriate web browsers. To learn how to manually setup your browser to use this plug-in, refer to the [Display PDF in browser](#) document. For the changes to take effect, you may need to close and reopen your browser.

Note that many modern web browsers include their own PDF plug-ins, which automatically replace the **Adobe Reader®** plug-in. If you need to revert to the **Adobe** plug-in, refer to [Configure browser to use the Adobe PDF plug-in](#).

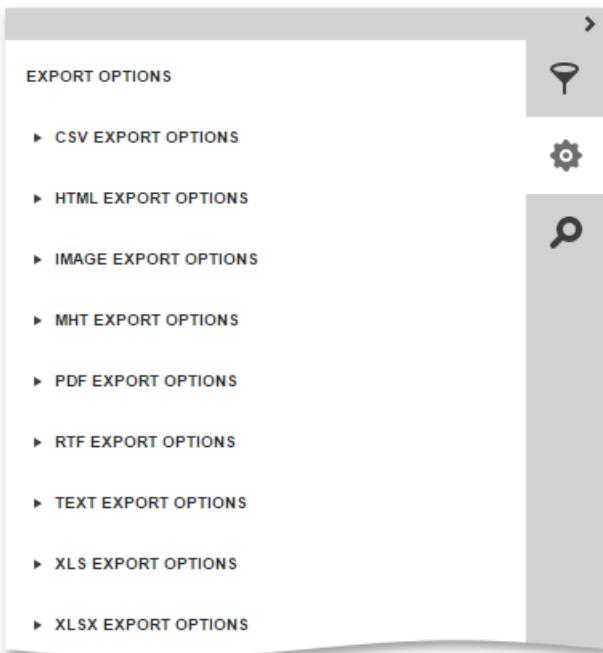
# Export a Document

To export a document to one of the supported third-party formats, click the **Export To** button on the Document Viewer toolbar and select a required format from the invoked list. The available formats are PDF, XLS, XLSX, RTF, MHT, HTML, Text, CSV and Image.



Download of the resulting document will be initiated. Depending on your web browser's configuration, a dedicated dialog can be invoked prompting you to specify whether to only save the exported file to a disk or save the file and then open it in an appropriate application. You can also be asked to specify a path for saving the file.

In addition, the Document Viewer allows you to view and edit format-specific options required to export a document in the dedicated **Export Options** panel. To switch to this panel, click the **Export Options** button on the right side of the Document Viewer.



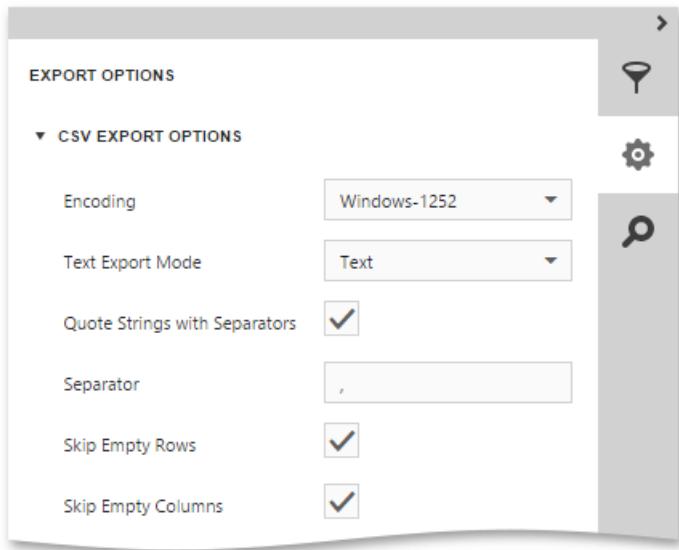
The options are allocated in groups by the export format to which they are applied. You can expand the required options group by clicking on its header. Refer to the following documents to learn more about format-specific options.

- [CSV-Specific Export Options](#)
- [HTML-Specific Export Options](#)
- [Image-Specific Export Options](#)
- [MHT-Specific Export Options](#)
- [PDF-Specific Export Options](#)

- [RTF-Specific Export Options](#)
- [Text-Specific Export Options](#)
- [XLS-Specific Export Options](#)
- [XLSX-Specific Export Options](#)

# CSV-Specific Export Options

Before [exporting a document](#) to CSV format, you can specify CSV-specific options in the dedicated **Export Options** panel.



- **Encoding**

Specifies the encoding used in the exported document.

- **Text Export Mode**

Specifies whether to use the formatting of data fields in the bound data source for cells in the exported document. If this option is set to **Text**, all data fields are exported to the CSV file as strings with the corresponding formatting embedded into those strings. If the option is set to **Value**, all formatting will be lost in the resulting document.

- **Quote Strings with Separators**

Specifies whether strings with separators should be placed in quotation marks in the exported document.

- **Separator**

Specifies a symbol used to separate text elements (comma by default).

- **Skip Empty Rows**

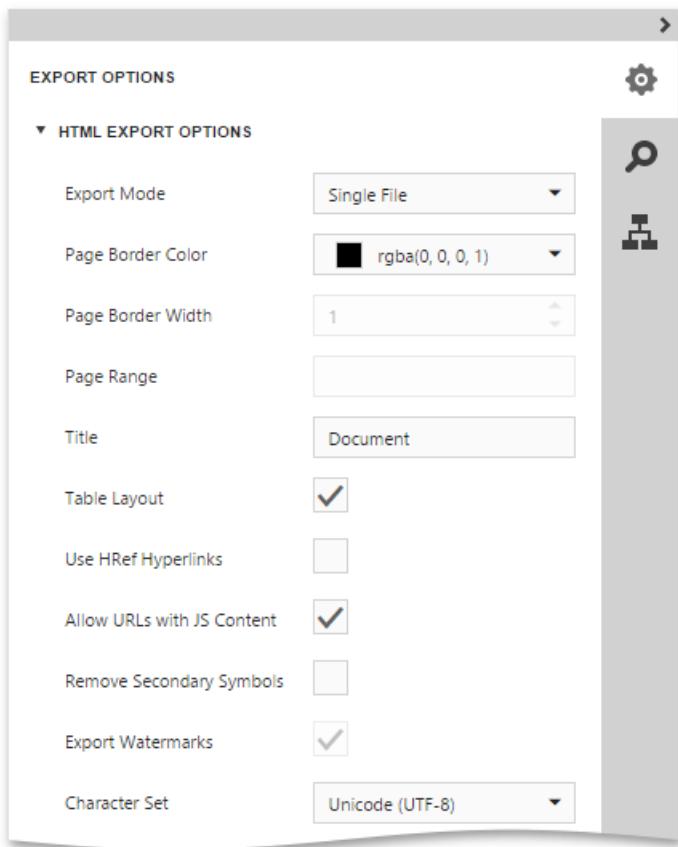
Specifies whether to include empty rows into the resulting file.

- **Skip Empty Columns**

Specifies whether to include empty columns into the resulting file.

# HTML-Specific Export Options

Before [exporting a document](#) to HTML format, you can specify HTML-specific options in the dedicated **Export Options** panel.



## • Export Mode

Specifies how a document is exported to HTML. The following modes are available.

- The **Single File** mode allows exporting a document to a single file, without preserving the page-by-page breakdown.
- The **Single File PageByPage** mode allows exporting a document to a single file, while preserving the page-by-page breakdown. In this mode, the **Page Border Color**, **Page Border Width** and **Page Range** options are available.

## • Page Border Color

Specifies the color of page borders.

## • Page Border Width

Specifies the width (in pixels) of page borders.

## • Page Range

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

## • Title

Specifies the title of the created document.

## • Table Layout

Specifies whether to use table or non-table layout in the resulting document.

## • Use HRef Hyperlinks

Specifies whether to enable the use of standard HTML link references in document navigation.

- **Allow URLs with JS Content**

Specifies whether the JavaScript code can be placed in URLs in the resulting HTML document.

- **Remove Secondary Symbols**

Specifies whether to remove all secondary symbols (for instance, **Space**, **Carriage Return**, etc.) in the resulting document to reduce its size.

- **Export Watermarks**

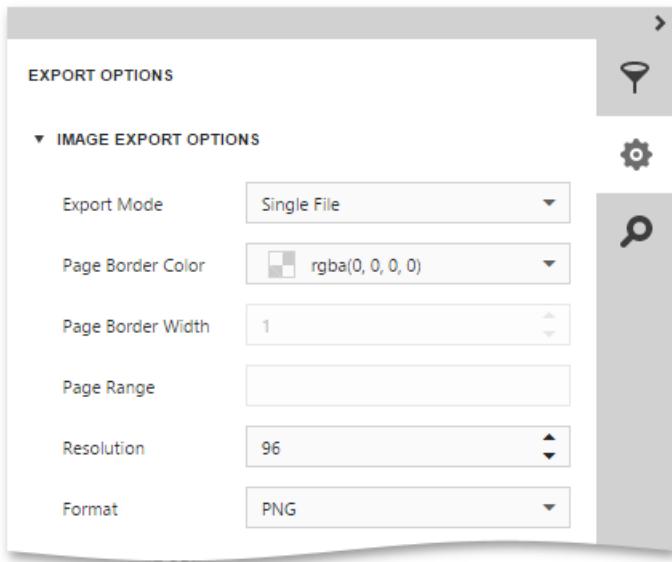
Specifies whether to export watermarks to HTML along with the rest of the document content.

- **Character Set**

Specifies the character set for the HTML document.

# Image-Specific Export Options

Before [exporting a document](#) to an image, you can specify Image-specific options in the dedicated **Export Options** panel.



- **Export Mode**

Specifies how a document is exported to an image. The following modes are available.

- The **Single File** mode allows exporting a document to a single file, without preserving the page-by-page breakdown.
- The **Single File PageByPage** mode allows exporting a document to a single file, while preserving the page-by-page breakdown. In this mode, the **Page Border Color**, **Page Border Width** and **Page Range** options are available.

- **Page Border Color**

Specifies the color of page borders.

- **Page Border Width**

Specifies the width (in pixels) of page borders.

- **Page Range**

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

- **Resolution**

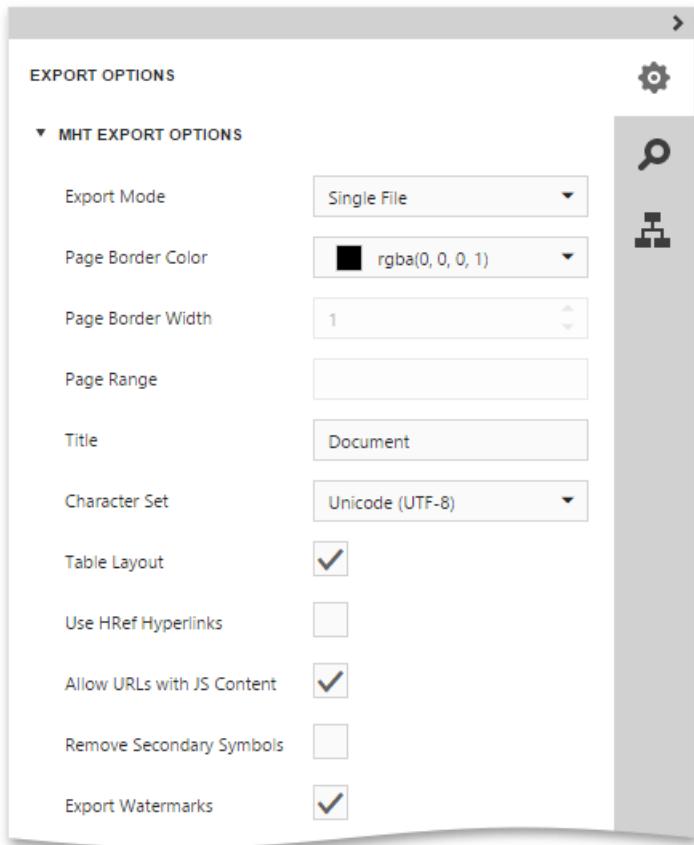
Specifies the required image resolution (in dpi).

- **Format**

Specifies an image format to export a document. Available formats are BMP, GIF, JPEG, PNG, EMF, WMF and TIFF.

# MHT-Specific Export Options

Before [exporting a document](#) to MHT format, you can specify MHT-specific options in the dedicated **Export Options** panel.



## • Export Mode

Specifies how a document is exported to MHT. The following modes are available.

- The **Single File** mode allows exporting a document to a single file, without preserving the page-by-page breakdown.
- The **Single File PageByPage** mode allows exporting a document to a single file, while preserving the page-by-page breakdown. In this mode, the **Page Border Color**, **Page Border Width** and **Page Range** options are available.

## • Page Border Color

Specifies the color of page borders.

## • Page Border Width

Specifies the width (in pixels) of page borders.

## • Page Range

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

## • Title

Specifies a title of the created MHT file.

## • Character Set

Specifies the encoding name used in the exported document.

## • Table Layout

Specifies whether to use table or non-table layout in the resulting document.

- **Use HRef Hyperlinks**

Specifies whether to enable the use of standard HTML link references in document navigation.

- **Allow URLs with JS Content**

Specifies whether the JavaScript code can be placed in URLs in the resulting HTML document.

- **Remove Secondary Symbols**

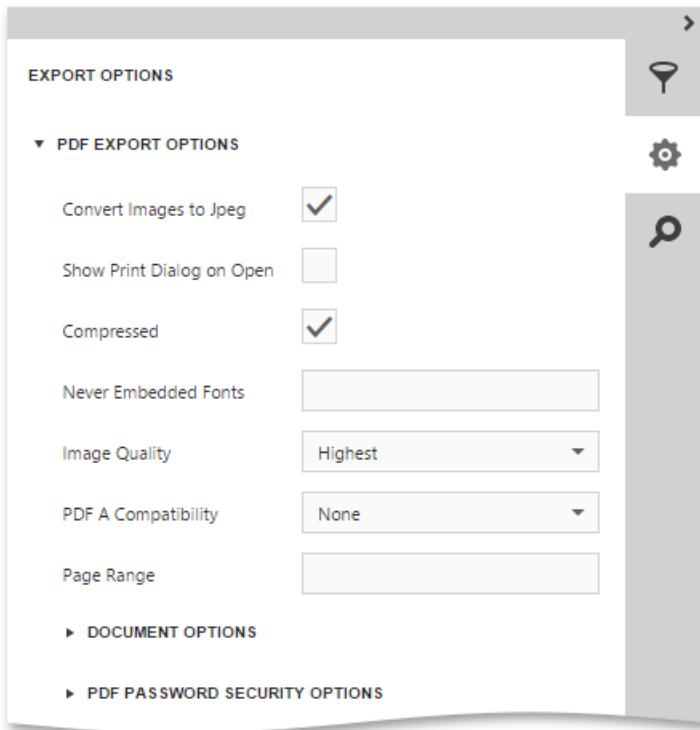
Specifies whether to remove all secondary symbols (for instance, **Space**, **Carriage Return**, etc.) in the resulting document to reduce its size.

- **Export Watermarks**

Specifies whether to export watermarks to HTML along with the rest of the document content.

# PDF-Specific Export Options

Before [exporting a document](#) to PDF, you can specify PDF-specific options in the dedicated **Export Options** panel.



## General Options

- **Convert Images to Jpeg**

Specifies whether all bitmaps contained in the document should be converted to JPEG format during export to PDF.

- **Show Print Dialog on Open**

Specifies whether the **Print** dialog should be displayed when the resulting PDF file is opened in an appropriate application.

- **Compressed**

Specifies whether the resulting file should be compressed.

- **Never Embedded Fonts**

Specifies font names which should not be embedded into the resulting file. To separate fonts, use semicolons.

- **Image Quality**

Specifies the document's image quality level. The higher the quality, the bigger the file, and vice versa.

- **PDF A Compatibility**

Specifies document compatibility with the **PDF/A** specification.

- **Page Range**

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

## Document Options

The **Document Options** complex property contains options which specify the **Document Properties** of the created PDF file. Click the complex property's header to access its nested options.

▼ DOCUMENT OPTIONS

Author	My name
Application	My application
Title	My title
Subject	My subject
Keywords	key, words

## PDF Password Security Options

This complex property allows you to adjust the security options of the resulting PDF file.

▼ PDF PASSWORD SECURITY OPTIONS

OpenPassword	
PermissionsPassword	

▼ PDF PERMISSIONS OPTIONS

PrintingPermissions	LowResolution
ChangingPermissions	InsertingDeletingRotating
EnableCopying	<input type="checkbox"/>
EnableScreenReaders	<input checked="" type="checkbox"/>

- **OpenPassword**

Specifies the password for opening the exported PDF document.

- **PermissionsPassword**

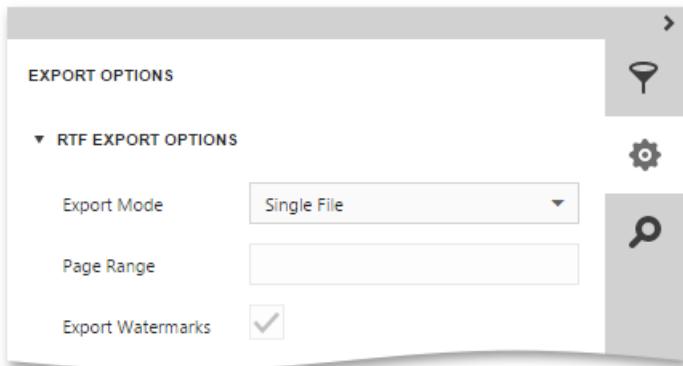
Specifies the PDF permissions password for the document.

- **PDF Permissions Options**

Provides access to the options which specify the permissions for printing, changing, copying and accessing the exported document.

# RTF-Specific Export Options

Before [exporting a document](#) to RTF, you can specify RTF-specific options in the dedicated **Export Options** panel.



- **Export Mode**

Specifies how a document is exported to RTF. The following modes are available.

- The **Single File** mode allows exporting a document to a single file, without preserving the page-by-page breakdown.
- The **Single File PageByPage** mode allows exporting a document to a single file, while preserving the page-by-page breakdown. In this mode, the **Page Range** and **Export Watermark** options are available.

- **Page Range**

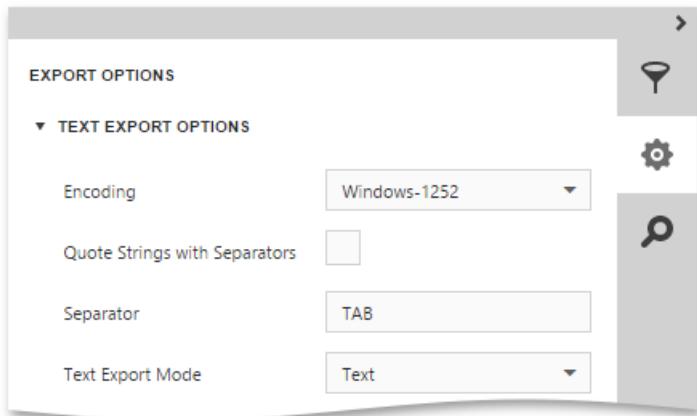
Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

- **Export Watermarks**

Specifies whether watermarks (if they exist) should be included into the resulting file.

# Text-Specific Export Options

Before [exporting a document](#) to TXT format, you can specify TXT-specific options in the dedicated **Export Options** panel.



- **Encoding**

Specifies the encoding used in the exported document.

- **Quote Strings with Separators**

Specifies whether strings with separators should be placed in quotation marks in the exported document.

- **Separator**

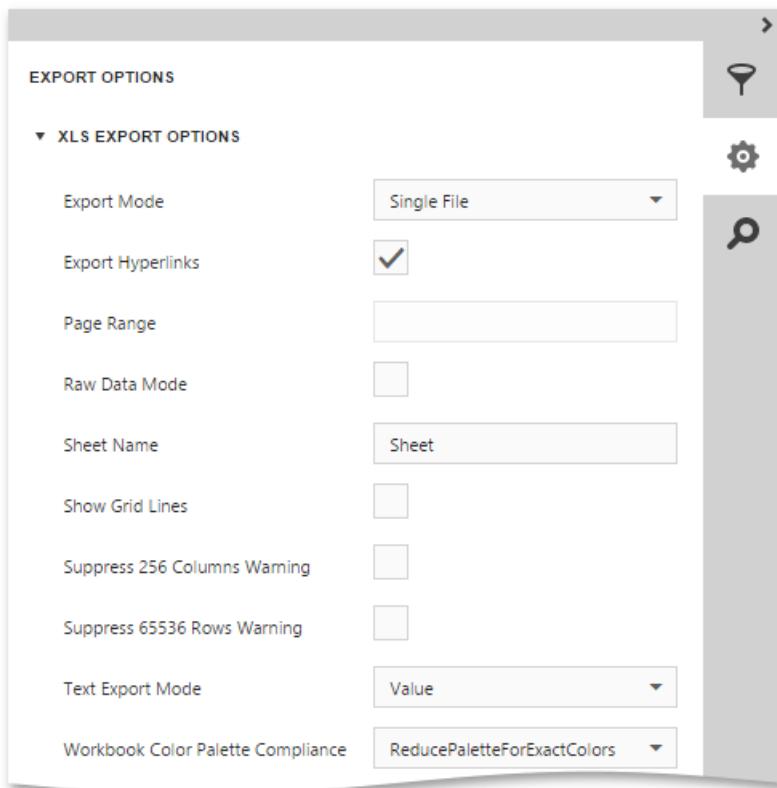
Specifies a symbol to separate text elements (TAB by default).

- **Text Export Mode**

Specifies whether to use the formatting of data fields in the bound data source for cells in the exported document. If this option is set to **Text**, all data fields are exported to the text file as strings with the corresponding formatting embedded into those strings. If the option is set to **Value**, all formatting will be lost in the resulting document.

# XLS-Specific Export Options

Before [exporting a document](#) to XLS format, you can specify XLS-specific options in the dedicated **Export Options** panel.



- **Export Mode**

Specifies how a document is exported to XLS.

- **Export Hyperlinks**

Specifies whether hyperlinks should be exported to the XLS document.

- **Page Range**

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

- **Raw Data Mode**

Specifies whether to enable the raw data export mode. In this mode, only a document's actual data is exported to XLS, ignoring non-relevant elements, such as images, graphic content, font and appearance settings.

- **Sheet Name**

Specifies the name of the sheet in the created XLS file.

- **Show Grid Lines**

Specifies whether grid lines should be visible in the resulting XLS file.

- **Suppress 256 Columns Warning**

Specifies whether to suppress the warning that appears if the resulting XLS file has more than **256** columns.

- **Suppress 65536 Rows Warning**

Specifies whether to suppress the warning that appears if the resulting XLS file has more than **65,536** rows.

- **Text Export Mode**

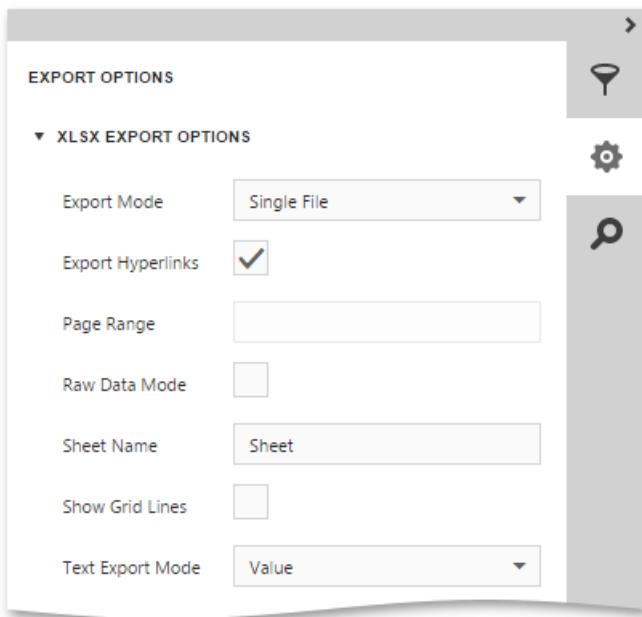
Specifies whether value formatting should be converted to the native XLS format string (if it is possible), or embedded into cell values as plain text.

- **Workbook Color Palette Compliance**

Specifies the color palette compatibility mode with different workbook versions. The workbook palette can store no more than **56** colors. If you select the **ReducePaletteExactColors** value, original color values are kept, but only the first **56** colors are included in the palette. Choose **AdjustColorsToDefaultPalette** to degrade the color values to match the **56** standard colors of the default workbook palette.

# XLSX-Specific Export Options

Before [exporting a document](#) to XLSX format, you can specify XLSX-specific options in the dedicated **Export Options** panel.



- **Export Mode**

Specifies how a document is exported to XLSX. The following modes are available.

- The **Single File** mode allows exporting a document to a single file, without dividing it into pages.
- The **Single File PageByPage** mode allows exporting a document to a single file, while preserving the page-by-page breakdown. In this mode, the **Page Range** option is available.

- **Export Hyperlinks**

Specifies whether to include hyperlinks into the resulting file.

- **Page Range**

Specifies a range of pages which will be included in the resulting file. To separate page numbers, use commas. To set page ranges, use hyphens.

- **Raw Data Mode**

Specifies whether to enable the raw data export mode. In this mode, only a document's actual data is exported to XLSX, ignoring non-relevant elements, such as images, graphic content, font and appearance settings.

- **Sheet Name**

Specifies the name of the sheet in the created XLSX file.

- **Show Grid Lines**

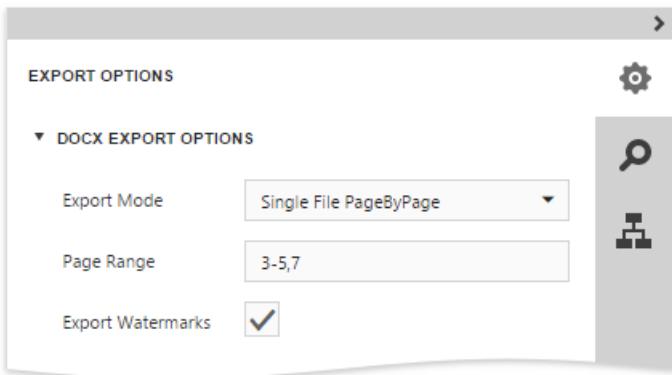
Specifies whether grid lines should be visible in the resulting XLSX file.

- **Text Export Mode**

Specifies whether value formatting should be converted to the native XLSX format string (if it is possible), or embedded into cell values as plain text.

# DOCX-Specific Export Options

Before [exporting a document](#) to DOCX format, you can specify DOCX-specific options in the dedicated **Export Options** panel.



- **Export mode**

Specifies how a document is exported to DOCX. The following modes are available.

- The **Single file** mode allows export of a document to a single file without dividing it into pages.
- The **Single file page-by-page** mode allows export of a document to a single file divided into pages. In this mode, the **Page range** option is available.

- **Page range**

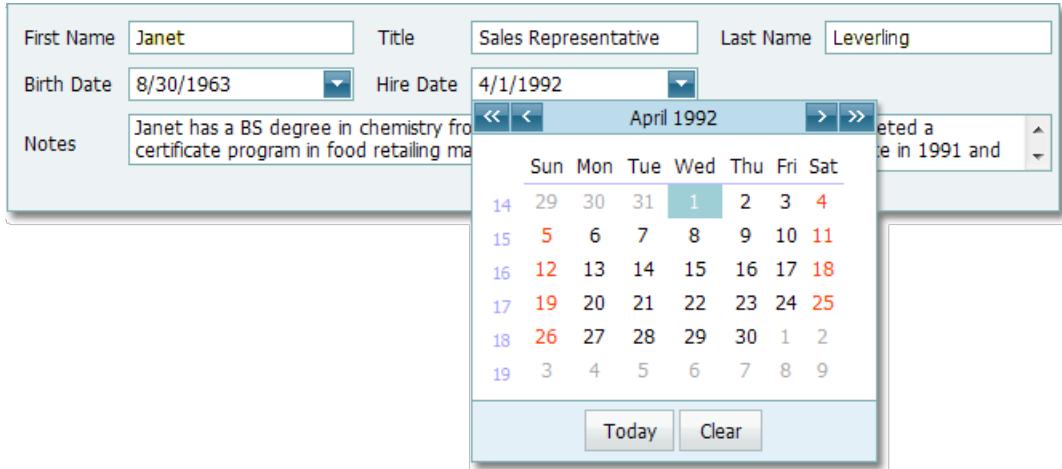
Specifies a range of pages which will be included in the resulting file. Use commas to separate page numbers. Use hyphens to set page ranges.

- **Export watermarks**

Specifies whether the exported document should include watermarks (if they exist).

# Editors

This section describes the capabilities provided by the editor controls:



- [Work with Dropdown Editors](#)
- [Editing Values, Selecting Text and Using the Clipboard](#)
- [Editor Context Menu](#)
- [Masked Input](#)
- [Calendar](#)
- [Captcha](#)
- [Color Edit](#)
- [Token Box](#)
- [Track Bar](#)
- [Validation Summary](#)

# Work with Dropdown Editors

## Open Editor's Dropdown

- Focus the editor and press ALT+DOWN ARROW or ALT+UP ARROW .
- Click the editor's dropdown button.



## Close Editor's Dropdown

For all editors providing a dropdown, you can close the dropdown by pressing ALT+DOWN ARROW, ALT+UP ARROW or ESC.

Dropdowns displaying lists of items can be closed by clicking on an item with a mouse, or by selecting an item with a keyboard and pressing ENTER.

## Filter Editor's Dropdown Content

To filter data within a dropdown, type the filter condition within an editor. Note that the filter is used after the minimum number of characters has been typed within an editor.

ale		
First Name	Last Name	Phone
Alexia	Adams	1 (525) 208-2441
Dale	Adams	1 (525) 418-3761
Alexia	Adams	1 (526) 153-9709
Dale	Adams	1 (526) 199-2846
Kaitlin	Alexander	1 (528) 486-8371
Monica	Alexander	1 (526) 269-1028
Jason	Alexander	1 (528) 155-7298

# Editing Values, Selecting Text and Using the Clipboard

## Select and Deselect Editor's Contents

To select all the text within an editor, invoke the control's [Editor Context Menu](#) and choose **Select All**. To select a part of the editor's content, click on the position where the selection should start, drag the pointer to the end position, and then release the mouse button.

Additionally, the following keyboard shortcuts allow you to manage selections.

Shortcut	Description
CTRL+A	Select all the text within an editor.
SHIFT+ARROW	Extends or shrinks the selection by one character.
CTRL+SHIFT+ARROW	Extends or shrinks the selection by one word.

## Clipboard Operations

Clipboard operations are represented by copying, cutting and pasting operations.

To copy selected text into the clipboard, do the following.

- Press CTRL+C or CTRL+INSERT.
- Open the [Editor Context Menu](#) and select **Copy**.

To paste text from the clipboard, do the following.

- Press CTRL+V or SHIFT+INSERT.
- Open the [Editor Context Menu](#) and select **Paste**.

To cut text from an editor into the clipboard, do the following.

- Press CTRL+X or SHIFT+DELETE.
- Open the [Editor Context Menu](#) and select **Cut**.

## Delete Selected Text

To delete the selected text within an editor, do one of the following:

- Press DELETE or BACKSPACE.
- Open the [Editor Context Menu](#) and select **Delete**.
- Click the clear button, which is displayed when an editor is focused and is not empty.



## Undo and Redo

To undo the last text editing operation, do one of the following:

- Press CTRL+Z.
- Open the [Editor Context Menu](#) and select **Undo**.

To redo a canceled operation, press CTRL+Y.

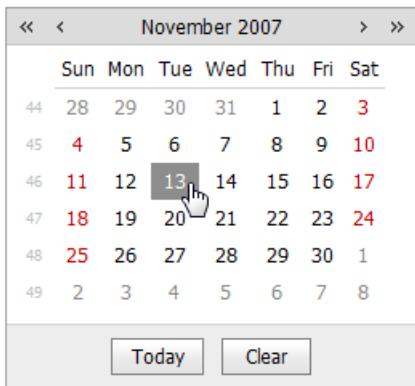
## Change Date Values within a Edit Box

To change the date value within the edit box, click the required part of the date value (month, day, year, etc.) and press the **Increment** or **Decrement** button. Alternatively, you can use the Up and Down Arrows.

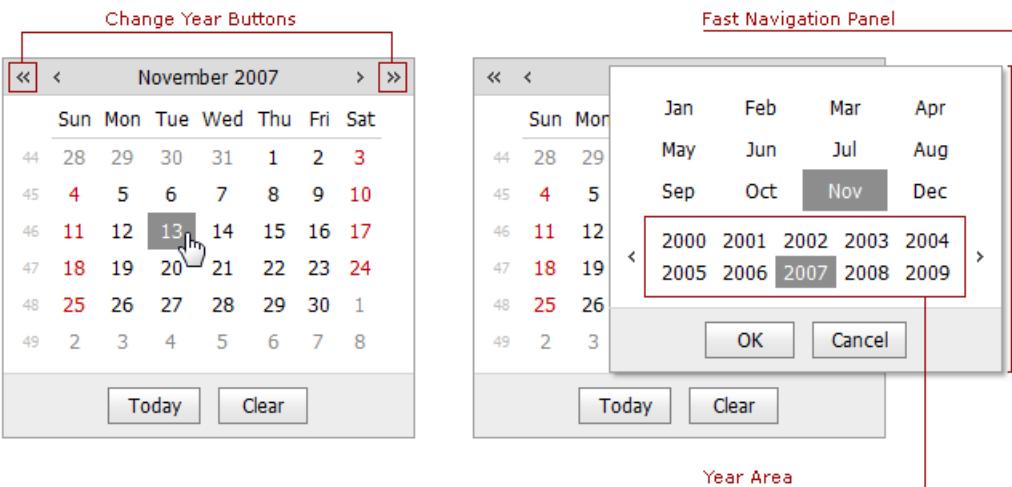


## Change Date Values within a Calendar

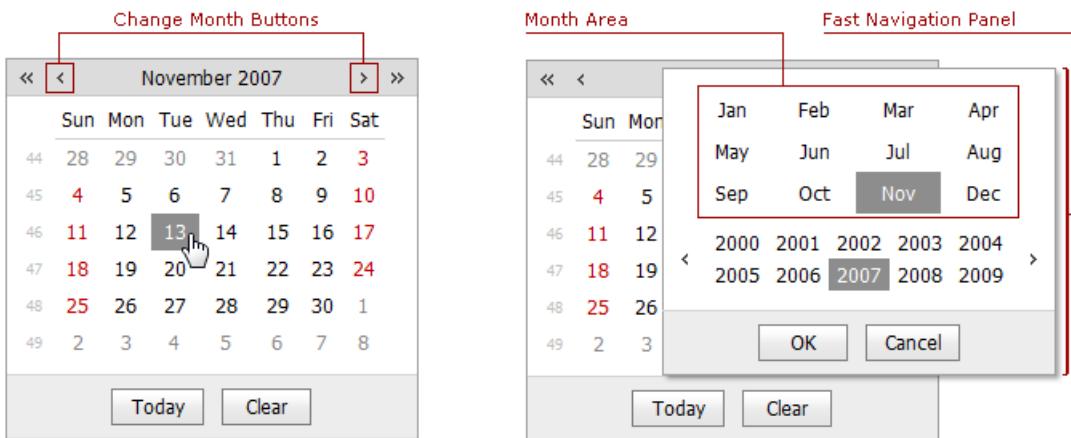
- Click a date to set a new edit value.



- To change the year value use the **<<** and **>>** calendar buttons. Also, you can click the current date within the control header and specify the year within the opened fast navigation panel.

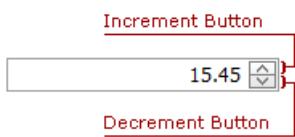


- To change the month value, use the **<** and **>** calendar buttons. Also, you can click the current date within the control header and specify the month within the opened fast navigation panel.



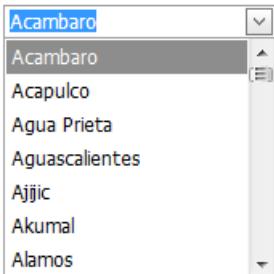
The arrow keys can also be used for navigating within the calendar.

## Change Numeric Values



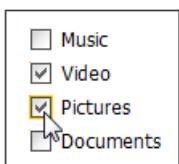
To increment a value, press the UP ARROW or increment button. To decrement the value, press the DOWN ARROW or decrement button. Or, use the mouse wheel.

## Change Values of Editors That Display Items in the Dropdown



To select the previous or the next value, press the UP or DOWN ARROW. Or, use the mouse wheel.

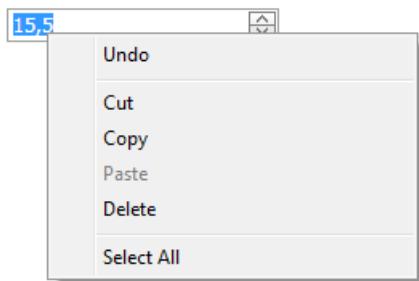
## Items Selection in Check Box List



To select required items in the check box list, just click the items or the respective check boxes.

# Editor Context Menu

Text editors support a context menu. To open the menu, right-click an editor.



# Masked Input

Masked input functionality is available for the text and date editors. It allows end users to enter the string in the specified format. For instance, a text editor shall accept date/time values in the 24-hour format only, or only numeric values, or a phone number that only allows an end-user to enter digits into automatically constructed placeholders.

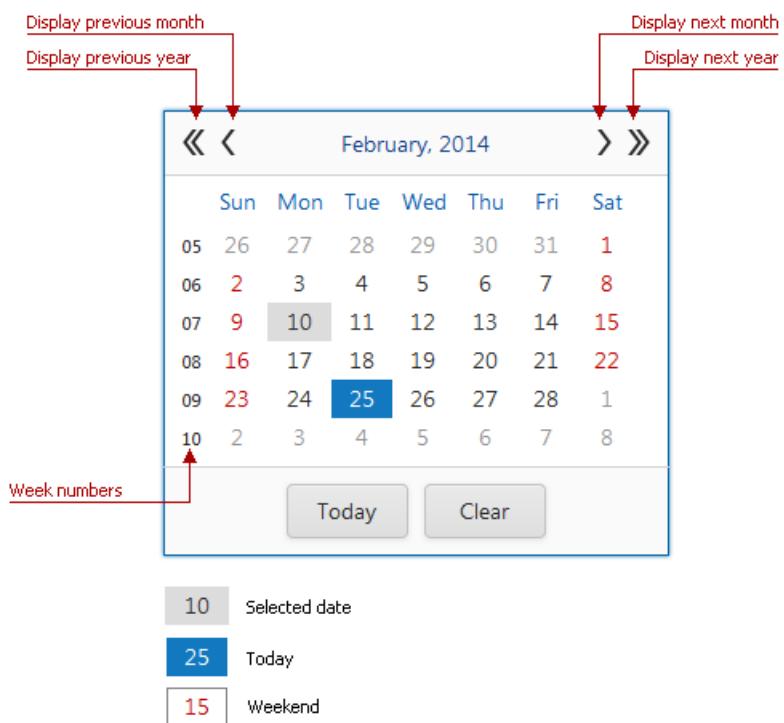
The screenshot shows a user interface for managing dates and numbers. On the left is a calendar for April 2009, with the date April 09, 2009 selected. Below the calendar are two text input fields: 'Zip Code' and 'Telephone'. To the right of the telephone field is another text input field labeled 'Price'. The 'Zip Code' field contains a single digit '1'. The 'Telephone' field contains the prefix '+1 (' followed by a space and a hyphen -. The 'Price' field contains '\$0.00'. At the bottom of the interface are two buttons: 'Today' and 'Clear'.

## Note

The keyboard and mouse wheel can be used to incrementally modify portions of the edit value.

# Calendar

The **Calendar** is used to [select dates](#), and allows you to navigate through months and years.



The header buttons in the Calendar allow you to navigate through months and years. Click the header text (i.e., the current month and year) to display the [Fast Navigation Window](#).

## Keyboard Support

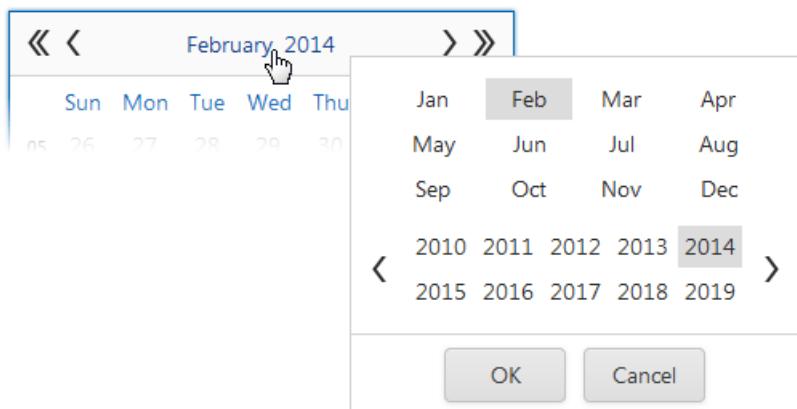
KEY COMBINATION	ACTION (WHEN NO DATE IS SELECTED)	ACTION (WHEN A DATE IS SELECTED)
LEFT ARROW	Selects the current day	Moves selection to the previous day
RIGHT ARROW	Selects the current day	Moves selection to the next day
UP ARROW	Selects the current day	Moves selection one week back
DOWN ARROW	Selects the current day	Moves selection one week forward
PAGE UP	Selects the current day	Moves selection one month back
PAGE DOWN	Selects the current day	Moves selection one month forward
END	Selects the last day of the current month	Moves selection to the last day of the month
HOME	Selects the first day of the current month	Moves selection to the first day of the month
ENTER	Applies changes	Applies changes
ESC	Cancels changes and closes the calendar	Cancels changes and closes the calendar

This section consists of the following topics.

- [Fast Navigation Window](#)
- [Date Selection](#)

# Fast Navigation Window

The **Fast Navigation** window allows you to easily select a month and year to be displayed in the calendar. To display the Fast Navigation window, click the calendar header text. To hide the window, click **OK** or **Cancel**, click outside the window, or press the ESC key.

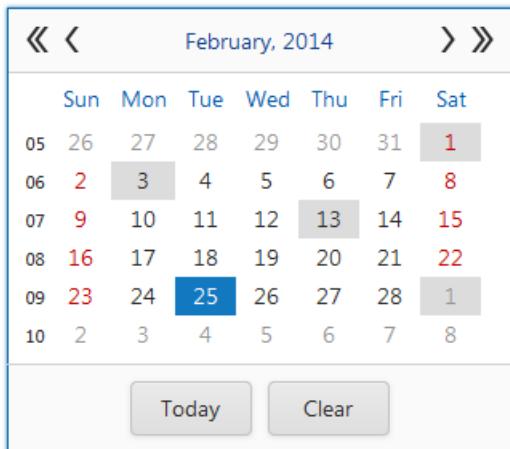


## Keyboard Support

KEY COMBINATION	ACTION
LEFT ARROW	Moves the selected year one year back
RIGHT ARROW	Moves the selected year one year forward
UP ARROW	Moves the selected year five years back
DOWN ARROW	Moves the selected year five years forward
SHIFT+LEFT ARROW	Moves the selected month one month back
SHIFT+RIGHT ARROW	Moves the selected month one month forward
SHIFT+UP ARROW	Moves the selected month four months back
SHIFT+DOWN ARROW	Moves the selected month four months forward
PAGE UP	Moves the selected year ten years back
PAGE DOWN	Moves the selected year ten years forward
ENTER	Applies changes
ESC	Cancels changes and closes the Fast Navigation window

# Date Selection

Click a date to select it in the calendar. Click **Today** to select today's date. To clear the selection, click **Clear**.



## Multiple Date Selection

If multiple date selection is allowed by the application vendor, you can select dates in the following ways.

- Focus a date while holding the CTRL key to select or deselect the date without changing the other selection(s).
- Move focus using either the ARROW keys or the mouse while holding down the SHIFT key.
- Press and hold the left mouse button while moving it.

# Captcha

The Captcha is used to distinguish human input from machine input.

Enter the code displayed within the challenge image into the text box.

If a code seems unreadable, click the refresh button to refresh the code .

Challenge Image



Type the code shown:

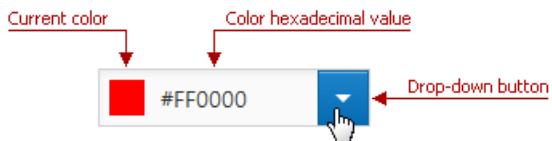
Text Box

Refresh Button

Text Box

# Color Edit

The Color Edit is used to specify a color. The editor displays the current color and its hexadecimal value.



Click the drop-down button to display the drop-down color palette.



## Specifying a color in the Color Edit

Using the Color Edit, you can specify a color in the following ways.

### Using the color palette

To select a color, click it in the drop-down color palette.

### Using the text edit

You can specify the color by typing it directly in the editor's text box. Note that in this case you can specify custom colors that are not displayed in the drop-down palette. You can specify a color in the following color formats.

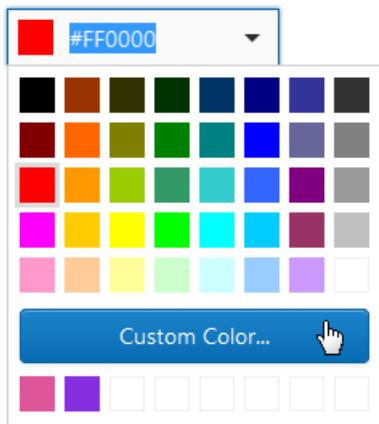
FORMAT	EXAMPLES	IMAGE	DESCRIPTION
HTML color name	RED, aquamarine, DarkViolet	<input type="color" value="green"/>	Standard HTML color names.
Longhand hexadecimal notation	#00FFFF, 2fa135, #abcdef	<input type="color" value="#FFFF00"/>	#RRGGBB, where RR is red, GG is green, and BB is blue. These hexadecimal integers specify the components of the color. All values must be between 0 and FF. The hash (#) sign can be skipped.
Shorthand hexadecimal notation	#OFF, 21f, #afa	<input type="color" value="#F0F"/>	#RGB, where R is red, G is green, and B is blue. These hexadecimal integers specify the components of the color. All values must be between 0 and F. The hash (#) sign can be skipped.
RGB format	rgb(143,26,225), RGB(255,255,0), rgb(0,0,0)	<input type="color" value="rgb(255,0,0)"/>	RGB(red, green, blue). Each parameter (red, green, and blue) defines the intensity of the color and must be an integer between 0 and 255.

#### Note

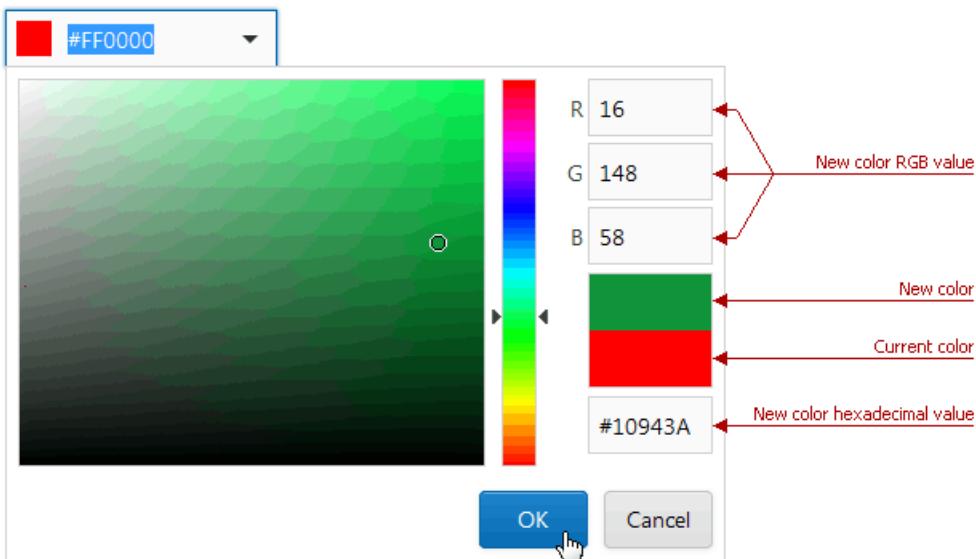
If you specify the wrong value, the editor returns the last correct value.

# Custom Color Picker

The Custom Color Picker allows you to select a custom color using a graphical interface.



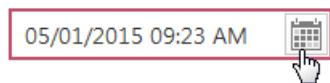
To display the color picker, click **Custom Color....**



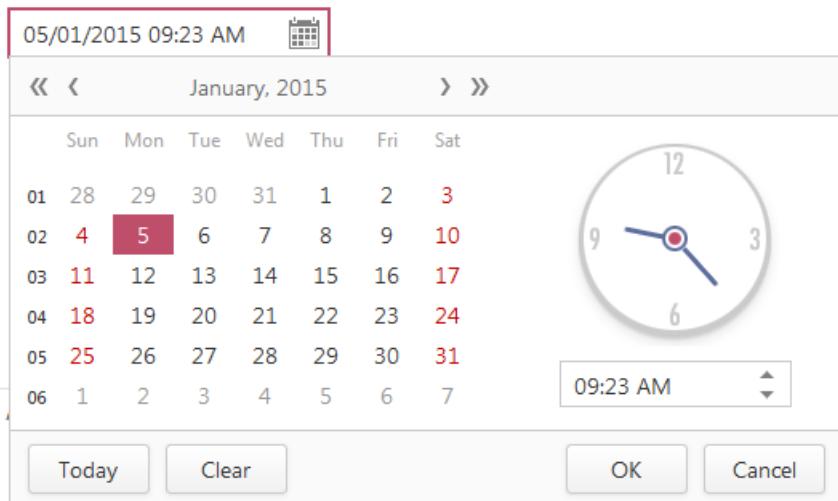
In the invoked drop-down window, select a color and click **OK**. The color will be added to the custom color palette, which is displayed under the **Custom Color...** button.

# Date Edit

The Date Edit is used to specify a date and time.



Click the drop-down button to display a drop-down window containing a [calendar](#) and time section.



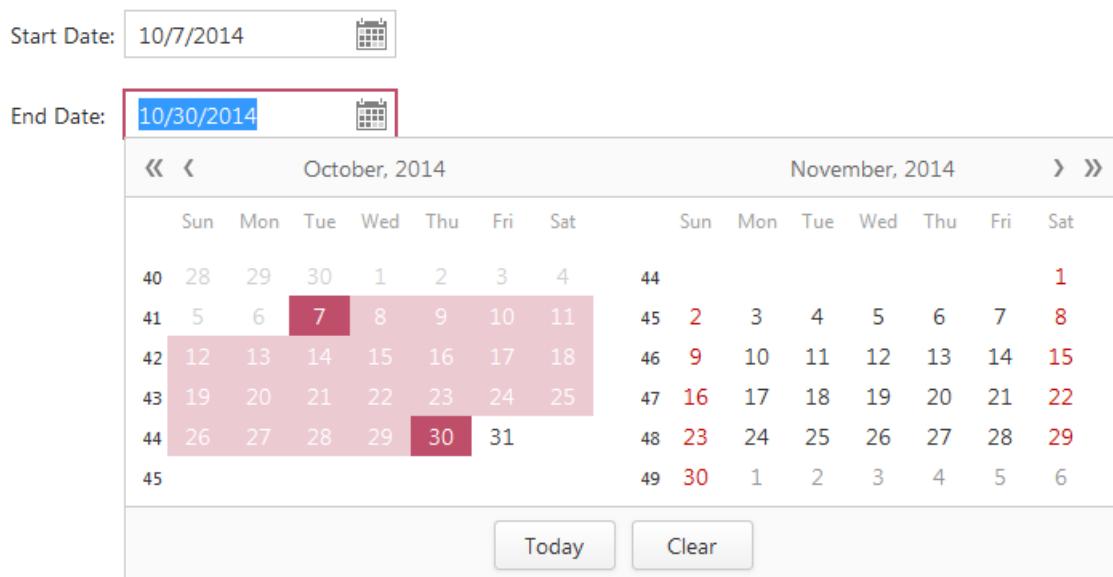
## Specifying a date in the Date Edit

To specify a date in the Date Edit, do one of the following.

- Click a date in the drop-down [calendar](#).
- Type a date directly in the editor's text box.

## Date Range Picker

A date range picker is used to specify a date range. The picker is implemented by two Date Edits.



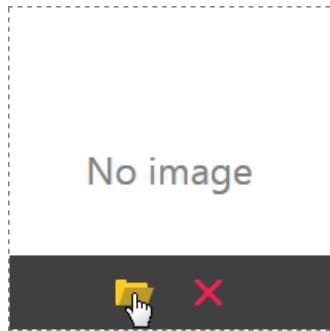
To specify a date range, do the following.

- Select a start range date in "Start Date".

- Select an end range date in "End Date".

# Image Uploading

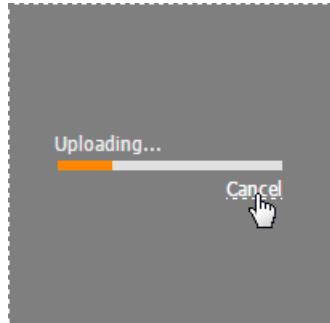
Click the **Upload Image** button to invoke the **File Upload** dialog. In the dialog, select an image to be uploaded and click **Open**.



You can upload image by dropping it to the image area as well.



You can cancel file uploading process by clicking the **Cancel** button.

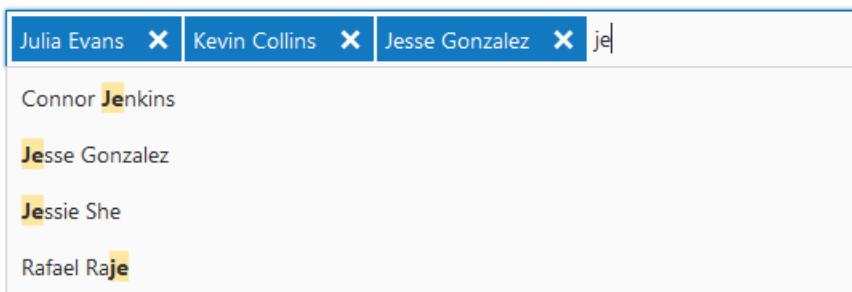


To change the current image, click the **Upload Image** button. To remove the image, click the **Clear** button.



# Token Box

The Token Box allows you to select values using a predefined value list.



## How to Add a Token

You can add a token in the following ways.

- Type the token name in the Token Box. To end a token input, type a comma (,) or semicolon (;) character, press the ENTER key, or click an area outside of the Token Box.
- Select a token from the predefined token list in the drop-down window. Start typing a token name to filter the list of values according the typed text. You can navigate through values using the UP ARROW and DOWN ARROW keys, or by using the mouse scroll wheel. To select a token press the ENTER key or click the desired value.

Note that tokens must be unique, so you cannot add the same tokens twice.

## How to Remove a Token

To remove a token, click the **Remove** button.



You can remove the last token by pressing the BACKSPACE key when the Token Box is focused. The last token will be displayed as the selected text, and you can remove it by pressing the DELETE key.



# Track Bar

You can select a value within the Track Bar by positioning the drag handle within a range of values limited by a developer. The drag handle position can be changed in the following manner:

- **By clicking on the track or scale**

You can click the track or scale in the desired place in order to change the track bar value.

[See animation.](#)

- **By clicking on decrement and increment buttons**

You can click increment and decrement buttons in order to change the drag handle position.

[See animation](#)

- **Via the mouse wheel**

If a track bar is in focus, you can scroll the mouse wheel in order to change a drag handle position.

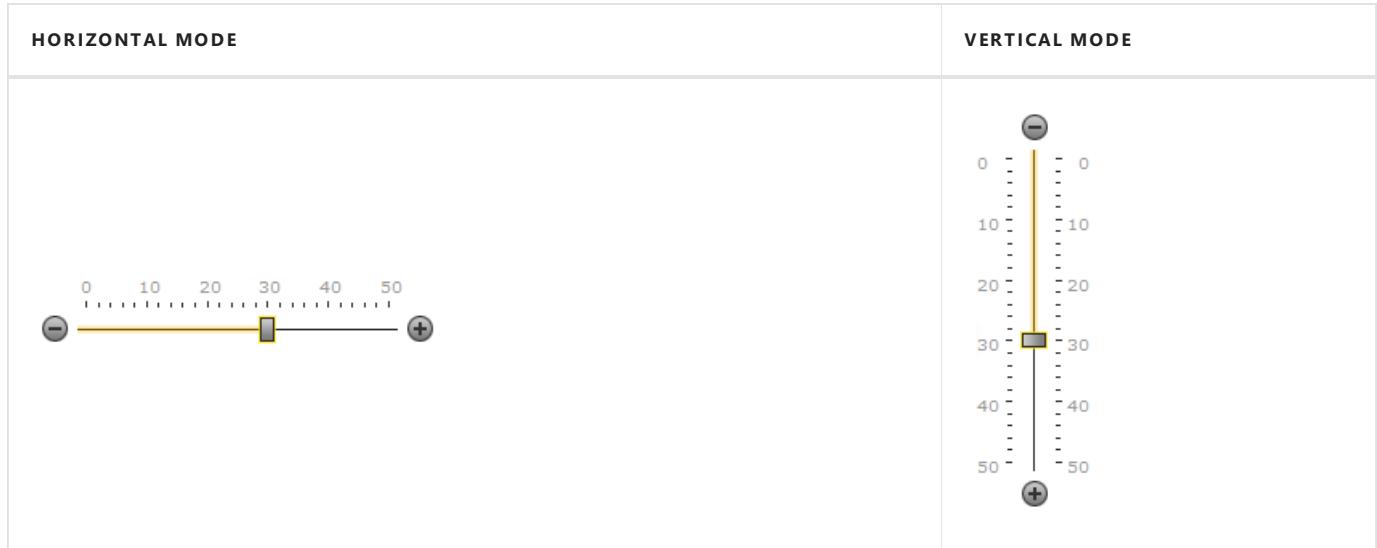
- **By dragging the handles**

You can drag the handle and drop it at the required position.

[See animation.](#)

- **By pressing arrow keys**

If the track bar is in a horizontal orientation mode, end-users can use left/right arrows to change the track bar value, if in a vertical orientation mode - up/down arrows.



- **Bar Highlight moving**

If the track bar is in a range selection mode, you can select a range of values instead of a single value. The track bar control provides you with the ability to move the selected range along the track by dragging the track highlighted part called bar highlight.

[See animation.](#)

Note that the track bar control automatically marks the last clicked handle as focused and highlights it by default. You can change its position using arrow keys, increment/decrement buttons and the scroll wheel. Note that a click on the track or a scale changes the position of the nearest drag handle.

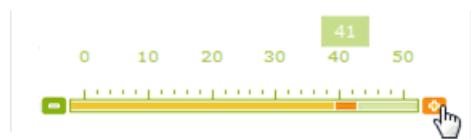
# Track and Scale Clicks

The following image demonstrates how you can change track bar values by clicking on the track or a scale.



# Change Buttons Clicks

The following image demonstrates how you can change track bar values by clicking the change buttons.



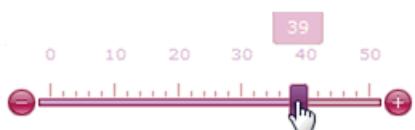
# Dragging Bar Highlight

The following image demonstrates how you can move a selected range (bar highlight).



## Drag Handle Drag-n-Drop

The following image demonstrates how you can change track bar values by dragging the handle and dropping it on the required position.



# Validation Summary

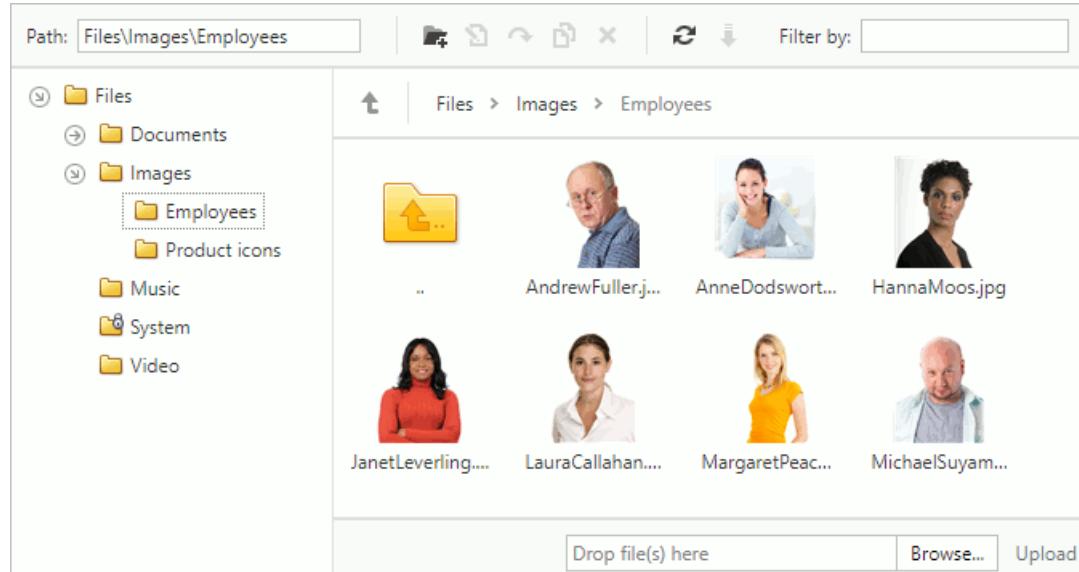
Editors validate input values. If a value doesn't pass validation, the explanatory notes are displayed in red. If allowed by the application vendor, the notes can serve as links. Clicking a link in this case, moves focus to the corresponding invalid editor.

Name:	<input type="text" value="Rachel"/>
Birthday:	<input type="text"/>
Occupation:	<input type="text" value="Administrative"/>
Email:	<input type="text" value="MyMail@com"/>

- [Birthday is required](#)
- [Invalid e-mail](#)

# File Manager

This section describes the File Manager's features.



- [File and Folder Editing](#)
- [Filtering Files](#)
- [Multiple File Selection](#)
- [Uploading Files](#)
- [Downloading Files](#)
- [Details View](#)
- [Access Control](#)
- [Adaptive Layout](#)

# File and Folder Editing

## Create a Folder

To create a new folder:

- Select the folder in which you wish to create a child folder.
- Click the **Create** button () or press F7.
- Type the new folder name.



## Rename Files and Folders

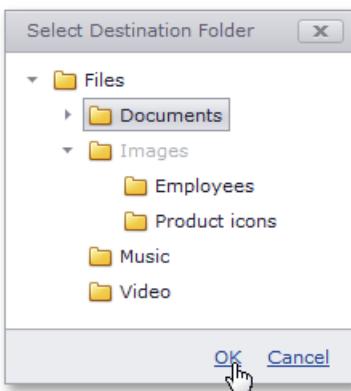
To rename a file or folder:

- Select the file/folder you wish to rename.
- Click the **Rename** button () or press F2.
- Type the new folder name.

## Move Files and Folders

To move a file or folder:

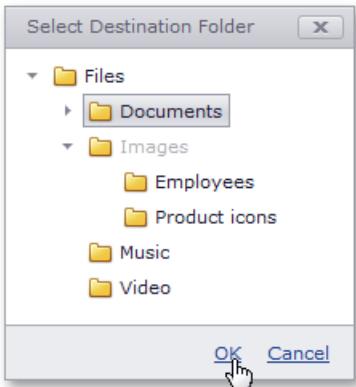
- Select the file/folder you wish to move.
- Click the **Move** button () or press F6.
- Select the folder in which you wish to move the file/folder and click **OK**.



## Copy Files and Folders

To copy a file or folder:

- Select the file/folder you wish to copy.
- Click the **Copy** button ()
- Choose the folder to which you wish to copy the file/folder and click **OK**.



## Delete Files and Folders

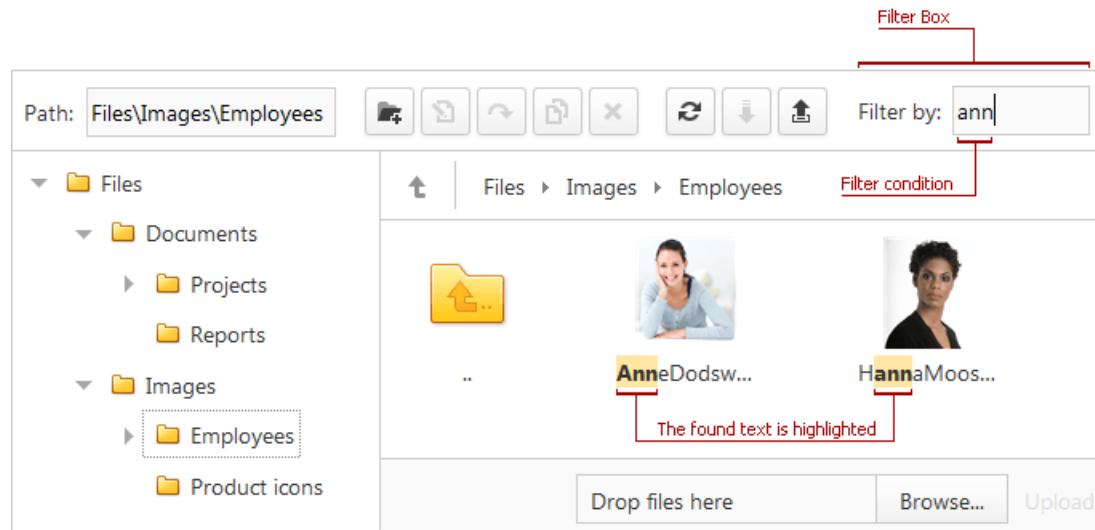
To delete a file or folder:

- Select the file/folder you wish to delete.
- Click the **Delete** button ( ) or press the DELETE key.

# Filtering Files

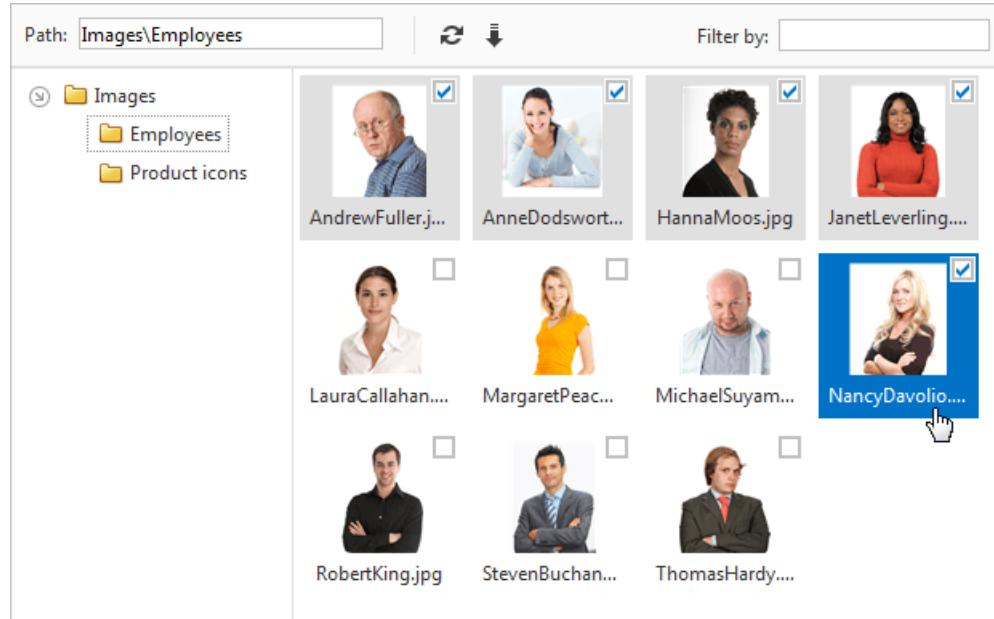
You can filter file manager items within the current folder and subfolders.

- Type text in the filter box to filter files or change the filter conditions.
- Clear the text from the filter box to remove a filter.



# Multiple File Selection

The file manager allows you to choose multiple files and perform actions on them simultaneously.



You can select multiple files by doing one of the following.

- Use the arrow keys to move focus and the SPACE key to mark a focused file as either selected or unselected.
- Focus a file while holding the CTRL key to select or deselect a file without changing the other selection.
- Use the arrow keys or the mouse while holding down the SHIFT key to move focus.
- Click a file's check box to select or deselect a file without changing the other selection.

# Uploading Files

To upload files by a file manager do the following.

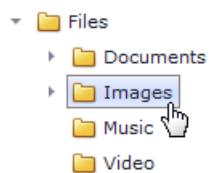
- Click **Browse**.



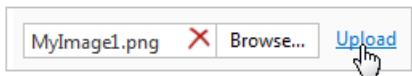
- Select a file you want to upload. Its name is shown in an editor.



- Select a folder into which you want to upload the file.



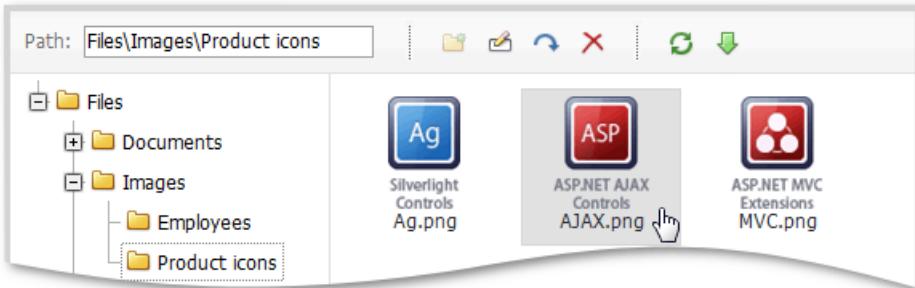
- Click **Upload**.



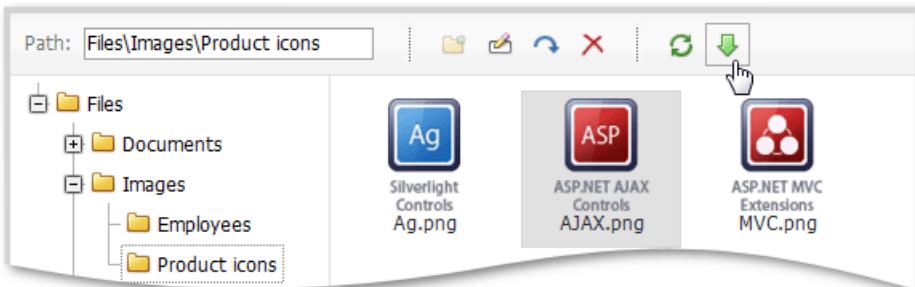
# Downloading Files

To download files from the file manager, do the following.

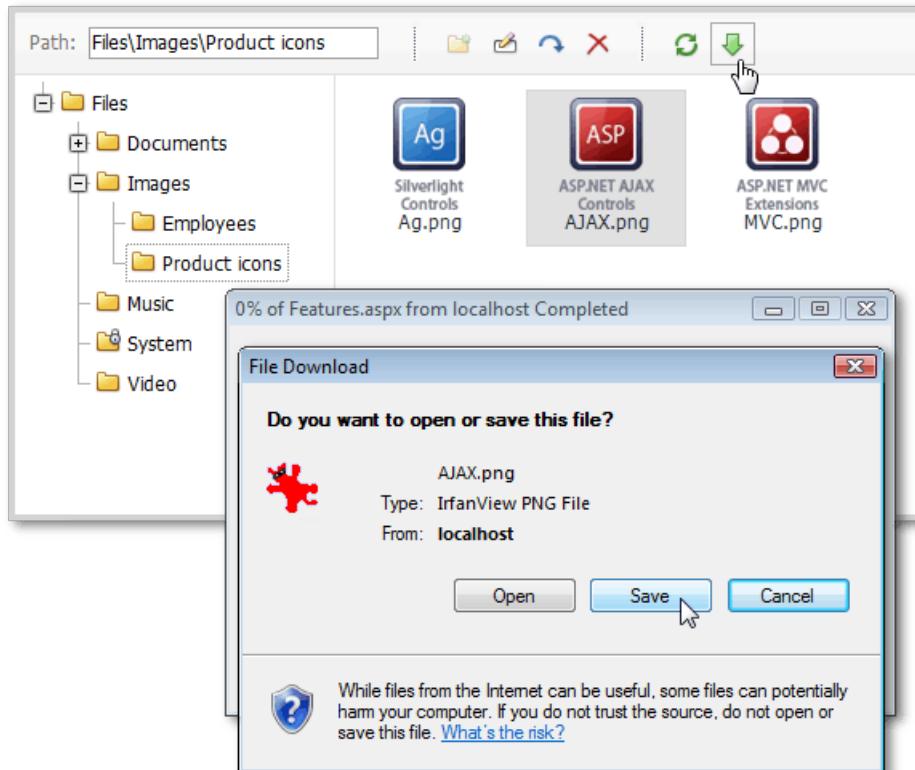
- Select the files you wish to download.



- Click the **Download Button**.



- Click **Save** in the dialog invoked by your browser.



# Details View

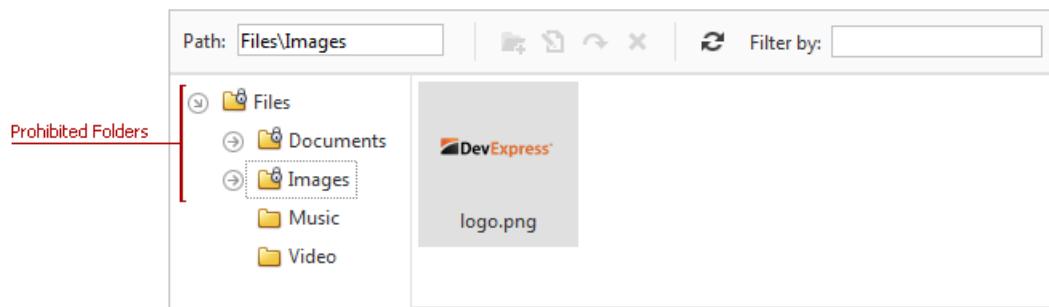
The file manager allows you to perform the following actions in the details view.

- Resize a column
- Drag-and-drop a column
- Sort files by column values
- Filter files

Path: Arts\Leonardo Da Vinci\1471 - 1480		Filter by:	
	Name	Date modified	Size
📁 Arts	CrepuscularOldMan.jpg	1/26/2011 3:44:31 PM	28.97 KB
📁 Leonardo Da Vinci	Ginevra de' Benci.jpg	1/26/2011 3:46:58 PM	24.83 KB
📁 1471 - 1480	LandscapeNearFigueras.jpg	1/26/2011 3:44:38 PM	18.16 KB
📁 1481 - 1490	Madonna of the Carnation.jpg	1/26/2011 3:47:03 PM	32.06 KB
📁 1491 - 1500	The Baptism of Christ.jpg	1/26/2011 3:47:08 PM	34.12 KB
📁 Raphael	Voyeur.jpg	1/26/2011 3:44:42 PM	22 KB
📁 Salvador Dali			
📁 Van Gogh			

# Access Control

If a folder is displayed with a lock, it means that all file/folder modifications and file uploads to this folder are prohibited.

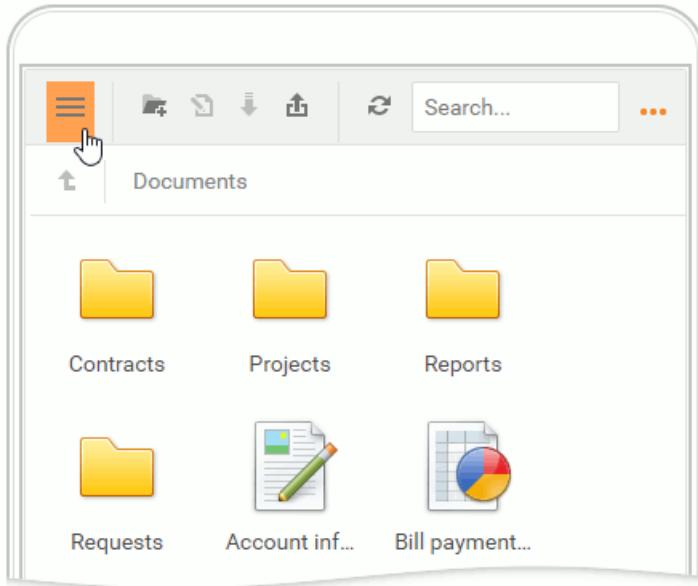


# Adaptive Layout

The file manager's elements are automatically rearranged when the browser window is resized.

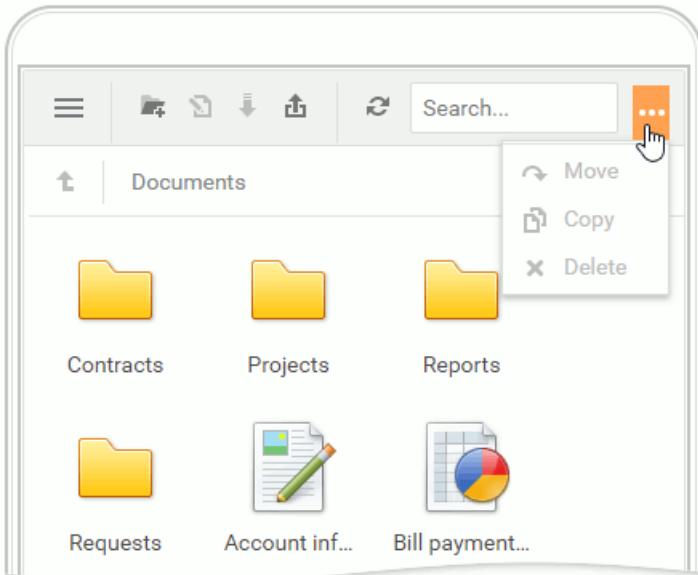
## Folder Container

Click the hamburger button to expand/collapse the folder container in the toolbar's left side.



## Toolbar

The file manager automatically resizes or hides the toolbar items in the popup menu hidden under the ellipsis button. Click the ellipsis button to show the hidden items.



## File Container

The file container grid automatically hides columns one by one when the browser window is resized.

Filter by:

	Name	Date	Size
▼ Arts			
▼ Leonardo Da	CrepuscularOldMan.jpg	...	...
1471 - 14	Ginevra de' Benci.jpg	...	...
1481 - 14	LandscapeNearFigueras.jpg	...	...
1491 - 15	Madonna of the Carnation.jpg	...	...
▶ Raphael	The Baptism of Christ.jpg	...	...
▶ Salvador Da	Voyeur.jpg	...	...
▶ Van Gogh			

# File Upload

This section describes the capabilities provided by the File Upload element.

MyImage1.png	X	Browse...	Remove
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[Add](#) [Upload](#)

- [Uploading a Single File](#)
- [Uploading Multiple Files](#)
- [Canceling File Uploading](#)
- [Multi-File Selection](#)

# Uploading a Single File

To select a file, click **Browse** or the input area, and select a file within the invoked **Choose File** dialog.

Click here to browse files...  

Allowed image types: jpeg, gif  
Maximum file size: 4Mb

[Upload](#)

As a result, the selected file's name is placed into the edit box. Then, click **Upload** to upload the selected file to the server.

MyImage1.gif   

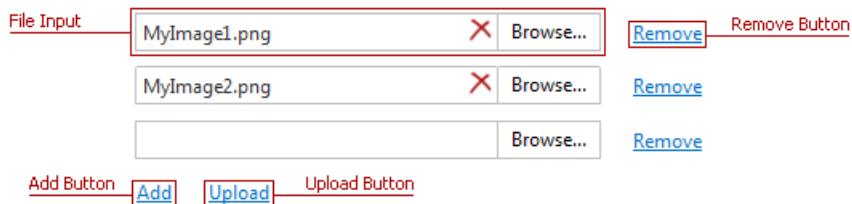
Allowed image types: jpeg, gif  
Maximum file size: 4Mb

[Upload](#) 

# Uploading Multiple Files

To upload multiple files, do one of the following.

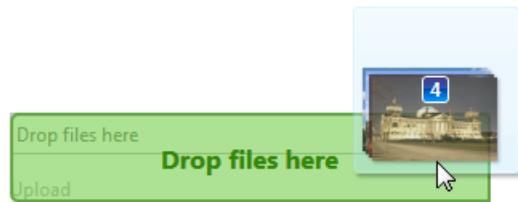
- Select a file for upload within a file input using the **Browse** button.



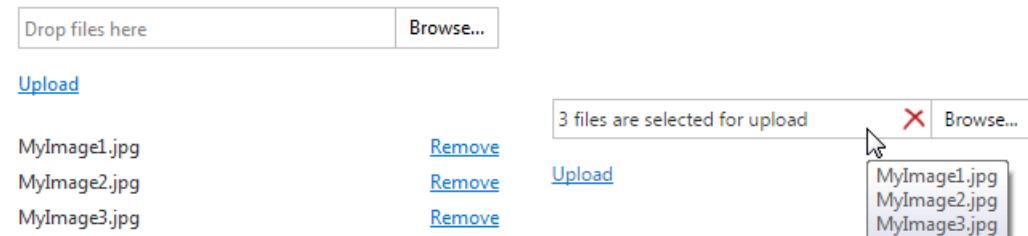
Use the **Add** button to add a file input to the File Upload.

Use the **Remove** button to delete a file input from the File Upload.

- Click **Browse** and select **multiple files**, or drag the required files to File Upload.



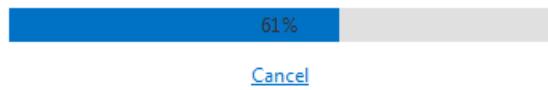
The selected files will be displayed in a file list or within the file input tooltip.



Then, click **Upload** to upload the selected files to the server.

# Cancelling File Uploading

File uploading can be cancelled by using the specific **Cancel** button.



# Multi-File Selection

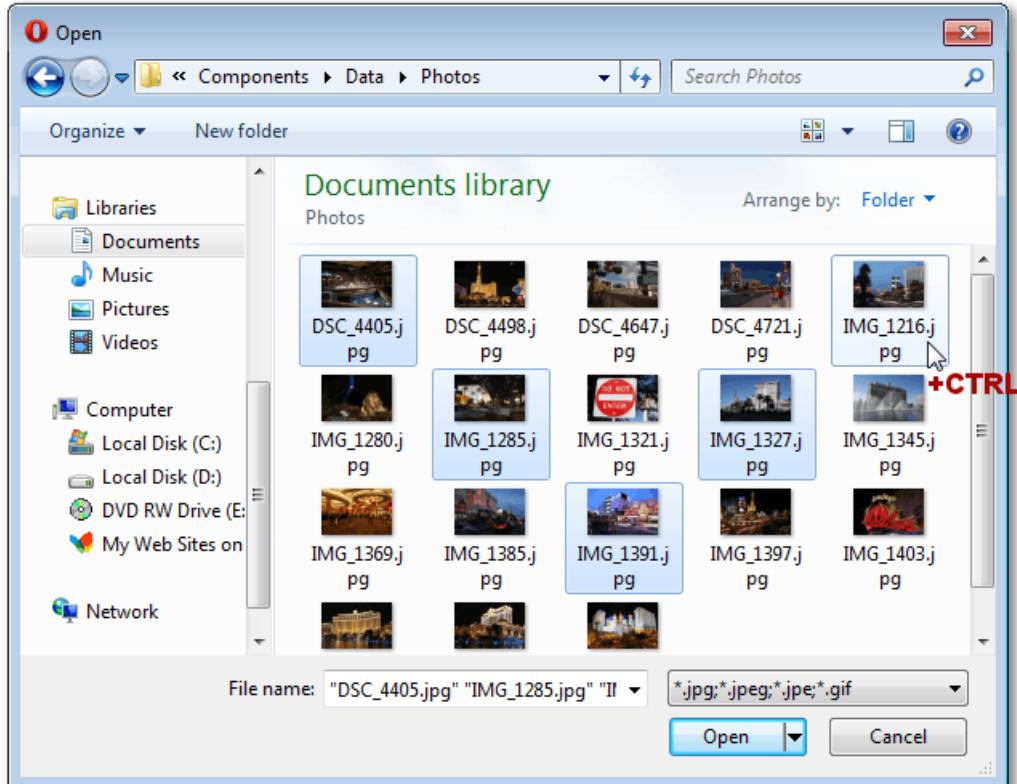
You can upload several files at once if multiple file selection is allowed by the application vendor.

Click **Browse** to invoke the file chooser.

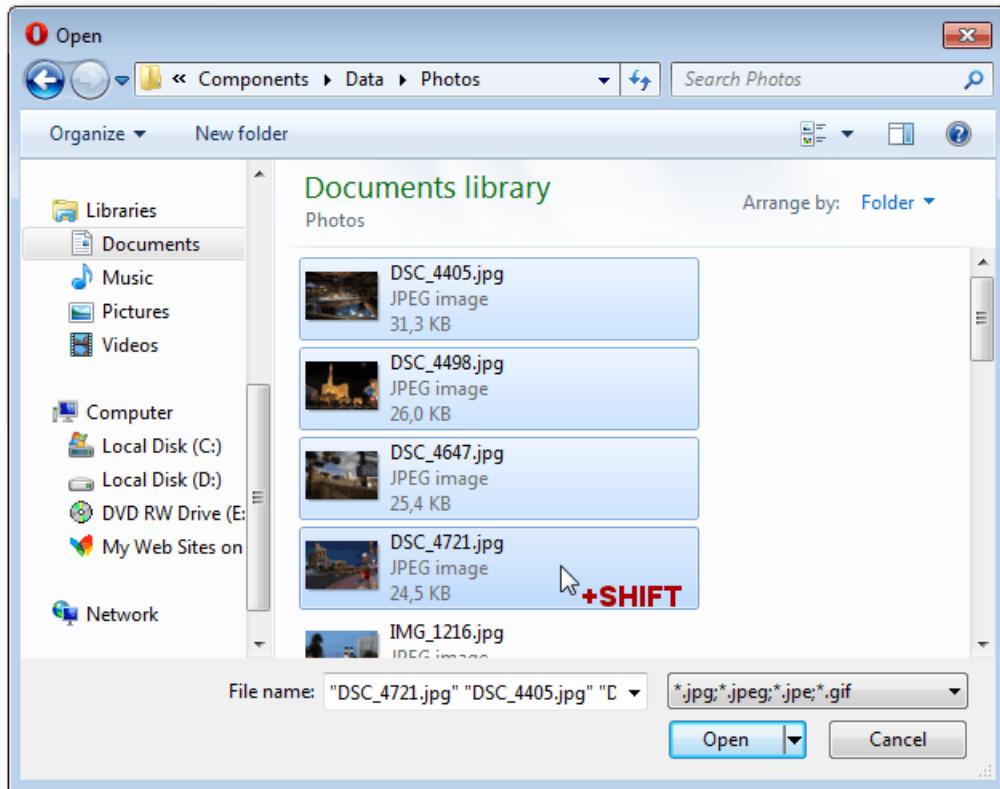


You can select multiple files by doing one of the following.

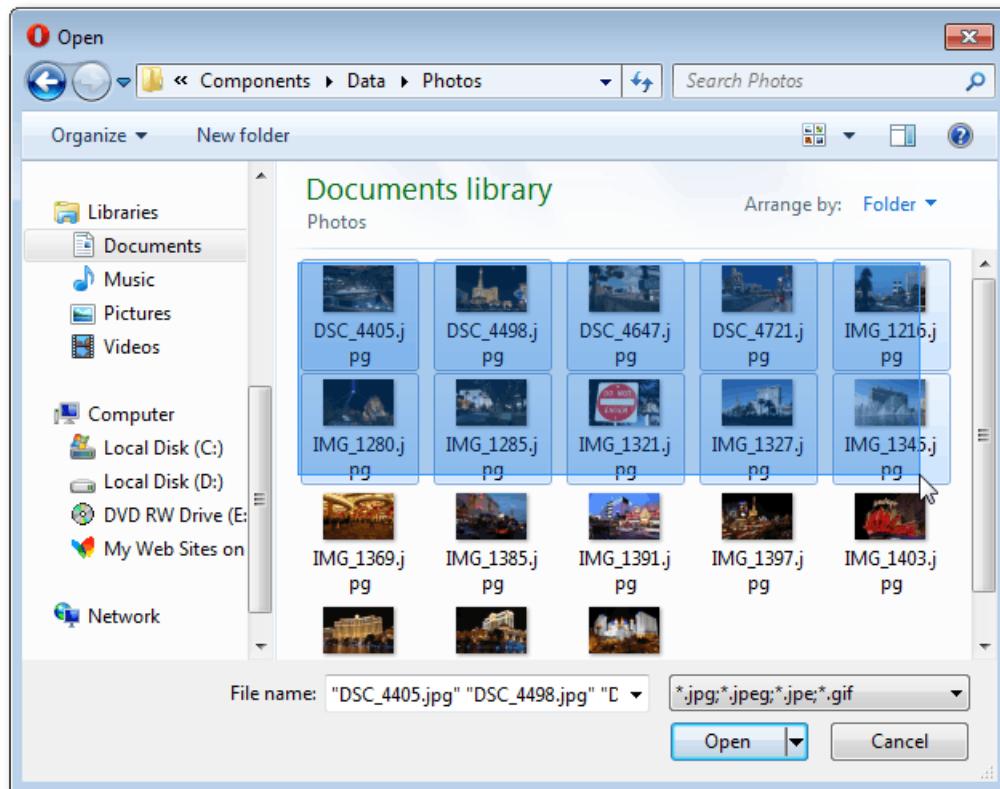
- Click a file while holding the CTRL key. This toggles a file's selected state without affecting other files.



- To select all files between the clicked file and the previously focused file, click a file while holding the SHIFT key. In this case, the previous selection is cleared.



- To select a consecutive group of files without using the keyboard, drag the mouse pointer around the outside of all the files you want to include to create a selection.



After required files are selected, click **Open** to add them to file upload list.

# Filter Editor

The Filter Editor is used to edit filter criteria. Use the **Add**  and **Remove**  buttons to create and customize filter criteria.

Filter

Visual Text

Logical operator combining conditions  
Click to change the current operator, or add/remove conditions or groups of conditions

And  Add a new condition

Category.Category Name Equals Beverages  

Discontinued Equals Checked  

Unit Price Is less than 150.0  

Filter conditions combined into a group

Column  
Click to select a column

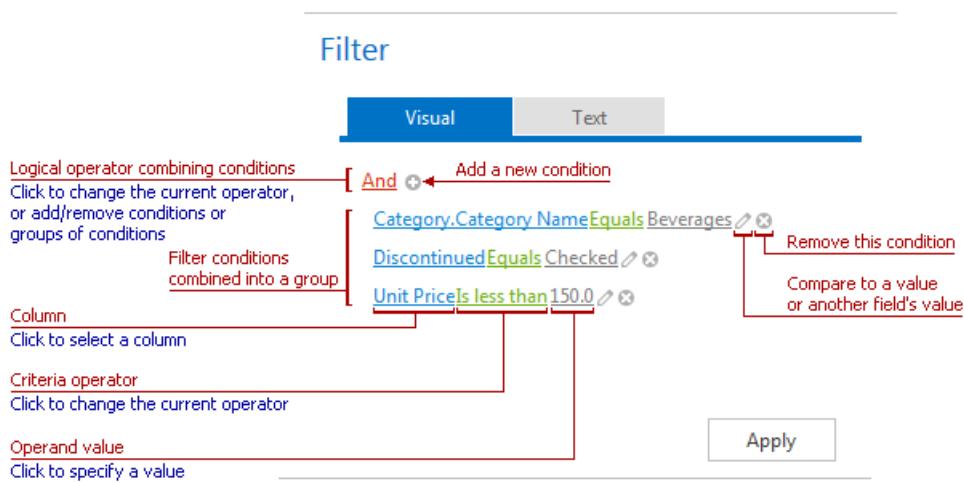
Criteria operator  
Click to change the current operator

Operand value  
Click to specify a value

Remove this condition

Compare to a value or another field's value

Apply



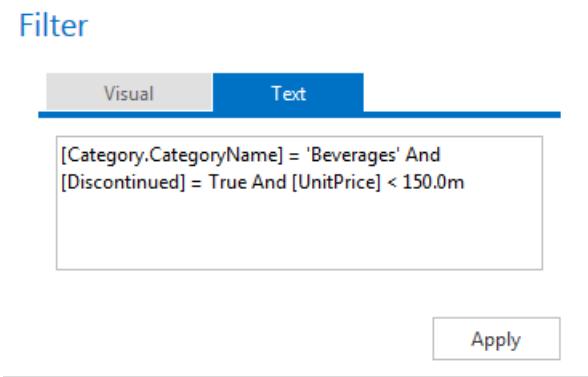
Switch to the **Text** tab to edit filter criteria in text view.

Filter

Visual Text

[Category.CategoryName] = 'Beverages' And  
[Discontinued] = True And [UnitPrice] < 150.0m

Apply



The following sections describe how to add, change and delete filter conditions.

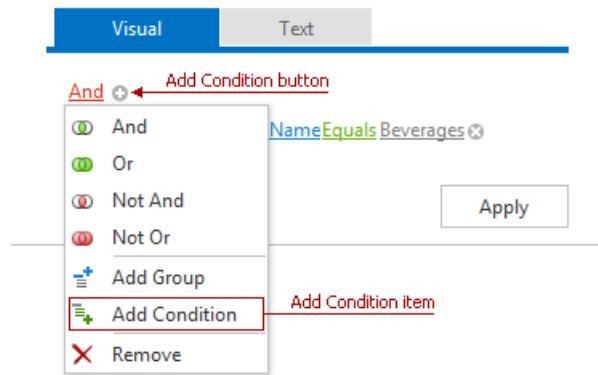
- [Create New Conditions in Filter Editor](#)
- [Change Conditions in Filter Editor](#)
- [Delete Conditions in Filter Editor](#)

# Create New Conditions

To add a condition to a logical group, do one of the following:

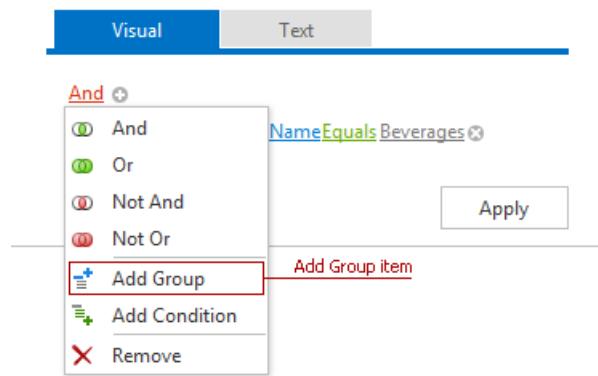
- Click the **Add**  button for the group.
- Click the group's logical operator and select **Add Condition**.

## Filter



To add a group of conditions to another group, click the group's logical operator and select **Add Group**.

## Filter



# Change Conditions

You can modify the manner that filter conditions change the columns in a filter.

## Change a Column in a Filter Condition

To change a condition's column, invoke the column list by clicking the current column. Then, choose the required column from the list that will be invoked.

### Filter

The screenshot shows the 'Filter' interface with a 'Visual' tab selected. A condition 'Quantity Per Unit Is greater than 100' is displayed. A dropdown menu is open next to the column name 'Category'. The menu contains the following options: Category, Category Name, Description, Picture, Products, Discontinued, and Product Name. An 'Apply' button is visible at the bottom right of the menu.

## Change an Operator in a Filter Condition

To change a condition's operator, invoke the operator list by clicking the condition's current operator. Then, choose the required operator from the list that will be invoked.

### Filter

The screenshot shows the 'Filter' interface with a 'Visual' tab selected. A condition 'Quantity Per Unit Is greater than 100' is displayed. A dropdown menu is open next to the operator 'Is greater than'. The menu contains the following operators: Equals (=), Does not equal ( $\neq$ ), Is greater than (>), Is greater than or equal to ( $\geq$ ), Is less than (<), Is less than or equal to ( $\leq$ ), Is between (is between), and Is not between (is not between).

## Edit a Condition's Value

To edit a condition's value, click the operand value and type text. To discard changes to the value and close the active edit box, press ESC.

## Filter

Visual Text

And +

Product Name Equals  X

## Filter

Visual Text

And +

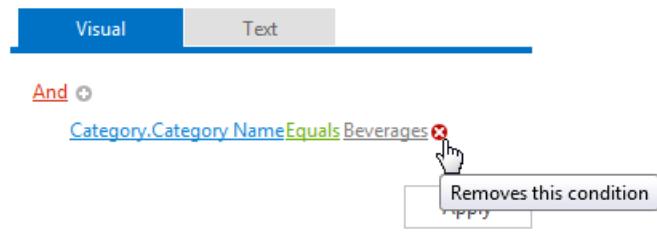
Category.Category Name Equals  X

- Beverages
- Condiments
- Confections
- Dairy Products
- Grains/Cereals
- Meat/Poultry
- Produce

# Delete Conditions

Click the **Remove**  button to delete a condition.

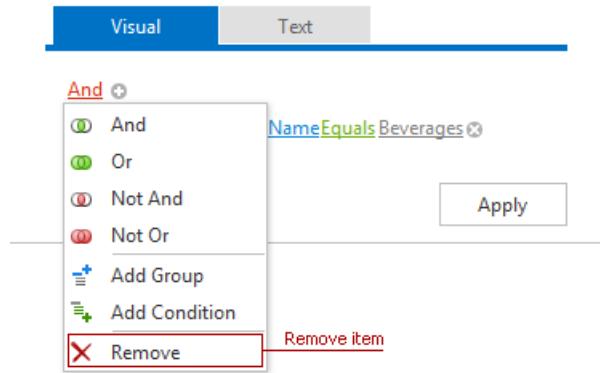
## Filter



The screenshot shows a 'Visual' tab selected in a 'Filter' interface. A single condition is listed: 'Category.Category Name Equals Beverages'. To the right of this condition is a small 'Remove' button (), which has a tooltip 'Removes this condition'.

Click the logical operator and select **Remove** to delete a group.

## Filter



The screenshot shows a 'Visual' tab selected in a 'Filter' interface. A dropdown menu is open under the 'And' logical operator. The 'Remove' option at the bottom of the menu is highlighted with a red border and has a tooltip 'Remove item'.

# Grid

This section describes the Grid's capabilities. It represents data in a tabular form, supports data editing, sorting, grouping, filtering, summary calculation, column resizing, data exporting and using data cell bands.

The screenshot shows a grid interface with two main sections. The top section displays data for the 'Beverages' category, with a summary row above the data rows. The bottom section displays data for the 'Condiments' category, also with a summary row above the data rows. Both sections include page navigation controls at the bottom.

Category Name		Description			
Beverages		Soft drinks, coffees, teas, beers, and ales			
ID	Product Name	Quantity Per Unit	Unit Price	Units On Order	Discontinued
1	Chai	10 boxes x 20 bags	18	0	<input type="checkbox"/>
2	Chang	24 - 12 oz bottles	19	40	<input type="checkbox"/>
24	Guaraná Fantástica	12 - 355 ml cans	4.5	0	<input checked="" type="checkbox"/>
34	Sasquatch Ale	24 - 12 oz bottles	14	0	<input type="checkbox"/>
35	Steeleye Stout	24 - 12 oz bottles	18	0	<input type="checkbox"/>

Page 1 of 3 (12 items) < [1] 2 3 >

Condiments	Sweet and savory sauces, relishes, spreads, and seasonings
Confections	Desserts, candies, and sweet breads
Dairy Products	Cheeses
Grains/Cereals	Breads, crackers, pasta, and cereal

Page 1 of 2 (8 items) < [1] 2 >

## Data Editing

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## Selection and Navigation

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## Sorting

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## Context Menu

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- [Resize Columns](#)
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## **Customization Dialog**

- [Customization Dialog](#)
- [Sorting Page](#)
- [Grouping Page](#)
- [Filtering Page](#)
- [Column Chooser Page](#)

## **Data Summaries**

- [Data Summaries](#)

## **Data Validation**

- [Data Validation](#)

## **Data Export**

- [Data Export](#)

## **Responsive Layout**

- [Responsive Layout](#)

## **Grid Lookup**

- [Grid Lookup](#)
- [Filter Grid Lookup Data](#)
- [Select Grid Lookup Rows](#)

# Add and Delete Rows

## Add a Row

To create a new row:

- Click **New**.

#	First Name	Last Name	Birth Date	Title	Hire Date
<a href="#">Edit New</a>	Nancy	Davolio	12/8/1948	Sales Representative	5/1/1992
<a href="#">Edit New</a>	Andrew	Fuller	2/19/1952	Vice President, Sales	8/14/1992
<a href="#">Edit New</a>	Janet	Leverling	8/30/1963	Sales Representative	4/1/1992

- Specify cell values.

- Click **Update**.

#	First Name	Last Name	Birth Date	Title	Hire Date
<a href="#">Edit New</a>	Nancy	Davolio	12/8/1948	Sales Representative	5/1/1992
<a href="#">Edit New</a>	Andrew	Fuller	2/19/1952	Vice President, Sales	8/14/1992
	Janet	Leverling	8/30/1963	Sales Representative	4/1/1992

First Name  Title  Last Name   
Birth Date  Hire Date

[Update](#) [Cancel](#)

## Delete a Row

To delete a row, click **Delete** within the row to be deleted.

#	First Name	Last Name	Birth Date	Title	Hire Date
<a href="#">Delete</a>	Nancy	Davolio	12/8/1948	Sales Representative	5/1/1992
<a href="#">Delete</a>	Andrew	Fuller	2/19/1952	Vice President, Sales	8/14/1992
<a href="#">Delete</a>	Janet	Leverling	8/30/1963	Sales Representative	4/1/1992

### Note

Row management links may be unavailable in your application. This is the choice of the application vendor.

# Switch a Grid to Edit Mode

Click **Edit** to switch the Grid to edit mode.

#	Contact Name	Company Name	City
<a href="#">Edit</a>	Maria Anders	Alfreds Futterkiste	Berlin
<a href="#">Edit</a>	Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.
<a href="#">Edit</a>	Antonio Moreno	Antonio Moreno Taquería	México D.F.
<a href="#">Edit</a>	Thomas Hardy	Around the Horn	London
<a href="#">Edit</a>	Christina Berglund	Berglunds snabbköp	Luleå
<a href="#">Edit</a>	Hanna Moos	Blauer See Delikatessen	Mannheim

## Note

In-place editing links may be unavailable in your application. This is up to the application vendor.

# Save or Discard Changes when Editing Rows

## Save Changes

Click **Update** to save your changes.

#	First Name	Last Name	Birth Date	Title	Hire Date
<a href="#">Edit New</a>	Nancy	Davolio	12/8/1948	Sales Representative	5/1/1992
<a href="#">Edit New</a>	Andrew	Fuller	2/19/1952	Vice President, Sales	8/14/1992
	Janet	Leverling	8/30/1963	Sales Representative	4/1/1992

First Name  Title  Last Name   
Birth Date  Hire Date

[Update](#) [Cancel](#) 

## Discard Changes

Click **Cancel** to cancel your changes.

#	First Name	Last Name	Birth Date	Title	Hire Date
<a href="#">Edit New</a>	Nancy	Davolio	12/8/1948	Sales Representative	5/1/1992
<a href="#">Edit New</a>	Andrew	Fuller	2/19/1952	Vice President, Sales	8/14/1992
	Janet	Leverling	8/30/1963	Sales Representative	4/1/1992

First Name  Title  Last Name   
Birth Date  Hire Date

[Update](#) [Cancel](#) 

# Batch Editing

The Grid allows you to edit a group of grid records (on a single page) and save these changes with one click. In this view, you can create new rows, delete existing rows and edit individual cell values.

- To create a new row, click **New** and specify the field values.
- To delete a row, click **Delete** within the row to be deleted.
- To focus a cell and edit the value of a cell, use one of following approaches available depending on settings made by your application vendor.
  - Click on the cell to focus it and edit its value.
  - Click on the cell to focus it. Double-click on the focused cell to edit it.
  - Click on the cell to focus it. Click on the focused cell to edit it.

You can navigate through cells and edit cell values using the keyboard.

## Navigation

- Use the TAB and SHIFT+TAB keys to move focus forward and backward. The edit state will be preserved for the next cell.
- Use the arrow keys to move focus between cells.

## Editing

- Use the ENTER key to edit the focused cell.
- Use the ESC key to finish editing of the focused cell.
- Use the ENTER key to move focus ahead of the edited cell. The edit state will be preserved for the next cell.

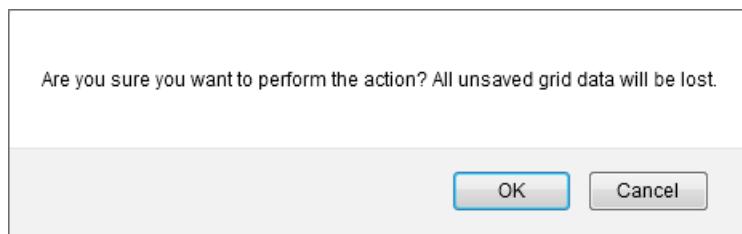
The cells that were modified are highlighted in a different color. To save all changes, click **Save changes**. To cancel all changes, click **Cancel changes**.

New	Product Name	Quantity Per Unit	Unit Price	Units In Stock	Discontinued
<a href="#">Delete</a>	Chai	10 boxes x 20 bags	\$18.00	39	<input type="checkbox"/>
<a href="#">Delete</a>	Chang	24 - 12 oz bottles	\$19.00	17	<input checked="" type="checkbox"/>
<a href="#">Delete</a>	Aniseed Syrup	12 - 550 ml bottles	\$10.00	13	<input checked="" type="checkbox"/>
<a href="#">Delete</a>	Chef Anton's Cajun Seasoning	48 - 6 oz jars	\$22.00	53	<input type="checkbox"/>
<a href="#">Delete</a>	Chef Anton's Gumbo Mix	26	\$21.35	0	<input checked="" type="checkbox"/>
<a href="#">Recover</a>	Grandma's Boysenberry Spread	12 - 8 oz jars	\$25.00	120	<input type="checkbox"/>
<a href="#">Recover</a>	Uncle Bob's Organic Dried Pears	12 - 1 lb pkgs.	\$30.00	15	<input type="checkbox"/>

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[Save changes](#) [Cancel changes](#)

If a Grid contains unsaved data, a confirmation message is displayed before the data is lost (e.g., when sorting the data, changing the grid page or closing the web page).



Click **OK** to cancel all data changes and proceed with the action, or click **Cancel** to cancel the action.

# Page Navigation

Use the grid's pager to switch between pages.

Contact Name	Company Name	Country	City
Aria Cruz	Familia Arquibaldo	Brazil	São Paulo
Diego Roel	FISSA Fabrica Inter. Salchichas S.A.	Spain	Madrid
Martine Rancé	Folies gourmandes	France	Lille
Maria Larsson	Folk och fä HB	Sweden	Bräcke
Peter Franken	Frankenversand	Germany	München
Carine Schmitt	France restauration	France	Nantes
Paolo Accorti	Franchi S.p.A.	Italy	Torino
Lino Rodriguez	Furia Bacalhau e Frutos do Mar	Portugal	Lisboa
Eduardo Saavedra	Galería del gastrónomo	Spain	Barcelona
José Pedro Freyre	Godos Cocina Típica	Spain	Sevilla

Page 3 of 10 (91 items) [◀](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [▶](#)

When data is grouped, rows that belong to one group may be displayed on different pages. This occurs when the number of rows contained within a group exceeds the maximum number of rows that can be displayed on a page. In this instance, to indicate that rows belong to a group, the image is displayed within the top data row(s). Hovering over this image displays parent group rows.

Country ▾			
Country: Brazil	Company Name	City	Region
Aria Cruz	Familia Arquibaldo	São Paulo	SP
André Fonseca	Gourmet Lanchonetes	Campinas	SP
Mario Pontes	Hanari Carnes	Rio de Janeiro	RJ
Bernardo Batista	Que Delícia	Rio de Janeiro	RJ
Lúcia Carvalho	Queen Cozinha	São Paulo	SP
Janete Limeira	Ricardo Adocicados	Rio de Janeiro	RJ
Anabela Domingues	Tradição Hipermercados	São Paulo	SP
Paula Parente	Wellington Importadora	Resende	SP
Country: Canada (Continued on the next page)			
Elizabeth Lincoln	Bottom-Dollar Markets	Tsawwassen	BC

Page 2 of 11 (110 items) [◀](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) ... [9](#) [10](#) [11](#) [▶](#)

To change the number of data items (rows) displayed within a grid, click the **Page Size** menu and select the needed number of rows per page.

Contact Name	Company Name	City	Country
Maria Anders	Alfreds Futterkiste	Berlin	Germany
Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.	Mexico
Antonio Moreno	Antonio Moreno Taquería	México D.F.	Mexico
Thomas Hardy	Around the Horn	London	United Kingdom
Christina Berglund	Berglunds snabbköp	Luleå	Sweden

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Page size:

5    
 5  
 10   
 20  
 50

# Select Rows

## Using Row Clicks

Click a row while holding down the CTRL key to toggle the row's selected state.

You can select contiguous rows by clicking the first row and the last row while holding down the SHIFT key. In this case the previous selection is cleared. You can further customize the selection by clicking individual rows while holding down the CTRL key.

Contact Name	Company Name	City
Maria Anders	Alfreds Futterkiste	Berlin
Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.
Antonio Moreno	Antonio Moreno Taquería	México D.F.
Thomas Hardy	Around the Horn	London

Page 1 of 23 (91 items)  

## Using Check Boxes

Select and clear a check box to select and cancel the selection of the corresponding row.

#	Contact Name	Company Name	City
<input type="checkbox"/>	Maria Anders	Alfreds Futterkiste	Berlin
<input checked="" type="checkbox"/>	Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.
<input type="checkbox"/>	Antonio Moreno	Antonio Moreno Taquería	México D.F.
<input checked="" type="checkbox"/>	Thomas Hardy	Around the Horn	London

Page 1 of 23 (91 items)  

Select and clear the **Select All** check box to select and cancel the selection of all rows on the page (or all rows in the grid).

<input checked="" type="checkbox"/>	Contact Name	Company Name	City
<input checked="" type="checkbox"/> Selection state of all rows			
<input checked="" type="checkbox"/>	Maria Anders	Alfreds Futterkiste	Berlin
<input checked="" type="checkbox"/>	Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.
<input checked="" type="checkbox"/>	Antonio Moreno	Antonio Moreno Taquería	México D.F.
<input checked="" type="checkbox"/>	Thomas Hardy	Around the Horn	London

Page 1 of 23 (91 items)  

# Keyboard Navigation

You can use a keyboard to perform Grid primary navigation operations.

## Access Key

Press CTRL+SHIFT+[AccessKey] keys to navigate to the grid.

## Focused Row

Press the UP ARROW and DOWN ARROW keys to move focus between rows. Moving focus from the ultimate (first or last) row within a page changes the page within the grid, if possible.

## Row Selection

Press the SPACE key to select and cancel the selection of the focused row. To select multiple rows, move row focus by arrow keys while holding down the SHIFT key.

## Expanding/Collapsing Rows

Press the PLUS/RIGHT ARROW and MINUS/LEFT ARROW keys to expand and collapse group and detail rows.

## Paging

Press the SHIFT+PAGE UP and SHIFT+PAGE DOWN key combinations to go to the next and previous grid page.

# Sorting

- Click a column header to sort data in ascending order. If sorting has already been applied, subsequent clicks reverse the current sort order.

Contact Name	Company Name	Country	City
Alejandra Camino	Romero y tomillo	Spain	Madrid
Alexander Feuer	Morgenstern Gesundkost	Germany	Leipzig
Ana Trujillo	Ana Trujillo Emparedados y helados	Mexico	México D.F.
Anabela Domingues	Tradição Hipermercados	Brazil	São Paulo
André Fonseca	Gourmet Lanchonetes	Brazil	Campinas

- A click on a column header clears the sort settings on any other columns. Hold the SHIFT key down while clicking to sort against multiple columns.
- Click a column's header while pressing the CTRL key to clear the column's sorting.

You can use the [customization dialog](#) to sort grid data, change the sorting order (ascending/descending), and change the order of sorted columns within the grid.

# Group Grid Rows

- Drag a column header from the column header panel to the group panel to group data.

A screenshot of a grid interface. At the top, there's a header bar with a placeholder 'Drag a column header here to group by that column'. Below it is a table with columns: Contact Name, Country, Company Name, and City. A 'City' column header is selected and highlighted with a blue border. A large blue arrow points downwards from the column header to a 'group panel' below. This panel contains a table with columns: Contact Name, Country, Company Name, and a list of cities grouped under 'City': Aachen, Albuquerque, Anchorage, Århus, and Barcelona.

Contact Name	Country	Company Name	City
Maria Anders	Germany	Alfreds Futterkiste	Berlin
Ana Trujillo	Mexico	Ana Trujillo Emparedados y helados	México D.F.
Antonio Moreno	Mexico	Antonio Moreno Taquería	México D.F.
Thomas Hardy			
Christina Berglund			

Contact Name	Country	Company Name
City: Aachen		
City: Albuquerque		
City: Anchorage		
City: Århus		
City: Barcelona		

- Move a column header within the group panel to change the group order.

A screenshot of a grid with complex grouping. The column headers 'Country' and 'City' are in the group panel, with arrows indicating they can be moved. The 'Contact Name' and 'Company Name' headers are in the column header panel. The data is grouped by country (Argentina, Austria, Belgium) and city (Buenos Aires). The 'Country' header is being moved from its current position in the group panel to the column header panel.

Country	City	Contact Name	Company Name
Country: Argentina			
City: Buenos Aires			
Patricia Simpson		Cactus Comidas para llevar	
Yvonne Moncada		Océano Atlántico Ltda.	
Sergio Gutiérrez		Rancho grande	
Country: Austria			
Country: Belgium			

- Drag a column header(s) from the group panel to the column header panel to ungroup data.

Use the [customization dialog](#) to group/ungroup grid data and change the order of grouping columns within the grid.

# Expand and Collapse Group Rows

Click a group row's expand button to expand or collapse the row.

Title ▲				
#	First Name	Last Name	Birth Date	
+	Title: Inside Sales Coordinator			
+	Title: Sales Manager			
+	Title: Sales Representative			
	 <a href="#">Edit</a> <a href="#">New</a>	Nancy	Davolio	12/8/1948
	 <a href="#">Edit</a> <a href="#">New</a>	Robert	King	5/29/1960
	 <a href="#">Edit</a> <a href="#">New</a>	Anne	Dodsworth	1/27/1966
+	Title: Vice President, Sales			

You can press the PLUS and MINUS keys to expand and collapse the focused group row.

# Filtering Data

Grid provides different elements that allow you to filter data.

## Filter Buttons

Click a filter button to invoke a filter drop-down list that contains unique values in a column.

You can use the check boxes in the drop-down list to select values and click **OK** to apply the filter criteria.

Country	City	Company Name	Total
Canada	Tsawwassen	(Select All)	\$300.00
Canada	Tsawwassen	<input type="checkbox"/> Montréal	\$930.00
Canada	Tsawwassen	<input checked="" type="checkbox"/> Tsawwassen	\$2,958.00
Canada	Tsawwassen	<input checked="" type="checkbox"/> Vancouver	\$600.00
Canada	Tsawwassen		\$414.00
Canada	Tsawwassen		\$200.00
Canada	Tsawwassen		\$1,700.00
Canada	Tsawwassen		\$1,218.00
Canada	Tsawwassen	Bottom-Dollar Markets	\$1,170.00
Count=75		Sum=\$50,196.29	
Page 1 of 8 (75 items) < [1] 2 3 4 5 6 7 8 >			

If the drop-down list does not display check boxes, click the required value to apply the filter criteria.

Company Name	City	Region	Country	Unit Price
(All)		Isle of Wight	UK	\$19.00
Alfreds Futterkiste		Isle of Wight	UK	\$40.00
Ana Trujillo Emparedados y helados		Isle of Wight	UK	\$6.00
Antonio Moreno Taquería		Isle of Wight	UK	\$34.00
Around the Horn			Italy	\$12.50
			Italy	\$34.80
Reggiani Caseifici	Reggio Emilia		Italy	\$13.00

The drop-down list displays values that match the applied filter criteria. To remove the filter, click **(All)**.

Note that if a filter is applied to a column, other column header filters display the sorted rows' unique values. You can press SHIFT and click a header filter button to show all the values (including hidden rows' values).

The drop-down box displays a [date range editor](#) for columns containing date and time data.

## Filter Row

Type text within the **Filter Row**. A filter condition is automatically created based on the value entered, and this is applied to the corresponding column.

#	Contact Name	Company Name	City	Region	Country
<a href="#">Clear</a>	m		r		
	Mario Pontes	Hanari Carnes	Rio de Janeiro	RJ	Brazil
	Maurizio Moroni	Reggiani Caseifici	Reggio Emilia		Italy

If the **Apply** button is displayed, the filter is applied on button click.

#	Contact Name	Company Name	City	Region	Country
<a href="#">Apply</a> <a href="#">Clear</a>	m		r		
	Mario Pontes	Hanari Carnes	Rio de Janeiro	RJ	Brazil
	Maurizio Moroni	Reggiani Caseifici	Reggio Emilia		Italy

To remove the column filter, clear the text in the auto-filter row. To remove the grid's entire filter, click **Clear**.

#	Contact Name	Company Name	City	Region	Country
 <b>Clear</b>	m		r		
	Mario Pontes	Hanari Carnes	Rio de Janeiro	RJ	Brazil
	Maurizio Moroni	Reggiani Caseifci	Reggio Emilia		Italy

## Search Panel

Use the [Search Panel](#) to filter data and highlight search results.

## Filter Builder

Use the [Filter Builder](#) to create complex filter criteria.

## Customization Dialog

Use the customization dialog's [Filtering page](#) to apply filter criteria to grid data.

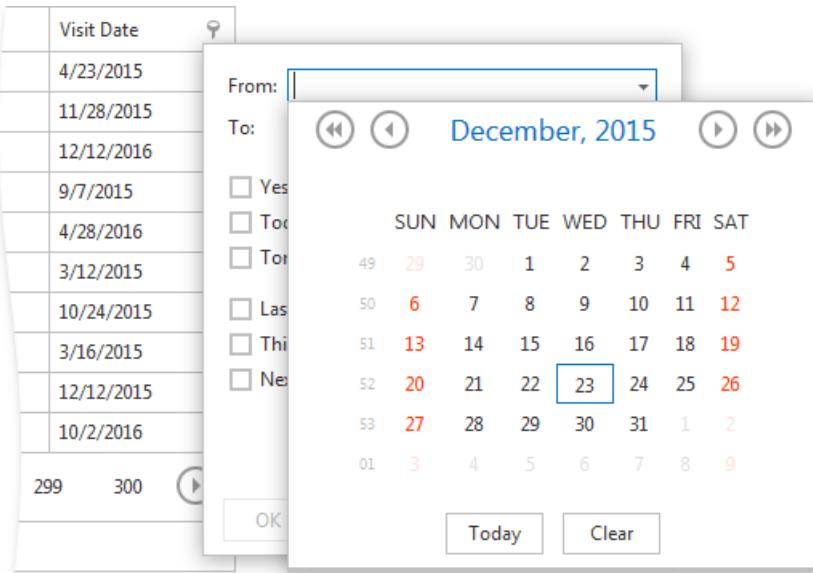
# Date Range Header Filter

The header filter's drop-down box displays a date range editor for columns containing date and time data.

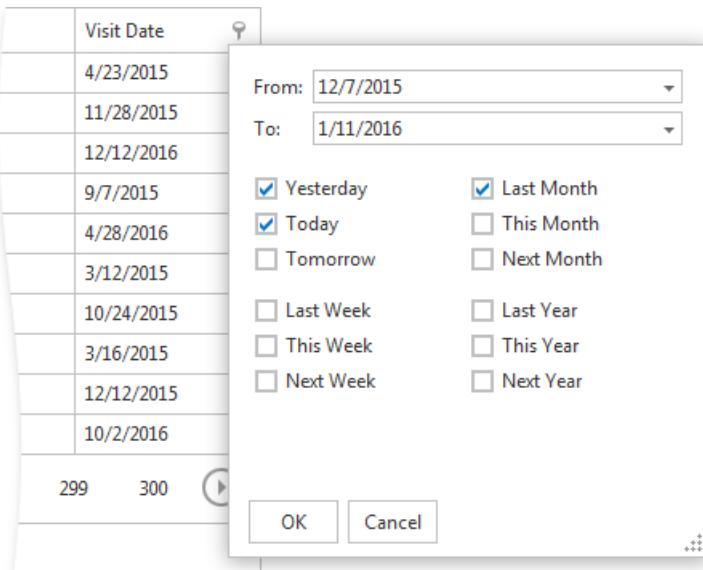
## Date Range Picker

Click a filter button to invoke a filter drop-down box that contains a date picker and a set of date range periods.

Click the drop-down button in the **From** text box to display a calendar. Select the first date in a required date range. You can also type the date in the text box.



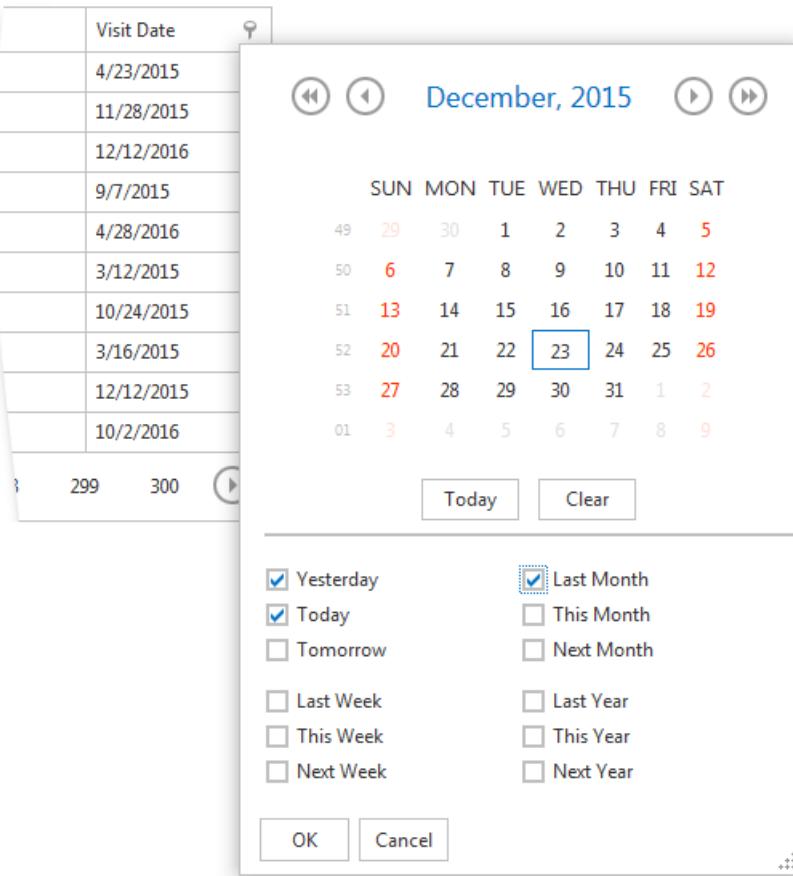
Click the drop-down button in the **To** text box to display a calendar. Select the last date in a required date range. You can also type the date in the text box.



Select the required date periods and click **OK** to apply the filter criteria.

## Date Range Calendar

Click a filter button to invoke a filter drop-down box that contains a calendar and a set of predefined periods.



Select the required date(s) in the calendar and date periods. Then, click **OK** to apply the filter criteria.

# Search Panel

To filter data and highlight search results, type a filter criterion in the search panel.

Company Name		Address	City	Country
Ana Trujillo Emparedados y helados		Avda. de la Constitución 2222	México D.F.	Mexico
Antonio Moreno Taquería		Mataderos 2312	México D.F.	Mexico
Centro comercial Moctezuma		Sierras de Granada 9993	México D.F.	Mexico
Océano Atlántico Ltda.		Ing. Gustavo Moncada 8585 Piso 20-A	Buenos Aires	Argentina
Pericles Comidas clásicas		Calle Dr. Jorge Cash 321	México D.F.	Mexico
Tortuga Restaurante		Avda. Azteca 123	México D.F.	Mexico

## Applying the Search Panel Filter Criterion

To apply a filter criterion typed in the search panel, press the ENTER key or click the **Search** button. Otherwise, a filter is automatically applied in 1.2 seconds.

## Clearing the Search Panel Filter Criterion

To clear the search panel filter criterion, do one of the following.

- Press DELETE or BACKSPACE.
- Click the **Clear** button.
- Click the clear button, which is displayed within the editor when the editor is focused and is not empty.



## Search syntax

In its simplest form, a search criterion consists of a single word. However, the search panel allows you to create composite criteria.

- **Mask:** criterion

maria

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Hanna Anders	Santa Maria	USA
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

**Example description:** selects records that contain the "maria" string in any search column.

- **Mask:** column:criterion

contact:maria

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden

You can search against a specific column by preceding a search string with the column's caption plus a colon character. Instead of the complete caption, it is possible to use the initial characters of the caption. A search will be performed against the first column whose name starts with the specified substring. If you want to search against a column whose caption contains space characters, specify the column's display caption in quotation marks.

If the search string contains multiple conditions separated by space characters, and at least one condition defines a search against a specific column, only records that match all of these conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain "maria" in the column that starts with "contact".

- **Mask:** criterion1 ciretention2

maria anders

#### Option AND

Contact Name	City	Country
Maria Anders	Berlin	Germany
Hanna Anders	Santa Maria	USA

#### Option OR

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Hanna Anders	Santa Maria	Germany
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

Based on conditions provided by your application vendor, the search panel can search words separated by space characters in one of the following ways.

#### Option AND

Only records that match all of the conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain both "maria" AND "anders" strings in any search column.

## Option OR

If there is no column specification, records that match at least one of these conditions are shown (i.e., the conditions are combined by the OR logical operator). If at least one condition defines a search against a specific column, only records that match all of these conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain either "maria" OR "anders" strings in any search column.

- **Mask:** "criterion with spaces"

"maria anders"

<input type="text" value="maria anders"/> <span style="border: 1px solid red; padding: 2px;">X</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Anders	Berlin	Germany

If you want to search for a string containing a space character, specify this string in quotation marks.

**Example description:** selects records that contain "maria anders" in any search column.

- **Mask:** criterion1 -criterion2

maria -anders

<input type="text" value="maria -anders"/> <span style="border: 1px solid red; padding: 2px;">X</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

Precede a condition with "-" to exclude records that match this condition from the result set. There should be no space between the "-" sign and the condition.

**Example description:** selects records that contain "maria", excluding records that contain "anders".

- **Mask:**

criterion1 +criterion2

maria +sweden

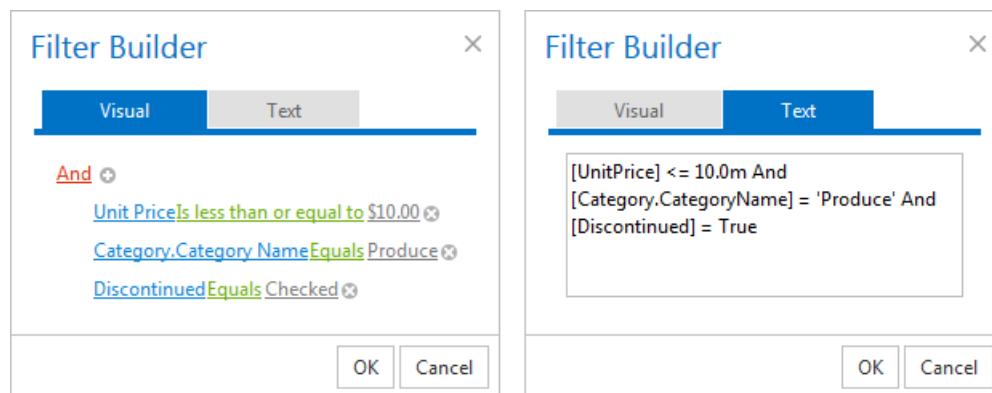
<input type="text" value="maria +sweden"/> <span style="border: 1px solid red; padding: 2px;">X</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden

Precede a condition with "+" to display only records that match this condition. The "+" specifier allows you to implement the logical AND operator. There should be no space character between the "+" sign and the condition.

**Example description:** selects records that contain both "maria" AND "sweden" in search columns.

# Creating Complex Filter Criteria with the Filter Builder

To build complex filter criteria with an unlimited number of filter conditions, combined by logical operators, use the built-in Filter Builder.



To open the Filter Builder, click one of the following.

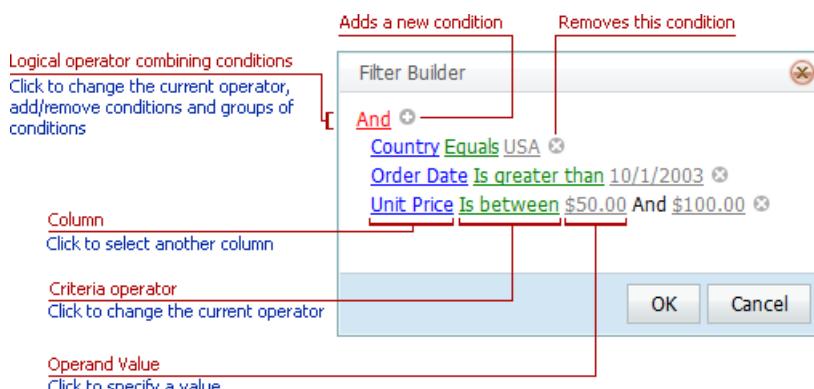
- the filter image displayed within the filter bar.

Tunnbröd	Grains/Cereals	Lars Peterson	\$9.00	61	\$549.00
Singaporean Hokkien Fried Mee	Grains/Cereals	Chandra Leka	\$14.00	26	\$364.00
Page 5 of 8 (77 items) <span style="float: right;">◀ 1 2 3 4 5 6 7 8 ▶</span>					
<span style="float: left;"> <a href="#">Create Filter</a></span>					

- the filter expression link.

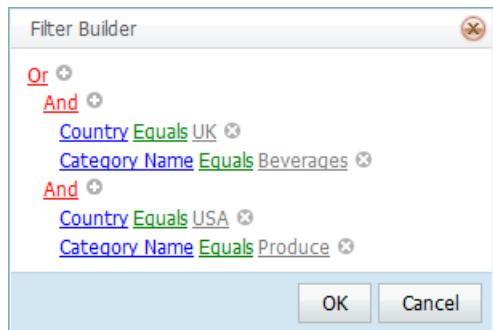
Perth Pasties	Meat/Poultry	Wendy Mackenzie	\$32.80	0	\$0.00
Rössle Sauerkraut	Produce	Martin Bein	\$45.60	26	\$1,185.60
<input checked="" type="checkbox"/> <a href="#">[Unit Price] Is less than or equal to '\$10.00' And [Category Name] Equals 'Grains/Cereals' Or [Unit Price]...</a>					<a href="#">Clear</a>

To create and customize filter criteria, use the  and  buttons.



## Remarks

A filter condition group is a set of conditions combined by the same logical operator. The following filter expression contains two groups combined by the logical **OR** operator: "(Country Equals 'UK' And Category Equals 'Beverages') Or (Country Equals 'USA' And Category Equals 'Produce')". In the Filter Builder, it is represented as follows.



To learn more, see the [Filter Editor](#) topic.

# Context Menu

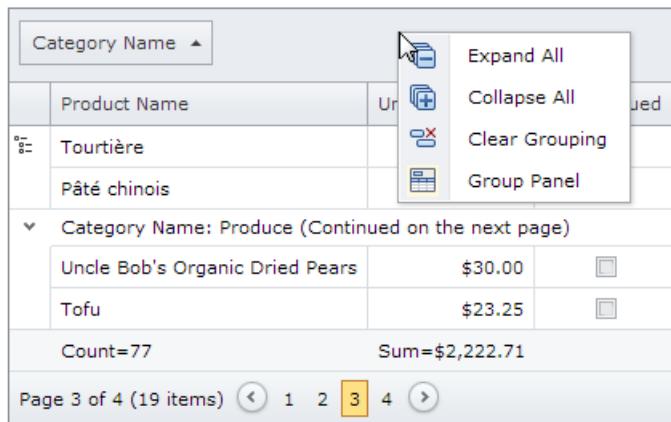
The **context menu** is a menu displayed when you right-click a grid element.

A context menu can be displayed for the following elements: [group panel](#), [column header](#), [row](#), [group footer](#), and [footer](#).

Context menu commands can be hidden or unavailable, based on the current grid settings.

## Group Panel Menu

Right-click a group panel to display the group panel menu.

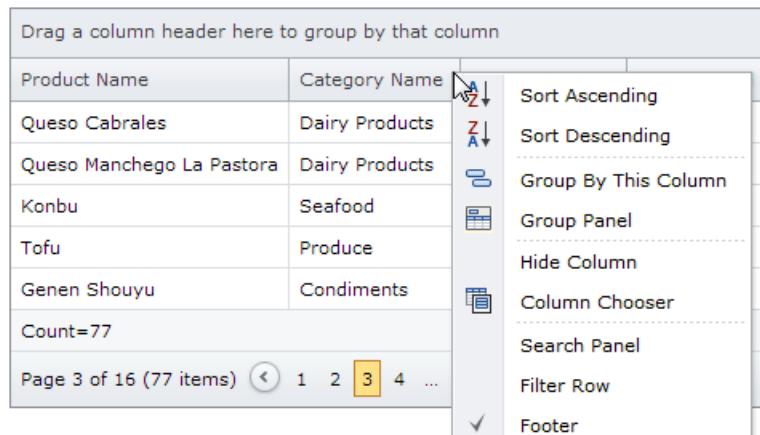


The table below lists the group panel menu commands.

COMMAND	DESCRIPTION
Expand All	Expands all group rows.
Collapse All	Collapses all group rows.
Clear Grouping	Clears grouping in the group panel.
Group Panel	Shows and hides the group panel.

## Column Header Menu

Right-click the column header to display the column header menu.



The table below lists the column header menu commands.

COMMAND	DESCRIPTION
Clear Filter	Clears the current column filter.
Clear Sorting	Clears the current column sorting.
Collapse All	Collapses all group rows.
Expand All	Expands all group rows.
Group by This Column	Groups grid data by the current column.
Hide Column	Hides the current column.
Show Column	Shows a column in the grid.
Show Customization Dialog	Shows the customization dialog.
Column Chooser	Shows and hides the column chooser.
Filter Builder...	Shows and hides the filter builder.
Filter Row	Shows and hides the filter row.
Filter Row Menu	Shows and hides the filter row menu.
Footer	Shows and hides the footer.
Group Panel	Shows and hides the group panel.
Search Panel	Shows and hides the search panel.
Sort Ascending	Sorts grid data by the current column ascending.
Sort Descending	Sorts grid data by the current column descending.
Ungroup	Ungroups grid data by the current column.

## Row Menu

Right-click a row or a group row to display the row menu.

The table below lists the row menu commands.

COMMAND	DESCRIPTION
Collapse Detail	Collapses the current detail row.
Collapse	Collapses the current group row.
Delete	Deletes the current data row.
Edit	Turns the edit mode on for the current row.
Expand Detail	Expands the current detail row.
Expand	Expands the current group row.
Export	Allows to export grid data to different formats.
Group Summary	Allows to show and hide group row summary items.
New	Creates a new row.
Refresh	Refreshes grid data.

## Group Footer Menu

Right-click a group footer to display the group footer menu.

The table below lists the group footer menu commands.

COMMAND	DESCRIPTION
Average	Shows and hides the average cell value in the current column.
Count	Shows and hides the count of the current column cell values.
Max	Shows and hides the maximum cell value in the current column.
Min	Shows and hides the minimum cell value in the current column.
Sum	Shows and hides the sum of the current column cell values.
None	Hides every summary item.

## Footer Menu

Right-click a footer to display the footer menu.

Drag a column header here to group by that column			
Product Name	Category Name	Unit Price	Discontinued
Queso Cabrales	Dairy Products	\$21.00	<input type="checkbox"/>
Queso Manchego La Pastora	Dairy Products	\$38.00	<input type="checkbox"/>
Konbu	Seafood	\$6.00	<input type="checkbox"/>
Tofu	Produce	\$23.25	<input type="checkbox"/>
Genen Shouyu	Condiments	\$15.50	<input type="checkbox"/>

Count=77 Sum=\$2,222.71

Page 3 of 16 (77 items) 1 2 3 4 ... 15 16

- Sum
- Min
- Max
- Count
- Average

The table below lists the footer menu commands.

COMMAND	DESCRIPTION
Average	Shows and hides the average cell value in the current column.
Count	Shows and hides the count of the current column cell values.
Max	Shows and hides the maximum cell value in the current column.
Min	Shows and hides the minimum cell value in the current column.
Sum	Shows and hides the sum of the current column cell values.
None	Hides every summary item.

# Resize Columns

Hover a column header's right border (so that it displays a double-sided arrow) and drag the column border to change column width.

Contact Name	Company Name	City	Country
Maria Anders	Alfreds Futterkiste	Berlin	Germany
Ana Trujillo	Ana Trujillo Emparedados ...	México D.F.	Mexico
Antonio Moreno	Antonio Moreno Taquería	México D.F.	Mexico
Thomas Hardy	Around the Horn	London	United Kingdom
Christina Bergl...	Berglunds snabbköp	Luleå	Sweden

# Hide and Display Columns

Invoke the Field Chooser and drag a column's header onto it to hide the column.

Contact Name	Company Name	City	Country
Maria Anders	Alfreds Futterkiste	Berlin	Germany
Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.	Mexico
Antonio Moreno	Antonio Moreno Taquería	México D.F.	Mexico
Thomas Hardy	Around the Horn	London	UK
Christina Berglund	Berglunds snabbköp	Luleå	Sweden
Hanna Moos	Blauer See Delikatessen	Mannheim	Germany
Frédérique Citeaux	Blondel père et fils	Strasbourg	France
Martín Sommer	Bólido Comidas preparadas	Madrid	Spain
Laurence Lebihan	Bon app'	Marseille	France
Elizabeth Lincoln	Bottom-Dollar Markets	Tsawassen	Canada

Page 1 of 10 (91 items) 1 [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) >

Field Chooser ✖

Region

Country ✖

Drag a column's header from the Field Chooser and drop it onto the column header panel to make the column visible.

## Customization Dialog

Use the [customization dialog](#) to change the order and visibility of data columns.

# Reorder Columns

Drag a column header to a new position within the column header panel to reorder columns.

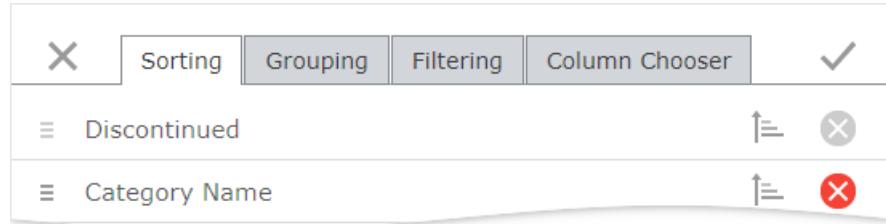
Drag a column header here to group by that column			
Contact Name	Company Name	City	Country
Maria Anders	Alfreds Futterkiste	Berlin	Germany
Ana Trujillo	Ana Trujillo Emparedados y helados	México D.F.	México D.F.
Antonio Moreno	Antonio Moreno Taquería	Mexico	México D.F.
Thomas Hardy	Around the Horn	UK	London



Drag a column header here to group by that column			
Contact Name	City	Company Name	Country
Maria Anders	Berlin	Alfreds Futterkiste	Germany
Ana Trujillo	México D.F.	Ana Trujillo Emparedados y helados	Mexico
Antonio Moreno	México D.F.	Antonio Moreno Taquería	Mexico
Thomas Hardy	London	Around the Horn	UK

# Customization Dialog

You can use the customization dialog to perform data shaping operations.



The following pages are available within the dialog:

- [Sorting](#) page enables you to sort grid data, change the sorting order (ascending/descending), and change the order of sorted columns.
- [Grouping](#) page enables you to group grid data and change the grouping priority order.
- [Filtering](#) page enables you to filter grid data.
- [Column Chooser](#) page enables you to change data columns' order and visibility.

Click a tab to switch to the corresponding page.

You can modify dialog settings on every page and click **Apply** ✓ or click **Close** ✘ to discard all the changes.

# Sorting Page

You can use the **Sorting** page to sort grid data, change the sorting order, and change the order of sorted columns.

Select a column's check box in the **Columns to Sort** list to sort grid data against this column in ascending order. The grid can be sorted more than by one column. A list of the sorted columns is displayed at the top of the **Sorting** page.

- Use to drag the columns in this list and change the sorting priority.
- Use to reverse a column's sort order.
- Use or clear a column's check box in the **Columns to Sort** list to remove a column from the sorting list.

A grouping column is always sorted, therefore its remove button is displayed disabled. You can see the list of grouping columns in the [Grouping](#) dialog page.

The screenshot shows the 'Sorting' dialog box. At the top, there are tabs for 'Sorting' (selected), 'Grouping', 'Filtering', and 'Column Chooser'. Below the tabs are three sorted columns: 'Discontinued' (asc), 'Category Name' (desc), and 'Unit Price' (desc). Each has a remove button (). A 'Columns to Sort' section lists other columns with checkboxes: Product Name (unchecked), Category Name (checked), Quantity Per Unit (unchecked), Unit Price (checked), Units In Stock (unchecked), and Discontinued (checked).

Column	Sort Order
Discontinued	↑ (Asc)
Category Name	↓ (Desc)
Unit Price	↓ (Desc)

Column	Selected
Product Name	unchecked
Category Name	checked
Quantity Per Unit	unchecked
Unit Price	checked
Units In Stock	unchecked
Discontinued	checked

You can modify dialog settings and click **Apply** or click **Close** to discard all the changes.

# Grouping Page

You can use the **Grouping** page to group grid data and change grouping priority order.

Select a column's check box in the **Columns to Group** list to group grid data against this column. You can group grid data by more than one column. The selected columns are displayed at the top of the **Grouping** page.

- Use to drag the columns in this list and change the grouping priority order.
- Use or clear a column's check box in the **Columns to Group** list to remove the column from the grouping list.

X	Sorting	Grouping	Filtering	Column Chooser	✓
≡	Discontinued				
≡	Category Name				
<b>Columns to Group</b>					
Product Name				<input type="radio"/>	
Category Name				<input checked="" type="radio"/>	
Quantity Per Unit				<input type="radio"/>	
Unit Price				<input type="radio"/>	
Units In Stock				<input type="radio"/>	
Discontinued				<input checked="" type="radio"/>	

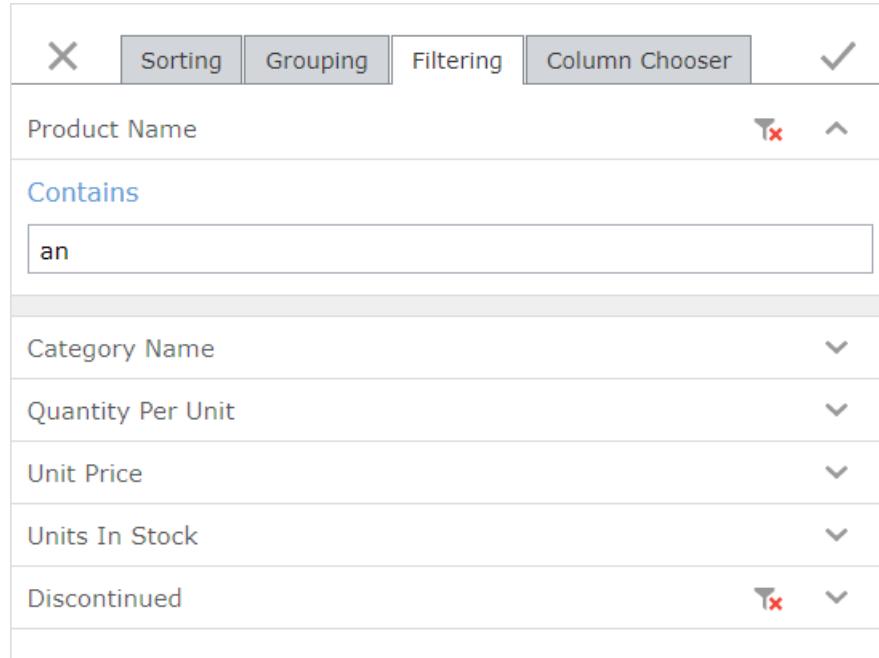
You can modify dialog settings and click **Apply** or click **Close** to discard all the changes.

# Filtering Page

You can use the **Filtering** page to create and change filter conditions.

You can select the criteria operator and specify the operand value for each column.

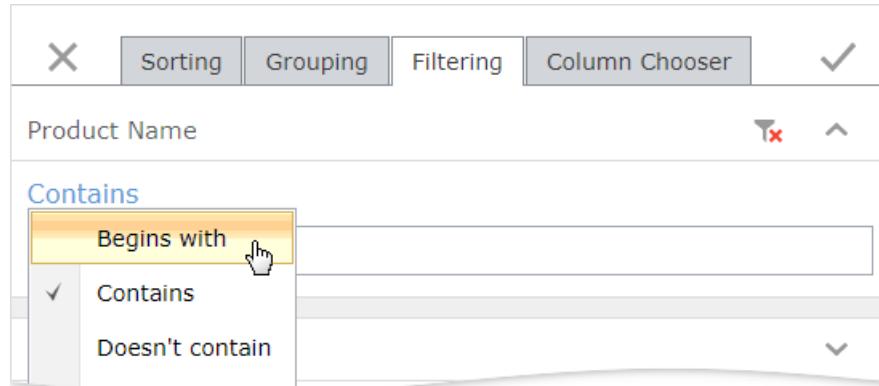
- Use  to expand a column's filter condition.
- Click  or clear an operand value's editor to remove a column's filter.



The screenshot shows the 'Filtering' tab selected in a dialog box. It includes buttons for 'X' (Close), 'Sorting', 'Grouping', 'Filtering' (which is active and highlighted in blue), and 'Column Chooser'. There is also a checkmark button at the top right. Below these are six filter rows:

- Product Name:** Contains 'an' (with a red 'X' icon and an up arrow icon).
- Category Name:** (with a down arrow icon)
- Quantity Per Unit:** (with a down arrow icon)
- Unit Price:** (with a down arrow icon)
- Units In Stock:** (with a down arrow icon)
- Discontinued:** Contains 'an' (with a red 'X' icon and a down arrow icon)

Click a column's criteria operator to display a list of available operators. Click a new operator to change the current one.



The screenshot shows the 'Filtering' tab selected in a dialog box. The 'Contains' row for 'Product Name' has its dropdown menu open, displaying three options: 'Begins with' (highlighted with a yellow background and a cursor icon), 'Contains' (with a checked checkbox), and 'Doesn't contain'.

You can modify dialog settings and click **Apply**  or click **Close**  to discard all the changes.

# Column Chooser Page

You can use the **Column Chooser** page to change data columns' order and visibility.

Click  to hide the corresponding column in a grid.

Click the  to show the corresponding column in a grid.

Use  to drag columns and change their order in a grid.

X	Sorting	Grouping	Filtering	Column Chooser	✓
≡	Product Name				
≡	Category Name				
≡	Unit Price				
≡	Discontinued				
≡	Units In Stock				
≡	Quantity Per Unit				

You can modify dialog settings and click **Apply**  or click **Close**  to discard all the changes.

# Data Summaries

The grid can calculate and displays summaries about groups of rows or individual data columns. The following aggregate functions are available:

- Average
- Count
- Max
- Min
- Sum

The grid supports two summary types: total and group summary.

## Total Summary

A total summary calculates the value of an aggregate function over all the rows within a grid and is displayed within the footer.

Company Name	City	Country	Unit Price	Quantity	Total
Blondesddsl père et fils	Strasbourg	France	\$31.20	30	\$936.00
Blondesddsl père et fils	Strasbourg	France	\$12.00	20	\$240.00
Morgenstern Gesundkost	Leipzig	Germany	\$36.40	20	\$728.00
Morgenstern Gesundkost	Leipzig	Germany	\$39.40	12	\$472.80
Berglunds snabbköp	Luleå	Sweden	\$3.60	12	\$43.20
Min=1 Count=2,155 Avg=23.81 Sum=\$1,354,458.59 Max=130					
Page 1 of 431 (2155 items) <span style="float: right;">◀ ▶</span>					

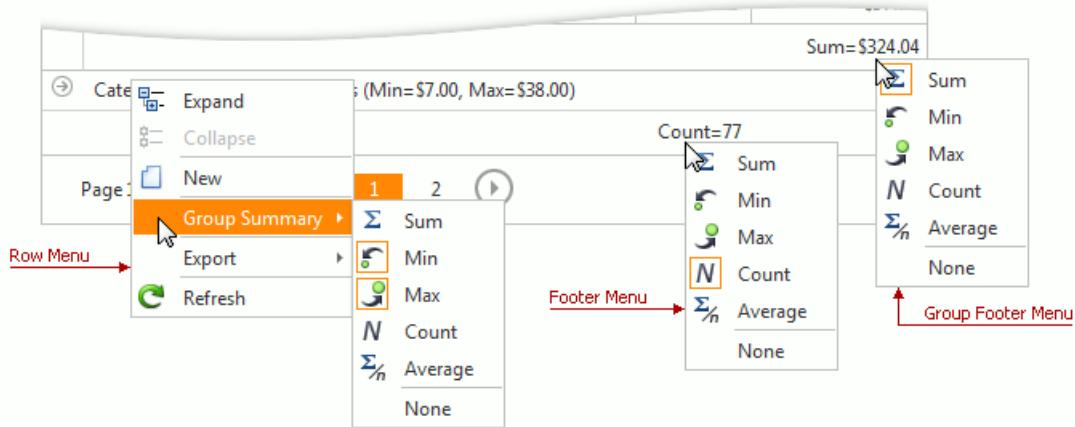
## Group Summary

A group summary calculates the value of an aggregate function over all rows within a group and is displayed in the group row or group footer.

Order Date ▲						
	Product Name	Category Name	Country	Unit Price	Quantity	Total
⌚	Order Date: 7/4/1996 (Sum=\$440.00, Count=3)					
⌚	Order Date: 7/5/1996 (Sum=\$1,863.40, Count=2)					
	Manjimup Dried Apples	Produce	UK	\$42.40	40	\$1,696.00
	Tofu	Produce	UK	\$18.60	9	\$167.40
			Count=2		Sum=49	Sum=\$1,863.40
⌚	Order Date: 7/8/1996 (Sum=\$2,483.80, Count=6)					

## Add and remove summaries

Use the [context menu](#) to add and remove summaries.



CONTEXT MENU ITEM	DESCRIPTION
Sum	Shows/hides a sum of cell values
Min	Shows/hides the minimum cell value
Max	Shows/hides the maximum cell
Count	Shows/hides a count of cell values
Average	Shows/hides the average cell value
None	Hides all summaries in the current column

# Data Validation

The grid validates entered values and displays errors if a value does not pass validation.

An error icon indicating the invalid value. Hover the mouse over the icon to display a hint with the error's description.

Correct every invalid value to save data.

New	First Name	Last Name	Age	E-mail	Arrival Date
	Andrew	Fuller	42	andrew.fuller@devexpress.com	10/15/2018
	First Name:	Andrew	Last Name:	Fuller	
	Age:	15	E-mail:	andrew.fuller@devexpress.com	
	Arrival Date:	11/15/2018	Age must be greater than or equal 18.		
				<a href="#">Update</a> <a href="#">Cancel</a>	
Please, correct all errors.					
	Edit	Nancy	Davolio	34	nancy.davolio@devexpress.com
	Edit	Margaret	Peacock	48	margaret.peacock@devexpress.com
					11/20/2018
					11/22/2018

# Data Export

The grid allows you to export data in the following formats.

- DOCX
- CSV
- PDF
- RTF
- XLS
- XLSX

Customer Name	Unit Price	Discount	Quantity	Total
Alfreds Futterkiste	\$13.25	5 %	40	\$503.50
Alfreds Futterkiste	\$21.50	0 %	20	\$430.00
Alfreds Futterkiste	\$43.90	0 %	20	\$878.00

Grid (3) - Excel

A1 : Customer Name

	A	B	C	D	E
1	Customer Name	Unit Price	Discount	Quantity	Total
2	Alfreds Futterkiste	\$13.25	5 %	40	\$503.50
3	Alfreds Futterkiste	\$21.50	0 %	20	\$430.00
4	Alfreds Futterkiste	\$43.90	0 %	20	\$878.00
5	Alfreds Futterkiste	\$10.00	0 %	6	\$60.00
6	Alfreds Futterkiste	\$18.00	0 %	15	\$270.00
7	Alfreds Futterkiste	\$45.60	25 %	15	\$513.00

Sheet

READY

# Responsive Layout

The grid automatically hides columns one by one when the browser window is resized. When a grid has hidden columns, an ellipsis button (**Show Adaptive Detail** button) is displayed for every row.

New	Product Name	Unit Price	Units In Stock	...
<a href="#">Edit</a> <a href="#">Delete</a>	Chai	\$18.00	39	...
<a href="#">Edit</a> <a href="#">Delete</a>	Chang	\$19.00	17	...
<a href="#">Edit</a> <a href="#">Delete</a>	Aniseed Syrup	\$10.00	13	

Category Name: Condiments X

Quantity Per Unit: 12 - 550 ml bottles

Discontinued:

**Adaptive Detail Row**

**Adaptive Column**

**Show Adaptive Detail Buttons**

**Hide Adaptive Detail Button**

You can see hidden data in the adaptive detail row. Click the ellipsis button to expand the corresponding detail row. To hide a detail row, click the **Hide Adaptive Detail** button.

# Grid Lookup

Grid Lookup enables you to easily locate and select values from a dropdown grid.

Adam Khan		
First Name	Last Name	Phone
Lindsay	Hayes	1 (524) 213-8821
Nicole	Kapoor	1 (528) 601-4000
Madison	Keiser	1 (523) 774-9244
Jerry	Trenary	1 (528) 678-0518
Adam	Khan	1 (527) 476-7505
Jonathon	Munoz	1 (525) 829-5226
Dwayne	Suri	1 (524) 151-9652
Brooke	Chande	1 (524) 178-7004
Oscar	Roberts	1 (525) 904-4168
Kelli	Reed	1 (524) 455-1295
Page 1 of 2000 (20000 items)		
<a href="#">&lt;</a>	<a href="#">[1]</a>	<a href="#">2</a> ... <a href="#">2000</a> <a href="#">&gt;</a>

Topics in this section:

- [Filter Grid Lookup Data](#)
- [Select Grid Lookup Rows](#)

# Filter Grid Lookup Data

Type text within the editor to filter data. A filter condition is automatically created based upon the value entered.

First Name	Last Name	Phone
Lisa	Jai	1 (528) 940-2847
Isabel	Baker	1 (525) 293-5341
Lisa	Ferrier	1 (524) 892-2426
Isabelle	Vance	1 (528) 429-5491
Isabel	Belli	1 (523) 710-0554
Isabel	Coleman	1 (526) 822-7838
Isabel	Schmidt	1 (528) 550-6112
Lisa	Scott	1 (526) 153-0017
Lisa	Jai	1 (526) 825-8718
Isabel	Michaels	1 (524) 802-1854

Page 1 of 23 (228 items) [\[<\]](#) [\[1\]](#) [2](#) ... [23](#) [\[>\]](#)

# Select Grid Lookup Rows

If multiple row selection is allowed by the application vendor, you can select multiple rows by doing one of the following.

- Click a row to toggle its selected state.
- If selection check boxes are visible, check rows that need to be selected.

php, jquery, python, sql		
#	Tag Name	Rank
<input type="checkbox"/>	c#	111055
<input type="checkbox"/>	java	69087
<input checked="" type="checkbox"/>	php	60724
<input type="checkbox"/>	.net	53376
<input type="checkbox"/>	javascript	52387
<input type="checkbox"/>	asp.net	49338
<input checked="" type="checkbox"/>	jquery	43561
<input type="checkbox"/>	c++	42524
<input checked="" type="checkbox"/>	python	35044
<input checked="" type="checkbox"/>	sql	27736

Page 1 of 4 (38 items)  [1]

# HTML Editor

This section describes the capabilities provided by the HTML Editor (Rich Text Editor), which provides a wide range of capabilities for HTML content editing.

## User Interface

- [View Modes](#)
- [Toolbar](#)
- [Ribbon](#)
- [Search Panel](#)
- [Context Menu](#)
- [Tag Inspector](#)

## Formatting Text

- [Make Text Bold](#)
- [Apply Italic Formatting](#)
- [Underline Text](#)
- [Apply Strikethrough Formatting](#)
- [Change Foreground Color](#)
- [Change Background Color](#)
- [Change Font Type](#)
- [Change Font Size](#)
- [Make Text Superscript or Subscript](#)
- [Remove Formatting](#)

## Formatting Paragraphs

- [Text Indentation](#)
- [Text Alignment](#)
- [Paragraph Styling](#)
- [Ordered and Bullet Lists](#)

## Paste Formatting

- [Paste Formatting](#)

## Find and Replace Dialog

- [Find and Replace Dialog](#)

## Working with Hyperlinks

- [Create a Hyperlink](#)
- [Modify a Hyperlink](#)
- [Remove a Hyperlink](#)

## Working with Tables

- [Create a Table](#)
- [Modify a Table](#)
- [Remove a Table](#)

## Working with Images

- [Insert an Image](#)

- [Modify an Image's Settings](#)
- [Image Settings](#)

## **Working with Audio Files**

- [Insert an Audio](#)
- [Modify Audio Settings](#)
- [Audio Settings](#)

## **Working with Flash Files**

- [Insert a Flash](#)
- [Modify Flash Settings](#)
- [Flash Settings](#)

## **Working with Video Files**

- [Insert a Video](#)
- [Modify Video Settings](#)
- [Video Settings](#)

## **Working with YouTube Video Files**

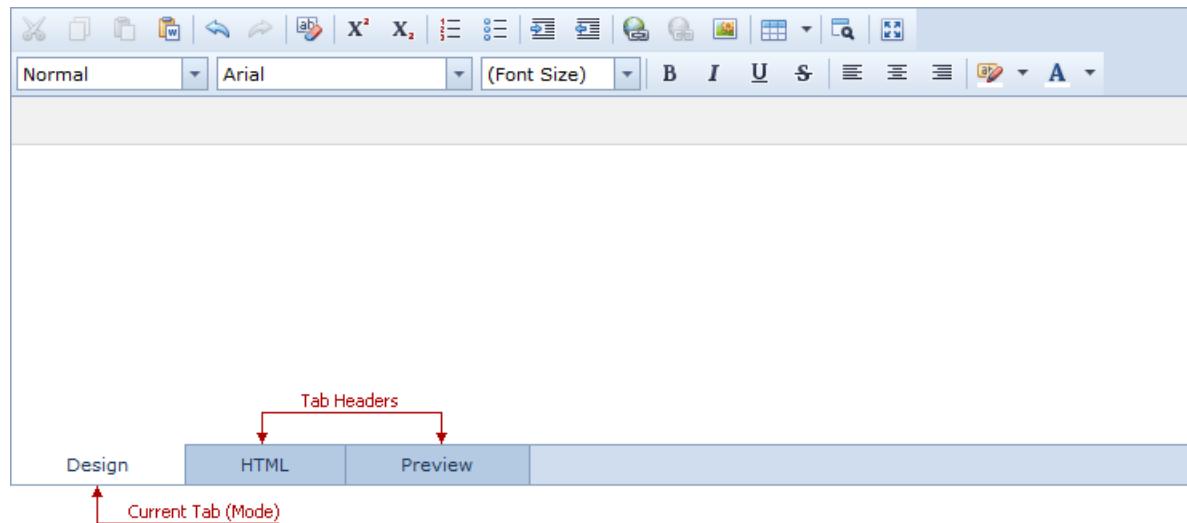
- [Insert a YouTube Video](#)
- [Modify YouTube Video Settings](#)
- [YouTube Video Settings](#)

## **Miscellaneous Operations**

- [Repeat and Undo Actions](#)
- [Printing Content](#)
- [Clipboard Operations](#)
- [Check Spelling](#)
- [Sizing and Full-Screen Mode](#)
- [Export Content to Various Documents Formats](#)
- [Shortcuts](#)

# View Modes

The HTML Editor can operate in three modes: [Design mode](#), [HTML mode](#), and [Preview mode](#). You can switch between modes by using the tab headers.

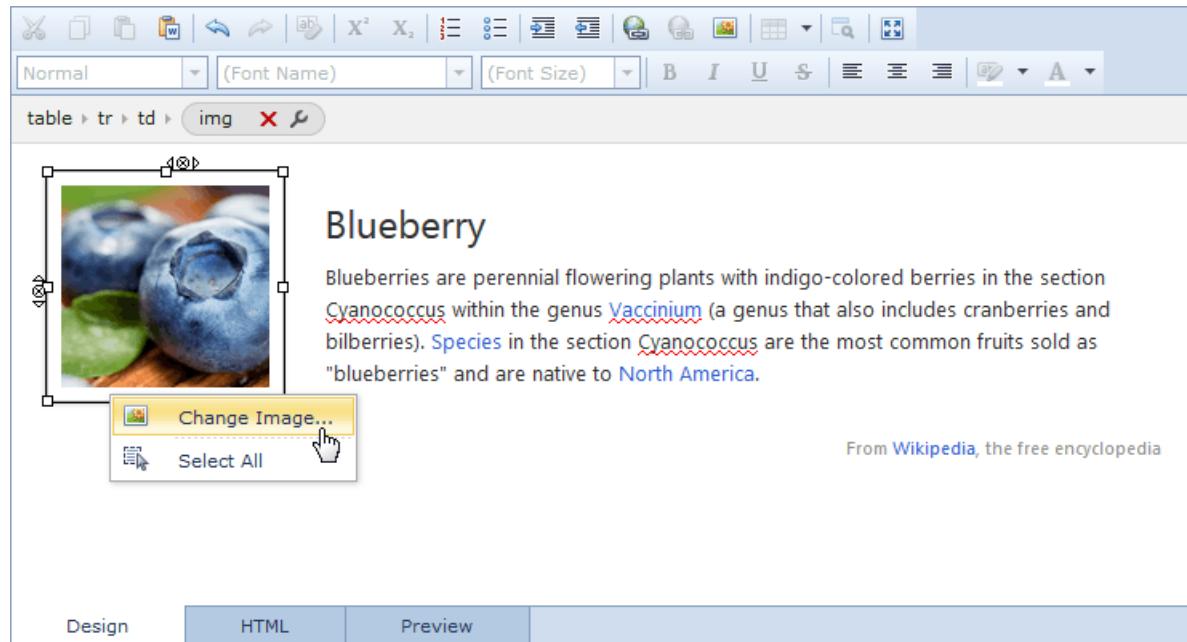


## Design Mode

**Design Mode** allows you to modify editor content using various design tools, and instantly see the results.

In this view, the editor can display the following elements.

- [Toolbar or Ribbon](#)
- [Context Menu](#)
- [Tag Inspector](#)



## HTML Mode

**HTML Mode** allows you to modify editor content using HTML markup.

```
1  - <table cellpadding="1" cellspacing="0">
2  -   <tbody><tr>
3  +     <td style="width: 170px; vertical-align: top; border: 1px solid #ffcccc;"> ...
4  -   <td style="vertical-align: top; border: 1px solid #ffcccc;">
5  -     <div style="font-family: 'Segoe UI'; color: #303030;">
6  -       <p>
7  -         <span style="font-size: 18pt;">Blueberry</span>
8  -       </p>
9  +     <p style="margin-top: -10px;">
10 +       <span style="font-size: 10pt; line-height: 1.5; erries in the section Cyanococcus within the genus <a href="https://en.wikipedia.org/wiki/Vaccinium" style="text-decoration: inherit; color: #2B5ED1;">Vaccinium</a> (a genus that also includes cranberries and bilberries). <a href="http://en.wikipedia.org/wiki/North_America" style="text-decoration: inherit; color: #2B5ED1;">North America</a>.</span><br />
11 +     </p>
12 +   </td>
13 + </tr>
14 + </tbody></table>
15 + <p style="text-align: right;"> ... </p>
```

Design

HTML

Preview

## Preview Mode

**Preview Mode** allows you to view editor content as a regular webpage.



### Blueberry

Blueberries are perennial flowering plants with indigo-colored berries in the section Cyanococcus within the genus [Vaccinium](#) (a genus that also includes cranberries and bilberries). [Species](#) in the section Cyanococcus are the most common fruits sold as "blueberries" and are native to [North America](#).

From [Wikipedia](#), the free encyclopedia

Design

HTML

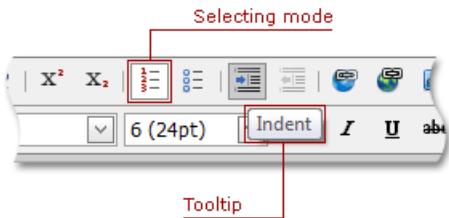
Preview

# Menu Toolbar

The **Menu toolbar** is a set of buttons, which perform common tasks in HTML content editing and formatting. Most toolbar buttons work in the same manner as in Microsoft Word.



Each standard toolbar button has its own tooltip, invoked while the button is hovered with the mouse cursor. Some buttons have a selected mode, which indicates the active state of the button.

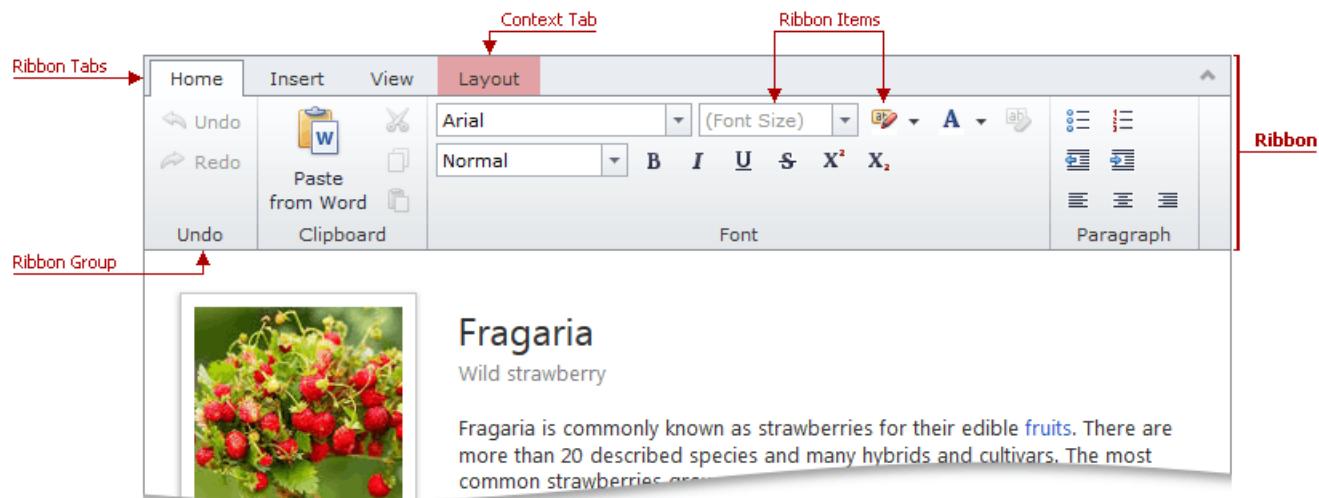


## ■ Note

Some buttons and functionality may be unavailable in your application. This is the choice of the application vendor.

# Ribbon

The **Ribbon** is a set of items which perform common tasks in HTML content editing and formatting, grouped by functionality. Most ribbon items work in the same manner as in Microsoft Word.



HTML Editor provides the following ribbon tabs that contain predefined sets of ribbon items, grouped by functionality.

- **Home** tab contains items that provide quick shortcuts to many frequently used operations (such as clipboard operations, undo/redo operations, changing the text's font and style, etc.)
- **Insert** tab contains items that provide access to the link dialogs, image dialogs, and insert table button.
- **View** tab contains an item allowing you to switch the editor to full-screen mode.
- **Layout** context tab contains table-related items and is displayed when a selection is in a table.

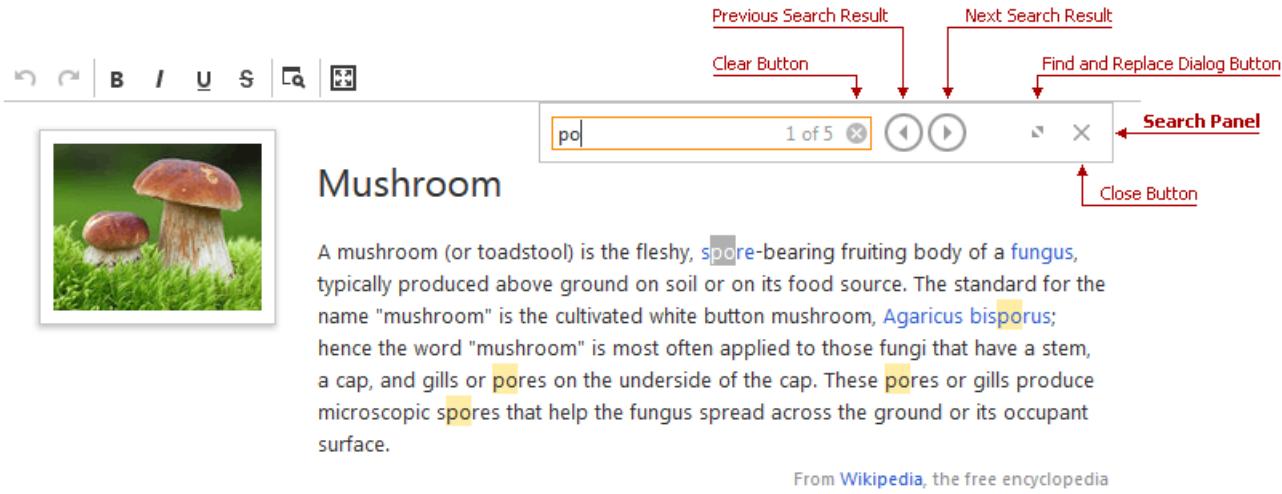
## Note

Some buttons and functionality may be unavailable in your application. This is the choice of the application vendor.

# Search Panel

The **Search Panel** allows you to search text and navigate through search results.

To invoke the panel, press the CTRL+F keys.



Design    HTML    Preview

Type the search text in the edit box. The search panel automatically searches the text and highlights the results. You can clear the search text by clicking the **Clear Button**.

The number of search results is displayed in the edit box near the **Clear Button**. You can navigate through the results using the **Previous Search Result** and **Next Search Result** buttons.

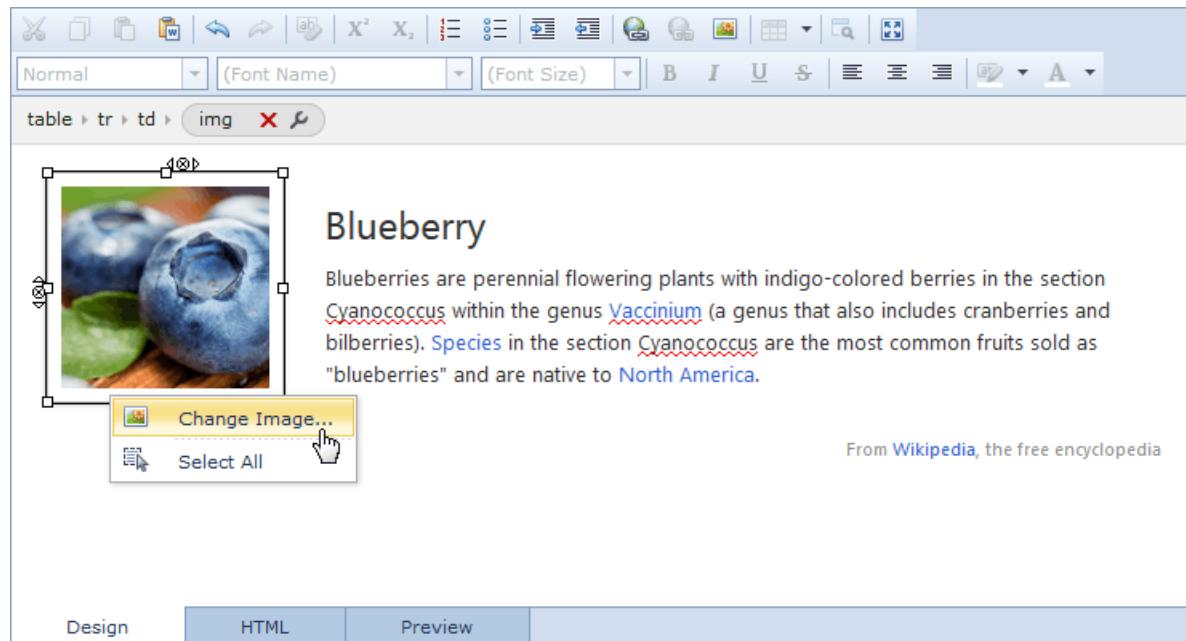
To close the **Search Panel**, click the **Close Button**.

The **Find and Replace Dialog Button** invokes the **Find and Replace Dialog** that allows you to replace the search results with a custom text.

# Context Menu

A **Context menu** is displayed when you right-click the content (text, image, table, etc.) in the editor.

A context menu can be invoked only in the editor's Design and HTML [view modes](#).



## Context Menu Commands

The context menu contains the following commands.

COMMAND	DESCRIPTION
<b>Commands available in Design view</b>	
Cut	Cuts the selection to the clipboard. (See the note below the table)
Copy	Copies the selection to the clipboard. (See the note below the table)
Paste	Pastes content from the clipboard to the current cursor position. (See the note below the table)
Select All	Selects all editor content.
Unlink	Removes the current link element.
Change Link...	Invokes the <b>Change Link</b> dialog for the current link.
Change Image...	Invokes the <b>Change Image</b> dialog for the current image.
Change Audio...	Invokes the <b>Change Audio</b> dialog for the current audio element.
Change Video...	Invokes the <b>Change Video</b> dialog for the current video element.
Change Flash...	Invokes the <b>Change Flash</b> dialog for the current flash element.

COMMAND	DESCRIPTION
Change YouTube Video...	Invokes the <b>Change YouTube Video</b> dialog for the current YouTube video element.
Change Placeholder...	Invokes the <b>Change Placeholder</b> dialog for the current placeholder.
Table Properties...	Invokes the <b>Table Properties</b> dialog for the current table.
Row Properties...	Invokes the <b>Row Properties</b> dialog for the current row.
Column Properties...	Invokes the <b>Column Properties</b> dialog for the current column.
Cell Properties...	Invokes the <b>Cell Properties</b> dialog for the current cell.
Insert Table	Insert a new table
Insert Row Above	Inserts a table row above the current one.
Insert Row Below	Inserts a table row below the current one.
Insert Column to the Left	Inserts a table column to the left of the current one.
Insert Column to the Right	Inserts a table column to the right of the current one.
Split Horizontally	Splits the current cell horizontally into two cells.
Split Vertically	Splits the current cell vertically into two cells.
Merge Right	Merges the current table cell with the right one.
Merge Down	Merges the current table cell with the bottom one.
Delete Table	Deletes the current table.
Delete Row	Deletes the current table row.
Delete Column	Deletes the current table column.
<b>Commands available in the HTML view</b>	
Outdent	Decrease an indent for the current paragraph.
Indent	Increase an indent for the current paragraph.
Comment	Comments the selected code lines.
Uncomment	Uncomments the selected HTML.
Format Document	Formats the HTML document.
Collapse Tag	Collapses the current tag.

COMMAND	DESCRIPTION
Expand Tag	Expands the current tag.

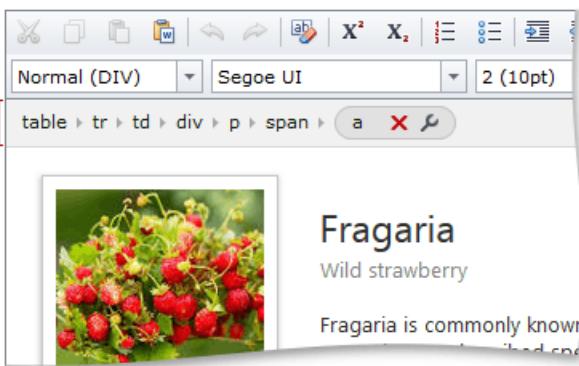
Default command visibility is switched based on the currently selected element.

**Note**

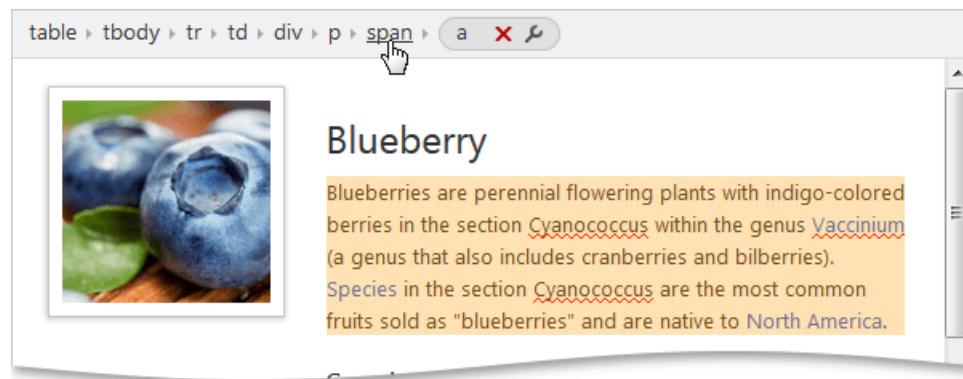
Some browsers (e.g., Firefox, Chrome) do not allow scripts to work with the clipboard for security reasons. Therefore, the Cut, Copy, and Paste commands are removed from the context menu for these browsers.

# Tag Inspector

The **Tag Inspector** allows you to navigate through a tag hierarchy, remove tags, and customize tag properties using the **Tag Properties Editor**.

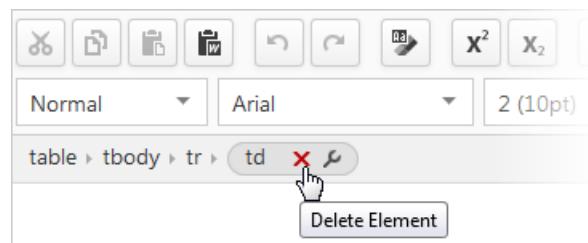


Hover a tag in the **Tag Inspector** to highlight the corresponding tag in the editor content.

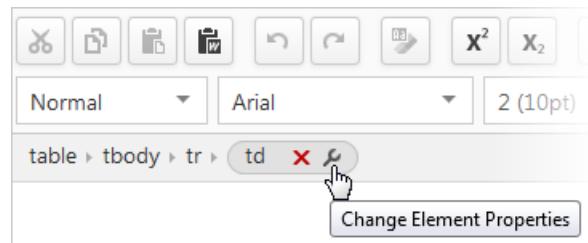


Click a tag in the **Tag Inspector** to select the corresponding tag in the editor content.

Click the **Delete Element** button to delete the current element in the editor's content.



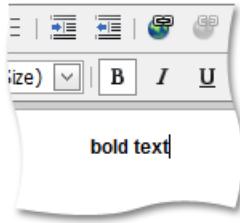
Click the **Change Element Properties** button to invoke a dialog that will allow you to change the properties of the current element.



# Make Text Bold

To apply bold formatting to a specific portion of the text, do the following:

1. Select the text that you want to make bold.
2. Click the **B** button or press Ctrl+B.



To remove bold formatting from the text, select the required bold-formatted part of the text, and click the button again.

To type bold formatted text, click the **B** button. To stop bold formatting, click the button again.

# Apply Italic Formatting

To apply italic formatting to a specific portion of the text, do the following.

1. Select the text you want to format.
2. Click the **Italic**  button or press Ctrl+I.



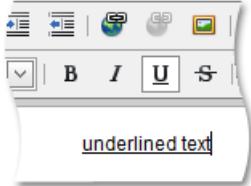
To remove italic formatting from the text, select the desired italic-formatted part of the text, and click the button again.

To type italic formatted text, click the **Italic**  button. To stop italic formatting, click the button again.

# Underline Text

To apply underlined formatting to a specific portion of the text, do the following:

1. Select the required part of the text (or the whole text).
2. Click the **Underline**  button or press Ctrl+U.



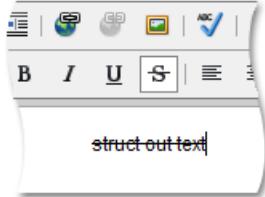
To remove underline formatting from the text (which is already underlined), repeat the actions described above.

To type underlined text click the **Underline**  button. To stop underlining, click this button again.

# Apply Strikethrough Formatting

To apply strikethrough formatting to a specific portion of the text, do the following:

1. Select the required part of the text (or the whole text).
2. Click the **Strikethrough**  button.



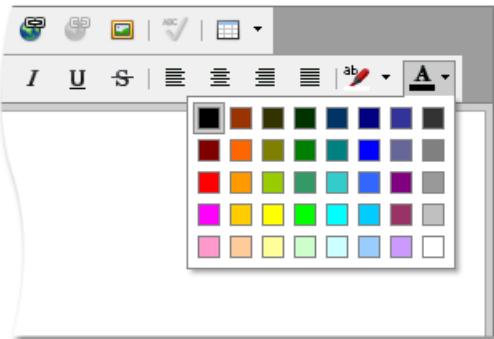
Note that if you want to remove strikethrough formatting from the text (which is already strikethrough-formatted), repeat the actions described above.

To type strikethrough formatted text, click the **Strikethrough**  button. To stop formatting, click the button again.

# Change Foreground Color

To change the text color, do the following.

1. Select a portion of the text you are going to process.
2. Click the **Fore Color**  button, and select the color from the invoked color selector.

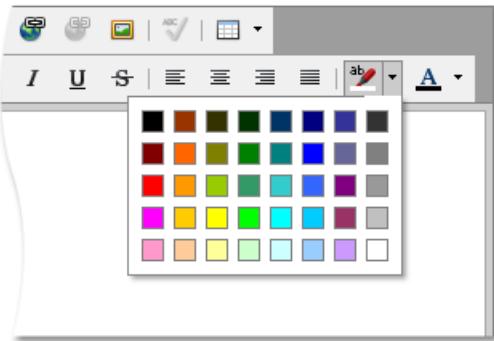


To type text with the specified fore color, select the color via the  button. To stop formatting, select another color.

# Change Background Color

To apply a specific background color to the text, do the following.

1. Select the portion of the text you are going to process.
2. Click the **Back Color**  button and select the color from the invoked color selector.

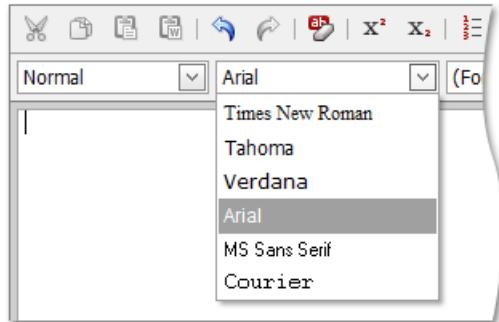


To type text with the specified background color, select the color by using the  button. To stop formatting, select the another color.

# Change Font Type

To change the text's font type, do the following.

1. Select the part of the text you want to process.
2. Click the **Font** list box' dropdown button and select the appropriated font within the opened list.

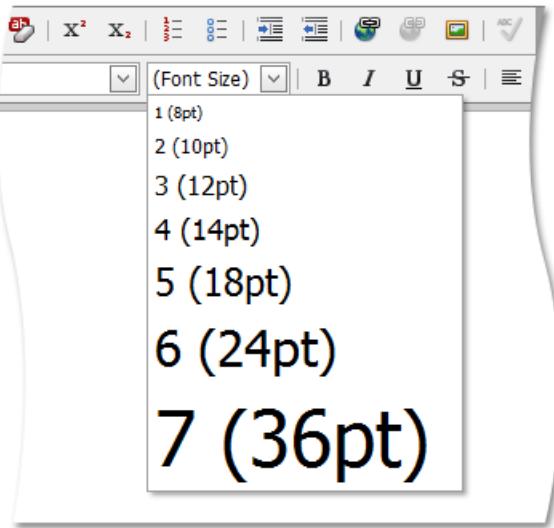


To type text with specified font, set it by using the **Font** list box. To stop formatting, define another font.

# Change Font Size

To change the text font size, do the following.

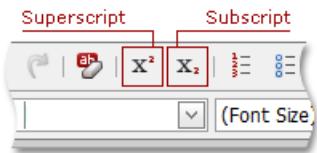
1. Select the required part of the text you want to process.
2. Click the **Font Size** list box's dropdown button and select the appropriate font size within the invoked list.



To type text with the specified font size, set it by using the **Font Size** list box. To stop formatting, set the another font size.

# Make Text Superscript or Subscript

To apply superscript or subscript style to text, select the required characters and click the **Superscript** or **Subscript** button.



To clear this text formatting, select the required portion of the text and click the corresponding formatting button again.

To type superscript or subscript text, press the corresponding button. To stop formatting, press the button again.

# Remove Formatting

To remove text formatting from a specific portion of the text, do the following.

1. Select the text.
2. Click the **Remove Formatting** button (

# Text Indentation

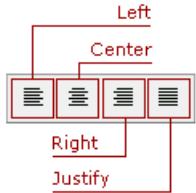
To change text indentation, do the following.

1. Place the mouse pointer over the paragraph you want to format, or select multiple paragraphs.
2. Click the **Indent**  or **Outdent**  button, to indent or outdent the text.

# Text Alignment

The editor allows users to apply the left, right, centered or justified alignment to the text. To change text alignment, do the following.

1. Place the mouse pointer on the paragraph you are going to format, or select multiple paragraphs.
2. Click the appropriate alignment button or press keyboard shortcut.

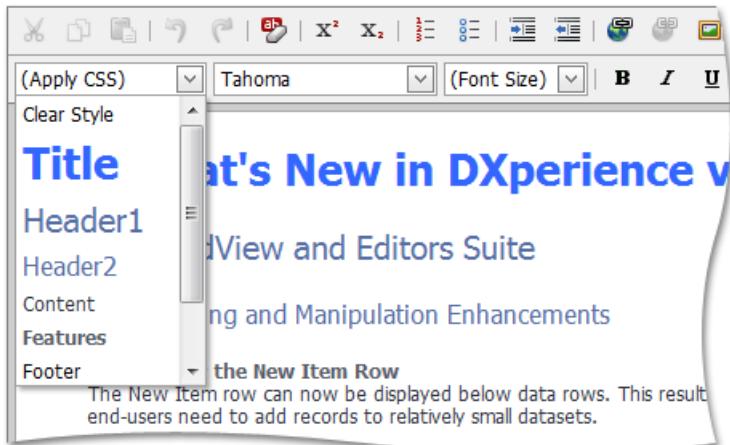


COMMAND	SHORTCUT	DESCRIPTION
<b>Align Left</b>	Ctrl+L	Justifies text left
<b>Align Center</b>	Ctrl+E	Justifies text center
<b>Align Right</b>	Ctrl+R	Justifies text right
<b>Justify</b>	Ctrl+J	Justifies text

# Paragraph Styling

To apply a style, do the following.

1. Select the text you are going to format.
2. Click the **Apply CSS** dropdown button, to invoke a list of available paragraph styles.
3. Select the required style.



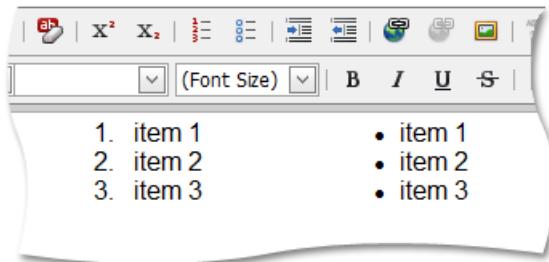
# Ordered and Bullet Lists

## Start a New List

Click a list button (**Ordered List**  or **Bullet List** ). Type in the first item, then press ENTER to create another item.

## Convert Existing Paragraphs into a List

1. Select the paragraphs you want to turn into a list.
2. Click the **Ordered List**  button to apply ordered list formatting to the text, or the **Bullet List**  button to create a bullet list.
3. Place the mouse pointer at the end of the last item and press ENTER to create a new list item.



# Paste Formatting

To change the format of the pasted HTML content, click the buttons that appear at the top right corner of the editor once content is pasted.

- **Keep Source Formatting** button retains the format of the pasted content.
- **Merge Formatting** button discards format of the pasted content. However, emphasis formatting, such as bold and italic text, is retained.
- **Keep Plain Text** button discards format of the pasted content and non-text elements (such as pictures or tables).

The screenshot shows a rich text editor interface. At the top, there's a toolbar with icons for back, forward, search, font (Arial), font size (2 (10pt)), and bold/italic/underline/size buttons. Below the toolbar is a main content area containing text and images. In the top right corner of the content area, there's a small floating toolbar with three buttons: a yellow one with a lock icon, a green one with a checkmark icon, and a blue one with a document icon. A callout bubble points to the yellow button with the text "Keep Source Formatting". The main content area contains promotional text about DevExpress web controls and a preview of a responsive web application on a laptop and tablet.

UI Controls for Your Next Great Web App

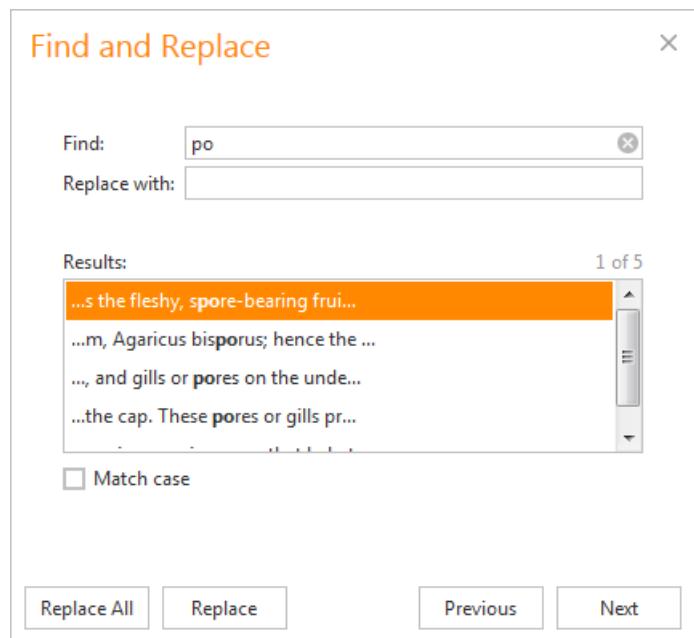
With [DevExpress web controls](#), you can build a bridge to the future on the platform you know and love. The 175+ AJAX controls and [MVC](#) extensions that make up the [DevExpress ASP.NET Subscription](#) have been engineered so you can deliver exceptional, touch-enabled, interactive experiences for the web, regardless of the target browser or computing device. [DevExpress web UI components](#) support all major browsers including *Internet Explorer*, [FireFox](#), [Chrome](#), [Safari](#) and [Opera](#), and are continuously tested to ensure the best possible compatibility across platforms, operating systems and devices.

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# Find and Replace Dialog

The **Find and Replace dialog** allows you to search text, navigate through search results and replace them.

To invoke the dialog, click the corresponding button in a toolbar or in the [Search Panel](#), or press the CTRL+H keys.



Type the search text in the **Find** edit box. For using case sensitive search, select the **Match case** check box. You can navigate through the results using the **Previous** and **Next** buttons, or by selecting a result in the **Results** section.

To replace a search result, specify the replacing text in the **Replace with** edit box, select a search result, and click the **Replace** button. To replace all search results, click the **Replace All** button.

# Create a Hyperlink

## Add a Hyperlink

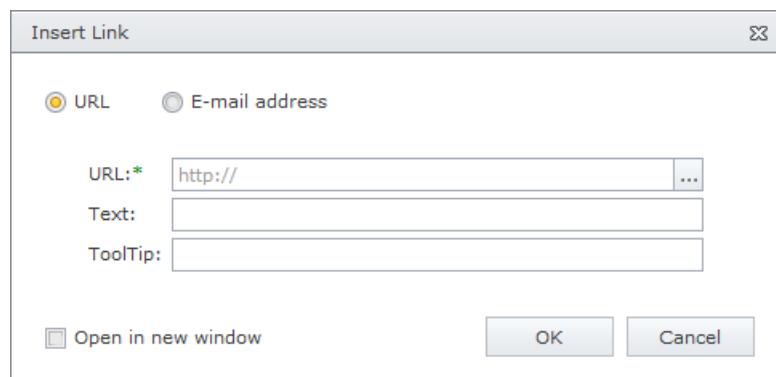
- Select the text or image that you want to display as a hyperlink and click the **Insert Link** button.
- Or, simply click the **Insert Link** button to create a new text link at the current cursor position.



## Specify Hyperlink Settings

After you've pressed the **Insert Link** button, the **Insert Link** dialog is invoked. The radio button at the top allows you to choose whether you want to enter a URL or an e-mail address.

### Enter a URL



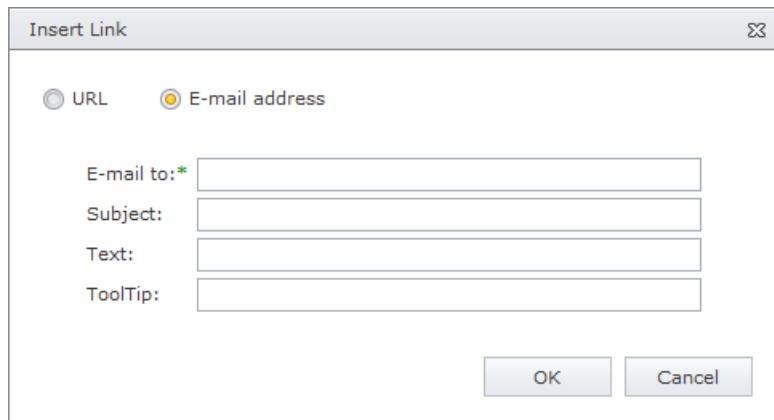
Type a target URL within the edit box or call a built-in [document selector](#) by clicking the **Browse** button.



The hyperlink's settings can be customized by using the following parameters:

PARAMETER	DESCRIPTION
URL	Specifies the target URL.
Text	Specifies the link text. This parameter is not available when creating image links.
Tooltip	Specifies the text that will appear in the tooltip when the mouse cursor is placed over the hyperlink.
Open in new window	Specifies whether to open the URL in the same window, or new one.

### Enter an E-mail Address



The e-mail's settings can be customized using the following parameters:

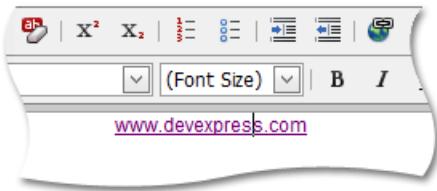
PARAMETER	DESCRIPTION
Email to	Defines an email address.
Subject	Specifies the subject of the email message.
Text	Specifies the link text. This parameter is not available when creating image links.
Tooltip	Specifies the text that will appear in the tooltip when the mouse cursor is placed over the hyperlink.

Click the **OK** or **Cancel** button to save or reject the changes made.

# Modify a Hyperlink

To modify a hyperlink, do the following.

1. Select a hyperlink; or place a mouse pointer inside a link if you are going to modify a text hyperlink; or select an image in order to edit an image hyperlink.



2. Click the **Insert link** button. Alternatively, you can right-click and select the **Change Link** item within the invoked context menu.



3. Modify the hyperlink's settings within the invoked **Change Link** dialog, according to the type of a hyperlink - text or image hyperlink. Detailed information about the hyperlink's available settings can be obtained from the [Create a Hyperlink](#) section.
4. Click **OK** to save the modified hyperlink.

# Remove a Hyperlink

To remove a hyperlink, do the following.

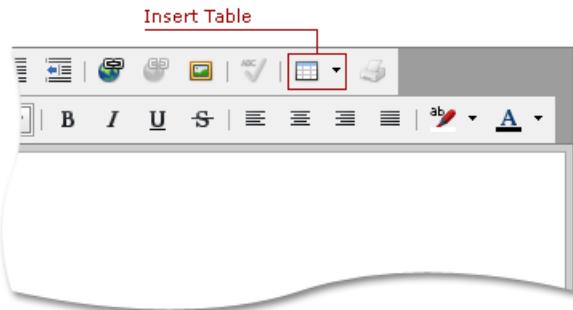
1. Select a hyperlink; or place a mouse pointer inside a link if you are going to remove a text hyperlink; or select an image in order to remove an image hyperlink.
2. Click the **Remove Link** button.



# Create a Table

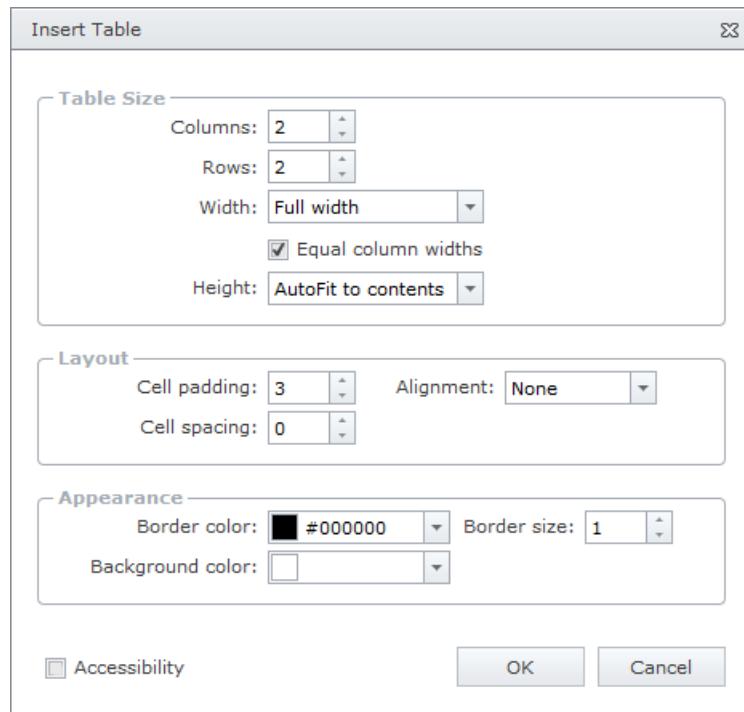
## Create a Table

Place a mouse pointer where you want to create a table. Click the  button.



## Specify Table Settings

Pressing the **Insert Table** button invokes the **Insert Table** dialog.



The invoked window provides a set of parameters to customize a table's settings.

- **Table Size**

These settings are used to specify the row/column count and the table's width and height.

- **Layout**

This section contains settings useful for customizing the table's layout (paddings, alignment).

- **Appearance**

These settings are used to customize the table's background color and borders size and color.

Check the **Accessibility** to enable accessibility compliance for the table.

Click the **OK** or **Cancel** button to save or reject the changes.

# Modify a Table

You can modify a table by changing its properties, adding/deleting a row or column, etc.

## Changing Table Properties

To modify a table's (and its rows, columns and cells) properties, select a table (a row, column, cell) and click one of the following buttons:

COMMAND	BUTTON	DESCRIPTION
<b>Table Properties</b>		Use this command to modify the table's properties (size, layout, appearance).
<b>Row Properties</b>		Use this command to modify a row's alignment, size and appearance.
<b>Column Properties</b>		Use this command to modify a column's alignment, size and appearance.
<b>Cell Properties</b>		Use this command to modify a cell's alignment and appearance.

Each button click invokes the specified window for modifying a table, row, column or cell. When complete, click the **OK** button to save the changes.

## Inserting Rows and Columns

Select a cell of the required row, and click the **Insert Row Above**  or **Insert Row Below**  button to insert a new row above or below the specified row.

To insert a new column to right or to the left from the selected column, click the corresponding **Insert Column to the Left**  or **Insert Column to the Right** .

## Splitting

You can split a cell vertically or horizontally by using the **Split Vertically**  or the **Split Horizontally**  button.

## Merging

To merge two cells to the right or down use the **Merge Right**  or **Merge Down**  button.

# Remove a Table

You can remove a table or its elements from the HTML Editor by using the following buttons:

COMMAND	BUTTON	DESCRIPTION
<b>Delete Table</b>		Removes a table from the HTML Editor.
<b>Delete Row</b>		Removes the specified row and automatically shifts other rows up.
<b>Delete Column</b>		Removes the specified column and automatically shifts other columns to the left.

# Insert an Image

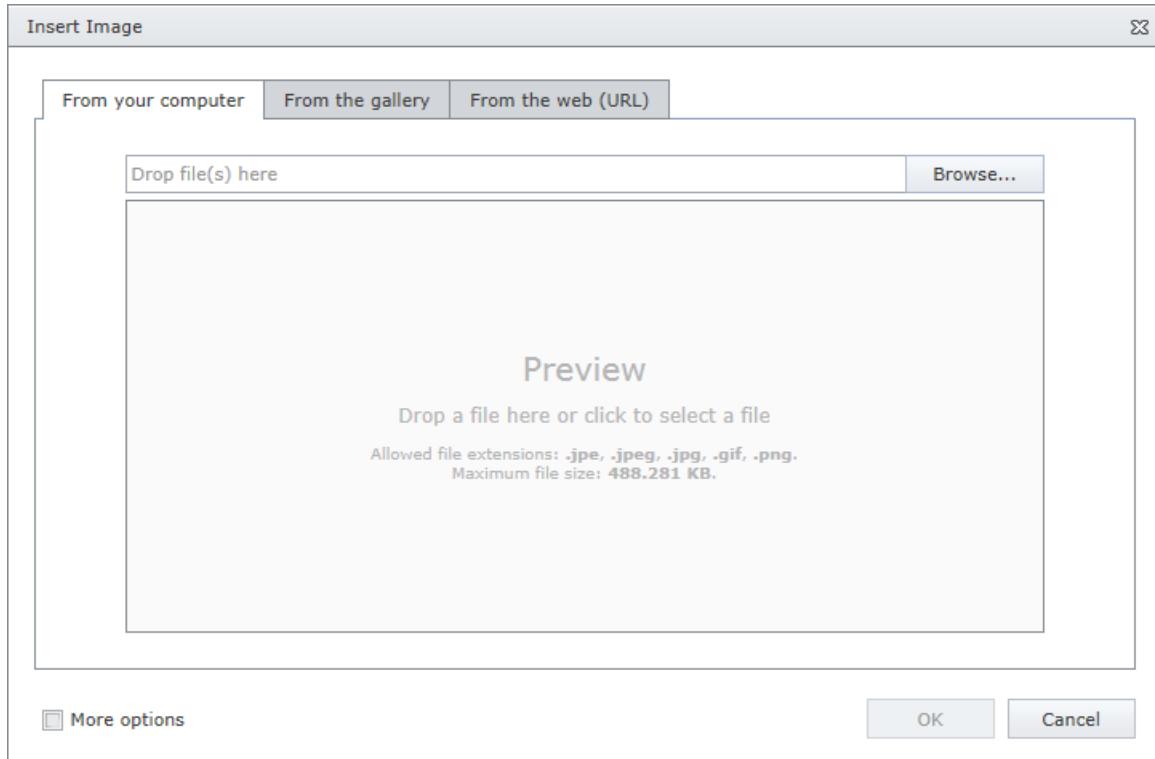
To insert an image into an editor's content, position the mouse pointer on the place in the text where you want to add an image and click the **Insert Image** button.



Define the required parameters of the image within the invoked **Insert Image** dialog.

## Insert an Image Stored on the Local Machine

- Select the **From this computer** radio button within the **Insert Image** dialog.



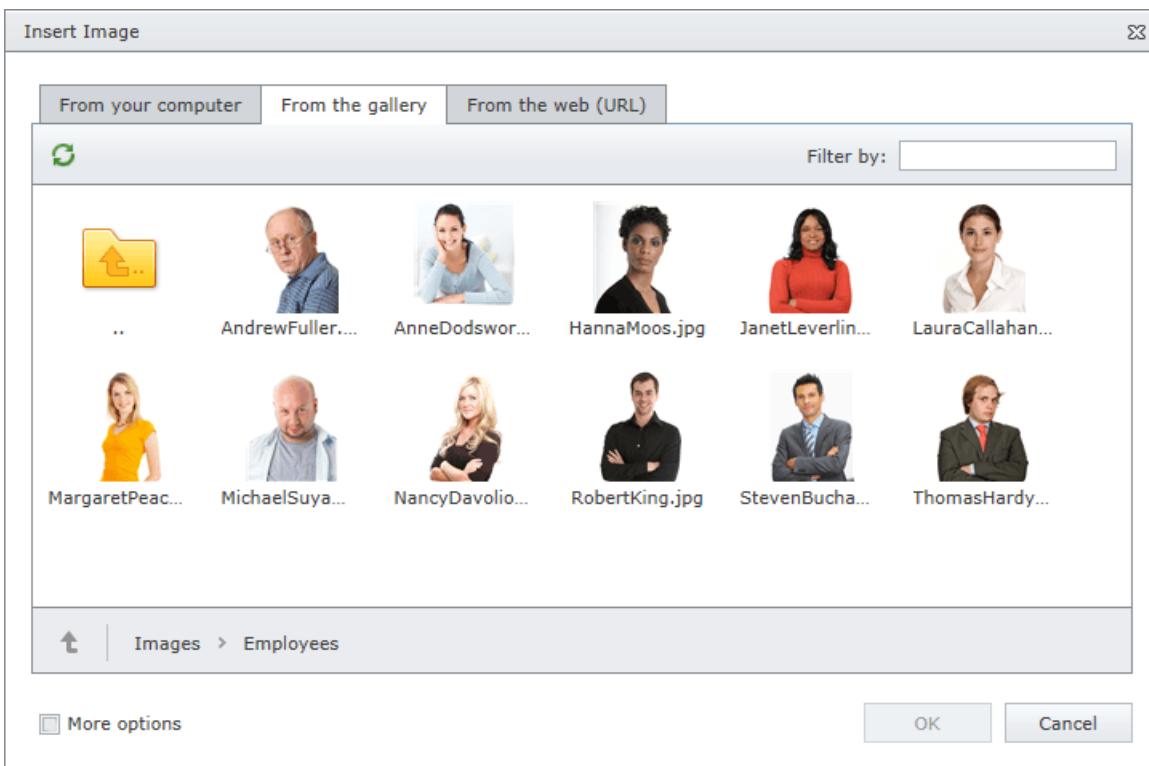
- Click the **Browse...** button, or edit box, or preview area to invoke **File Upload** dialog. Select the image file that you want to add and click the **Open** button to upload the image file to the web server.
- Or you can drag and drop a file to the edit box or preview area to upload the file to the web server.
- Check **More Options** to customize the [image settings](#) (optional).

After completing all the steps above, you can preview the image in the **Insert Image** dialog.

- Click the **OK** button to close the dialog and insert the image into the editor's content.

## Insert an Image from the Predefined Gallery

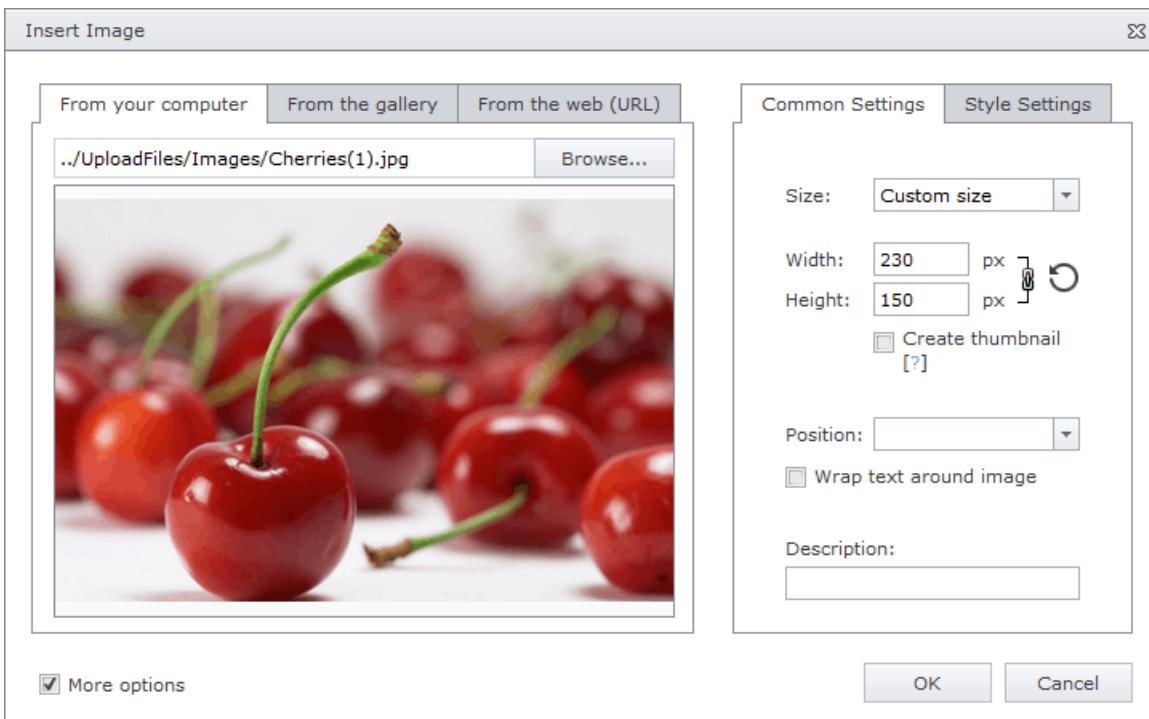
- Click the **From the gallery** tab in the **Insert Image** dialog.



- Select the image that you want to add and click the **OK** button to close the dialog and insert the image into the editor's content.

## Insert an Image by Specifying Its URL

- Click the **From the web (URL)** tab in the **Insert Image** dialog.



- Type the web address of the image file in the edit box.
- Check **Save file to this server** if you want to upload the image to the web server.
- Check **More options** to customize the **image settings** (optional).

After completing all the steps above, you can preview the image in the **Insert Image** dialog.

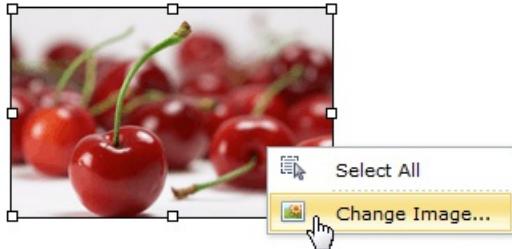
- Click the **OK** button to close the dialog and insert the image into the editor's content.

You can [modify the image](#) after inserting it into the HTML editor.

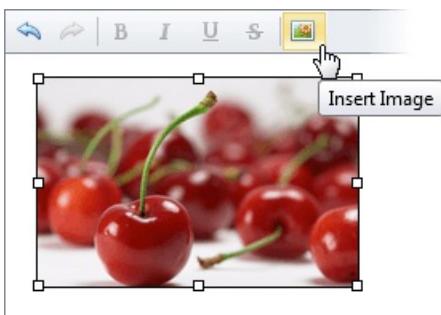
# Modify an Image's Settings

To modify an image's settings within the editor's content, do one of the following.

- Double-click the image.
- Right-click on the image and select **Change Image** within the invoked context menu.



- Select the image and click the **Insert Image** button.

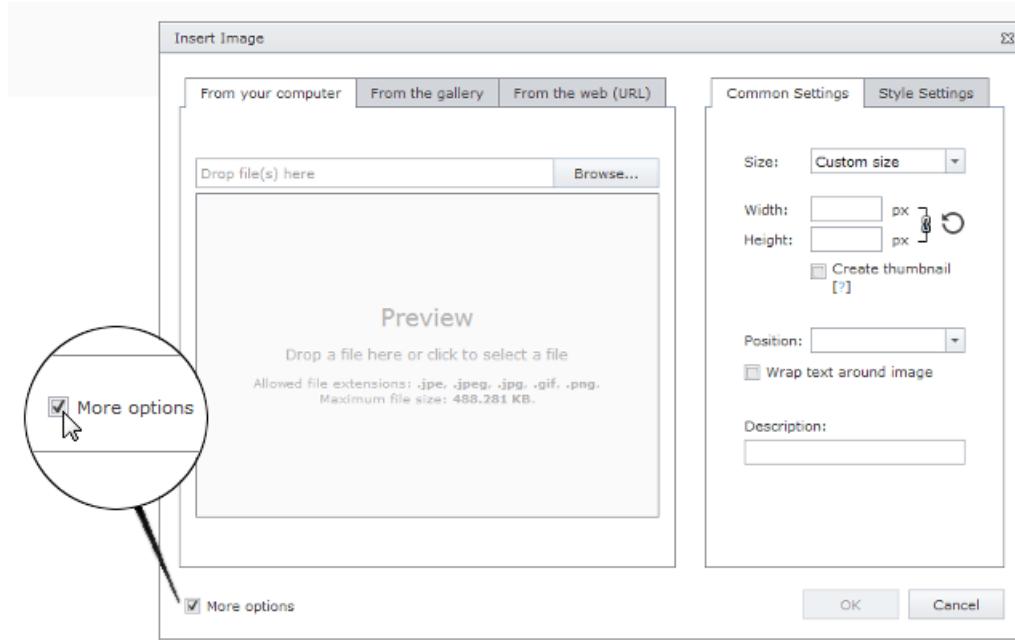


The opened **Change Image** dialog allows you to modify the image's settings. More detailed information about modifying image settings is available in the [Insert an Image in HTML Editor](#) section.

# Image Settings

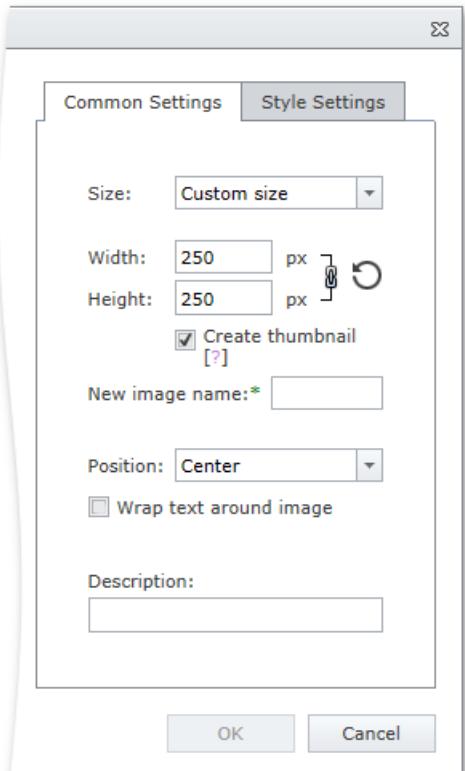
When you [insert](#) or [modify](#) image in an HTML Editor, you can customize the image settings.

To display the settings section in an image dialog, select the **More options** check box.



The displayed section contains the following settings, which you can use to customize the image.

## Common Settings Tab



- **Size** - specifies if the image is a custom or original size.
- **Width** - specifies the width of the image in pixels (for custom size).
- **Height** - specifies the height of the image in pixels (for custom size).
- **Create thumbnail** - specifies if a thumbnail will be created from the image with the specified size (for custom size).

- **New image name** - specifies a name for the image thumbnail.
- **Position** - specifies the position of the image.
- **Wrap text around image** - specifies whether text should be wrapped around the image.
- **Description** - specifies the image description.

## Style Settings Tab



- **Margin top** - specifies the image top margin in pixels.
- **Margin bottom** - specifies the image bottom margin in pixels.
- **Margin left** - specifies the image left margin in pixels.
- **Margin right** - specifies the image right margin in pixels.
- **Border width** - specifies the width of the image border in pixels.
- **Border color** - specifies the color of the image border.
- **Border style** - specifies the style of the image border.
- **CSS class** - specifies the CSS class applied to the image.

# Insert an Audio

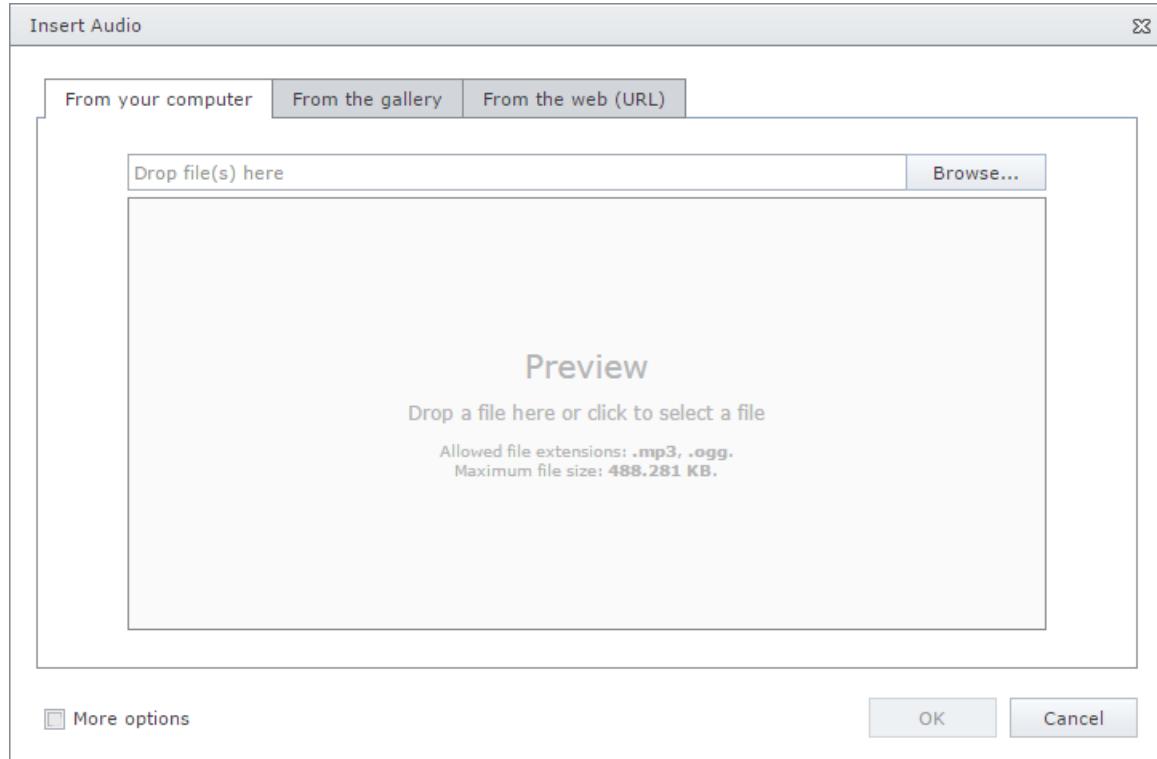
To insert audio into an editor's content, position the mouse pointer on the place in the text where you want to add audio, and click the **Insert Audio** button.



Define the required parameters of the audio in the invoked **Insert Audio** dialog.

## Insert an Audio Stored on the Local Machine

- Click the **From your computer** tab in the **Insert Audio** dialog.



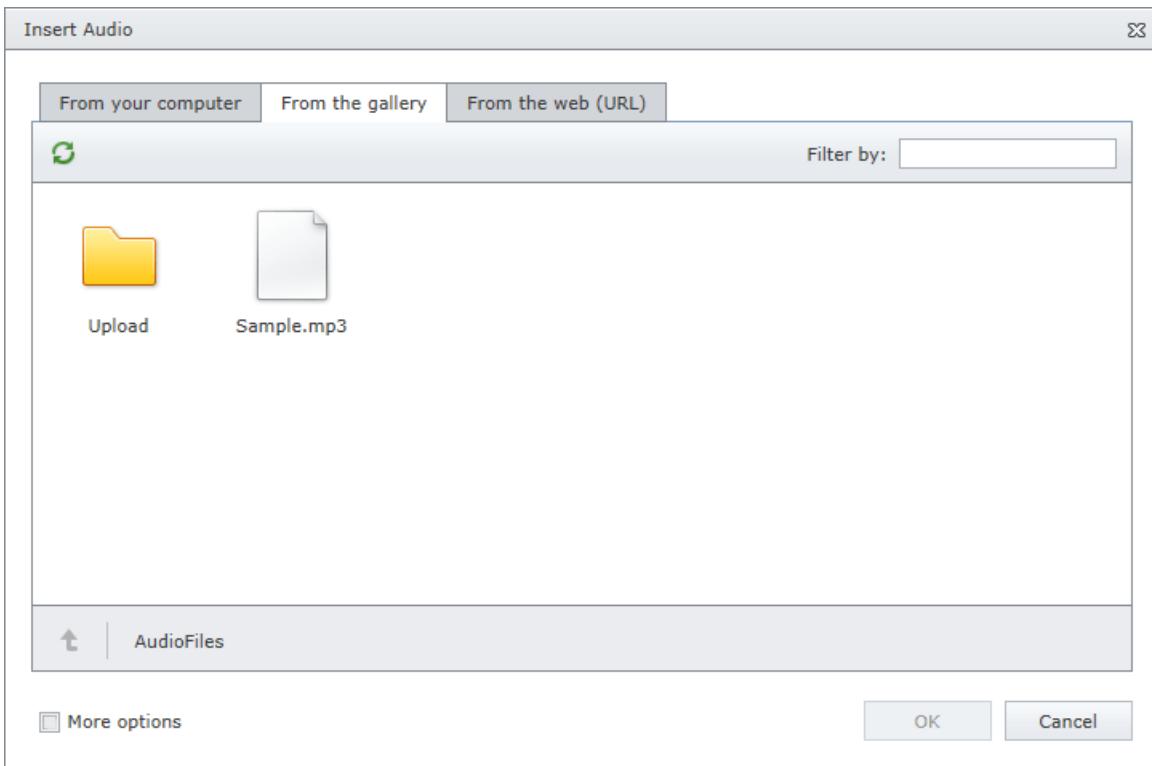
- Click the **Browse...** button, or edit box, or preview area to invoke **File Upload** dialog. Select the audio file that you want to add and click the **Open** button to upload the audio file to the web server.
- Or you can drag and drop a file to the edit box or preview area to upload the file to the web server.
- Check **More Options** to customize the [audio settings](#) (optional).

After completing all the steps above, you can preview the audio in the **Insert Audio** dialog. The audio player allows you to listen to the audio before inserting it.

- Click the **OK** button to close the dialog and insert the audio into the editor's content.

## Insert an Audio from the Predefined Gallery

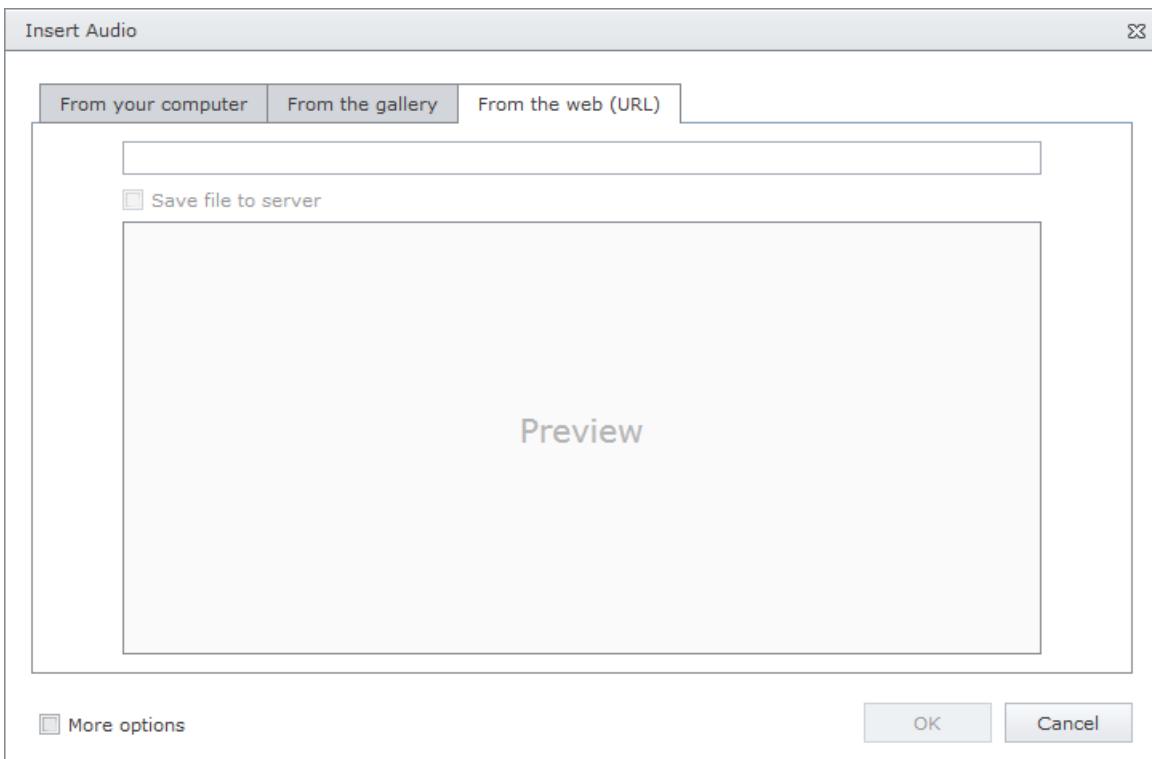
- Click the **From the gallery** tab in the **Insert Audio** dialog.



- Select the audio file that you want to add and click the **OK** button to close the dialog and insert the audio into the editor's content.

## Insert Audio by Specifying Its URL

- Click the **From the web (URL)** tab in the **Insert Audio** dialog.



- Type the web address of the audio file in the edit box.
- Check **Save file to server** if you want to upload the audio file to the web server.
- Check **More options** to customize the [audio settings](#) (optional).

After completing all the steps above, you can preview the audio in the **Insert Audio** dialog. The audio player allows you to

listen to the audio before inserting it.

- Click the **OK** button to close the dialog and insert the audio into the editor's content.

You can [modify audio](#) after inserting it into the HTML editor.

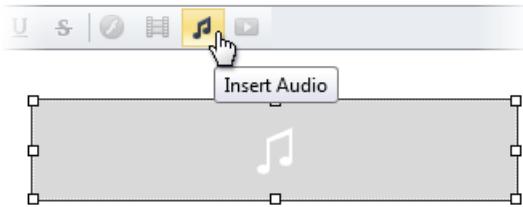
# Modify Audio Settings

To modify audio element settings within editor content, do one of the following.

- Double-click the audio element.
- Right-click the audio element and select **Change Audio...** within the invoked context menu.



- Select the audio element and click the **Insert Audio** button.

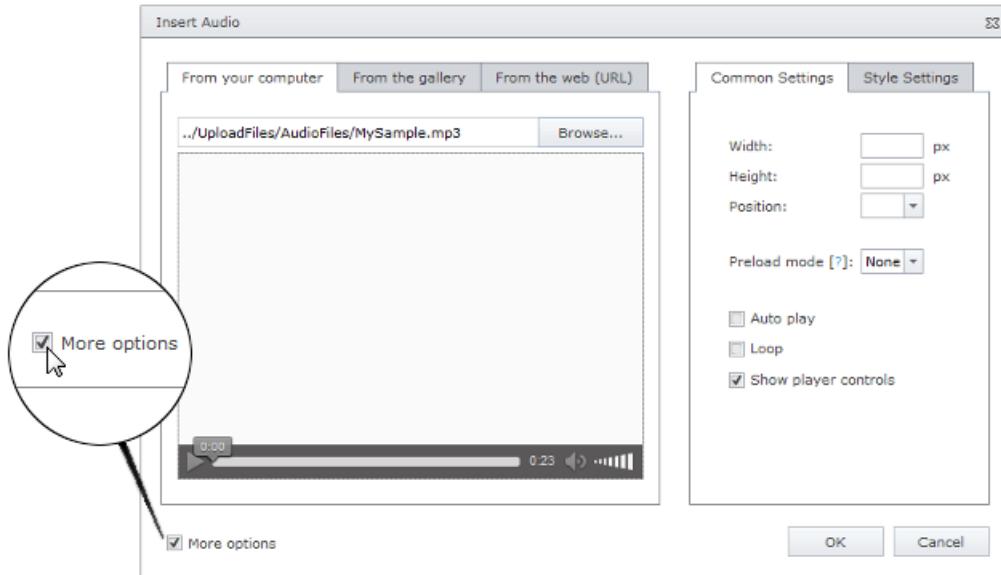


The opened **Change Audio** dialog allows you to modify audio element settings. More detailed information is available in the [Insert an Audio Into HTML Editor](#) section.

# Audio Settings

When you [insert](#) or [modify](#) audio in an HTML Editor, you can customize the audio player settings.

To display the settings section in an audio dialog, select the **More options** check box.



The displayed section contains the following settings, which you can use to customize the audio player.

## Common Settings Tab



- **Width** - specifies the width of the audio player in pixels.
- **Height** - specifies the height of the audio player in pixels.
- **Position** - specifies the position of the audio player.
- **Preload mode** - specifies how the audio file should be loaded when the page loads.
  - *None* - the browser does not load the audio when the page loads.
  - *Metadata* - the browser loads only metadata when the page loads.
  - *Auto* - the browser loads the entire audio when the page loads.

- **Auto Play** - specifies whether or not the audio will automatically start playing.
- **Loop** - specifies whether or not the audio will start over again every time it is finished.
- **Show player controls** - specifies whether or not the audio player controls should be displayed.

## Style Settings Tab



- **Margin top** - specifies the audio player top margin in pixels.
- **Margin bottom** - specifies the audio player bottom margin in pixels.
- **Margin left** - specifies the audio player left margin in pixels.
- **Margin right** - specifies the audio player right margin in pixels.
- **Border width** - specifies the width of the audio player border in pixels.
- **Border color** - specifies the color of the audio player border.
- **Border style** - specifies the style of the audio player border.
- **CSS class** - specifies the CSS class applied to the audio player.

# Insert a Flash

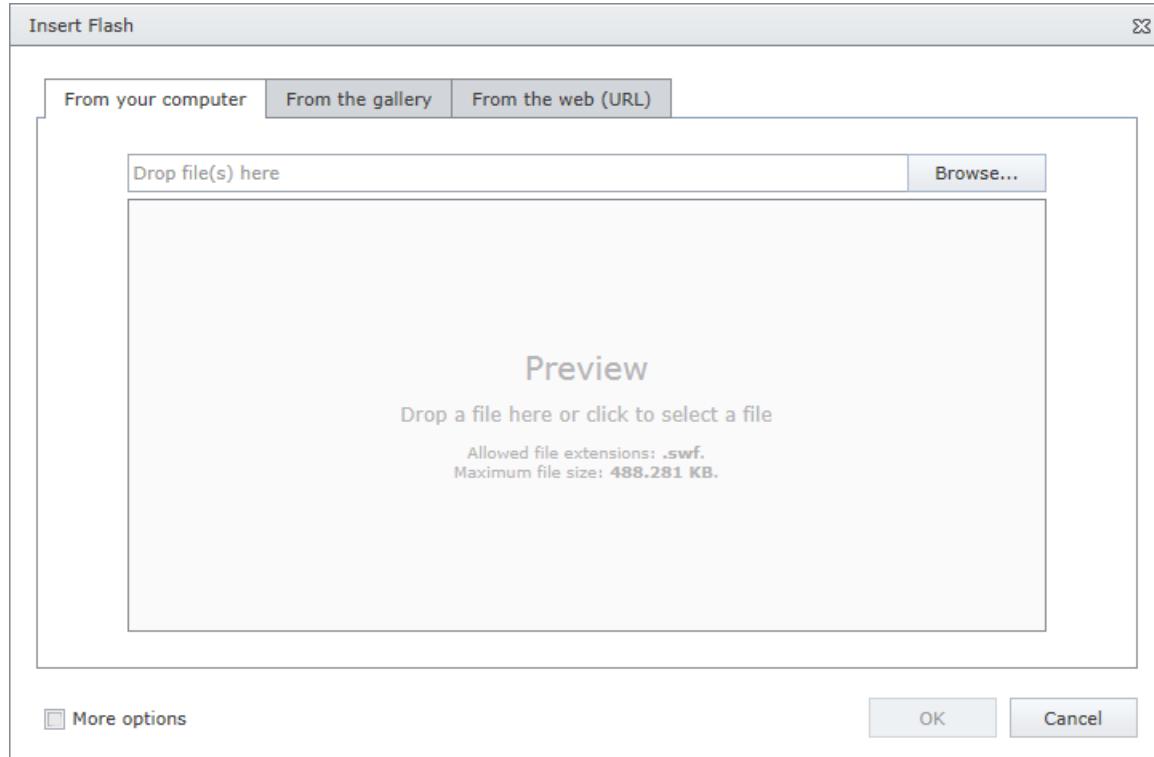
To insert a flash into an editor's content, position the mouse pointer on the place in the text where you want to add a flash and click the **Insert Flash** button.



Define the required parameters of the flash within the invoked **Insert Flash** dialog.

## Insert a Flash Stored on the Local Machine

- Click the **From your computer** tab within the **Insert Flash** dialog.



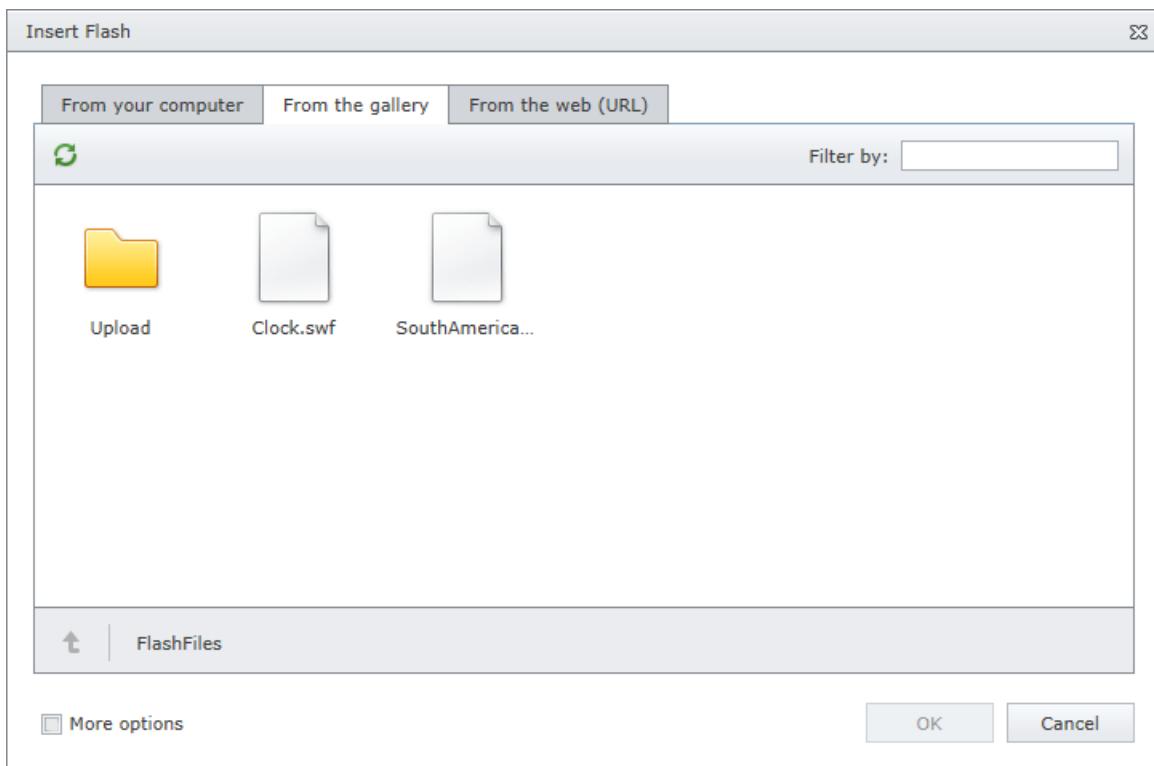
- Click the **Browse...** button, or edit box, or preview area to invoke **File Upload** dialog. Select the flash file that you want to add and click the **Open** button to upload the flash file to the web server.
- Or you can drag and drop a file to the edit box or preview area to upload the file to the web server.
- Check **More Options** to customize the [flash settings](#) (optional).

After completing all the steps above, you can preview the flash in the **Insert Flash** dialog.

- Click the **OK** button to close the dialog and insert the flash into the editor's content.

## Insert a Flash from the Predefined Gallery

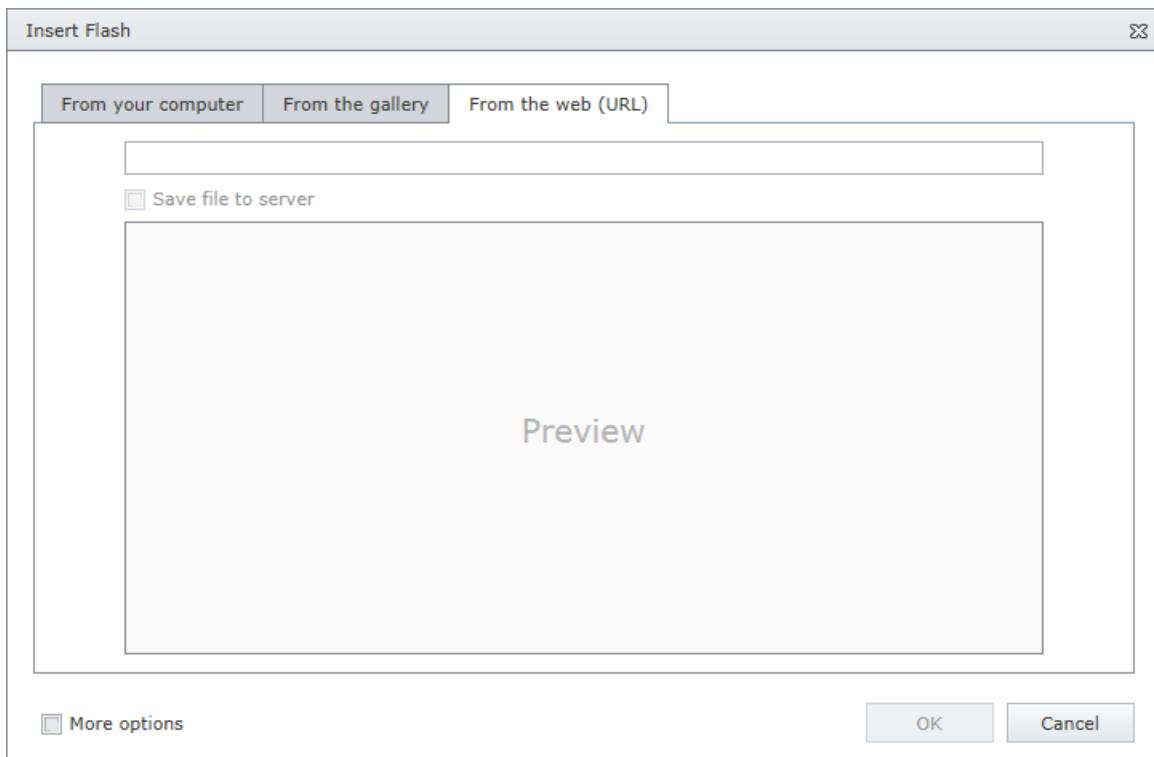
- Click the **From the gallery** tab in the **Insert Flash** dialog.



- Select the flash file that you want to add and click the **OK** button to close the dialog and insert the flash into the editor's content.

## Insert a Flash by Specifying Its URL

- Click the **From the web (URL)** tab in the **Insert Flash** dialog.



- Type the web address of the flash file in the edit box.
- Check **Save file to server** if you want to upload the flash file to the web server.
- Check **More options** to customize the [flash settings](#) (optional).

After completing all the steps above, you can preview the flash in the **Insert Flash** dialog.

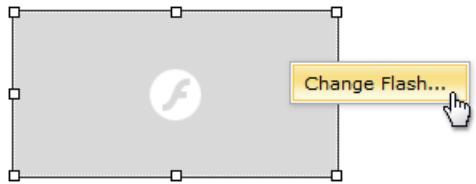
- Click the **OK** button to close the dialog and insert the flash into the editor's content.

You can [modify the flash](#) after inserting it into HTML editor.

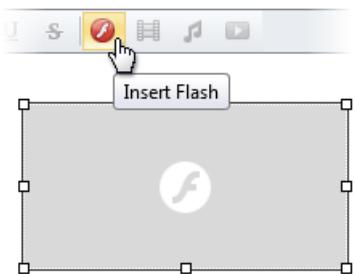
# Modify Flash Settings

To modify flash element settings within editor content, do one of the following.

- Double-click the flash element.
- Right-click the flash element and select **Change Flash...** within the invoked context menu.



- Select the flash element and click the **Insert Flash** button.

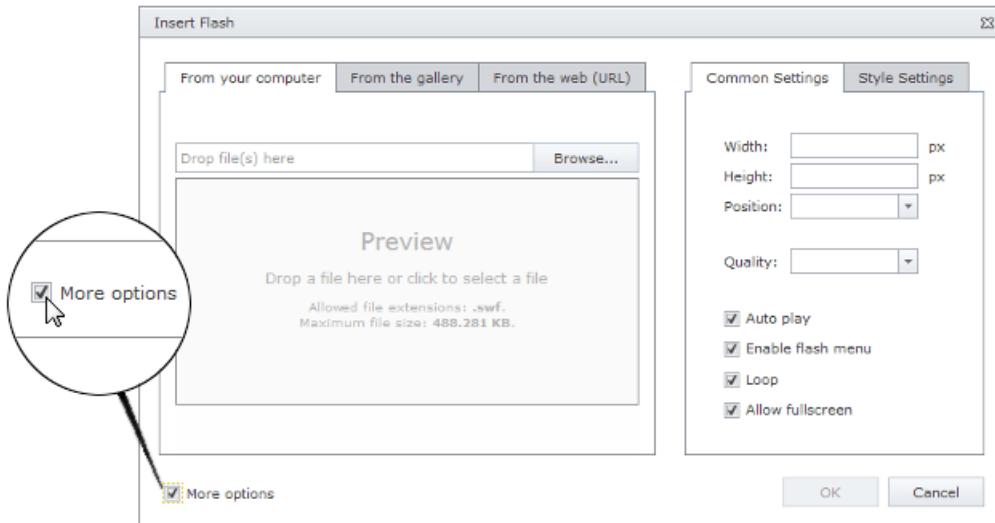


The opened **Change Flash** dialog allows you to modify flash element settings. More detailed information is available in the [Insert a Flash Into HTML Editor](#) section.

# Flash Settings

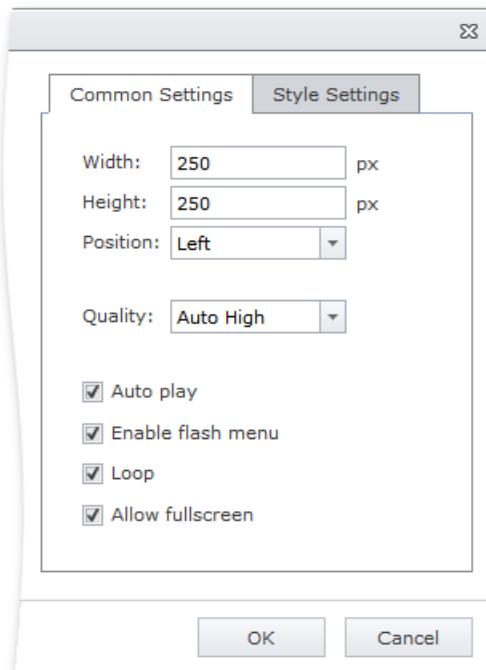
When you [insert](#) or [modify](#) flash in an HTML Editor, you can customize the flash player settings.

To display the settings section in a flash dialog, select the **More options** check box.



The displayed section contains the following settings, which you can use to customize the flash player.

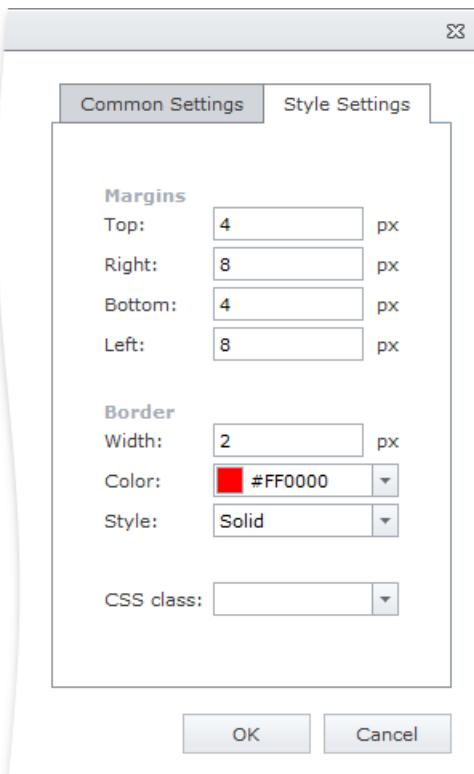
## Common Settings Tab



- **Width** - specifies the width of the flash player in pixels.
- **Height** - specifies the height of the flash player in pixels.
- **Position** - specifies the position of the flash player.
- **Quality** - specifies the flash rendering quality.
  - *Best* - specifies that a flash will be rendered in the 'best' quality.
  - *High* - specifies that a flash will be rendered in 'high' quality.
  - *Auto High* - specifies that a flash will be rendered in the 'autohigh' quality.
  - *Medium* - specifies that a flash will be rendered in 'medium' quality.
  - *Low* - specifies that a flash will be rendered in 'low' quality.
  - *Auto Low* - specifies that a flash will be rendered in the 'autolow' quality.

- **Auto Play** - specifies whether or not the flash will automatically start playing.
- **Enable flash menu** - specifies whether or not the movie playback controls are available in the flash player context menu.
- **Loop** - specifies whether or not the flash will start over again every time it is finished.
- **Allow fullscreen** - specifies whether or not the flash file can be displayed in full screen mode.

## Style Settings Tab



- **Margin top** - specifies the flash player top margin in pixels.
- **Margin bottom** - specifies the flash player bottom margin in pixels.
- **Margin left** - specifies the flash player left margin in pixels.
- **Margin right** - specifies the flash player right margin in pixels.
- **Border width** - specifies the width of the flash player border in pixels.
- **Border color** - specifies the color of the flash player border.
- **Border style** - specifies the style of the flash player border.
- **CSS class** - specifies the CSS class applied to the flash player.

# Insert a Video Into

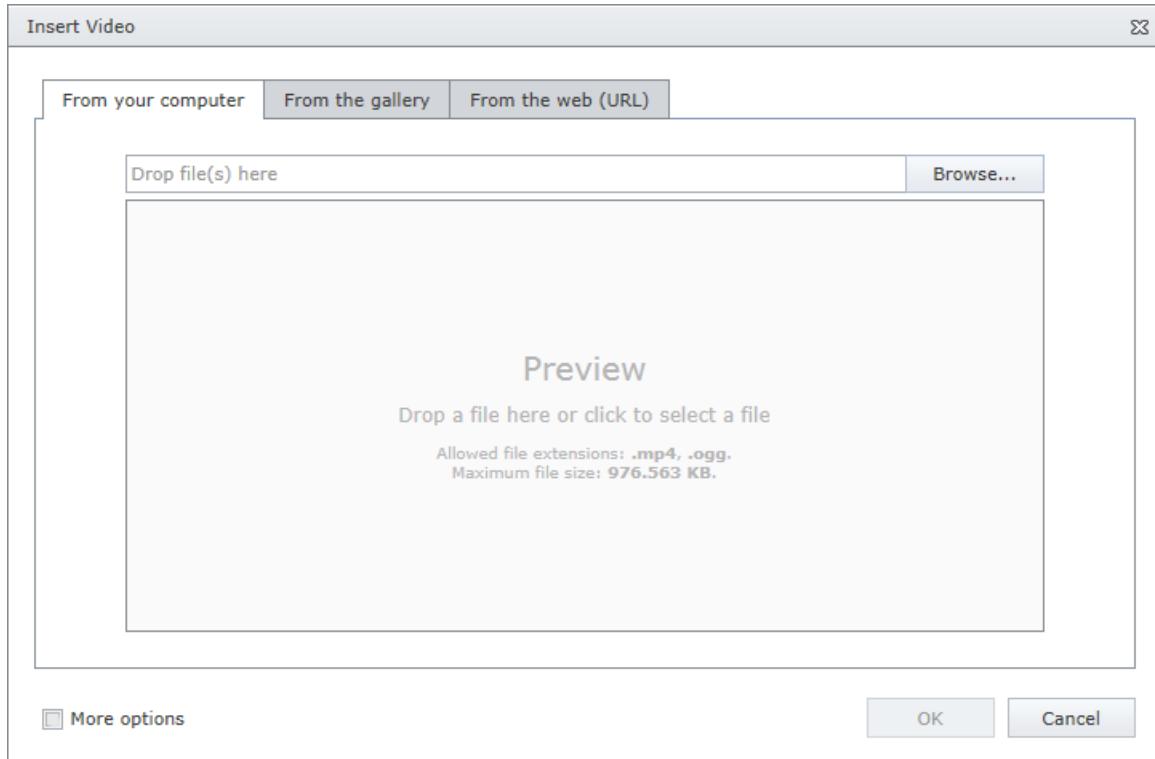
To insert video into an editor's content, position the mouse pointer on the place in the text where you want to add video and click the **Insert Video** button.



Define the required parameters of the video within the invoked **Insert Video** dialog.

## Insert an Video Stored on the Local Machine

- Click the **From your computer** tab in the **Insert Video** dialog.



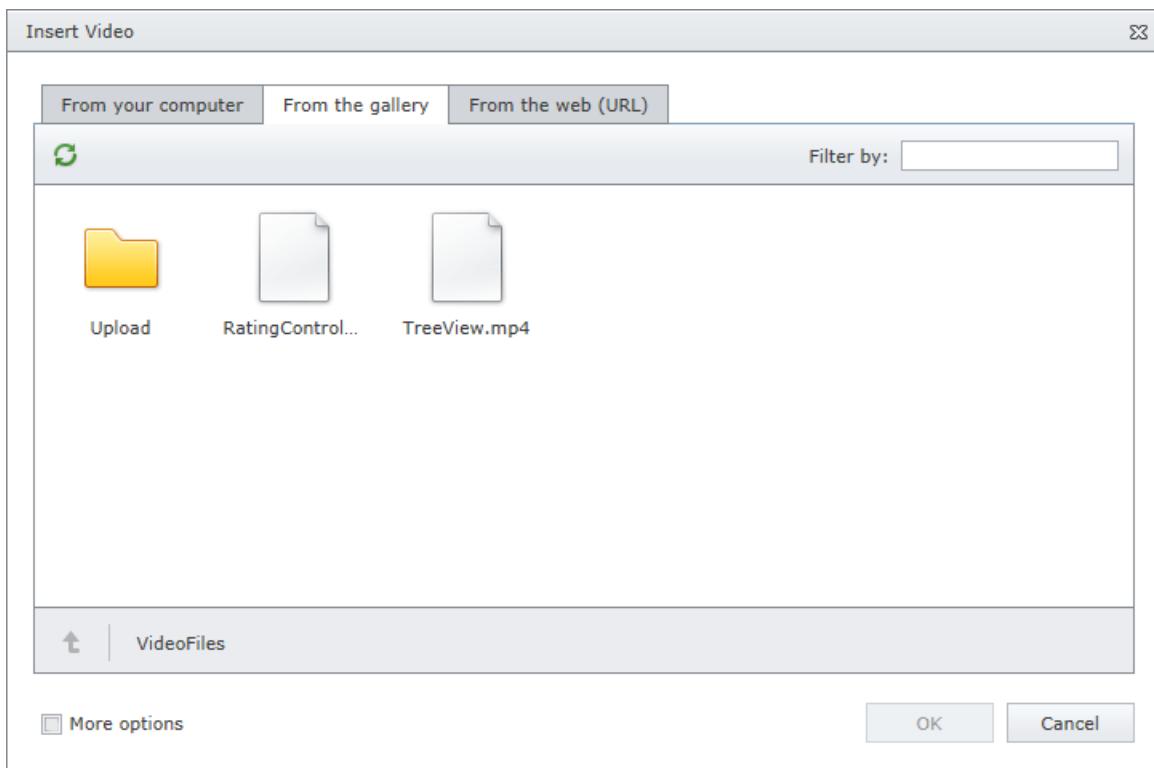
- Click the **Browse...** button, or edit box, or preview area to invoke **File Upload** dialog. Select the video file that you want to add and click the **Open** button to upload the video file to the web server.
- Or you can drag and drop a file to the edit box or preview area to upload the file to the web server.
- Check **More Options** to customize the [video settings](#) (optional).

After completing all the steps above, you can preview the video in the **Insert Video** dialog.

- Click the **OK** button to close the dialog and insert the video into the editor's content.

## Insert an Video from the Predefined Gallery

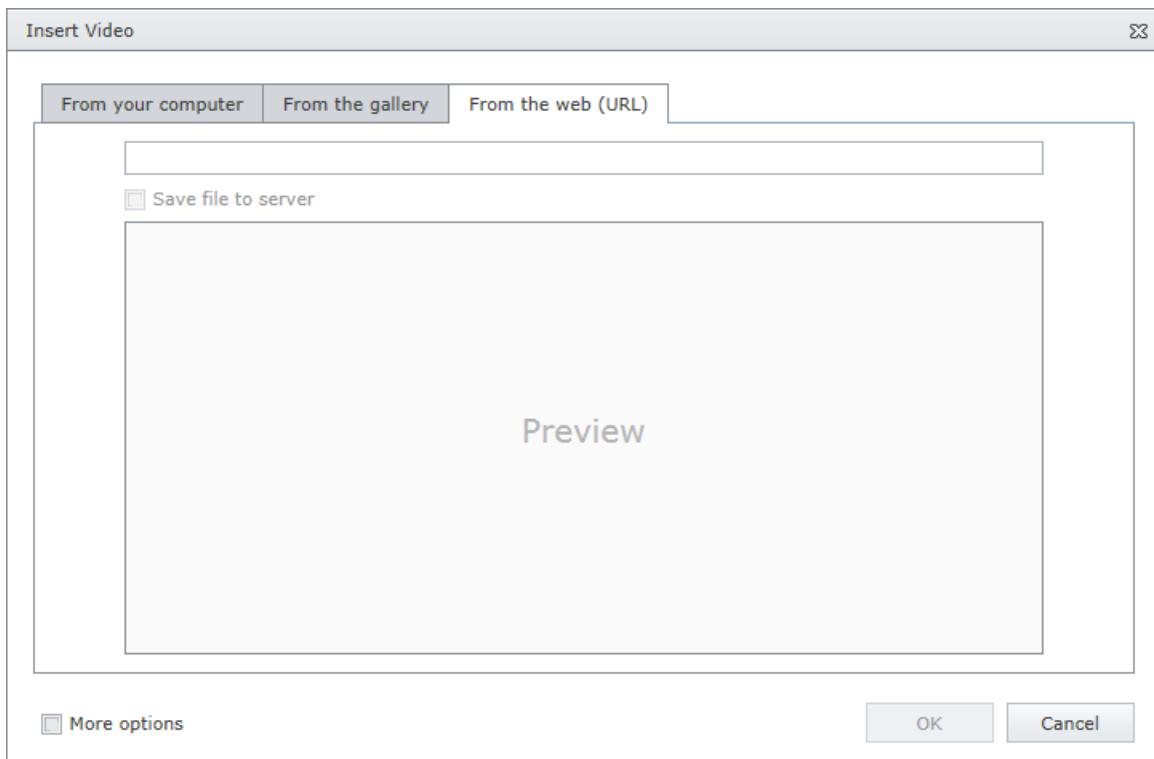
- Click the **From the gallery** tab in the **Insert Video** dialog.



- Select the video file that you want to add and click the **OK** button to close the dialog and insert the video into the editor's content.

## Insert an Video by Specifying Its URL

- Click the **From the web (URL)** tab in the **Insert Audio** dialog.



- Type the web address of the video file in the edit box.
- Check **Save file to server** if you want to upload the video file to the web server.
- Check **More options** to customize the [video settings](#) (optional).

After completing all the steps above, you can preview the video in the **Insert Audio** dialog. The video player allows you to

view the video before inserting it.

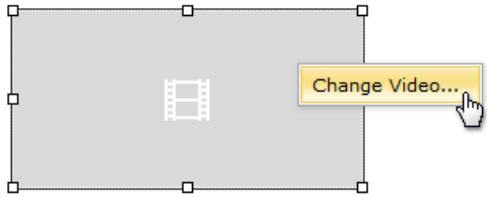
- Click the **OK** button to close the dialog and insert the video into the editor's content.

You can [modify video](#) after inserting it into an HTML editor.

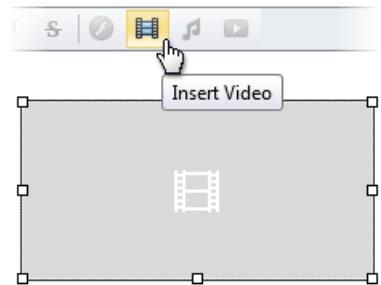
# Modify Video Settings

To modify video element settings within editor content, do one of the following.

- Double-click the video element.
- Right-click the video element and select **Change Video...** within the invoked context menu.



- Select the video element and click the **Insert Video** button.

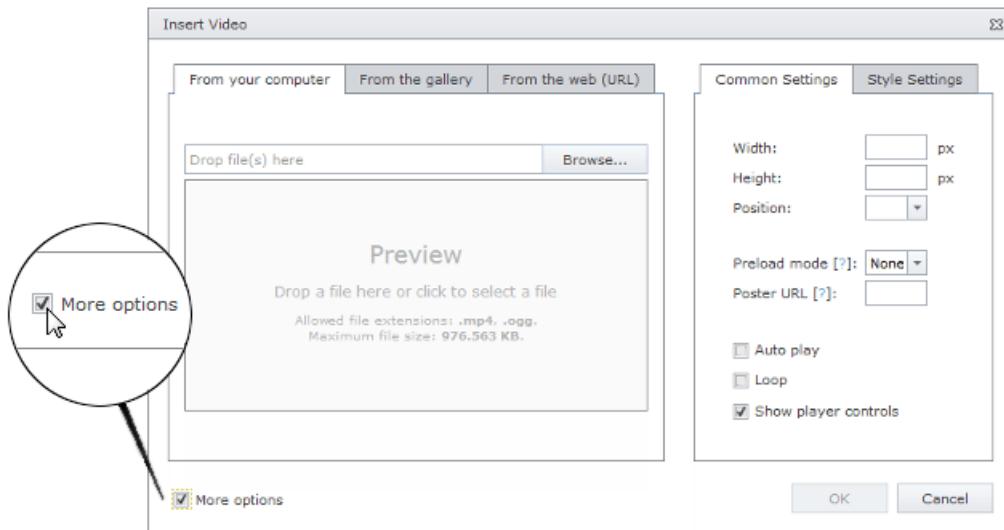


The opened **Change Video** dialog allows you to modify video element settings. More detailed information is available in the [Insert a Video Into HTML Editor](#) section.

# Video Settings

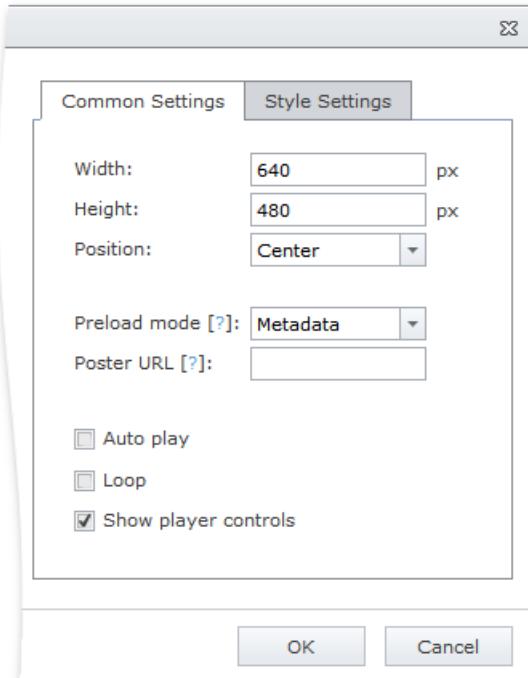
When you [insert](#) or [modify](#) video in an HTML Editor, you can customize the video player settings.

To display the settings section in a video dialog, select the **More options** check box.



The displayed section contains the following settings, which you can use to customize the video player.

## Common Settings Tab



- **Width** - specifies the width of the video player in pixels.
- **Height** - specifies the height of the video player in pixels.
- **Position** - specifies the position of the video player.
- **Preload mode** - specifies how the video file should be loaded when the page loads.
  - *None* - the browser does not load the video when the page loads.
  - *Metadata* - the browser loads only metadata when the page loads.
  - *Auto* - the browser loads the entire video when the page loads.
- **Poster URL** - specifies an image to be displayed while the video is being downloaded or until a user clicks the play button. If

the poster is not specified, the first frame of the video will be used.

- **Auto Play** - specifies whether or not the video will automatically start playing.
- **Loop** - specifies whether or not the video will start over again every time it is finished.
- **Show player controls** - specifies whether or not the video player controls should be displayed.

## Style Settings Tab



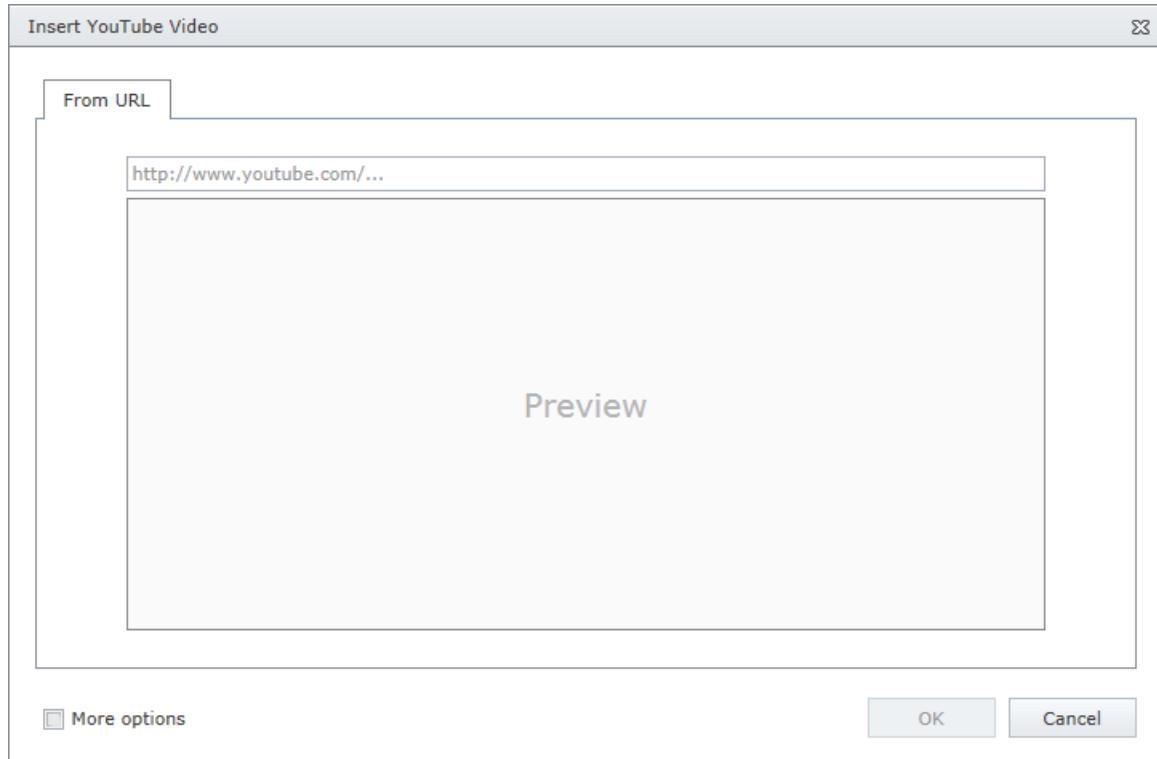
- **Margin top** - specifies the video player top margin in pixels.
- **Margin bottom** - specifies the video player bottom margin in pixels.
- **Margin left** - specifies the video player left margin in pixels.
- **Margin right** - specifies the video player right margin in pixels.
- **Border width** - specifies the width of the video player border in pixels.
- **Border color** - specifies the color of the video player border.
- **Border style** - specifies the style of the video player border.
- **CSS class** - specifies the CSS class applied to the video player.

# Insert a YouTube Video

To insert a YouTube video into an editor's content, position the mouse pointer on the place in the text where you want to add a YouTube video and click the **Insert YouTube Video** button.



Define the required parameters of the YouTube video in the invoked **Insert YouTube Video** dialog.



- Type the web address of the YouTube video in the edit box. Note that the URL should be as follows:  
<http://www.youtube.com/watch?v=videoID>
- Check **More options** to customize the [YouTube video settings](#) (optional).

After completing the steps above, you can preview the YouTube video in the **Insert YouTube Video** dialog.

Click the **OK** button to close the dialog and insert the YouTube video into the editor's content.

From URL

 http://www.youtube.com/watch?v=uQL8aH\_LaD0 More optionsOK 

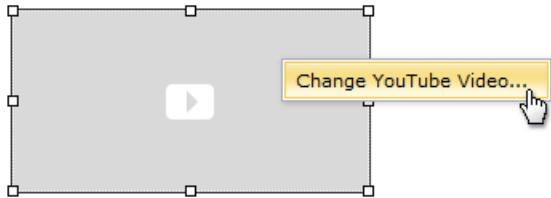
Cancel

You can [modify the YouTube video](#) after inserting it into an HTML editor.

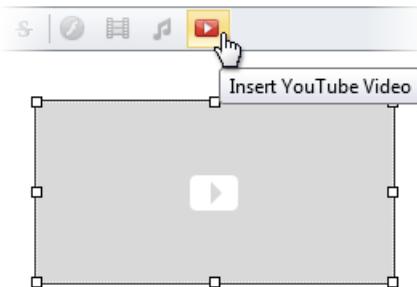
# Modify YouTube Video Settings

To modify YouTube video element settings within editor content, do one of the following.

- Double-click the YouTube video element.
- Right-click the YouTube video element and select **Change YouTube Video...** within the invoked context menu.



- Select the YouTube video element and click the **Insert YouTube Video** button.

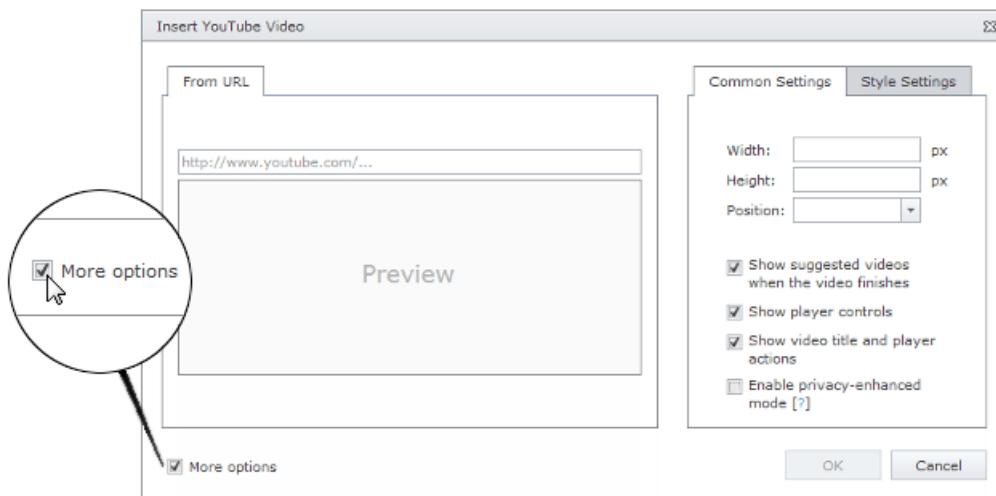


The opened **Change YouTube Video** dialog allows you to modify YouTube video element settings. More detailed information is available in the [Insert a YouTube Video Into HTML Editor](#) section.

# YouTube Video Settings

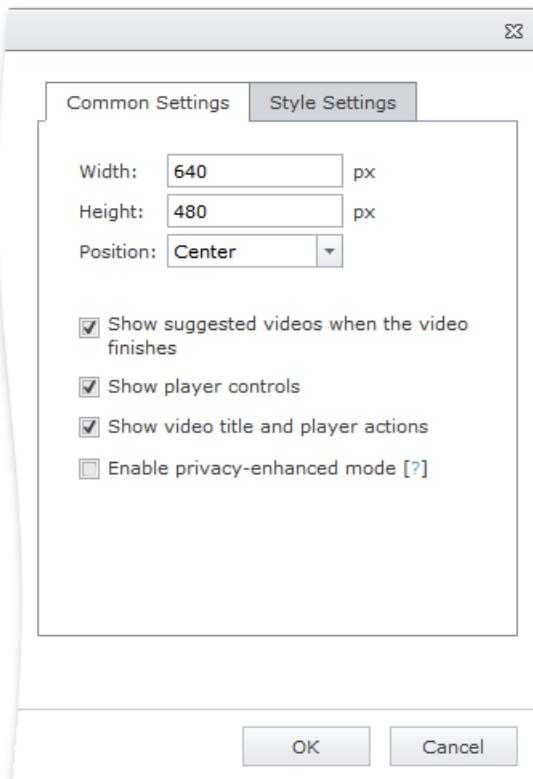
When you [insert](#) or [modify](#) YouTube video in an HTML Editor, you can customize the video player settings.

To display the settings section in a YouTube video dialog, select the **More options** check box.



The displayed section contains the following settings, which you can use to customize the YouTube video player.

## Common Settings Tab



- **Width** - specifies the width of the YouTube video player in pixels.
- **Height** - specifies the height of the YouTube video player in pixels.
- **Position** - specifies the position of the YouTube video player.
- **Show suggested videos when the video finishes** - specifies whether or not the suggested videos will be displayed when the video finishes.
- **Show player controls** - specifies whether or not the YouTube video player controls should be displayed.
- **Show video title and player actions** - specifies whether or not the information about video is displayed.

- **Enable privacy-enhanced mode** - specifies whether or not YouTube stores information about visitors on your webpage unless they play the video.

## Style Settings Tab



- **Margin top** - specifies the video player top margin in pixels.
- **Margin bottom** - specifies the video player bottom margin in pixels.
- **Margin left** - specifies the video player left margin in pixels.
- **Margin right** - specifies the video player right margin in pixels.
- **Border width** - specifies the width of the video player border in pixels.
- **Border color** - specifies the color of the video player border.
- **Border style** - specifies the style of the video player border.
- **CSS class** - specifies the CSS class applied to the video player.

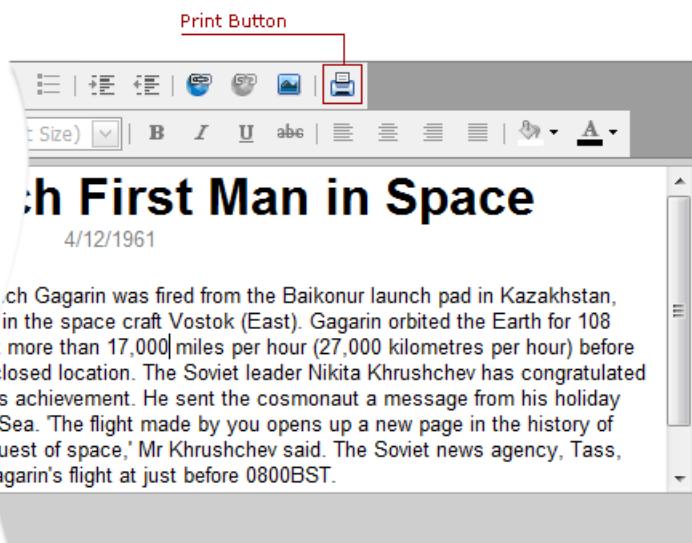
# Repeat and Undo Actions

The editor keeps track of all user actions, and allows you to undo or repeat them. The following table lists editor buttons and keyboard shortcuts providing this functionality.

BUTTON	SHORTCUT	DESCRIPTION
 <b>Undo</b>	CTRL+Z	Reverses the last operation.
 <b>Redo</b>	CTRL+Y	Reverses the last "Undo" operation.

# Printing Content

To print the editor's content, click the **Print** () button or press CTRL+P keys.



This invokes the standard print dialog, where you can specify required print settings.

# Clipboard Operations

Any part of the editor's content (images, tables or other content) can be cut, copied or pasted. The following table lists keyboard shortcuts and editor buttons providing this functionality.

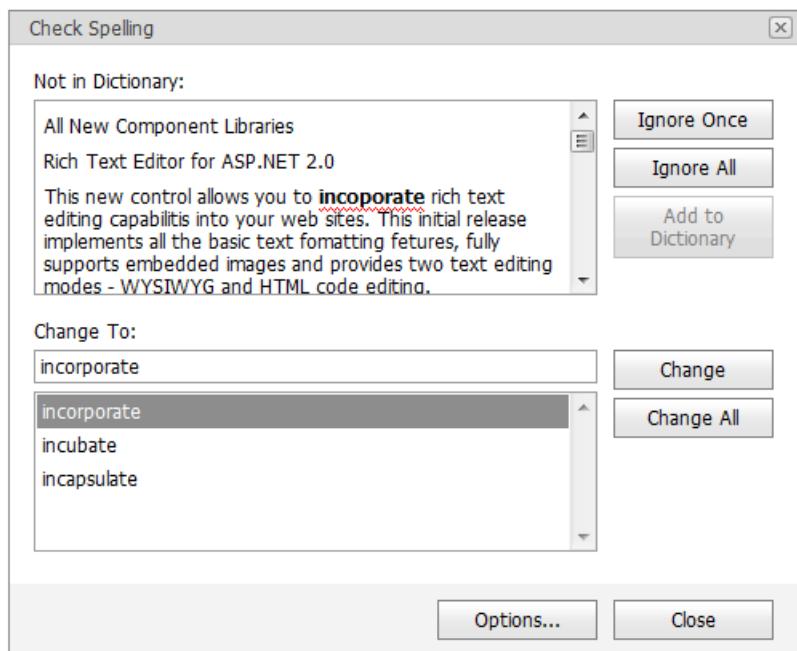
EDITOR'S BUTTON	SHORTCUT	DESCRIPTION
 <b>Copy</b>	CTRL+C, CTRL+INS	Copies the selected content to the clipboard.
 <b>Cut</b>	CTRL+X, SHIFT+DEL	Cuts the selected content to the clipboard.
 <b>Paste</b>	CTRL+V, SHIFT+INS	Pastes the selected content to the editor. This action is available if the clipboard is not empty.
 <b>Paste From Word</b>	None	Pastes the copied content from Word to the editor. This action is available if the clipboard is not empty.

## Note

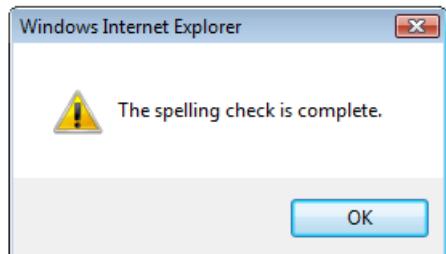
The copy and cut operations place the copied or cut content onto the clipboard, replacing the existing content.

# Check Spelling

Click the **Check spelling** (  ) button to check the editor text content spelling. If the text contains spelling errors, the following dialog box allows you to preview, correct or ignore them.

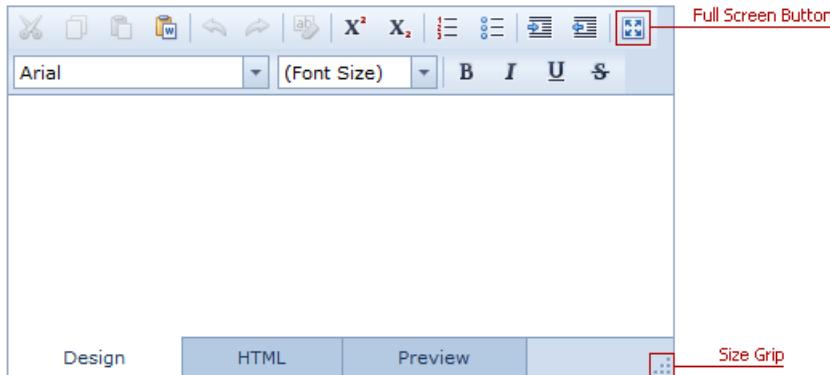


After the entire text has been scanned, the following window is shown.



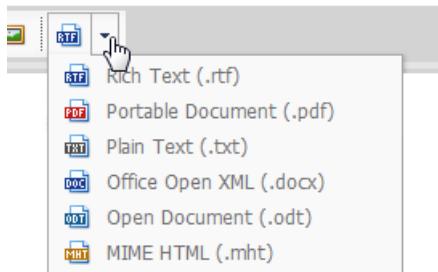
# Sizing and Full-Screen Mode

- To resize an HTML Editor place the mouse pointer over the size grip, press the left mouse button and drag the editor's scope to the required size.
- To switch to full-screen mode, click the **Full Screen Mode**  button or press F11 while the HTML Editor has focus. Note that this mode is in effect for the Design View only.



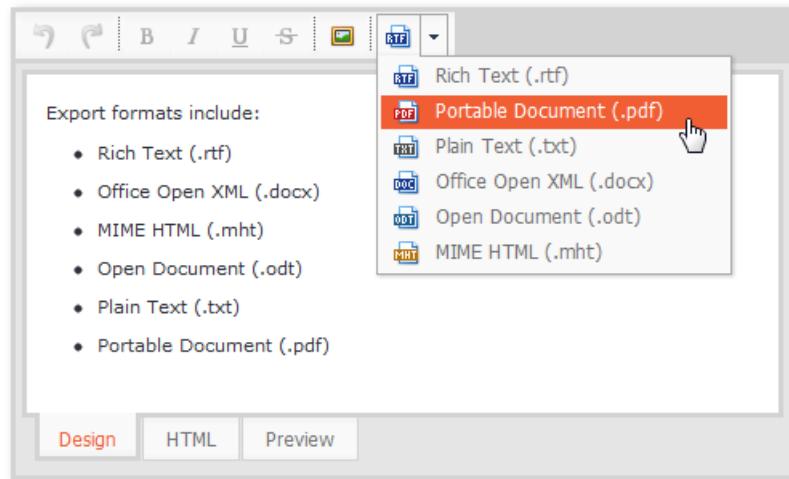
# Export Content to Various Documents Formats

To export a document, invoke a dropdown menu with the list of available document formats.



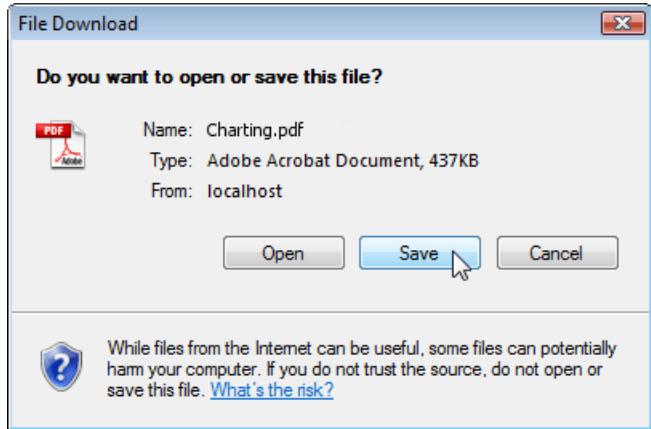
Choose the required format for export from the list. The available formats are:

- Rich Text (.rtf)
- Office Open XML (.docx)
- MIME HTML (.mht)
- Open Document (.odt)
- Plain Text (.txt)



- Portable Document (.pdf).

Click **Save** on the invoked web browser's **File Download** dialog.



Define a path for the exported document in the invoked **Save As** dialog, and click **Save**.

# Shortcuts

HTML Editor provides the following shortcuts.

Shortcut	Description
Ctrl+A	Selects the entire content
Ctrl+B	Applies bold formatting to the selected text
Ctrl+C	Copies the selection
Ctrl+E	Justifies text center
Ctrl+F	Shows <a href="#">Search Panel</a>
Ctrl+G	Invokes the <a href="#">Insert Image Dialog</a>
Ctrl+H	Invokes the <a href="#">Find and Replace Dialog</a>
Ctrl+I	Applies italic formatting to the selected text
Ctrl+J	Justifies text
Ctrl+K	Invokes the <a href="#">Insert Link Dialog</a> for the selection
Ctrl+L	Justifies text left
Ctrl+P	Prints the editor's content
Ctrl+R	Justifies text right
Ctrl+U	Underlines the selected text
Ctrl+V	Pastes content from the clipboard
Ctrl+X	Cuts the selection
Ctrl+Y	Redoes the last undone action
Ctrl+Z	Undoes the last action
Ctrl+Ins	Copies the selection
Ctrl+Space	Shows intellisense (for <a href="#">Html View</a> )
Ctrl+Shift+K	Unlinks the selection
Shift+Del	Cuts the selection
Shift+Ins	Pastes content from the clipboard

Shortcut	Description
F11	Activates/deactivates the full-screen mode

# Image Gallery

The Image Gallery displays images as thumbnails, allows you to navigate through them using a [pager](#), and provides the ability to display images in a [fullscreen viewer](#).

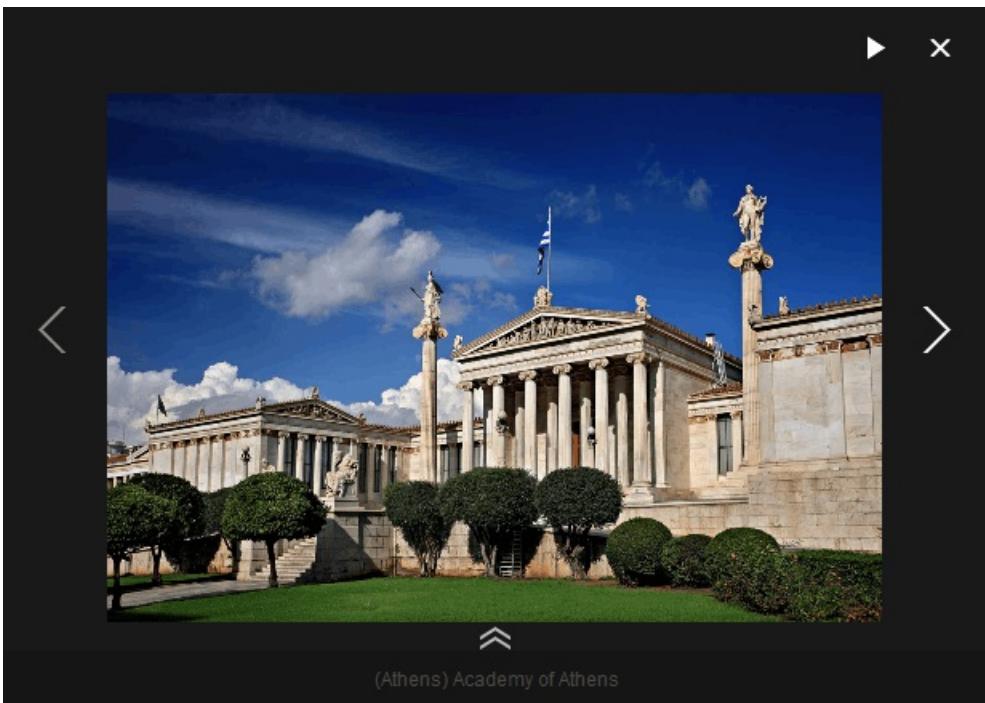
Rows per page: 1 ▾

1 2 3 4 5 6

Hover an image to display the image description.

1 2 3 4

Click an image to display it in a [fullscreen viewer](#).



▶ X

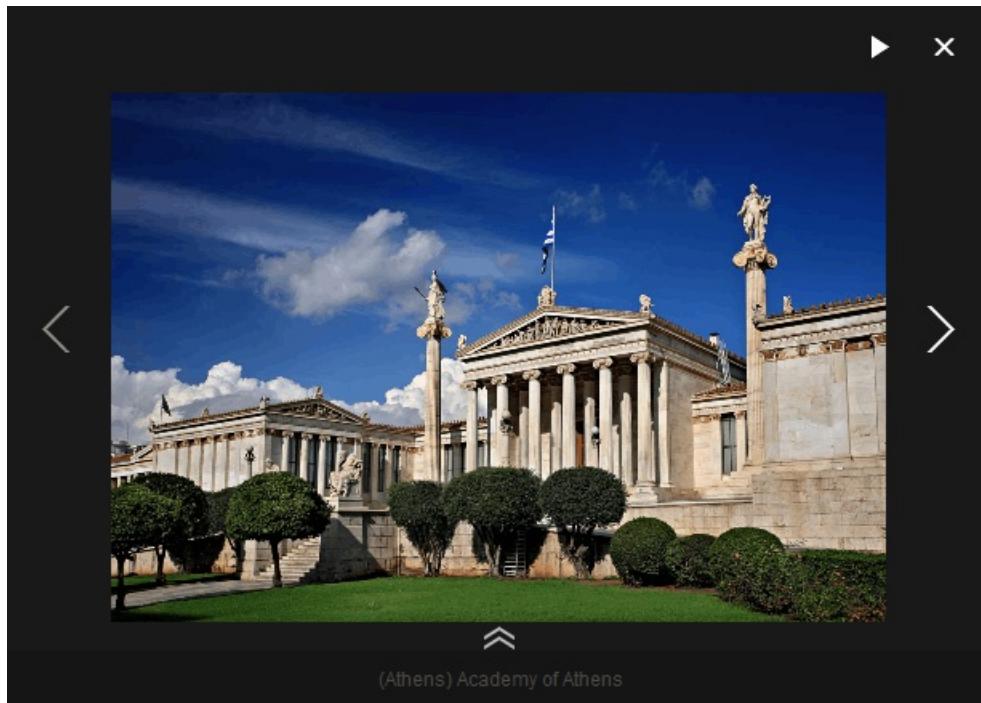
>



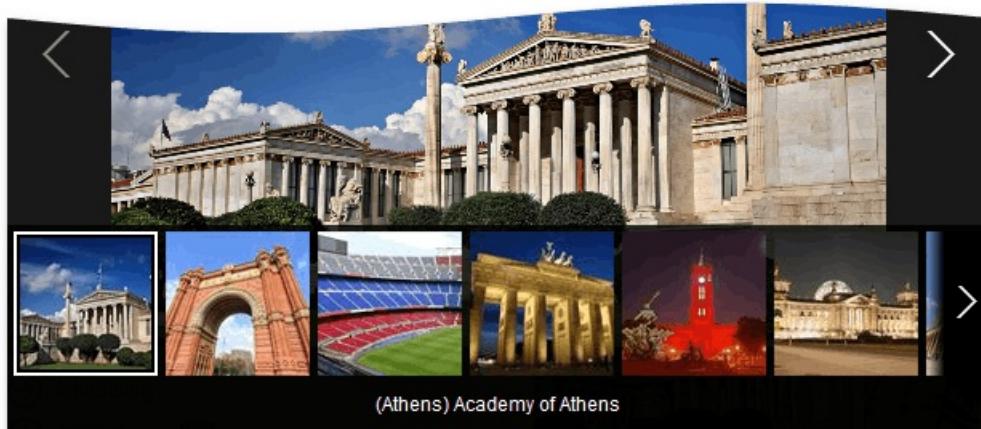
(Athens) Academy of Athens

# Fullscreen Viewer

The image gallery **Fullscreen Viewer** displays images in full screen mode and allows you to navigate through them.



Hover the navigation bar marker ( ) to display a navigation bar.



You can navigate through images by clicking the navigation buttons or the image area, or by pressing the arrow keys. You can also use the mouse scroll wheel, or perform a swipe gesture. You can also use the swipe gesture on touch devices.

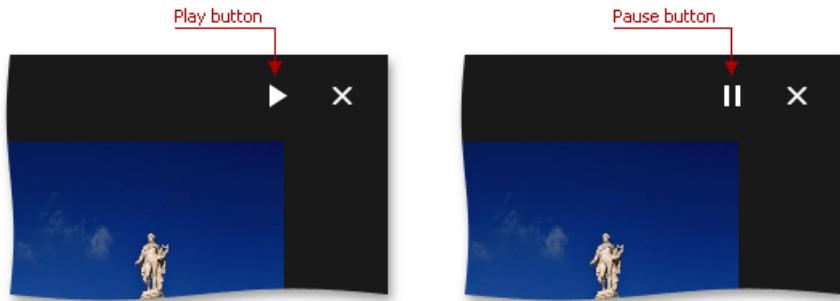
## Closing the Fullscreen Viewer

To close the fullscreen viewer, click the **Close** button or press the ESC key.



## Slide Show

The fullscreen viewer can display images in a slide show. To play the slide show, click the **Play** button. To pause the slide show, click the **Pause** button. Note that you can still navigate through images manually, while the slide show is playing.



# Image Gallery Pager

The image gallery pager allows you to navigate through image data pages. It can be displayed at the top, bottom, or top and bottom of the Image Gallery. To navigate to a specific page, click its number in the pager. Additionally, you can use the pager buttons to navigate to the next, previous, first or last page. The current page is highlighted.

The **Rows per page** menu allows you to select the number of rows to be displayed on the page.

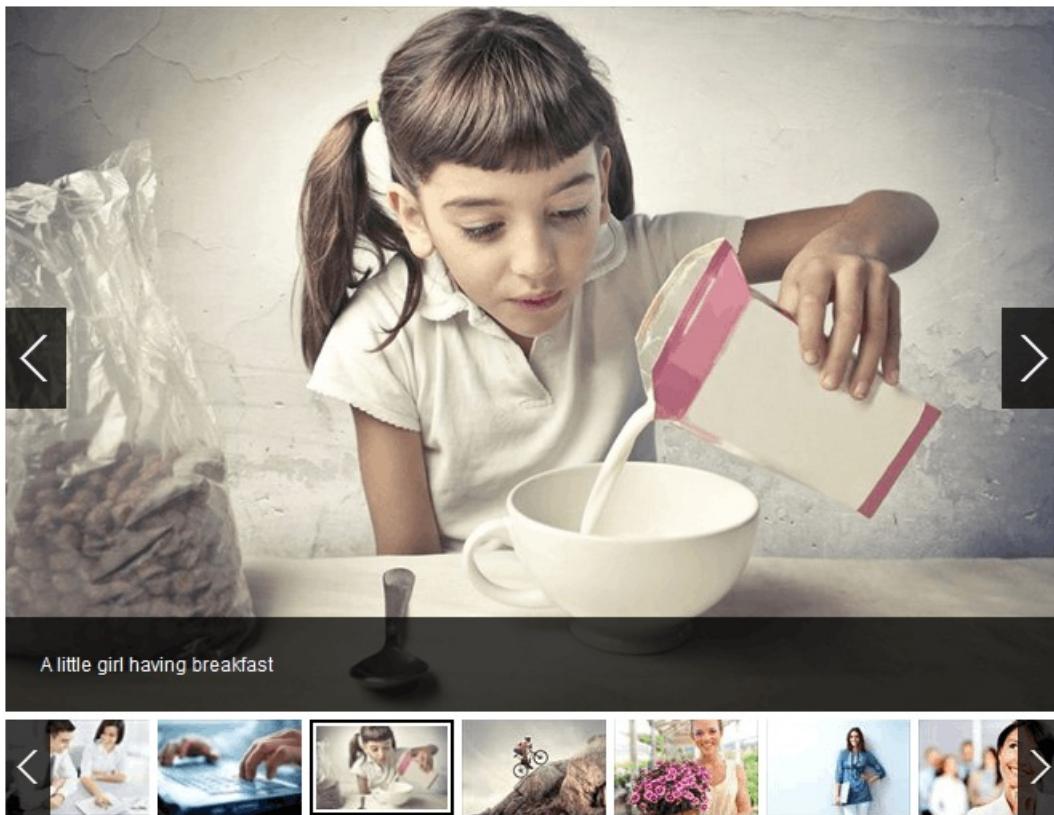


If the **Show more items...** link is displayed, click it to load more images to the image gallery.



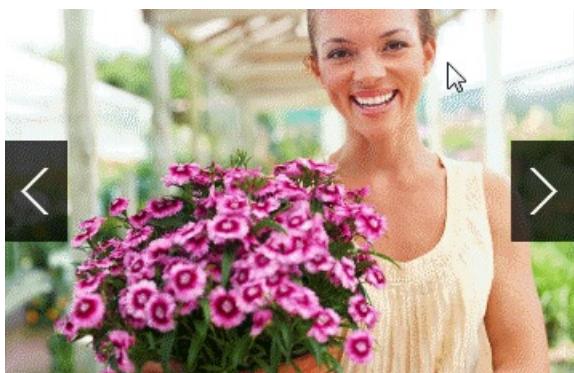
# Image Slider

The Image Slider displays images and enables you to navigate through them.



You can navigate through images as follows:

- Click the navigation buttons
- Click the right or left side of the image
- Press the arrow keys
- Use the mouse scroll wheel
- Use a swipe gesture (mouse or touch devices)



## Slide Show

You can click **Play** to display images in a slideshow. To pause slide show, click **Pause**. You can also navigate through images while the slide show is playing.



Play (Pause) Button



A business team working on their business project in the office



# Image Zoom

The Image Zoom allows you to examine images in high-res detail.

Move the pointer over the image to display a window with the image in high-res detail. An image area displayed in high-res details is marked out on the main image.



Click the image to display it in a high-res detail in [fullscreen window](#).

# Fullscreen Window

Click the [main image](#) to display it in a high-res detail in **Fullscreen Window**.



## Closing the Fullscreen Window

To close the **Fullscreen Window** click the close button, or press the ESC key, or click an area behind image.

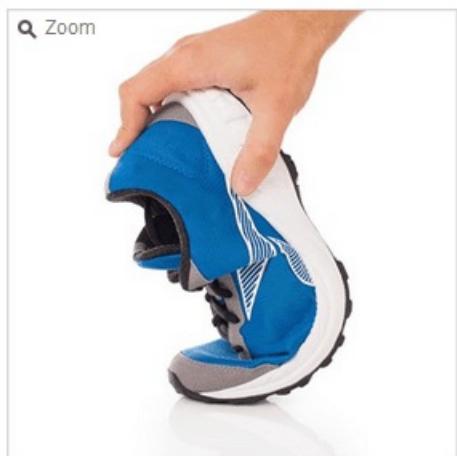
Close Button



# Navigation Bar

The Navigation Bar allows you to fast navigate between images. To change an image, click or move the pointer over a corresponding thumbnail.

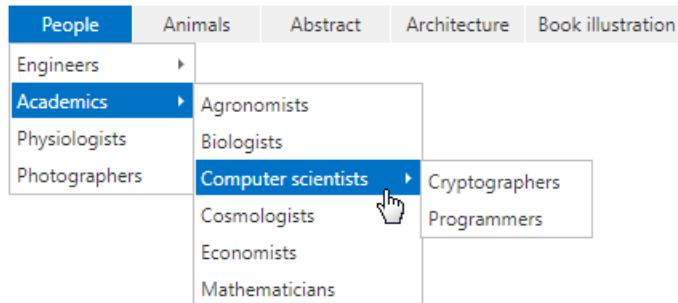
Navigation buttons allows you to navigate among thumbnails.



# Menu

The Menu enables you to navigate through a website.

Hover a menu item to display its subitems. If a subitem has an arrow sign (>) , hover over it to expand its submenu.

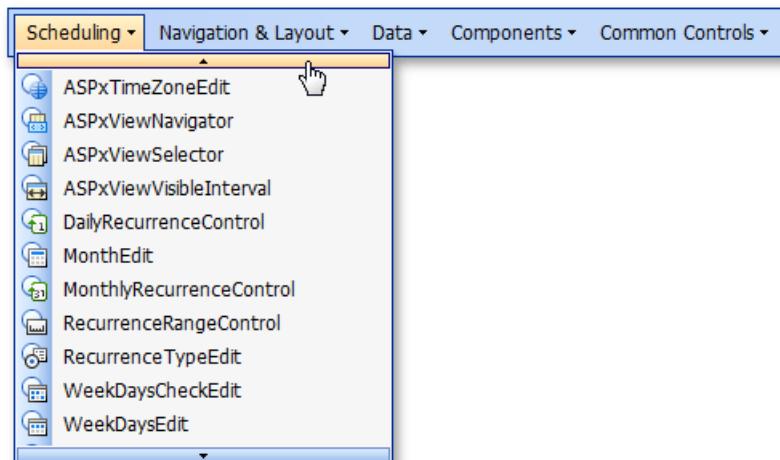


## Menu Scrolling

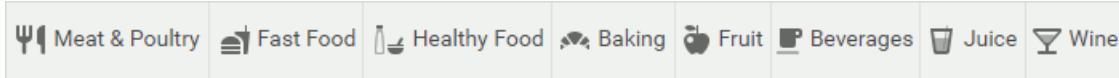
- [Menu Scrolling](#)
- [Responsive Layout](#)

# Menu Scrolling

A submenu displays scroll buttons if it does not fit into the visible document area. Use the scroll button to scroll through a submenu.

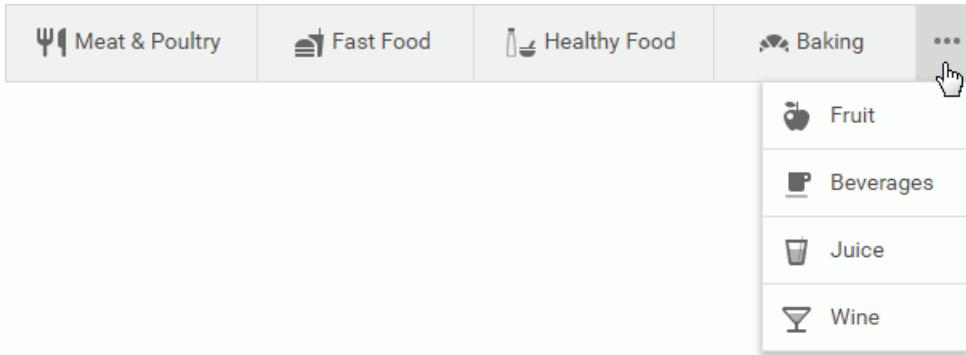


# Responsive Layout



The menu can display its items as follows when they do not fit the browser window's width:

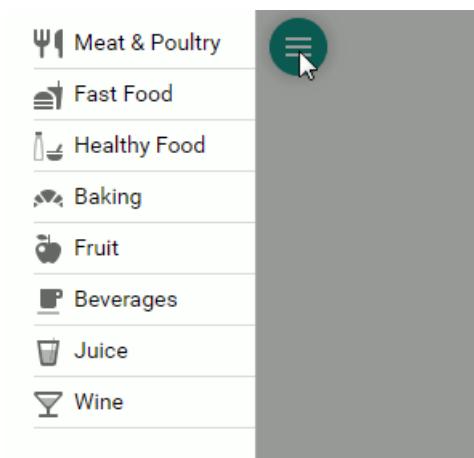
- Move items to a drop-down menu. To show these items, hover the ellipsis button.



- Display icons only. When you hover an item, its caption is displayed as a tooltip.

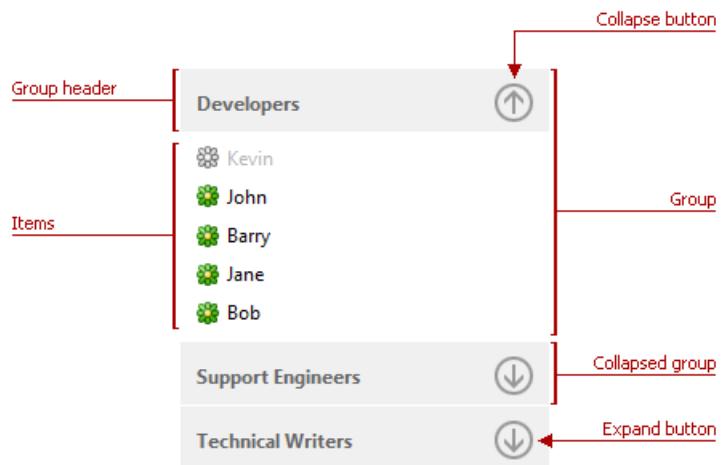


- Oriental vertically and hide items under the hamburger button. You can click this button to show vertical side-menu.



# Navigation Bar

The Navigation Bar is used to navigate through items. Items are separated into groups. Click the expand/collapse button, or a group header, to expand and collapse a group.



# News Control

The News Control displays news in a list-based view. Click **Details** to open a page with a required article.

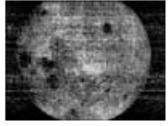


## UK's first trunk call from a pay phone

9/5/1959

The UK's first trunk dialling system from a public call-box has been inaugurated in Bristol today.

It is the start... [Details](#)



## World glimpses far side of the Moon

10/26/1959

The Soviet Union has revealed the first pictures of the far side of the Moon.

The pictures were taken about three... [Details](#)



## 'Music of spheres' hails Venus fly-by

12/14/1962

The unmanned US spacecraft, Mariner 2, has taken the first-ever scan from space of the planet Venus.

The mission... [Details](#)

		1	2	3	4	...	9			
First Page Button	Previous Page Button	Current Page						Next Page Button	Last Page Button	Page size: 3

## News Control Pager

The news control pager allows you to navigate through news pages. To navigate to a specific page, click its number in the pager. Additionally, you can use the pager buttons to navigate to the next, previous, first or last page. The current page is highlighted.

The **Page size** menu allows you to select the number of news articles on the page.

# Pivot Table

The **Pivot Table** is a data bound control that provides maximum capabilities for organizing, summarizing and analyzing your business data.

The screenshot shows a Pivot Table with the following structure:

Year								
Extended Price		Country ▲		Sales Person ▲				
Category ▲		Product ▲		UK		UK Total	USA	Grand Total
Beverages		\$19,642.55	\$9,450.20	\$27,963.83	\$11,000.52	\$68,057.10	\$199,811.06	\$267,868.16
Condiments		\$10,125.54	\$4,648.47	\$8,851.37	\$2,675.29	\$26,300.67	\$79,746.38	\$106,047.05
Confections		\$8,053.16	\$6,859.63	\$14,518.98	\$4,809.80	\$34,241.57	\$133,115.58	\$167,357.15
Dairy Products		\$21,101.12	\$17,039.04	\$27,621.86	\$21,937.61	\$87,699.63	\$146,807.62	\$234,507.25
Grains/Cereals		\$1,245.30	\$9,410.70	\$6,535.50	\$4,027.56	\$21,219.06	\$74,525.53	\$95,744.59
Meat/Poultry		\$8,676.66	\$9,003.69	\$21,176.72	\$11,488.20	\$50,345.27	\$112,677.10	\$163,022.37
Produce		\$314.81	\$11,560.70	\$10,753.38	\$7,109.02	\$29,737.91	\$70,246.66	\$99,984.57
Seafood		\$8,148.90	\$5,940.70	\$7,146.58	\$5,744.25	\$26,980.43	\$104,281.30	\$131,261.73
Grand Total		\$77,308.04	\$73,913.13	\$124,568.22	\$68,792.25	\$344,581.64	\$921,211.23	\$1,265,792.87

## Data Presentation

- [Sort Data in Pivot Tables](#)

Describes how you can sort field values alphabetically or by summary values displayed in a particular column or row.

- [Filter Data in Pivot Tables](#)

Provides information on how to filter data by hiding specific rows or columns via filter drop-down lists, and how to provide a more advanced filtering by building a complex filter condition.

## Layout Customization

- [Expand and Collapse Groups in Pivot Tables](#)

Provides information on how to expand and collapse field values and field headers.

- [Hide Pivot Table Fields](#)

Guides you through the process of hiding Pivot Table fields.

- [Display Hidden Pivot Table Fields](#)

Describes how to display fields that have previously been hidden.

- [Reorder Pivot Table Fields](#)

Provides information on how to reorder Pivot Table fields.

## Field List

- [Field List Overview](#)

Provides basic information about Field Lists.

- [Invoke a Field List](#)

Describes how to invoke a Field List.

- [Defer Pivot Table Updates](#)

Describes how to prevent automatic Pivot Table updates and force it to update manually.

- [Change Field List Layout](#)

Provides information on how to change the layout of an advanced Field List.

# Data Presentation

This section describes how you can customize data presentation in Pivot Tables.

The following sections are available.

- [Sort Data in Pivot Tables](#)

Describes how you can sort field values alphabetically or by summary values displayed in a particular column or row.

- [Filter Data in Pivot Tables](#)

Provides information on how to filter data by hiding specific rows or columns via filter drop-down lists, and how to provide a more advanced filtering by building a complex filter condition.

# Sort Data in Pivot Tables

This section describes the Pivot Table capabilities used to sort its data by field and summary values.

Topics in this section:

- [Simple Sorting](#)

Provides information on how to sort data by field values.

- [Sort Data Using a Field List](#)

Describes how to use a Field List to sort data.

- [Sort Data by Summaries](#)

Describes how to sort data by column or row values.

# Simple Sorting

Values of dimension fields are always arranged in ascending or descending order. The sort order is indicated by an Up or Down arrow displayed within a corresponding dimension field's header.

		Descending Order		Ascending Order	
Extended Price		Year ↘	Quarter ↗		
Country ↗		Sales Person ↘			
④ USA	Nancy Davolio	\$17,724.91	\$14,480.03	\$30,103.96	\$23,945.60
	Margaret Peacock	\$41,957.65	\$25,621.34	\$26,099.28	\$24,995.39
	Laura Callahan	\$20,357.15	\$9,898.88	\$10,304.51	\$17,915.55
	Janet Leverling	\$19,952.45	\$39,901.55	\$12,513.34	\$20,780.94
	Andrew Fuller	\$10,681.56	\$20,336.87	\$14,904.70	\$23,018.45
USA Total		\$110,673.72	\$110,238.67	\$93,925.79	\$110,655.93
					\$425,494.11

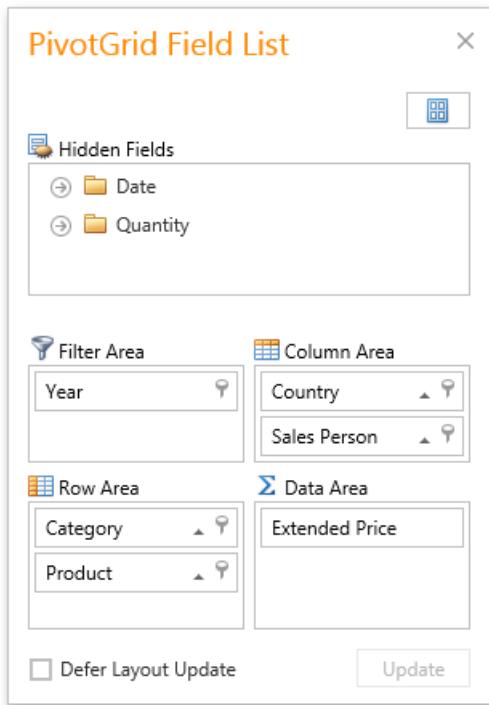
To toggle the sort order for a dimension field, click this field's header.



You can also sort field values using a Field List or context menu. To learn more, see [Sort Data Using a Field List](#).

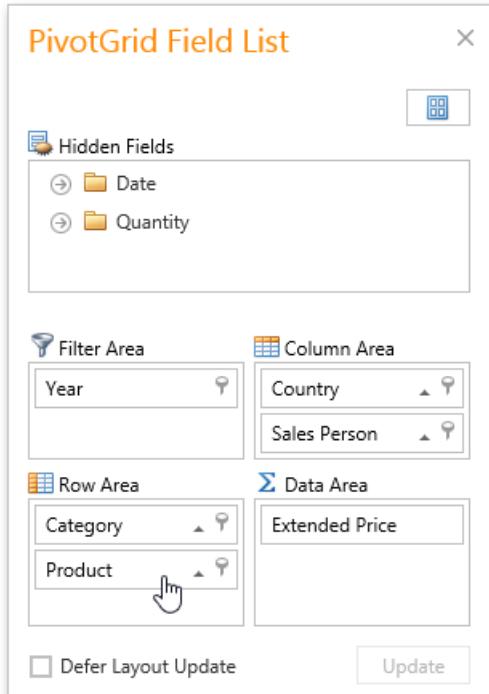
# Sort Data Using a Field List

You can use an advanced Field List to sort field values (to learn more about Field Lists, see [Field List Overview](#)).



First, invoke a Field List. For information on how to do this, see [Invoke a Field List](#).

To toggle the sort order of a field, click its header.



You can sort data without using a Field List. To learn more, see [Simple Sorting](#).

# Sort Data by Summaries

You can sort values of a particular dimension field by summary values calculated against a specific data field. To do this, right-click a column or row header, and choose a dimension field whose values should be sorted by column/row summary values. A specific indicator marks the column/row whose summary values are used to define the sort order.

The screenshot shows a data grid with sorting controls at the top. The columns are labeled 'Extended Price' and 'Quantity'. There are also filters for 'Year' (set to 2013) and 'Quarter' (set to Quarter 4). The rows are grouped by 'Country' (UK and USA) and 'Sales Person'. A context menu is open over the 'Sales Person' column header, with the option 'Sort "Sales Person" by This Column' highlighted with an orange background and a checkmark icon. Other options in the menu include 'Sort "Country" by This Column', 'Remove All Sorting', and a button with a hand cursor icon.

Extended Price	Quantity	Year ▲ 🔍	Quarter ▲ 🔍				
2013				2013 Total			
Country ▲ 🔍	Sales Person ▲ 🔍	Quarter 3		Quarter 4			
④ UK	Steven Buchanan	\$1,638.82		Sort "Country" by This Column	53.10	580	
	Michael Suyama	\$5,099.14		✓ Sort "Sales Person" by This Column	11.20	623	
	Anne Dodsworth	\$4,364.30		Remove All Sorting	28.51	550	
UK Total		\$11,102.26	734	\$18,290.55	1019	\$29,392.81	1753
④ USA	Andrew Fuller	\$2,990.00	144	\$12,729.38	622	\$15,719.38	766
	Nancy Davolio	\$7,170.78	368	\$20,146.82	716	\$27,317.60	1084
	Margaret Peacock	\$15,240.42	667	\$28,605.49	1169	\$43,845.91	1836
USA Total		\$25,401.20	1179	\$61,481.69	2507	\$86,882.89	3686
Grand Total		\$36,503.46	1913	\$79,772.24	3526	\$116,275.70	5439

You can sort values of multiple dimension fields against a single column/row. To cancel this sorting, click the same item again, or 'Remove All Sorting' to cancel sorting for all dimension fields.

# Filter Data in Pivot Tables

By default, the Pivot Table processes all records when calculating its values. Data filtering allows you to process only those records that meet your requirements.

Topics in this section describe two ways of filtering data in Pivot Tables - using Filter Windows (provide simple filtering capabilities) and the Prefilter (used for advanced filtering).

The following sections and topics are available:

- [Filter Data by Field Values](#)

This section contains topics that describe how to specify simple filter conditions via Filter Windows.

- [Build Complex Filter Criteria](#)

This topic describes the Prefilter feature that allows you to build complex filter criteria.

# Filter Data by Field Values

Filter Popup Windows allow you to configure and apply simple filtering conditions by selecting which values you wish to view, and which you do not.

Topics in this section describe how to invoke and use Filter Windows.

The following topics are available:

- [Invoke a Filter Popup Window](#)

Shows how to invoke Filter Windows from the Pivot Table and a Field List.

- [Using Filter Popup Windows](#)

Describes how to build filter conditions in Filter Popup Windows.

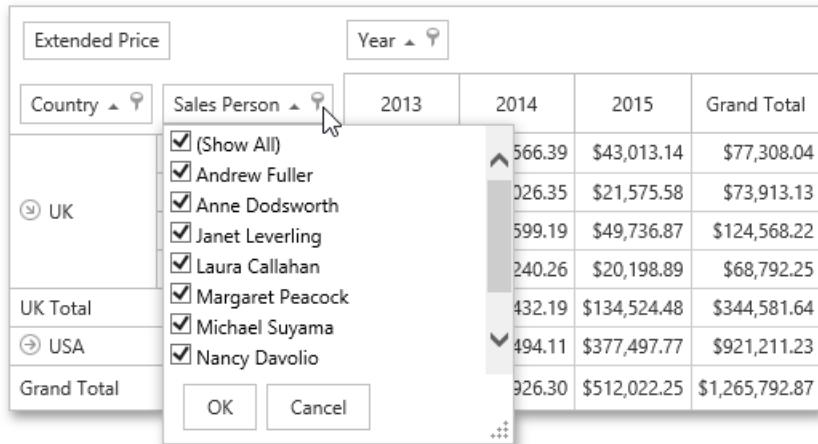
# Invoke a Filter Popup Window

You can invoke a Filter Window from the Pivot Table or from a Field List (to learn about Field Lists, see [Field List Overview](#)).

## Invoke a Filter Window from the Pivot Table

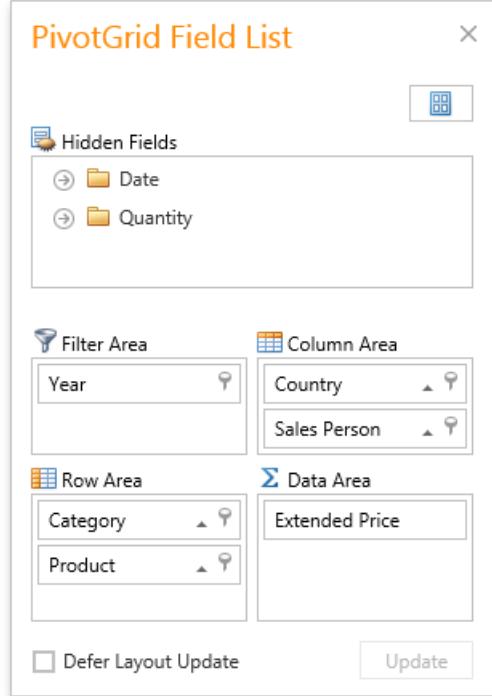
Field headers display special buttons used to invoke a Filter Window.

Click a header's filter button. This invokes the filter dropdown, which lists unique field values.



## Invoke a Filter Window from a Field List

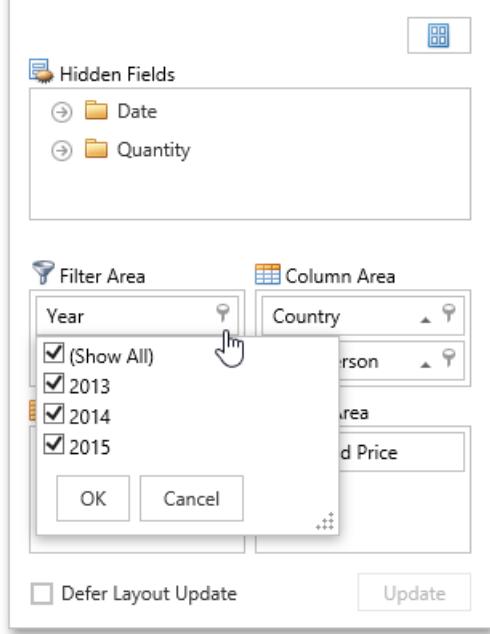
You can use an advanced Field List to filter field values.



First, invoke a Field List. For information on how to do this, see [Invoke a Field List](#).

To open a Filter Window, click the filter button displayed in the field header.

## PivotGrid Field List



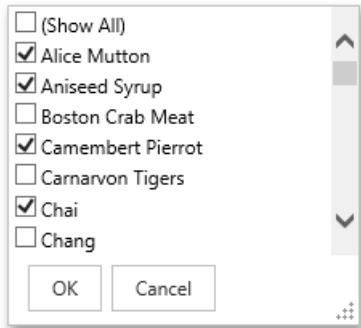
# Using Filter Popup Windows

Depending on the settings made by your application vendor, the Pivot Table can display an individual Filter Window for each field, or an integrated Filter Window for a group of fields.

This topic describes how to filter data using both types of Filter Windows.

## Simple Filter Window

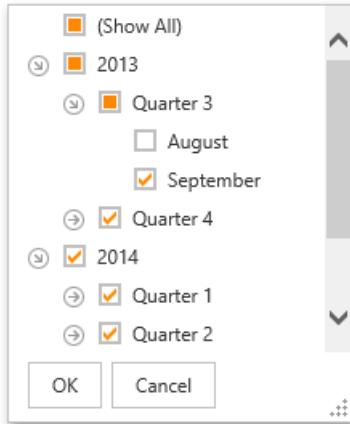
A simple Filter Window allows you to hide visible and show previously hidden values of a particular field.



In the Filter Window, uncheck field values that should be hidden and check values that should be visible. Then, click **OK** to close the window and apply the filtering.

## Hierarchical Filter Window

A hierarchical Filter Window displays values of several fields, arranged in a tree-like manner.



In the Filter Window, uncheck field values that should be hidden and check values that should be visible.

Use the **▶** buttons to expand field values and access their child values. To collapse an expanded field value and hide its child values, use the **▼** button.

Click **OK** to close the window and apply the filtering.

## Filtering Indication

If a field's values are filtered, the corresponding filter button is highlighted.

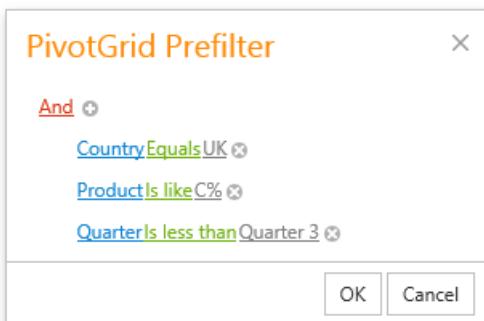
Extended Price	Country ▲ ↴	Sales Person ▲ ↴		
Category ▲ 🔍	Product ▲ ↴	UK	USA	Grand Total
⊖ Beverages		\$68,057.10	\$199,811.06	\$267,868.16
⊖ Meat/Poultry		\$50,345.27	\$112,677.10	\$163,022.37
⊖ Produce		\$29,737.91	\$70,246.66	\$99,984.57
⊖ Seafood		\$26,980.43	\$104,281.30	\$131,261.73
Grand Total		\$175,120.71	\$487,016.12	\$662,136.83

## Removing Filtering

To remove filtering against a specific field, invoke its Filter Window and select (**Show All**).

# Build Complex Filter Criteria

To build complex filter criteria consisting of multiple filter clauses using various filter operators, you can use a Prefilter (Filter Editor).



The Prefilter does not affect filtering via Filter Windows.

To invoke a Prefilter, click an empty space within the Pivot Table header region and select **Show Prefilter** from the context menu.

The screenshot shows a Pivot Table with several columns: Extended Price, Category, Product, Reload Data, Sales Person, USA, and Grand Total. A context menu is open over the table, with the 'Show Prefilter' option highlighted by a yellow box. Other options in the menu include 'Reload Data', 'Show Field List', and 'Sales Person' sorting.

Extended Price	Category	Product	Reload Data	Sales Person ▲ ↴	USA	Grand Total
(+) Grains/Cereals	\$21,219.81	\$21,219.81	\$74,525.53	\$95,744.59		
(+) Meat/Poultry	\$50,345.27	\$50,345.27	\$112,677.10	\$163,022.37		
(+) Produce	\$29,737.91	\$29,737.91	\$70,246.66	\$99,984.57		
(+) Seafood	\$26,980.43	\$26,980.43	\$104,281.30	\$131,261.73		
Grand Total	\$128,282.67	\$128,282.67	\$361,730.59	\$490,013.26		

After you have built and applied a filter condition, a filter panel appears at the Pivot Table bottom. This panel displays the filter condition.

The screenshot shows a Pivot Table with columns: Extended Price, Category, Product, Country, Sales Person, and UK Total. A filter panel is displayed at the bottom of the table, containing the following information:  
- Filtered by Country: UK  
- Filtered by Category: Condiments, Confections  
- Filtered by Product: Anne Dodsworth, Michael Suyama, Robert King, Steven Buchanan  
- Grand Total: \$60,542.24  
A checkbox is checked next to the filter condition: 'Begins with([Category], 'C') And [Country] Equals 'UK''. At the bottom right of the filter panel is a 'Clear' button.

Extended Price	Category	Product	Country	Sales Person	UK Total
(+) Condiments	\$10,125.54	Anne Dodsworth	\$4,648.47	\$8,851.37	\$2,675.29
(+) Confections	\$8,053.16	Michael Suyama	\$6,859.63	\$14,518.98	\$4,809.80
Grand Total	\$18,178.70	Robert King	\$11,508.10	\$23,370.35	\$7,485.09

To modify a filter condition, open a Prefilter. You can now do it by clicking a filter condition displayed in the filter panel.

To temporarily disable filtering, uncheck the  button.

To remove filtering, click **Clear**.

For information on the Prefilter filtering capabilities, see [Filter Editor](#).

# Layout Customization

This section describes how to customize the Pivot Table layout by expanding and collapsing field values, as well as hiding, displaying and reordering fields.

The following sections are available.

- [Expand and Collapse Groups in Pivot Tables](#)

Provides information on how to expand and collapse field values and field headers.

- [Hide Pivot Table Fields](#)

Guides you through the process of hiding Pivot Table fields.

- [Display Hidden Pivot Table Fields](#)

Describes how to display fields that have previously been hidden.

- [Reorder Pivot Table Fields](#)

Provides information on how to reorder Pivot Table fields.

# Expand and Collapse Groups in Pivot Tables

## Expand/Collapse Values Groups

To expand/collapse value groups, do one of the following.

- Click the corresponding expand button.

Extended Price		Country ▲ 🔍		Sales Person ▲		UK Total
Category ▲ 🔍	Product ▾	UK				
		Anne Dodsworth	Michael Suyama	Robert King	Steven Buchanan	
Beverages	Steeleye Stout	\$856.80	\$518.40	\$1,339.20	\$54.00	\$2,768.40
	Sasquatch Ale	\$112.00	\$420.00	\$3,442.60	\$106.40	\$4,081.00
	Rhönbräu Klosterbier	\$833.12	\$948.60	\$223.20	\$201.50	\$2,206.42
	Outback Lager	\$744.00	\$540.00	\$1,290.00		\$2,574.00
	Lakkalikööri	\$977.58	\$751.50	\$489.60	\$720.00	\$2,938.68
Beverages Total		\$3,523.50	\$3,178.50	\$6,784.60	\$1,081.90	\$14,568.50
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
Grand Total		\$42,803.32	\$31,725.64	\$57,776.81	\$30,504.60	\$162,810.37

- Right-click a value that has nested values, and select the required Expand or Collapse command from the menu that opens.

Extended Price		Country ▲ 🔍		Sales Person ▲		UK Total
Category ▲ 🔍	Product ▾	UK				
		Anne Dodsworth	Michael Suyama	Robert King	Steven Buchanan	
Beverages	Steeleye Stout	\$856.80	\$518.40	\$1,339.20	\$54.00	\$2,768.40
	Sasquatch Ale	\$112.00	\$420.00	\$3,442.60	\$106.40	\$4,081.00
	Rhönbräu Klosterbier	\$833.12	\$948.60	\$223.20	\$201.50	\$2,206.42
	Outback Lager	\$744.00	\$540.00	\$1,290.00		\$2,574.00
	Lakkalikööri	\$977.58	\$751.50	\$489.60	\$720.00	\$2,938.68
Beverages Total		\$3,523.50	\$3,178.50	\$6,784.60	\$1,081.90	\$14,568.50
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
Grand Total		\$42,803.32	\$31,725.64	\$57,776.81	\$30,504.60	\$162,810.37

## Expand/Collapse Fields

To expand/collapse a group of fields, click a corresponding field expand button.

Extended Price					
Country ▲		Sales Person ▲			
Category ▲	UK				UK Total
Beverages	\$3,523.50	\$3,178.50	\$6,784.60	\$1,081.90	\$14,568.50
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
Grand Total	\$42,803.32	\$31,725.64	\$57,776.81	\$30,504.60	\$162,810.37

# Hide Pivot Table Fields

This section describes the Pivot Table capabilities to hide fields.

Topics in this section:

- [Hide Fields Using the Context Menu](#)

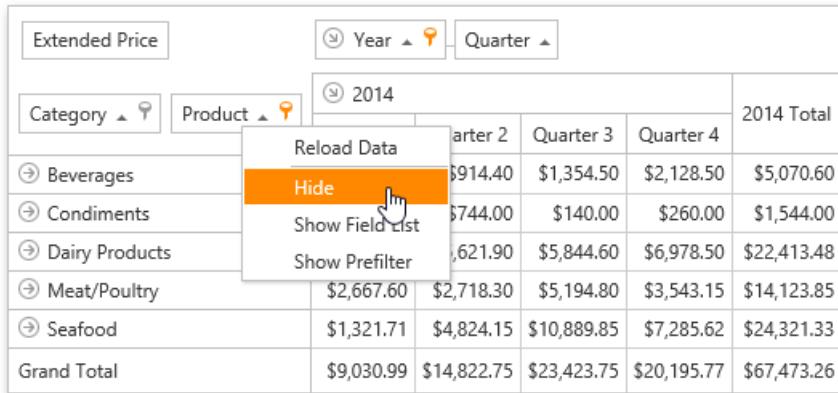
Provides information on how to use context menus to hide fields.

- [Hide Fields Using a Field List](#)

Describes how to hide fields using a Field List.

# Hide Fields Using the Context Menu

To hide a field, right-click within its header and select **Hide** within the context menu that opens.



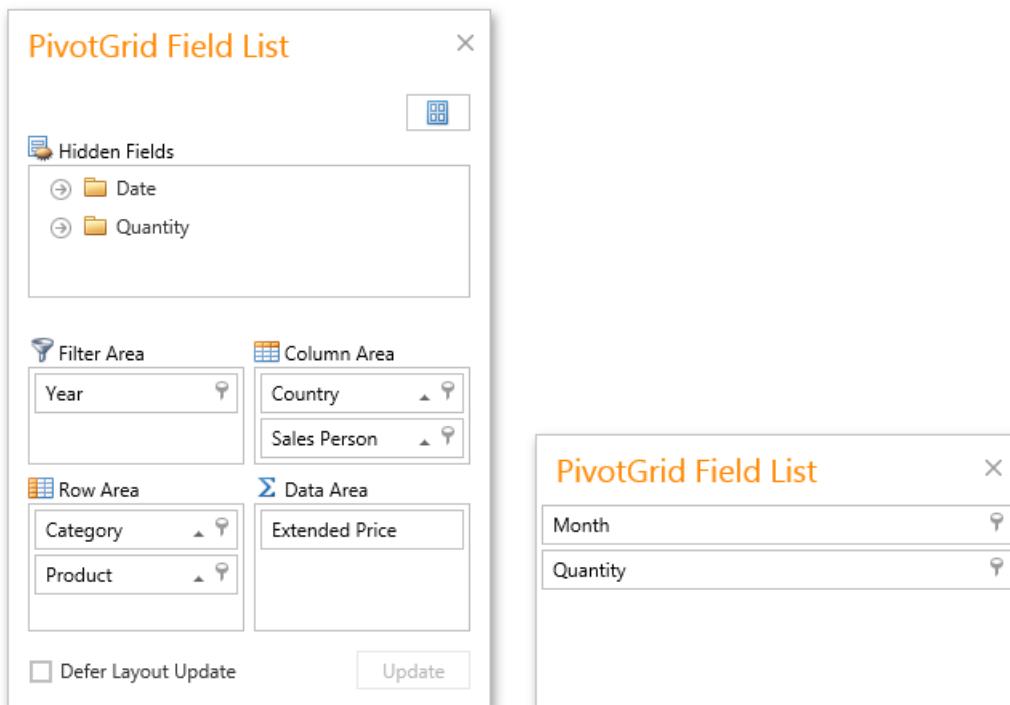
A screenshot of a data grid interface. At the top, there are filter bars for 'Extended Price', 'Year' (set to 2014), and 'Quarter' (set to Quarter 4). Below this is a table with columns for 'Category', 'Product', 'Quarter' (with sub-columns for Quarter 2, Quarter 3, and Quarter 4), and '2014 Total'. The rows list product categories: Beverages, Condiments, Dairy Products, Meat/Poultry, and Seafood, along with their respective sales figures. A context menu is open over the 'Category' column header. The menu items are 'Reload Data', 'Hide' (which is highlighted with an orange background and a cursor icon), 'Show Field List', and 'Show Prefilter'.

Category	Product	Quarter	2014 Total
(+) Beverages		Quarter 2	\$914.40
(+) Condiments		Quarter 3	\$1,354.50
(+) Dairy Products		Quarter 4	\$2,128.50
(+) Meat/Poultry			\$5,070.60
(+) Seafood			\$744.00
			\$140.00
			\$260.00
			\$1,544.00
			\$621.90
			\$5,844.60
			\$6,978.50
			\$22,413.48
			\$2,667.60
			\$2,718.30
			\$5,194.80
			\$3,543.15
			\$14,123.85
			\$1,321.71
			\$4,824.15
			\$10,889.85
			\$7,285.62
			\$24,321.33
Grand Total			\$9,030.99
			\$14,822.75
			\$23,423.75
			\$20,195.77
			\$67,473.26

You can also use a Field List to hide fields. To learn more, see [Hide Fields Using a Field List](#).

# Hide Fields Using a Field List

You can use a simple or an advanced Field List to hide fields (to learn more about Field Lists, see [Field List Overview](#)).



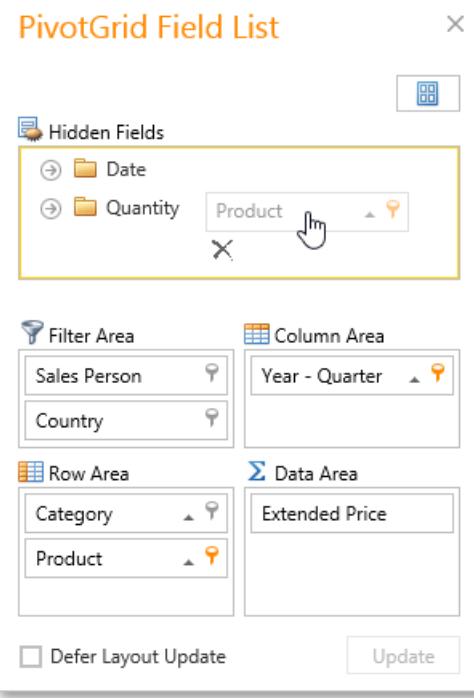
First, invoke a Field List. For information on how to do this, see [Invoke a Field List](#).

Then drag and drop a field onto the Field List form.

A screenshot of a PivotGrid interface. The Row Area contains fields for Category and Product. The Data Area displays a table of sales data for the UK, including columns for Product, Month, and Quantity. A 'PivotGrid Field List' dialog box is overlaid on the grid, containing fields for Month and Quantity. A hand cursor is shown dragging the 'Product' field header from the Row Area into the dialog box. The table data includes:

	Product	Month	Quantity	UK Total
Beverages	\$5.00			\$3,567.60
Condiments	\$7.00			\$1,160.00
Dairy Products	\$1,450.00			\$8,894.40
Meat/Poultry	\$5.00			\$8,562.45
Seafood	\$3,700.00			\$7,073.13
Grand Total	\$7,088.35	\$3,355.80	\$7,332.38	\$11,481.05
				\$29,257.58

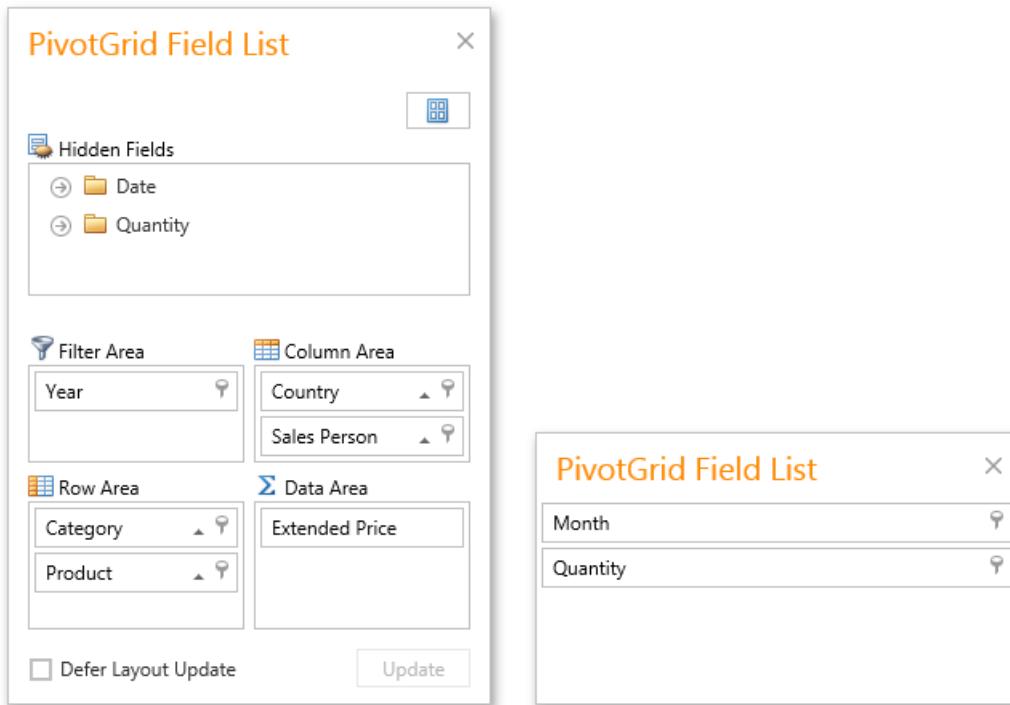
If you are using an advanced Field List, you can hide a field by dragging its header to the hidden fields area displayed on the Field List top.



You can also hide fields using the context menu. To learn more, see [Hide Fields Using the Context Menu](#).

# Display Hidden Pivot Table Fields

To display hidden fields, use a simple or advanced Field List (to learn more about Field Lists, see [Field List Overview](#)).



First, invoke a Field List. For information on how to do this, see [Invoke a Field List](#).

To display a hidden field, drag-and-drop the field from the Field List onto the required area of Pivot Table. This works for both simple and advanced Field Lists.

The image shows a PivotTable with various filters and data. A "PivotGrid Field List" window is overlaid on the table, listing hidden fields such as "Country", "Month", "Quantity", "Sales Person", and "Category". The PivotTable itself displays data for categories like Beverages, Condiments, Confections, Dairy Products, Grains/Cereals, Meat/Poultry, Produce, and Seafood, broken down by Year (2014), Quarter, and Month.

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	2014 Total
2014	\$34,181.80	\$33,133.48	\$17,211.56	\$17,952.60	\$102,479.44
Category	041.80	752.21	495.43	823.47	164.75
Product	973.68	195.52			
Beverages					
Condiments					
Confections					
Dairy Products					
Grains/Cereals					
Meat/Poultry					
Produce					
Seafood					
Grand Total	\$144,981.32	\$145,361.44	\$134,671.28	\$165,912.26	\$590,926.30

If you are using an advanced Field List, you can display a hidden field by dragging its header from the hidden fields section to the section corresponding to the required Pivot Table area.

## PivotGrid Field List

X

grid Hidden Fields

+/- Date

+/- Product

grid Product

+/- Quantity

filter Filter Area

grid Column Area

grid Row Area

Σ Data Area

+/- Category

+/- Country

+/- Sales Person

+/- Product

+/- Extended Price

grid Defer Layout Update

Update

# Reorder Pivot Table Fields

This section describes the Pivot Table capabilities to reorder fields.

The following topics are available:

- [Simple Fields Reordering](#)

Describes how to reorder fields via drag-and-drop and context menus.

- [Reorder Fields Using a Field List](#)

Provides information on how to use a Field List to reorder fields.

# Simple Fields Reordering

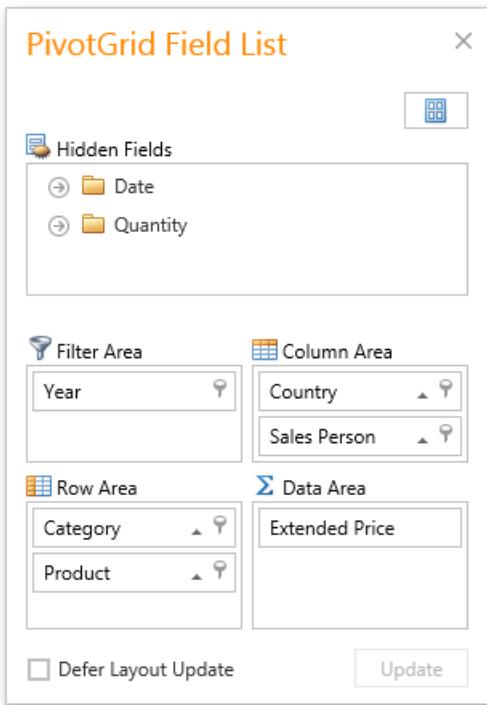
To move a field to another position, use drag-and-drop.

Quantity 			
Extended Price	Year 	Quarter 	
Category 	Product 	2013	
		Quarter 3	Quarter 4
⊕ Beverages		\$8,049.38	\$30,437.82
⊕ Condiments		\$4,174.80	\$12,228.14
⊕ Confections		\$10,781.92	\$13,030.97
⊕ Dairy Products		\$11,600.04	\$18,427.75
⊕ Grains/Cereals		\$1,527.46	\$5,786.46
⊕ Meat/Poultry		\$6,157.38	\$13,699.48
⊕ Produce		\$4,673.12	\$6,021.84
⊕ Seafood		\$6,383.06	\$9,864.70
Grand Total		\$53,347.16	\$109,497.16
			\$162,844.32

You can also use a Field List to reorder fields. For more information, see [Reorder Fields Using a Field List](#).

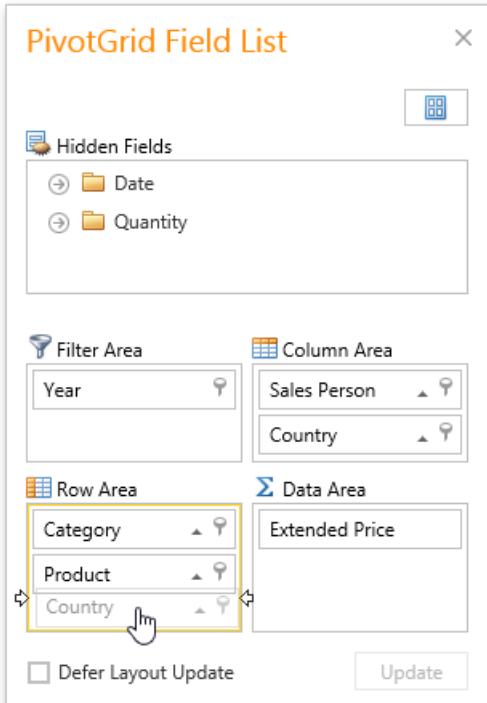
# Reorder Fields Using a Field List

You can use an advanced Field List to reorder fields (to learn more about Field Lists, see [Field List Overview](#)).



First, invoke a Field List. For information on how to do this, see [Invoke a Field List](#).

To reorder fields, drag their headers within or between Field List sections that correspond to different Pivot Table areas.



You can also reorder fields via simple drag-and-drop operations without invoking a Field List. To learn more, see [Simple Fields Reordering](#).

# Field List Overview

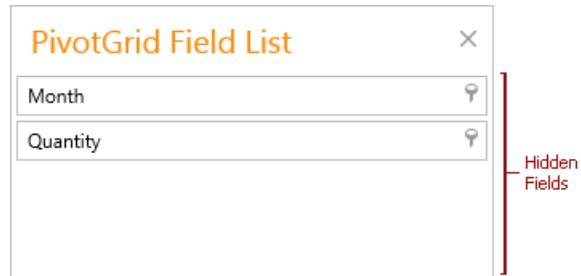
Pivot Table provides a Field List form used to reorder and hide fields, sort and filter data, etc. For more information on how to invoke a Field List, see [Invoke a Field List](#).

This topic describes Field List visual elements and layout.

Depending on Pivot Table settings made by your application vendor, Pivot Table can display either a simple or advanced Field List.

## Simple Field List

The following picture shows a simple Field List.



A simple Field List contains the following visual elements:

- **Hidden Fields Section** - contains headers of fields hidden from Pivot Table. Use it to display hidden fields.

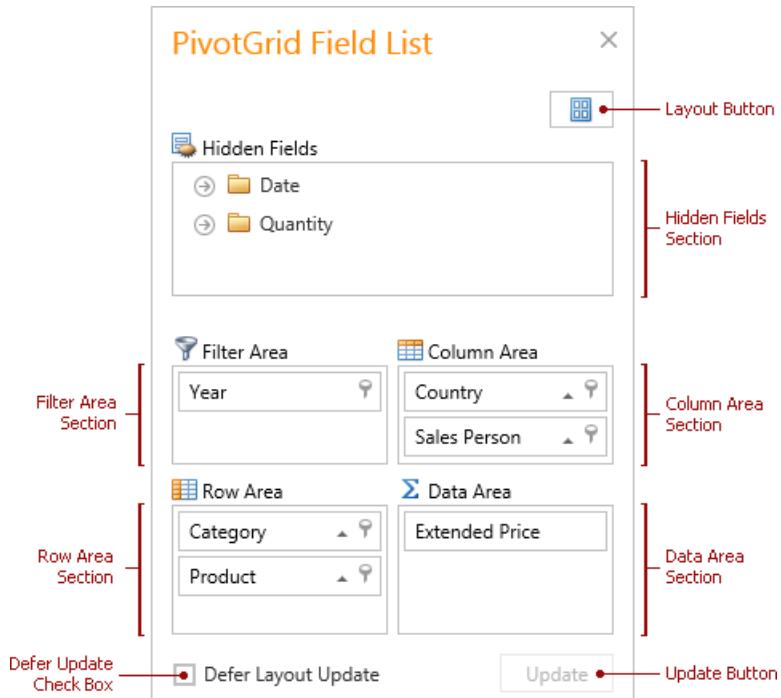
Use a simple Field List to hide fields from Pivot Table and display hidden fields again.

For more information on operations available in a simple Field List, refer to the following topics:

- [Hide Fields Using a Field List](#)
- [Display Hidden Pivot Table Fields](#)

## Advanced Field List

The following picture shows an advanced Field List.



An advanced Field List contains the following visual elements:

- **Hidden Fields Section** - contains headers of fields hidden from Pivot Table. Use it to display hidden fields.
- **Filter, Column, Row and Data Area Sections** - contains headers located in respective Pivot Table areas.
- **Defer Updates Check Box** - used to enable/disable automatic Pivot Table updates (see [Defer Pivot Table Updates](#)).
- **Update Button** - used to force Pivot Table to update (see [Defer Pivot Table Updates](#)).
- **Layout Button** - used to invoke the *Layout* menu and change the Field List layout (see [Change Field List Layout](#)).

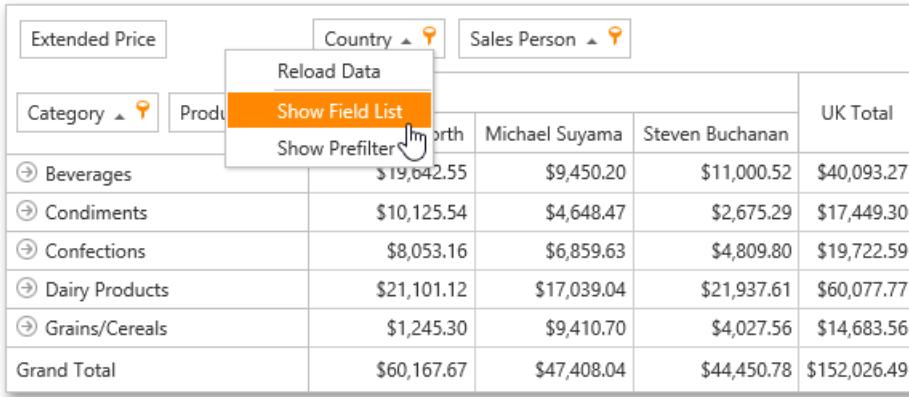
Use an advanced Field List to sort and filter data, reorder and hide visible fields, and show fields that have been hidden.

For more information on operations available in an advanced Field List, refer to the following topics:

- [Sort Data Using a Field List](#)
- [Invoke a Filter Popup Window](#)
- [Hide Fields Using a Field List](#)
- [Display Hidden Pivot Table Fields](#)
- [Reorder Fields Using a Field List](#)

# Invoke a Field List

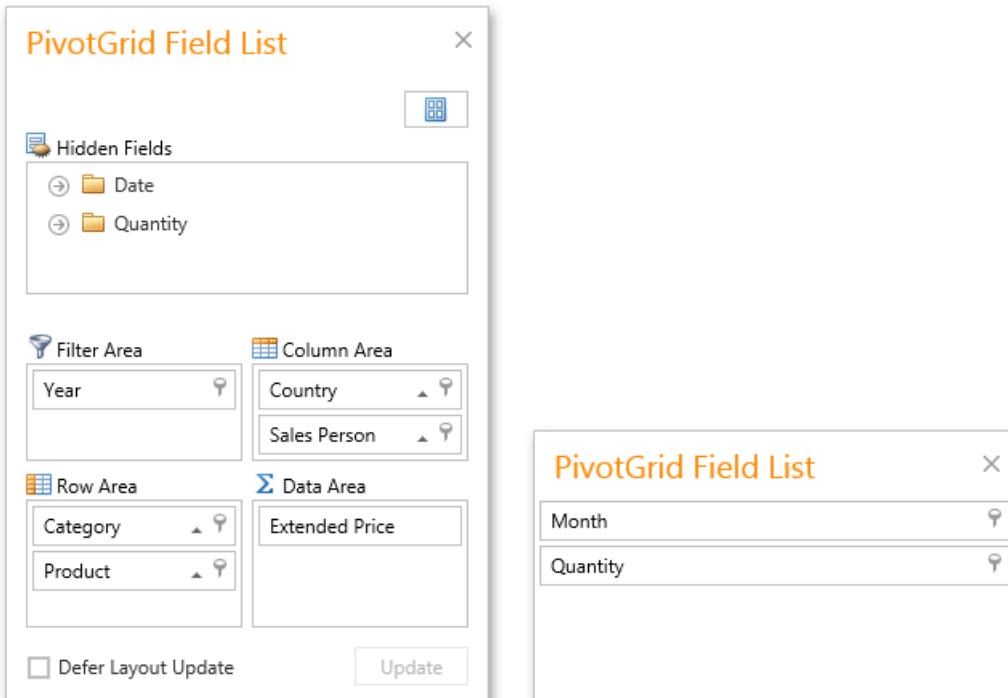
To invoke a Field List, right-click on an empty space within the Pivot Table header region, and select **Show Field List** from the context menu.



A screenshot of a Pivot Table header. The context menu is open at the top center, with the "Show Field List" option highlighted in orange. Other options visible in the menu include "Extended Price", "Country", "Sales Person", "Category", "Product", "Reload Data", and "Show Prefilter". The main table area shows data for various product categories like Beverages, Condiments, Confections, Dairy Products, and Grains/Cereals, along with a Grand Total row. The columns include Month, Michael Suyama, Steven Buchanan, and UK Total.

Category	Product	Month	Michael Suyama	Steven Buchanan	UK Total
(+) Beverages		\$19,642.55	\$9,450.20	\$11,000.52	\$40,093.27
(+) Condiments		\$10,125.54	\$4,648.47	\$2,675.29	\$17,449.30
(+) Confections		\$8,053.16	\$6,859.63	\$4,809.80	\$19,722.59
(+) Dairy Products		\$21,101.12	\$17,039.04	\$21,937.61	\$60,077.77
(+) Grains/Cereals		\$1,245.30	\$9,410.70	\$4,027.56	\$14,683.56
Grand Total		\$60,167.67	\$47,408.04	\$44,450.78	\$152,026.49

A simple or advanced Field List (similar to one of those shown below) will be displayed.



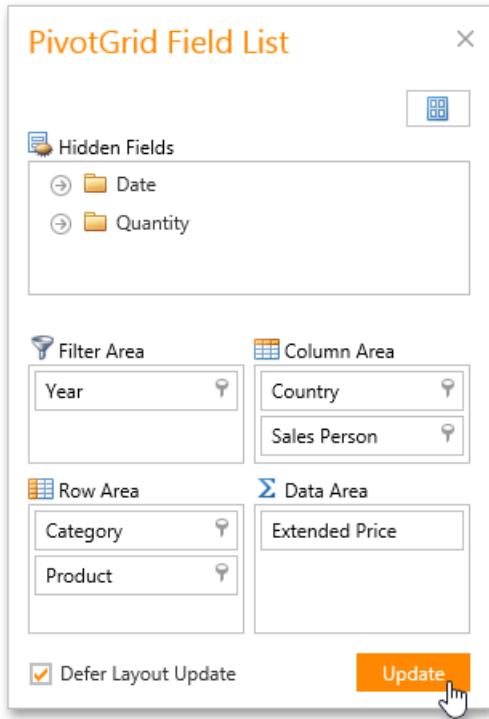
The image displays two instances of the "PivotGrid Field List" dialog box. The left instance is a detailed version with several sections: "Hidden Fields" containing Date and Quantity; "Filter Area" with Year, Country, and Sales Person dropdowns; "Row Area" with Category and Product dropdowns; "Column Area"; and "Data Area" with Extended Price. It also includes checkboxes for "Defer Layout Update" and "Update". The right instance is a simplified version showing only the "Data Area" section with Month and Quantity.

To learn more about Field Lists, see [Field List Overview](#).

# Defer Pivot Table Updates

When you perform several sequential operations like hiding, displaying or reordering fields using an advanced Field List, Pivot Table is updated after each operation.

You can disable automatic Pivot Table updates by checking the **Defer Layout Update** check box. In this instance, use the **Update** button to force Pivot Table to update.

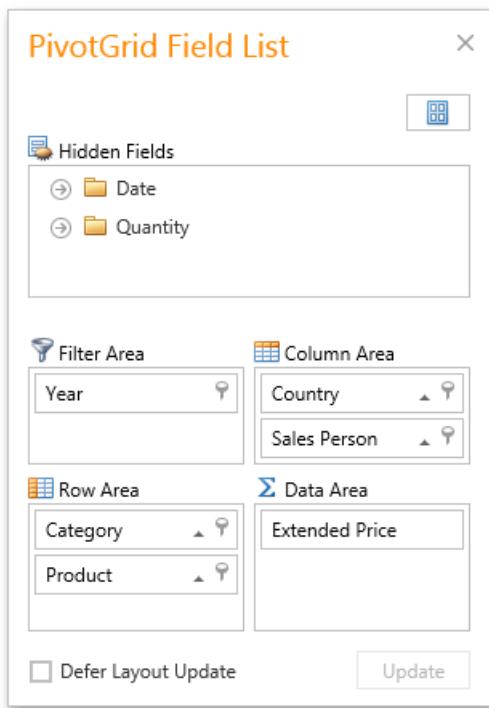


Note that if the **Defer Layout Update** check box is checked, you cannot sort or filter data in the Field List.

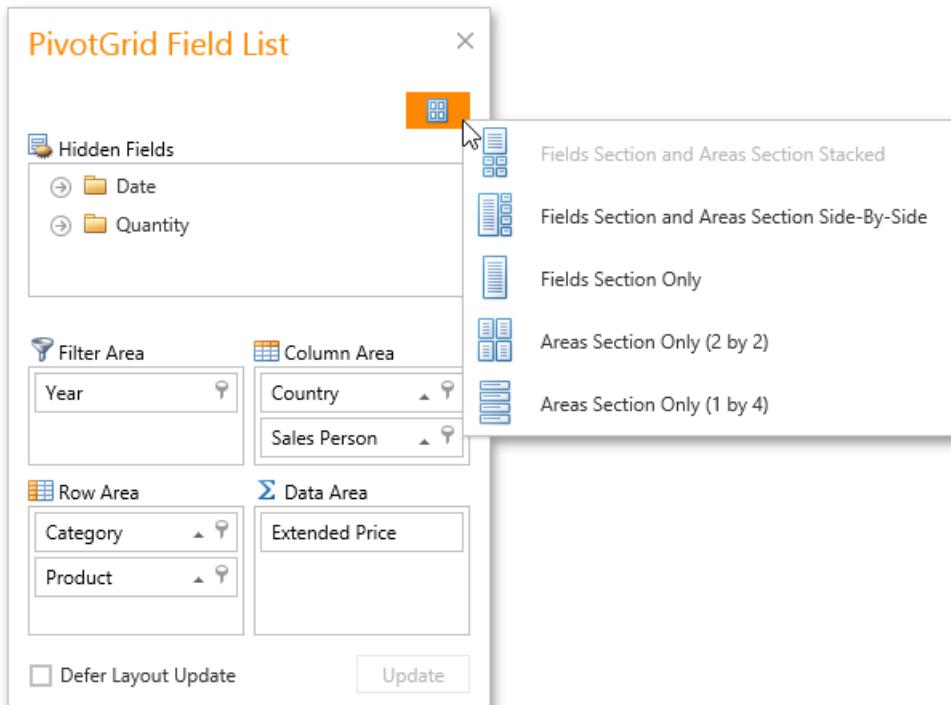
To learn more about Field Lists, see [Field List Overview](#).

# Change Field List Layout

By default, an advanced Field List displays a hidden fields section on the top, and four sections that correspond to Pivot Table areas at the bottom (see [Field List Overview](#) for details).



You can use the *Layout* menu to control which sections are displayed and where they are displayed. To do this, click the button and select the required layout from the drop-down menu.



To learn more about Field Lists, see [Field List Overview](#).

# Popup Window

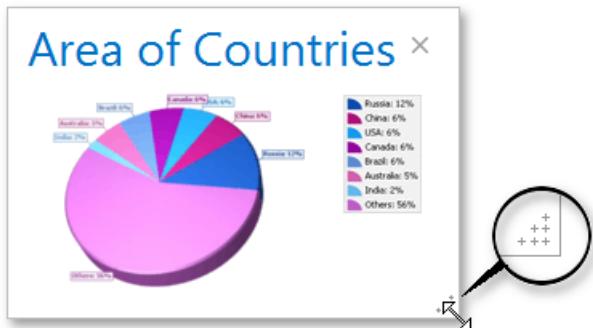
The Popup Window is a temporary window that appears above an application's main window. It is typically used to display quick reference information. The popup window can be displayed when hovering or clicking a specific element, or it can initially be visible.

[Click here to invoke a popup window](#)

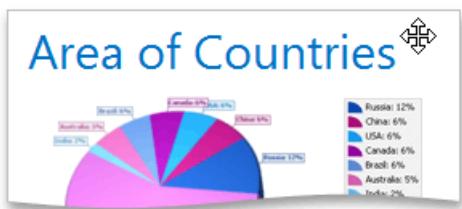


## Window Resizing and Dragging

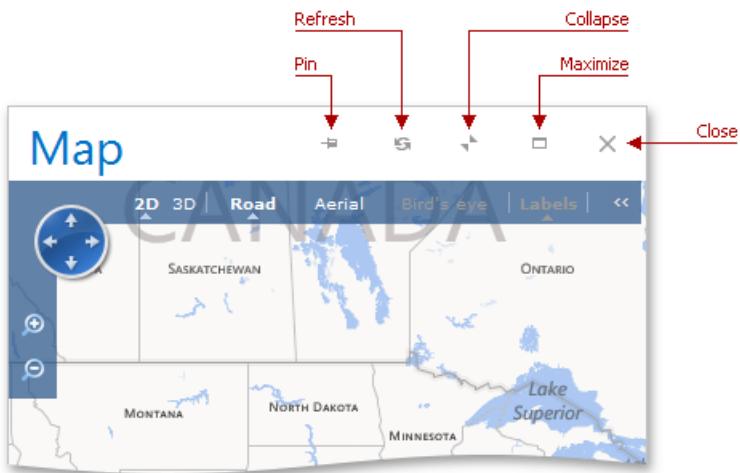
If a window displays a size grip, you can use it to resize the window.



To change the window position, click and hold its header (the cursor will change to a four-directional arrow). Drag the header and drop it to the required position.



## Header Buttons



A popup window's header can display the following buttons.

BUTTON	DESCRIPTION
Pin Button	Allows you to pin the window.
Refresh Button	Allows you to refresh the window.
Collapse Button	Allows you to collapse the window.
Maximize Button	Allows you to maximize the window.
Close Button	Allows you to close the window.

## Closing a Popup Window

Depending on the settings specified by the application vendor, a popup window can be closed in the following ways.

- By clicking the **Close** button
- By moving the cursor out of the window
- By clicking an area outside of the window
- By pressing the ESC key.

# Rating

The Rating allows you to vote for the content.

To vote, select the desired number of stars.

## ■ Note

The type of item images depends on your application vendor.

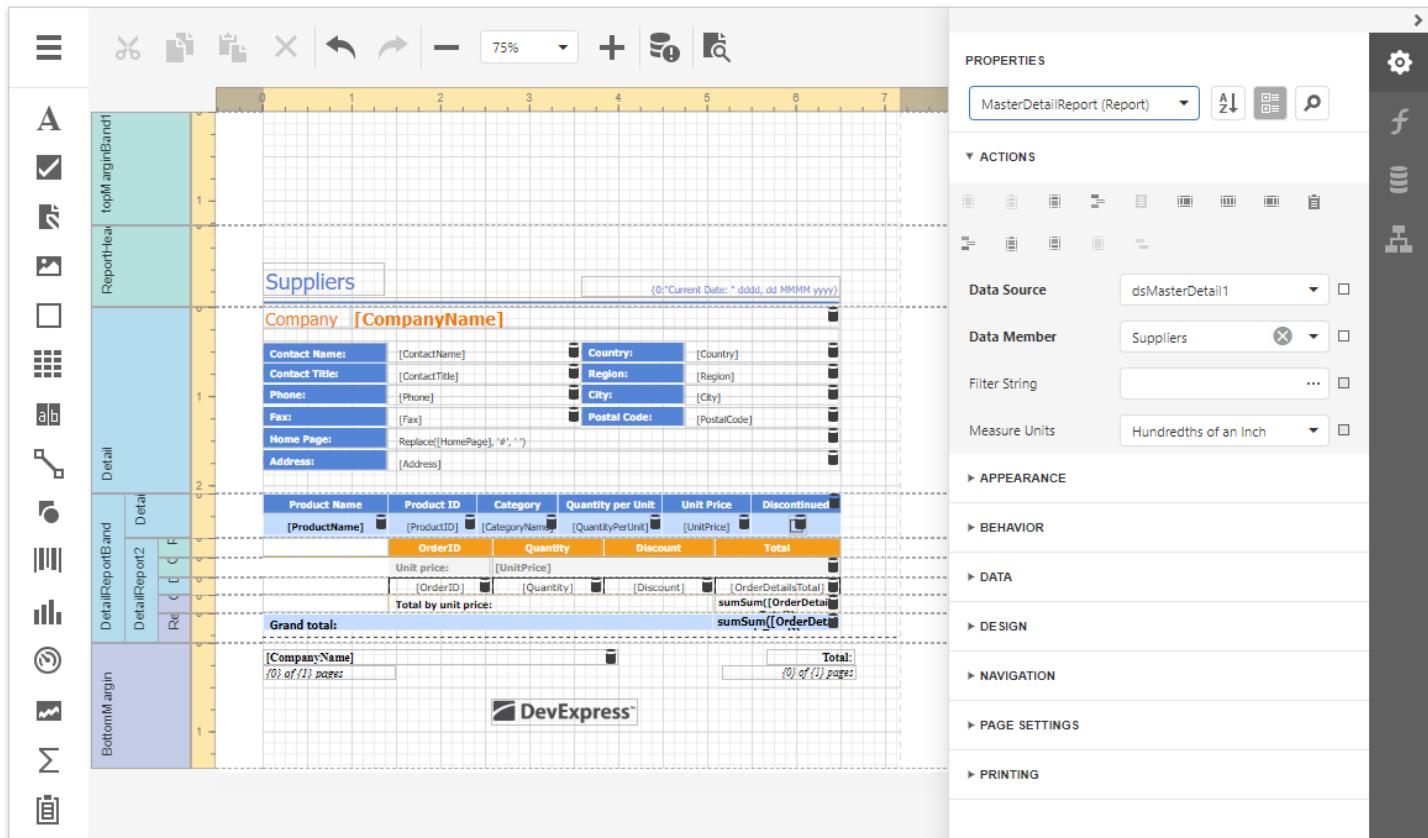


Number of stars visualizes the rating.



# Report Designer

The **Web Report Designer** allows you to create data-bound reports and provides a rich set of tools to construct report layouts that meet your requirements.

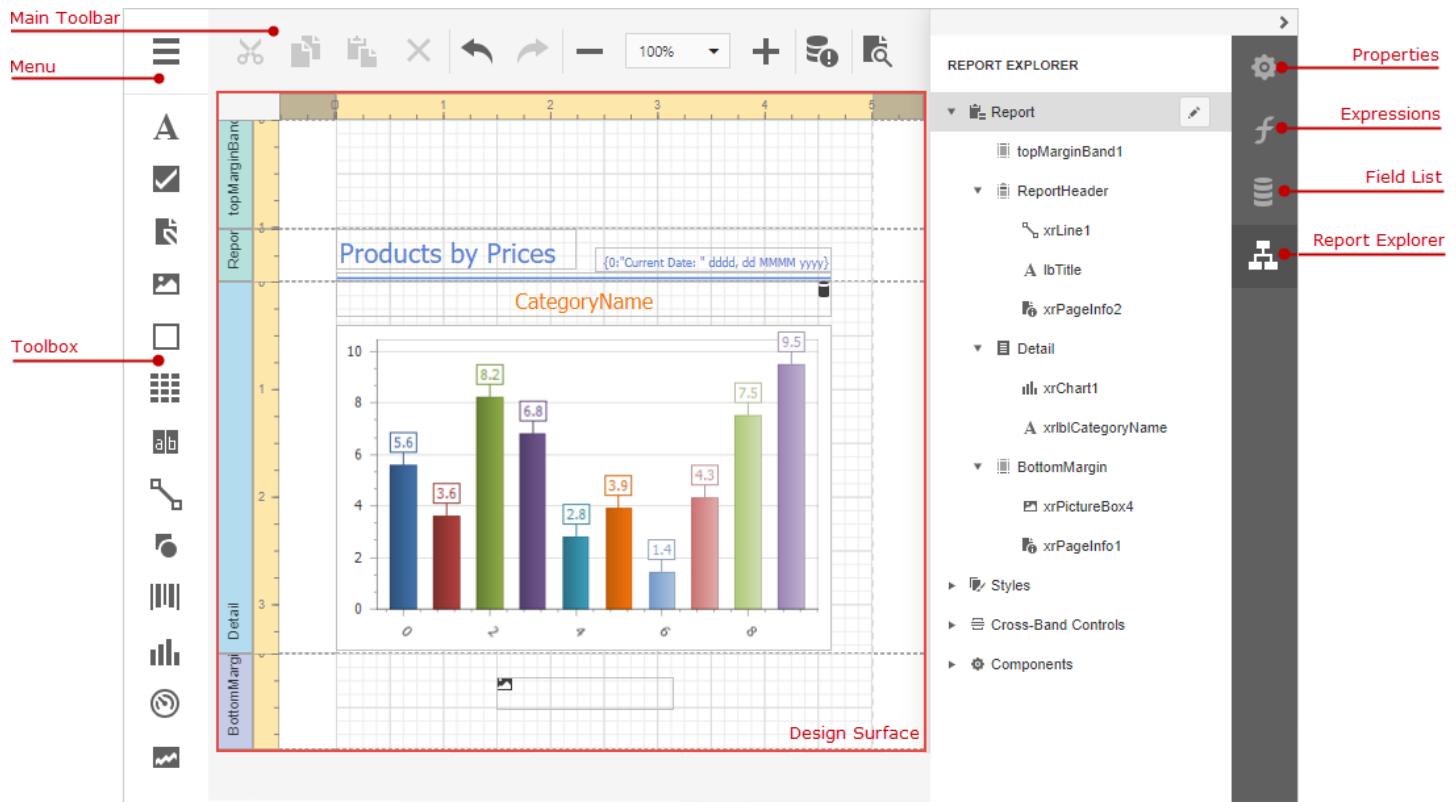


- [First Look at the Report Designer](#)
- [Add New Reports](#)
- [Open Reports](#)
- [Save Reports](#)
- [Introduction to Banded Reports](#)
- [Bind to Data](#)
- [Create Popular Reports](#)
- [Configure Design Settings](#)
- [Use Report Elements](#)
- [Shape Report Data](#)
- [Lay out Dynamic Report Content](#)
- [Customize Appearance](#)
- [Add Navigation](#)
- [Provide Interactivity](#)
- [Add Extra Information](#)
- [Use Expressions](#)
- [Report Designer Tools](#)
- [Preview, Print and Export Reports](#)

## Note

Specific features described in this guide may differ from what you see in your application. This depends on your application vendor.

# First Look at the Report Designer



The [Design Surface](#) displays a report's structure and contents. You can use the tools on the Report Designer's panels to design the report:

- use the [Menu](#) to manage and set up reports;
- drop report controls from the [Toolbox](#) to the design surface;
- access report editing commands in the [Main Toolbar](#);
- use the [Properties](#) panel to set up the report controls;
- use the [Expressions](#) panel to provide data to the report controls and conditionally shape data;
- access the report's data source schema in the [Field List](#) panel;
- access the report's elements in the [Report Explorer](#) panel.

# Add New Reports

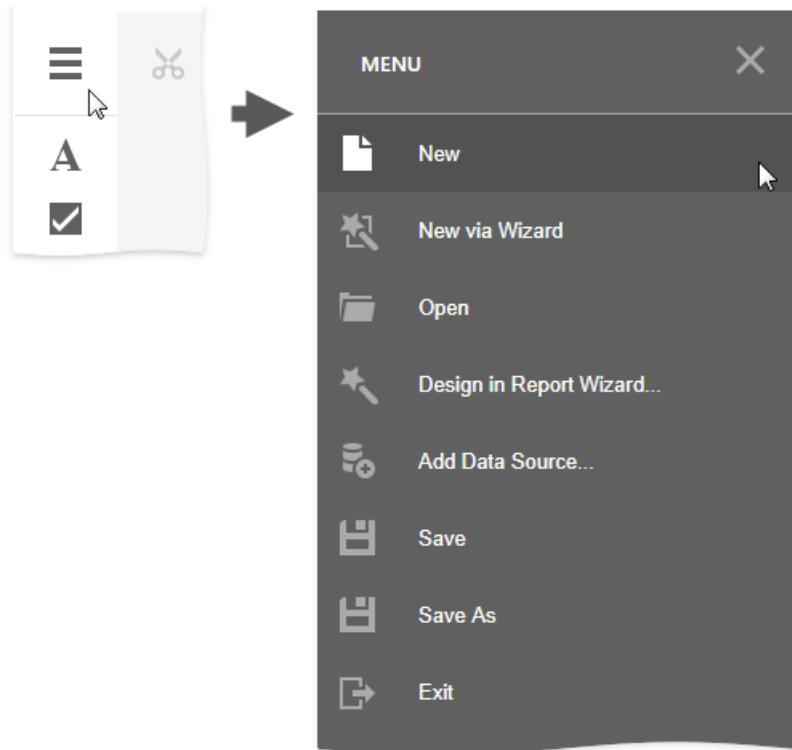
This topic explains how to create a new report in the Report Designer.

## ■ Note

Before you start, make sure to [back up the current report](#).

## Create a New Blank Report

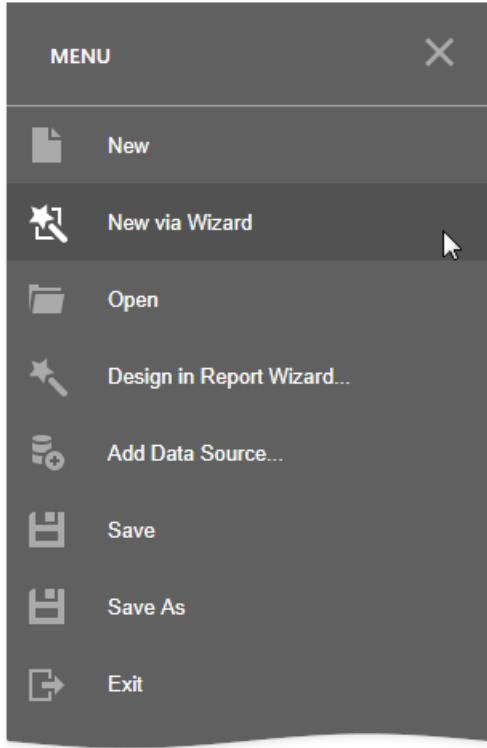
In the designer [menu](#), click **New**.



The created report contains three [bands](#) - **Top Margin**, **Detail**, and **Bottom Margin**. Refer to the [Use Report Elements](#) section for information on how to add controls to the report.

## Create a New Report Using the Report Wizard

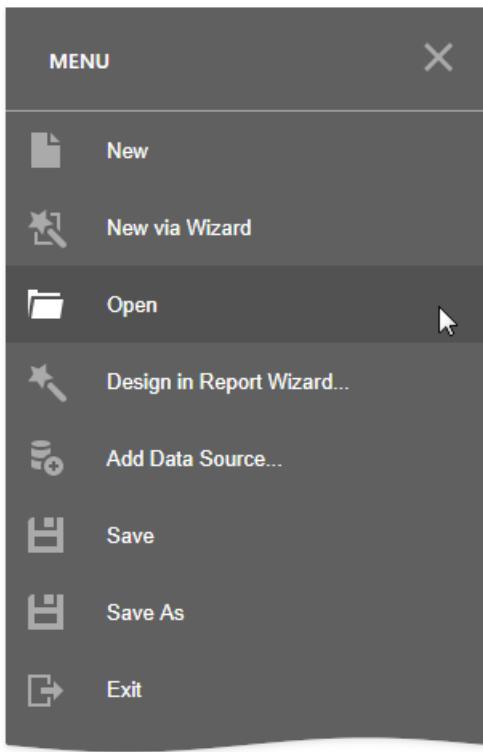
In the designer [menu](#), click **New via Wizard**.



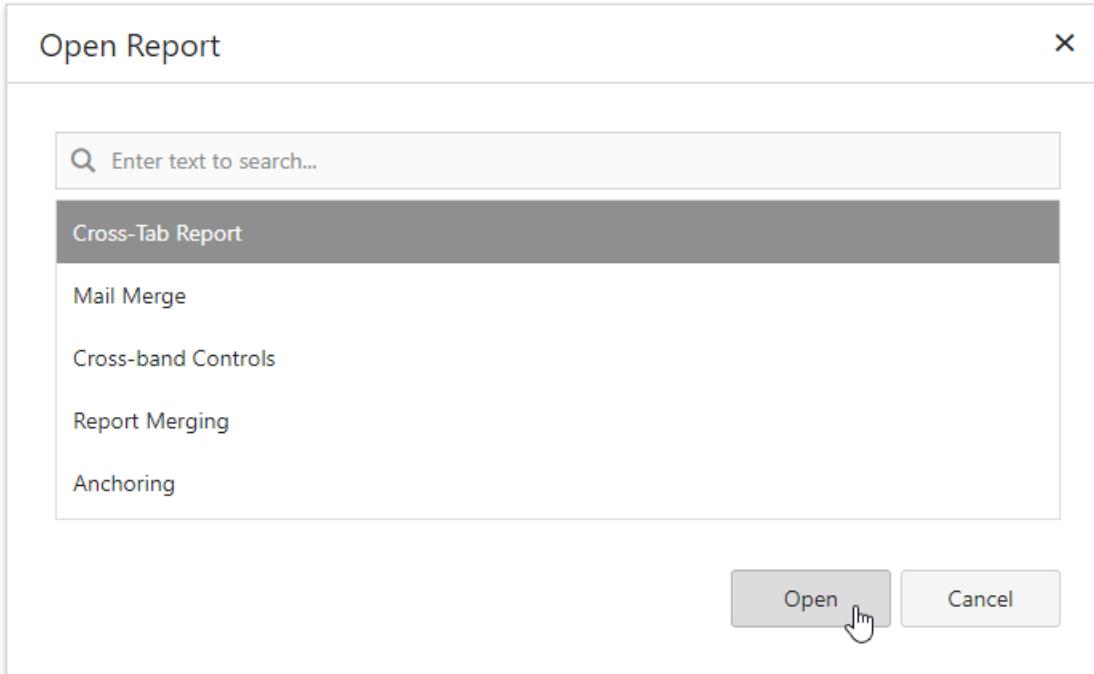
Go through the wizard's pages to get a predesigned report. For more information about this option, refer to [Report Wizard](#).

# Open Reports

Click **Open** in the **menu** to invoke the **Open Report** dialog.



This dialog displays [saved reports](#). Select a report and click **Open**.



You can use the **Open Report** dialog to search for a report.

## Open Report

X

 cross 

Cross-Tab Report

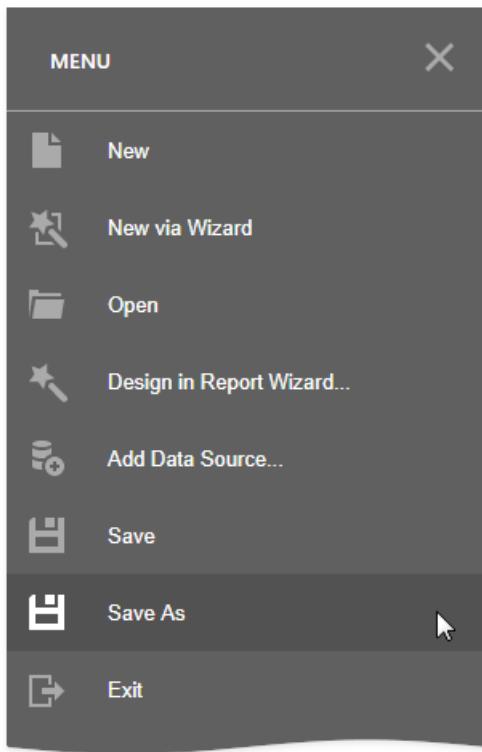
Cross-band Controls

Open

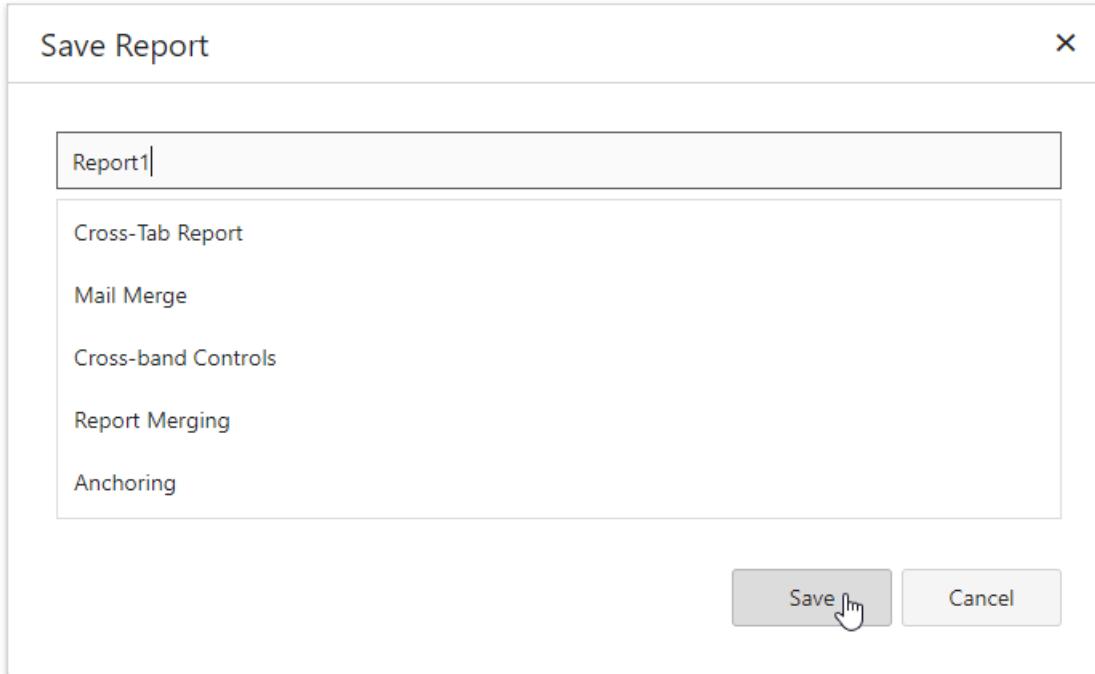
Cancel

# Save Reports

Click **Save| Save As** in the **menu** to save the current report.



Specify the report name in the invoked **Save Report** dialog.



You can see the following message at the bottom of the Designer, if the report is saved successfully.



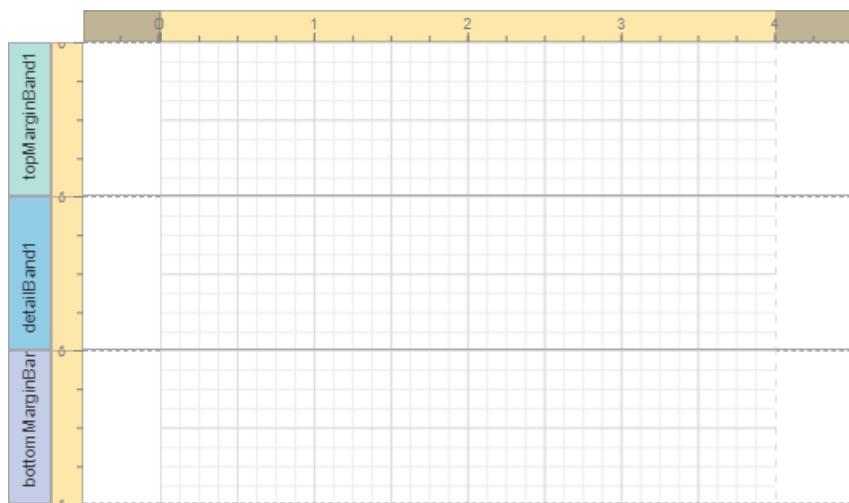
# Introduction to Banded Reports

Banded reports provide a generalized report layout notion. When you preview a banded report, a report document is generated based on the report layout and data source.

## Report Bands

A report layout consists of bands that contain report controls and define their location on document pages. A blank report contains the following bands:

- The **Detail Band** displays recurring contents from the report's data source. This band is printed as many times as there are records available in a data source unless you filtered the data.  
Every report must have a detail band, and you cannot delete it.
- The top and bottom page **Margin bands**. These bands are repeated once on every document page.



You can also add the following bands:

- **Report Header** and **Report Footer**

The **Report Header** is the report's first band (margins are "out-of-page" zones). Use this band to display the report's name, company logo, [date of creation](#), [username](#), etc.

The **Report Footer** is placed before the Page Footer and Bottom Margin on the report's last page. You can use the Report Footer band for report [summaries](#) or conclusions.

- **Page Header** and **Page Footer**

These bands are at the top and bottom of every page in a report. They display information that should be printed on every page.

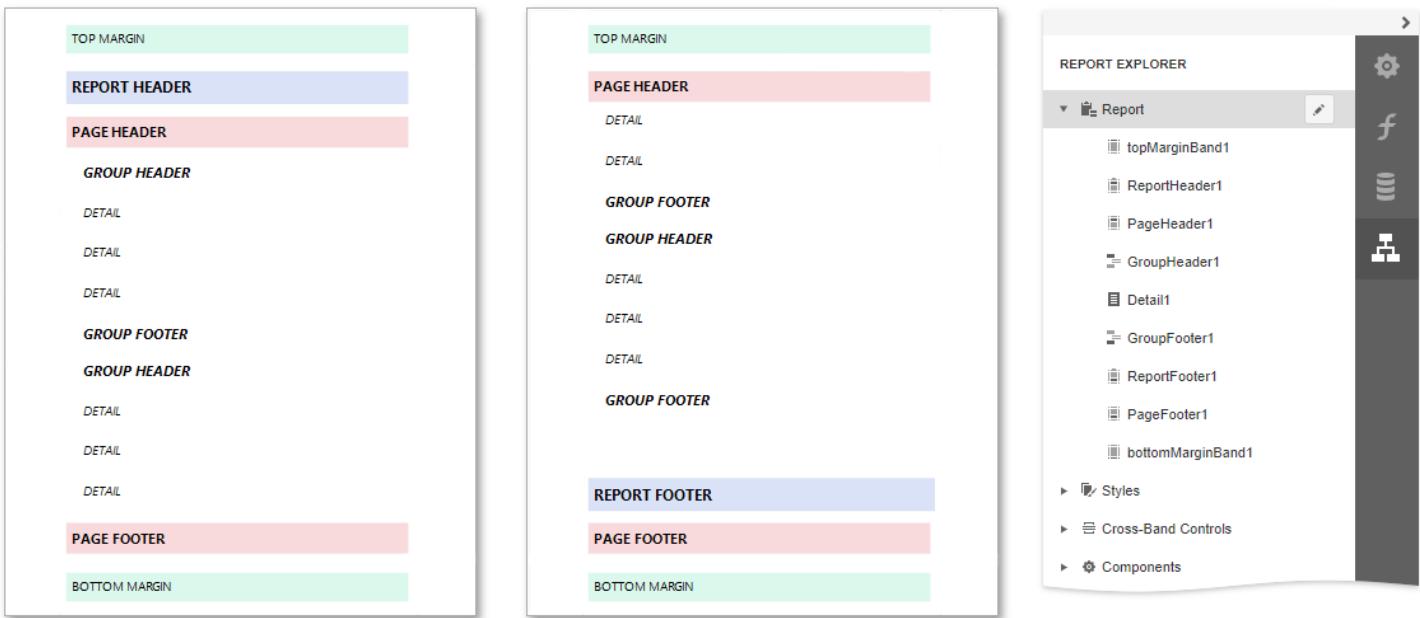
- **Group Header** and **Group Footer**

These bands are above and below each [group](#).

### Tip

Only the detail and group bands can be used to display dynamic data source contents. Other bands display titles, summaries, and [extra information](#).

The following image illustrates a sample report layout and the [Report Explorer](#) panel that reflects the report's structure:



## Add a Detail Band to a Master-Detail Band

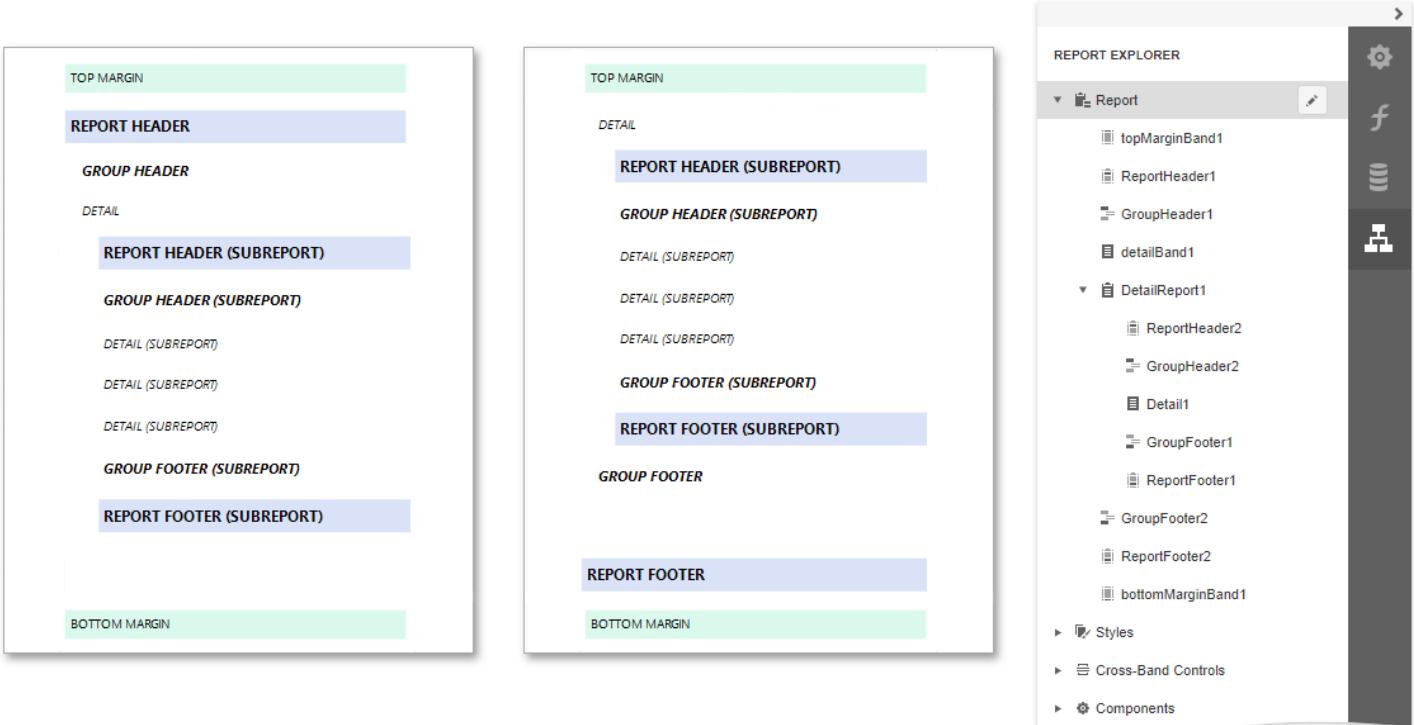
Use the **detail report band** to create hierarchical [master-detail reports](#). Detail report bands provide detailed information about each record in the master report's detail band. You can create such reports when master-detail relationships are defined between data source tables:

3. Configure master-detail relationships.

The screenshot shows a dialog box for configuring master-detail relationships. The 'Customers' data source is selected. A 'CustomersHomes' relationship is being defined between 'Customers' and 'Homes'. The 'Customers' table has a column 'DataAccessUIStringId' and the 'Homes' table has a column 'Text'. A dropdown menu is open over the 'Text' field, showing fields from the 'Homes' table: ID, FirstName, LastName, Company, Prefix, and Title. At the bottom of the dialog are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

A detail report band is a separate report (subreport) with its own data source and different bands. A report can have any number of detail reports that can also be nested.

The following image illustrates a master-detail report and the [Report Explorer](#) panel that reflects the report's structure:



## Vertical Bands

You can replace the Detail band with the **Vertical Header**, **Vertical Detail** and **Vertical Total** bands to display record fields vertically and print data records horizontally - from left to right.

Profit and Loss							
January - June 2018							
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
<b>INCOME</b>							
Construction Income	\$88,593.76	\$93,252.79	\$82,345.80	\$76,067.11	\$119,220.71	\$115,339.77	\$574,819.94
Sales Income	\$720.00	\$749.00	\$471.00	\$26.00	\$69.00	\$579.00	\$2,614.00
<b>TOTAL INCOME</b>	<b>\$89,313.76</b>	<b>\$94,001.79</b>	<b>\$82,816.80</b>	<b>\$76,093.11</b>	<b>\$119,289.71</b>	<b>\$115,918.77</b>	<b>\$577,433.94</b>
<b>COST OF GOODS SOLD</b>							
Cost of Goods Sold	\$2,532.99	\$1,453.18	\$2,452.07	\$239.49	\$1,417.39	\$373.61	\$8,468.72
Job Expenses	\$14,628.39	\$10,060.92	\$18,692.87	\$11,596.53	\$28,317.67	\$18,540.57	\$101,836.94
<b>TOTAL COST OF GOODS SOLD</b>	<b>\$17,161.38</b>	<b>\$11,514.10</b>	<b>\$21,144.94</b>	<b>\$11,836.02</b>	<b>\$29,735.06</b>	<b>\$18,914.18</b>	<b>\$110,305.66</b>
<b>GROSS PROFIT</b>	<b>\$72,152.38</b>	<b>\$82,487.70</b>	<b>\$61,671.87</b>	<b>\$64,257.09</b>	<b>\$89,554.65</b>	<b>\$97,004.59</b>	<b>\$467,128.28</b>

### Note

If your report's Detail band contains report controls, this band and all these controls are lost when you add a vertical band (the same behavior takes place in the opposite situation).

The following vertical bands are available:

- **Vertical Header**

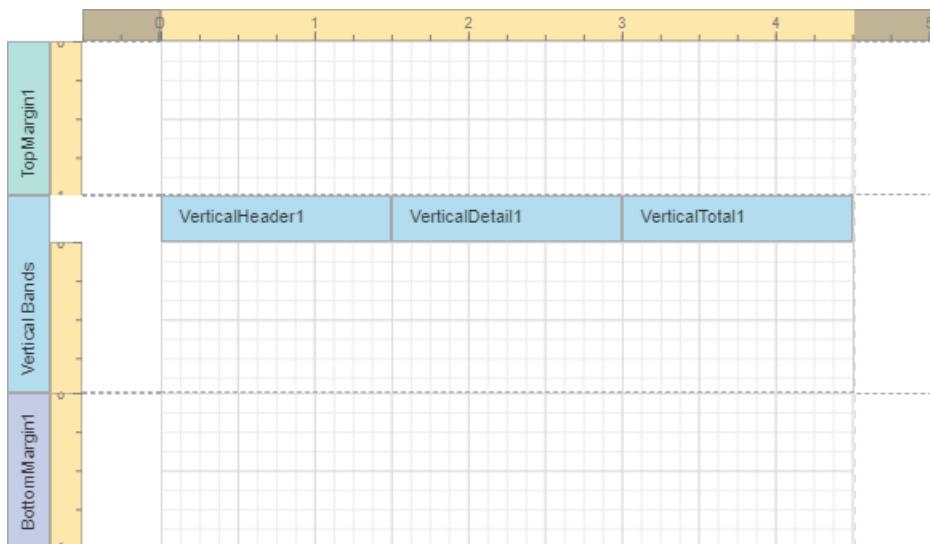
Contains headers of the report's data fields. These headers are arranged one after another in a vertical direction.

- **Vertical Details**

Displays recurring contents from the report's data source. This band is printed as many times as there are available records in a data source, unless you filtered the data. The records are displayed one after another in a horizontal direction.

- **Vertical Total**

This band is placed at the rightmost position (leftmost when RTL is enabled). You can use the Vertical Total band for report summaries or conclusions.



**Tip**

See [Create a Vertical Report](#) for details on how to use vertical bands.

## Create Band Copies

You can create functional copies of a band, for example, to display different contents based on a specific condition. To do this, add **sub-bands** to bands.

The screenshot displays the Report Explorer and Report Designer side-by-side. The Report Explorer on the right lists the hierarchical structure of report bands: topMarginBand1, ReportHeader1 (with SubBand1 and label1), PageHeader1 (with SubBand2 and label2), detailBand1 (with SubBand3 and label3), ReportFooter1 (with SubBand4 and label4), PageFooter1 (with SubBand5 and label5), and bottomMarginBand1. The Report Designer on the left shows the physical layout of these bands as colored horizontal bars: TOP MARGIN (green), REPORT HEADER (light blue), REPORT HEADER (COPY) (medium blue), PAGE HEADER (pink), PAGE HEADER (COPY) (light pink), DETAIL (yellow), DETAIL (COPY) (orange), DETAIL (light orange), DETAIL (COPY) (yellow-orange), REPORT FOOTER (light blue), REPORT FOOTER (COPY) (medium blue), PAGE FOOTER (pink), PAGE FOOTER (COPY) (light pink), and BOTTOM MARGIN (green). A central grid area contains a box labeled "DETAIL".

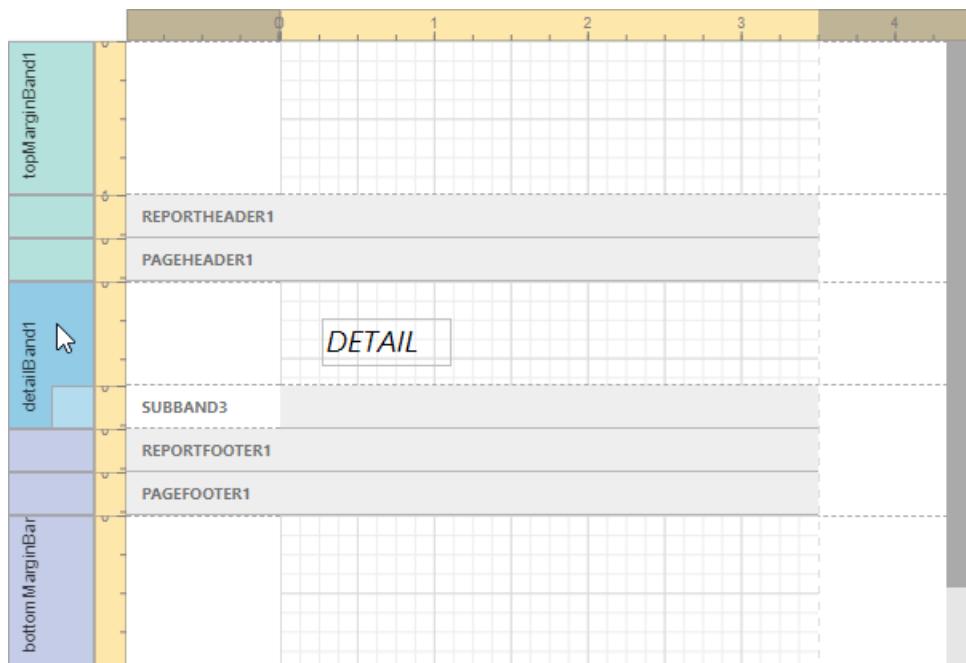
#### Tip

See [Laying out Dynamic Report Contents](#) for details on how to specify the location of bands' content on document pages.

## Manage Report Bands

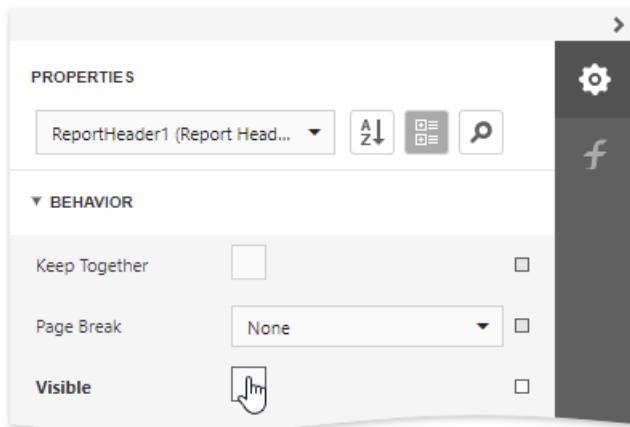
Hide Bands in the Report Designer

Select a band and click on the band's tab title to collapse or expand the band.



Hide Bands in the Report Document

You can avoid printing a band's content in a document. To do this, set the band's **Visible** property to **false**. Select the band and set this property in the [Properties Panel](#).

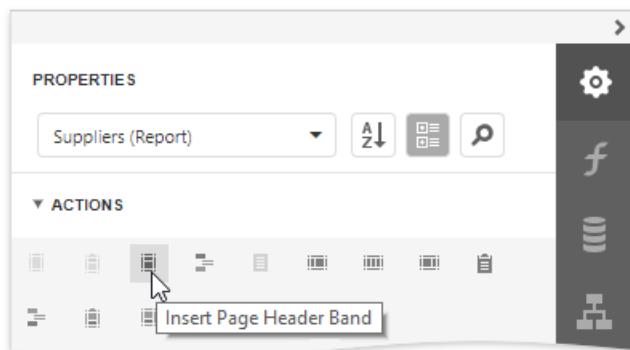


## Remove Bands

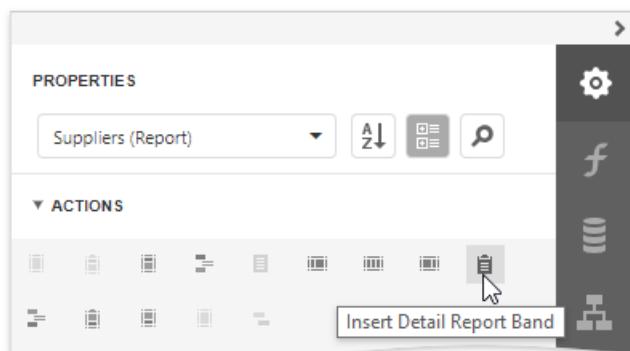
Select a band on the report design surface and press **DELETE**. This removes the band and all its content.

## Add Bands

To add a band, select the report or any of its bands in the **Properties** panel and click an appropriate item in the **Actions** category.



You can insert a detail report band if the report's data source has [master-detail relations](#). Click **Insert Detail Report** in the **Actions** category.



# Bind to Data

The following topics illustrate how to bind a report and its controls to data:

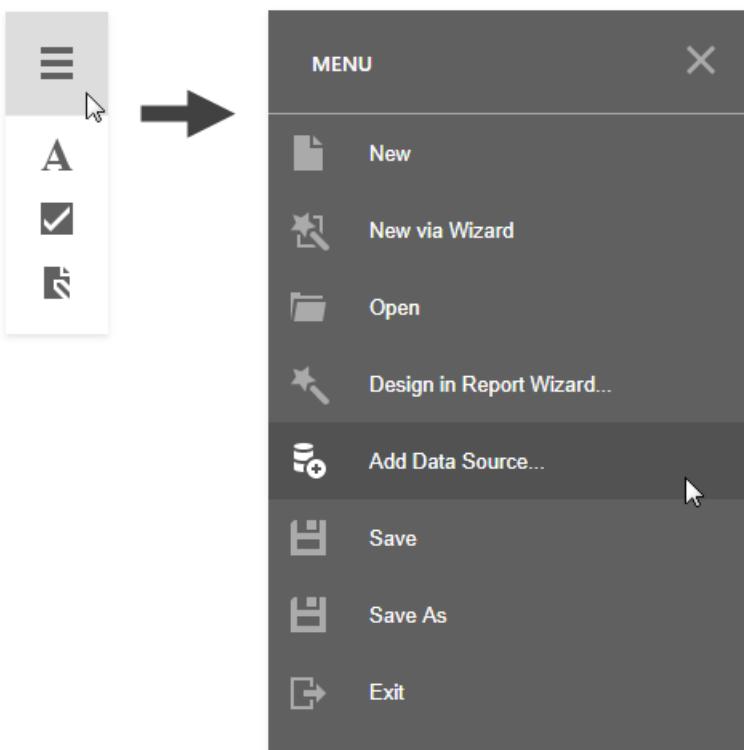
- [Bind a Report to a Database](#)
- [Bind a Report to JSON Data](#)
- [Data Binding Modes](#)
- [Bind Report Controls to Data \(Expression Bindings\)](#)
- [Bind Report Controls to Data \(Data Bindings\)](#)
- [Use Embedded Fields \(Mail Merge\)](#)
- [Validate Report Data Bindings](#)

# Bind a Report to a Database

This tutorial illustrates how to bind a report to a database and specify a master-detail relationship between data source queries.

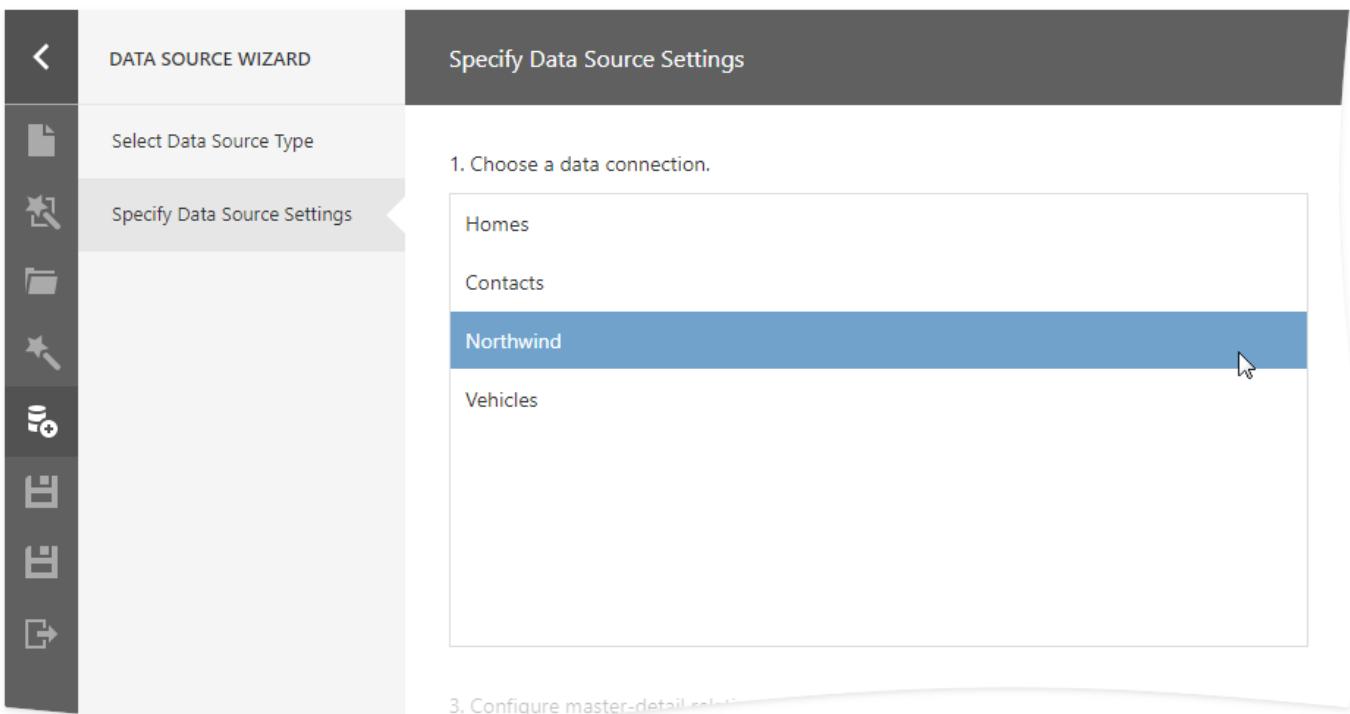
## Add a New Data Source

1. [Create a new blank report](#).
2. Invoke the designer menu and click **Add Data Source....**



The menu contains this command if your software vendor provides data connections.

3. Select the data connection on the [Data Source Wizard](#)'s first page and click **Next**.



4. Choose which tables, views and/or stored procedures to add to a report and click **Next**. Select two or more tables to [create a master-detail report](#).

2. Choose predefined queries and/or create custom queries.

Tables

- Views
  - AlphabeticalListOfProducts
  - CategoryProducts
  - CurrentProductList
  - CustomerAndSuppliersByCity
  - CustomerReports
  - Invoices
  - OrderDetailsExtended

**Note**

You can also create [custom queries](#) to shape data at the data source level. Select **Queries** and click the plus button to add a new query.

The invoked [Query Builder](#) allows you to join multiple tables, filter, sort, and group their data, and calculate various aggregate functions.

5. Set master-detail relationships on this wizard page. Hover the master table name, click the plus button and choose the detail table.

3. Configure master-detail relationships.

Categories

Products

Select the required key fields (columns) to connect tables.

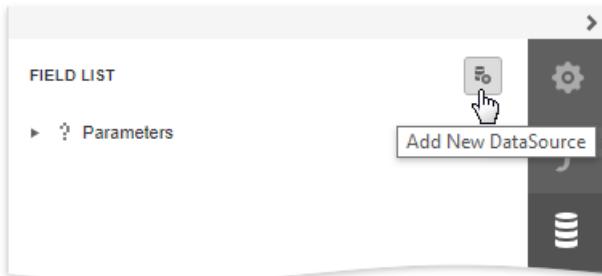
3. Configure master-detail relationships.

The screenshot shows the Data Source Wizard interface. A dropdown menu is open under the condition "Categories . CategoryID = Products . <Select a column>". A list of columns from the Products table is displayed, including ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, and UnitPrice. The "CategoryID" column is currently selected.

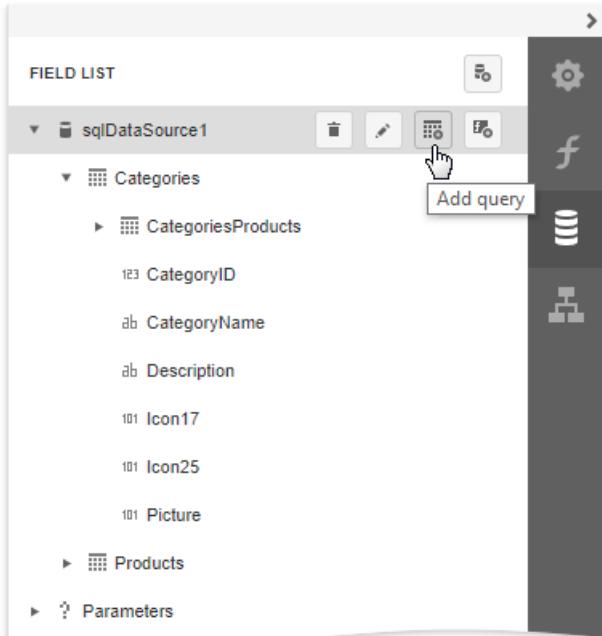
Click **Finish** to close the Data Source Wizard.

## Use an Existing Data Source

You can bind your report to a predefined data source. Open the **Field List** panel, click the **Add New DataSource** button and select a data source from the drop-down list.



The Field List reflects the added SQL data source and its hierarchy. You can select the data source to edit it.

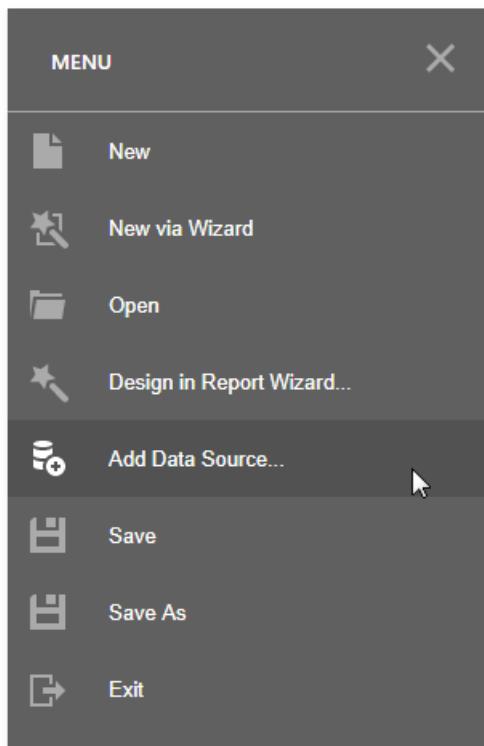


# Bind a Report to JSON Data

This topic describes how to bind a report to JSON data at design time.

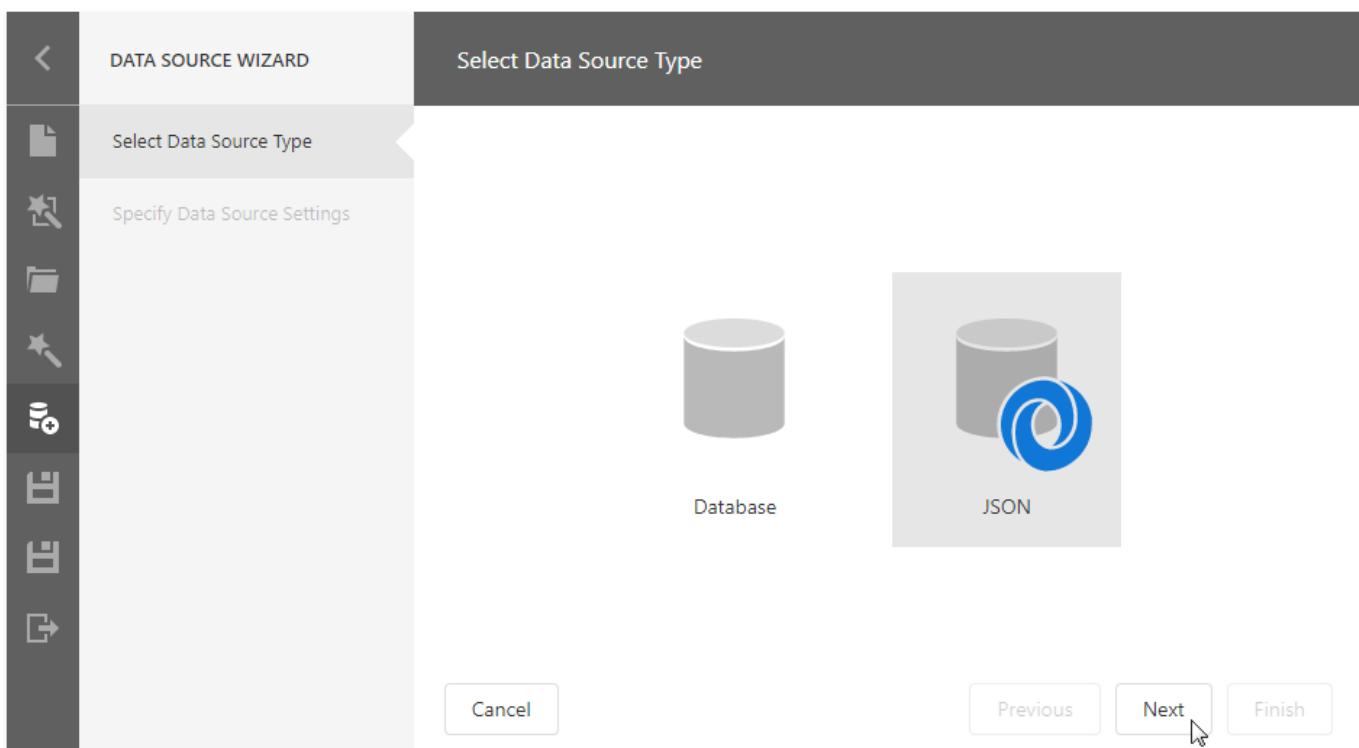
## Create a Project and Prepare a Data Source

1. [Create a new blank report.](#)
2. Invoke the designer [menu](#) and click **Add Data Source....**

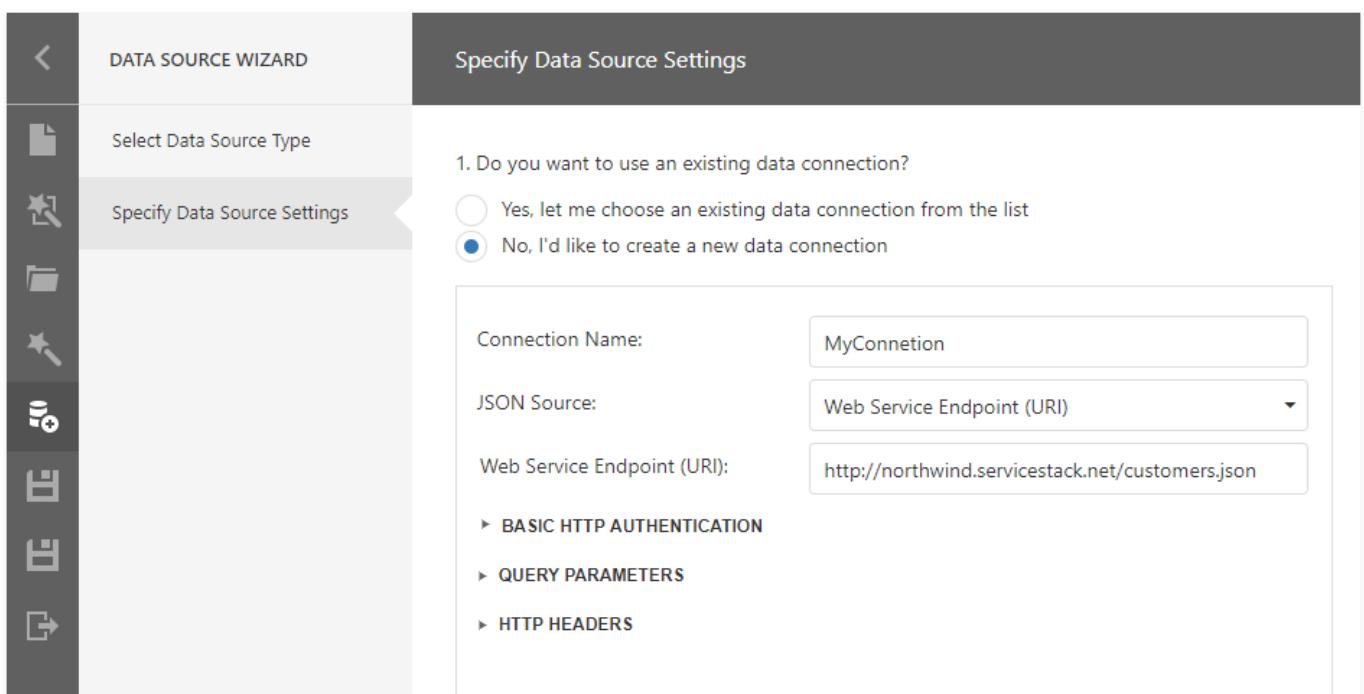
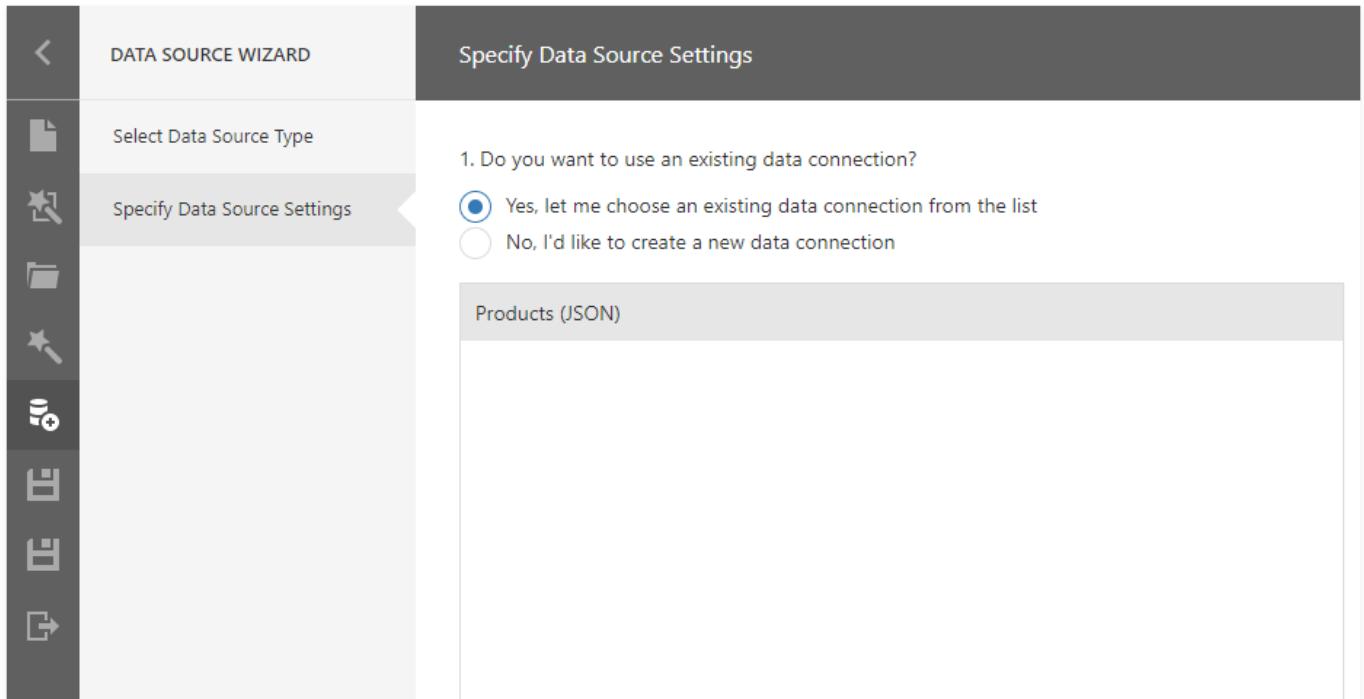


This invokes the Data Source Wizard.

3. Choose the **JSON** option and click **Next**.



4. The next wizard page allows you to specify whether you want to use an existing data connection or create a new data connection.



If you prefer to create a new data connection, specify its settings.

1. Do you want to use an existing data connection?

- Yes, let me choose an existing data connection from the list
- No, I'd like to create a new data connection

Connection Name:

JSON Source:

Web Service Endpoint (URI):

► **BASIC HTTP AUTHENTICATION**

► **QUERY PARAMETERS**

► **HTTP HEADERS**

Specify request parameters.

▼ **BASIC HTTP AUTHENTICATION**

Username:

Password:

▼ **QUERY PARAMETERS**

To create an item click the Add button.

▼ **HTTP HEADERS**

To create an item click the Add button.

Specify the Basic HTTP Authentication parameters or header parameters to access JSON data.

5. Also, on this page, the wizard shows the specified JSON data's structure. You can choose all nodes or a subset of nodes.

2. Select data fields.

Root element:

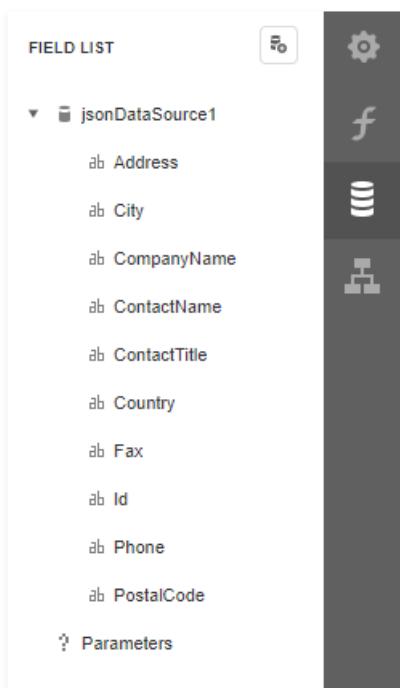
root

►  Customers

ResponseStatus

Uncheck the data fields that your report does not require.

After you finish the wizard, it creates the **JsonDataSource** component. This component retrieves the checked data fields that the selected JSON element includes. The [Field List](#) reflects the data source structure.



## Customize the JSON Data Source Schema

Choose the **JsonDataSource** component in the Field List and click **Edit Schema....** Reconfigure data fields in the invoked wizard page.

The screenshot shows the 'Data Source Wizard' dialog box overlying the Field List. The dialog has a title 'Data Source Wizard' and a subtitle 'Select data fields.' It contains a 'Root element:' dropdown set to 'root.Customers'. Below it is a list of checked items: 'Customers', 'Address', 'City', 'CompanyName', 'ContactName', 'ContactTitle', and 'Country'. At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

FIELD LIST

jsonDataSource1

- ab Address
- ab City
- ab CompanyName
- ab ContactName
- ab ContactTitle
- ab Country
- ab Fax
- ab Id
- ab Phone
- ab PostalCode

Parameters

Data Source Wizard

Select data fields.

Root element:

root.Customers

Customers

Address

City

CompanyName

ContactName

ContactTitle

Country

Cancel Previous Next Finish

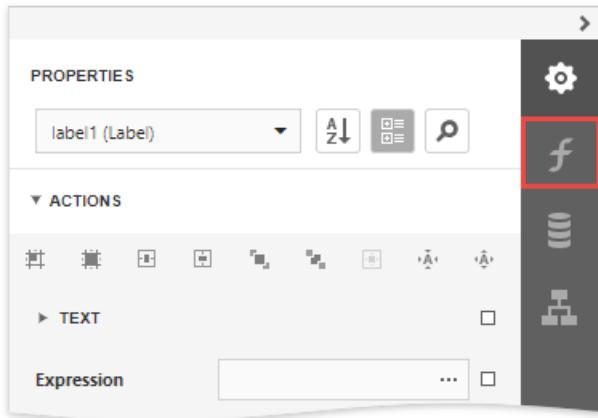
# Data Binding Modes

The Report Designer uses one of the following modes to provide dynamic content to your reports: expression bindings or standard data bindings.

## Expression Bindings

Expression bindings enable you to use complex [expressions](#) that include two or more fields and various functions. Expressions also allow you to calculate complex summaries without scripts and conditionally shape your data without formatting rules.

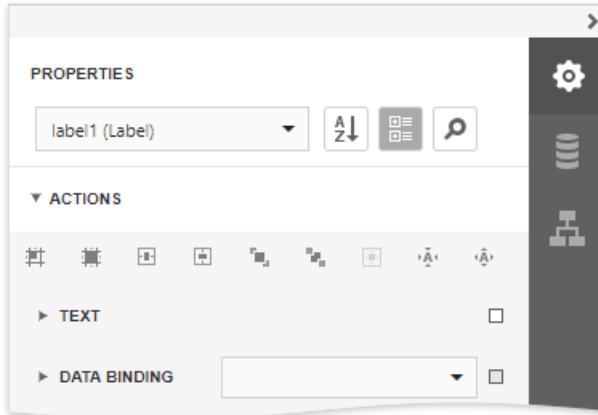
This mode is enabled in the Report Designer if it provides the [Expressions](#)  panel.



## Data Bindings

Standard data bindings enable you to assign a single data field to a report control or use [report scripts](#) to provide custom logic.

This mode is enabled in the Report Designer if it does not provide the [Expressions](#)  panel.



## Conversion Dialog

The following dialog appears only when [expression bindings](#) are enabled in the Report Designer, and you [open an existing report](#) that uses standard [data bindings](#):

## Convert



The Report contains bindings. Do you want to convert them to expressions?

Remember my choice and don't ask me again.

Yes

No

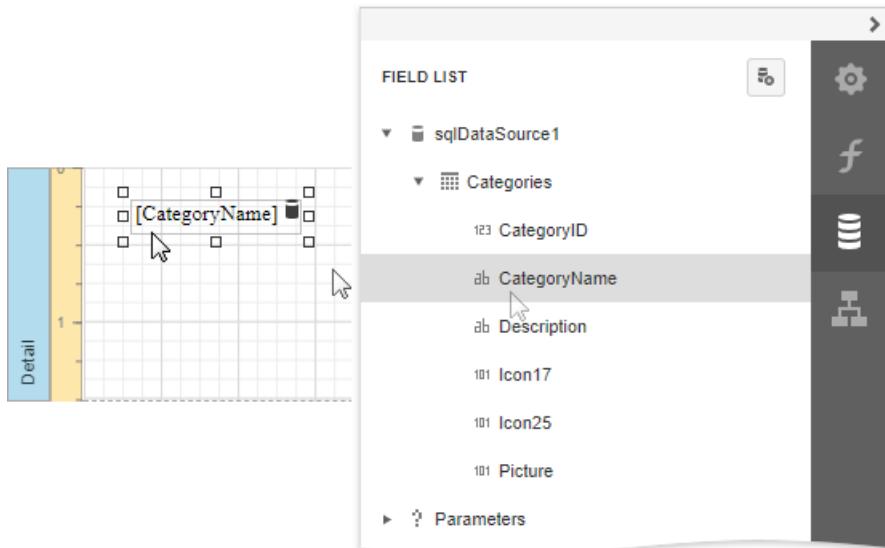
This dialog prompts you to convert your report to use expressions (the new binding mechanism). Click **Yes** to run the report conversion, click **No** to open the report without changes.

See the section below for information on how to use expressions instead of data bindings.

## Binding Mode Comparison

### Bind to a Single Data Field

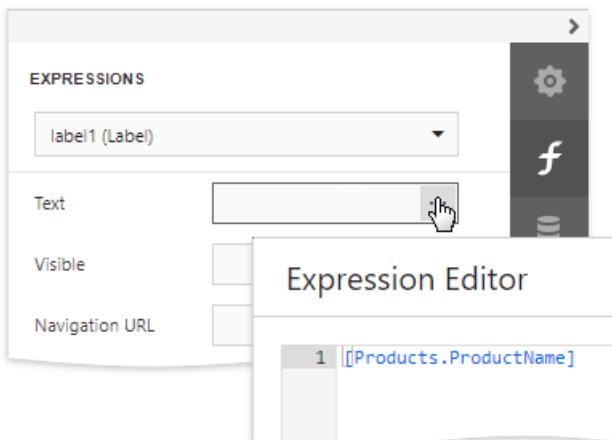
- The [Field List](#) panel allows you to drop fields onto the design surface or existing report controls. All binding ways are identical in the **data bindings** and **expression bindings** modes.



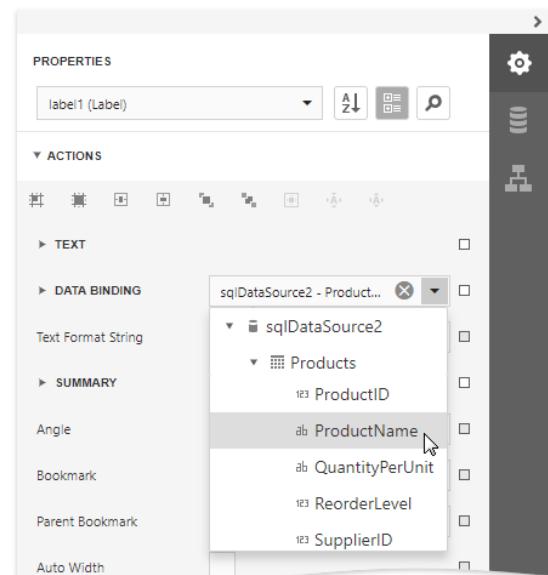
- You can select a report control and bind it to data in the [Properties](#) panel.

EXPRESSION BINDINGS	DATA BINDINGS

Switch to the [Expressions](#) panel, click the **Text** property's ellipsis button and specify the expression.



Expand the **Data Bindings** drop-down list and select a data field.



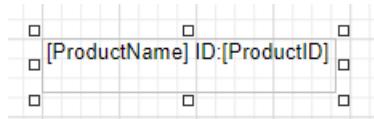
See the following topics for more information:

- [Bind Report Controls to Data \(Expression Bindings\)](#)
- [Bind Report Controls to Data \(Data Bindings\)](#)

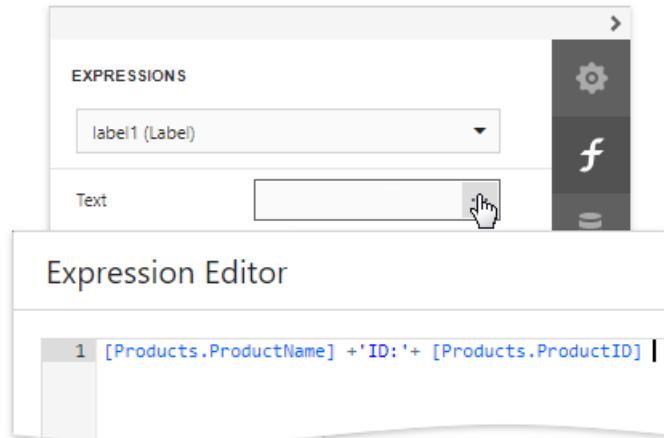
## Bind to Multiple Data Fields

EXPRESSION BINDINGS	DATA BINDINGS

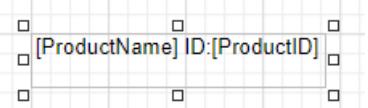
Use the [mail merge](#) functionality.



Switch to the [Expressions](#) panel, click the **Text** property's ellipsis button and specify the expression.



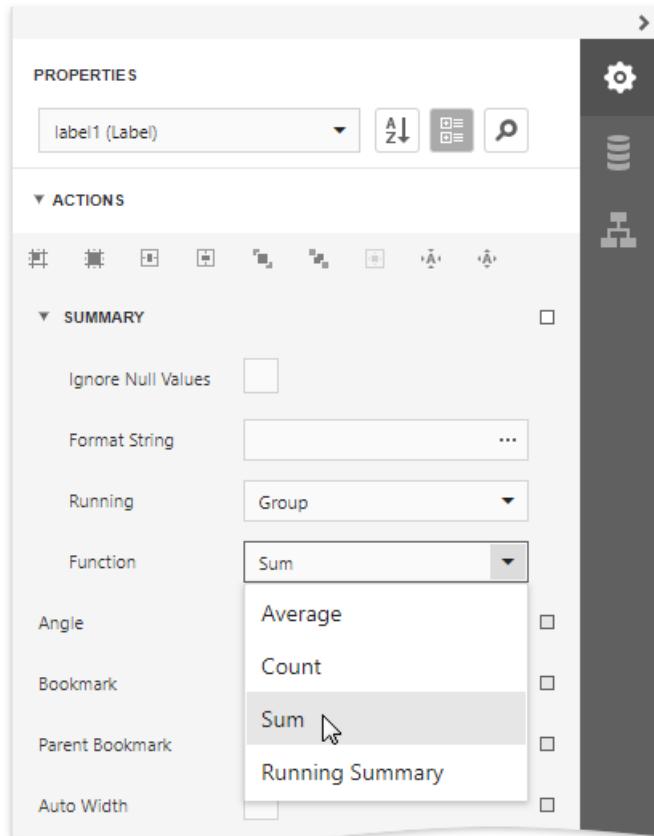
Use the [mail merge](#) functionality.



## Calculate Summary

EXPRESSION BINDINGS	DATA BINDINGS

Expand the **Summary** node in the **Actions** category and select the summary function in the **Function** drop-down list.



Select the summary function in the **Expression Editor's Summary** section.

All functions have the 'sum' prefix.

This screenshot shows the Expression Editor's Functions list. The "Summary" category is currently selected. A list of functions is shown, with "sumSum()" highlighted. Other listed functions include "sumAvg()", "sumCount()", "sumRunningSum()", and "sumPercentane()".

See [Calculate a Summary](#) for more information.

See [Calculate a Summary](#) for more information.

## Complex Bindings, Custom Summary

### EXPRESSION BINDINGS

### DATA BINDINGS

Use the **Expression Editor** to construct an [expression](#) of any complexity.

The screenshot shows the Expression Editor interface. At the top, it says "Expression Editor". Below that, there's a code editor window containing the expression: `1 Ceiling( sumSum( [UnitsOnOrder]/15 ) )`. To the left of the code editor is a sidebar titled "Functions" with categories: DateTime, Logical, Math, String, Summary (which is selected), Operators, and Variables. To the right of the code editor is a search bar labeled "Enter text to search..." and a list of available functions: sumAvg(), sumCount(), sumSum() (which is highlighted), sumRunningSum(), sumPercentage(), sumMax(), and sumMin().

Refer to [Calculate an Advanced Summary](#) for an example.

Use [report scripts](#).

Refer to [Calculate a Custom Summary](#) for an example.

## Conditionally Customize Appearance

EXPRESSION BINDINGS	DATA BINDINGS
Switch to the <a href="#">Expressions</a> panel, click the <b>Style Name</b> property's ellipsis button and specify the expression.	Create formatting rules and assign them to report controls.

**EXPRESSIONS**

label1 (Label)

**LAYOUT**

Style Name

**APPE**

Expression Editor

```
1 Iif([UnitPrice]>=30, 'Style1' , 'Style2')
```

**PROPERTIES**

Report1 (Report)

**APPEARANCE**

**FORMATTING RULES**

**formattingRule1**

Name	formattingRule1
Condition	[UnitPrice] >= 30
Data Source	sq DataSource1
Data Member	Products

**FORMATTING**

Background Color	rgba(0, 0, 0, 1)
Borders	None
Border Color	rgba(0, 0, 0, 1)
Border Dash Style	Select...
Border Width	1px
Foreground Color	rgba(255, 0, 0, 1)

**FONT**

Text Alignment	Select...
----------------	-----------

**Visible**

Refer to [Conditionally Change a Control Appearance](#) for an example.

Refer to [Conditionally Change a Control Appearance](#) for an example.

# Bind Report Controls to Data (Expression Bindings)

## Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Report Designer provides the Expressions **f** panel).

See [Bind Report Controls to Data \(Data Bindings\)](#) if expression bindings **are not enabled** in the Report Designer (the Report Designer does not provide the Expressions **f** panel).

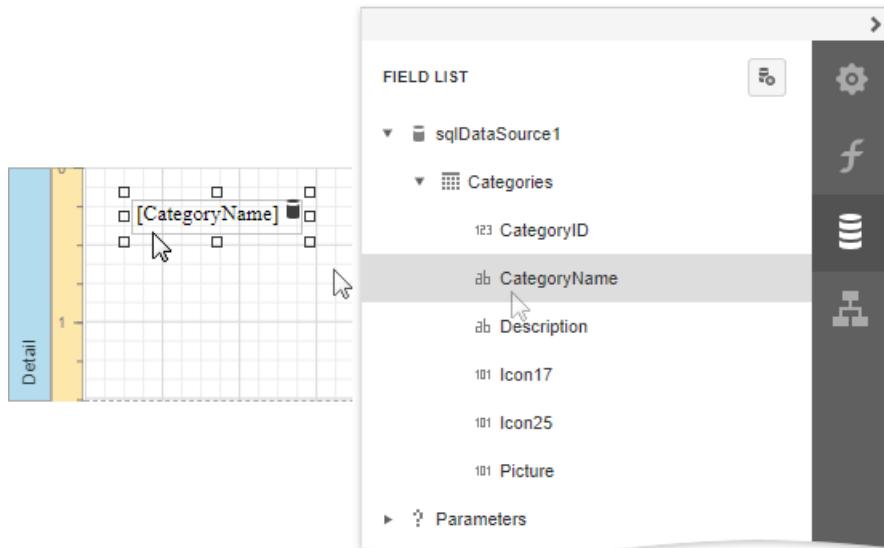
You can use the following approaches to include a data source's information in your report:

- [Use the Field List](#)
- [Use the Properties Panel](#)

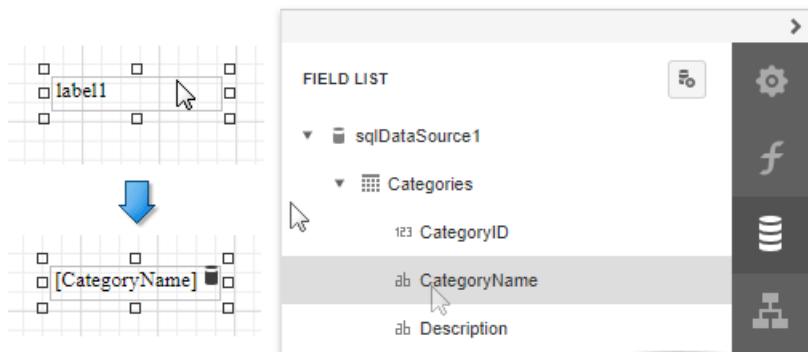
## Use the Field List

After you [bind your report to data](#), the **Field List** panel displays the data source's hierarchy and provides access to the available data fields.

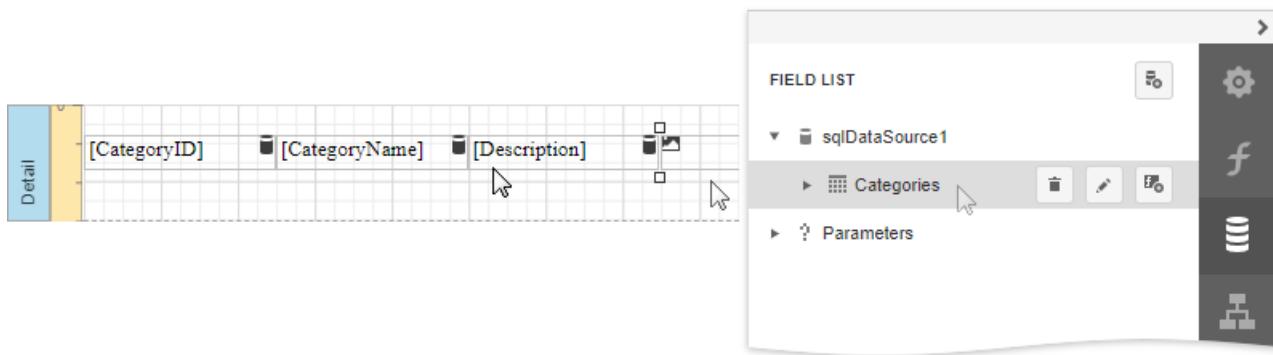
Drop a data field from this panel onto a report's surface to create a new report control bound to the corresponding field.



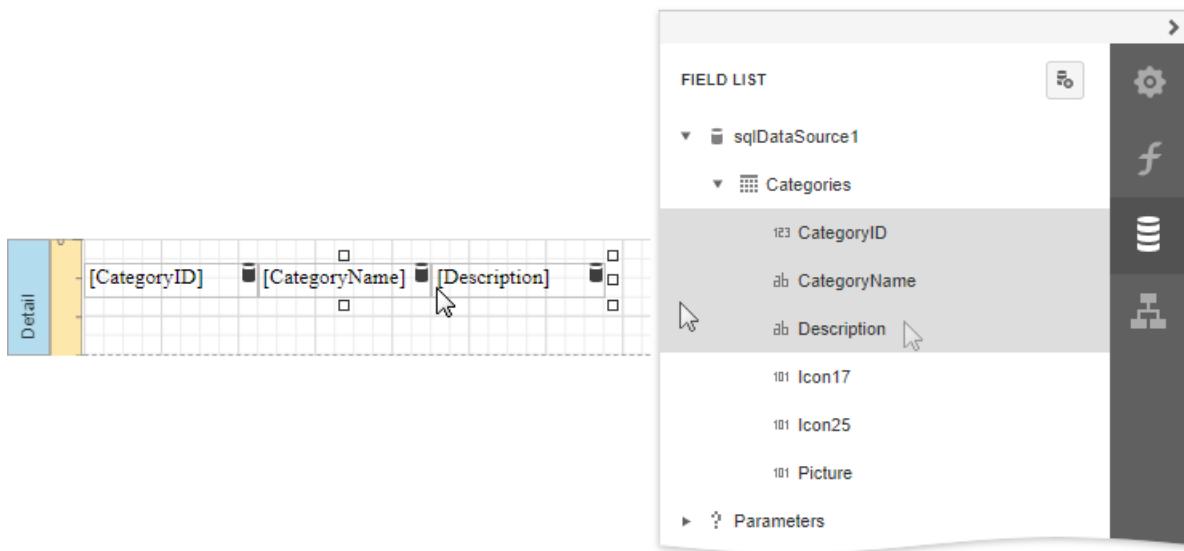
Drop a data field onto an existing control to bind this control to the corresponding field.



You can also drop an entire data table onto a report to create a [Table](#) control with its cells bound to the corresponding data table fields.



To select multiple fields in the Field List, hold CTRL or SHIFT and click the fields. Drop these fields onto a report to create a new table.



## Use the Properties Panel

Select a report control and switch to the [Properties](#) panel. Click the **Text** property's ellipsis button and select a data field or construct a binding [expression](#) in the invoked [Expression Editor](#).

Expression Editor		Properties	
<pre>1 [UnitPrice] * [UnitsInStock]</pre>		<b>label1 (Label)</b> <span style="float: right;">OK Cancel</span>	
Report Items Fields Constants Functions Operators Variables		<b>ACTIONS</b> <b>TEXT</b> <b>Expression</b> <span style="float: right;">...</span> <b>Text Format String</b> <span style="float: right;">...</span>	
		<span style="float: right;">...</span>	

You can use the same approach to specify expressions for all the control properties. See [Shape Report Data](#) for more tutorials.

# Bind Report Controls to Data (Data Bindings)

## ⚠ Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the **Expressions**  panel is not available in the Designer).

See [Bind Report Controls to Data \(Expression Bindings\)](#) if expression bindings **are enabled** in the Report Designer (the **Expressions**  panel is available in the Designer).

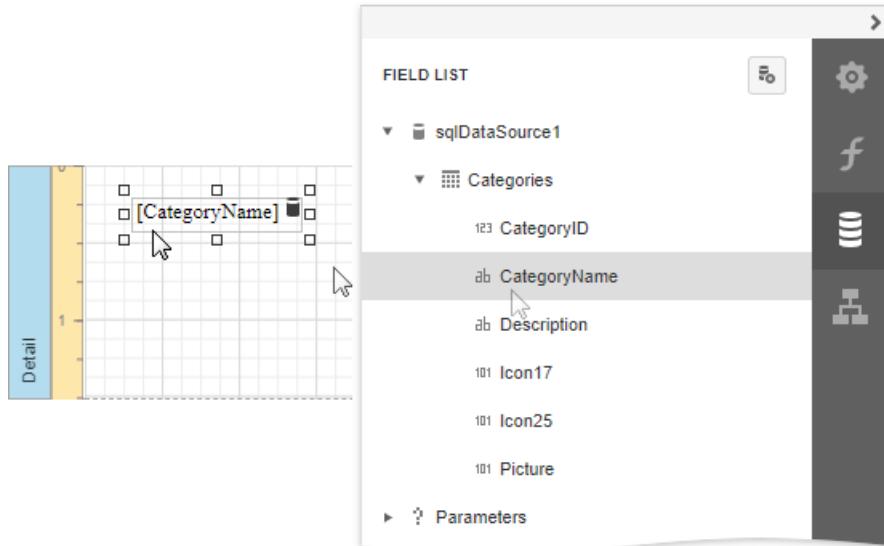
You can use the following approaches to include a data source's information in your report:

- [Use the Field List](#)
- [Use the Properties Panel](#)

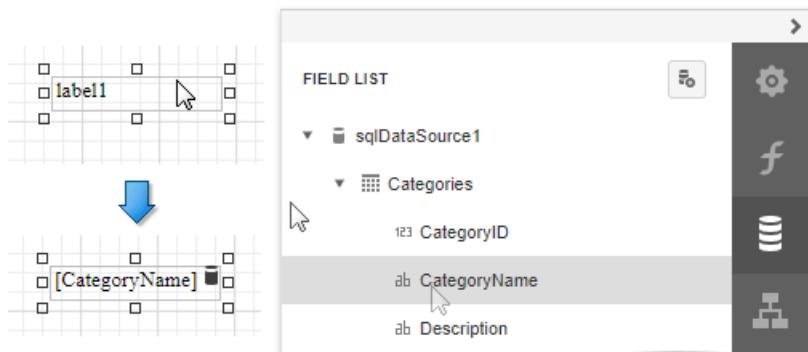
## Use the Field List

After you [bind your report to data](#), the **Field List** panel displays the data source's hierarchy and provides access to the available data fields.

Drop a data field from this panel onto a report's surface to create a new report control bound to the corresponding field.



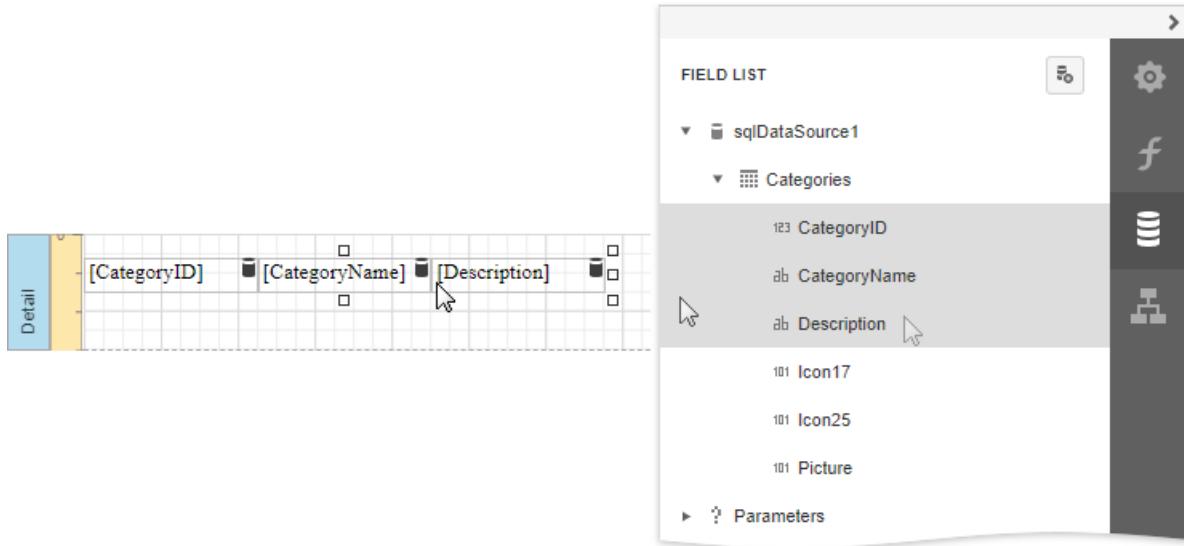
Drop a data field onto an existing control to bind this control to the corresponding field.



You can also drop an entire data table onto a report to create a [Table](#) control with its cells bound to the corresponding data table fields.

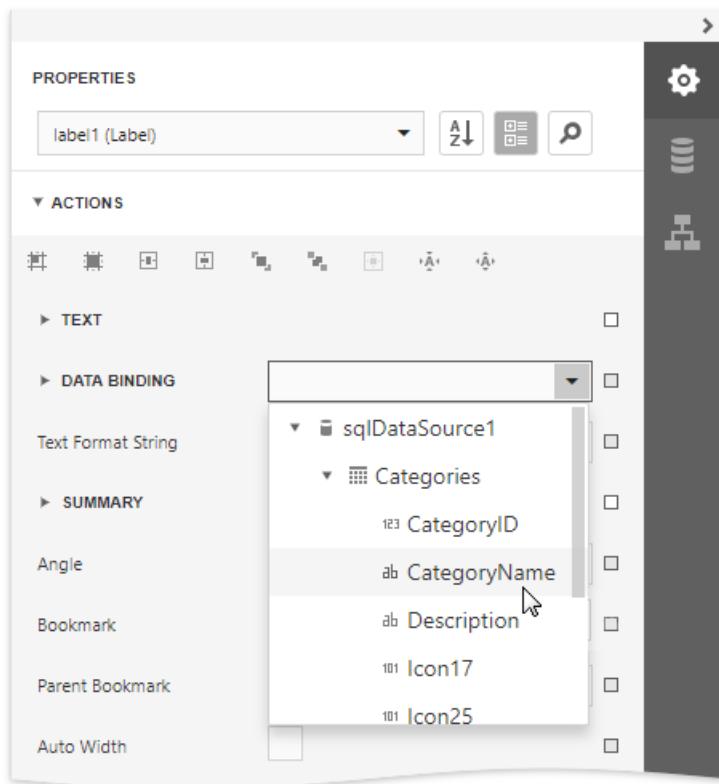


To select multiple fields in the Field List, hold CTRL or SHIFT and click the fields. Drop these fields onto a report to create a new table.



## Use the Properties Panel

You can use the [Properties](#) panel to bind a report control to a data field. Select the control, expand the **Data Bindings** drop-down list in the **Actions** category and choose a data field.

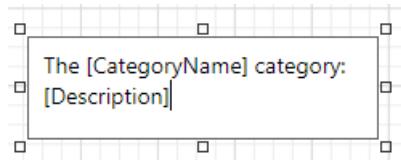


# Use Embedded Fields (Mail Merge)

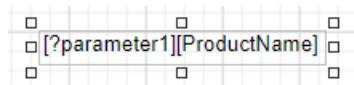
This topic describes how to provide data to report controls using the advanced **Mail Merge** binding method. This feature allows you to create templates in which data source values populate specific fields while other text remains constant (that is, allows you to combine static and dynamic content within the same control).

## Embed Fields in a Control Text

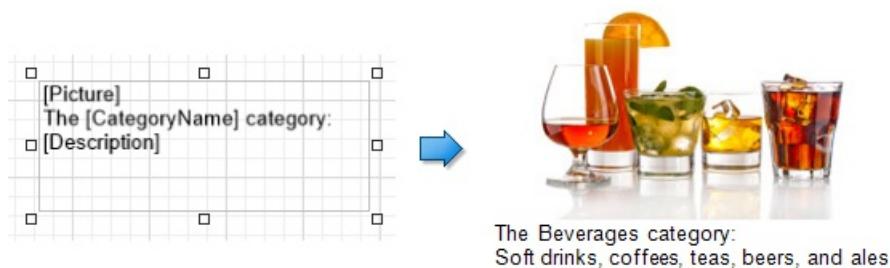
You can apply mail merge to the control's **Text** property only. Double-click the required control on the design surface to invoke the in-place editor. Insert data field names with square brackets to create embedded fields and use any prefixes or postfixes.



You can embed a [parameter](#)'s value into a control's content using the **?ParameterName** syntax.



Embedded fields are replaced with values obtained from an assigned data source when previewing or exporting a report:

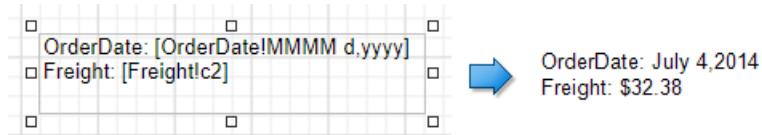


Consider the following specifics and limitations when using embedded fields:

- Field names should not use dots and spaces to be interpreted correctly.
- Mail Merge is not available for a table's nested fields in a master-detail hierarchy.
- Embedded fields cannot be exported to [XLS](#) and [XLSX](#) as values; they are always exported as plain text. We recommend using [text formats](#) instead if you need to accompany dynamic data with static text.

## Format Embedded Fields

You can add a format to the target data field by separating it from the field name with the **!** symbol and apply this format to field values when previewing a document.



## Supported Controls

You can apply the mail merge feature to the **Text** of the following report controls:

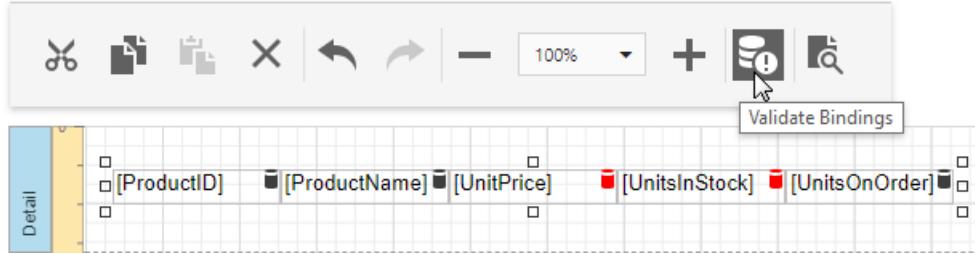
- [Bar Code](#)
- [Character Comb](#)
- [Check Box](#)

- [Label](#)
- [Rich Text](#)
- [Table Cell](#)

# Validate Report Data Bindings

After you assign a new data source to a loaded report, the report tries to automatically resolve all data bindings. You can check which the field names of your data source do not coincide with the report controls' bindings.

To do this, click the **Main Toolbar's Validate Bindings** command. Report controls with invalid bindings are marked with the  icon in the [Design surface](#).



# Create Popular Reports

The following tutorials illustrate how to create basic reports:

- [Create a Letter](#)
- [Create a Table Report](#)
- [Create a Vertical Report](#)

The following topics describe how to display hierarchical data in your reports:

- [Create a Master-Detail Report \(Use Detail Report Bands\)](#)
- [Create a Master-Detail Report \(Use Subreports\)](#)
- [Create a Hierarchical Report](#)

The following tutorial illustrates how to create invoice reports:

- [Create an Invoice Manually](#)

The tutorials listed below demonstrate various layout options available for reports:

- [Create Labels and Badges](#)
- [Create a Multi-Column Report](#)

The following tutorial illustrates interactive report features:

- [Create an Interactive E-Form](#)

**□ Note**

See the [Provide Interactivity](#) documentation section to learn about providing a drill-down functionality to your reports.

See [Use Report Parameters](#) to learn how to customize reports by submitting parameter values in Print Preview.

The following tutorial explains how to use the Pivot Grid control in your reports:

- [Create a Cross-Tab Report](#)

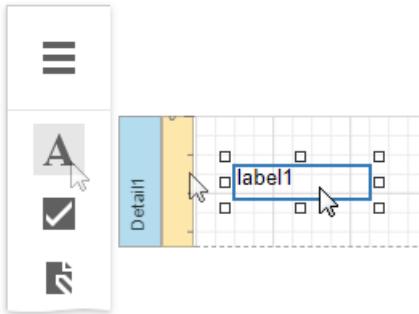
**□ Note**

See the [Use Charts and Pivot Grids](#) documentation section to learn more about using Pivot Grids and Charts in your reports.

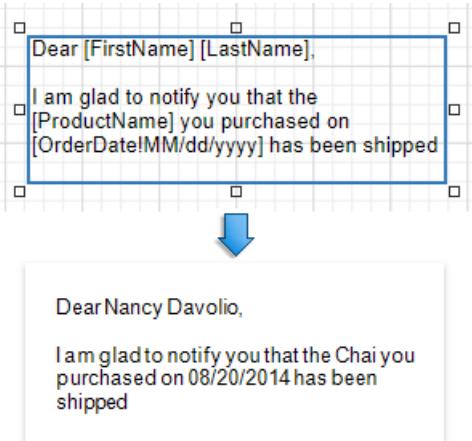
# Create a Letter

This tutorial describes the steps to create a mail merge report, in which data fields are embedded into a label's text that is replaced with corresponding data values on preview or export.

1. [Create a new report](#) or [open an existing one](#).
2. [Bind the report](#) to a required data source.
3. Drop the [Label](#) control from the [Toolbox](#) onto the [Detail](#) band.



4. Add the required text to the control and embed data fields' names into it, surrounded by [ square brackets ], as shown in the following image:



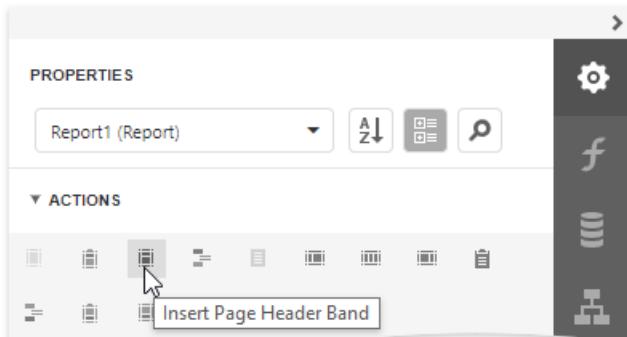
For more information about mail merge, refer to [Use Embedded Fields \(Mail Merge\)](#).

# Create a Table Report

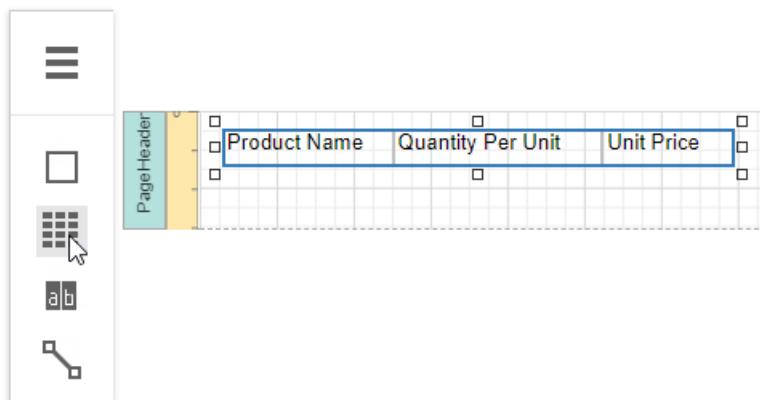
This tutorial describes how to create a data-bound report displaying information in a tabular format. Table reports should not be confused with hierarchical [master-detail reports](#), nor with [cross-tab reports](#).

Product Name	Quantity Per Unit	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
Konbu	2 kg box	\$6.00
Tofu	40 - 100 g pkgs.	\$23.25
Genen Shouyu	24 - 250 ml bottles	\$15.50
Pavlova	32 - 500 g boxes	\$17.45

1. [Create a new report or open an existing one.](#)
2. [Bind the report](#) to a required data source.
3. Add the **Page Header** band to the report to print the column headers at the top of every document page. To do this, expand the **Actions** category and click **Insert Page Header Band**.



4. Drop the [Table](#) control from the [Toolbox](#) onto the Page Header band and specify columns' text to create column headers.



5. To provide dynamic content to the report, switch to the **Field List**, select data fields and drop them onto the Detail band.

The screenshot shows the Report Designer interface. On the left, there's a visual representation of a table with three columns: 'Product Name', 'Quantity Per Unit', and 'Unit Price'. The 'Product Name' column contains the expression '[ProductName]'. The 'Detail' band is selected. On the right, the 'FIELD LIST' pane is open, showing the 'Products' data source with various fields listed. The 'ProductName' and 'QuantityPerUnit' fields are currently selected, as indicated by a blue selection bar around their respective entries in the list.

This creates a table with the same number of cells as the number of fields selected with each cell bound to the appropriate data field.

6. Click an empty place on the report's surface and draw a rectangle around the table to select it.

The screenshot shows the Report Designer interface. A dotted selection box surrounds the entire table structure, indicating it is selected. The 'Detail' band is still selected. The table has three columns labeled 'Product Name', 'Quantity Per Unit', and 'Unit Price', each containing the expression '[ProductName]', '[QuantityPerUnit]', and '[UnitPrice]' respectively.

7. Expand the **Appearance** category and specify the **Font**, **Text Alignment** and **Borders** properties to customize the tables' appearance.

The screenshot shows a report design interface with a table component. The table has three columns labeled "Product Name", "Quantity Per Unit", and "Unit Price". The "Unit Price" column contains the placeholder text "[UnitPrice]". The "Properties" panel on the right is open, displaying various styling options:

- APPEARANCE**:
  - Background Color: rgba(0, 0, 0, 0)
  - Border Color: black
  - Border Dash Style: Solid
  - Border Width: 1
  - Borders: A grid of checkboxes for setting borders on different sides.
- FONT**:
  - Font Name: Arial
  - Size: 10
  - Unit: Point
  - Text style buttons: B (Bold), I (Italic), U (Underline), S (Strikethrough).
  - Foreground Color: black
- PADDING**: (Not explicitly shown in the screenshot but mentioned in the text)
- Text Alignment**: Top Left

8. Define a currency format for the **UnitPrice** cell. Select the cell and click the **Text Format String** property's ellipsis button. Select the appropriate format in the invoked **Format String Editor** editor and click **OK**.

The screenshot shows a report designer interface with a table structure. The table has three columns: 'Product Name', 'Quantity Per Unit', and 'Unit Price'. The 'Unit Price' column is currently selected, highlighted with a blue border. On the right side of the screen, there is a 'Properties' panel and a 'Format String Editor' dialog box.

**Properties Panel:**

- Selected item: 'tableCell6 (Table Cell)'
- Action buttons: A-Z, Filter, Search

**Format String Editor Dialog:**

- Category:** Currency (selected)
- Types:** \$0.00, \$0, c, c1, c2
- Text Format String:** \$0.00 (with a '...' button)
- Preview:** \$100.00
- Buttons:** OK (highlighted with a cursor), Cancel

- To further improve the table readability, you can apply different visual styles to its odd and even rows. See [Report Visual Styles](#) to learn more.

The screenshot shows the Report Designer interface with a table control selected. The table has a single header row and multiple detail rows. The properties panel on the right is open, showing the following settings:

- NAME:** table2 (Table)
- EVEN STYLE:** xrControlStyle1
- NAME:** xrControlStyle1
- TEXT ALIGNMENT:** Select...
- BACKGROUND COLOR:** rgba(240, 240, 240, 1)
- FOREGROUND COLOR:** rgba(0, 0, 0, 1)
- BORDER COLOR:** rgba(0, 0, 0, 1)

See the [Use Tables](#) section to learn how to add or remove the table's rows and cells, as well as convert the table's cells to separate label controls.

Switch to [Print Preview](#) to see the resulting report.

Product Name	Quantity Per Unit	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
Konbu	2 kg box	\$6.00
Tofu	40 - 100 g pkgs.	\$23.25
Genen Shouyu	24 - 250 ml bottles	\$15.50
Pavlova	32 - 500 g boxes	\$17.45

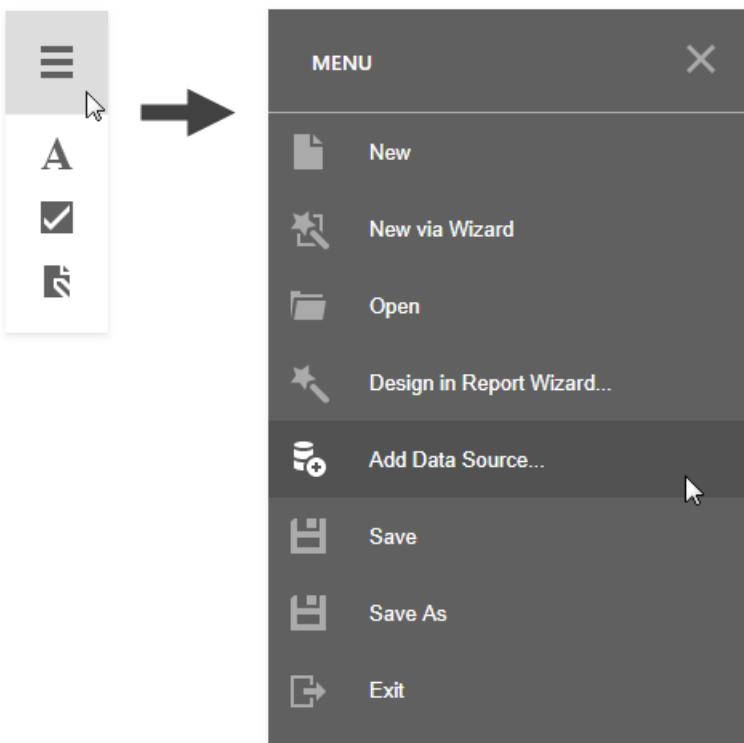
# Create an Invoice Manually

This tutorial describes how to create a simple invoice report displaying information about customers and their orders. You can perform similar steps to create various invoice layouts depending on your requirements.

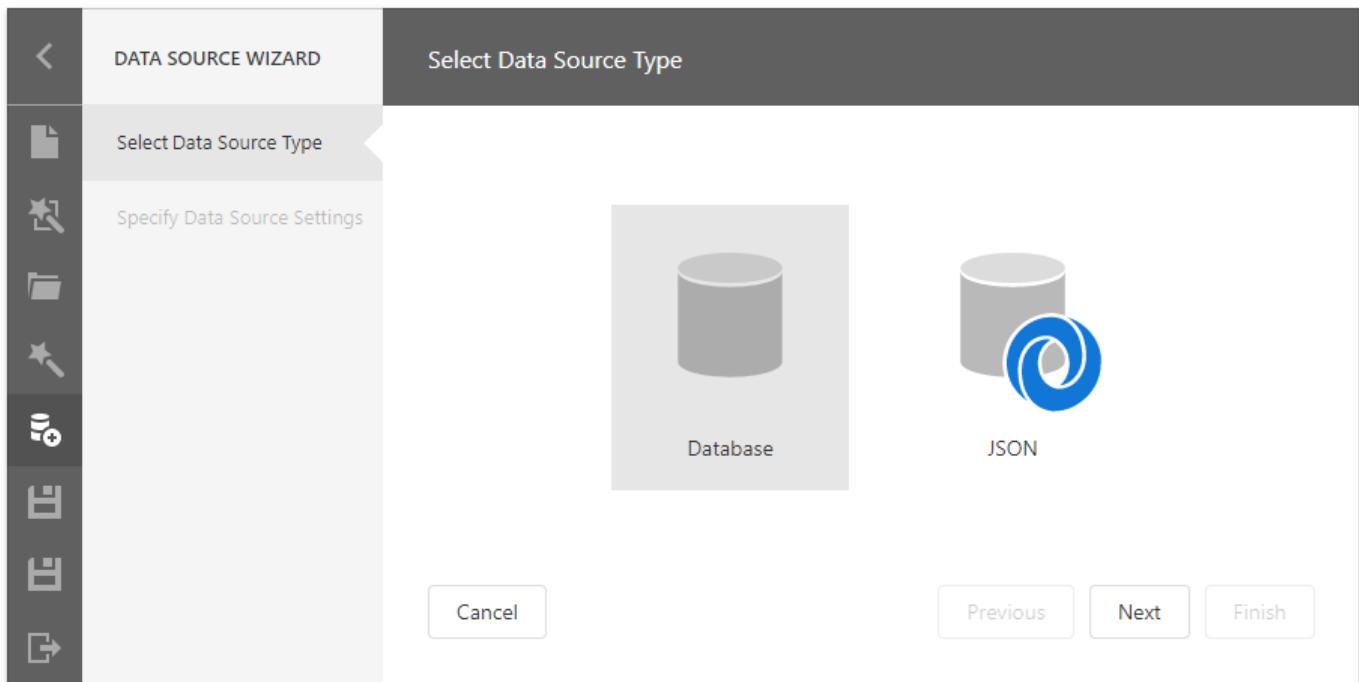
INVOICE		November 13, 2018		
Paul Henriot Vins et alcools Chevalier 59 rue de l'Abbaye Reims France	ORDER #	10248		
	ORDER DATE	August 4, 2014		
	REQUIRED DATE	September 1, 2014		
	SHIPPED DATE	August 16, 2014		
Quantity	Product	Unit Price	Discount	Extended Price
5	Mozzarella di Giovanni	\$34.80	0.00%	\$174.00
12	Queso Cabrales	\$14.00	0.00%	\$168.00
10	Singaporean Hokkien Fried Mee	\$9.80	0.00%	\$98.00
Total: \$440.00				

## Create a Report and Bind It to Data

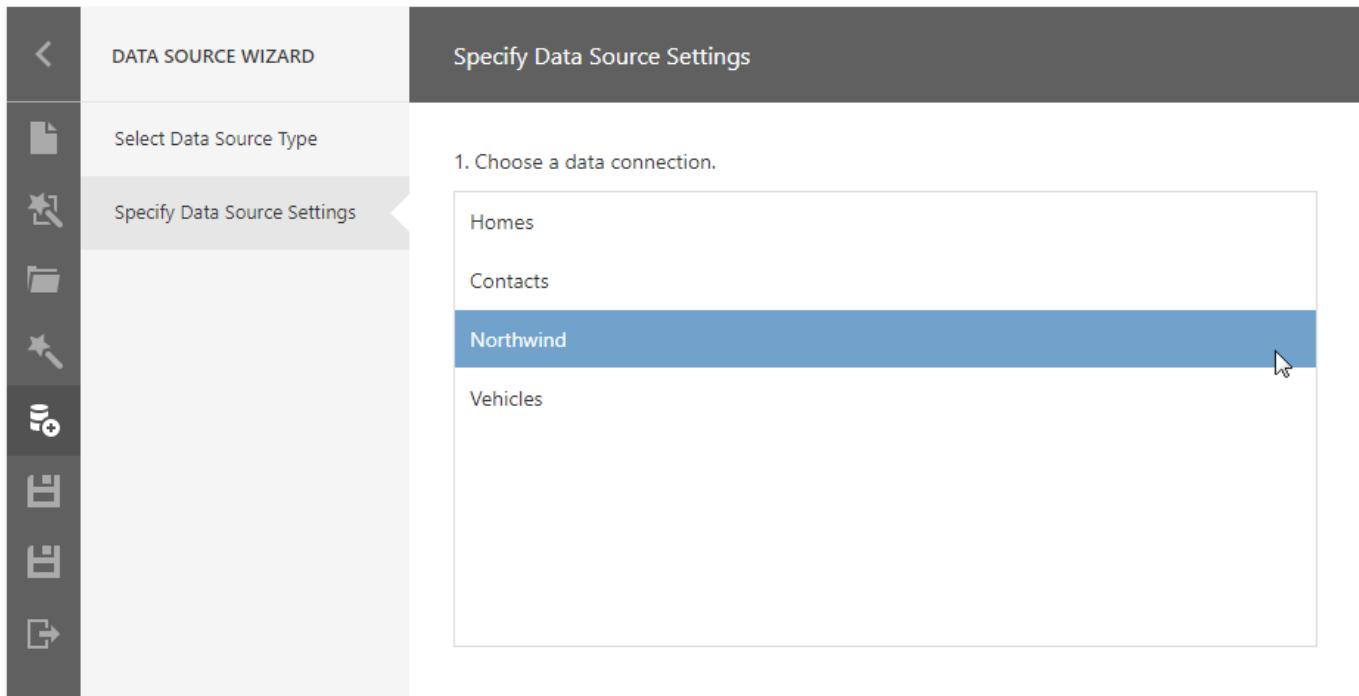
1. Create a new report or open an existing one.
2. Invoke the designer menu and click **Add Data Source....**



3. Select **Database** on the first page of the invoked Data Source Wizard and click **Next**.



4. Select a data connection on the next page.



5. On the same page, you can choose which tables, views and/or stored procedures to add to the report.

Obtain data from two different tables to display information about customers and orders at the same hierarchical level in the report. Click the plus button for the **Queries** category to create a custom query. In the invoked **Query Builder**, add the required data tables to a query and join them based on a key column.

2. Choose predefined queries and/or create custom queries.

- ▶  Tables
- ▶  Views
- Stored Procedures
- Queries

Query Builder

ORDERS	CUSTOMERS
<input type="checkbox"/> * (All Columns)	<input type="checkbox"/> * (All Columns)
<input type="checkbox"/> OrderID	<input type="checkbox"/> CompanyName
<input checked="" type="checkbox"/> CustomerID	<input checked="" type="checkbox"/> Customers_CustomerID
<input type="checkbox"/> EmployeeID	<input type="checkbox"/> ContactName
<input type="checkbox"/> OrderDate	<input type="checkbox"/> ContactTitle
<input type="checkbox"/> RequiredDate	<input type="checkbox"/> Address
<input type="checkbox"/> ShippedDate	<input type="checkbox"/> City
<input type="checkbox"/> ShipVia	<input type="checkbox"/> Region
<input type="checkbox"/> Freight	<input type="checkbox"/> PostalCode
<input type="checkbox"/> ShipName	<input type="checkbox"/> Country
<input type="checkbox"/> ShipAddress	<input type="checkbox"/> Phone
<input type="checkbox"/> ShipCity	<input type="checkbox"/> Fax
<input type="checkbox"/> ShipRegion	
<input type="checkbox"/> ShipPostalCode	
<input type="checkbox"/> ShipCountry	

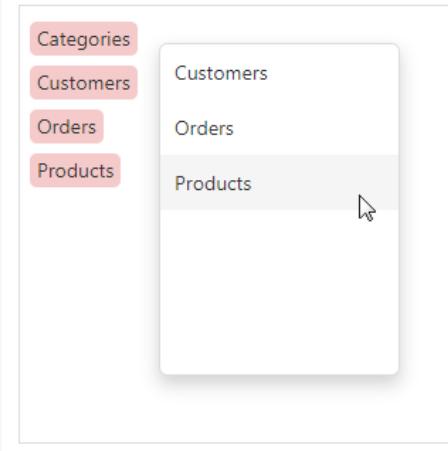
6. On the same wizard page, select the data view providing order details for listing products included in each order in the invoice.

2. Choose predefined queries and/or create custom queries.

- ▶  Tables
- ▼  Views
  - ▶  CategoryProducts
  - ▶  OrderDetails
  - ▶  OrderReports
- Stored Procedures
- ▼  Queries
  - Customers

7. On the same page, specify a master-detail relationship between the queries. Select the required key fields (columns) to connect tables.

3. Configure master-detail relationships.



3. Configure master-detail relationships.

Categories

CategoriesProducts

Categories . CategoryID = Products . <Select a column>

Customers

Orders

Products

ProductID

ProductName

SupplierID

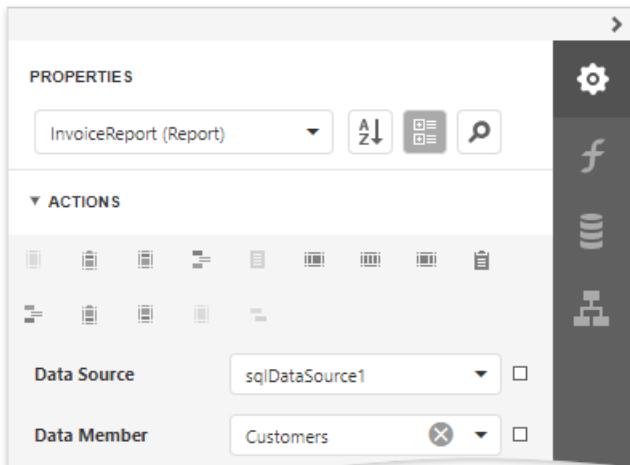
CategoryID

QuantityPerUnit

UnitPrice

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

After these steps, make sure that an appropriate data member is assigned to the report.



## Prepare the Master Report Layout

Create the master report layout to display basic information about customers and their orders.

1. Switch to the **Field List** and drop the required data fields onto the **Detail band**. New controls of appropriate types are automatically created and bound to the corresponding fields.

The screenshot shows the Report Designer interface. On the left is a data grid with columns for ContactName, ShipName, ShipAddress, ShipCity, ShipCountry, OrderID, OrderDate, RequiredDate, and ShippedDate. The ShipCountry field is selected. On the right is the Field List pane, which displays the structure of the sqlDataSource1. It shows the Customers table with fields: ContactName, CustomerID, OrderDate, OrderID, RequiredDate, ShipAddress, ShipCity, ShipCountry, ShipName, and ShippedDate. The ShipCountry field is highlighted.

- Drop **Label** controls from the **Toolbox** onto the band to display static captions for specific data fields.

The screenshot shows the Report Designer with labels added to the data grid. The labels are positioned next to their corresponding data fields: label10 for OrderID, label11 for OrderDate, label12 for RequiredDate, and label13 for ShippedDate. The labels are currently empty and have a blue selection border.

- Double-click the added labels one after another and enter the required text.

The screenshot shows the Report Designer with static text labels added to the data grid. The labels are: ORDER# above OrderID, ORDER DATE above OrderDate, REQUIRED DATE above RequiredDate, and SHIPPED DATE above ShippedDate. The labels are now filled with text and have a blue selection border.

- Use the **Line** control to separate data.

## Prepare the Detail Report Layout

Perform the following steps to create a detail report and construct its layout to show the order details in a tabular form:

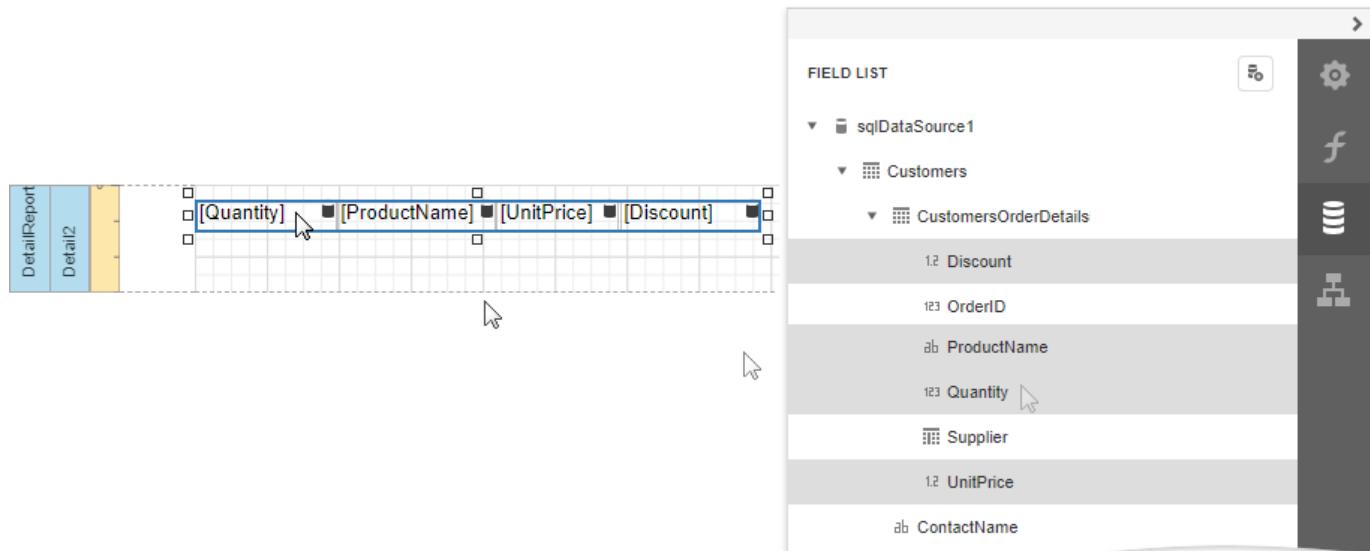
1. Expand the **Actions** category and click **Insert Detail Report Band** to create a **Detail Report Band**.

2. Select the Detail Report band and select the master-detail relationship's name in the **Data Member** property's drop-down list.

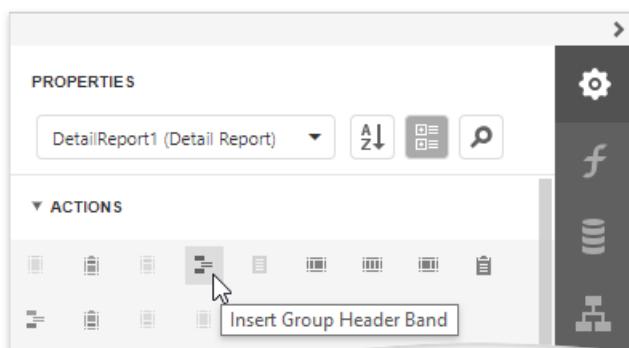
3. Add dynamic content to the detail report. Go to the **Field List**, select the data fields while holding down CTRL or SHIFT and

drag-and-drop them onto the Detail band. This automatically creates a **Table** control with table cells bound to the corresponding fields.

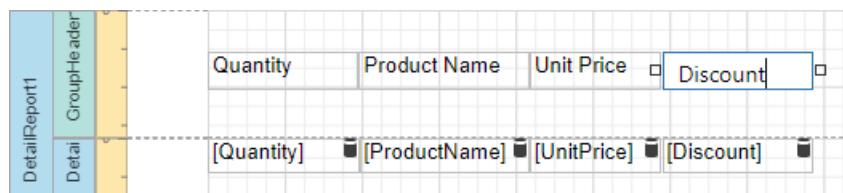
You should drag-and-drop fields from the category corresponding to the master-detail relationship to correctly generate the detail report's data.



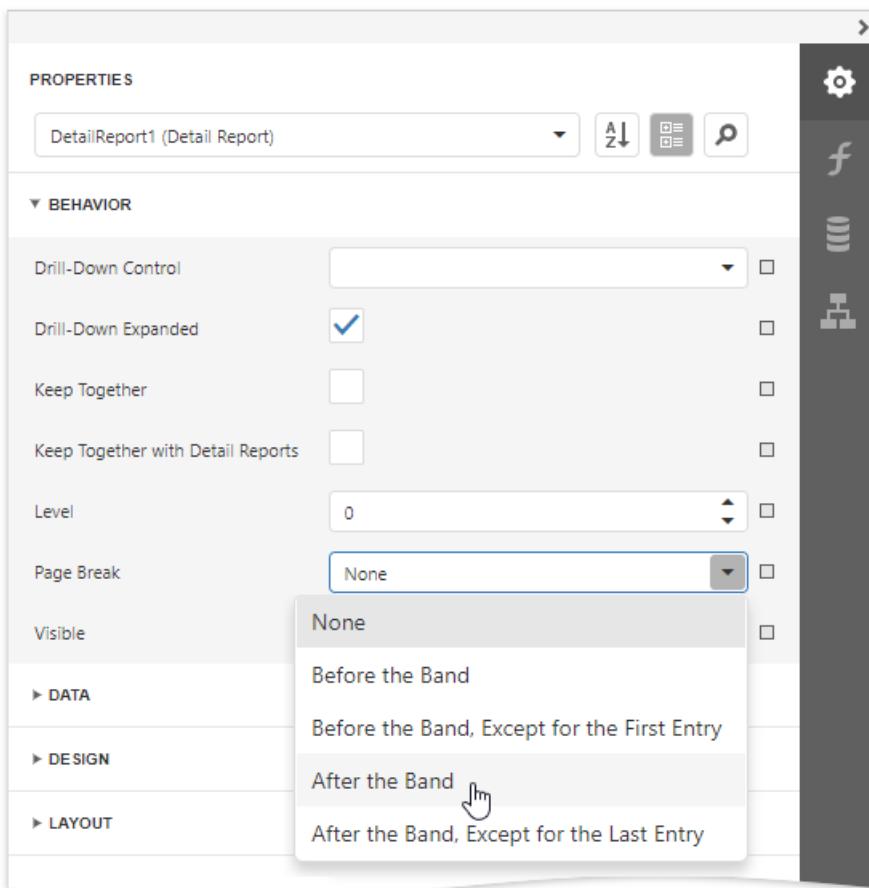
4. Add the Group Header band to the detail report to display captions for table columns. Select the Detail Report band and click **Insert Group Header Band** in the **Actions** category.



5. To create column headers, drop the **Table** control from the **Toolbox** onto the Group Header band and enter the required text in the table's cells.



6. Select the Detail Report band, expand the **Behavior** category and set the band's **Page Break** property to **After the Band** to print each order on a separate page.

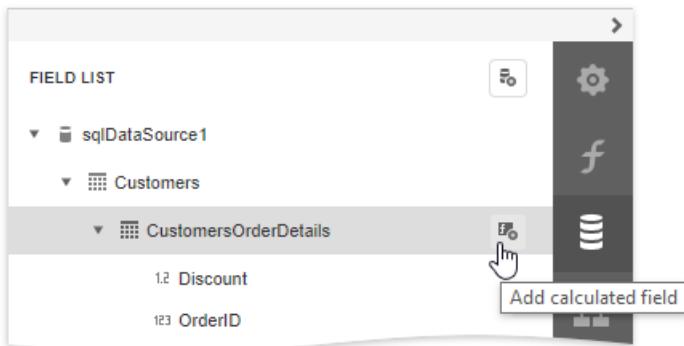


## Create a Calculated Field

This section demonstrates how to create a [custom field](#) whose values are calculated using a pre-defined expression.

Do the following to evaluate an extended price based on the price, quantity and discount values obtained from a database:

1. In the [Field List](#), select the detail table and click **Add calculated field**.



2. Click the **Edit** button for the calculated field and change its name to **ExtendedPrice**. Click the **Expression** property's ellipsis button, and in the invoked [Expression Editor](#), construct the expression based on the **UnitPrice**, **Quantity** and **Discount** fields.

The screenshot shows the Expression Editor and the Field List side-by-side.

**Expression Editor:** Displays the expression `1 * [UnitPrice] * [Quantity] * (1 - [Discount])`. The Fields pane on the left lists Constants, Functions, and Operators. The right pane shows the expanded fields: `1`, `[UnitPrice]`, `[Quantity]`, and `[Discount]`.

**Field List:** Shows the field `ExtendedPrice` defined under `sqlDataSource1` / `Customers` / `CustomersOrderDetails`. The properties for `ExtendedPrice` are set as follows:

- Name: ExtendedPrice
- Display Name: ExtendedPrice
- Field Type: None
- Data Source: sqlDataSource1
- Data Member: Customers.CustomersOrderDetail
- Expression: `1 * [UnitPrice] * [Quantity] * (1 - [Discount])`

3. You can use the created calculated field as an ordinary data field. Add a cell to a table in the Detail band and drop the calculated field onto this cell. Additionally, create one more table cell in the Group Header for displaying the corresponding caption.

The screenshot shows the Report Designer with a table in the Detail band and the Field List panel.

**Report Designer:** A table is shown in the Detail band with columns: Quantity, Product Name, Unit Price, Discount, and Extended Price. The `Extended Price` column contains the expression `[Quantity] * [UnitPrice] * (1 - [Discount])`.

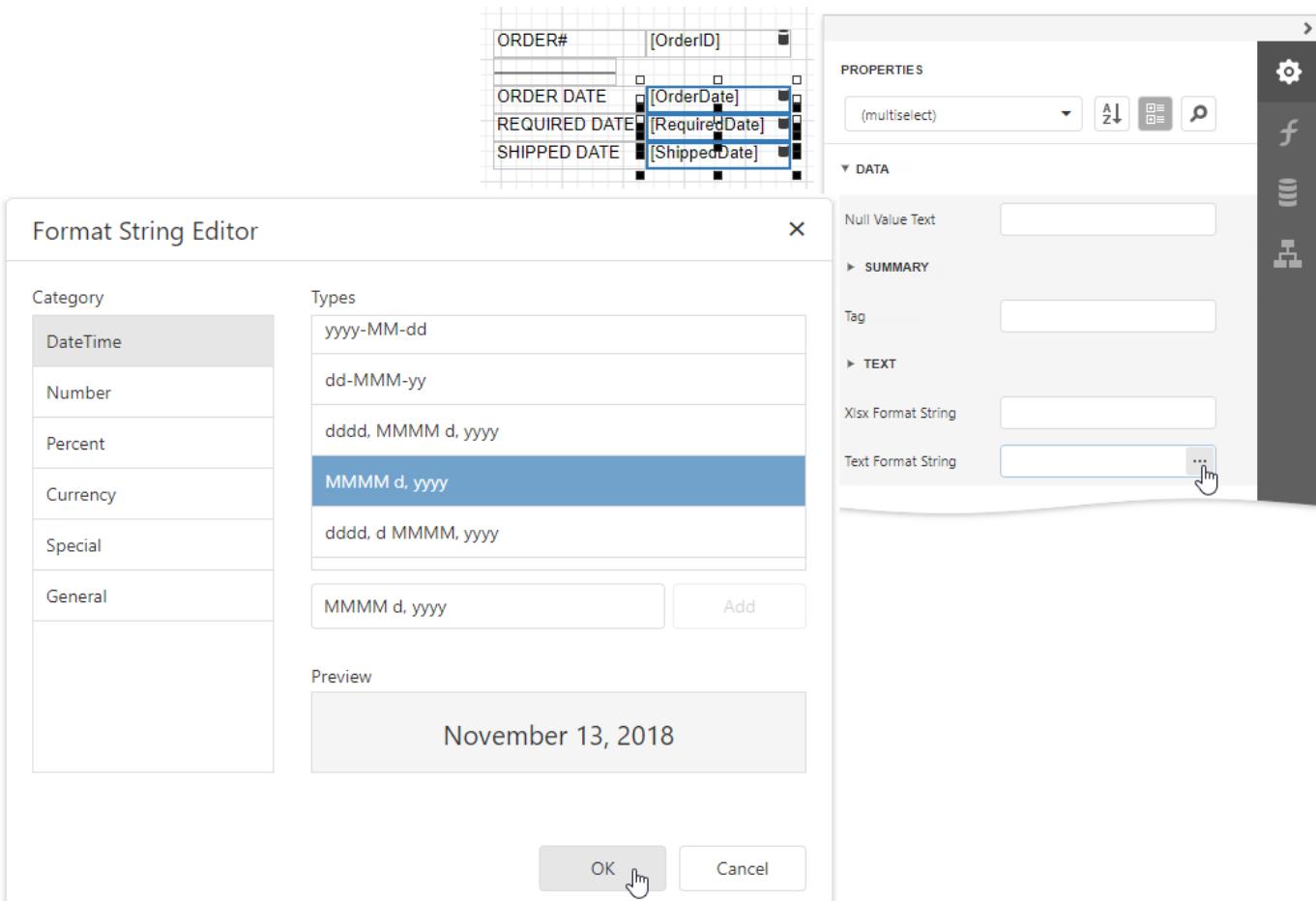
**Field List:** Shows the field `ExtendedPrice` defined under `sqlDataSource1` / `Customers` / `CustomersOrderDetails`. The properties for `ExtendedPrice` are set as follows:

- Name: ExtendedPrice
- Display Name: ExtendedPrice
- Field Type: None
- Data Source: sqlDataSource1
- Data Member: Customers.CustomersOrderDetail
- Expression: `1 * [UnitPrice] * [Quantity] * (1 - [Discount])`

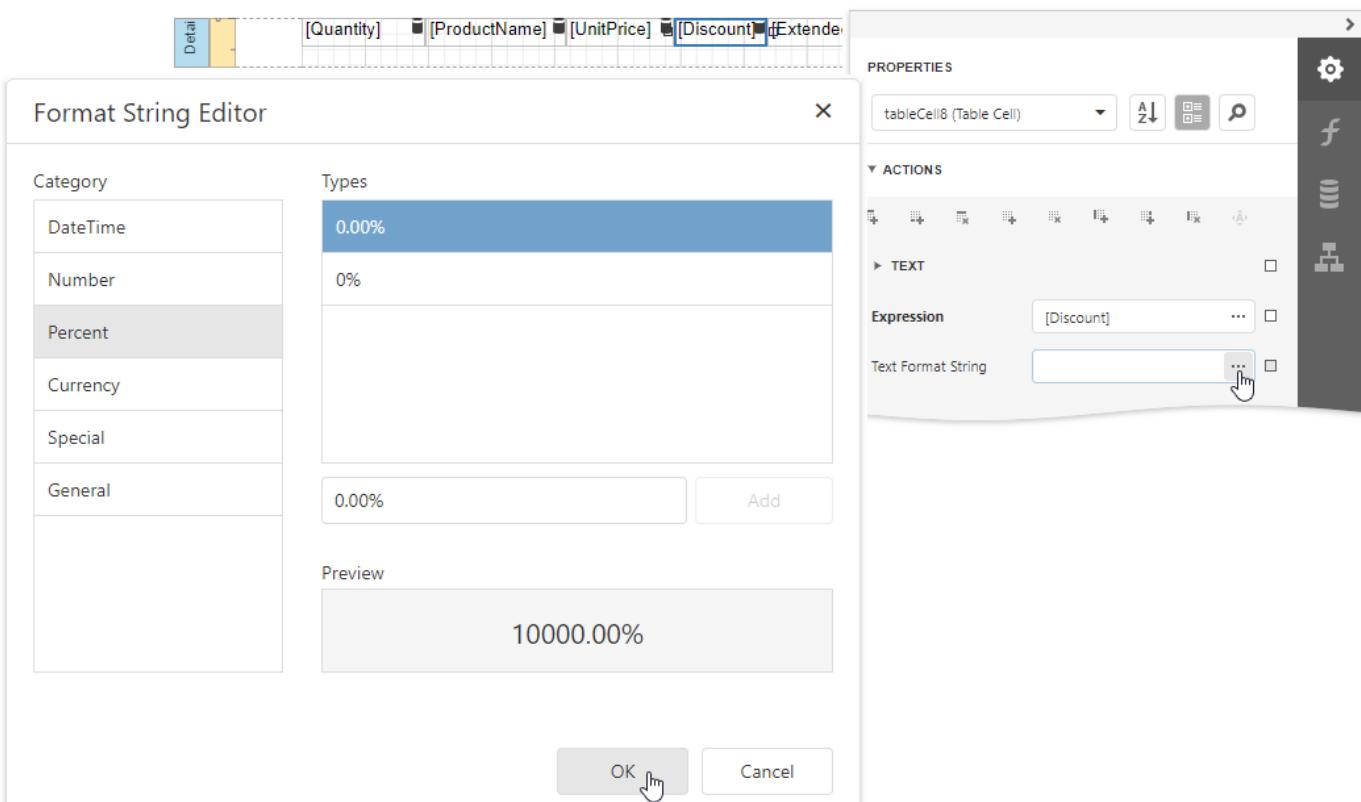
## Format Data

The next step is to specify report elements' [value formatting](#) to improve displaying their incoming data.

1. In the master report's Detail band, select controls bound to date fields while holding down CTRL. Switch to the **Properties** panel, expand the **Data** category and click the **Text Format String** property's ellipsis button. In the invoked **Format String Editor**, activate the **DateTime** category and select the format, for example, display dates as a month (name) followed by the day (number) and year (four digits).



2. Select the table cell bound to the **Discount** data field in the detail report's Detail band. Expand the **Actions** category, click the **Text Format String** property's ellipsis button, and in the invoked **Format String Editor**, apply the **Percent** format. In this case, field values are multiplied by 100 and displayed with a percent symbol.

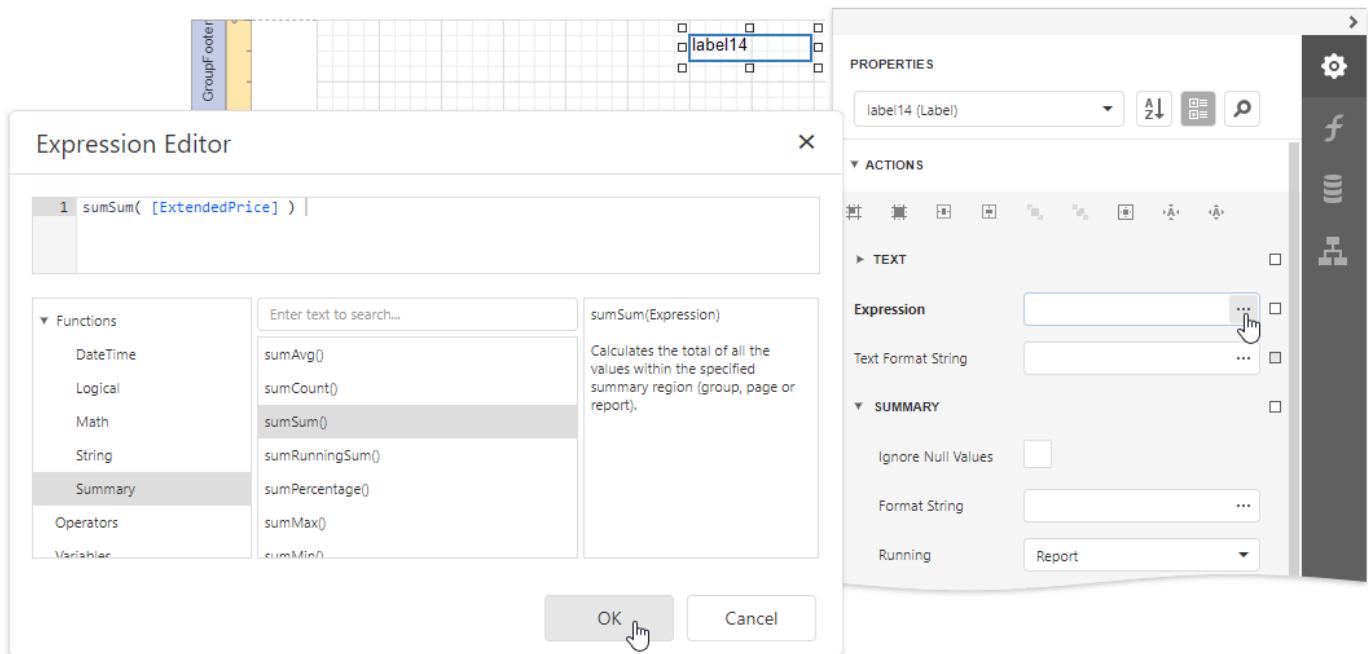


3. In the detail report's Detail band, select the cells bound to the **UnitPrice** and **ExtendedPrice** fields. Invoke the **Format String Editor** once again and choose the format preset from the **Currency** category (for instance, **c2**).

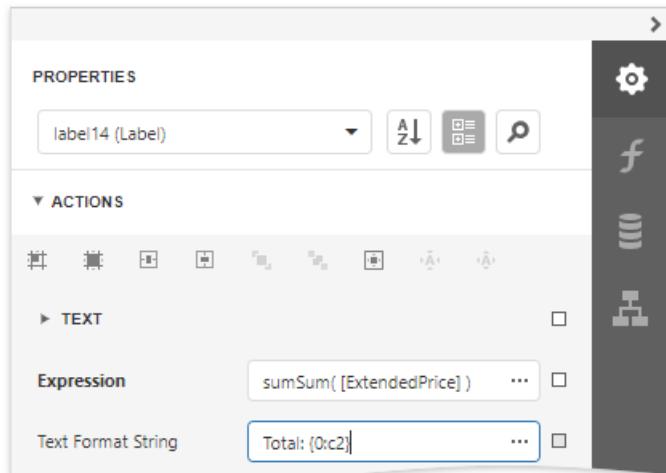
# Calculate a Summary

Do the following to calculate a total price for each order as a sum of **Extended Price** values:

1. Add the Group Footer band to the detail report in the same way as the Group Header.
2. Drop the Label control onto the added band and expand the **Actions** category in the Properties panel. Select the **Summary** section and set the **Running** property to **Report** to calculate the summary for the entire detail report and click the **Expression** property's ellipsis button. In the invoked [Expression Editor](#), specify the following expression to calculate the total price:



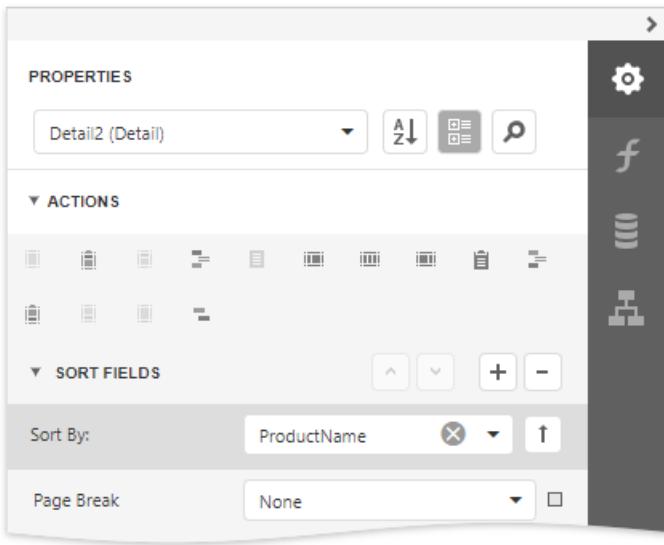
3. Use the **Text Format String** property to format the summary's value (for instance, set it to **Total: {0:c2}**).



# Sort Data

Perform the following steps to sort data in the detail report:

1. Select the **Detail** band in the detail report. Select the **Sort Fields** section in the **Actions** category and add a new sort field to sort the detail report's data by the required data field.

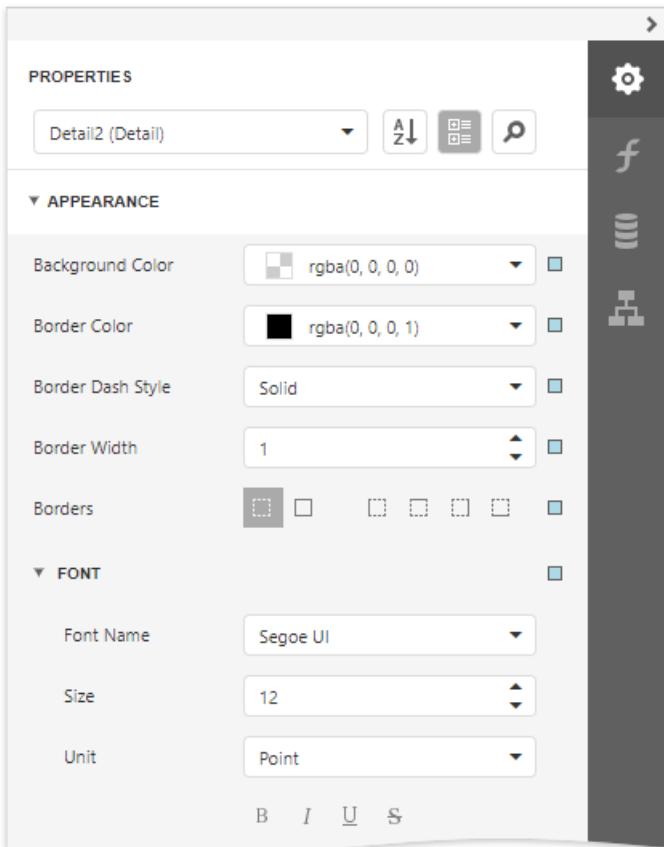


2. Click the or buttons to define the sort order within the group (ascending or descending). Use the button to disable sorting in grouped data.

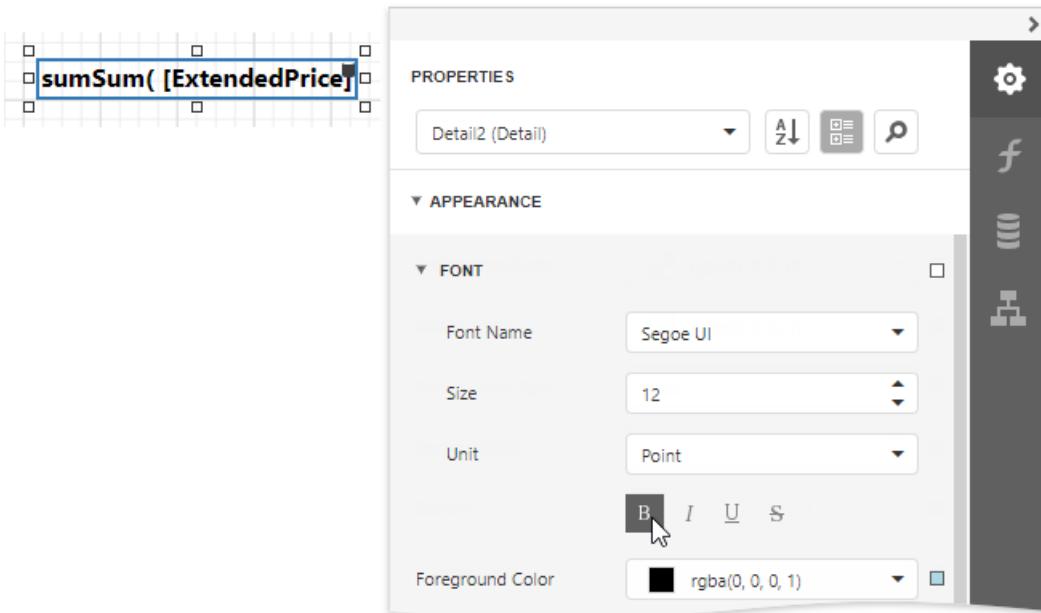
## Customize the Report Appearance

Do the following to customize the report and its elements' appearance:

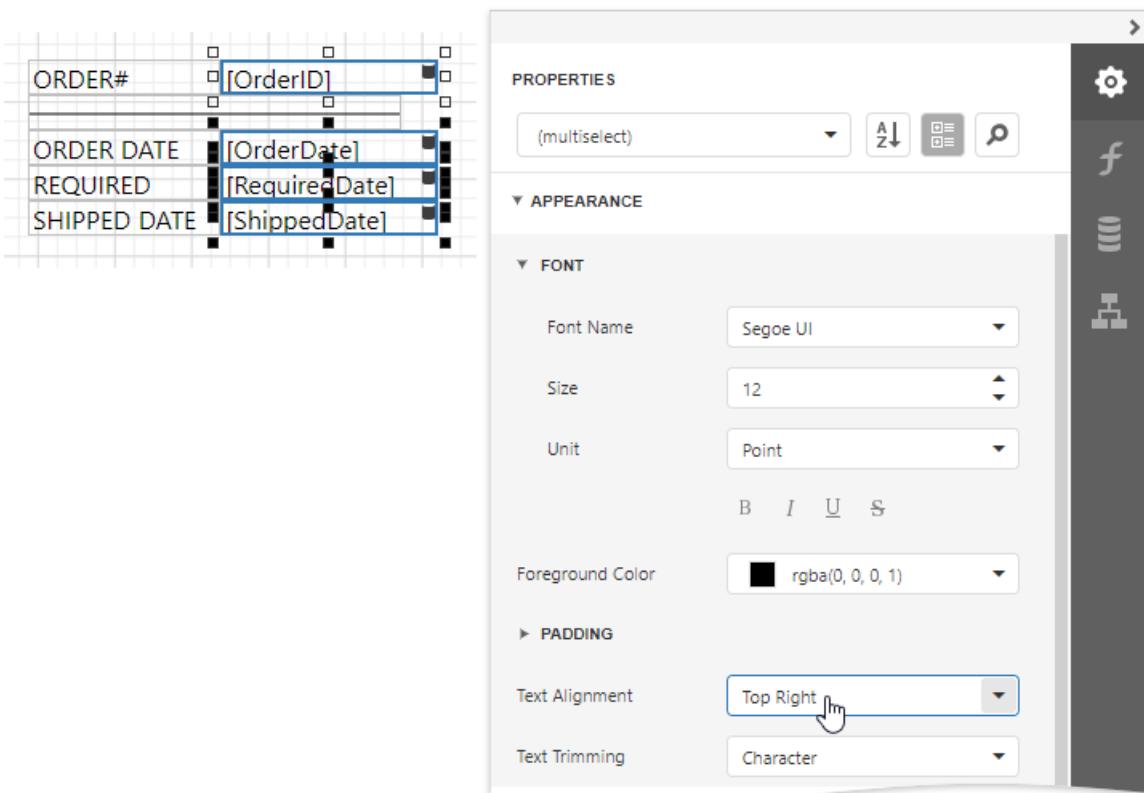
1. Click the gray area around the design surface to select the report, and in the [Properties](#) panel, specify the font settings. These settings are distributed to all report elements.



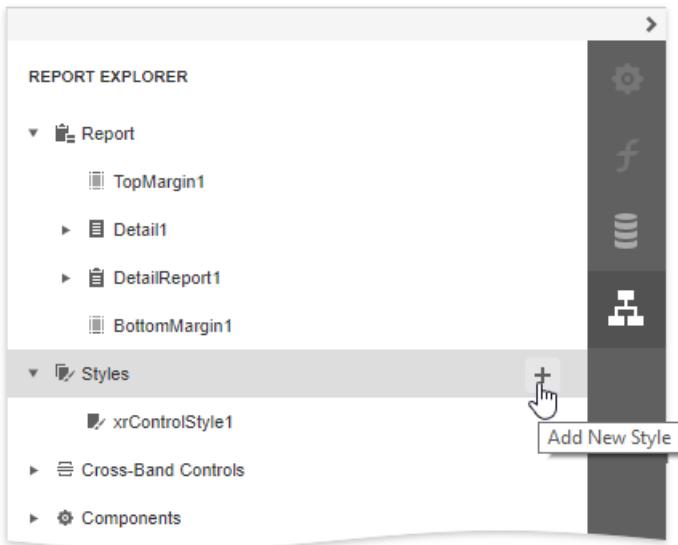
2. You can adjust a control's font independently from its parent (for instance, make summary values bold).



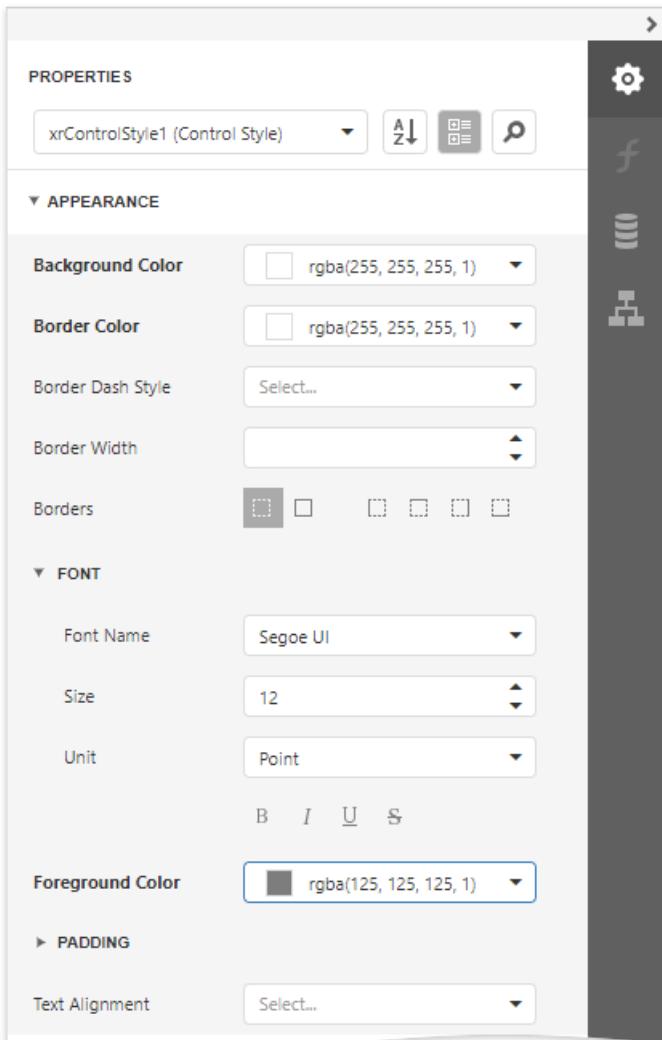
3. Change specific controls' (bound to date fields, price fields, etc.) text alignment using the **Text Alignment** property.



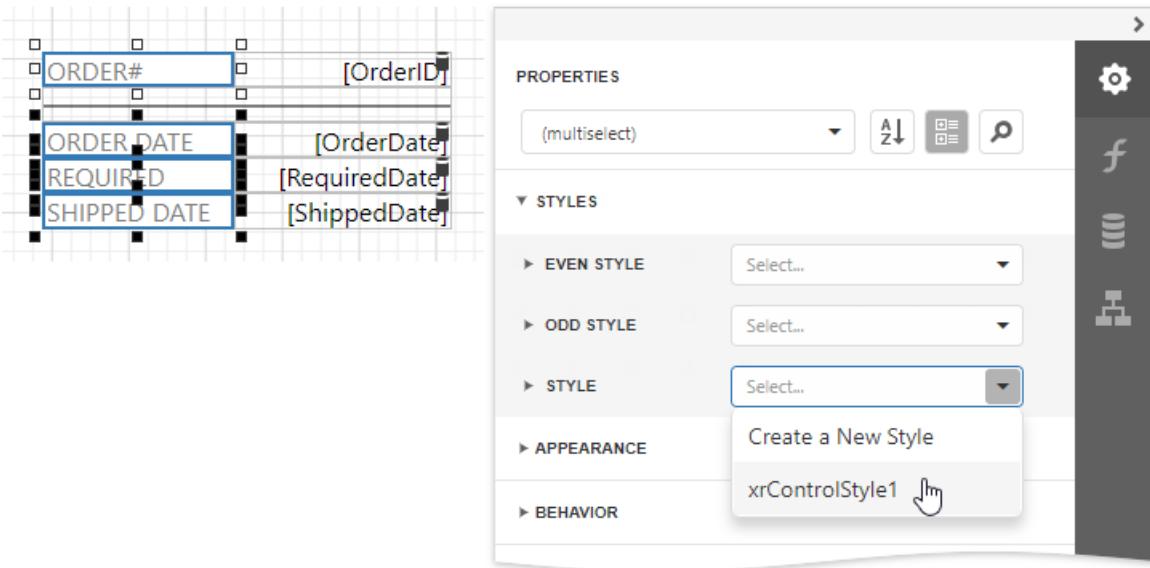
4. Create a global **visual style** to apply it afterwards to multiple controls. Switch to the **Report Explorer** panel, select the **Styles** node and click the plus button to add a new report visual style.



5. Select the created style and click the **Properties** button in the Report Explorer. This opens the Properties panel where you can adjust the settings of the selected style.



6. Select report elements, expand the **Styles** category and choose a style in the **Style** property's drop-down list to apply the style to the selected elements.



7. You can provide different appearances to alternating (odd and even) table rows in the detail report. Select the table and expand the **Styles** property in the Property Grid. Invoke the drop-down list for the **EvenStyle** property and select **New**.

Specify the created style's appearance settings (for example, background color).

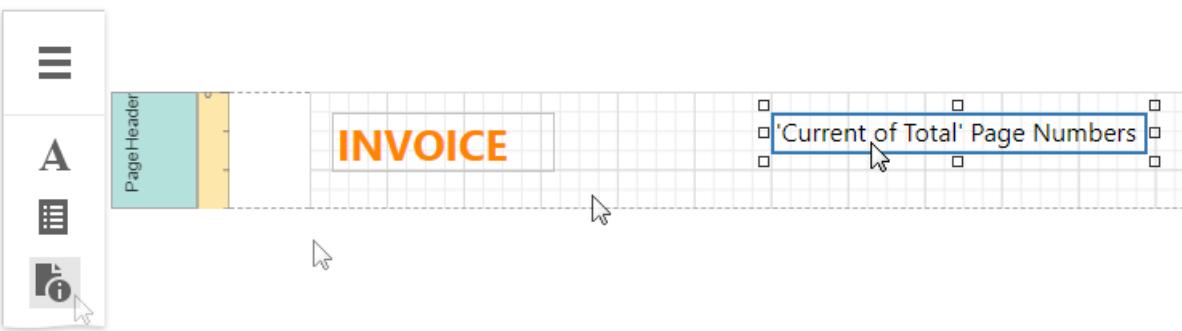
## Add Additional Information

Do the following to provide additional information to your invoices, such as the report name and current date:

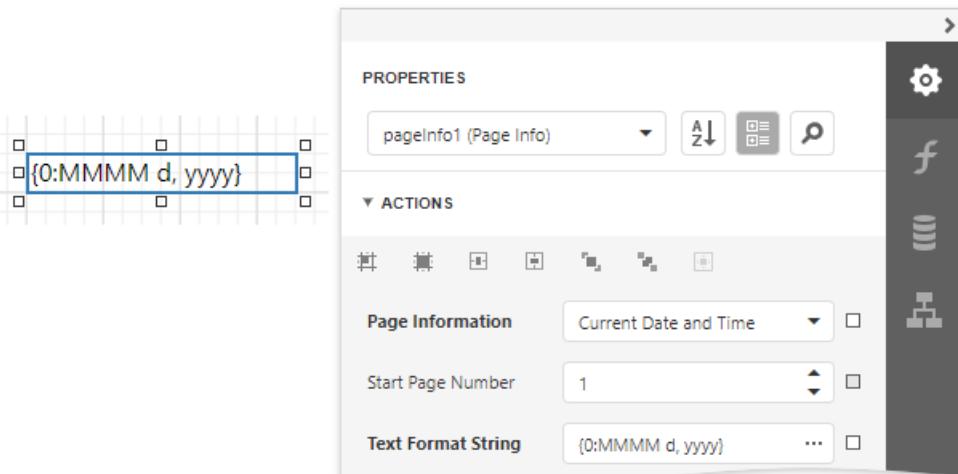
1. Add the Page Header band to the master report to display the required information on each invoice page.
2. Drop the Label control from the **Toolbox** onto the Page Header, double-click the control and type "**Invoice**". Specify the required appearance settings (font, foreground color, etc.).



3. Add the **Page Info** control to the Page Header band to display system date in the report.



4. Expand the **Actions** category and set the **Page Information** property to **Current Date and Time**. Click the **Text Format String** property's ellipsis button, and in the invoked **Format String Editor**, select a date format as in the **Format Data** section above.



## View the Result

The invoice report is now ready. Switch to [Print Preview](#) to see the result.

Quantity	Product	Unit Price	Discount	Extended Price
5	Mozzarella di Giovanni	\$34.80	0.00%	\$174.00
12	Queso Cabrales	\$14.00	0.00%	\$168.00
10	Singaporean Hokkien Fried Mee	\$9.80	0.00%	\$98.00

# Create a Master-Detail Report (Use Detail Report Bands)

This tutorial illustrates how to display hierarchical data in a master-detail report using nested [Detail Report bands](#). This approach is effective if your data source contains master-detail relationship. Another way is described at [Create a Master-Detail Report \(Use Subreports\)](#).

The screenshot shows a report with two main sections: "Beverages" and "Condiments".

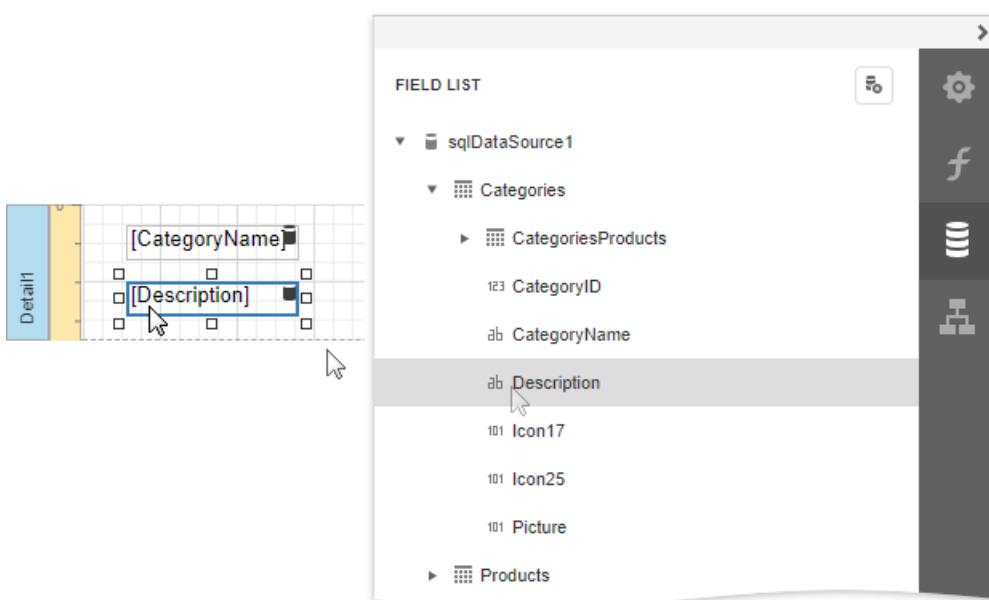
**Beverages**  
Soft drinks, coffees, teas, beers, and ales

Product	Description	Unit Price
Chai	10 boxes x 20 bags	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Steeleye Stout	24 - 12 oz bottles	\$18.00
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Ipoh Coffee	16 - 500 g tins	\$46.00
Lakkalikööri	500 ml	\$18.00

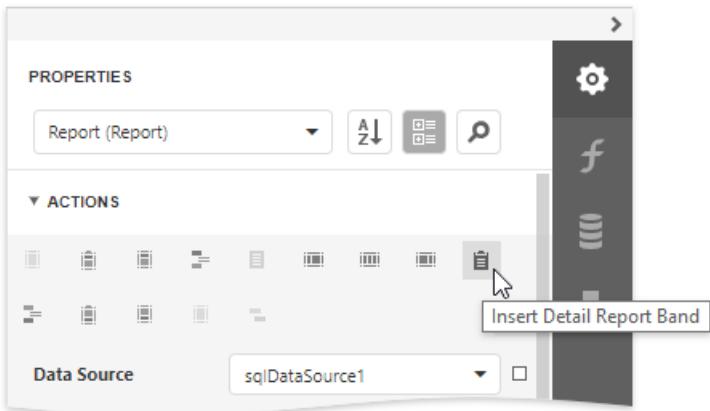
**Condiments**  
Sweet and savory sauces, relishes, spreads, and seasonings

Product	Description	Unit Price
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
Northwoods Cranberry Sauce	12 - 12 oz jars	\$40.00

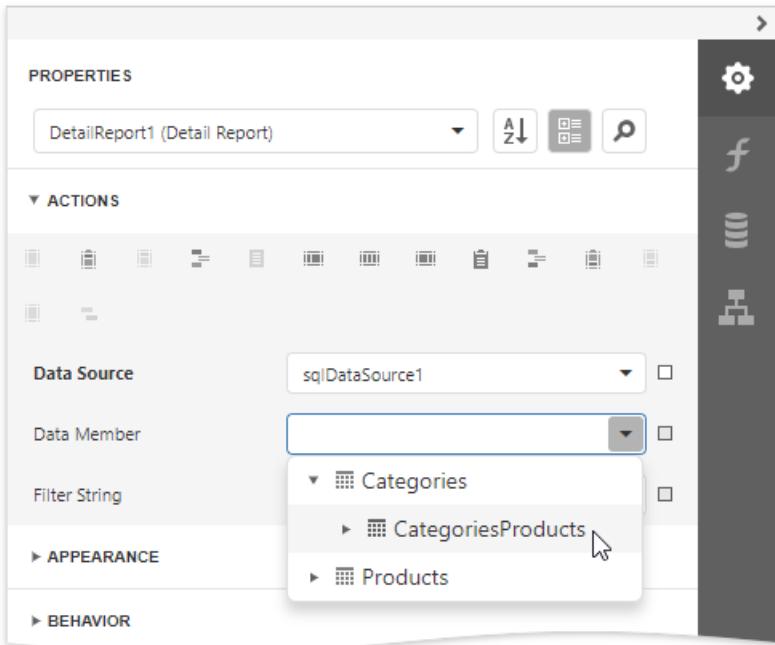
1. [Create a new report](#) or [open an existing one](#).
2. [Bind the report](#) to a required data source and provide it with a master-detail relationship as described in the [Bind a Report to a Database](#) topic.
3. Drop the required data fields from the [Field List](#) onto the [Detail](#) band.



4. Expand the **Actions** category and click **Insert Detail Report Band** to create a Detail Report Band.



Select the Detail Report band and select the master-detail relationship's name in the **Data Member** property's drop-down list.



5. Switch to the **Field List**, select the data fields while holding down CTRL or SHIFT and drag-and-drop them onto the Detail band.

The screenshot shows the Report Designer interface. On the left, there's a navigation bar with 'DetailReport' and 'Detail2'. The main area displays a report structure with three columns. The first column contains '[ProductName]'. The second and third columns are grouped together and contain '[QuantityPerUnit]' and '[UnitPrice]'. To the right of the report is the 'FIELD LIST' pane. It lists fields from 'sqlDataSource1' under 'Categories' and 'CategoriesProducts'. Fields include CategoryID, Discontinued, EAN13, ProductID, ProductName, QuantityPerUnit, ReorderLevel, SupplierID, UnitPrice, UnitsInStock, and UnitsOnOrder. The 'UnitPrice' field is currently selected.

#### **Note**

You should drag-and-drop fields from the category corresponding to the master-detail relationship to correctly generate the detail report's data. Otherwise, the report will display only the first record of the detail table as many times as there are records in this table.

- If required, customize the report's [appearance](#) and [format values](#).

Switch to [Print Preview](#) to see the resulting report.

<b>Beverages</b>		
<i>Soft drinks, coffees, teas, beers, and ales</i>		
Chai	10 boxes x 20 bags	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Steeleye Stout	24 - 12 oz bottles	\$18.00
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Ipoh Coffee	16 - 500 g tins	\$46.00
Lakkaliköön	500 ml	\$18.00
<b>Condiments</b>		
<i>Sweet and savory sauces, relishes, spreads, and seasonings</i>		
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
Northwoods Cranberry Sauce	12 - 12 oz jars	\$40.00

# Create a Master-Detail Report (Use Subreports)

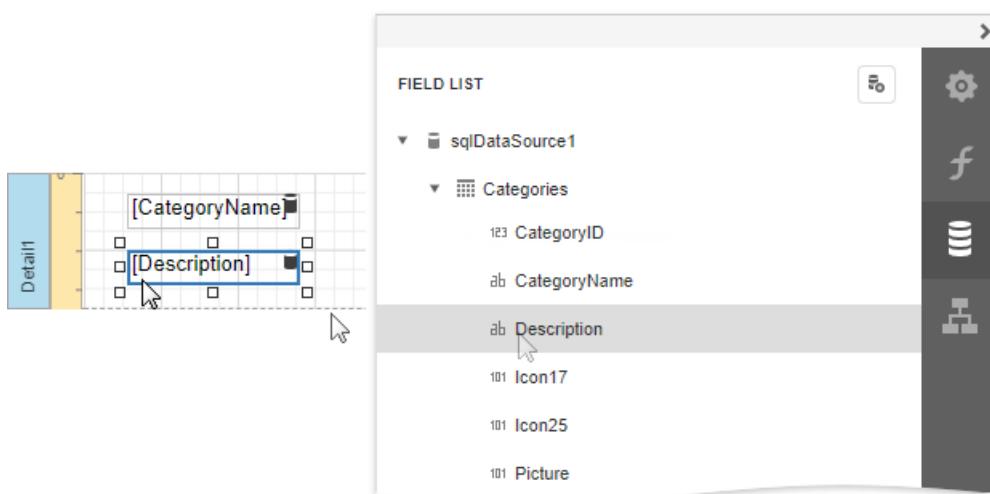
This tutorial demonstrates how to create a master-detail report using the [Subreport control](#). This approach is useful if your data source does not contain master-detail relationship or you prefer to store master and detail reports in different files. Another approach is described at [Create a Master-Detail Report \(Use Detail Report Bands\)](#).

The screenshot shows a report with two main sections: 'Beverages' and 'Condiments'. The 'Beverages' section contains a list of products with their descriptions and prices. The 'Condiments' section contains a list of products with their descriptions and prices. The report is presented in a clean, organized layout with a light background.

Category	Description	Price
Beverages	Chai	\$18.00
Beverages	Chang	\$19.00
Beverages	Steeleye Stout	\$18.00
Beverages	Côte de Blaye	\$263.50
Beverages	Chartreuse verte	\$18.00
Beverages	Ipoh Coffee	\$46.00
Beverages	Lakkalikööri	\$18.00
Condiments	Chef Anton's Cajun Seasoning	\$22.00
Condiments	Chef Anton's Gumbo Mix	\$21.35
Condiments	Grandma's Boysenberry Spread	\$25.00
Condiments	Northwoods Cranberry Sauce	\$40.00

## Create a Master Report

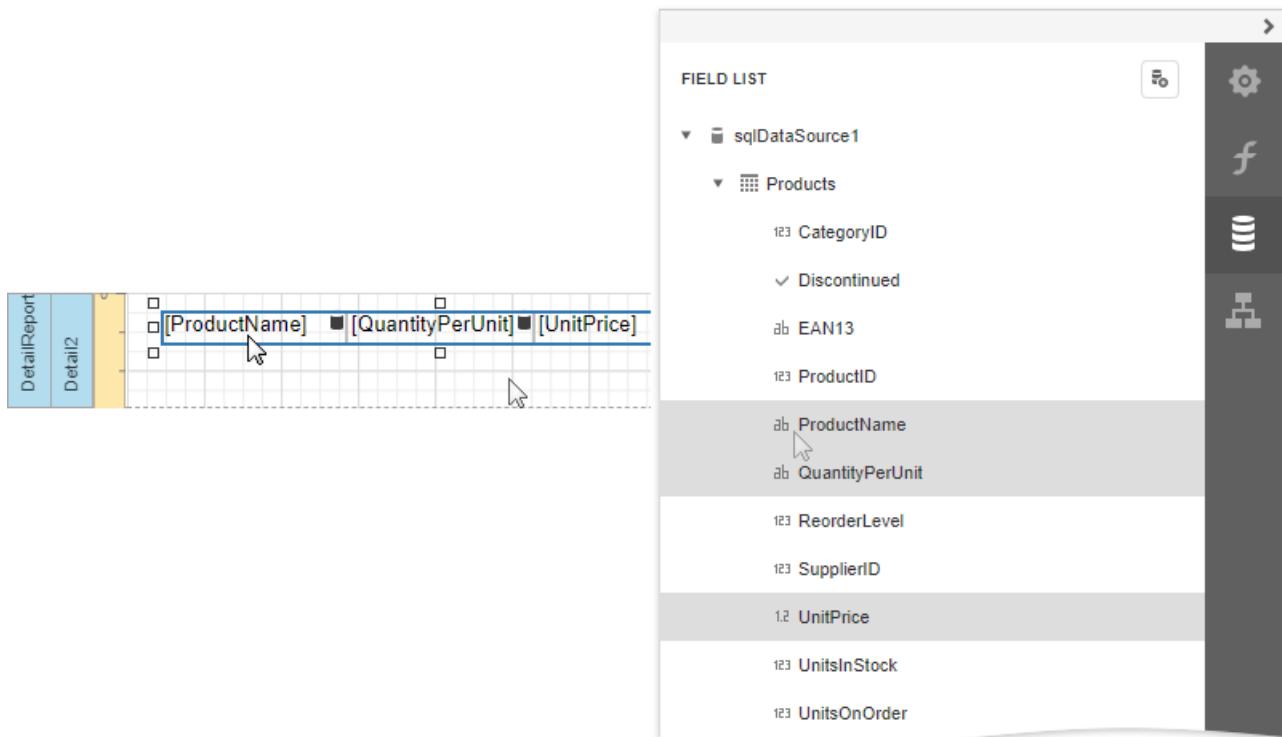
1. Create a new report or [open an existing one](#) to use it as a master report.
2. [Bind the report](#) to a required data table.
3. Drop the required data fields from the [Field List](#) onto the [Detail](#) band.



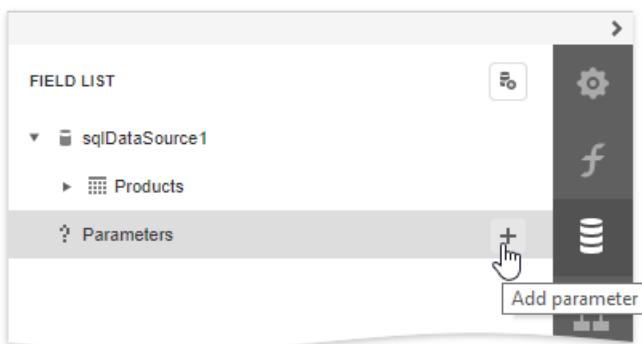
## Create the Detail Report

1. [Add one more blank report](#) to use it as a detail report.
2. [Bind it to data](#). For instance, use another table of the same database as for the master report.

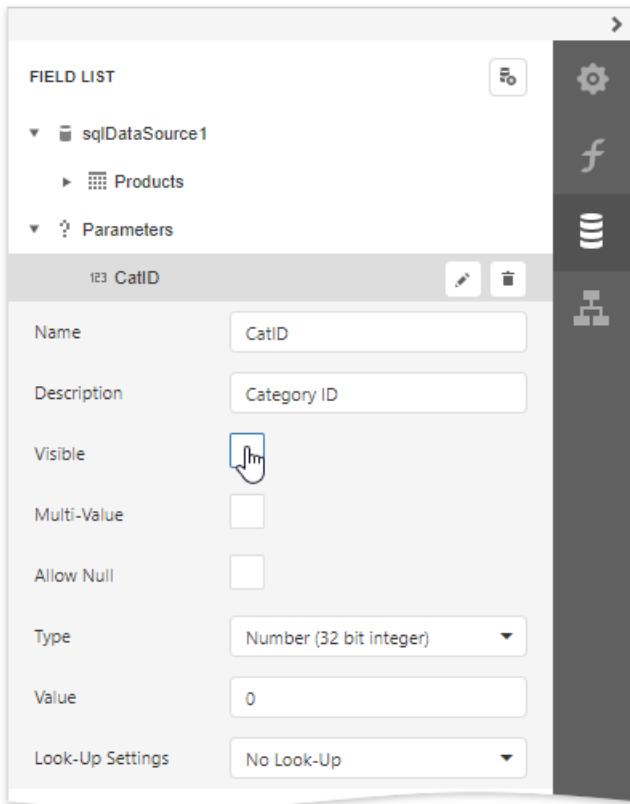
3. Switch to the **Field List**, select the data fields while holding down CTRL or SHIFT and drag-and-drop them onto the Detail band.



4. Add parameter to the detail report. Select the **Parameters** section in the **Field List** and click **Add parameter**.

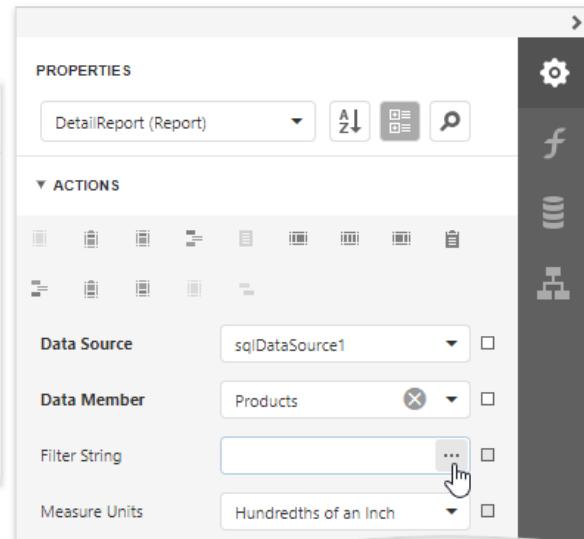
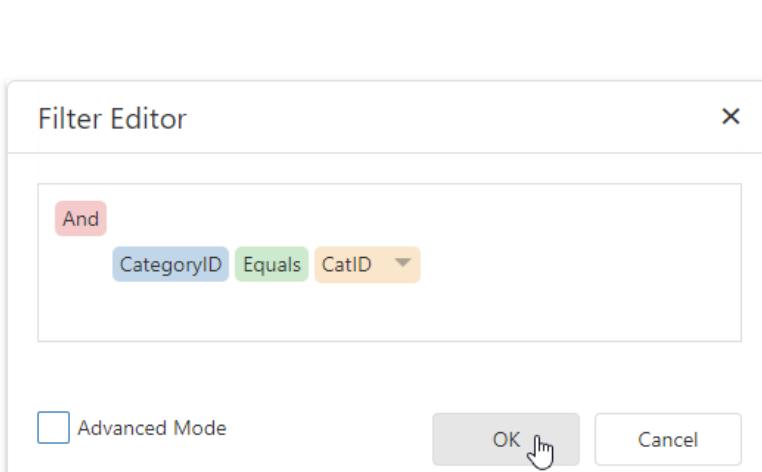


5. Click the **Edit** button for the created parameter and specify the parameter's **Name** and **Type** as well as disable the **Visible** property.

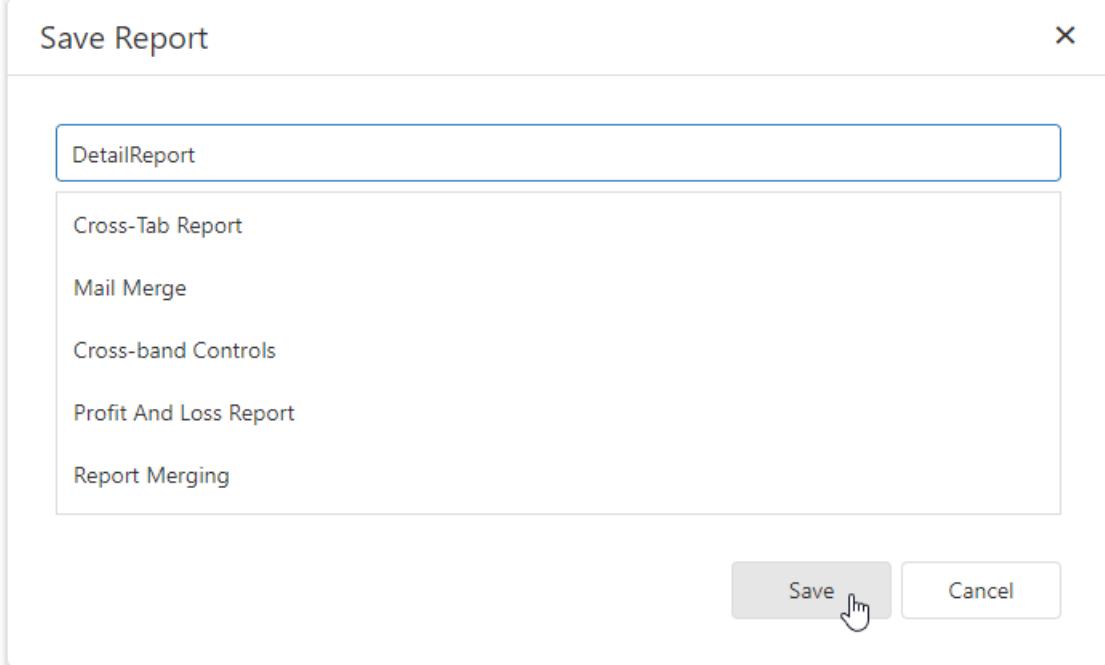


6. Switch to the **Properties** panel, expand the **Actions** category and click the **Filter String** property's ellipsis button.

In the invoked **Filter Editor**, construct an expression where the required data field is compared to the created parameter. To access the parameter, invoke the drop-down list on the right and select **Parameter**.



7. Click **Save | Save As** in the designer **menu** to **save the detail report** to the server-side report storage. In the invoked standard **Save** dialog, specify the folder and file name.

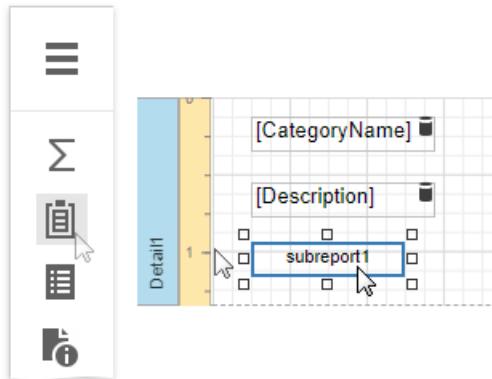


## Embed the Subreport

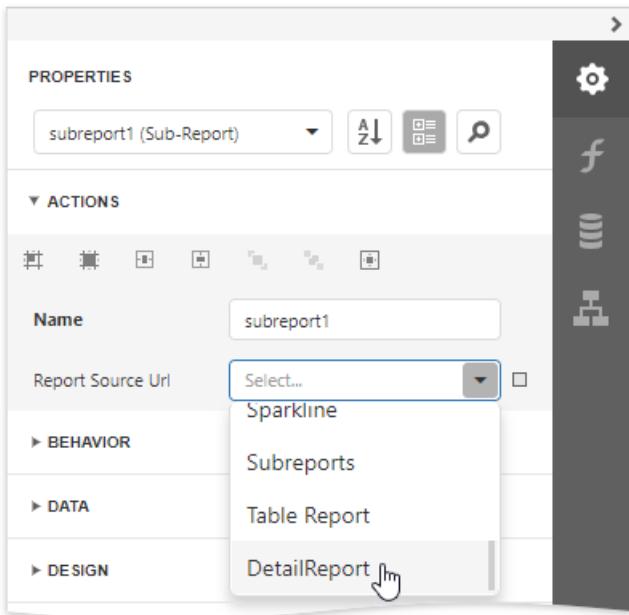
1. Click the corresponding tab in the bottom left corner of the Design Surface to switch back to the master report.



2. Drop the **Subreport** control from the **Toolbox** onto the **Detail** band.

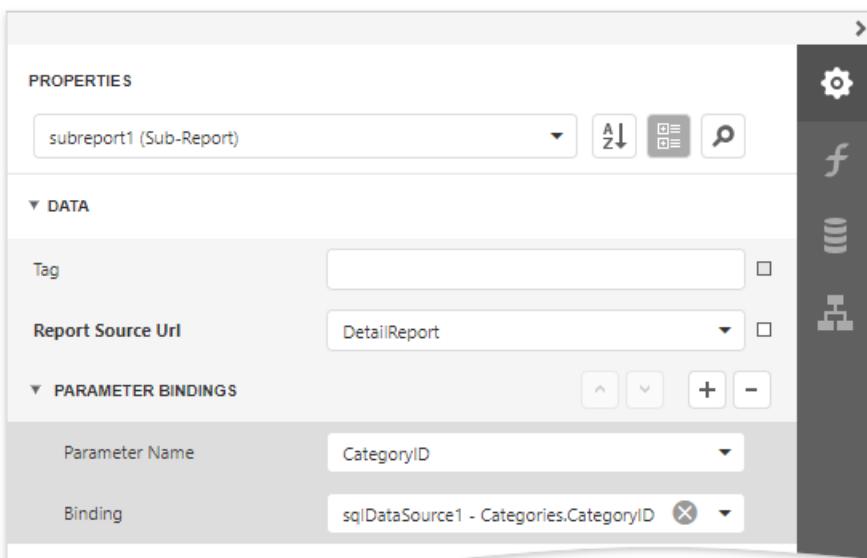


3. Expand the **Actions** category and select the previously saved detail report in the **Report Source URL** property's drop-down list.



You can double-click the added subreport to open the detail report.

- Bind the subreport's parameter used as a filter criterion to the master report's corresponding data field, which serve as a source of the parameter value. To do this, expand the **Data** category, select the **Parameter Bindings** section and add a new parameter 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.



- If required, customize the report's [appearance](#) and [format values](#).

## View the Result

Switch to [Print Preview](#) to see the resulting report.

## **Beverages**

*Soft drinks, coffees, teas, beers, and ales*

Chai	10 boxes x 20 bags	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Steeleye Stout	24 - 12 oz bottles	\$18.00
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Ipoh Coffee	16 - 500 g tins	\$46.00
Lakkaliköön	500 ml	\$18.00

## **Condiments**

*Sweet and savory sauces, relishes, spreads, and seasonings*

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
Northwoods Cranberry Sauce	12 - 12 oz jars	\$40.00

# Create a Hierarchical Report

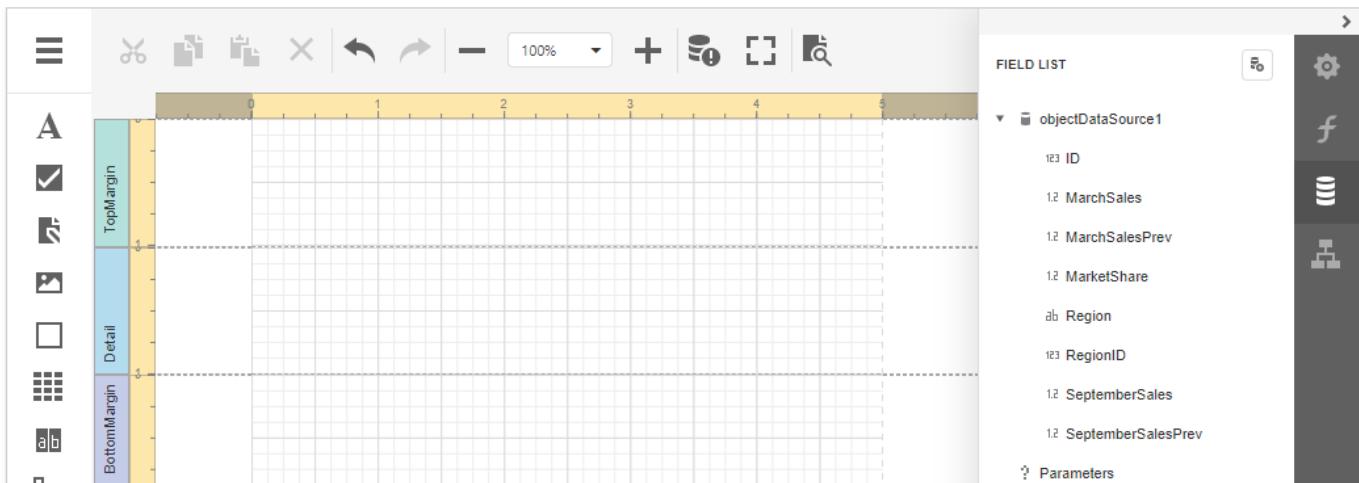
This tutorial describes how to use the [detail band's Hierarchy Print Options](#) property to create a hierarchical report.

## Market Share Report

Sales		
Region	March	September
> Asia	\$20,388.00	\$22,547.00
▼ Eastern Europe	\$22,500.00	\$24,580.00
Belarus	\$7,315.00	\$18,800.00
Bulgaria	\$6,300.00	\$2,821.00
Croatia	\$4,200.00	\$3,890.00
Czech Republic	\$19,500.00	\$15,340.00
Hungary	\$13,495.00	\$13,900.00

1. [Create a new report or open an existing one.](#)

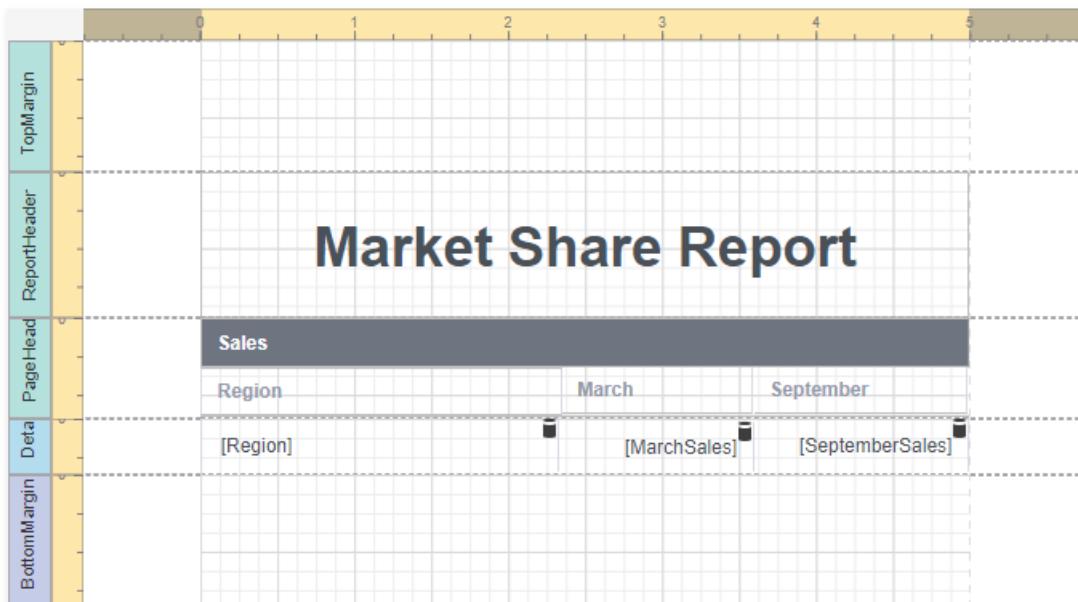
2. [Bind the report](#) to a data source.



Each record in the data source should include a field that defines the parent-child relationship and thus builds the hierarchy.

3. Arrange controls on the report.

- o Add the [Report Header](#) and [Page Header](#) bands (see the **Manage Report Bands | Add Bands** section in the [Introduction to Banded Reports](#) document for details)
- o Add [data-bound labels](#) to the **Detail** band.



Switch to [Preview](#) mode to see an intermediate result.

# Market Share Report

Region	March	September
Western Europe	\$30,540.00	\$33,000.00
Eastern Europe	\$22,500.00	\$24,580.00
North America	\$31,400.00	\$32,800.00
South America	\$16,380.00	\$17,590.00
Asia	\$20,388.00	\$22,547.00

4. Specify the Detail band's **Hierarchy Print Options** property.

**PROPERTIES**

Detail (Detail) ▾ A Z 🔍

▼ HIERARCHY PRINT OPTIONS ▾

- Child List Field Name:
- Key Field Name:  ID
- Parent Field Name:  RegionID
- Indent:  30
- Keep Together With First Child:

Set the following options:

- **Key Field Name** and **Parent Field Name**, or **Child List Field Name**

Set the **Key Field Name** and **Parent Field Name** properties if your report's data has the Id-ParentId related fields.

Set the **Child List Field Name** property if your report's data is recursive. Assign the collection of child objects (records) if they have the same type as the parent objects (records).

- **Indent**

Specify the child level node offset.

- **Keep Together with First Child**

Specify whether to print a parent node together with its first child node on the next page if these nodes do not fit at the end of a page.

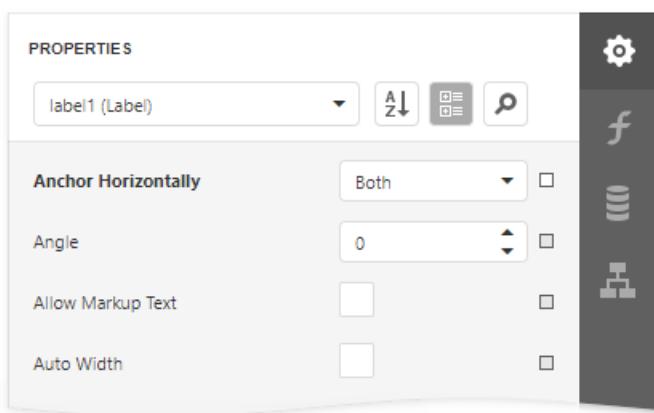
The screenshot shows a report titled "Market Share Report". The main title is "Market Share Report" in large bold letters. Below it is a table with a header row "Sales" and three columns: "Region", "March", and "September". The data rows show sales figures for Western Europe, Austria, Belgium, Denmark, Finland, and France. The table is styled with a dark header and light body rows.

Sales		
Region	March	September
Western Europe	\$30,540.00	\$33,000.00
Austria	\$22,000.00	\$24,580.00
Belgium	\$13,000.00	\$9,640.00
Denmark	\$21,000.00	\$18,100.00
Finland	\$17,000.00	\$17,420.00
France	\$23,020.00	\$27,000.00

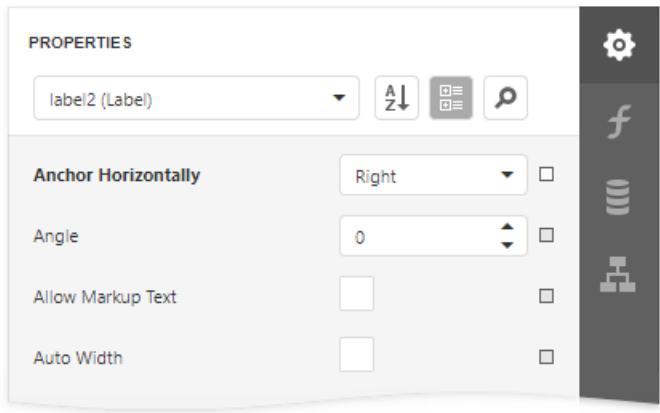
As you can see in the image above, the **Detail** band that contains child rows is printed with the specified indent. However, the row (the sum of the label widths) does not fit the page now.

## 5. Align labels.

- Anchor the first data-bound label to the Detail band's left and right edges. Set the label's **Anchor Horizontally** property to **Both**.



- Anchor the rest of the data-bound labels to the right edge of the Detail band (their container). Set their **Anchor Horizontal** property to **Right**.



# Market Share Report

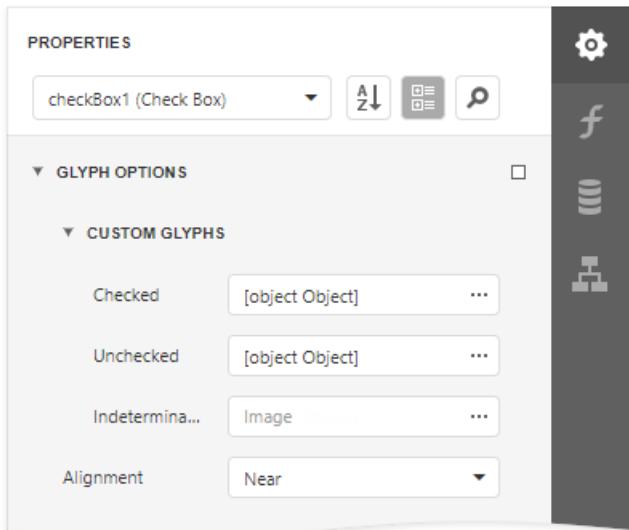
Sales		
Region	March	September
Western Europe	\$30,540.00	\$33,000.00
Austria	\$22,000.00	\$28,000.00
Belgium	\$13,000.00	\$9,640.00
Denmark	\$21,000.00	\$18,100.00
Finland	\$17,000.00	\$17,420.00
France	\$23,020.00	\$27,000.00

6. Add a drill-down control to expand/collapse child rows.

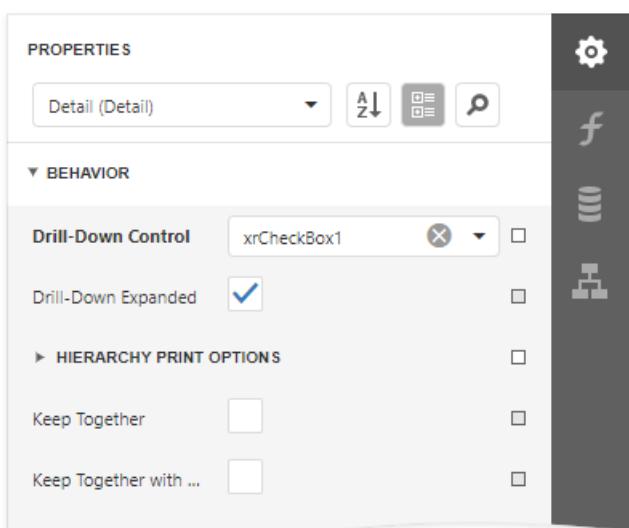
- Add a **Check Box** control to the **Detail** band at the left-most position.

The screenshot shows the SAP Fiori Launchpad design view. It displays a table with three columns: 'Region', 'March', and 'September'. In the first column ('Region'), there is a row containing a check box labeled 'checkbox1' and the text '[Region]'. The table has a dark header bar labeled 'Sales'.

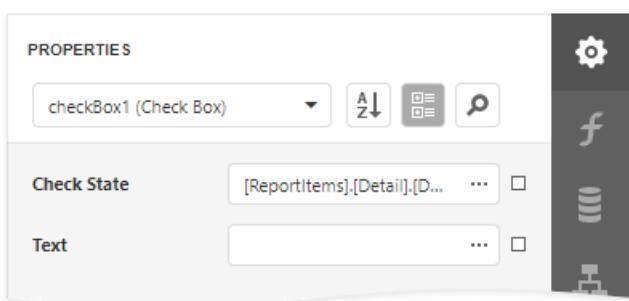
- Set the **Check Box** control's glyph options. Use custom glyphs for the *checked* and *unchecked* checkbox states.



- Set the **Detail** band's **Drill Down Control** property to the added **Check Box** control.



- Set the **Check Box**'s **Check State** property to the following expression: `[ReportItems].[Detail].[DrillDownExpanded]`.



# Market Share Report

Sales		
Region	March	September
> Western Europe	\$30,540.00	\$33,000.00
▼ Eastern Europe	\$22,500.00	\$24,580.00
Belarus	\$7,315.00	\$18,800.00
Bulgaria	\$6,300.00	\$2,821.00
Croatia	\$4,200.00	\$3,890.00
Czech Republic	\$19,500.00	\$15,340.00
Hungary	\$13,495.00	\$13,900.00

## 7. Sort report data.

Use the Detail band's **Sort Fields** property to sort data on each hierarchy level.

The screenshot shows the Oracle Reports Properties panel for a 'Detail (Detail)' band. The 'DATA' section is expanded, revealing the 'SORT FIELDS' configuration. Under 'Sort By:', the field 'Region' is selected. To the right of the 'Sort By:' dropdown are icons for sorting (A↓), filtering (grid), and search (magnifying glass). A vertical toolbar on the right side of the panel contains icons for settings, a funnel, a grid, and a stack.

PROPERTIES

Detail (Detail)

ACTIONS

STYLES

APPEARANCE

BEHAVIOR

DATA

SORT FIELDS

Sort By: Region

Tag

# Market Share Report

Sales		
Region	March	September
▼ Asia	\$20,388.00	\$22,547.00
China	\$20,388.00	\$22,547.00
India	\$4,642.00	\$5,320.00
Japan	\$9,457.00	\$12,859.00
▼ Eastern Europe	\$22,500.00	\$24,580.00
Belarus	\$7,315.00	\$18,800.00
Bulgaria	\$6,300.00	\$2,821.00
Croatia	\$4,200.00	\$3,890.00
Czech Republic	\$19,500.00	\$15,340.00
Hungary	\$13,495.00	\$13,900.00

## 8. Highlight root nodes.

To format rows based on their nesting level, use the **CurrentRowHierarchyLevel** variable in expressions. For example, specify the **Detail** band's appearance properties as listed below:

- Set the **Background Color** property to *iif([DataSource.CurrentRowHierarchyLevel] == 0, Rgb(231,235,244), ?)*
- Set the **Font | Bold** property to *[DataSource.CurrentRowHierarchyLevel] == 0*

**EXPRESSIONS**

Detail (Detail)

Visible

Tag

▼ APPEARANCE

Foreground Color

Background Color iif([DataSource.CurrentRowHierarchyLevel] == 0, Rgb(231,235,244), ?)

Expression Editor

```
1 iif([DataSource.CurrentRowHierarchyLevel] == 0, Rgb(231,235,244), ?)
```

Report Items

- Fields
- Values
- Constants
- Functions

Report

- TopMargin
- ReportHeader
- GroupHeader

OK Cancel

# Market Share Report

Sales		
Region	March	September
► Asia	\$20,388.00	\$22,547.00
▼ Eastern Europe	\$22,500.00	\$24,580.00
Belarus	\$7,315.00	\$18,800.00
Bulgaria	\$6,300.00	\$2,821.00
Croatia	\$4,200.00	\$3,890.00
Czech Republic	\$19,500.00	\$15,340.00
Hungary	\$13,495.00	\$13,900.00

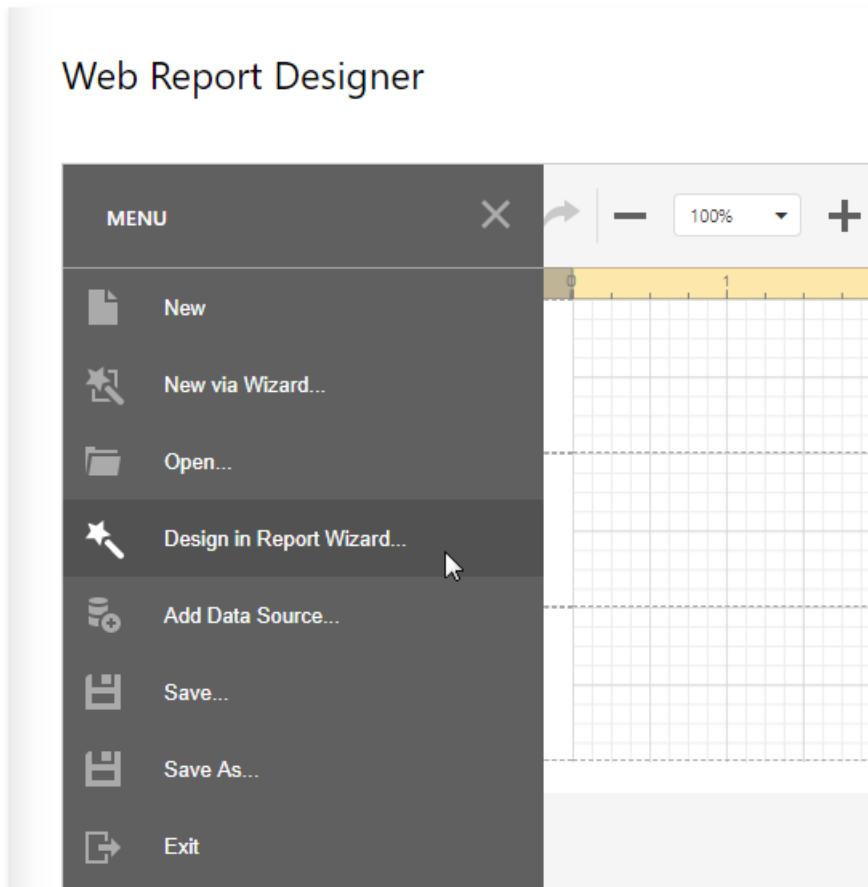
# Create a Vertical Report

This tutorial describes how to use vertical bands to create a report where record fields are arranged vertically and data records are printed horizontally.

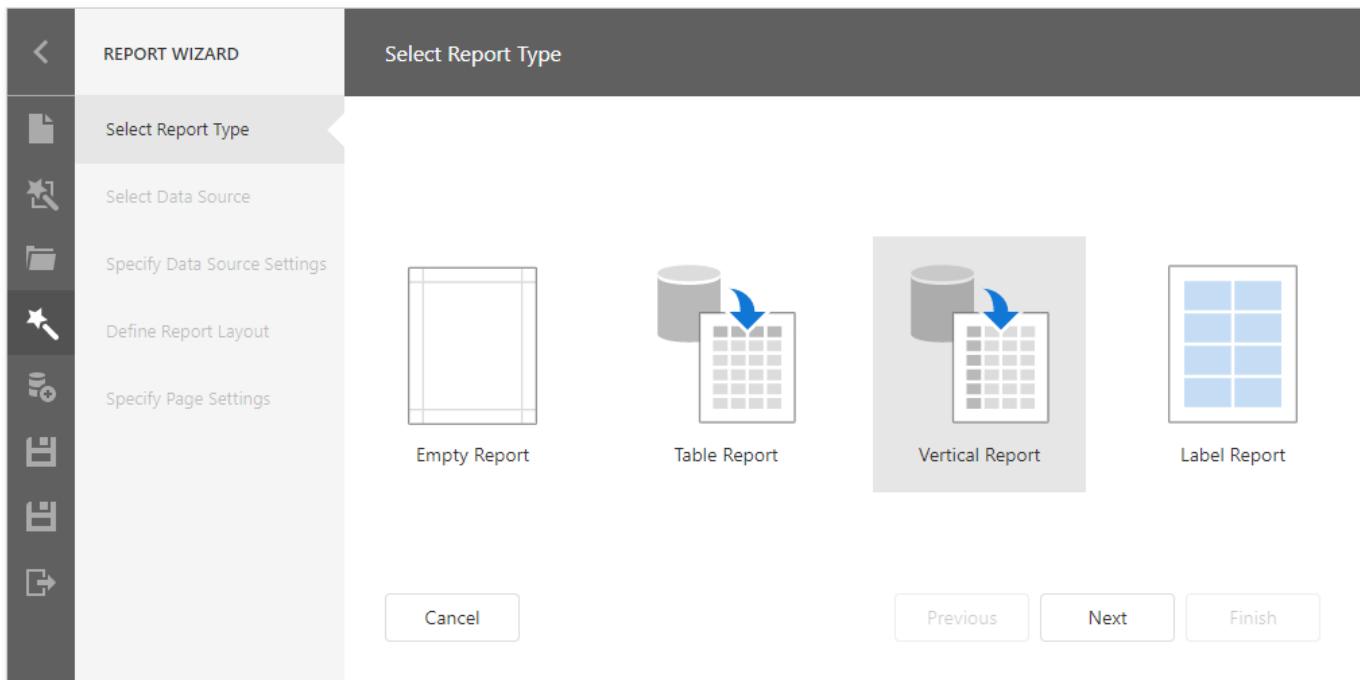
Profit and Loss							
	January - June 2018						
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
<strong>INCOME</strong>							
Construction Income	\$75,035.31	\$81,479.21	\$84,874.68	\$75,634.84	\$80,369.13	\$79,730.35	\$477,123.52
Sales Income	\$27.00	\$770.00	\$950.00	\$979.00	\$31.00	\$111.00	\$2,868.00
<strong>TOTAL INCOME</strong>	<strong>\$75,062.31</strong>	<strong>\$82,249.21</strong>	<strong>\$85,824.68</strong>	<strong>\$76,613.84</strong>	<strong>\$80,400.13</strong>	<strong>\$79,841.35</strong>	<strong>\$479,991.52</strong>
<strong>EXPENSE</strong>							
Automobile	\$710.49	\$830.06	\$656.85	\$512.30	\$420.57	\$848.60	\$3,978.87
Bank Service Charges	\$60.00	\$79.00	\$62.00	\$76.00	\$12.00	\$45.00	\$334.00
<strong>TOTAL EXPENSE</strong>	<strong>\$21,175.49</strong>	<strong>\$14,780.06</strong>	<strong>\$17,682.85</strong>	<strong>\$14,031.30</strong>	<strong>\$20,552.57</strong>	<strong>\$17,551.60</strong>	<strong>\$105,773.87</strong>
<strong>NET INCOME</strong>	<strong>\$42,535.03</strong>	<strong>\$52,482.75</strong>	<strong>\$53,293.59</strong>	<strong>\$51,554.52</strong>	<strong>\$43,305.18</strong>	<strong>\$52,811.17</strong>	<strong>\$295,982.24</strong>

## Design a Report in Report Wizard

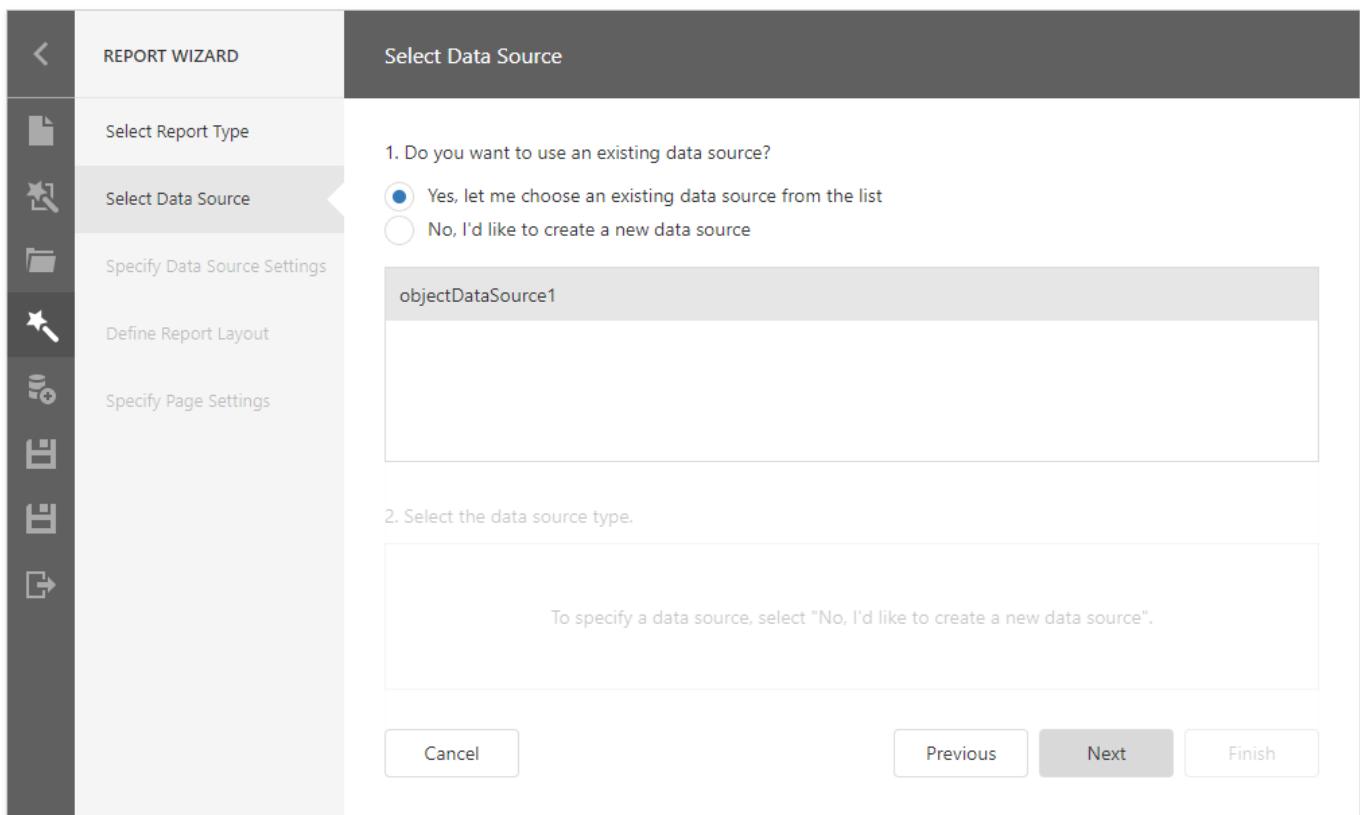
1. [Create a new report or open an existing one.](#)
2. Open the Web Report Designer's menu. Select **Design in Report Wizard**.



3. In the invoked Report Wizard, select **Vertical Report** and click **Next**.



4. Select a data source for the report.



5. Select queries and data fields to include in the report. Add group fields and summary fields.

REPORT WIZARD

## Define Report Layout

1. Select queries for the report and its detail reports.

objectDataSource1

2. Select data fields to display in the report.

Products

Month  
 ConstructionIncome  
 SalesIncome  
 CostOfGoodsSold  
 JobExpenses

3. Add group fields.

objectDataSource1

[Add Group](#)

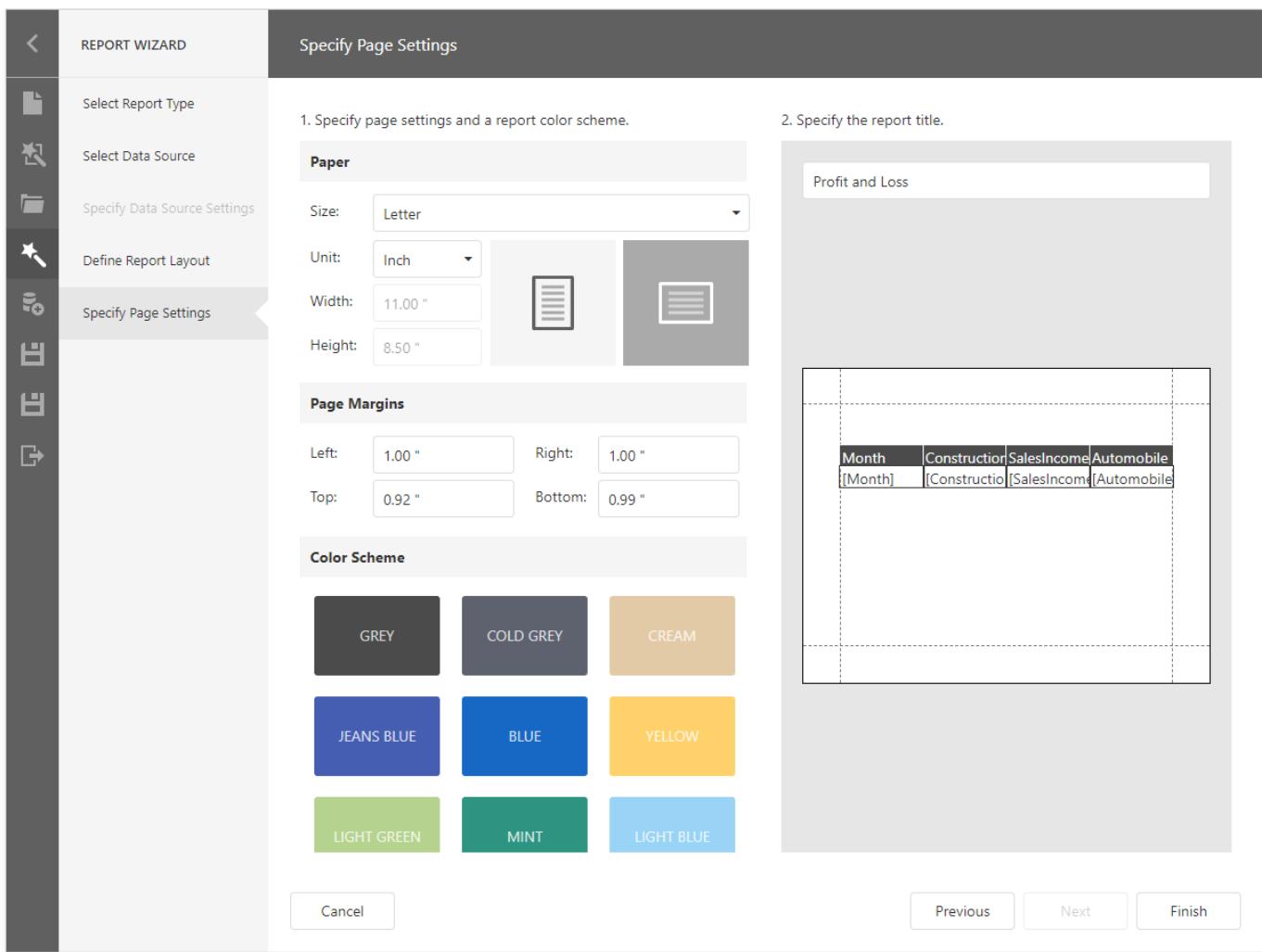
4. Add summary fields.

Field	Summary Functions
objectData... <input type="button" value="X"/>	Sum <input type="button" value="X"/>
objectData... <input type="button" value="X"/>	Sum <input type="button" value="X"/>
objectData... <input type="button" value="X"/>	Sum <input type="button" value="X"/>
objectData... <input type="button" value="X"/>	Sum <input type="button" value="X"/>
Select...	Select... <input type="button" value="X"/>

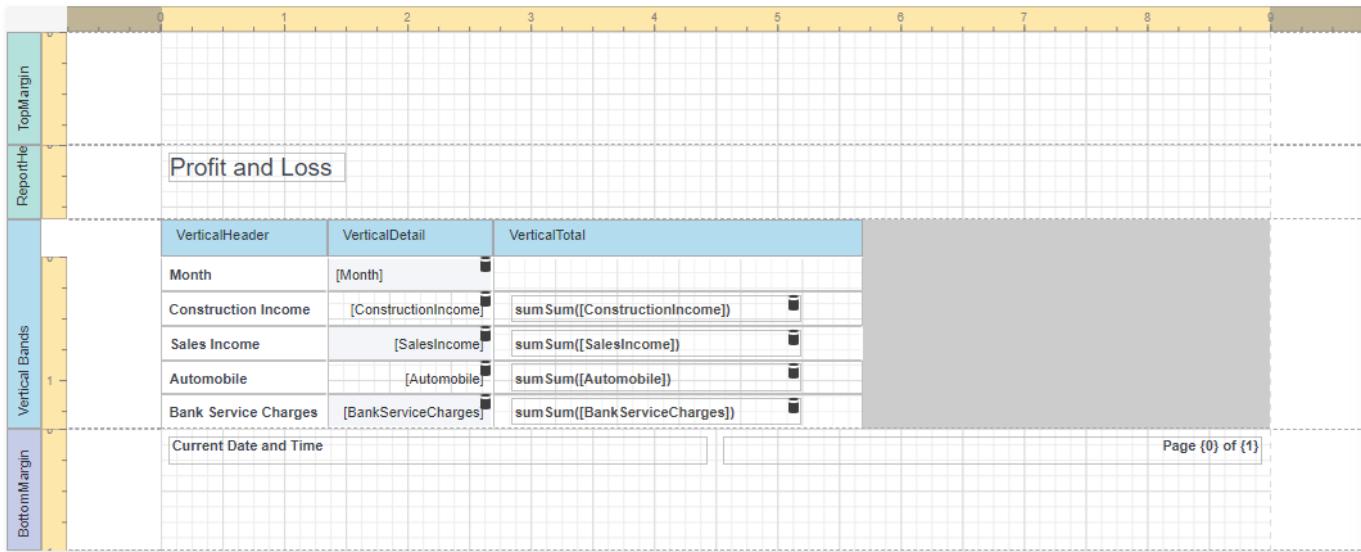
Ignore null values

Cancel Previous Next Finish

6. Specify page settings and set the report's title.



7. Click **Finish** to open the generated report in the Report Designer.



The wizard adds report controls to the following **bands**:

- **Vertical Header band**

Contains a table with a single column that displays data field headers.

- **Vertical Details band**

Contains a table with a single column that is printed as many times as there are records in the report's data source.

- **Vertical Total band**

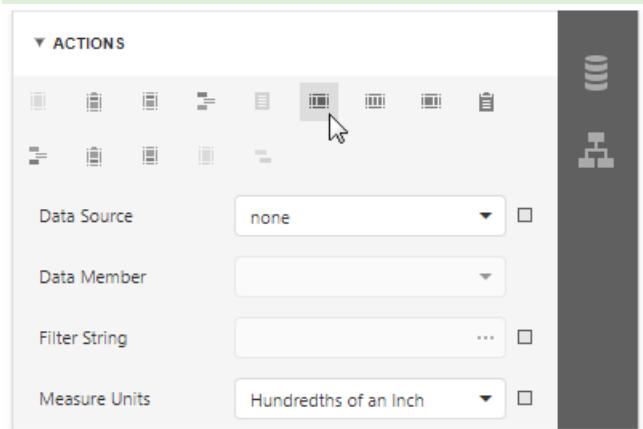
Contains a table with a single column that has as many labels in cells as there are summary functions you specified for each field in the Report Wizard.

Switch to the Preview mode to see the result.

Profit and Loss							
January - June 2018							
	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
INCOME							
Construction Income	\$75,036.31	\$81,479.21	\$84,874.68	\$75,634.84	\$80,369.13	\$79,730.35	\$477,123.52
Sales Income	\$27.00	\$770.00	\$950.00	\$979.00	\$31.00	\$111.00	\$2,868.00
TOTAL INCOME	\$75,062.31	\$82,249.21	\$85,824.68	\$76,613.84	\$80,400.13	\$79,841.35	\$479,991.52
EXPENSE							
Automobile	\$710.49	\$830.06	\$656.85	\$512.30	\$420.57	\$848.60	\$3,978.87
Bank Service Charges	\$60.00	\$79.00	\$62.00	\$76.00	\$12.00	\$45.00	\$334.00
TOTAL EXPENSE	\$21,175.49	\$14,780.06	\$17,682.85	\$14,031.30	\$20,552.57	\$17,551.60	\$105,773.87
NET INCOME	\$42,535.03	\$52,482.75	\$53,293.59	\$51,554.52	\$43,305.18	\$52,811.17	\$295,982.24

#### Tip

You can create a vertical report without using the Report Wizard. Click **Insert Vertical Header Band** in the report's Actions group.

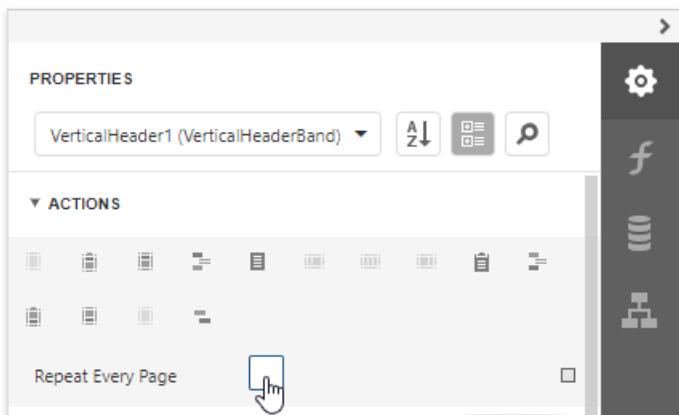


Refer to the [Introduction to Banded Reports](#) topic for more information.

## Set Vertical Table Options

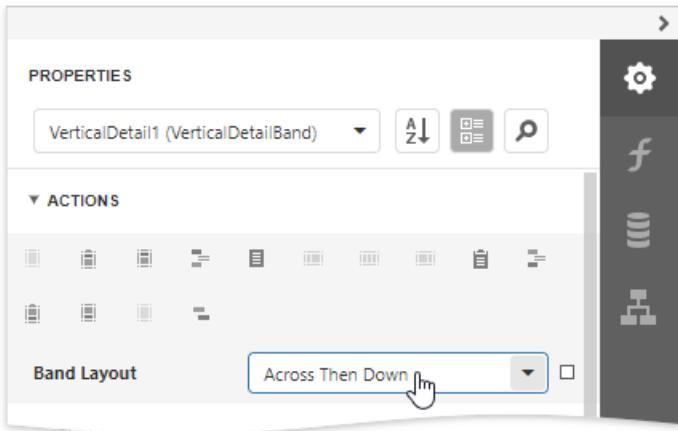
You can set the following options to modify the vertical table:

- Set the Vertical Header band's **Repeat Every Page** property to false to display field headers once - on the first report page.

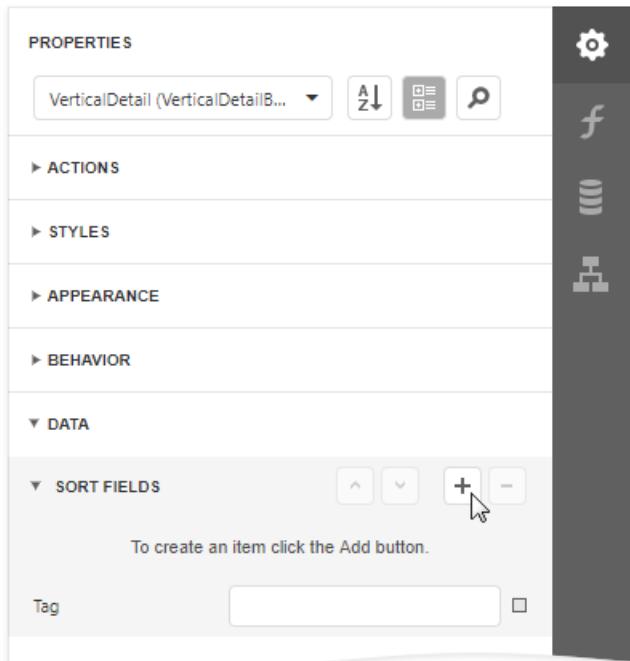


- Set the Vertical Detail band's **Band Layout** property to **Across Then Down** to print the data records that do not fit a page

on the same page, otherwise, they are printed on the next page.

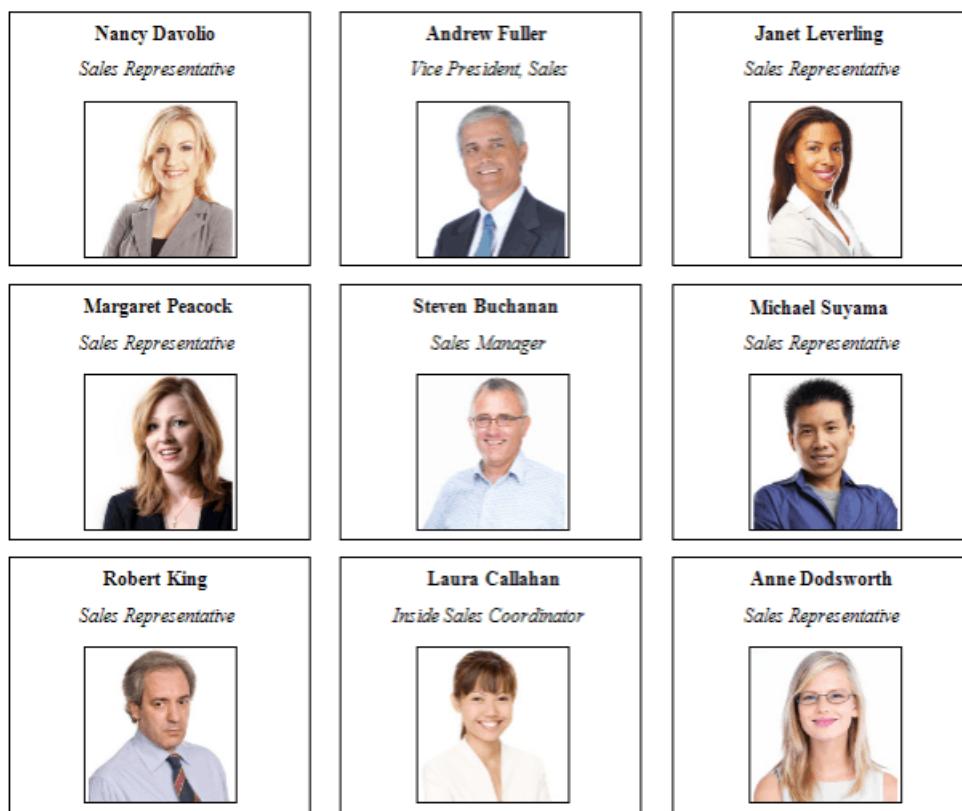


- Add a field to the **Sort Fields** group to sort the report's data.

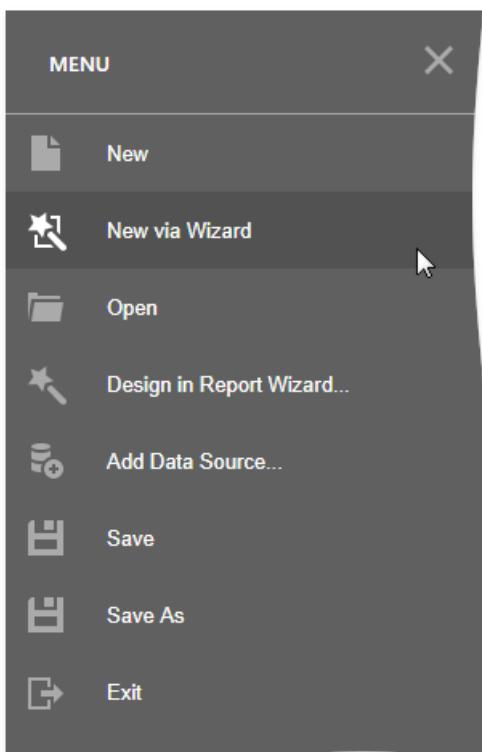


# Create Labels and Badges

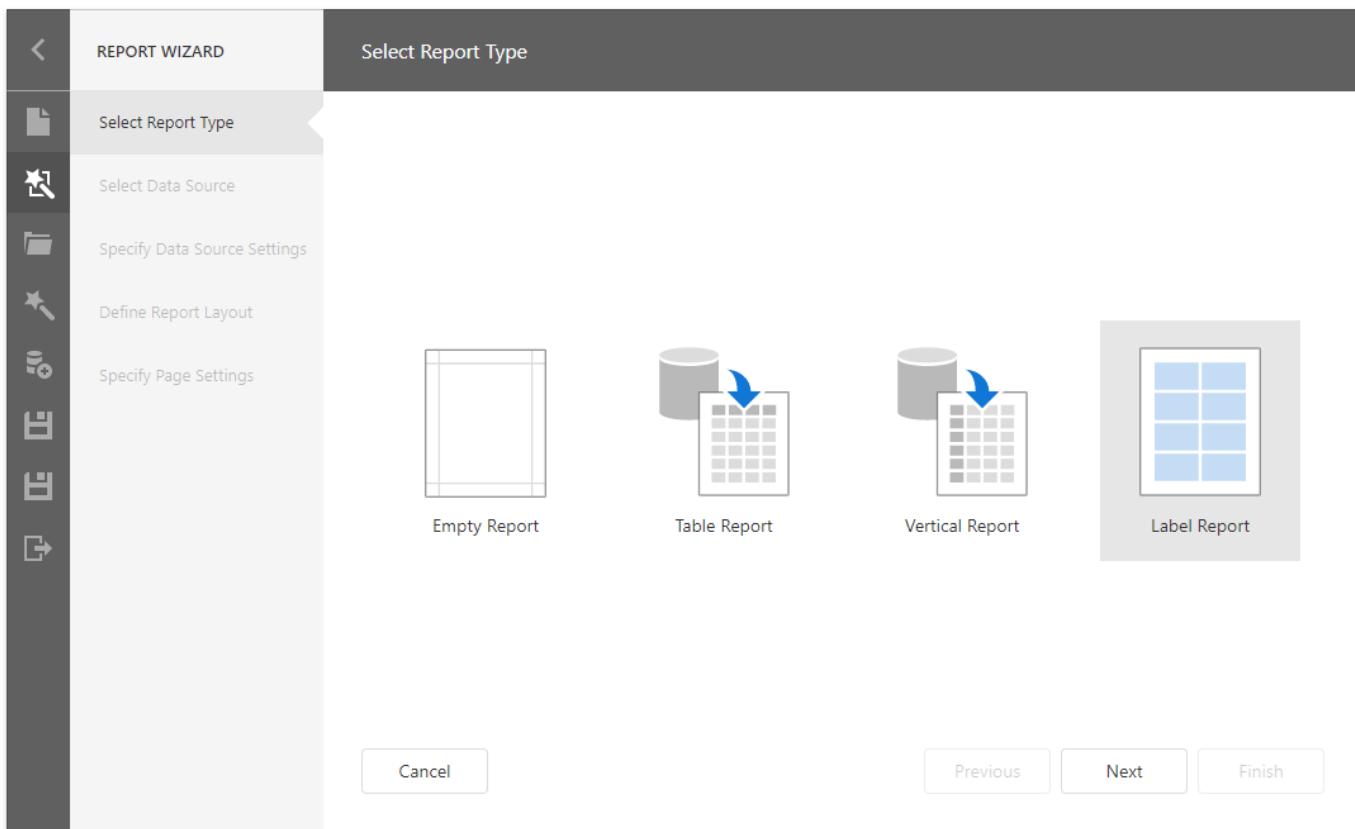
This tutorial describes the steps to create a label report that contains employee badges.



1. [Create a new report](#) and [bind it](#) to a required data source (for instance, to a table that contains information about employees).
2. Open the designer [menu](#) and click **New via Wizard**.



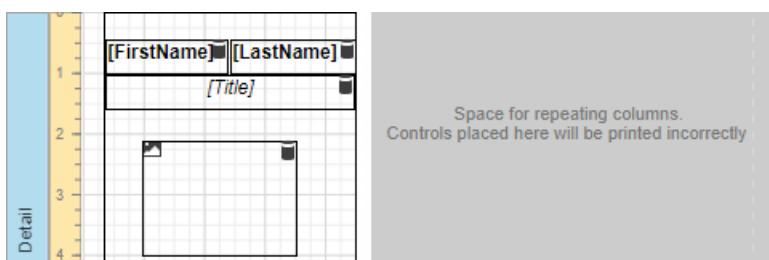
3. The wizard guides you through the process of creating a label report. Refer to [Label Report](#) for detailed instructions on the wizard's steps.



4. After performing the above steps you will see that the report's Detail band is now divided into three differently colored 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.



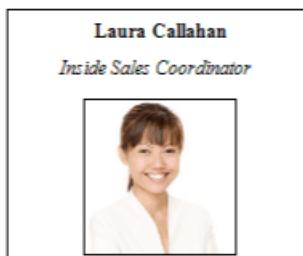
5. Drop the required fields from the [Field List](#) onto the available Detail band's area and adjust the layout.



If required, you can apply [mail merge](#) to combine several fields within the same [Label](#) control.

For the [Picture Box](#) control, you can set its **Sizing** property to **Zoom Image**.

Switch to [Print Preview](#) to see the resulting report.



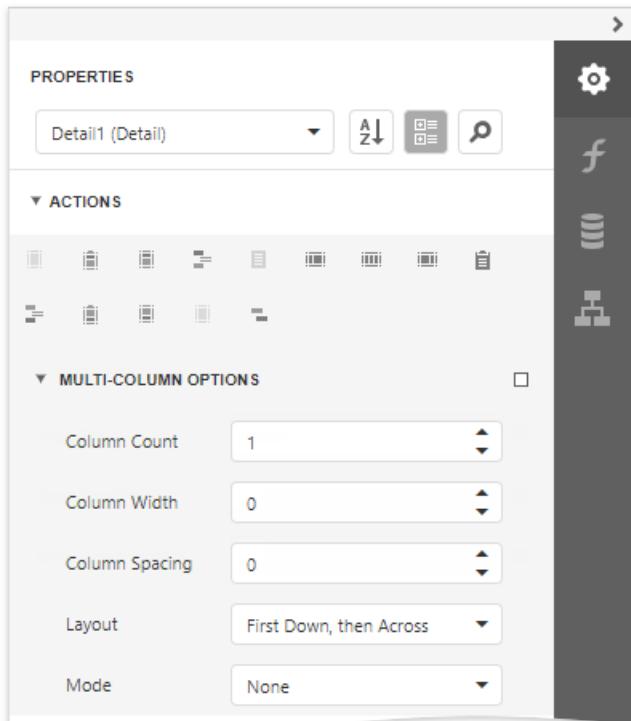
# Create a Multi-Column Report

This document describes how to arrange report data in multiple columns, which can be used to create mailing labels, business cards or multi-column directories.

Floor 1	Floor 2	Floor 3
Office 101 Dr. Andrew Fuller Vice President, Sales	Office 201 Ms. Nancy Davolio Sales Representative	Office 301 Mr. Antonio Moreno Sales Representative
Office 102 Ms. Anne Dodsworth Sales Representative	Office 202 Mr. Steven Buchanan Sales Manager	Office 302 Mr. Thomas Hardy Sales Representative
Office 103 Mr. Michael Suyama Sales Representative	Office 203 Ms. Laura Callahan Sales Coordinator	Office 303 Ms. Christina Berglund Sales Manager
Office 104 Ms. Janet Leverling Sales Representative		

## Settings

To access the multi-column settings of a report's Detail band, switch to the **Properties** panel and expand the **Actions** or the **Behavior** category.



## Mode

Enables you to select one of the following modes:

- **None**

Disables the multi-column layout.

- **Use Column Count**

Makes the report display a specific number of columns based on the **Column Count** value. When this property is set to **1**, the report looks as though its multi-column layout is disabled.

- **Use Column Width**

Makes the report columns have a specific width based on the **Column Width** value. With this setting, the report displays as many columns as it is possible according to the specified column width, column spacing and report page size.

## Column Spacing

Specifies the distance between adjacent columns. This value is measured in [report units](#).

## Layout

Specifies the preferred direction for arranging report data within columns.

- **First Across, then Down**

The report data is arranged horizontally and is wrapped to the next row on reaching the right page margin.

Office 101 Dr. Andrew Fuller Vice President, Sales	Office 102 Ms. Anne Dodsworth Sales Representative	Office 103 Mr. Michael Suyama Sales Representative
Office 104 Ms. Janet Leverling Sales Representative	Office 201 Ms. Nancy Davolio Sales Representative	Office 202 Mr. Steven Buchanan Sales Manager
Office 203 Ms. Laura Callahan Sales Coordinator	Office 301 Mr. Antonio Moreno Sales Representative	Office 302 Mr. Thomas Hardy Sales Representative
Office 303 Ms. Christina Berglund Sales Manager		

When the report data is grouped, the multi-column layout is applied to each group individually.

## Floor 1

Office 101
Dr. Andrew Fuller
Vice President, Sales

Office 102
Ms. Anne Dodsworth
Sales Representative

Office 103
Mr. Michael Suyama
Sales Representative

Office 104
Ms. Janet Leverling
Sales Representative

## Floor 2

Office 201
Ms. Nancy Davolio
Sales Representative

Office 202
Mr. Steven Buchanan
Sales Manager

Office 203
Ms. Laura Callahan
Sales Coordinator

- **First Down, then Across**

The report data is arranged vertically and is wrapped to the next column on reaching the bottom page margin.

Office 101
Dr. Andrew Fuller
Vice President, Sales

Office 201
Ms. Nancy Davolio
Sales Representative

Office 302
Mr. Thomas Hardy
Sales Representative

Office 102
Ms. Anne Dodsworth
Sales Representative

Office 202
Mr. Steven Buchanan
Sales Manager

Office 303
Ms. Christina Berglund
Sales Manager

Office 103
Mr. Michael Suyama
Sales Representative

Office 203
Ms. Laura Callahan
Sales Coordinator

Office 104
Ms. Janet Leverling
Sales Representative

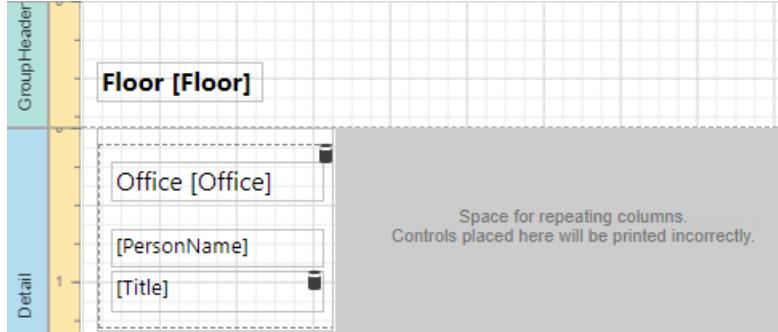
Office 301
Mr. Antonio Moreno
Sales Representative

When the report data is grouped, you can make each group start on a new column by setting the **Page Break** property of the Group Footer to **After the Band**.

Floor 1	Floor 2	Floor 3
Office 101 Dr. Andrew Fuller Vice President, Sales	Office 201 Ms. Nancy Davolio Sales Representative	Office 301 Mr. Antonio Moreno Sales Representative
Office 102 Ms. Anne Dodsworth Sales Representative	Office 202 Mr. Steven Buchanan Sales Manager	Office 302 Mr. Thomas Hardy Sales Representative
Office 103 Mr. Michael Suyama Sales Representative	Office 203 Ms. Laura Callahan Sales Coordinator	Office 303 Ms. Christina Berglund Sales Manager
Office 104 Ms. Janet Leverling Sales Representative		

## How It Works

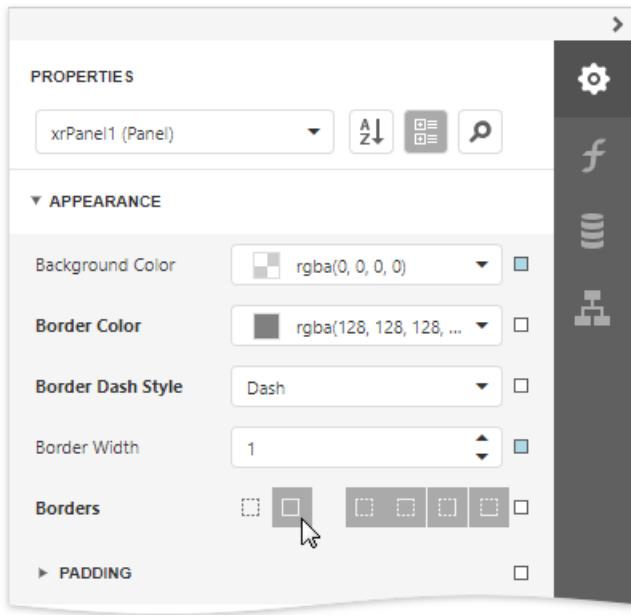
The following image illustrates a report designer with a multi-column layout applied to the report:



In multi-column mode, the report's design surface is limited to the area defined by the column width. This is the only area intended to contain report controls.

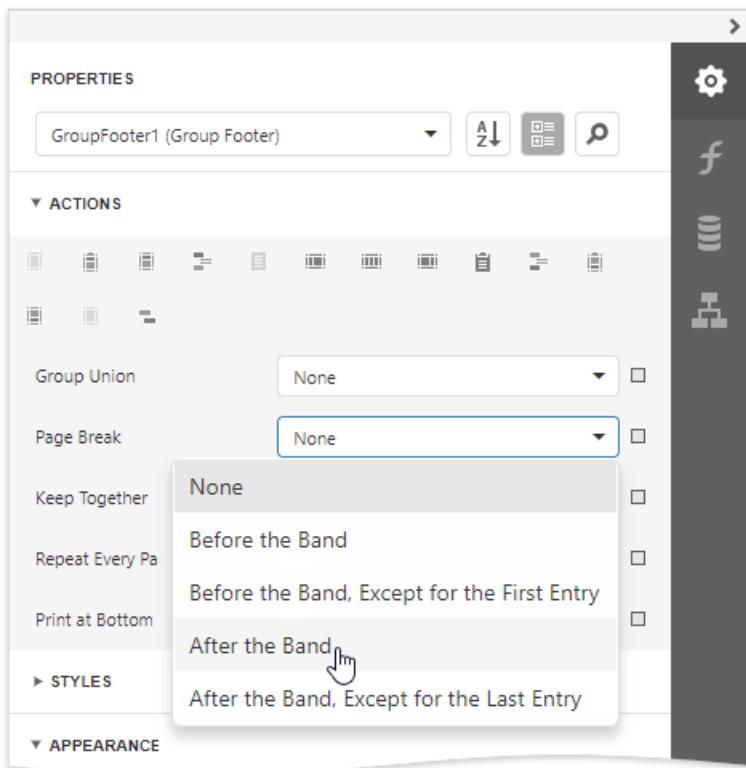
The rest of this surface defines the space on a page remaining for printing columns and column spacing area.

In the above image, the report data in the Detail band is contained within a **Panel** that provides borders around the enclosed content.



You can also specify a custom background color for the Panel. To learn how to change this color dynamically (based on the report's underlying data), see [Conditionally Change a Control's Appearance](#).

When the report data is **grouped** (as in the above image), and the **First Down, then Across** multi-column layout is used, you can make each group start on a new column. To do this, set the **Page Break** property of the Group Footer to **After the Band** or **After the Band, Except for the Last Entry**. When there is no data to display in the Group Footer, set the band height to zero.



# Create an Interactive E-Form

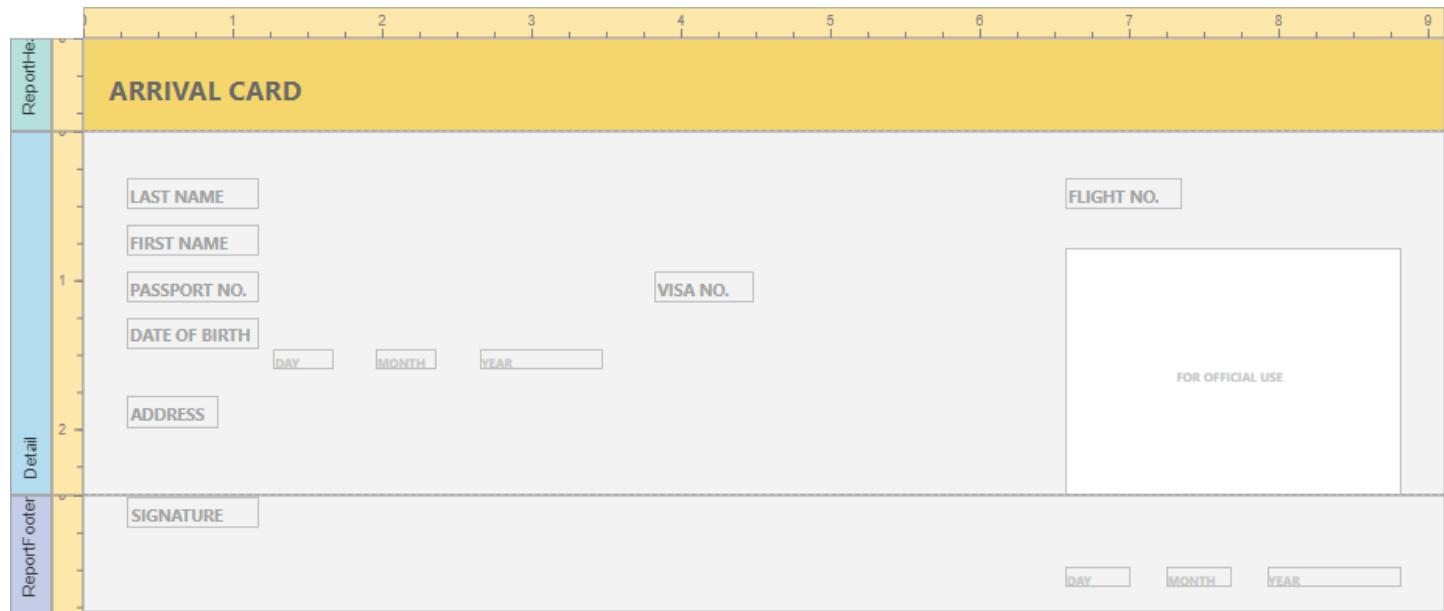
This tutorial describes how to create an electronic form and make it fillable directly in Print Preview before printing or exporting it.

The screenshot shows a digital form titled "ARRIVAL CARD". It contains fields for personal information: LAST NAME (THOMAS), FIRST NAME (MARK), PASSPORT NO. (7336093410), VISA NO. (10924155), DATE OF BIRTH (19021975), and ADDRESS (480 LINDA RD., YUMA, AZ, USA). There are checkboxes for MALE (checked) and FEMALE. A signature field contains a handwritten signature, with a small edit icon and a trash icon nearby. To the right, there's a flight number field (S01207) and a placeholder for official use. At the bottom right, there's a date field (1102018) with month and year components.

To get started with this tutorial, [create a new report](#) or [open an existing one](#).

## Add Form Fields

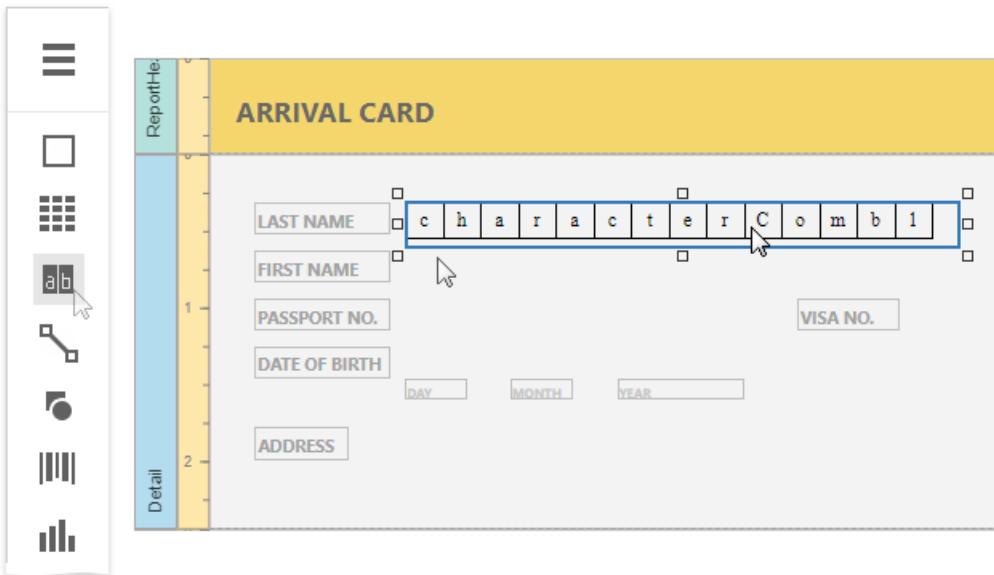
Add the **Label** controls to the report and arrange them according to the form's template. Set the labels' **Text** property to the form's field names.



## Add Fillable Cells

Use the **Character Comb** control for the form's text fields. This control displays letters in individual cells and allows end users to fill these cells in Print Preview.

1. Drop the **Character Comb** item from the Toolbox onto the report.



2. Select all the added controls, clear their text, switch to the **Properties** panel and expand the **Layout** category. Adjust cell settings, such as **Cell Width**, **Cell Height**, **Cell Horizontal Spacing**, etc.

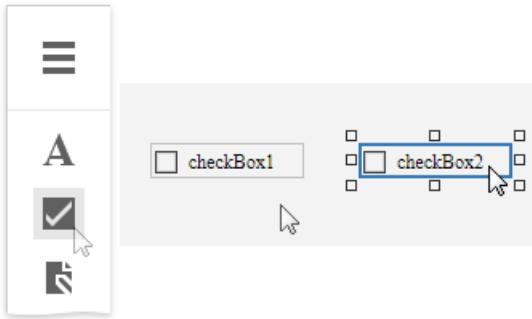
The screenshot shows the report designer interface with the 'ARRIVAL CARD' form. The 'Properties' panel is open on the right, specifically the 'Layout' category. The 'Cell Height' is set to 21, 'Cell Horizontal Spacing' to 2, and 'Cell Width' to 21. The 'Cell Size Mode' is set to 'Custom'. The 'VISA NO.' field and its associated 'DAY', 'MONTH', and 'YEAR' fields are selected, indicating they are being edited or have been edited.

3. Expand the **Behavior** category, select the **Edit Options** section and set the controls' **Enabled** property to **Yes** to enable content editing in Print Preview.

The screenshot shows the 'Properties' panel with the 'BEHAVIOR' category expanded. Under the 'EDIT OPTIONS' section, the 'Enabled' dropdown is set to 'Yes'. Other options visible include 'ID' and 'Read Only'.

## Add Check Box Editors

1. Add two **Check Box** controls to the report for selecting a gender (*Male/Female* fields). Then, change their text and appearance settings.

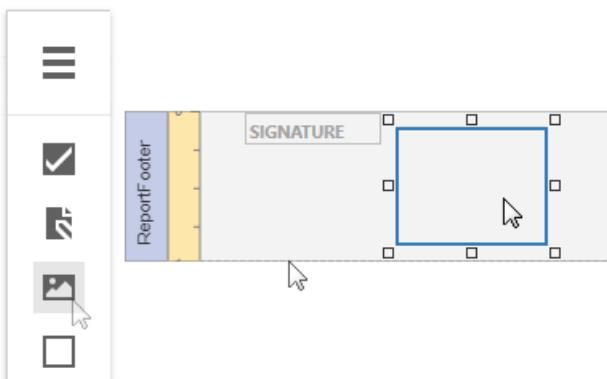


2. To enable switching check box states in Print Preview, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes** as you did before. To allow selecting only one option at a time, combine these check boxes into a logical group by specifying the same value for the **Group ID** property.

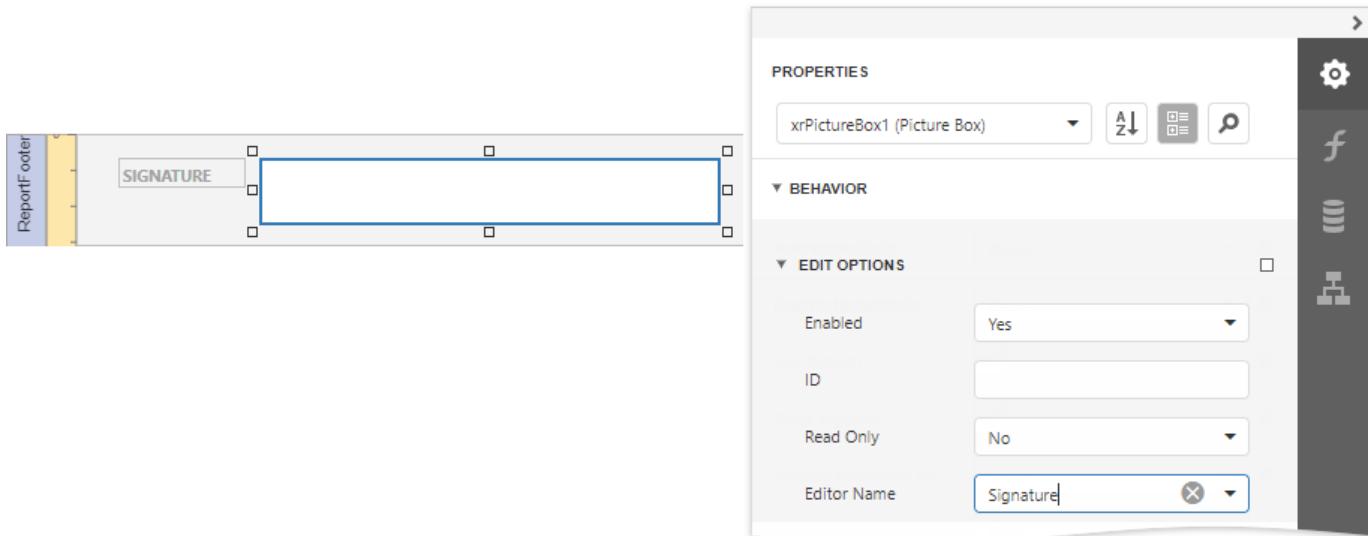
**PROPERTIES**  
(multiselect)     
▼ BEHAVIOR  
▼ EDIT OPTIONS  
Enabled: Yes  
ID:  
Read Only: No  
Group ID: Group1

## Add the Signature Editor

1. Add the **Picture Box** control for the form's *Signature* field.



2. Switch to the **Properties** panel and adjust control's appearance settings. Expand the **Behavior** category and select the **Edit Options** section. Set the **Enabled** property to **Yes** and the **Editor Name** property to *signature* to enable drawing in Print Preview.



## Get the Result

The e-form report is now ready. Switch to [Print Preview](#) to see the result.

To highlight all editing fields available in the form, click the **Highlight Editing Fields** button on the Print Preview toolbar. Clicking a field invokes the appropriate editor.

**ARRIVAL CARD**

LAST NAME: T H O M A S

FIRST NAME: M A R K

PASSPORT NO.: 7 3 3 6 0 9 3 4 1 0      VISA NO.: 1 0 9 2 4 1 5 5

DATE OF BIRTH: 1 9 0 2 1 9 7 5       MALE       FEMALE  
DAY      MONTH      YEAR

ADDRESS: 4 8 0 L I N D A R D .  
Y U M A , A Z , U S A

FLIGHT NO.: S 0 1 2 0 7

SIGNATURE:

FOR OFFICIAL USE

1 10 2018  
MONTH YEAR

# Create a Cross-Tab Report

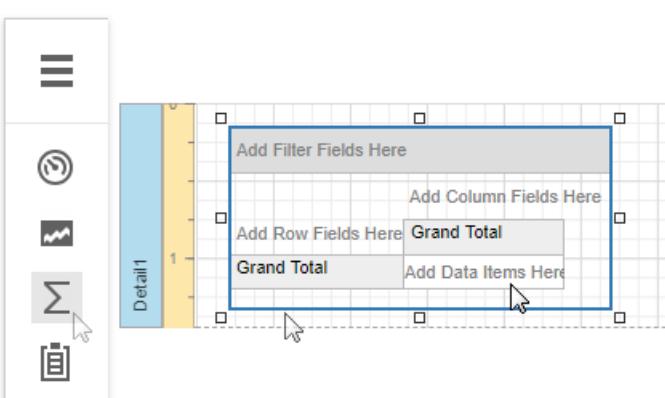
A cross-tab report displays complex multi-dimensional data, such as summary statistics, surveys, and market research information. This report uses a Pivot Grid control that calculates automatic summaries and grand totals across grouped rows and columns.

The screenshot shows a Microsoft Access report with two main sections: 'UK' and 'USA'. Each section contains a Pivot Grid control displaying sales data by category and product. The 'UK' section has a total row for 'Beverages' and a 'Beverages Total' row. The 'USA' section also has a 'Beverages Total' row. The data includes various products like Chai, Chang, and Sasquatch Ale, along with their respective sales figures and salespeople.

		Country	Sales Person				
		UK					
Category Name	Product Name	Anne Dodsworth	Michael Suyama	Robert King	Steven Buchanan	UK Total	
Beverages	Chai	\$544.50	\$1,551.60	\$535.50	\$936.00	\$3,567.60	
	Chang	\$494.00	\$1,805.00	\$1,510.12	\$817.00	\$4,626.12	
	Chartreuse verte	\$180.00	\$2,389.50	\$43.20	\$1,526.40	\$4,139.10	
	Côte de Blaye	\$14,624.25		\$16,695.36	\$6,324.00	\$37,643.61	
	Guaraná Fantástica	\$276.30	\$525.60	\$393.75	\$315.22	\$1,510.87	
	Ipoh Coffee			\$1,690.50		\$1,690.50	
	Lakkalikööri	\$977.58	\$751.50	\$489.60	\$720.00	\$2,938.68	
	Laughing Lumberjack Lager			\$310.80		\$310.80	
	Outback Lager	\$744.00	\$540.00	\$1,290.00		\$2,574.00	
	Rhönbräu Klosterbier	\$833.12	\$948.60	\$223.20	\$201.50	\$2,206.42	
	Sasquatch Ale	\$112.00	\$420.00	\$3,442.60	\$106.40	\$4,081.00	
Steeleye Stout	\$856.80	\$518.40	\$1,339.20	\$54.00	\$2,768.40		
Beverages Total		\$19,642.55	\$9,450.20	\$27,963.83	\$11,000.52	\$68,057.10	
USA							
Category Name	Product Name	Andrew Fuller	Janet Leverling	Laura Callahan	Margaret Peacock		
Beverages	Chai	\$1,512.00	\$1,857.60	\$1,072.80	\$3,787.20		
	Chang	\$1,059.25	\$1,429.75	\$1,197.00	\$4,756.84		
	Chartreuse verte	\$1,368.00	\$1,789.20	\$1,306.80	\$1,794.60		
	Côte de Blaye	\$25,190.60	\$25,559.50			\$29,432.95	
	Guaraná Fantástica	\$497.70	\$654.75	\$1,002.15		\$44.10	
	Ipoh Coffee	\$3,735.20	\$6,486.00	\$2,787.60		\$2,139.00	
	Lakkalikööri	\$1,125.00	\$3,033.36	\$3,483.00		\$1,382.40	
	Laughing Lumberjack Lager	\$896.00	\$210.00	\$280.00		\$700.00	
	Outback Lager	\$1,350.00	\$1,158.90	\$1,389.00		\$2,880.75	
	Rhönbräu Klosterbier	\$635.50	\$1,215.04	\$1,292.70		\$1,220.47	
	Sasquatch Ale	\$854.00	\$838.60	\$224.00		\$352.80	
Steeleye Stout	\$2,025.00	\$524.70	\$3,862.80		\$1,817.10		
Beverages Total		\$40,248.25	\$44,757.40	\$17,897.85		\$50,308.21	
Condiments	Aniseed Syrup						

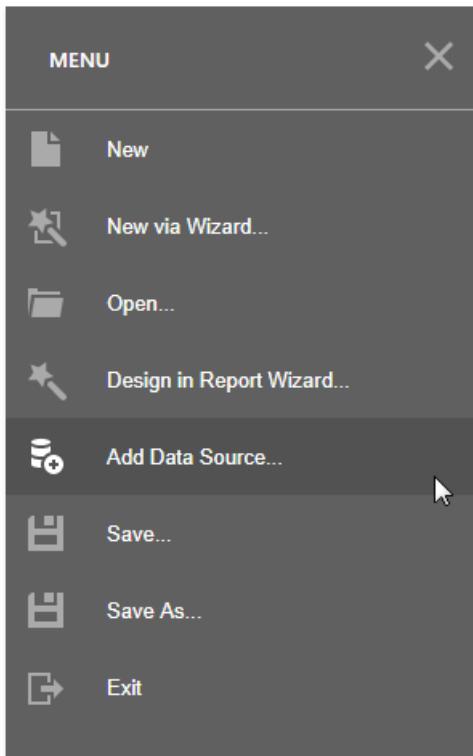
## Add a Pivot Grid and Bind It to Data

1. Create a new report or open an existing one.
2. Drop the **Pivot Grid** control from the **Toolbox** onto the **Detail** band.



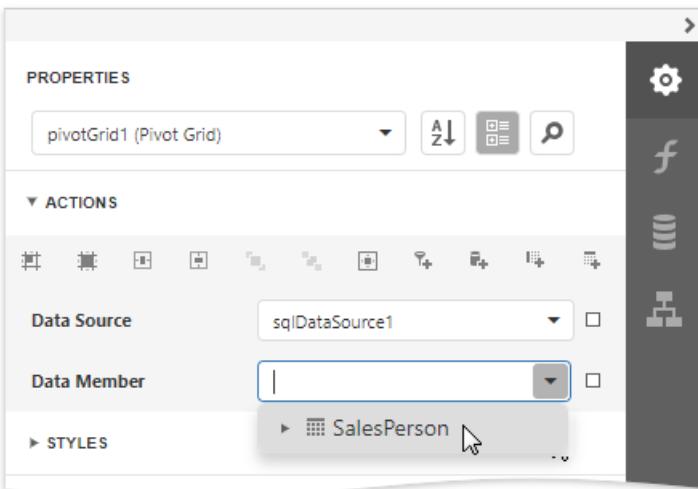
You cannot place a Pivot Grid in another report control (for example, [Table Cell](#) or [Panel](#)) because its width cannot be determined at design time.

3. Invoke the designer [menu](#) and click **Add Data Source...**



Navigate through the invoked [Data Source Wizard](#)'s pages to set up the data source. See the [Bind to Data](#) section for more information.

4. After the data source is created, you can specify the Pivot Grid's **Data Source** and **Data Member** properties. Expand the **Actions** category and to bind the Pivot Grid to data.



#### **Note**

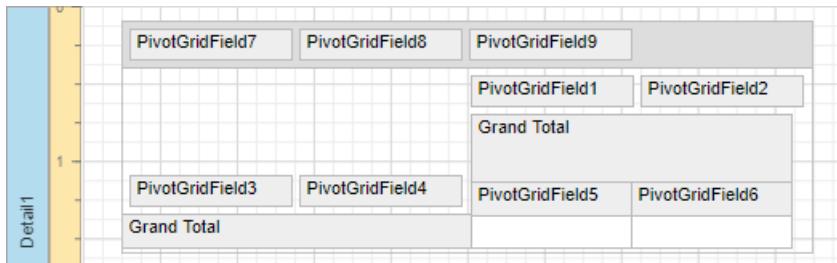
Ensure that a report's **Data Source** property is not set if you place the Pivot Grid in the Detail band. Otherwise, the Pivot Grid data is printed as many times as there are rows in the report data source.

## Define the Pivot Grid's Content

1. To add a field to the particular grid area, expand the **Actions** category and click one of the following buttons.

ICON	DESCRIPTION
	Adds a field to the <b>Filter Header</b> area. This field is available for further customizations.
	Adds a field to the <b>Data Header</b> area. The summaries will be calculated for all the cells, each cell is identified by a specific column and row.
	Adds a field to the <b>Column Header</b> area. This field's values will represent column headers.
	Adds a field to the <b>Row Header</b> area. This field's values will represent row headers.

Use these buttons to define the Pivot Grid's layout.



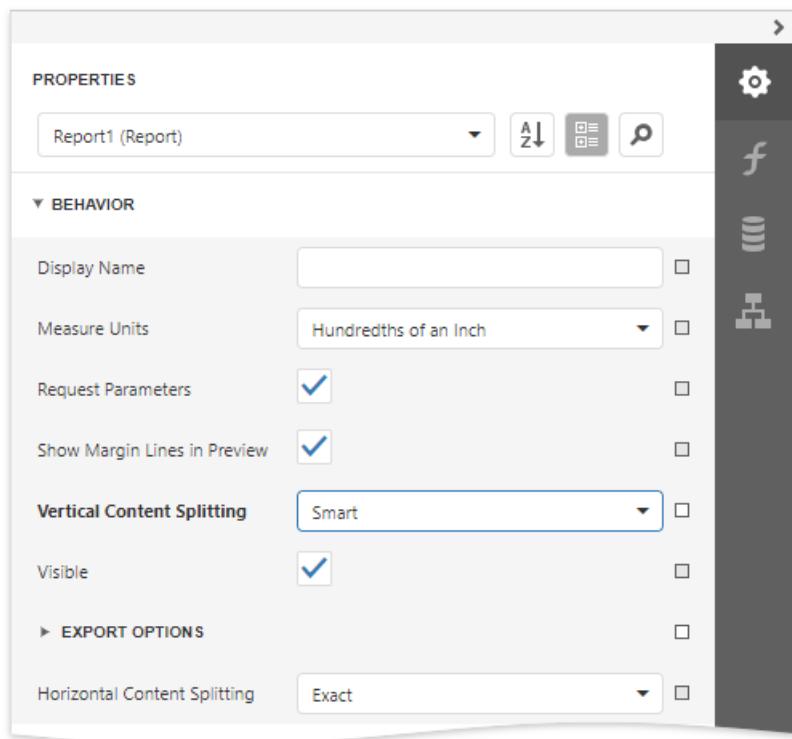
- To adjust a Pivot Grid field, select the required grid field on the design surface, switch to the **Properties panel** and expand the **ACTIONS** category. Specify the **Data Column Name** property to bind a grid field to a data source field.

Field	Type	Properties
FirstName	Text	
LastName	Text	
UnitPrice	Text	
Country	Text	
Sales Person	Text	Area: Column Area, Area Index: 1, Data Column Name: FullName
CategoryName	Text	
ProductName	Text	
Quantity	Text	
ExtendedPrice	Text	
Grand Total	Text	

You can also specify the field position, using the **Area** property or change the order of fields within their area, specifying the **Area Index** property. If required, it is possible to customize many other properties for the Pivot Grid and its fields.

## Adjust the Pivot Grid's Layout

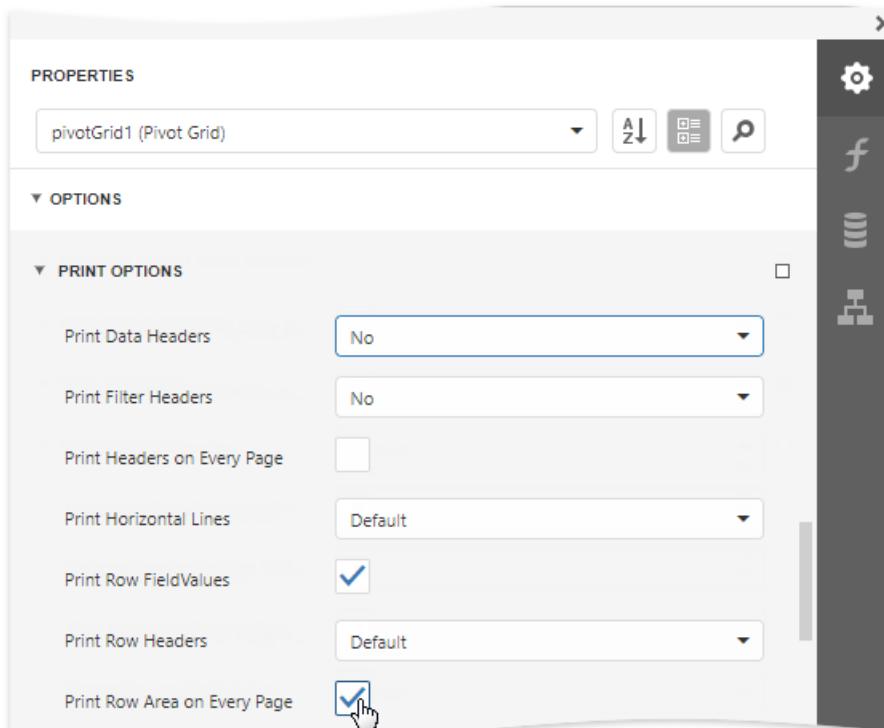
Set the report's **Vertical Content Splitting** property to **Smart** to split the Pivot Grid along the column borders if it does not fit the report's page in Print Preview.



## Specify the Pivot Grid's Print Options

Use the **Options** category's **Print Options** section to specify print options and define which Pivot Grid elements are printed.

- Set the **Print Data Headers** property to **No** to prevent data fields' headers from being printed.
- Enable the **Print Row Area On Every Page** property to repeat row headers on each document page when the Pivot Grid's layout is divided horizontally across several pages.



Switch to [Print Preview](#) to see the resulting report.

# Configure Design Settings

The documents in this section describe how to specify a report's various design settings:

- [Change a Report's Measurement Units](#)

Learn how to switch your reports between using the imperial or metric system for specifying the size and location of report elements, or use pixels as a measurement.

- [Change a Report's Page Settings](#)

Learn how to specify the settings of the default printer or page settings that affect the layout of the report's design surface.

- [Right-To-Left Support](#)

Learn how to mirror your reports' layout for audiences using a right-to-left writing system.

# Change a Report's Measurement Units

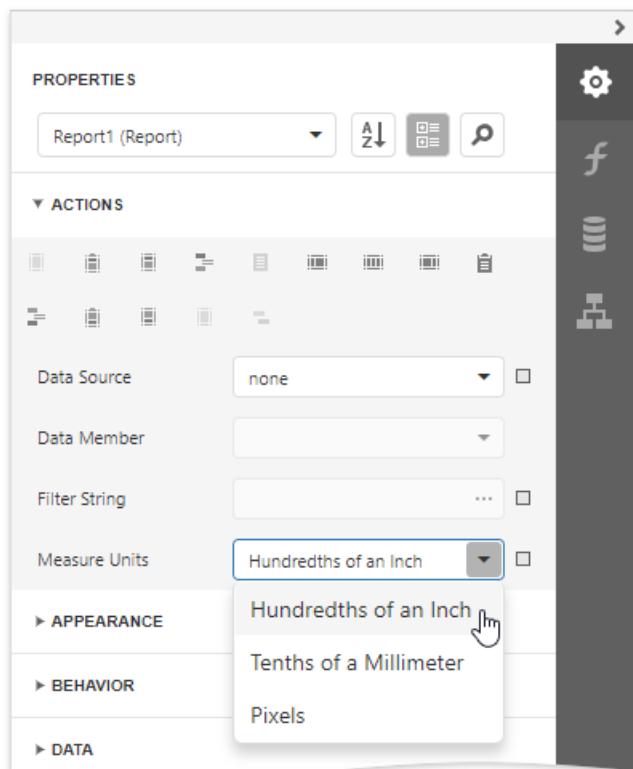
Most metrics of report elements (i.e., element locations, dimensions and margins) can be expressed in units that correspond to one of the following systems of measurement.

- **Imperial system** (in hundredths of an inch)

This is the default system that is assigned to each new report.

- **Metric system** (in tenths of a millimeter)
- **Screen coordinates** (in pixels)

To assign a system of measurements to a report, use its **Measure Units** property. You can specify this property in the [Properties](#) panel.



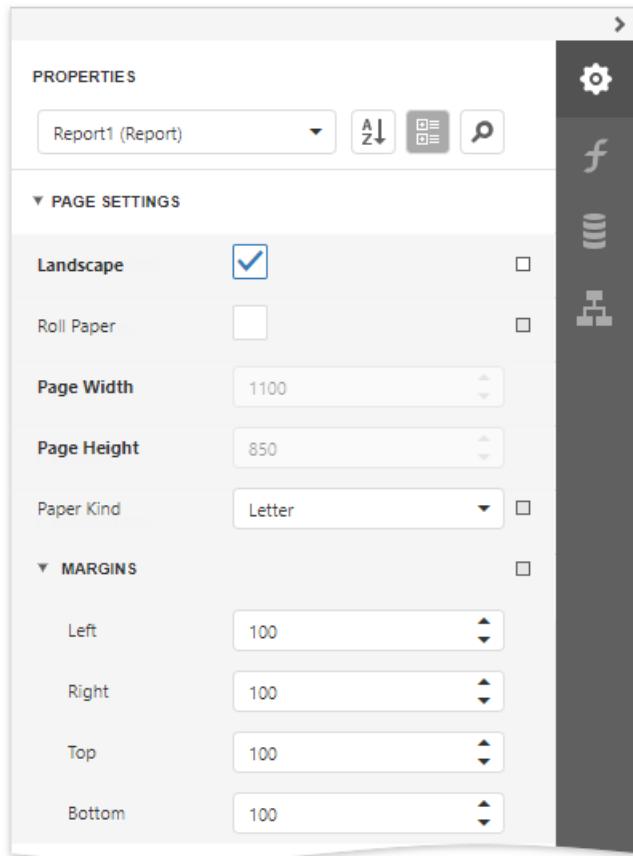
Changing the system of measurement results in converting the corresponding property values and updating the layout of all report elements in the Report Designer. Notably, the system of measurement determines the minimum increment with which an element's [location and size](#) can be changed.

# Change a Report's Page 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.

## Specify the Report's Page Settings

While designing the report, you can specify the report's page settings in the [Properties](#) panel. Expand the **Page Settings** category to access this options:



You can set the page orientation and modify the margins. The margin values are expressed in the report's [measurement units](#). You can select from the predefined paper sizes (**Paper Kind** property), choose **Custom** and create your own paper size.

These settings affect the layout of the report's design surface. After their modification, you may notice red warning marks, indicating that the controls go beyond the page width.



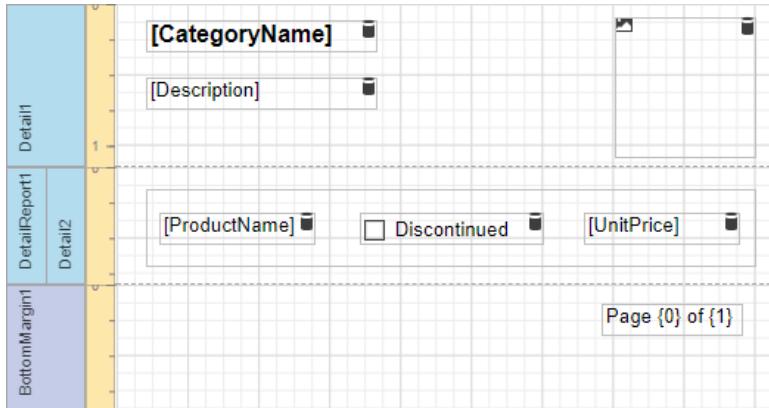
# Enable the Right-To-Left Layout

The report and most of the report controls provide the **Right To Left** property.

The screenshot shows two side-by-side property panes. On the left, for 'Report1 (Report)', the 'Right to Left' dropdown is set to 'Yes'. On the right, for 'label1 (Label)', the 'Right to Left' dropdown is set to 'Inherit'. Both panes include standard reporting tools like A-Z, grid, and search icons.

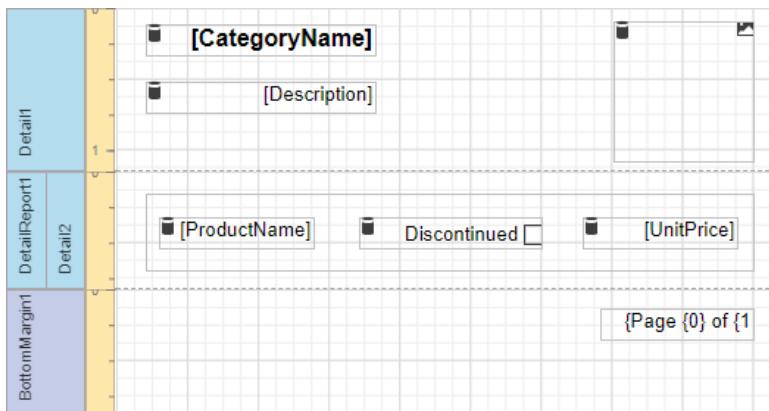
This property specifies content layout within a control (for most controls, this property affects the direction of their text, and for the [Check Box](#), this property also affects the check box position within the control).

- **Left-To-Right**



The screenshot shows the properties for 'Report1 (Report)'. The 'Right to Left' dropdown is set to 'No'. Other settings like 'Right to Left Layout' and 'REPORT PRINT OPTIONS' are also visible. The interface is identical to the one on the left.

- **Right-To-Left**



The screenshot shows the properties for 'Report1 (Report)'. The 'Right to Left' dropdown is set to 'Yes'. The layout is Right-To-Left, with text and controls oriented from right to left. The interface is identical to the one on the left.

By default, all report controls have this property set to **Inherit**, so enabling it for a report will apply this setting to all its controls.

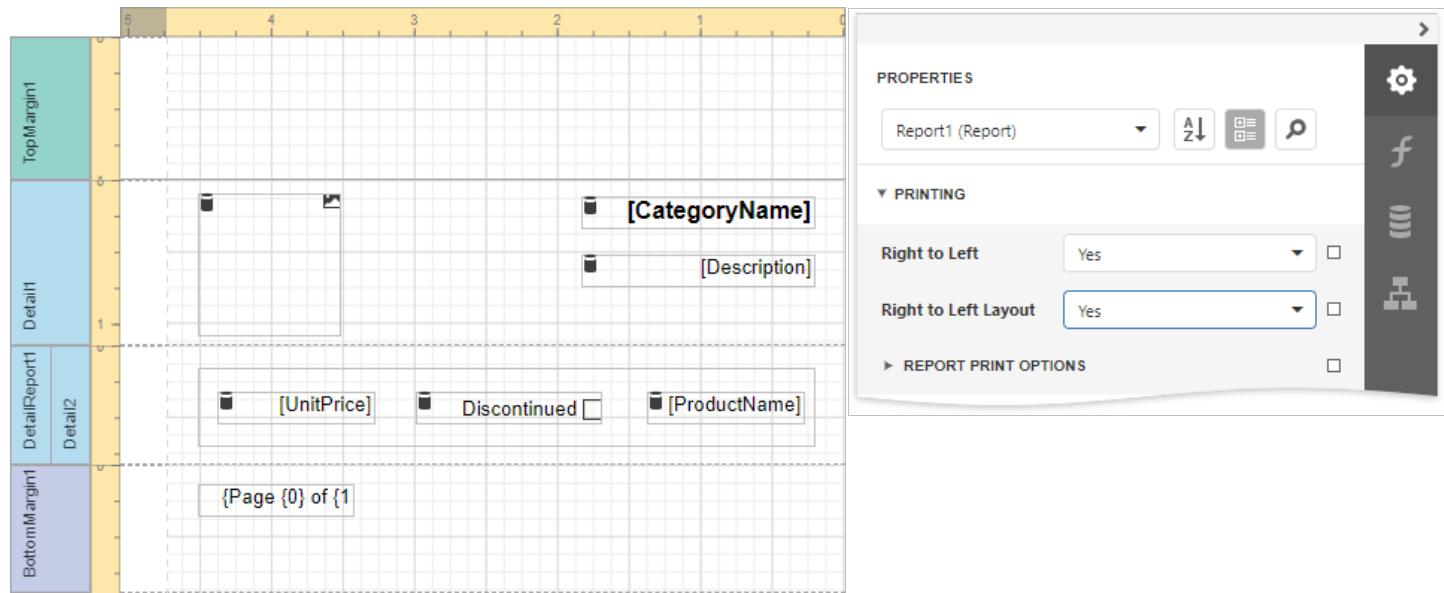
The following controls support this feature:

- [Label](#)
- [Check Box](#)
- [Page Info](#)
- [Panel](#)
- [Pivot Grid](#)

- [Table](#)
- [Table of Contents](#)

For the **Panel** and **Table**, this option only affects the controls contained in them.

When the **Right To Left** property of a report is set to **Yes**, you can also enable the **Right To Left Layout** property that specifies the position of controls within [report bands](#). Enabling the right-to-left layout will also swap the page margins of a document (it will become impossible to place controls outside the right page margin).



The controls' coordinates will remain unchanged and only the point and direction of reference will change (the X coordinate will be calculated starting with the top right corner).

The right-to-left layout is preserved when exporting a report to any of the [supported formats](#) (e.g., PDF, Excel, or RTF).

# Use Report Elements

The documents in this section describe how to use various controls in a report, manipulate report elements and customize the report layout:

- [Manipulate Report Elements](#)
- [Use Basic Report Controls](#)
- [Use Tables](#)
- [Use Bar Codes](#)
- [Use Charts and Pivot Grids](#)
- [Use Gauges and Sparklines](#)
- [Draw Lines and Shapes](#)

# Manipulate Report Elements

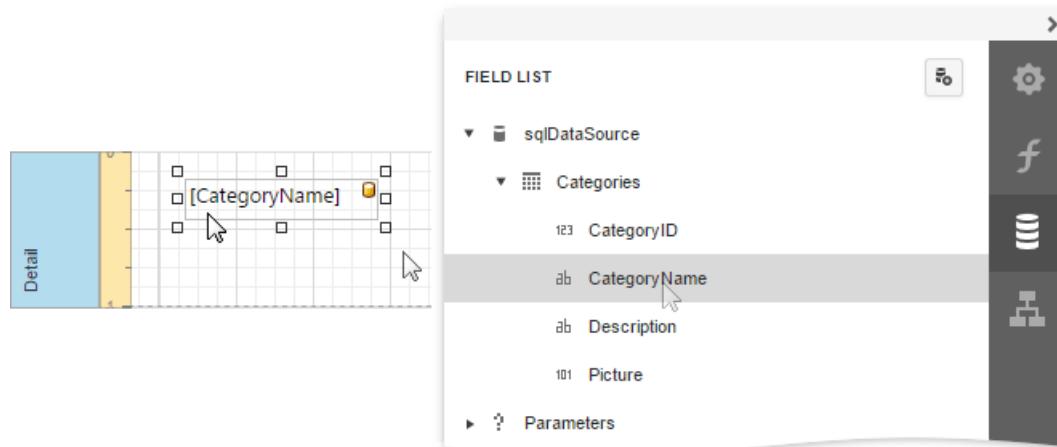
The following topics describe how to add various controls to a report, manipulate report elements and customize the report layout:

- [Add Controls to a Report](#)
- [Select Report Elements and Access Their Settings](#)
- [Move and Resize Report Elements](#)
- [Copy Report Controls](#)
- [Arrange Report Controls](#)
- [Add Report Controls to Containers](#)
- [Validate the Report Layout](#)

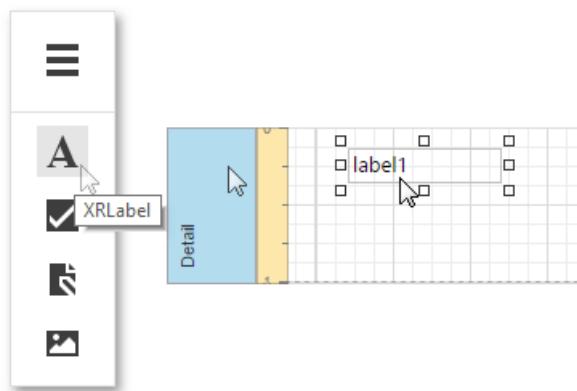
# Add Controls to a Report

## Add Report Controls

To display a data field's value in your report, drag the corresponding item from the [Field List](#) and drop it onto the report's detail band. This creates a new report control bound to the corresponding field.



You can also use the [Toolbox](#) to add other controls to your report and display content such as text, images, charts, barcodes, and so on.



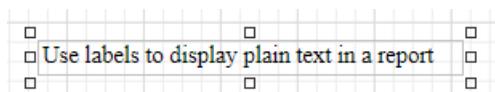
This document describes how to add the most commonly used controls to a report. See [Use Report Elements](#) for a complete list of available controls.

## Display Text

Use the following controls to display text in a report:

- [Label](#)

Displays plain text in a report.



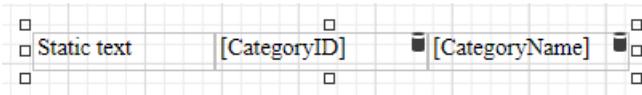
- [Rich Text](#)

Displays rich text in a report. You can apply different font settings to the control's content and load content from an external HTML file.



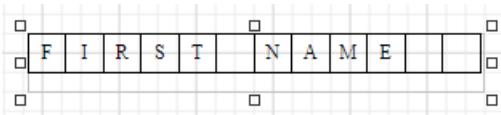
- [Table](#)

Contains any number of cells arranged in one or more rows. Each table cell can display plain text or contain other controls.

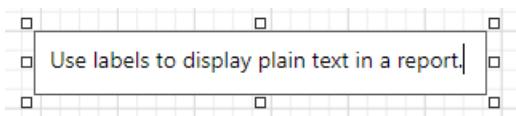


- [Character Comb](#)

Displays each character in a separate cell and can be used to create printed forms.

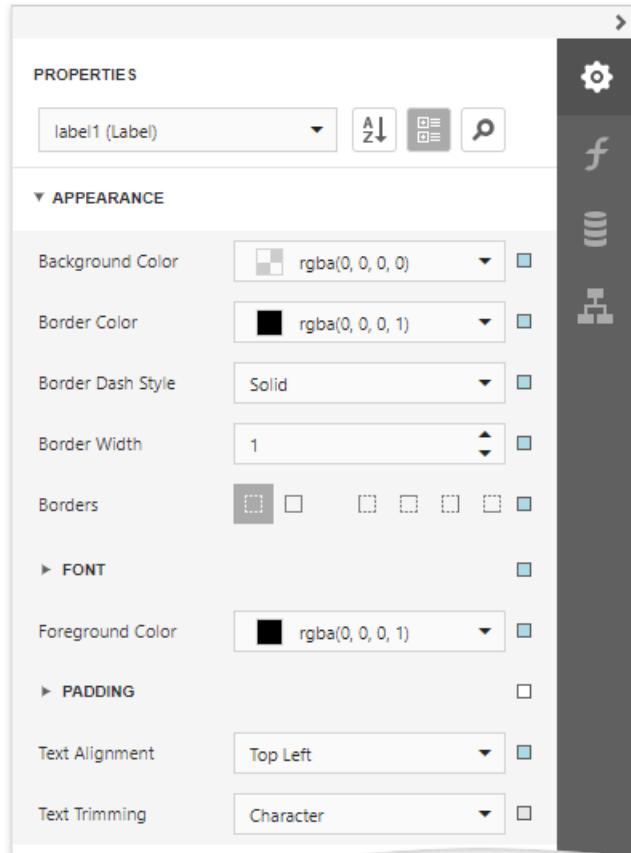


Double-click any of these controls to invoke an in-place editor where you can enter text.



Press CTRL+Enter to submit changes and close this mode.

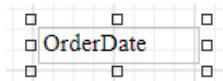
You can use corresponding properties of the **Appearance** category to access the selected control's font and alignment settings.



Labels and other text-oriented controls can display the following content:

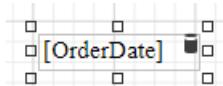
- [Static content](#)

A control's content does not change once it is specified in a published document.

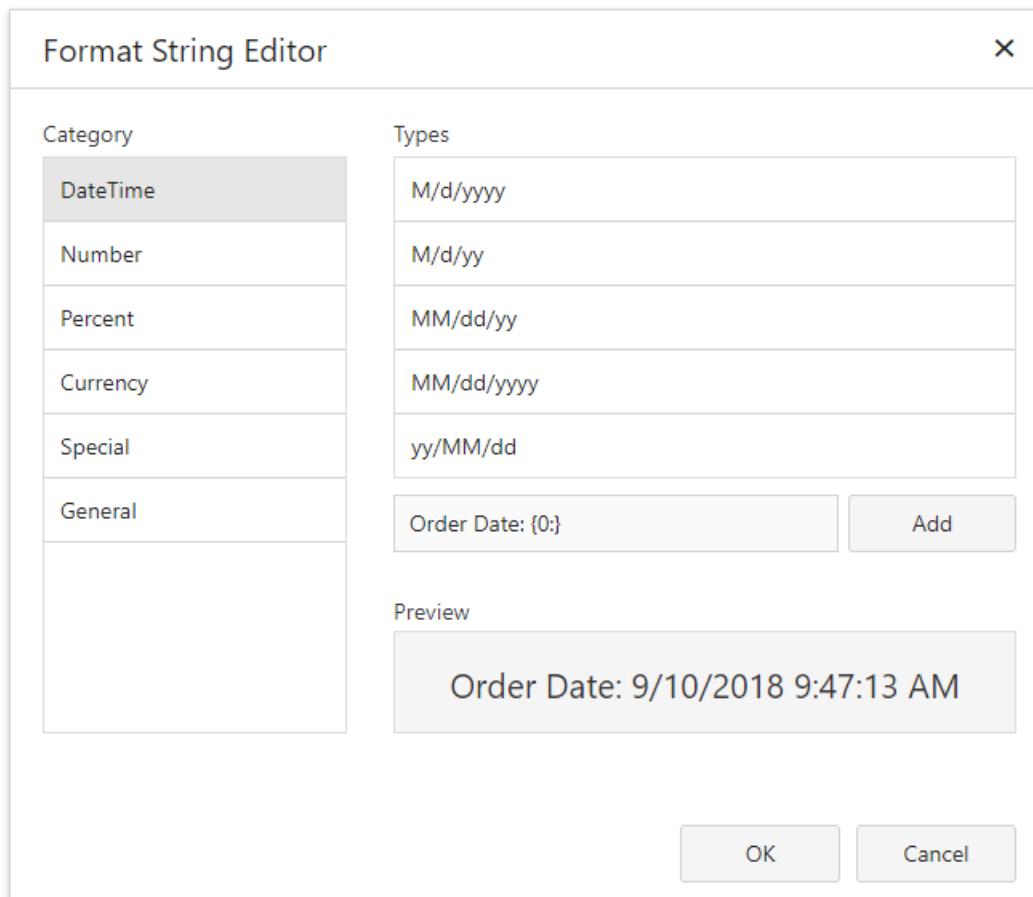


- **Dynamic content**

A connected data source supplies this content. In a published document, it changes according to the printed data source record.



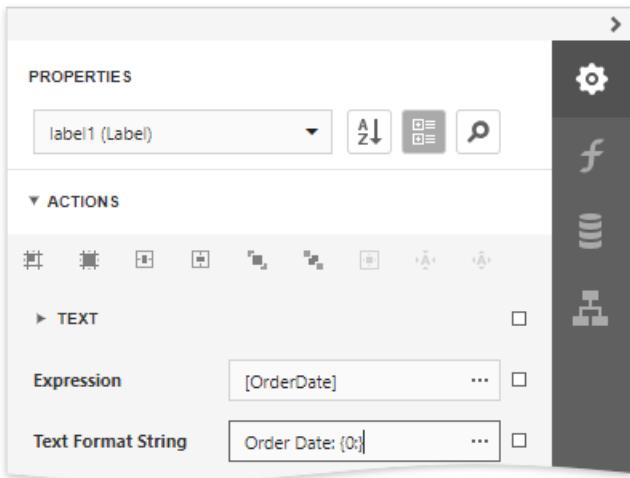
You can use the [Format String Editor](#) to format dynamic content.



- **Mixed content**

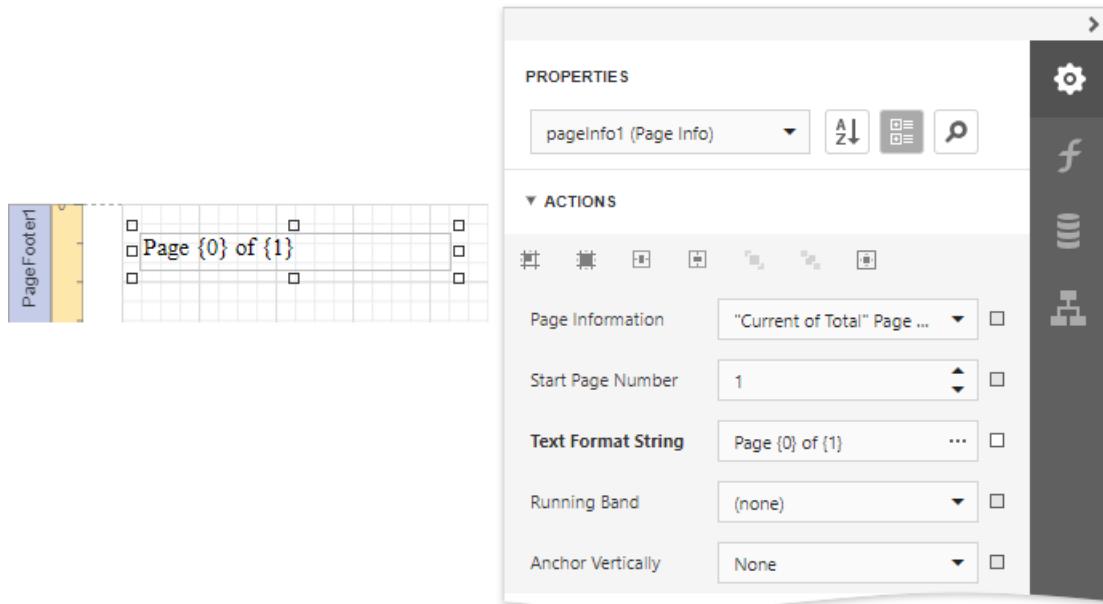
You can combine labels' and other text-oriented controls' static and dynamic content within the same control.

Use the **Format String** property in the **Action** category to format this field's value.



## Display Page Information

Use the [Page Info](#) control to display information about document pages, such as the current page number and/or total number of pages.



You can also use this control to add information about a report's author and the document's creation date.

See the following tutorials for detailed instructions:

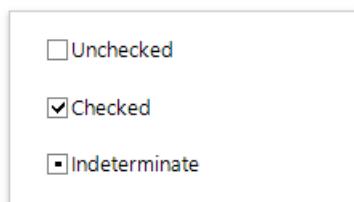
- [Add Page Numbers](#)
- [Display the User Name in a Report](#)
- [Display the Current Date and Time in a Report](#)

## Display Check Boxes, Images and Bar Codes

Drop a Boolean data field from the Field List onto a report to create a [Check Box](#) control bound to that field.

The screenshot shows the 'FIELD LIST' pane of the Report Designer. On the left, there's a preview area labeled 'Detail' with a yellow header bar. The main pane lists fields from 'sqlDataSource1': CategoryID, CategoryName, Description, Icon17, Icon25, and Picture. The 'Description' field is highlighted with a gray background and has a small cursor icon over it. To the right of the list are several icons: a gear, a magnifying glass, a database, and a funnel.

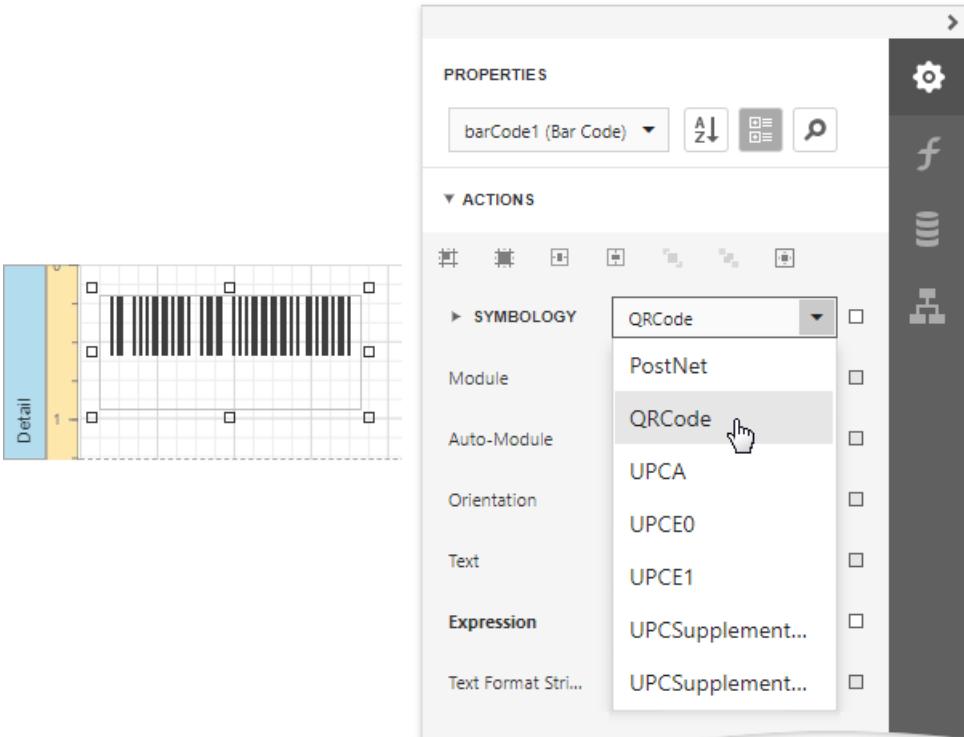
Check boxes can display different states depending on the underlying data values.



Use the [Picture Box](#) control to display images in a report. You can load an image from an external file, from a bound data source, or from a web location using the specified URL.

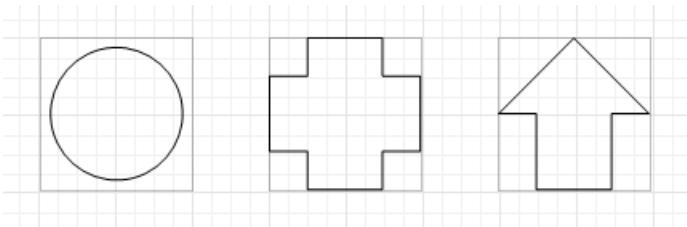
The screenshot shows the 'PROPERTIES' pane for a 'pictureBox1 (PictureBox)' control. The 'ACTIONS' section is expanded, showing settings for 'Image', 'Image URL', 'Sizing', 'Bookmark', and 'Parent Bookmark'. The 'Image' dropdown is set to '(none)'. The 'Sizing' dropdown is set to 'Normal'. The 'Bookmark' and 'Parent Bookmark' fields are empty. The pane includes standard toolbar buttons like copy, paste, and search, and a dark sidebar with icons for gear, magnifying glass, database, and funnel.

To display bar codes, use the [Bar Code](#) control.

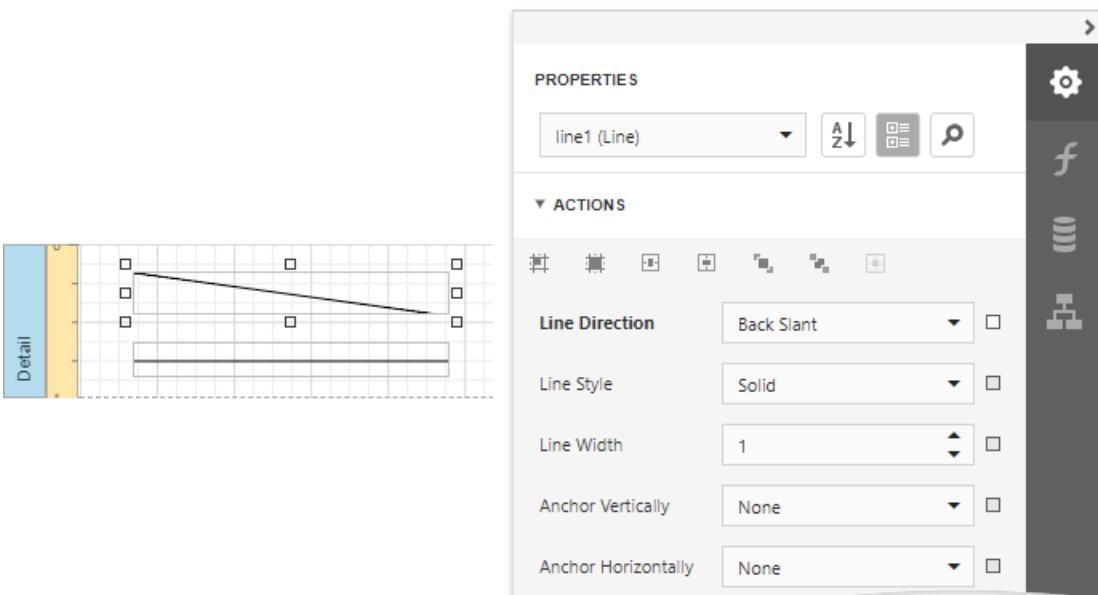


## Drawing Lines and Shapes

Use the [Shape](#) control to draw simple graphics in a report (circles, crosses or arrows).



The [Line](#) control enables you to draw straight or slanted lines in a single band.



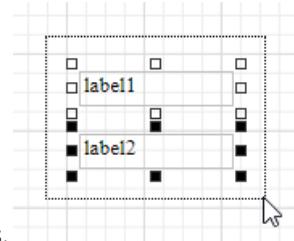
The [Cross-Band Line and Box](#) controls enable you to draw lines and boxes spanning multiple report bands.

# Select Report Elements and Access Their Settings

You can click a report control or band to select it.

Do one of the following to select multiple report controls:

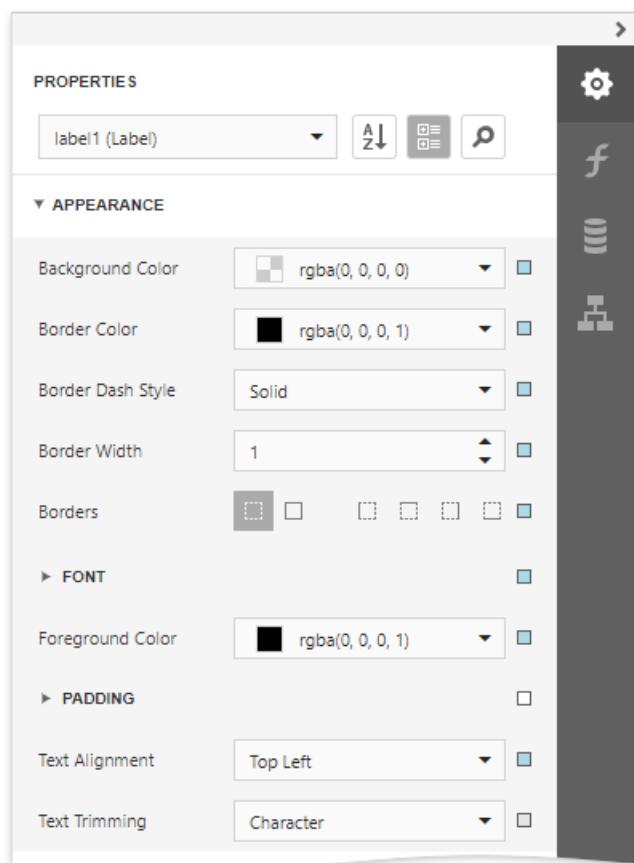
- Press and hold the CTRL key and click the controls.



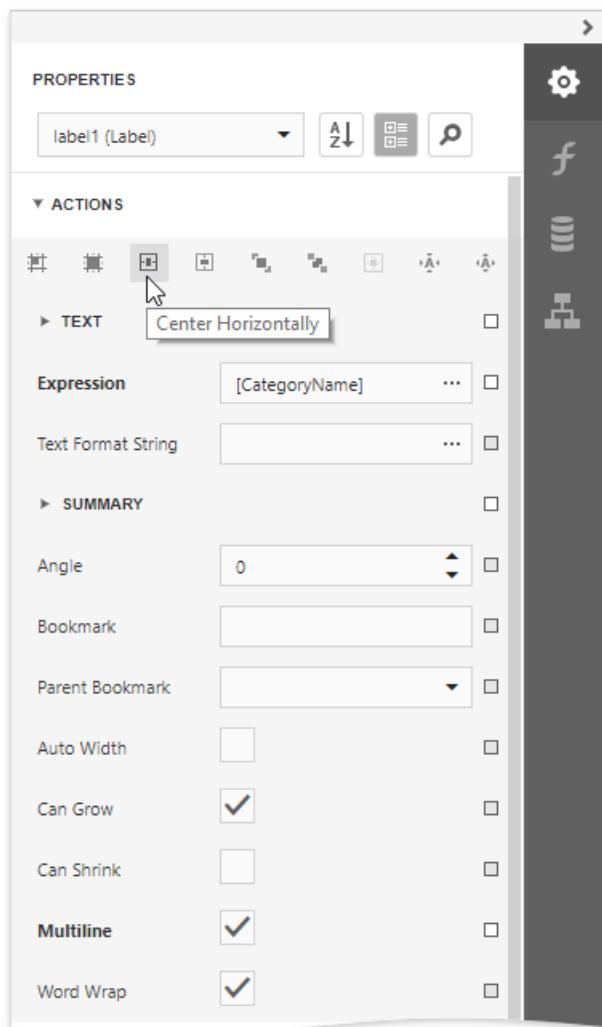
- Click an empty place on a report's surface and draw a rectangle around the controls.

Click the gray area around the design surface to select a report.

You can use the [Properties panel](#) to access the whole set of settings that the selected element supports.

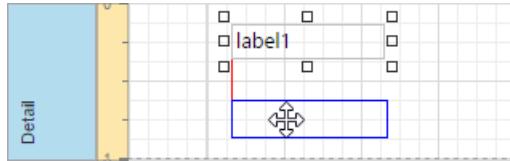


The **Actions** category contains the most commonly used element properties as well as alignment and positioning commands.

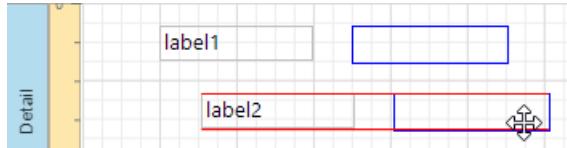


# Move and Resize Report Elements

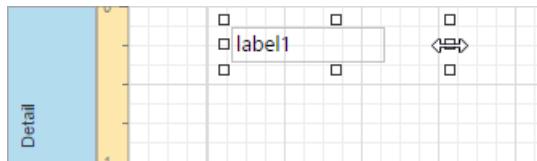
You can use the mouse or keyboard to move a report control to a new location.



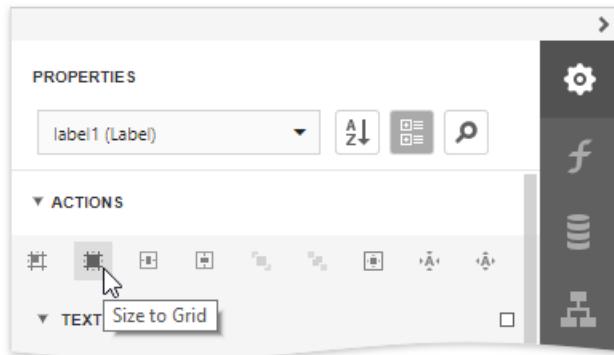
You can also [select multiple controls](#) and move them in the same way as individual report controls.



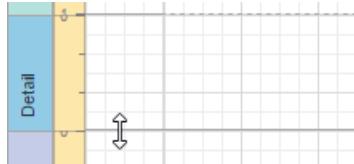
Select a control and then drag a rectangle drawn on its edge or corner to resize it.



You can use the **Size to Grid** button to resize a control to the report's **Snap Grid**.



Drag a band's header strip to resize the band.

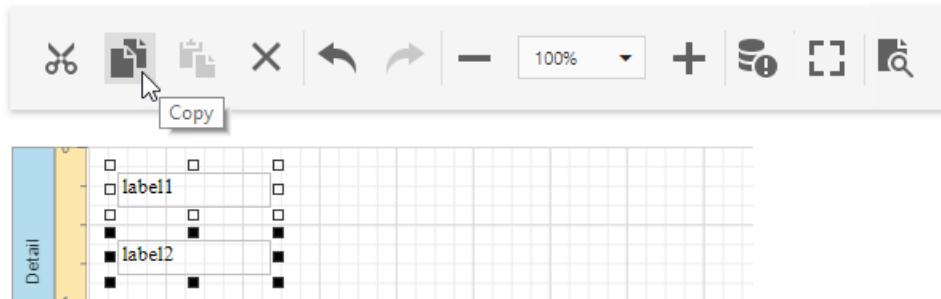


See [Arrange Report Controls](#) for information about tools that help you align report controls to each other and layout edges.

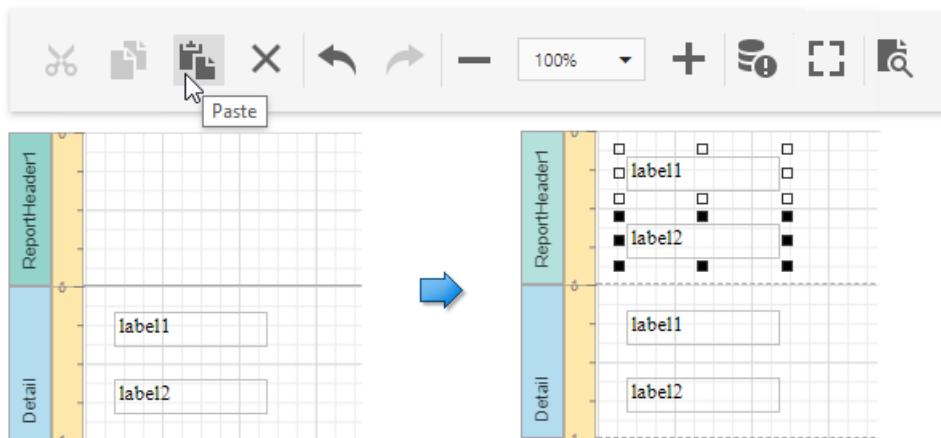
# Copy Report Controls

You can use the [Main Toolbar](#)'s commands or keyboard shortcuts to clone an existing report control. A cloned control has the same settings as the initial control.

Select report controls and click the **Copy** button or press CTRL + C to copy report controls to the clipboard.

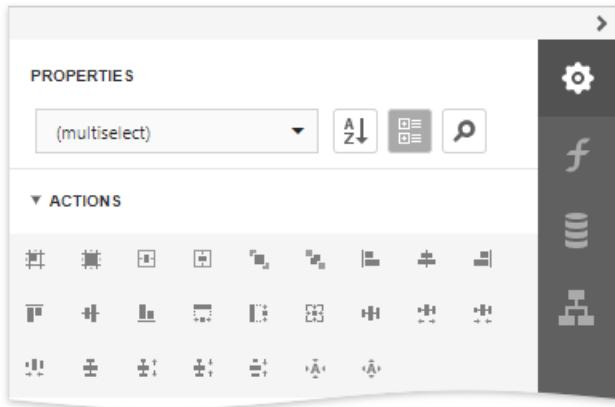


Select a new container or band and click the **Paste** button or press CTRL+V to paste these controls.

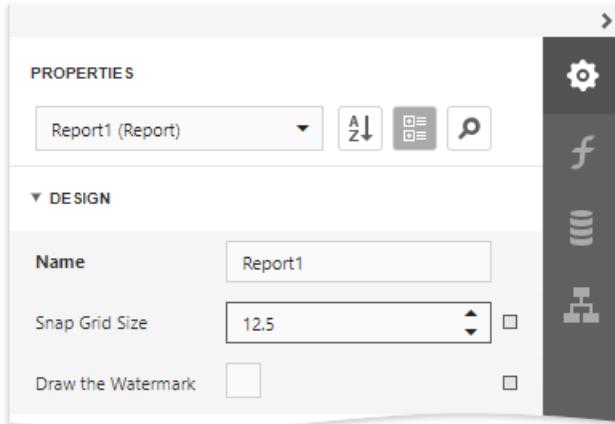


# Arrange Report Controls

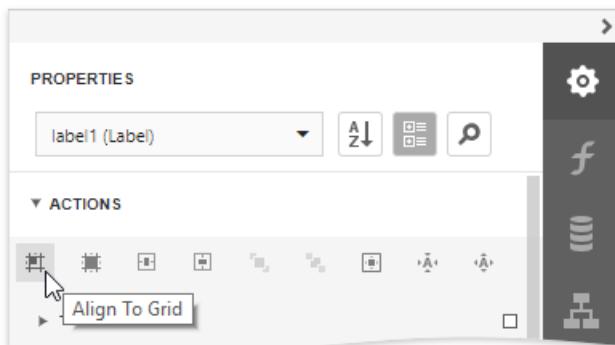
You can align report controls to each other, change the report element's size, change the stacked elements' order, and so on. Select a report control or multiple controls and choose an appropriate command in the **Actions** category.



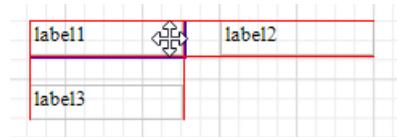
The design surface displays a visual grid that allows you to determine elements' size and location in a report. Use the **Snap Grid Size** property to customize the grid's size.



You can use the **Align to Grid** button to align the selected controls to the grid's cells.



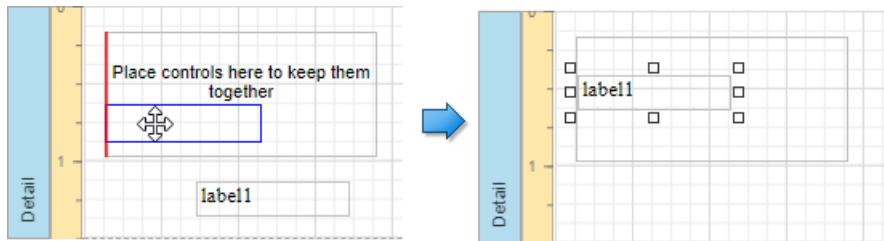
The Report Designer displays snap lines when you move or resize report controls. These lines appear around the report controls and indicate the distance to other report elements (controls and bands).



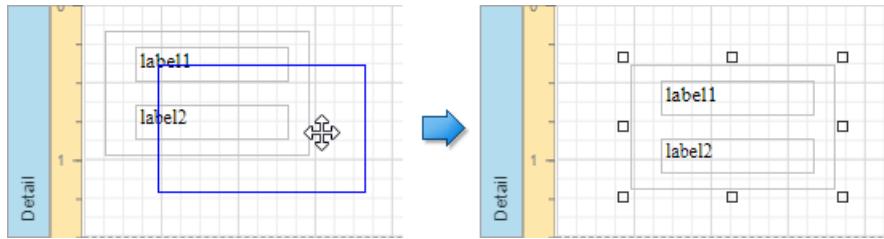
To avoid snapping controls, hold down ALT if you move or resize controls using the mouse.

# Add Report Controls to Containers

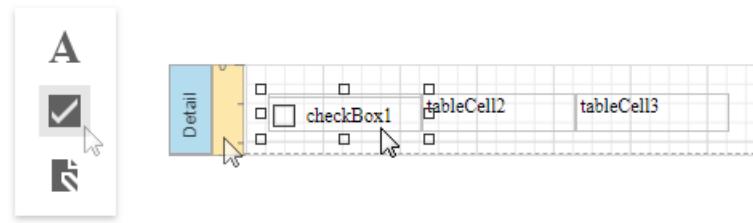
The [Panel](#) control allows you to place various report controls on it to combine them into a group.



You can use this panel to move, copy, change appearance settings, etc. instead of adjusting individual controls.



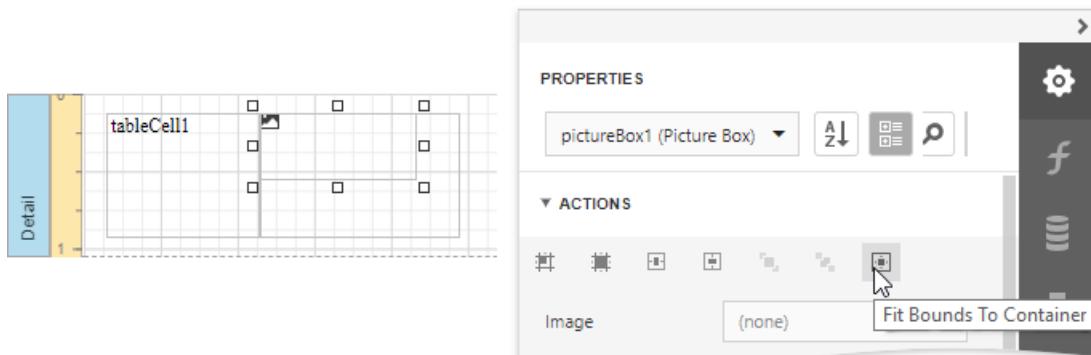
A [table cell](#) can also act as a container for other controls.



Both panel and table cell cannot contain the following report controls:

- [Pivot Grid](#)
- [Subreport](#)
- [Page Break](#)
- [Table of Contents](#)
- [Cross-Band Line and Box](#)

If a panel or table cell includes only one control, you can position it within the container using the **Fit Bounds to Container** command. This command resizes the control so that it occupies all the available space (excluding borders).



# Validate the Report Layout

Your report layout should meet the following requirements to correctly print and export it:

- **Avoid intersecting controls**

The Report Designer highlights intersecting report controls to warn you that the report layout can be exported incorrectly to HTML, RTF, DOCX, XLS, XLSX, CSV and TXT formats.



- **Do not place controls outside page margins**

The Report Designer highlights report controls that do not fit into the printable page area and overlap the right page margin. This warns you that extra pages can appear when document is printed.



# Use Basic Report Controls

The following documents describe the basic controls that display data in a report:

- [Label](#)
- [Character Comb](#)
- [Rich Text](#)
- [Check Box](#)
- [Picture Box](#)

The controls below allow you to embed other reports and customize the report layout:

- [Subreport](#)
- [Panel](#)
- [Page Break](#)

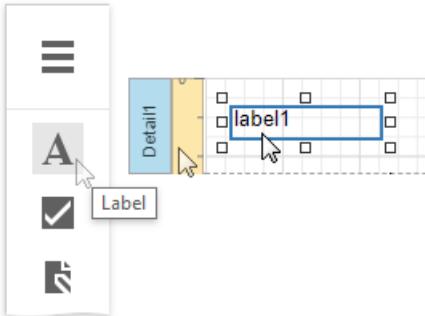
Use the following controls to display auxiliary information in a report:

- [Table of Contents](#)
- [Page Info](#)

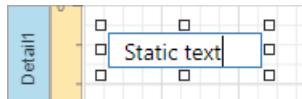
# Label

## Label Overview

The **Label** control displays plain text in a report. Drag the **Label** item from the [Toolbox](#) onto the report's area to add a Label control to it.



Double-click the label to invoke its in-place editor and enter the desired static text.



Press **CTRL+Enter** to submit text changes and exit the label's in-place editing mode.

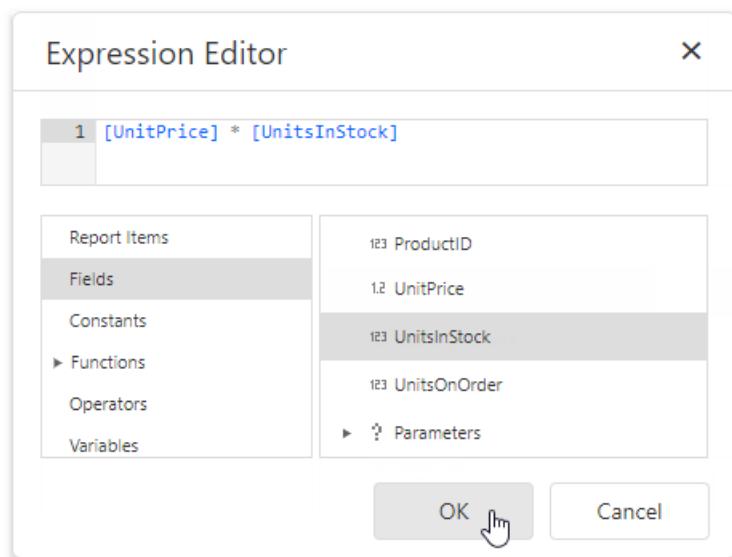
## Bind to Data

### Display Field Values

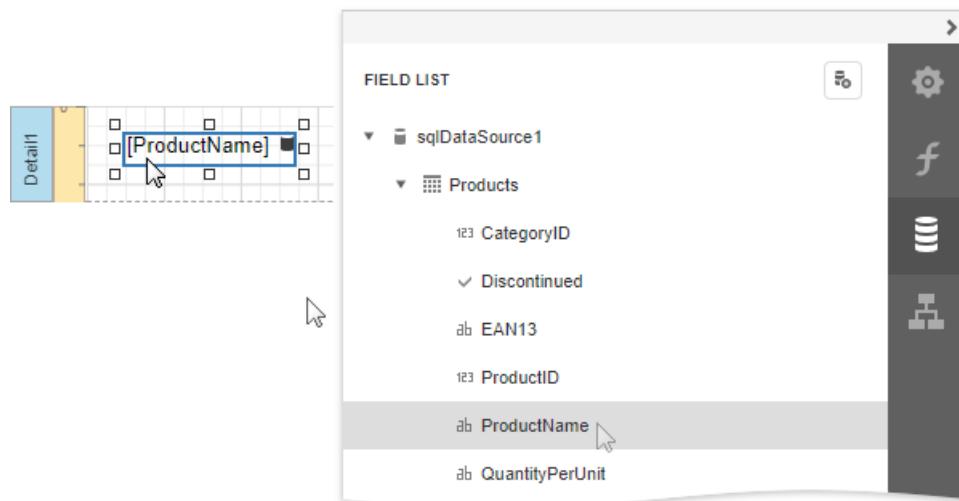
You can [bind](#) the label's **Text** property to a data field obtained from a report's data source. Switch to the [Properties](#) panel, expand the **Actions** category and click the **Expression** property's ellipsis button. Select the required data field in the invoked [Expression Editor](#).

The screenshot illustrates the process of binding a label to a data field. The 'label1' control is selected on the report design surface. In the Properties panel, the 'Actions' category is open, and the 'Expression' property is being edited. The 'Expression Editor' dialog is displayed, showing the expression '[ProductName]' entered into the main input field. The left sidebar of the dialog shows the 'Fields' node under 'Report Items' is selected, and a list of available fields is shown on the right, including ProductID, ProductName, QuantityPerUnit, ReorderLevel, and SupplierID.

Click the **Expression** option's ellipsis button to invoke the [Expression Editor](#). You can use this editor to construct a complex binding expression involving two or more data fields.

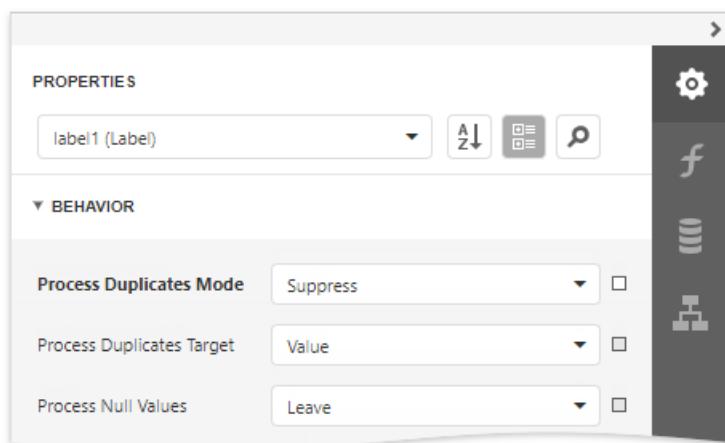


You can also drag and drop a numeric or text field from the [Field List](#) to create a new label bound to this field.

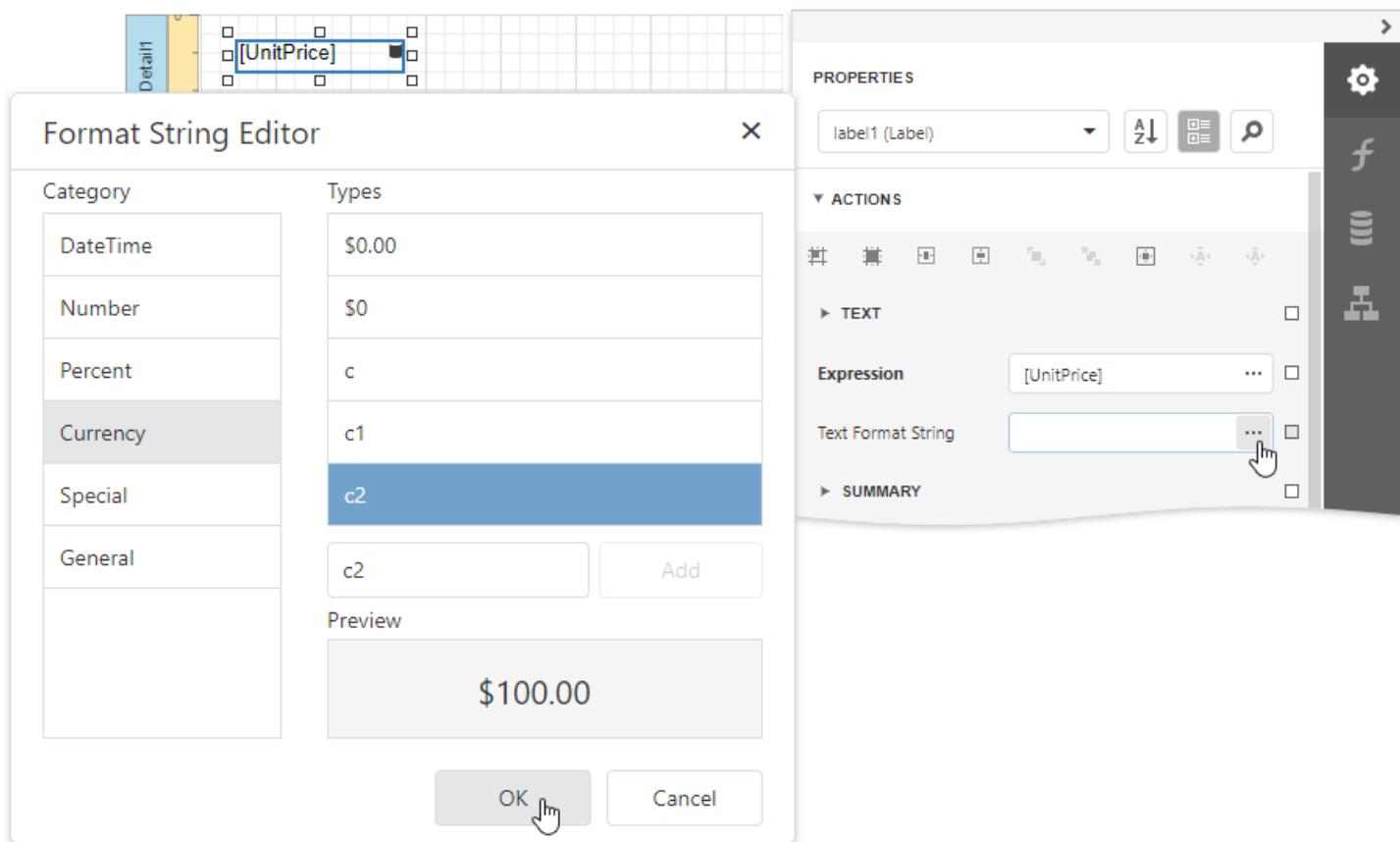


See the [Bind Controls to Data](#) topic for more information.

The **Process Duplicates Mode**, **Process Duplicates Target** and **Process Null Values** options enable you to hide a control when a duplicated or null value appears in an assigned data source.



You can also use the **Text Format String** property to specify output values' [format](#).



## Display Summaries

Specify a data range in the **Running** property and select the summary function in the **Expression Editor** to display a [summary function's result](#) in a label.

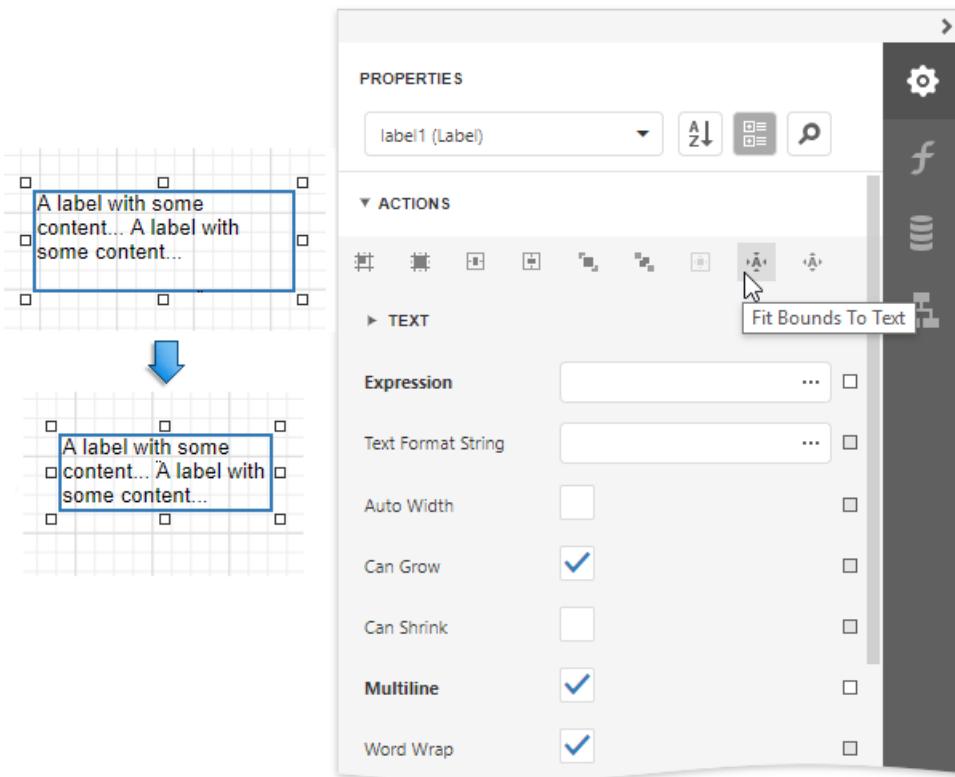
## Adjust the Label Size and Content

### Static Content

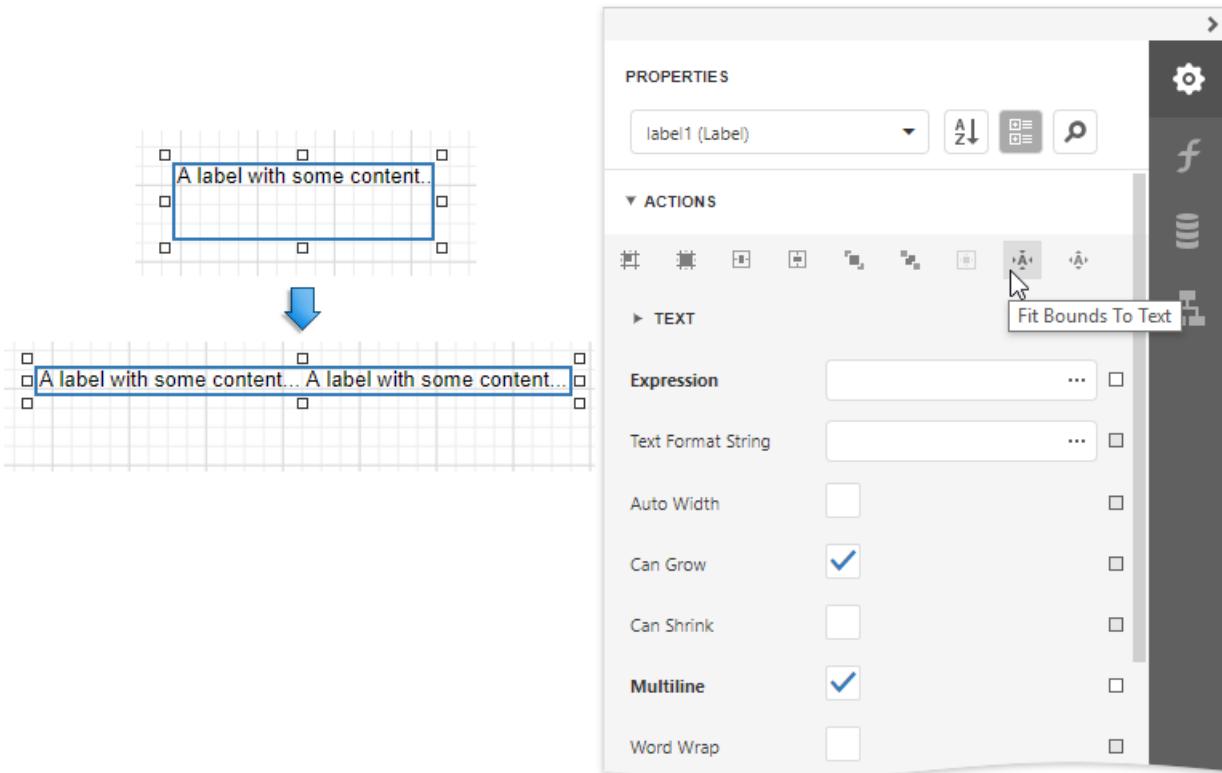
You can change a label's size to fit its static text using the **Fit Bounds To Text** command in the **Actions** category:

- If the **Word Wrap** option is enabled, the command displays control content in multiple lines. It reduces control height and

adjusts its width to fit its content.

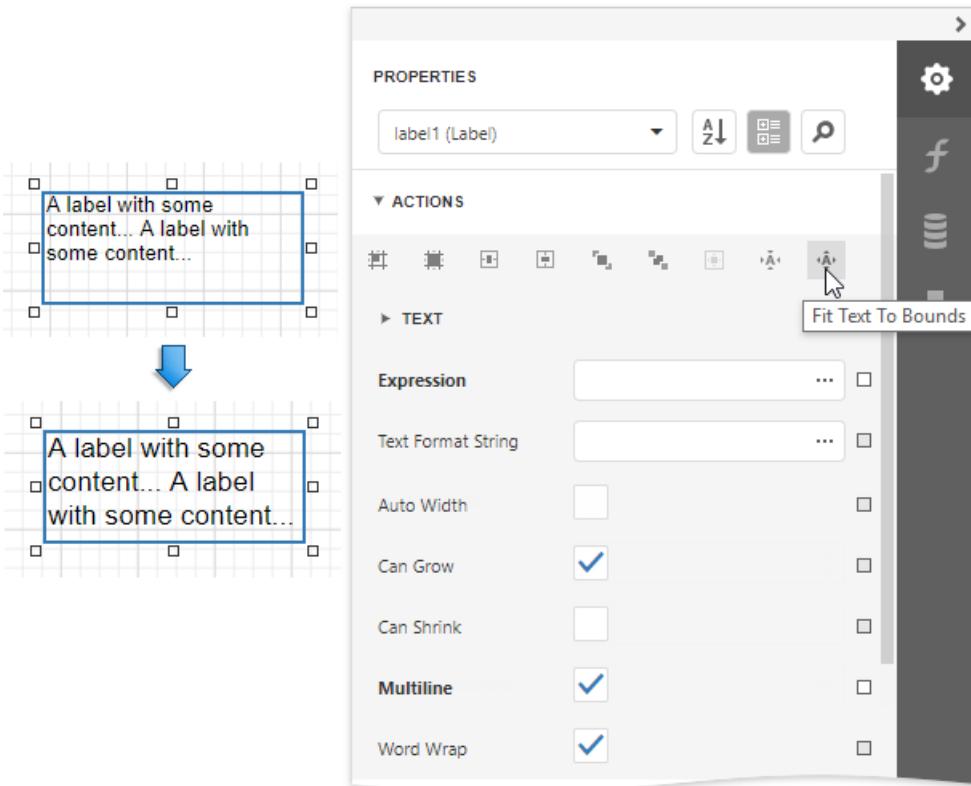


- If the **Word Wrap** option is disabled and the control's content is partially visible, the command adjusts the control's size to display this content.



This command's result also depends on the control's **Text Alignment** and **Right To Left** settings.

Use the **Fit Text To Bounds** button to adjust the control's font size to fit its area. The **Word Wrap** option defines whether the text can occupy multiple lines or should be in a single line.



These commands are not available in the following cases:

- A label's text is an empty string;
- A label's text is bound to data;
- A label's **Angle** property is specified.

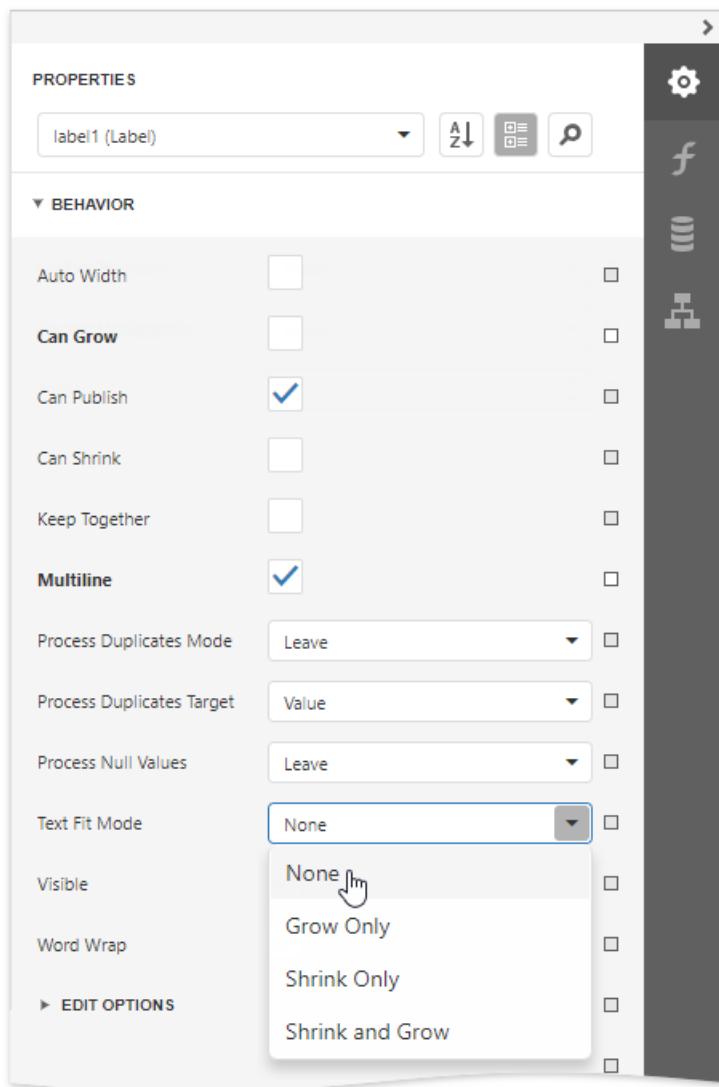
#### Data-Bound Labels

The **Can Grow** and **Can Shrink** properties allow you to increase or decrease the control's height according to its content in Print Preview mode.

CAN GROW IS ENABLED	CAN GROW IS DISABLED
A control with some lengthy content...	A control with some lengthy content... A control with some lengthy content... A control with some le
CAN SHRINK IS ENABLED	CANSHRINK IS DISABLED
A control with some content...	A control with some content...

The **Auto Width** property specifies whether to adjust a data-bound label's width to its content automatically.

You can also use the opposite **Text Fit Mode** property to adjust a control's font size to fit its boundaries in Print Preview. This property is not available if the **Can Grow**, **Can Shrink** or **Auto Width** option is enabled.

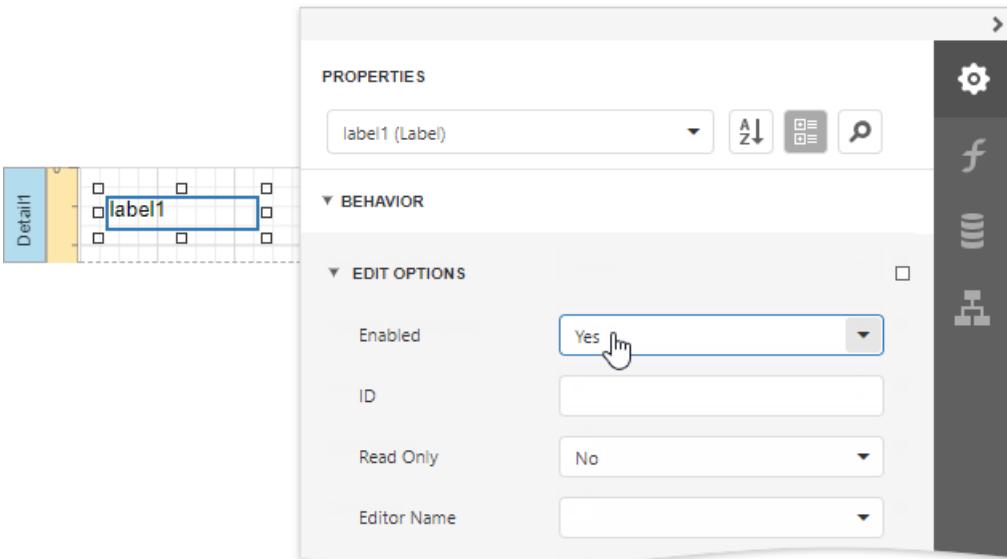


TEXT FIT MODE = NONE	TEXT FIT MODE = GROW ONLY	TEXT FIT MODE = SHRINK ONLY	TEXT FIT MODE = SHRINK AND GROW
A label with some lengthy content...			
A label with some lengthy content...			

See the [Lay out Dynamic Report Content](#) topic for more information.

## Interactivity

Set the **Enabled** option in the **Edit Options** category section to **Yes** to [edit a label's content](#) in Print Preview mode.



Clicking this label in a previewed document invokes the appropriate editor.



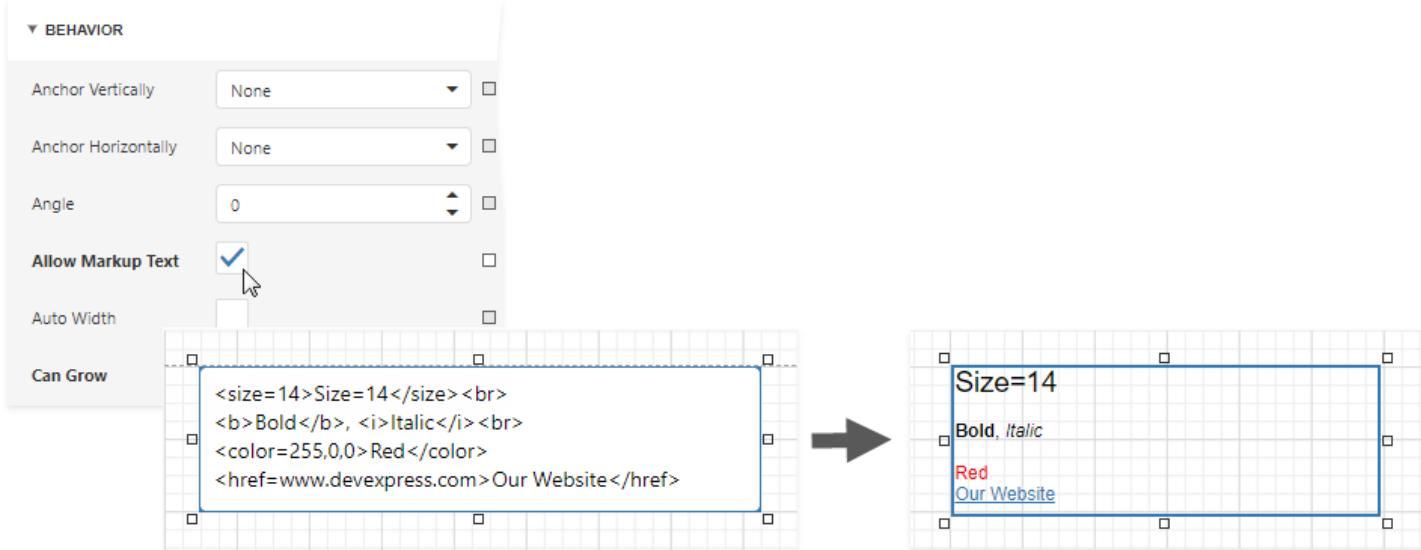
Use the label's **Interactive Sorting** option to click this label in Print Preview to sort report data. Set the **Target Band** property to the Group Header or Detail band, and specify the data field in the **Field Name** property.

The screenshot shows the 'Properties' panel for a label control. The 'Behavior' section is open, specifically the 'Interactive Sorting' subsection. It contains two dropdown menus: 'TARGET BAND' set to 'GroupHeader1' and 'Field Name' set to 'CategoryName'.

Refer to [Sort a Report in Print Preview](#) for a step-by-step tutorial.

## Markup Text

Enable the **Allow Markup Text** property to format the label's text with markup tags.



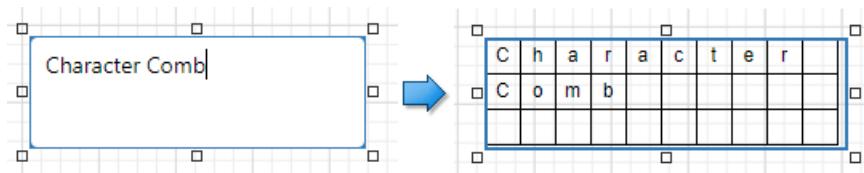
**Label** supports the following tags:

TAG	END TAG	DESCRIPTION
 		Inserts a single line break. Enable the <b>WordWrap</b> property to use this tag.
<nbsp>	-	Inserts a space.
<color=value>	</color>	Specifies the text color.
<backcolor=value>	</backcolor>	Specifies the background color.
<size=value>	</size>	Specifies the font size.
<b>	</b>	Defines bold text.
<i>	</i>	Defines italic text.
<s>	</s>	Defines strikethrough text.
<u>	</u>	Defines underlined text.
<image=value>	-	Inserts an image from the report's named image collection. Supports both raster images and SVG images. Use the report's <b>Image Resources</b> property to provide images and reference them by their <b>Id</b> . The <b>image</b> tag's <b>size</b> attribute sets the image display pixel size. If the specified width/height exceeds the label's width/height, it is reduced to display the entire image. Specify the <b>size</b> attribute after the tag's value followed by the ";" character.
<href=value>	</href>	Displays a hyperlink. The value string specifies the hyperlink source, and the string between the opening and closing tags is the text to display.

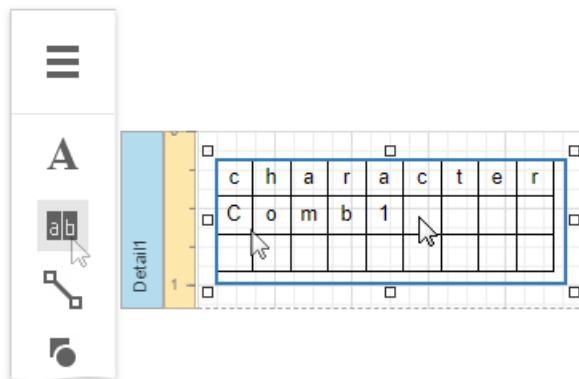
# Character Comb

## Overview

The **Character Comb** control displays text so that each character is printed in an individual cell.



To add a Character Comb to the report, drag the **Character Comb** item from the **Toolbox** onto the report's area.



The number of cells displayed by the control in Print Preview depends on the **Can Shrink** and **Auto Width** settings.

- If both these properties are enabled, the number of cells corresponds to the number of characters in the control's text.
- Otherwise, the number of cells corresponds to the specified cell size and the control size.

See the [Content Layout and Position](#) section to learn more on using these properties.

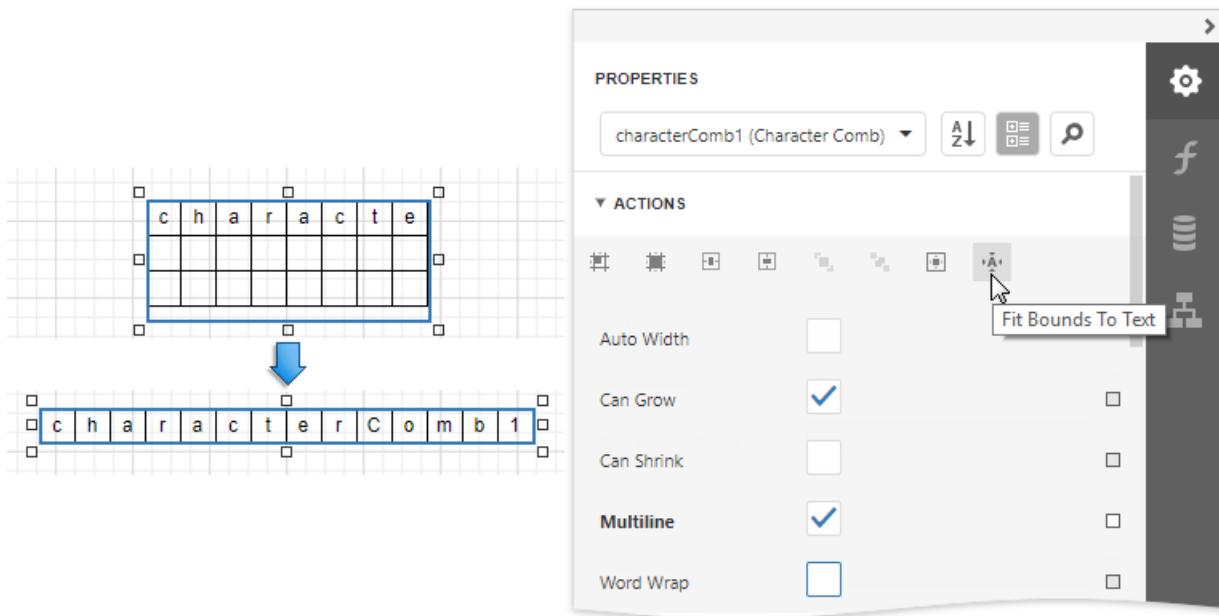
You can also adjust the character comb's size to match its characters using the **Fit Bounds To Text** command in the **Actions** category:

- If the **Word Wrap** option is enabled, the command keeps control content displayed in multiple lines. It decreases the control's height and adjusts the width to fit this content.

A screenshot of the Report Designer showing the properties of a "characterComb1" control. The "Actions" category is open, and the "Fit Bounds To Text" button is highlighted with a blue arrow. Below the properties, two screenshots show the "Character Comb" control before and after applying the "Fit Bounds To Text" action. In the first screenshot, the control is wider than the text it contains. In the second screenshot, the control has been resized to exactly fit the width of the text, with the "Word Wrap" option checked.

- If the **Word Wrap** option is disabled, the command adjusts the control's height and width to completely display the

control's content in a single line. As a result, the number of cells corresponds to the number of characters.



When exporting this control to third-party formats, consider the following

- When a report is exported to an **XLS** or **XLSX** file, the cells of the Character Comb correspond to the cells of a resulting Excel sheet.
- When a report is exported to a **CSV** (or **TXT**) file, the content of individual cells is separated (or spaced) by a specified **Separator** character.

In most aspects, the Character Comb is similar to the **Label** control from which it inherits most of its properties and its basic behavior. For general information about binding these controls to data and display summary function results, see the [Label](#) topic. To learn about Character Comb specifics, see the following sections in this document.

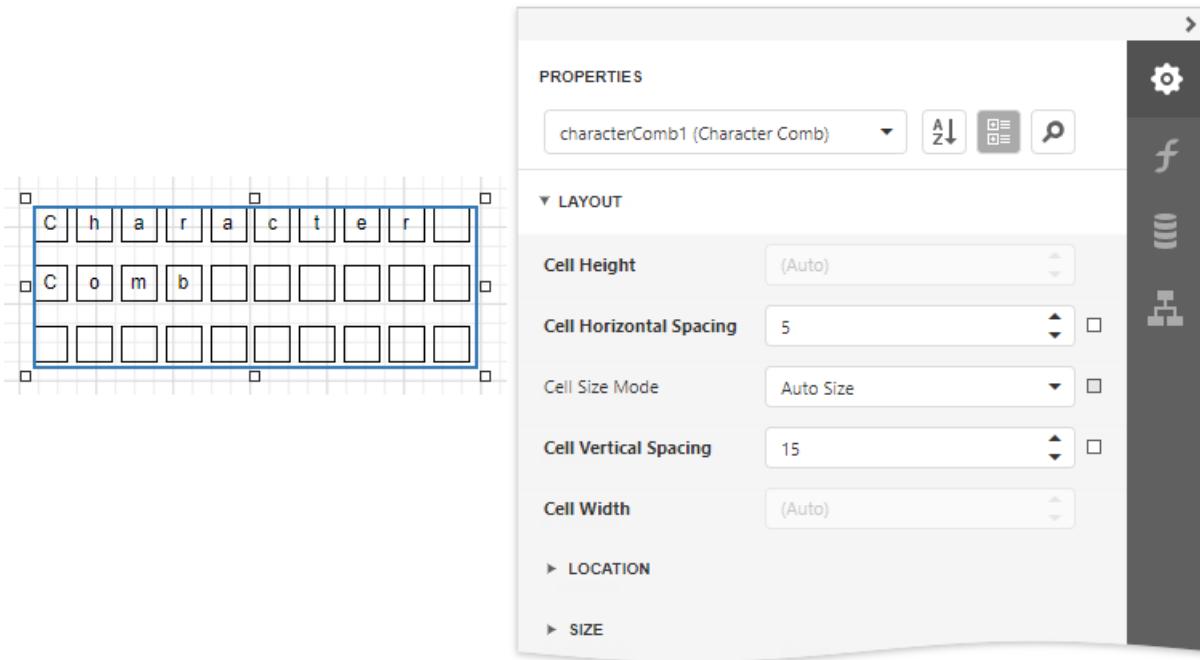
## Main Options

The following properties are specific to the Character Comb control:

- **Cell Vertical Spacing** and **Cell Horizontal Spacing**

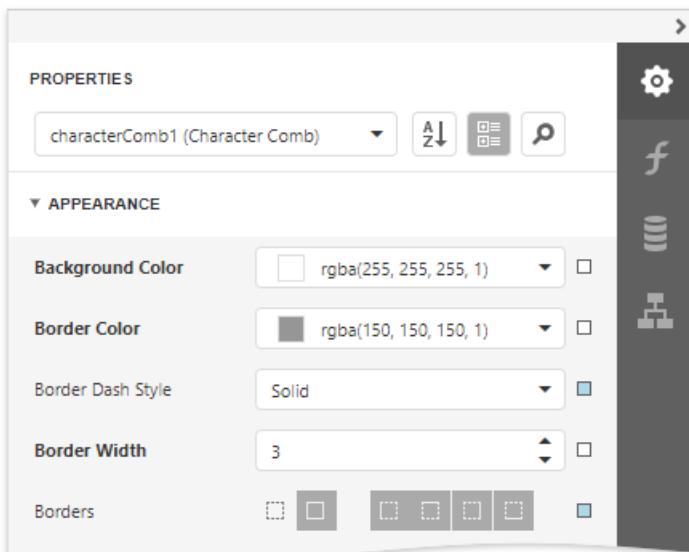
Specify the spacing between adjacent cells (measured in [report units](#)). These values do not depend on the specified border width of a control.

The following image illustrates a Character Comb with **Cell Vertical Spacing** set to **15** and **Cell Horizontal Spacing** set to **5**.



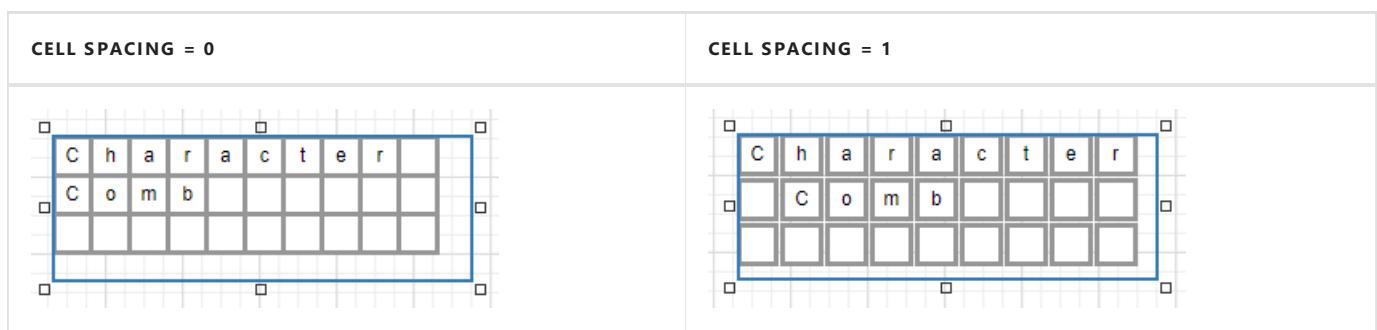
- **Border Width**

Specifies the width of cell borders in pixels, as a floating point value.

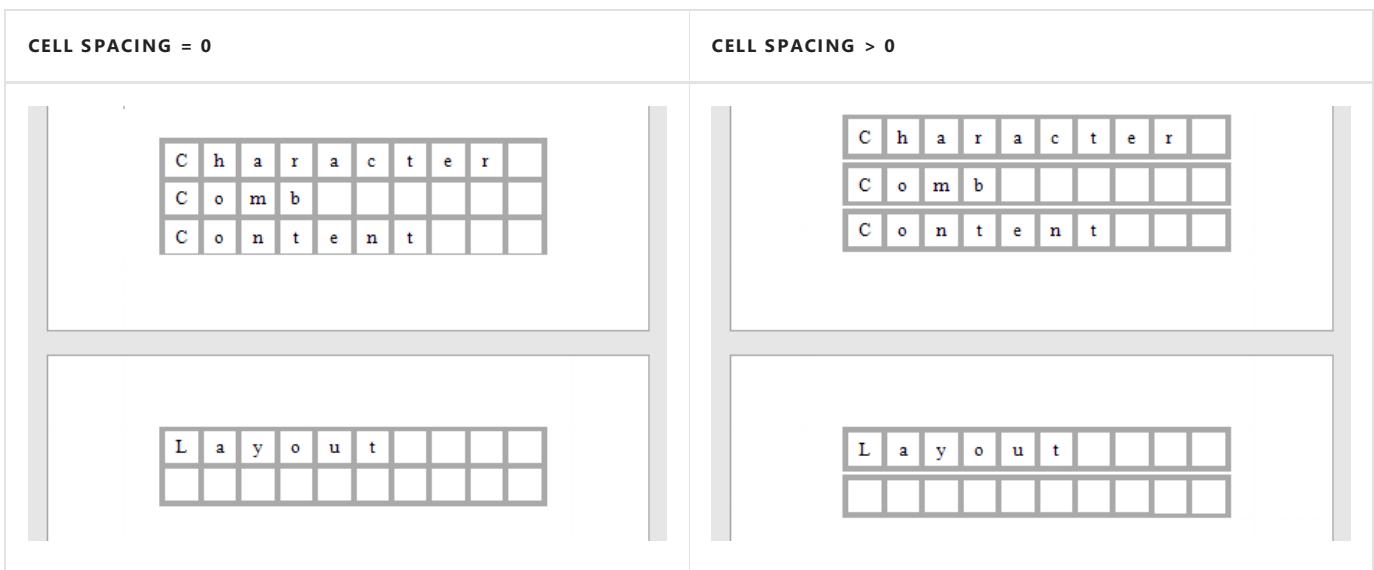


When the cell spacing is set to zero, the borders of adjacent cells are merged (i.e., the actual border width is not doubled).

The following images illustrate how cell spacing affects the **Border Width** property behavior:



When the control's content is to be printed on multiple pages, a page break horizontally splits the cell border based on the cell spacing setting, as shown below.



- **Cell Size Mode**

Specifies whether or not the cell size should depend on the current font size of a control. The following cell size modes are supported:

- **Custom**

The cell size is determined by the **Cell Height** and **Cell Width** property values and does not depend on the assigned font size.

With this setting, the actual cell size is less than the specified **Cell Height** and **CellWidth** by the **Border Width** value.

- **Auto Size**

The cell size depends on the current font size of a control (the **Cell Height** and **Cell Width** properties are ignored).

With this setting, the actual cell size does not depend on the specified border width of a control.

- **Auto Height**

Only the cell height depends on the current font size of a control (the **Cell Height** property is ignored), and the **Cell Width** value is specified manually.

With this setting, the following behavior is expected:

- The actual cell height does not depend on the specified border width of a control.
- The actual cell width is the difference between the specified **Cell Width** and **Border Width** values.

- **Auto Width**

Only the cell width depends on the current font size of a control (the **Cell Width** property is ignored), and **Cell Height** value is specified manually.

With this setting, the following behavior is expected:

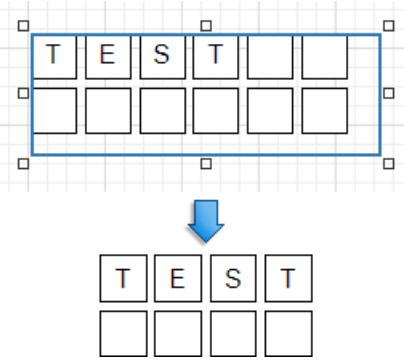
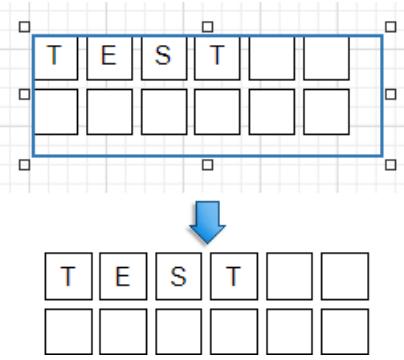
- The actual cell width does not depend on the specified border width of a control.
- The actual cell height is the difference between the specified **Cell Height** and **Border Width** values.

## Content Layout and Position

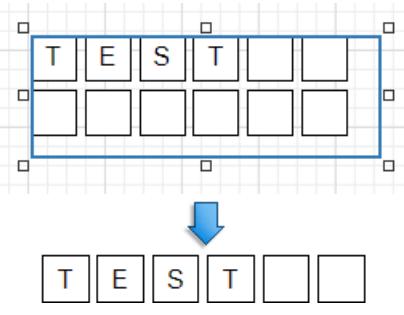
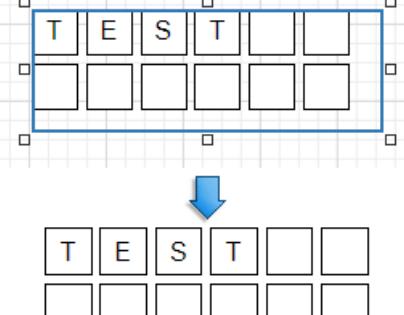
This section describes the **Character Comb** properties that affect the control's position on a page and content layout.

The following image illustrates the behavior of the **Auto Width** property that specifies whether or not the width of a control

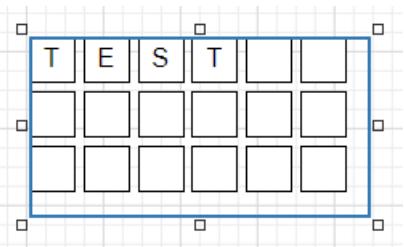
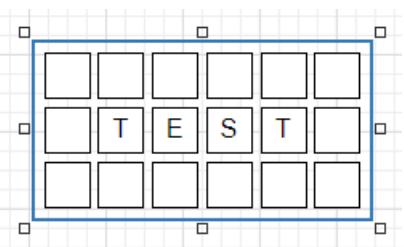
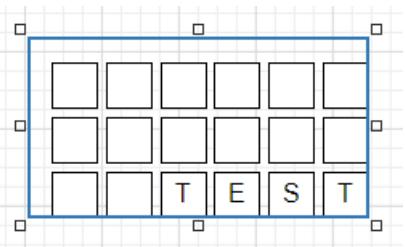
depends on its text. Expand the **Actions** or **Behavior** category to specify this property.

AUTOWIDTH = TRUE	AUTOWIDTH = FALSE
	

The following image illustrates the behavior of the **Can Shrink** property that specifies whether or not the height of a control depends on its text. Expand the **Actions** or **Behavior** category to specify this property.

CANSHRINK = TRUE	CANSHRINK = FALSE
	

The **Text Alignment** property specifies the alignment of text within a control. Expand the **Appearance** category to specify this property.

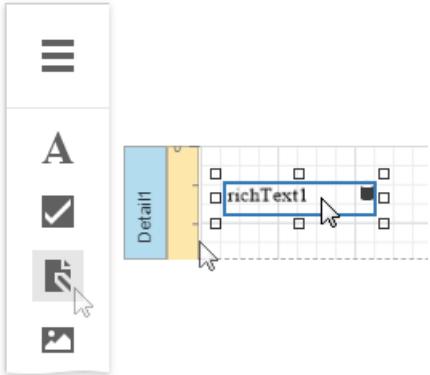
TEXTALIGNMENT = TOP LEFT	TEXTALIGNMENT = MIDDLE CENTER	TEXTALIGNMENT = BOTTOM RIGHT
		

# Rich Text

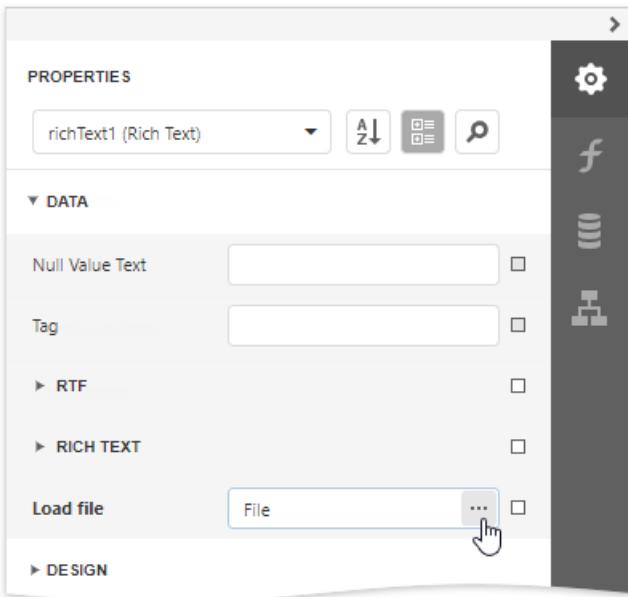
## Overview

The **Rich Text** control displays formatted text (static, dynamic or mixed) in your report.

To add this control to a report, drag the **Rich Text** item from the [Toolbox](#) onto the report's area.

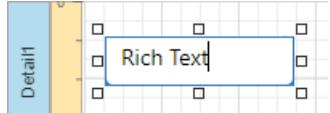


You can load RTF or HTML content from an external file. Expand the **Data** category and click the **Load file** property's ellipsis button.



In the invoked **Open** dialog, select the file and click **Open**.

You can double-click the Rich Text to invoke its in-place editor and enter static text.



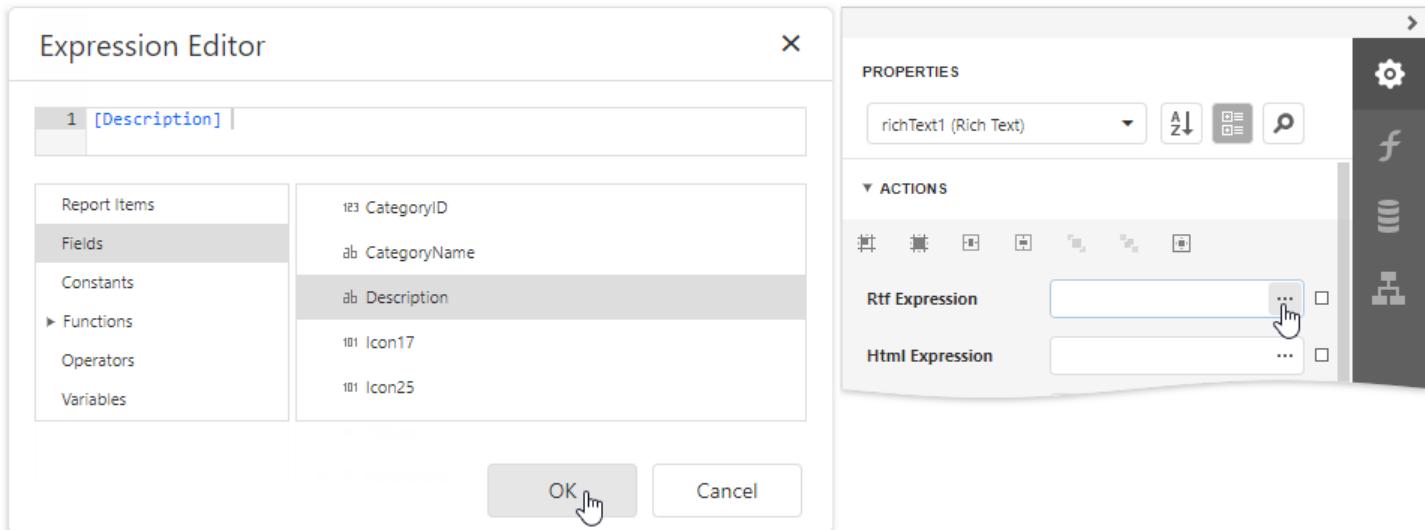
Press **CTRL+Enter** to submit changes and exit the in-place editor.

### Note

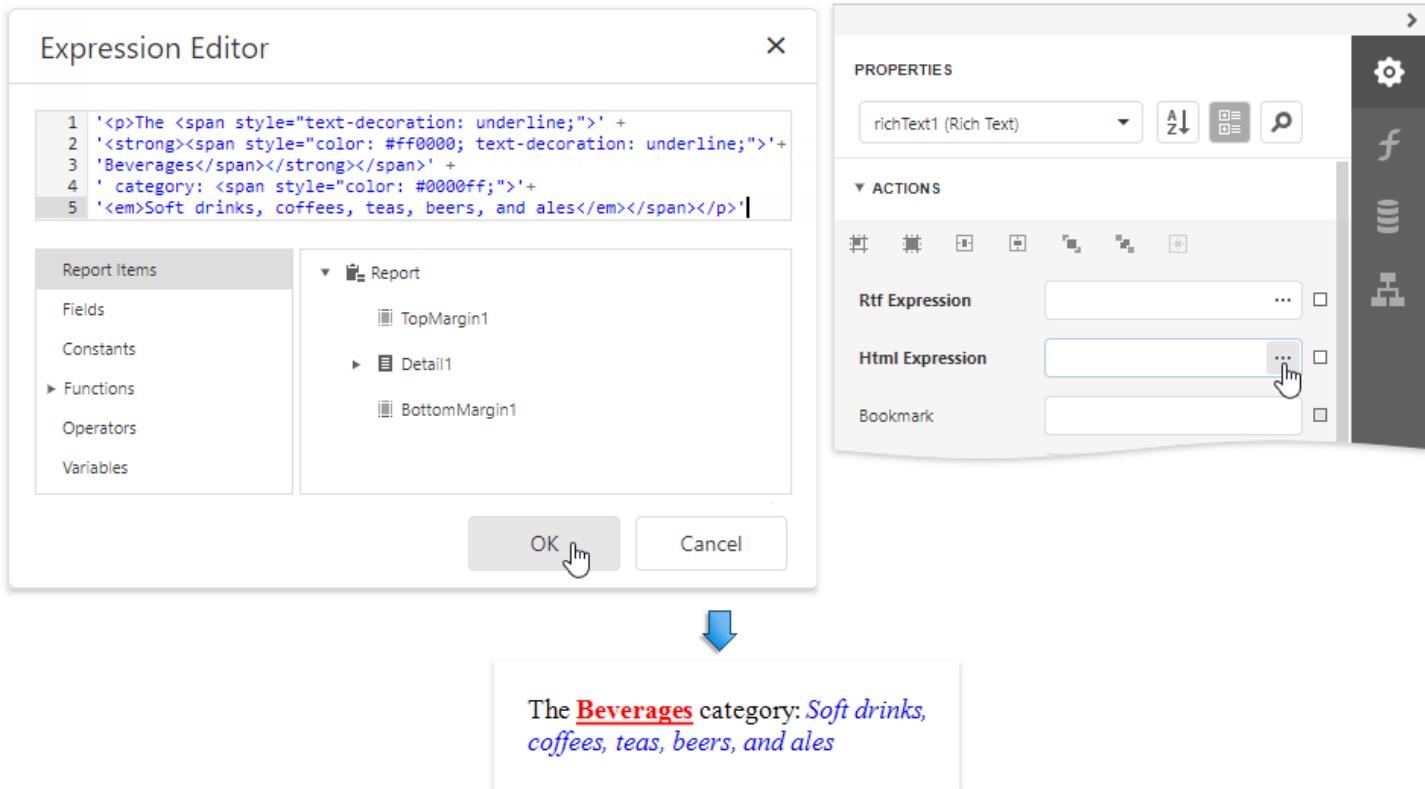
The Rich Text's in-place editor allows you to enter only plain text. Bind the control to a data field that provides RTF or HTML content to display formatted text.

## Bind to Data

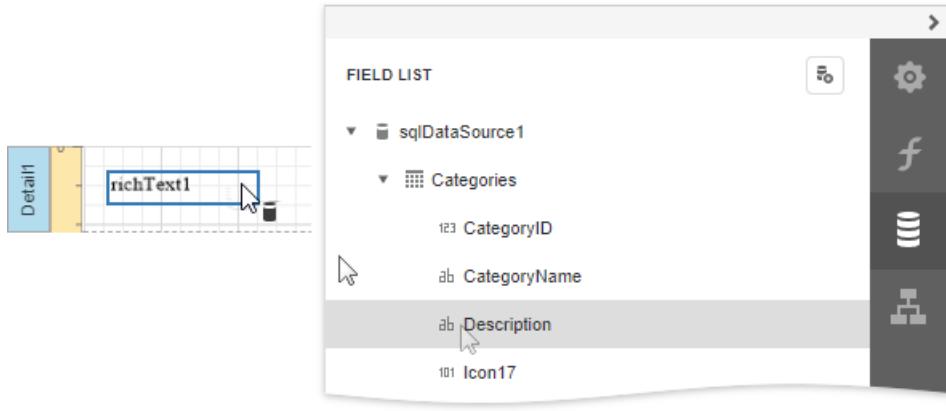
Click the **Rtf Expression** or **Html Expression** option's ellipsis button to invoke the **Expression Editor**. This editor allows you to bind the control to a data field or construct a complex binding expression with two or more data fields.



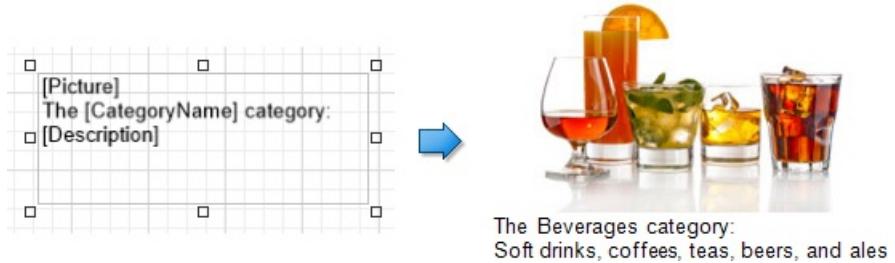
You can use HTML formatted text, which contains markup tags to define text appearance. Click the **Html Expression** option's ellipsis button and enter this text in ' quotes ' in the invoked **Expression Editor**.



Drag and drop a numeric or text field from the **Field List** onto the **Rich Text** control to bind it to this field.



The Rich Text also enables you to merge data fields and static content in its text.

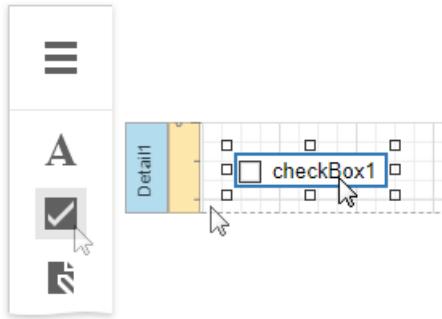


See the [Bind Controls to Data](#) and [Use Embedded Fields](#) topics for more information.

# Check Box

The **Check Box** control displays the checkbox's state.

You can add this control by dragging the **Check Box** item from the [Toolbox](#) onto the report's area.

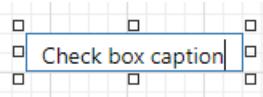


Use one of the following properties to set the checkbox's state:

- **Checked** - indicates whether the checkbox is selected (displays a check mark) or not (is empty).
- **Check State** - specifies one of the following checkbox states:

ICON	CHECK STATE
<input type="checkbox"/>	Unchecked
<input checked="" type="checkbox"/>	Checked
<input type="checkbox"/>	Indeterminate

The **Text** property specifies the checkbox's caption. You can double-click the checkbox to invoke its in-place editor and type the desired text.



## Bind to Data

You can [bind](#) the **Check State** property to a data field obtained from a report's data source. Expand the **Actions** category, click the **Check State** property's ellipsis button and select the required data field in the invoked [Expression Editor](#).

The screenshot shows the Expression Editor dialog box. At the top, there's a preview area with a yellow header labeled "Detail1" containing a single checkbox control named "checkBox1". Below this is the "Expression Editor" title bar with "OK" and "Cancel" buttons.

The main area has a tree view on the left under "Report Items" with "Fields" selected, listing "CategoryID", "Discontinued", "EAN13", "ProductID", and "ProductName".

The "ACTIONS" panel on the right shows the "Check State" set to "Unchecked" and the "Text" property set to "checkBox1". The "Text" property has an ellipsis button highlighted with a mouse cursor.

The data field value determines the checkbox state in the following manner:

- **True** or **1** activates the **Checked** state;
- **False** or **0** activates the **Unchecked** state;
- Any other value activates the **Indeterminate** state.

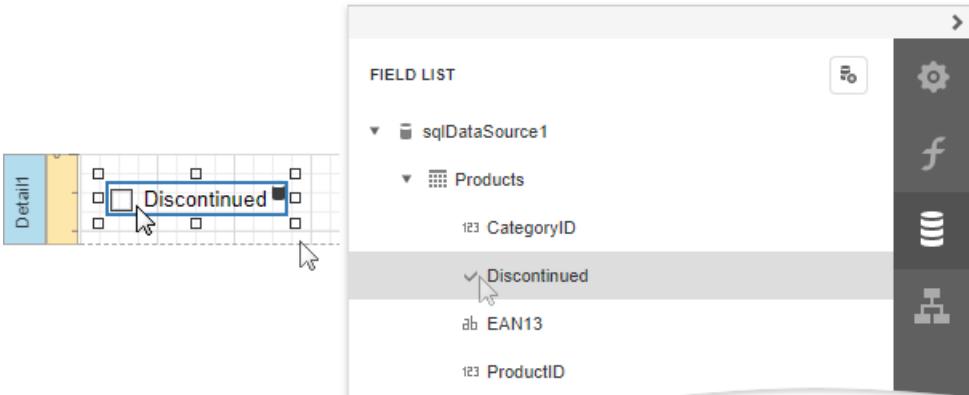
In the same way, click the **Text** property's ellipsis button and select the desired data field or construct a complex binding expression involving two or more data fields.

This screenshot is similar to the previous one but shows a more complex binding expression in the "Text" property of the "checkBox1" control.

The "Text" property contains the expression: `IIf( [UnitsInStock] > 0, 'Units in stock:' + [UnitsInStock] , 'None')`.

The "ACTIONS" panel shows the "Check State" set to "Unchecked" and the "Text" property set to "checkBox1". The "Text" property has an ellipsis button highlighted with a mouse cursor.

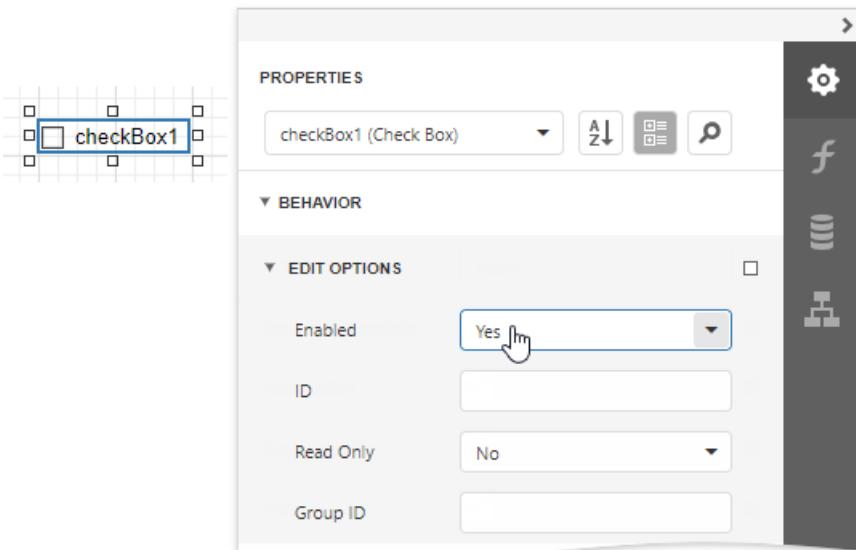
You can also drag and drop a Boolean type data field from the **Field List** to create a new checkbox bound to this field.



See the [Bind Report Controls to Data](#) topic to learn more about creating data-aware controls.

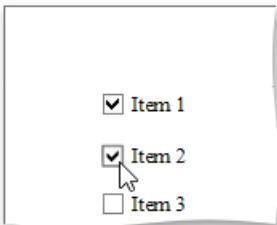
## Interactivity

Set the **Edit Options | Enabled** option to **Yes** to enable [changing the checkbox state](#) in Print Preview.



The **Group ID** setting defines the checkbox's behavior in Print Preview:

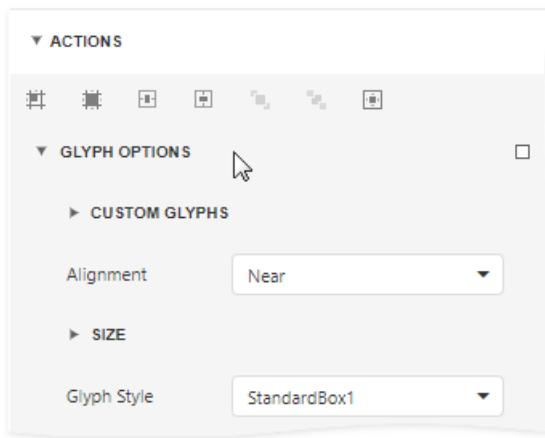
- When you set this property to an empty string value, a checkbox can be switched to either the "checked" and "unchecked" state independently on other available check boxes.



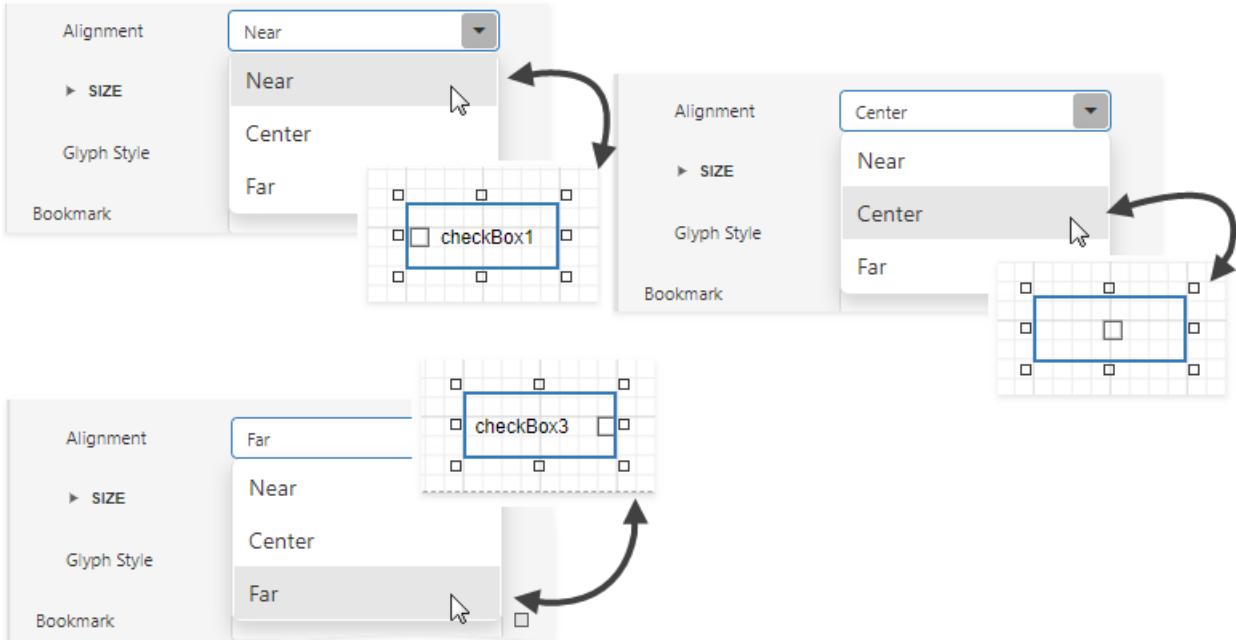
- Otherwise, the field editor behaves like a radio button, and editors that have the same ID belong to a single logical group (that is, only one option can be selected in a group at a time).

## Glyph Customization

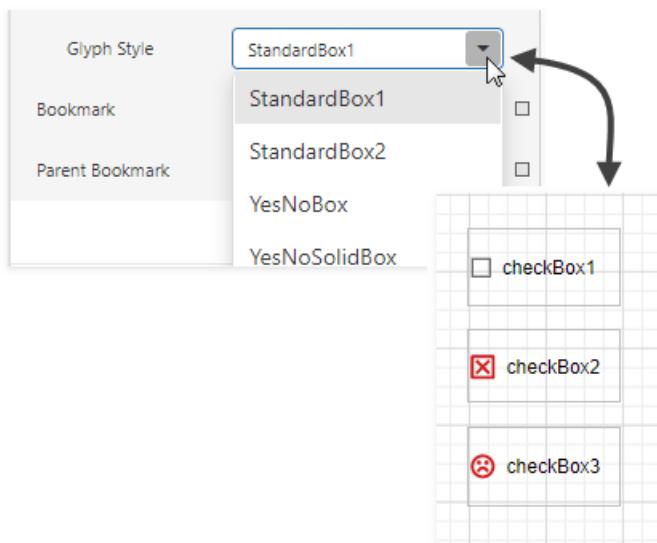
The **Glyph Options** property provides access to glyph settings.



- **Alignment** - specifies the glyph's alignment within the control.



- **Size** - specifies the glyph size.
- **Glyph Style** - specifies a predefined glyph style.



- **Custom Glyphs** - specifies a custom glyph image for each checkbox state (Checked/Unchecked/Indeterminate).

▼ CUSTOM GLYPHS

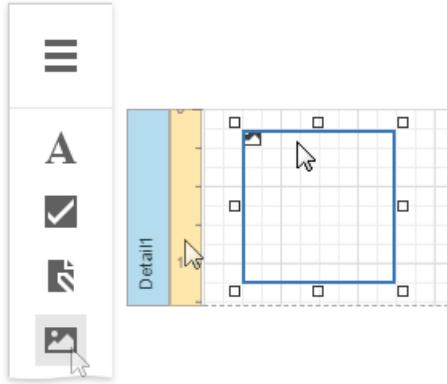
Checked	Image	...
Unchecked	Image	...
Indetermina...	Image	...

# Picture Box

## Overview

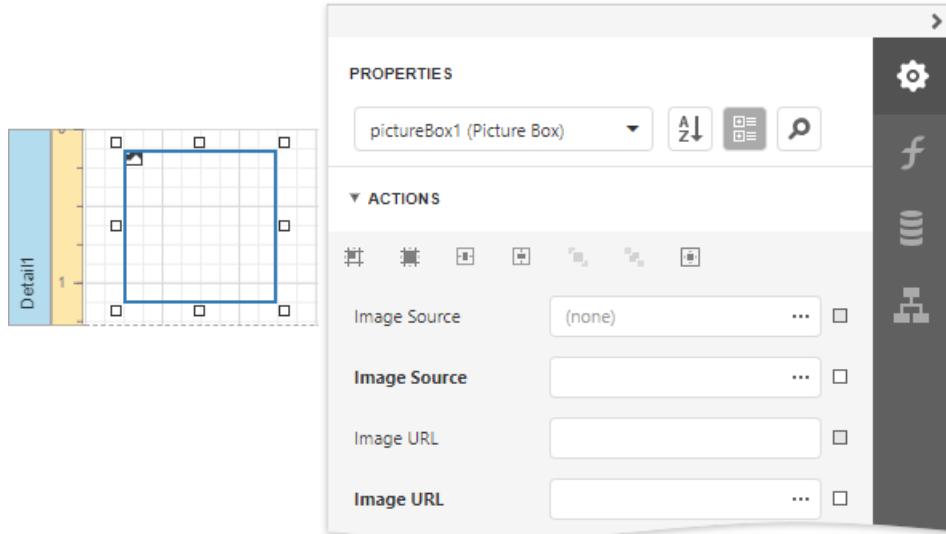
The **Picture Box** control allows you to embed *static* (stored with the report) or *dynamic* (obtained from a data source) images into a report.

To add this control to a report, drag the **Picture Box** item from the **Toolbox** onto the report's area.



The Picture Box can display images with the following formats: BMP, JPG, JPEG, GIF, TIF, TIFF, PNG, ICO, DIB, RLE, JPE, JFIF, EMF, WMF, SVG.

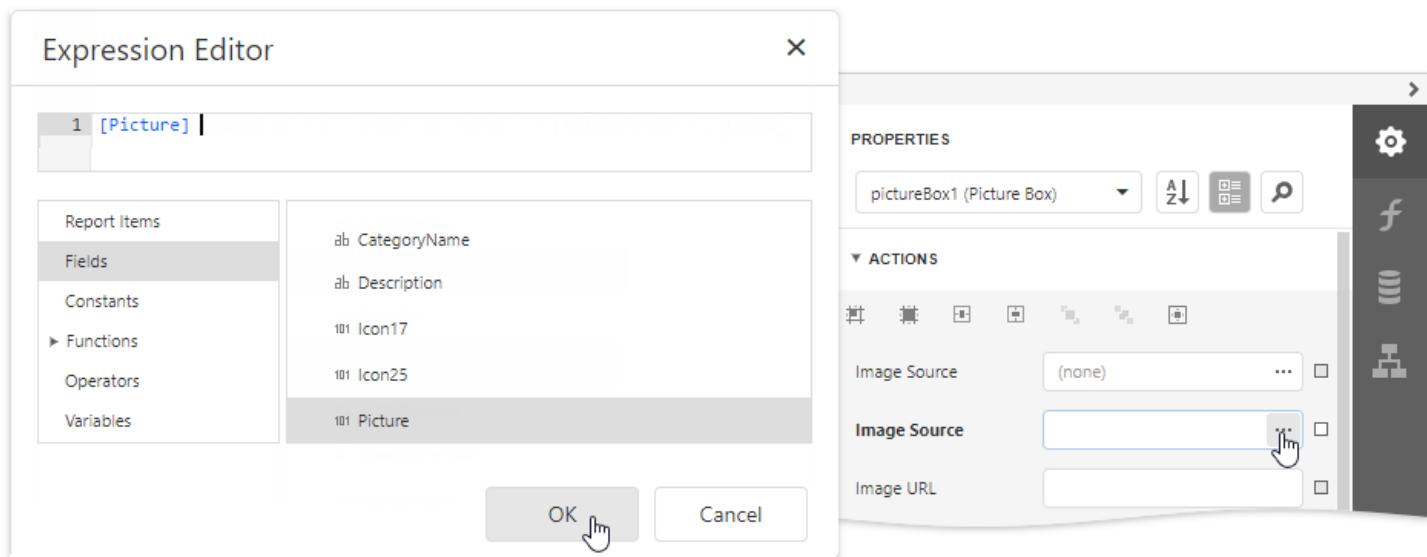
Use the **Image Source** or **Image URL** property to specify the image the Picture Box displays. You can access these properties in the **Actions** category.



The specified image is [saved](#) with the report if you use the **Image Source** property. If you use the **Image URL** property, only the path to the image is stored.

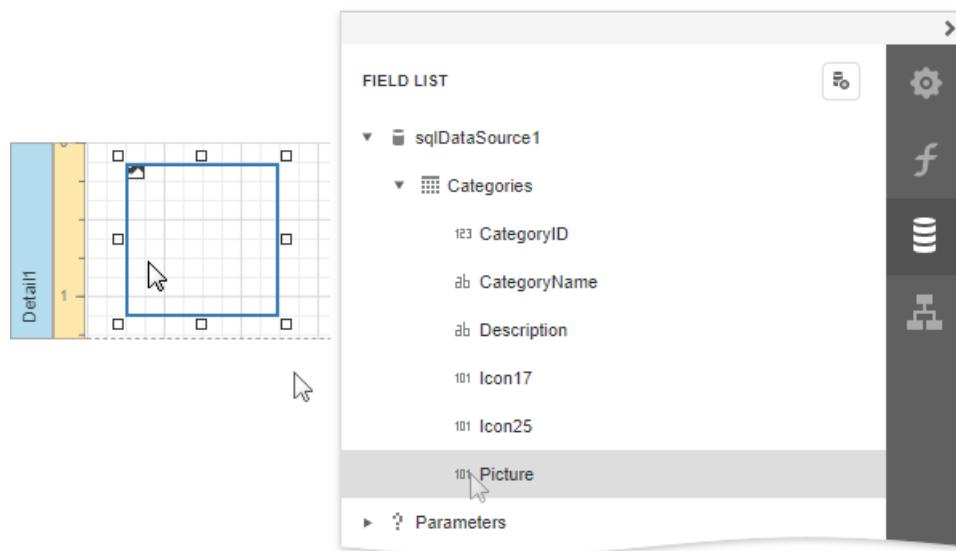
## Bind to Data

You can use the Picture Box to display an image [dynamically obtained](#) from a data source. Click the **Image Source** property's ellipsis button and select the data field in the invoked [Expression Editor](#). You can use this editor to construct a binding expression that can include two or more data fields.



You can bind the **Image URL** property to data in the same way.

You can also drag and drop a field that contains image data from the [Field List](#) to create a new Picture Box bound to this field.



See the [Bind Report Controls to Data](#) topic for more information about how to create data-aware controls.

## SVG Support Limitations

The Picture Box does not support the following SVG content:

- Gradient colors
- Text (you can convert text to curves as a workaround)
- Animations
- External .css styles

Export (except for PDF) has the following limitations:

- SVG images are converted to metafiles because document viewers may not support SVG format.
- SVG images are exported as PNG in the **Microsoft Azure** environment.

The **Medium Trust** permission level does not support SVG.

# Image Size Modes

Use the **Sizing** property to specify an image's position in the Picture Box.

The screenshot shows the Windows Forms Designer's Properties window. The 'pictureBox1 (PictureBox)' control is selected. In the 'ACTIONS' section, the 'Sizing' property is expanded, showing a dropdown menu with the following options: Normal (selected), Stretch Image, Auto-Size, Zoom Image, Squeeze, and Tile. Other properties like 'Image Source' and 'Image URL' are also visible in the window.

This control supports the following image size modes:

- **Normal**

The image is displayed at the top left corner with its original dimensions. The image is clipped if it does not fit the control's boundaries.



- **Stretch Image**

The image is stretched or shrunk to fill the control's width and height.



- **Auto-Size**

The control's dimensions are adjusted to the image's size.



- **Zoom Image**

The image is resized proportionally without clipping it to fit the control dimensions.



- **Squeeze**

The image is centered and shown full-size if the control dimensions exceed the image size. Otherwise, the image is resized to fit the control's boundaries.



- **Tile**

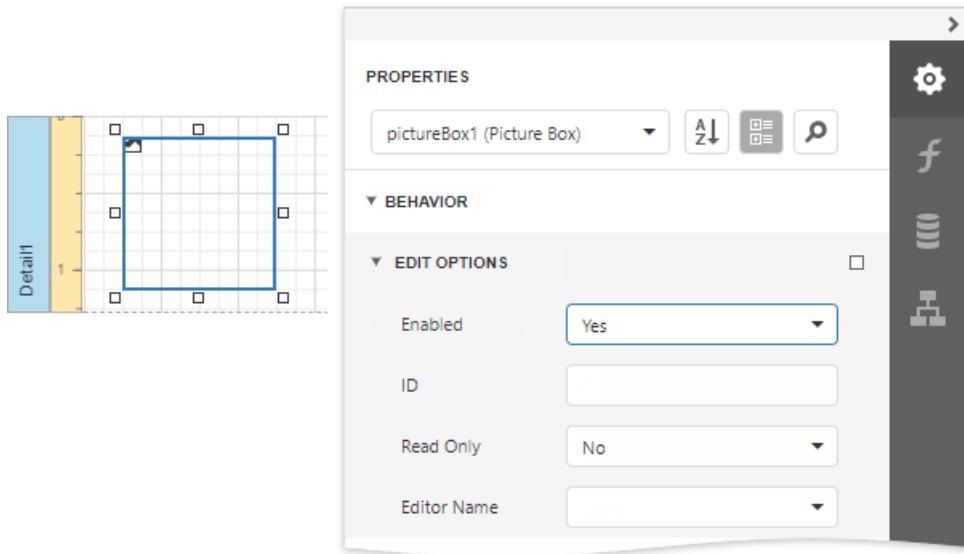
The original image is replicated within the control starting from the top left corner. The replicated image is clipped if it does not fit the control's boundaries.



You can also use the **Image Alignment** property in the **Normal**, **Zoom Image** and **Squeeze** modes to specify the alignment in relation to the control's boundaries.

## Interactivity

You can add a possibility to load/change an image and/or draw a signature in a Picture Box when it is displayed in Print Preview. To do this, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes**.



Click the Picture Box in a previewed document and an editor invokes.



#### Tip

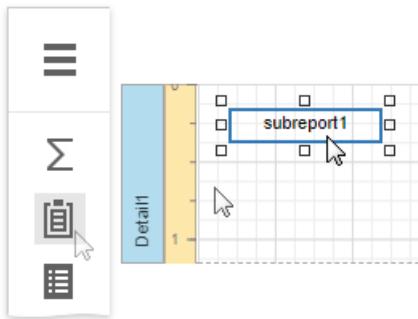
You can draw borders for the Picture Box to make the editor visible in Print Preview, if an image is not specified.

Refer to the [Edit Content in Print Preview](#) and [Create an Interactive E-Form](#) topics to see how use this Picture Box mode.

# Subreport

The **Subreport** control is used to embed other reports into the current report.

To add this control to the report, drag the **Subreport** item from the [Toolbox](#) onto the report's area.



The Subreport control allows you to solve the following tasks:

- **Reuse reports**

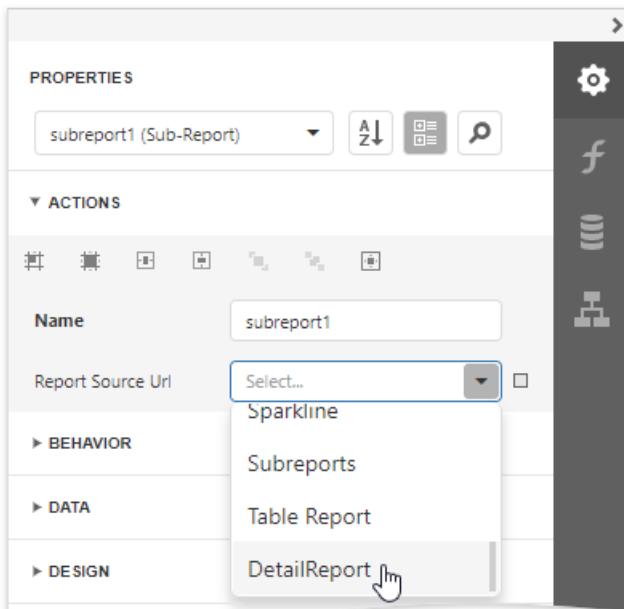
This can be useful if there is a particular report structure (template) that needs to be included in many reports, and the report must have consistent appearance and functionality. A good example is a report header that always contains the same information (the company information, logo, date, etc.).

- **Create master-detail reports**

Another reason for using subreports is to create master-detail reports (reports with hierarchically linked data). For more details on this, see [Create a Master-Detail Report \(Use Subreports\)](#).

- [Merge Reports](#)

You can use an already existing report in the report storage as a report source. Select the Subreport control, open the **Actions** category, expand the **Report Source URL** property's drop-down list and select the required report.

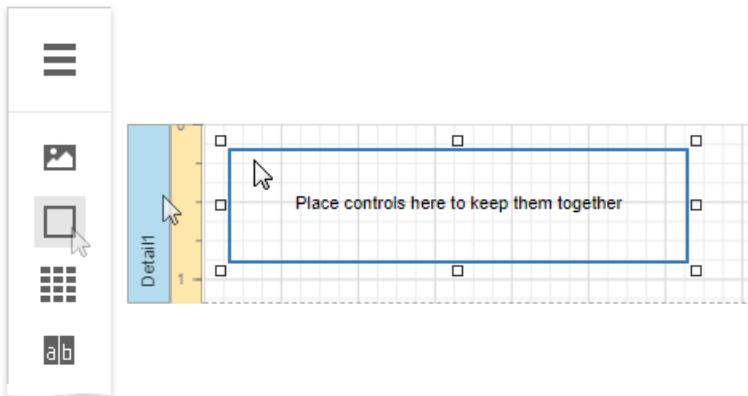


Double-clicking a subreport opens its associated report in a new Report Designer tab.

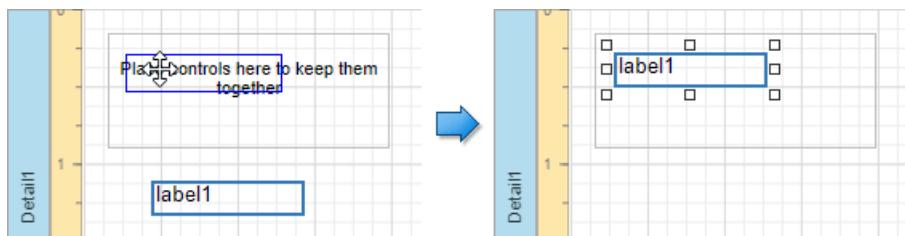
# Panel

The **Panel** control is a container that frames separate report controls and allows you to move, copy and paste them. The panel also visually unites report controls in Print Preview (for instance, with borders or a uniform color background).

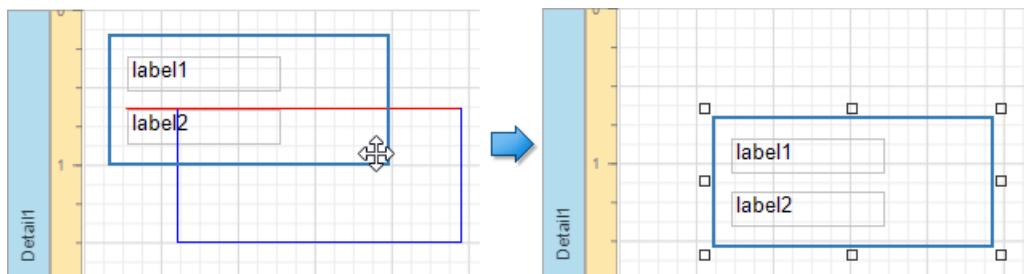
To add a panel to a report, drag the **Panel** item from the [Toolbox](#) and drop it onto the required report band.



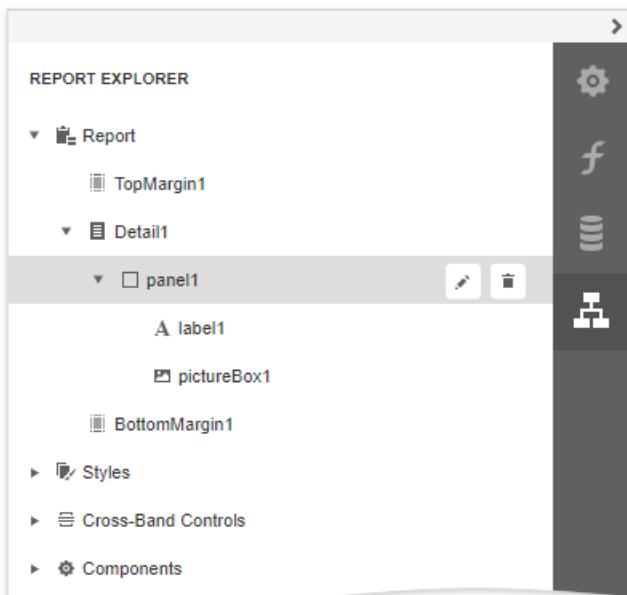
Drop the desired report controls onto the panel to combine them to a group.



You can use this panel to move, copy, change appearance settings, etc. instead of adjusting individual controls.



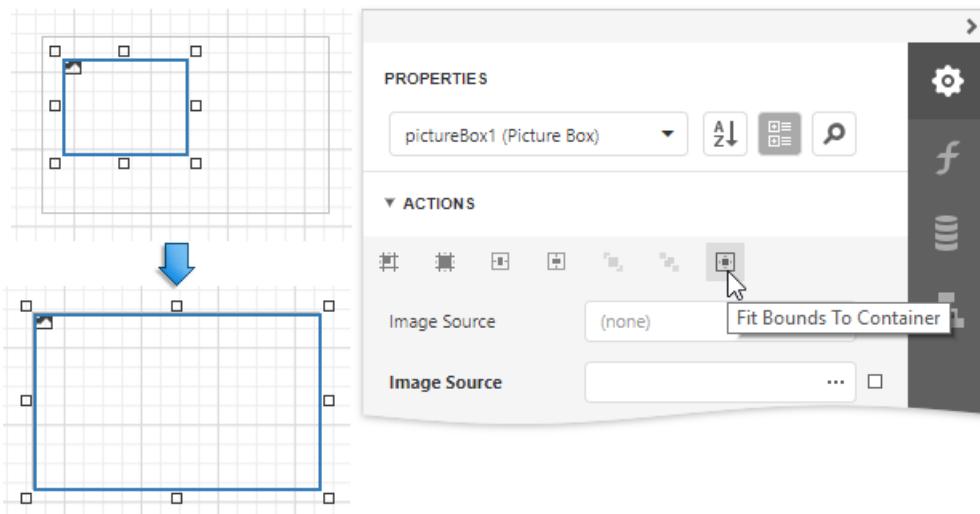
The [Report Explorer](#) displays controls placed onto a panel as its subordinate nodes.



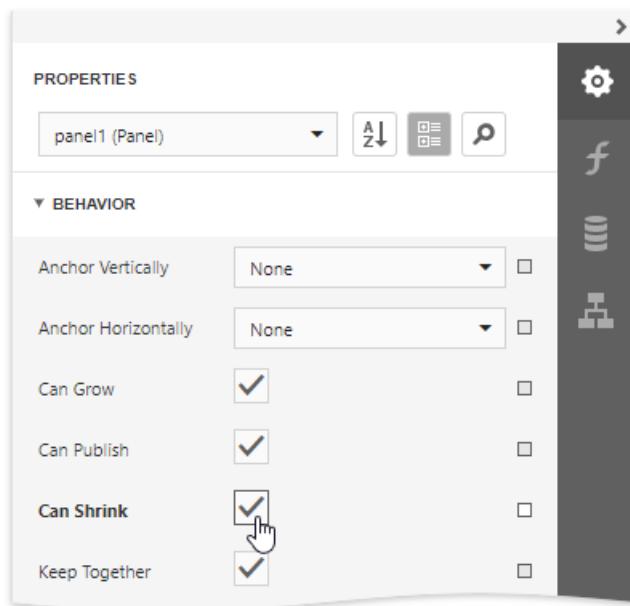
The panel cannot contain the following report controls:

- [Pivot Grid](#)
- [Subreport](#)
- [Page Break](#)
- [Table of Contents](#)
- [Cross-Band Line and Box](#)

If a panel includes only one control, you can use the **Fit Bounds to Container** in the **Actions** category. This command resizes the control so that it occupies all the available container space (excluding borders).



You can also enable the panel's **Can Shrink** property to automatically adjusts the panel's size to fit all the inner controls. For instance, this allows preventing blank areas when you [conditionally hide specific controls](#).



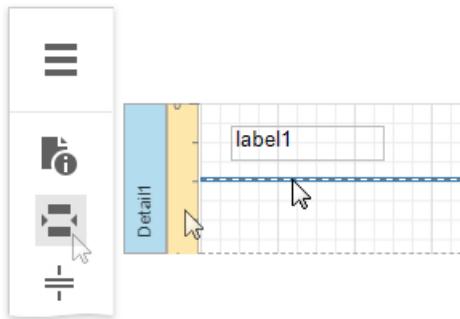
#### ■ Note

The Panel control cannot span several [report bands](#) as [cross-band controls](#) can.

# Page Break

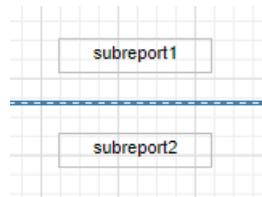
The **Page Break** control's sole purpose is to insert a page delimiter at any point within a report.

You can add this control by dragging the **Page Break** item from the [Toolbox](#) onto the report's area.

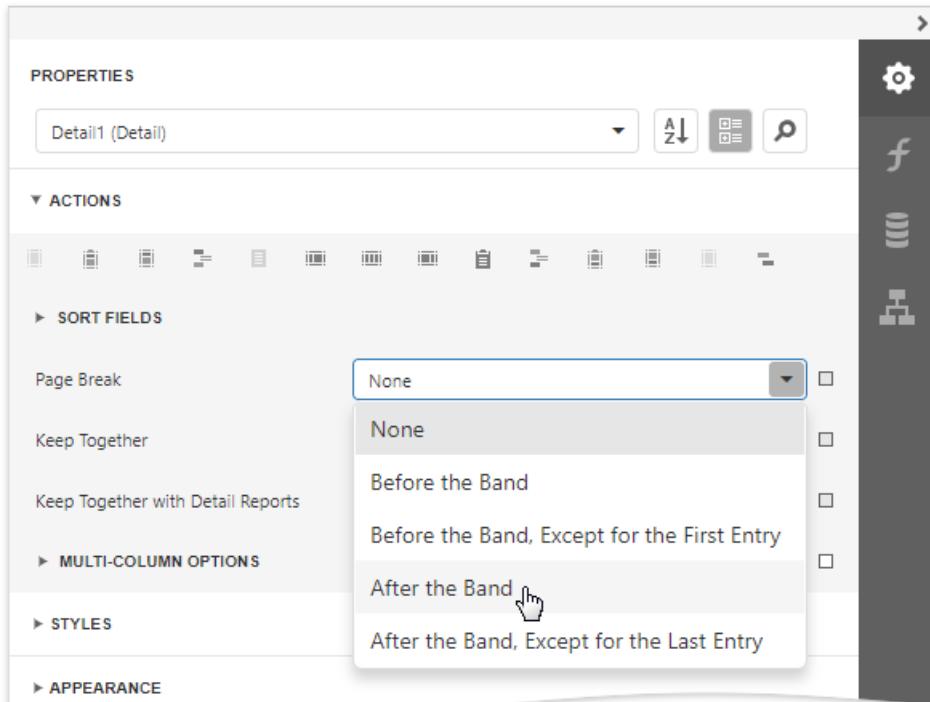


This control is visually represented by a short line attached to the report's left margin.

The Page Break control is useful when you need to insert a page break between controls within a [report band](#) (for example, to divide subreports so that the second subreport starts printing on a new page).



You can also insert a page break before or after a specific report band using the band's **Page Break** property.

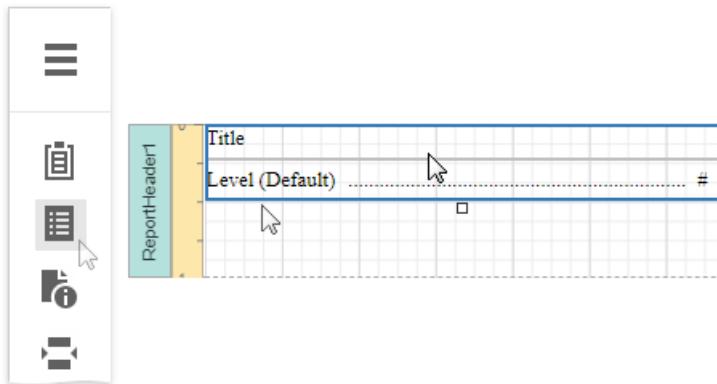


# Table of Contents

## Overview

Once [bookmarks](#) have been assigned to specific report elements, you can generate a table of contents that displays page numbers containing the elements included into the document map.

To implement a table of contents, drop the **Table Of Contents** control from the [Toolbox](#) onto the report's area. If the report does not contain a [Report Header](#) at the moment, it is created automatically so that the table of contents can be added to it.



The following image illustrates the difference in displaying information by a table of contents within a report and in a published document.

The diagram shows the transition from the Report Designer environment to the final published output. At the top, the Report Designer interface is shown with a 'ReportHeader1' section containing a table of contents. An arrow points downwards to a screenshot of the published report. The published report features a main title 'Products By Category' and a detailed table of contents below it, listing categories like Beverages and Condiments along with their corresponding page numbers.

Category	Item	Page Number
Beverages	Chai	4
Beverages	Chang	5
Beverages	Guaraná Fantástica	6
Beverages	Sasquatch Ale	7
Beverages	Steeleye Stout	8
Beverages	Côte de Blaye	9
Beverages	Chartreuse verte	10
Beverages	Ipoh Coffee	11
Beverages	Laughing Lumberjack Lager	12
Beverages	Outback Lager	13
Beverages	Rhönbräu Klosterbier	14
Beverages	Lakkalikööri	15
Condiments	Aniseed Syrup	16
Condiments	Chef Anton's Cajun Seasoning	17

## Table of Contents Structure

The table of contents contains the following elements:

1. A title that displays text and formatting options specified by the **Level Title** property.
2. One or more document levels that provide individual formatting settings to specific nodes of a document map's tree. To access the collection of levels, use the **Levels** property.

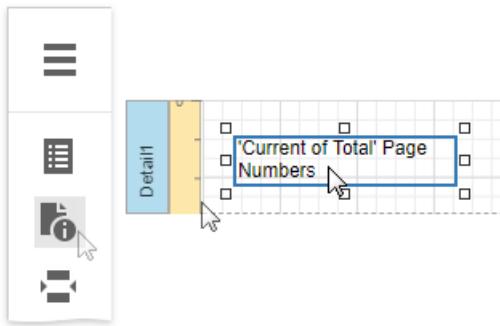
Unless levels have been added to a table of contents, a single default level is used to provide common settings to the elements of a document map for which no specific level has yet been assigned.

Refer to the [Add a Table of Contents](#) topic for a step-by-step tutorial.

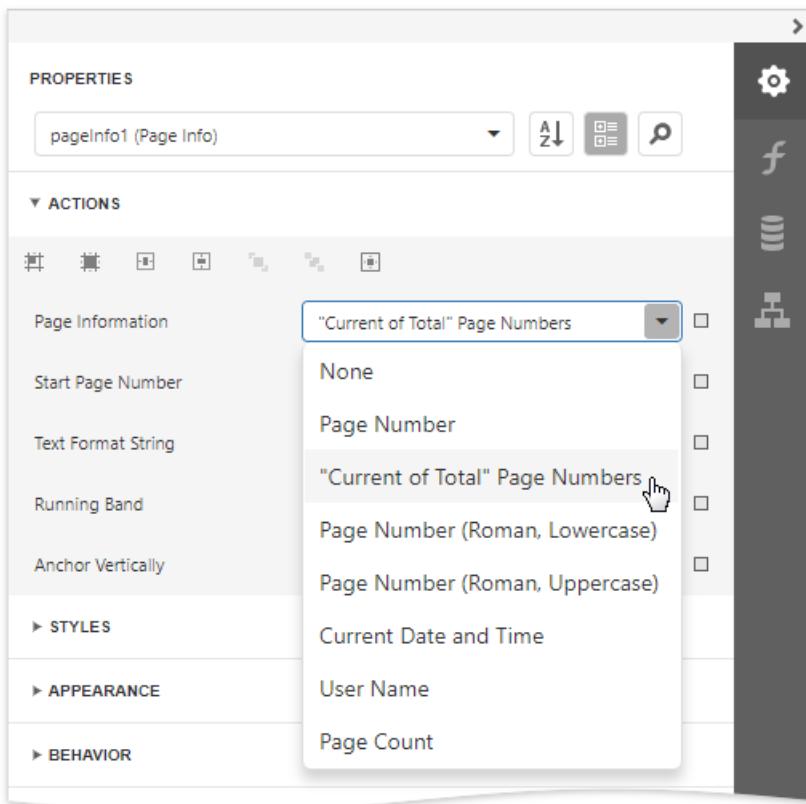
# Page Info

The **Page Info** control is used to display auxiliary information on report pages, such as date, time, page numbers or user name.

To add a new Page Info control to a report, drag the **Page Info** item from the **Toolbox** and drop it onto the required report band.



Use the **Page Information** property to define the kind of information the control displays: page numbers, system date-time, or user name.



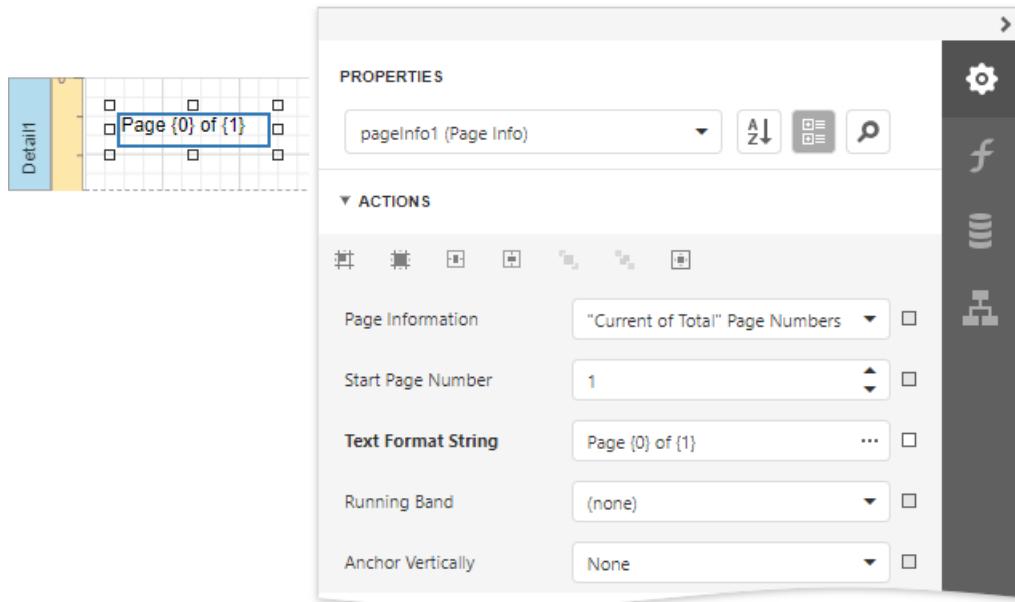
For examples of different uses of this control, see the corresponding tutorials:

- [Add Page Numbers](#)
- [Display the User Name in a Report](#)
- [Display the Current Date and Time in a Report](#)

## Note

Because usually this information is displayed in the Page Header/Footer and Top/Bottom Margin bands, you cannot bind the **Page Info** property to a field from a data source. So, in order to display dynamic information, use the [Label](#) or [Rich Text](#) controls instead.

In addition, a format string can be applied to a control's contents. For example, you can change the control's format to **Page {0} of {1}** using the **Text Format String** property.



When a report contains at least one [group](#), you can specify individual page numbers for report groups by setting the **Running Band** property to the name of the required group.

# Use Tables

The documents in this section describe the **Table** control and illustrate its main features:

- [Table Overview](#)
- [Bind Table Cells to Data](#)
- [Manage Table Structure](#)
- [Manipulate Table Elements](#)
- [Hide Table Cells](#)

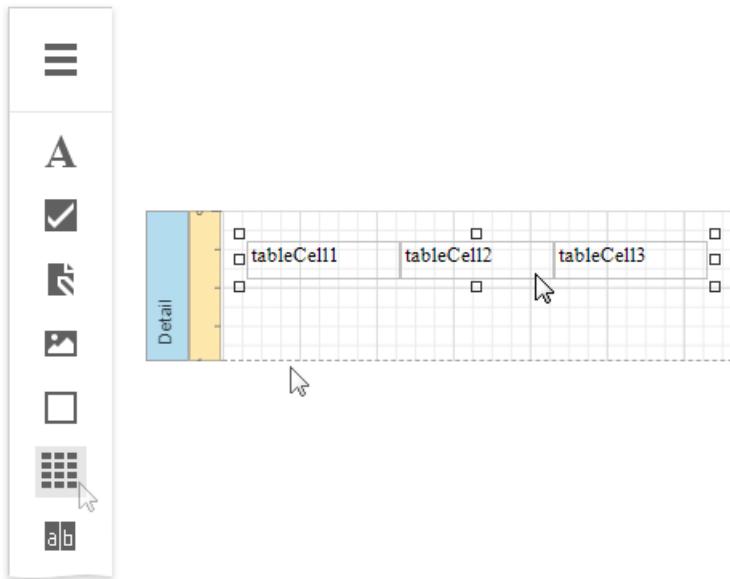
## □ Note

Refer to [Create a Table Report](#) for a step-by-step tutorial on creating a data-bound table report.

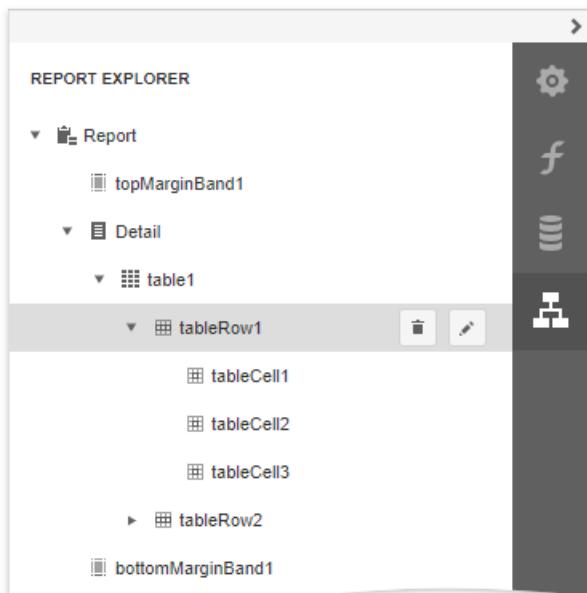
# Table Overview

The **Table** control displays information in a tabular format and allows you to create [table reports](#).

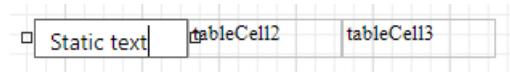
You can add a table control by dragging the **Table** item from the [Toolbox](#) onto the report's area.



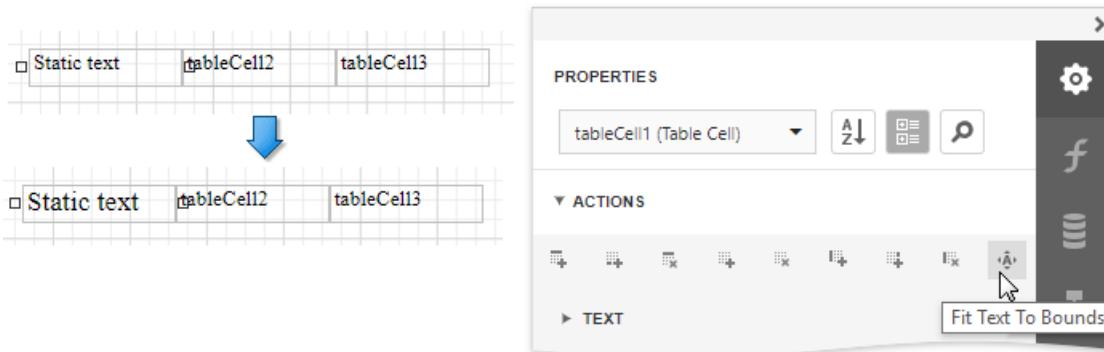
The table control contains one or more rows. Each row contains one or more cells. See the [Report Explorer](#) for a table structure example.



You can double-click the cell to invoke its in-place editor and type the desired static text.



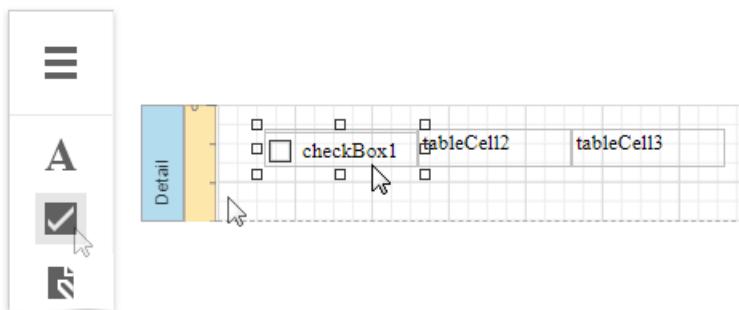
You can adjust the font size of a cell's static text to fit into the cell's boundaries. Use the **Fit Text to Bounds** command in the **Actions** category.



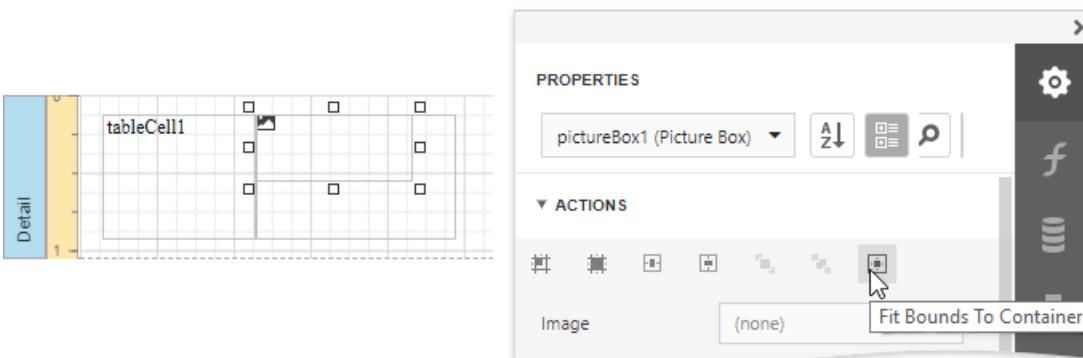
Refer to [Bind Table Cells to Data](#) to learn about providing dynamic content to table cells.

A table cell is like an [Label](#) control - it provides the same options for text formatting, alignment, appearance, interactivity, etc.

You can also make a table cell act as a container for other report controls by dropping the required control from the toolbox on this cell.



If a table cell includes only one control, you can right-click this control and use the **Fit Bounds to Container** command in the context menu. This command resizes the control so that it occupies all the available cell space (excluding borders).

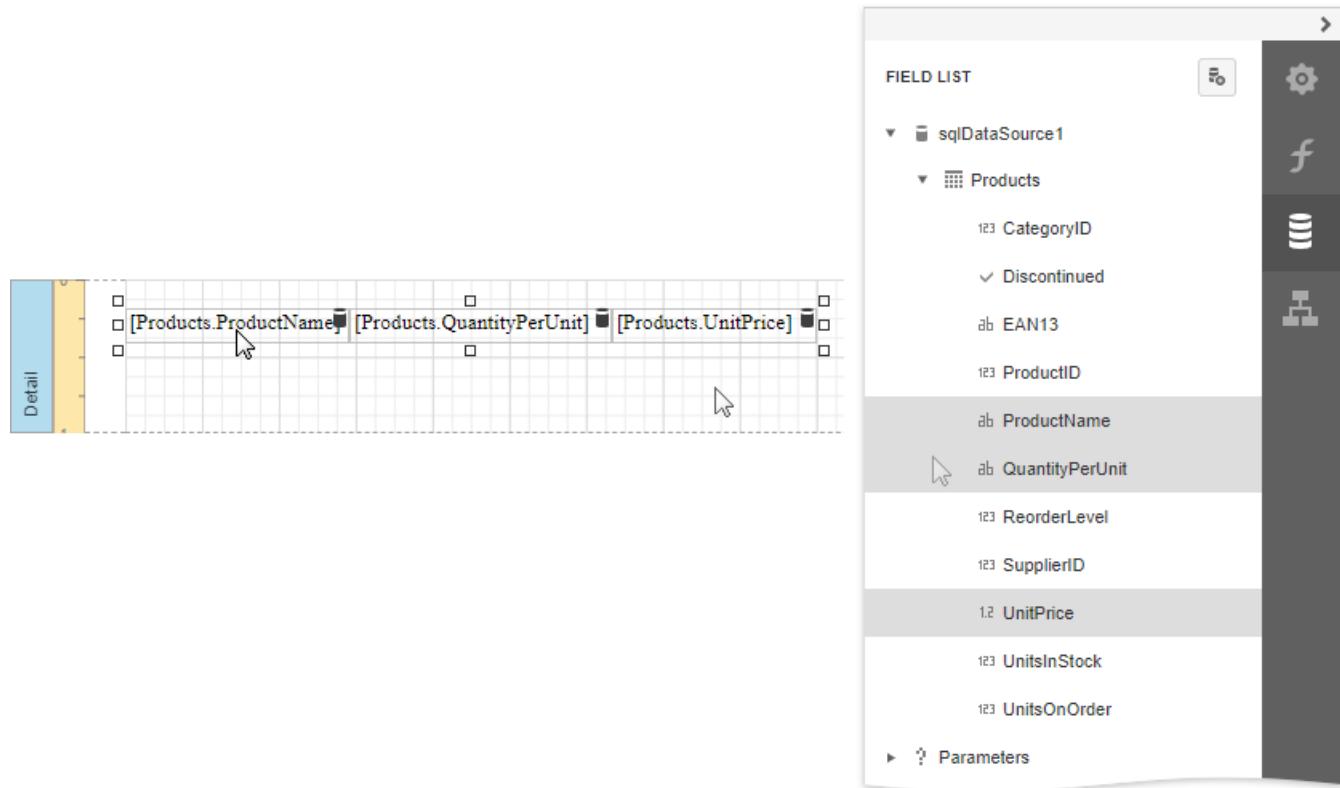


You can assign different [visual styles](#) for even and odd table rows to improve readability.

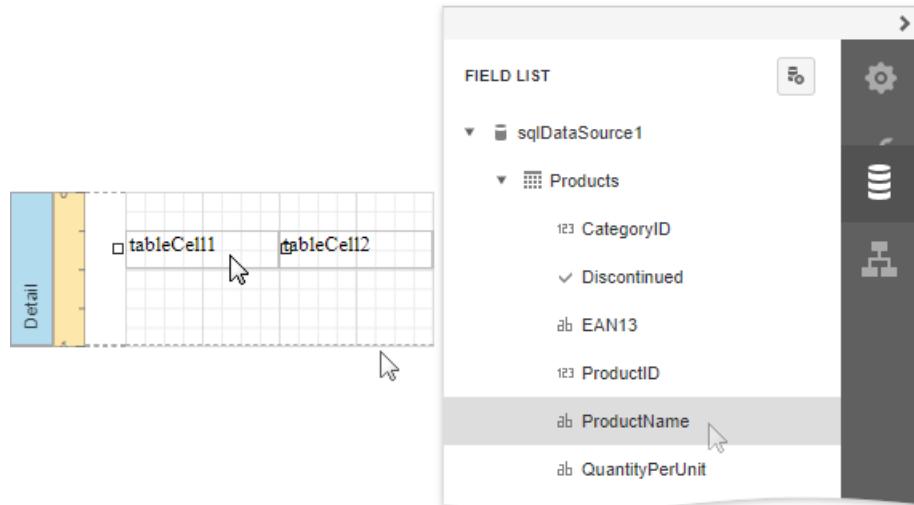
# Bind Table Cells to Data

Use the [Field List](#) to create a table control with cells [bound](#) to data fields obtained from a report's data source.

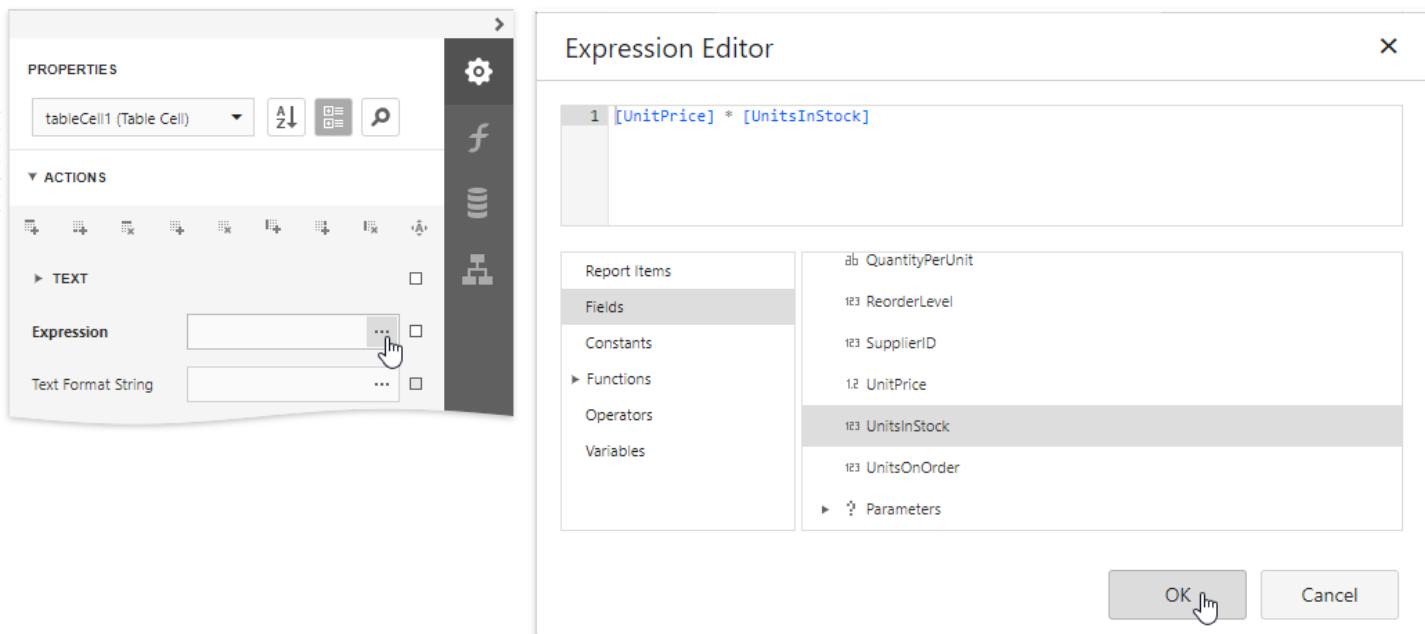
Hold CTRL or SHIFT and click multiple data fields to select them. Drop the selected data fields onto the Detail band.



You can bind individual table cells to data in the same ways as [Label](#) controls. Drop a data field onto an existing cell to bind this cell to the corresponding field.

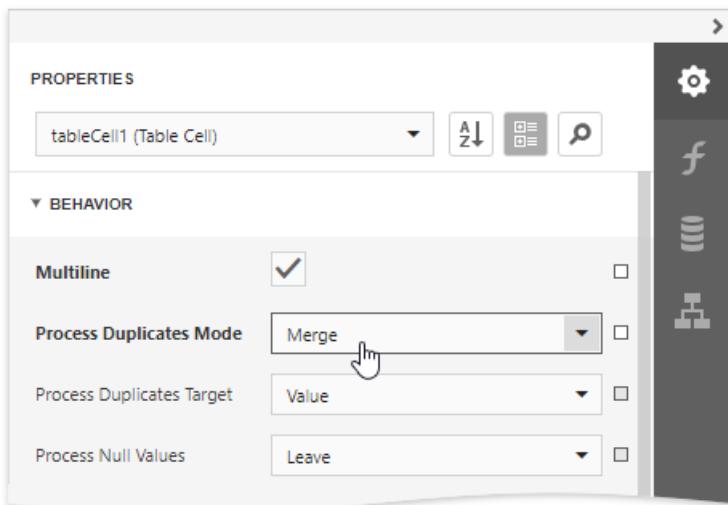


Use the [Expression Editor](#) to construct a complex binding expression with two or more data fields. Click the **Expression** option's ellipsis button to invoke the Expression Editor.



See the [Bind Report Controls to Data](#) topic for information on how to create data-aware controls.

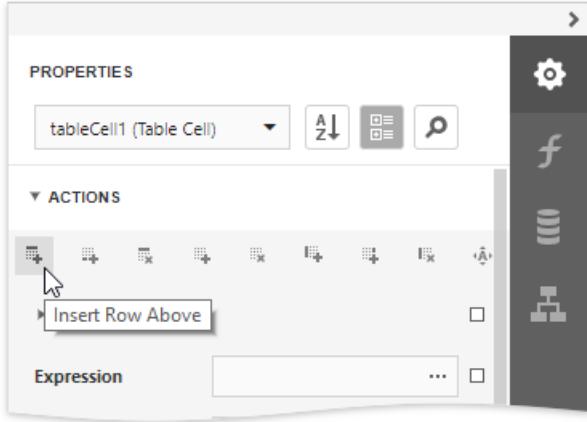
The **Process Duplicates Mode** and **Process Duplicates Target** options enable you to merge cells with identical values.



# Manage Table Structure

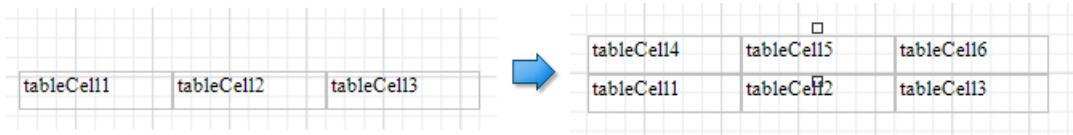
## Insert Table Elements

Use **Insert** commands in the **Actions** category to add new rows and columns. The added cells inherit the source cells' size and appearance settings.



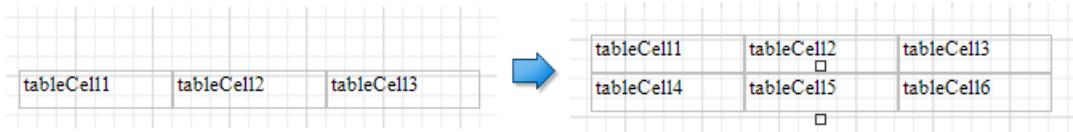
- **Insert Row Above**

Inserts a row above the current cell and shifts the existing rows up if there is enough space above the table (otherwise, shifts the existing rows down).



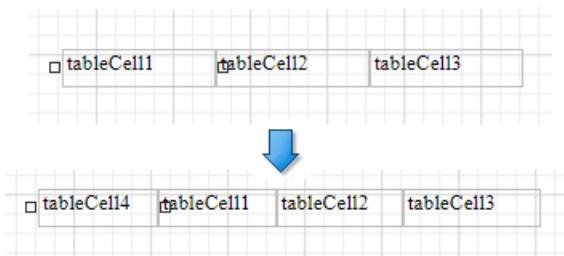
- **Insert Row Below**

Inserts a row below the current cell and shifts the existing rows down. This command increases the band height to accommodate all the rows if there is not enough space under the table.



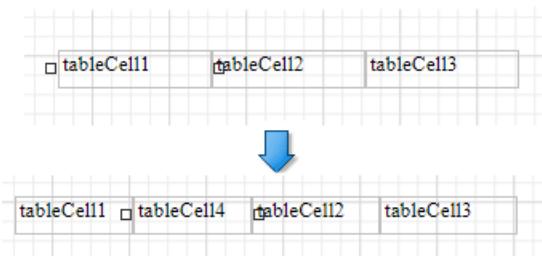
- **Insert Column to Left**

Inserts a new column to the left of the current cell and shifts the leftmost columns to the left (otherwise, shifts these columns to the right).



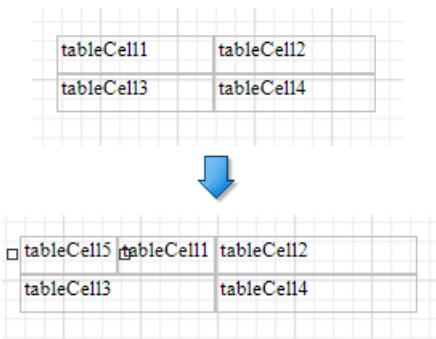
- **Insert Columns to Right**

Inserts a new column to the right of the current cell and shifts the rightmost columns to the right. This command decreases all columns' width proportionally to accommodate all the columns if there is not enough space to the right of the table.



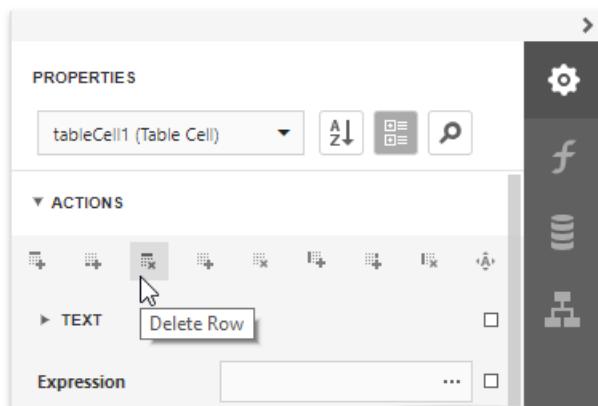
- **Insert Cell**

Divides the current cell width in half and inserts a new cell to the left. The added cell copies the source cell's appearance settings.



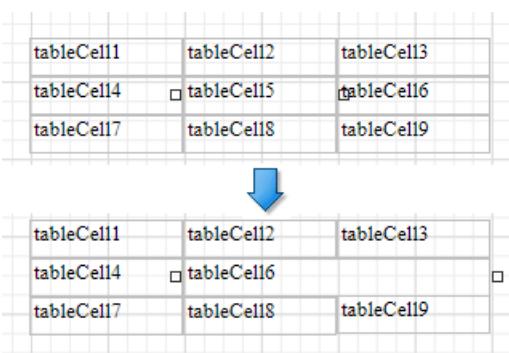
## Delete Table Elements

Use **Delete** commands in the **Actions** category to remove table elements.



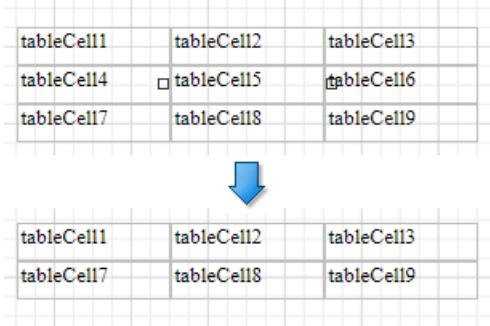
- **Delete Cell**

Deletes a table cell and stretches the next cell to occupy the remaining space. If this cell is the last in the row, the previous cell is stretched.



- **Delete Row**

Deletes a row and shifts the existing rows up.



The diagram shows a 3x3 grid of table cells. The first row contains 'tableCell11', 'tableCell12', and 'tableCell13'. The second row contains 'tableCell14' (with a small square icon), 'tableCell15', and 'tableCell16' (with a small square icon). The third row contains 'tableCell17', 'tableCell18', and 'tableCell19'. A large blue arrow points downwards from the original 3x3 grid to a smaller 2x3 grid below it. In the second row of the smaller grid, the first cell ('tableCell14') and its small square icon are missing, indicating they have been deleted.

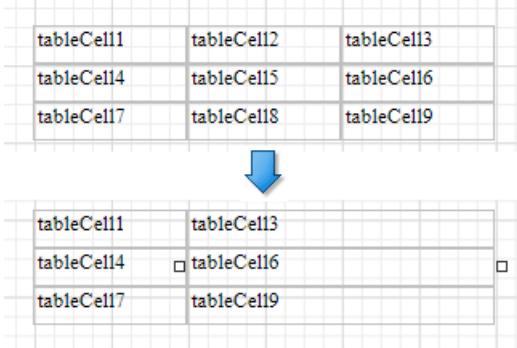
tableCell11	tableCell12	tableCell13
tableCell14	tableCell15	tableCell16
tableCell17	tableCell18	tableCell19

tableCell11	tableCell12	tableCell13
tableCell17	tableCell18	
tableCell17	tableCell19	

- **Delete Column**

Deletes a column and stretches the next column to the left. If this column is the last in the table, the previous column is stretched.



The diagram shows a 3x3 grid of table cells. The first row contains 'tableCell11', 'tableCell12', and 'tableCell13'. The second row contains 'tableCell14' (with a small square icon), 'tableCell15', and 'tableCell16' (with a small square icon). The third row contains 'tableCell17', 'tableCell18', and 'tableCell19'. A large blue arrow points downwards from the original 3x3 grid to a smaller 2x3 grid below it. In the second row of the smaller grid, the second cell ('tableCell15') and its small square icon are missing, indicating they have been deleted.

tableCell11	tableCell12	tableCell13
tableCell14	tableCell15	tableCell16
tableCell17	tableCell18	tableCell19

tableCell11	tableCell13	
tableCell14	tableCell16	
tableCell17	tableCell19	

# Manipulate Table Elements

## Select Table Elements

You can click a table cell to select it and [access its settings](#). To select multiple cells, hold the CTRL key and click cells.

tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6

Use the arrow that appears when a mouse cursor hovers over the table edges to select an entire row or column.



tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6

Draw a rectangle around the table to select the whole control.

The [Properties](#) panel enables you to select the table element or the entire table and access their properties.

## Resize Table Elements

You can resize a table or its cell by dragging the rectangle drawn on its edge or corner.

Resizing a column changes the next column's width without affecting the other columns (keeps the table dimensions intact).



tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6

tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6

Resizing a row changes the next row's width without affecting the other rows (keeps the table dimensions intact).



tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6
tableCell7	tableCell8	tableCell9

tableCell1	tableCell2	tableCell3
tableCell4	tableCell5	tableCell6
tableCell7	tableCell8	tableCell9

You can set the same size for multiple table columns or rows. Select the required rows or the whole table, right-click the selected area and choose **Distribute Rows Evenly**.

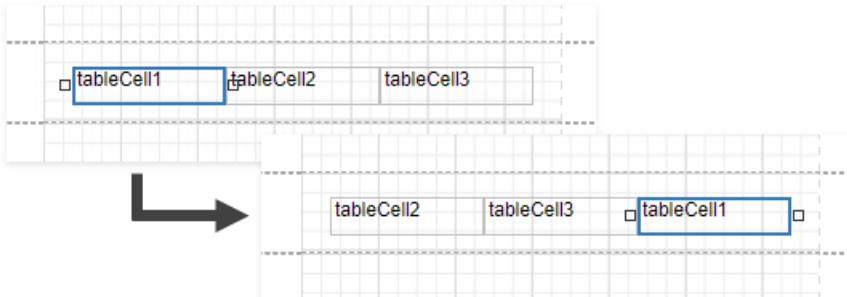
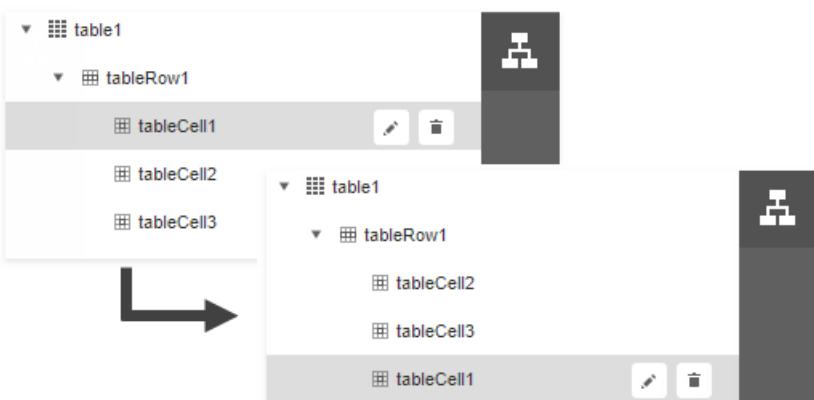
If the cell's content is partially visible in the resulting row, this row automatically increases its height to fit its content and also adjusts the other rows accordingly.

You can resize columns equally in a similar way by selecting the columns or the table itself and choosing **Distribute Columns Evenly** in the context menu.

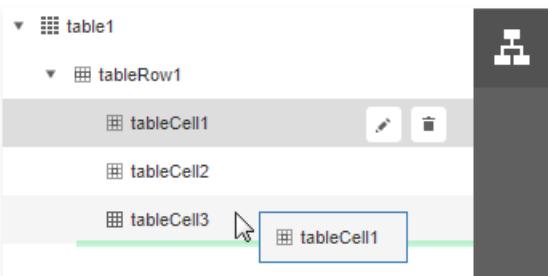
## Reorder Table Cells

You can change table cells' order in the [Report Explorer](#). To do this, select a cell and drag it to a new position.

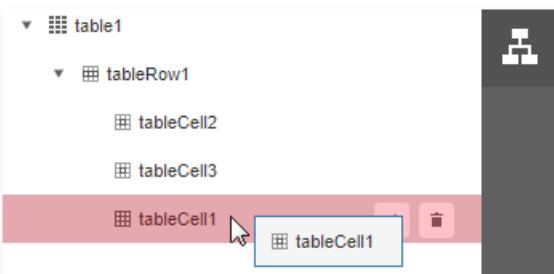
During the drag-and-drop operation, the dragged and focused cells are swapped.



- The green light indicates where the cell can be dropped.



- The red light indicates where the cell can't be dropped.



## Stretch Table Cells

You can stretch a cell to occupy several rows and columns. To stretch a cell across several columns, press **DELETE** or select the **Delete Cell** command in the **Action** category to remove a neighboring cell.

The screenshot shows a table transformation process. On the left, there is a 3x2 grid table with cells labeled: tableCell11, tableCell12, tableCell13 in the top row; tableCell14, tableCell15, tableCell16 in the middle row; and an empty cell below tableCell14. A blue arrow points down to a second 3x2 grid table where the cells have been rearranged: tableCell12, tableCell13 in the top row; tableCell14, tableCell15, tableCell16 in the middle row; and an empty cell below tableCell14. To the right of the tables is a Properties panel for 'tableCell1 (Table Cell)'. The 'ACTIONS' section contains a 'Delete Cell' button, which is highlighted with a red box.

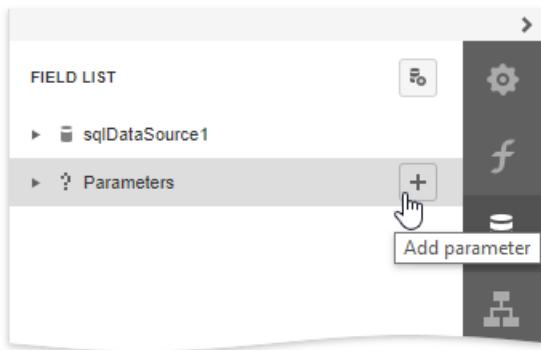
Use a table cell's **Row Span** property to specify the number of rows the table cell spans.

The screenshot shows a table transformation process. On the left, there is a 3x2 grid table with cells labeled: tableCell11, tableCell12, tableCell13 in the top row; tableCell14, tableCell15, tableCell16 in the middle row; and an empty cell below tableCell14. A blue arrow points down to a second 3x2 grid table where the cells have been rearranged: tableCell11, tableCell12, tableCell13 in the top row; tableCell14, tableCell15 in the middle row; and an empty cell below tableCell14. To the right of the tables is a Properties panel for 'tableCell3 (Table Cell)'. In the 'BEHAVIOR' section, the 'Row Span' property is set to 2, indicated by a red box.

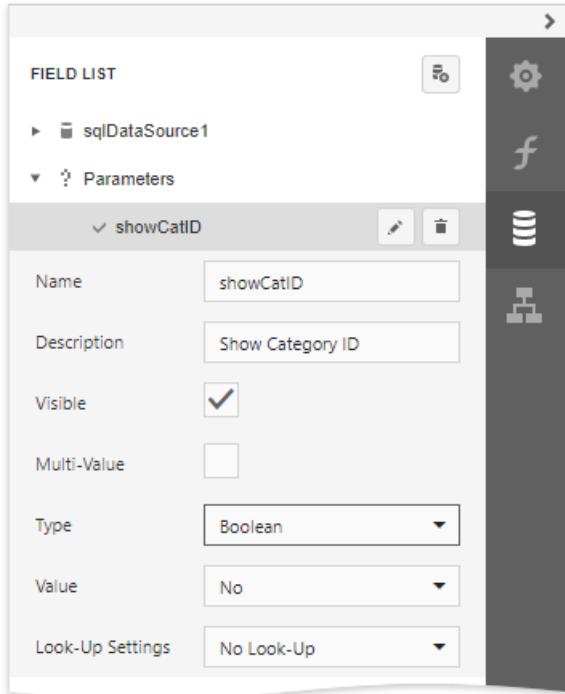
# Hide Table Cells

You can hide a specific table cell conditionally, for instance, based on a [report parameter](#) value.

Select the **Parameters** node in the [Field List](#) and click the **Add parameter** button.



Click the **Edit** button to expand the property list and specify the parameter's name and description for Print Preview, and set the type to **Boolean**.



Open the [Expressions](#) panel and specify an [expression](#) for the cell's **Visible** property to define a logical condition for displaying or hiding this cell.

The image below demonstrates how to provide the visibility expression for the cell bound to the **CategoryID** field. For a report to display correctly, you should specify the same expression for the cell that displays the field caption in the Page Header.

The screenshot shows the Microsoft Report Designer's Expression Editor. At the top, there's a preview area with a table structure. The first row has two columns labeled "Product Name" and "Category ID". The second row contains two text boxes with the expressions "[ProductName]" and "[CategoryID]". To the right of the preview is the "EXPRESSIONS" pane, which displays the current expression for the selected table cell: "tableCell6 (Table Cell)". Below this are three fields: "Text" containing "[CategoryID]", "Visible" (which is currently empty and highlighted with a cursor), and "Navigation URL" (also empty). A toolbar with icons for gear, function, and database is visible above the expression fields.

Expression Editor

1 Iif(?showCatID, true, false)

Report Items

Fields

Constants

Functions

Aggregate

Date/Time

Logical

Math

ReorderLevel

SupplierID

UnitPrice

UnitsInStock

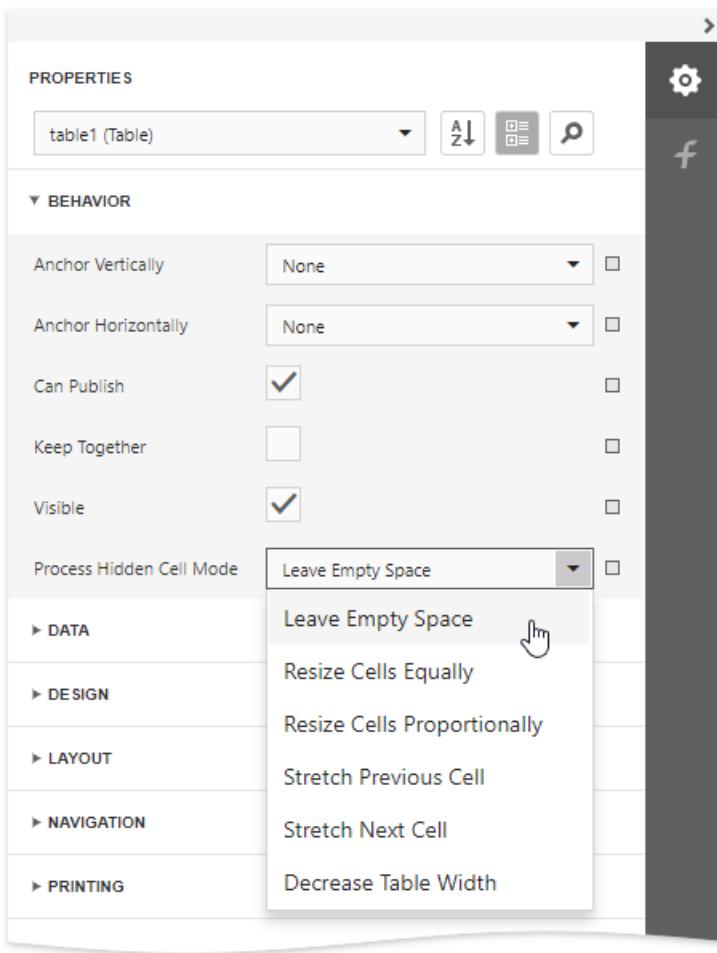
UnitsOnOrder

Parameters

showCatID

OK Cancel

The **Process Hidden Cell Mode** property allows you to define how to distribute the remaining space between the table's visible cells.



The image below illustrates how the original table looks like:

Product Name	Category ID	Unit Price	Units In Stock
Chai	1	\$18.00	39
Chang	1	\$19.00	17
Aniseed Syrup	2	\$10.00	13
Chef Anton's Cajun Seasoning	2	\$22.00	53

The following modes are available to process hidden cells:

- **StretchPreviousCell** - A cell to the left of the hidden cell is stretched to occupy the available space. If the hidden cell is the first in the row, the next cell is stretched.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

- **StretchNextCell** - A cell to the right of the hidden cell is stretched to occupy the available space. If the hidden cell is the last in the row, the previous cell is stretched.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

- **ResizeCellsEqually** - All visible cells are resized to divide the space that a hidden cell reserved equally.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

- **ResizeCellsProportionally** - All visible cells are resized to proportionally divide the space that a hidden cell reserved based on their weights in the whole table width.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

- **DecreaseTableWidth** - The table width is decreased, and visible cells are shifted to a hidden cell's location without changing their size.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

- **LeaveEmptySpace** (the default mode) - A space remains at a hidden cell's location, and other cells are not affected.

Product Name	Unit Price	Units In Stock
Chai	\$18.00	39
Chang	\$19.00	17
Aniseed Syrup	\$10.00	13
Chef Anton's Cajun Seasoning	\$22.00	53

# Use Bar Codes

The following topics provide basic information about using bar codes:

- [Add Bar Codes to Reports](#)
- [Bar Code Recognition Specifics](#)

See the following topics to learn about the supported one-dimensional bar codes:

- [Codabar](#)
- [Code 11 \(USD-8\)](#)
- [Code 128](#)
- [Code 39 \(USD-3\)](#)
- [Code 39 Extended](#)
- [Code 93](#)
- [Code 93 Extended](#)
- [EAN 8](#)
- [EAN 13](#)
- [GS1-128 - EAN-128 \(UCC\)](#)
- [GS1 - DataBar](#)
- [Industrial 2 of 5](#)
- [Intelligent Mail Package](#)
- [Interleaved 2 of 5](#)
- [Matrix 2 of 5](#)
- [MSI - Plessey](#)
- [PostNet](#)
- [UPC Shipping Container Symbol \(ITF-14\)](#)
- [UPC Supplemental 2](#)
- [UPC Supplemental 5](#)
- [UPC-A](#)
- [UPC-E0](#)
- [UPC-E1](#)

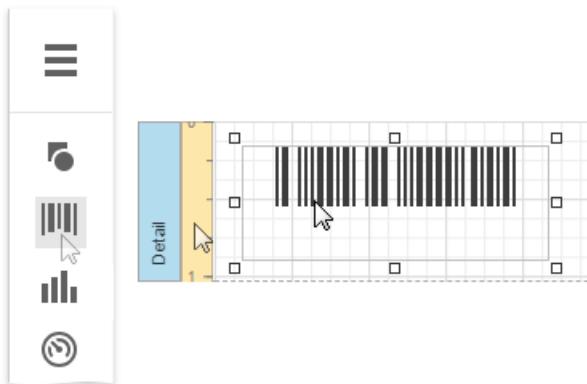
See the following topics to learn about the supported two-dimensional bar codes:

- [ECC200 - Data Matrix](#)
- [GS1 - Data Matrix](#)
- [Intelligent Mail](#)
- [PDF417](#)
- [QR Code](#)

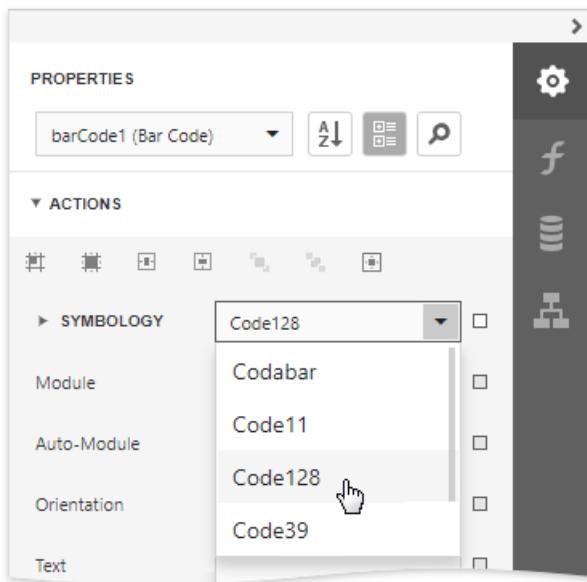
# Add Bar Codes to a Report

## Overview

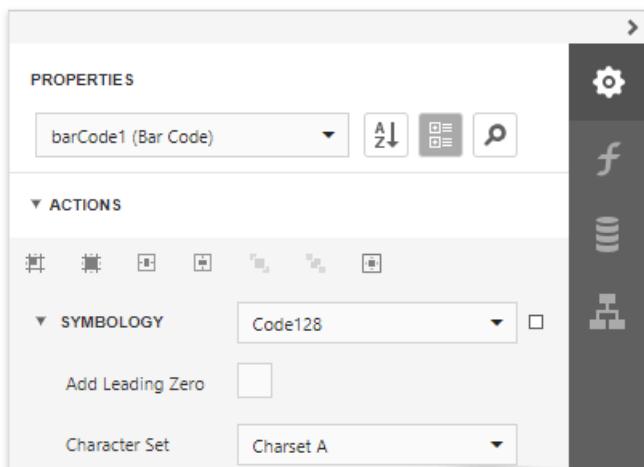
To insert a bar code into a report, drag the **Bar Code** item from the [Toolbox](#) onto the report's area.



After creating the bar code, expand the **Actions** category and select the bar code type (symbology) in the **Symbology** property's drop-down list.



After specifying the symbology, you can customize the type-specific options of the bar code, which are listed under the **Symbology** property.



# Main Options

To specify the bar width (a bar code's resolution), use the following options:

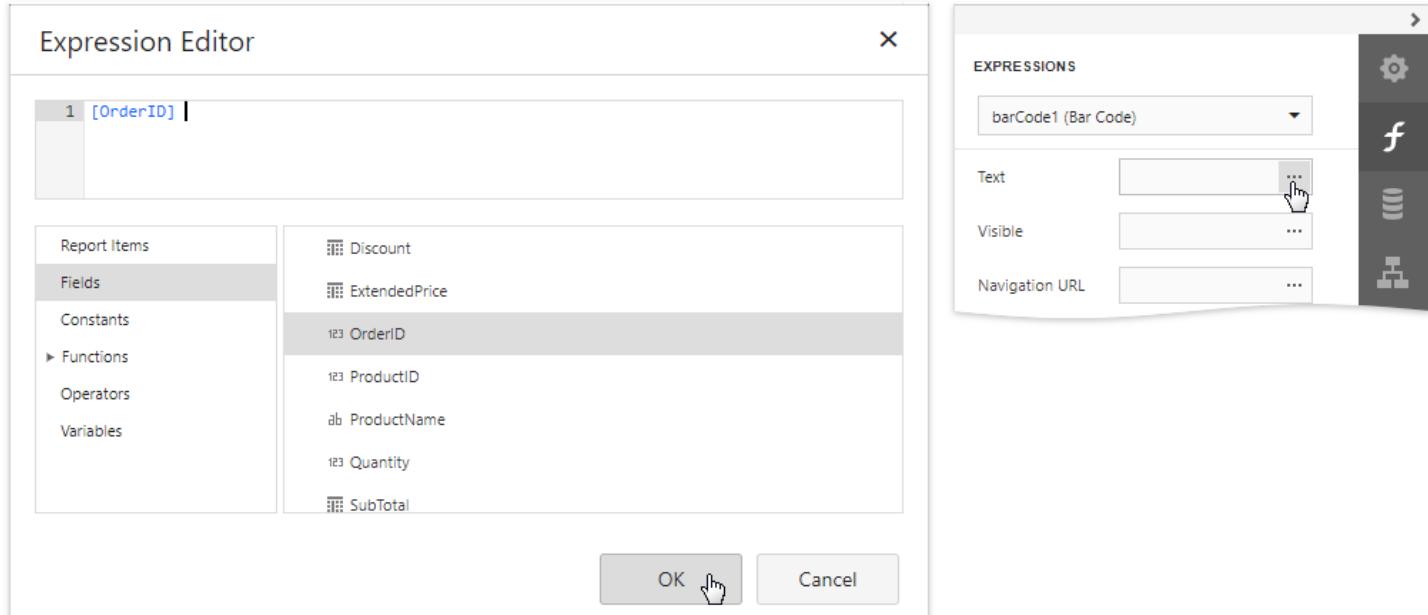
- Automatically calculate the bar width according to a bar code's dimensions by enabling the **Auto Module** option;
- Provide a fixed bar width value using the **Module** property.

The following are some additional bar code options:

- Use the bar code's **Text** property to provide accompanying text. The **Show Text** property allows you to show or hide this text.
- Use the **Orientation** property to rotate a bar code.
- Use the **Padding** property to specify the indent between bars and the bar code's inner boundaries.

## Bind to Data

You can bind the bar code's **Text** property to a data field obtained from a report's data source. Click the **Text** property's ellipsis button in the **Expressions** panel. The invoked **Expression Editor** allows you to select a data field or construct a complex binding expression with two or more data fields.



## Common Errors

The following section explains how to work around the most frequently encountered errors related to the incorrect use of bar codes.

- The following error message is shown in place of the bar code if the control's dimensions are too small to fit the bar code with its specified resolution.

Control's boundaries  
are too small for the  
barcode

To get rid of this error, enable the **Auto Module** property and/or increase the bar code's dimensions.

- The following error message appears when the data supplied to a bar code contains characters that are not supported by this bar code type.

There are invalid  
characters in the text

To avoid this error, supply data that applies to a particular bar code specification.

# Bar Code Recognition Specifics

This document describes the main specifics of bar code recognition and how to resolve the most frequently encountered issues when working with bar codes.

## Choose an Appropriate Bar Code Type

Selecting an appropriate bar code type (symbology) depends on your specific business requirements and the applied industrial standards.

In general, consider using [Bar Code 2 of 5 Interleaved](#) for encoding digits and [Bar Code 39](#) for encoding the full range of ASCII characters.

## Insert the Function Code One Character (FNC1) or the Application Identifier into a Bar Code

Some encodings enable you to insert a special **FNC1** character for separating application identifiers from the rest of the bar code.

According to the **GS1** specification, the **FNC1** character is always inserted at the first position of the encoded data. Other identifiers can be inserted manually using the default "#" character.

Although you can use any ASCII character as the **FNC1** placeholder, it will not be a part of the encoded data as it does not have any direct ASCII representation.

### ■ Note

For the [Code 128](#) symbology, only **FNC1** characters are currently supported. At present, there is no way to define **FNC2 - 4** characters for this bar code.

For the list of the available application identifiers, refer to the official documentation at [www.gs1.org](http://www.gs1.org).

## Specify the Bar Code Resolution on Export to Third-Party Formats

At present, only [export to PDF](#) preserves the original bar code in its vector form. Export to other formats will keep only the rasterized version of a bar code (with the default DPI set to **96**).

For [XLSX](#) and [XLS](#) export, the output resolution can be set up manually using the **Rasterization Resolution** property.

## Common Issues

This document section provides solutions to the most common issues that you may encounter when creating bar codes.

- **The bar code is too "dense"**

The more information you wish to encode, the more bars should be drawn and the larger the bar code should become.

The bar code's **Module** property specifies the width of the narrowest bar in a bar code. Although you can set this property to a very small value, the actual value is determined by the maximum resolution of your bar code printer device.

Alternatively, consider using the **Auto Module** option to automatically calculate the optimal bar size based on the current bar code dimensions.

### ■ Note

When bar codes are "dense" and you are manually specifying the Module value, make sure that multiplying this value by the bar code printer resolution results in an integer number. Otherwise, rounding errors may occur on calculating the resulting bar width.

For example, when the Module is set to **0.015** inches and the printer resolution is **300** DPI, their product equals **4.5**, which may be rounded to **4** or **5** pixels for different bars and result in bar code recognition errors. In this case, the Module property should be set to **0.01333** (to make the bar width equal to **4** pixels) or to **0.01667** (to make the bar width equal to **5** pixels).

- **The bar code is correctly displayed on the preview but it is not scanned**

Make sure that your scanner has been correctly set up to be able to recognize a specific kind of a bar code. If you are not certain about how to operate the scanner properly, please refer to its product manual.

Avoid scanning bar codes from the monitor screen (e.g., using an application installed on your smartphone), because the screen DPI may not be sufficient to effectively recognize each particular bar.

- **The bar code is correctly displayed on the preview but it is scanned incorrectly**

The cause for this problem may be an encoding issue specific to the "binary" input mode.

By default, the **UTF-16** encoding is used. However, your scanner device may use a different encoding model or even a codepage (i.e., a specific table that maps abstract values to real human-understandable characters). For additional information on this subject, please refer to the specification of your scanner device.

- **The "There are invalid characters in the text" error occurs**

Different bar code symbologies define different ranges of allowed characters under different character sets. To avoid this error, please check the bar code specification.

# Codabar

The **Codabar** is a discrete, self-checking symbology that may encode **16** different characters, plus an additional **4** start/stop characters. This symbology is used by U.S. blood banks, photo labs, and on FedEx air bills.



The following properties are specific to the **Codabar** type and listed in the [Properties](#) panel under the **Symbology** property:

- **Start and Stop Symbols**

Specifies the first (start) and last (stop) symbols used to code the bar code's structure.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

## Code 11 (USD-8)

**Code 11**, also known as **USD-8**, was developed as a high-density numerical-only symbology. It is used primarily in labeling telecommunications equipment.

The symbology is discrete and is able to encode the numbers **0** through to **9**, the dash symbol (-), and start/stop characters.

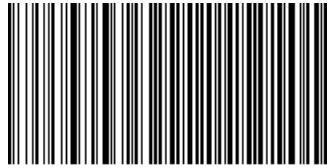


There are no properties specific to the **Code 11** bar code type.

# Code 128

**Code 128** is a very effective, high-density symbology which permits the encoding of alphanumeric data. The symbology includes a checksum digit for verification, and the bar code can also be verified character-by-character, allowing the parity of each data byte to be verified.

This symbology has been widely implemented in many applications where a relatively large amount of data must be encoded in a relatively small amount of space. Its specific structure also allows numerical data to be effectively encoded at double-density.



BarCode 0123456

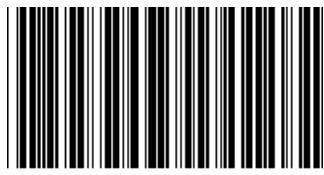
The following property is specific to the **Code 128** type and available in the [Properties](#) panel under the **Symbology** property:

- **Character Set**

Specifies the set of symbols which can be used when setting the bar code's text.

# Code 39 (USD-3)

**Code 39**, the first alpha-numeric symbology to be developed, is still widely used, particularly in non-retail environments. It is the standard bar code used by the United States Department of Defense, and is also used by the Health Industry Bar Code Council (HIBCC). **Code 39** is also known as "**3 of 9 Code**" and "**USD-3**".



The following properties are specific to the **Code 39** type and listed in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

# Code 39 Extended

Using **Code 39**'s "Full ASCII Mode", it is possible to encode all **128** ASCII characters. This is accomplished by using the **( \$ ) ( / ) ( % )**, and **( + )** symbols as "shift" characters. These characters combined with the single character that follows indicate which Full ASCII character is to be used.



BarCode

The following properties are specific to the **Code 39 Extended** type and listed in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

The **Code 39 Extended** bar code, as opposed to [Code 39](#), automatically replaces all necessary characters with special symbols, when required. This means that you do not need to do this manually, otherwise, the result will be incorrect.

For example, if you want to insert a "TAB" character into a bar code's text, use "\t", which will be replaced by "\$I" for coding, and then into "TAB" after scanning:

PROPERTY	VALUE
Bar code's text:	"12345\t678"
Coded text:	"12345\$I678"
Scanned text:	"12345[TAB]678"

The checksum is not considered to be part of a bar code's text and checksum characters are never replaced. When the bar code's **Show Text** and **Calculate a Checksum** properties are enabled, the bar code will not display a checksum character. This is required to avoid mistakenly treating a checksum as part of bar code text.

# Code 93

**Code 93** was designed to supplement and improve upon **Code 39**.

**Code 93** is similar in that, like **Code 39**, can represent the full ASCII character set by using combinations of **2** characters. It differs in that **Code 93** is a continuous symbology and produces denser code. It also encodes **47** characters (compared to **Code 39**'s **43** characters).



BARCODE

The following property is specific to the **Code 93** type and available in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

**Note**

A checksum of a **Code 93** bar code can contain characters that are not supported by this bar code symbology. For this reason, the checksum is not included in the **Code 93** bar code's displayed text.

# Code 93 Extended

Using **Code 93**'s "Full ASCII Mode", it is possible to encode all **128** ASCII characters. This is accomplished by using the (\$), (/), (%), and (+) symbols as "shift" characters. These characters combined with the single character that follows indicate which Full ASCII character is to be used.



Barcode

The following property is specific to the **Code 93 Extended** type and available in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

**Note**

A checksum of a **Code 93 Extended** bar code can contain characters that are not supported by this bar code symbology. For this reason, the checksum is not included in the **Code 93 Extended** bar code's displayed text.

# EAN 13

**EAN-13**, based upon the **UPC-A** standard, was implemented by the International Article Numbering Association (EAN) in Europe. At present, the **GS1** organization is responsible for the maintenance of bar code standards.

The **EAN-13** bar code contains **13** digits, no letters or other characters. The first two or three digits represent the country. The leading zero actually signifies the USA, and **UPC-A** coding. The last digit is the "check digit", the checksum. The check digit is calculated using the first twelve figures when the bar code is constructed. So, for the correct **EAN-13** code, you should specify only the first **12** digits.

The recommended dimensions are shown in the following image. The standard allows magnification up to **200%**, and reduction of up to **80%** of the recommended size.



There should be two quiet zones before and after the bar code. They provide reliable operation of the bar code scanner. The quiet zone recommended length is **3.63** mm for the left zone and **2.31** mm for the right zone.

There are no properties specific to the **EAN 13** bar code type.

## EAN 8

**EAN-8** is the **EAN** equivalent of **UPC-E** in the sense that it provides a "short" bar code for small packages.

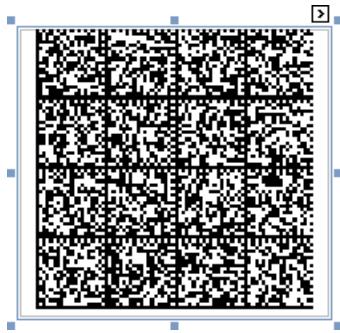


The are no properties specific to the **EAN 8** bar code type.

# ECC200 - Data Matrix

**Data Matrix** code (**ISO/IEC 16022** international standard) is a two-dimensional matrix bar code consisting of black and white "cells" arranged in a rectangular pattern. The information to be encoded can be text or raw data.

Every **Data Matrix** is composed of two solid adjacent borders in an "L" shape (called the "finder pattern"), and two other borders consisting of alternating dark and light cells or modules (called the "timing pattern"). Within these borders are rows and columns of cells that encode information. The finder pattern is used to locate and orient the symbol, while the timing pattern provides a count of the number of rows and columns in the symbol.



The following properties are specific to the **ECC200 - Data Matrix** type and available in the [Properties](#) panel under the **Symbology** property:

- **Compaction Mode**

Specifies whether textual information or a byte array should be used as the bar code's data, as well as its encoding.

- **Matrix Size**

Specifies the bar code matrix size.

# GS1 - DataBar

The **GS1 DataBar** bar code is based on a family of symbols often used in the **GS1 DataBar Coupon** (coupon codes commonly used in retail).

These bar codes can encode up to **14** digits, which makes them suitable for **GTIN 8, 12, 13** and **14**.

**GS1 DataBar Expanded** and **GS1 DataBar Expanded Stacked** can encode up to **74** numeric or **41** alphanumeric characters, and provide the capability to utilize all **GS1 Application Identifiers** (e.g., expiration date, batch and serial number). These bar codes are often used in manufacturer coupons.



The following properties are specific to the **GS1 DataBar** type and available in the [Properties](#) panel under the **Symbology** property:

- **FNC1 Functional Character**

Specifies the symbol (or set of symbols) in the bar code text that will be replaced with the **FNC1** functional character when the bar code's bars are drawn.

- **Segments In Row**

Specifies the number of data segments per row in the Expanded Stacked type of a GS1 DataBar bar code.

- **Type**

Specifies the type of a GS1 DataBar bar code.

# GS1- Data Matrix

The **GS1 Data Matrix** uses a special start combination to differentiate the **GS1 DataMatrix** symbol from other **Data Matrix ECC 200** symbols. This is achieved by using the **Function 1 Symbol Character (FNC1)** in the first position of the encoded data. It enables scanners to process the information according to the **GS1 System Rules**.



The following properties are specific to the **GS1 DataMatrix** type and available in the [Properties](#) panel under the **Symbology** property:

- **FNC1 Functional Character**

Specifies the symbol (or set of symbols) in the bar code text that will be replaced with the **FNC1** functional character when the bar code's bars are drawn.

- **Human-Readable Text**

Specifies whether or not parentheses should be included in the bar code's text to improve the readability of the bar code's text.

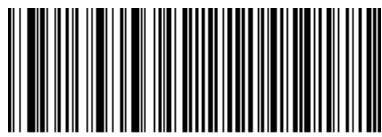
- **Matrix Size**

Specifies the bar code matrix size.

# GS1-128 - EAN-128 (UCC)

**GS1-128 (EAN-128)** was developed to provide a worldwide format and standard for exchanging common data between companies.

While other bar codes simply encode data with no respect for what the data represents, **GS1-128** encodes data and encodes what that data represents.



The following properties are specific to the **GS1-128 (EAN-128)** type and available in the [Properties](#) panel under the **Symbology** property:

- **Character Set**

Specifies the set of symbols which can be used when setting the bar code's text.

- **FNC1 Functional Character**

Specifies the symbol (or set of symbols) in the bar code text that will be replaced with the **FNC1** functional character when the bar code's bars are drawn.

- **Human-Readable Text**

Specifies whether or not parentheses should be included in the bar code's text to improve the readability of the bar code's text.

## Industrial 2 of 5

**Standard 2 of 5** is a low-density numerical bar code that is used in the photofinishing and warehouse sorting industries, as well as to sequentially number airline tickets.



0123456789

The following properties are specific to the **Industrial 2 of 5** type and available in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

# Intelligent Mail

The **Intelligent Mail (IM)** code is a **65**-bar code for use on mail in the United States. This bar code is intended to provide greater information and functionality than its predecessors POSTNET and PLANET.

The **Intelligent Mail** bar code has also been referred to as **One Code Solution** and **4-State Customer** bar code abbreviated **4CB, 4-CB or USPS4CB**.



There are no properties specific to the **Intelligent Mail** bar code type.

# Intelligent Mail Package

The **Intelligent Mail Package Barcode (IMPB)** was developed for the use on mail in the United States. Bar codes of this symbology are used only for packages as opposed to [Intelligent Mail](#) bar codes, which are used for postcards, letters, and flats.

This bar code is capable of encoding package tracking information required for more efficient sorting and delivering of packages with the capability of piece-level tracking.

**USPS TRACKING #**



**9212 3912 3456 7812 3456 70**

The following property is specific to the **Intelligent Mail Package** type and available in the [Properties](#) panel under the **Symbology** property:

- **FNC1 Functional Character**

Specifies the symbol (or set of symbols) in the bar code text that will be replaced with the **FNC1** functional character when the bar code's bars are drawn.

# Interleaved 2 of 5

**Interleaved 2 of 5** is a higher-density numerical bar code based upon the **Standard 2 of 5** symbology. It is used primarily in the distribution and warehouse industry.



0123456789

The following properties are specific to the **Interleaved 2 of 5** type and available in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

## Matrix 2 of 5

**Matrix 2 of 5** is a linear one-dimensional bar code. **Matrix 2 of 5** is a self-checking numerical-only bar code.

Unlike the **Interleaved 2 of 5**, all of the information is encoded in the bars; the spaces are of a fixed width and used only to separate the bars. **Matrix 2 of 5** is used primarily for warehouse sorting, photo finishing, and airline ticket marking.



00123456789

The following properties are specific to the **Matrix 2 of 5** type and available in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

# MSI – Plessey

**MSI** was developed by the MSI Data Corporation, based on the original **Plessey Code**. **MSI**, also known as **Modified Plessey**, is used primarily to mark retail shelves for inventory control.

**MSI** is a continuous, non-self-checking symbology. While an **MSI** bar code can be of any length, a given application usually implements a fixed-length code.



0123456789

The following property is specific to the **MSI** type and available in the [Properties](#) panel under the **Symbology** property:

- **MSI Checksum**

Specifies the bar code's checksum type, which defines the appearance of checksum bars added to the bar code.

# PDF417

**PDF417 (Portable Data File)** is a stacked linear two-dimensional bar code used in a variety of applications; primarily transport, postal, identification card and inventory management. It has spawned an Open Source decoder project together with an Open Source encoder.

The **PDF417** bar code is also called a **symbol** bar code and usually consists of **3** to **90** rows, each of which is like a small linear bar code.



The following properties are specific to the **PDF417** type and available in the [Properties](#) panel under the **Symbology** property:

- **Columns**

Specifies the number of bar code columns, which allows you to control the logic width of the bar code.

- **Compaction Mode**

Specifies whether textual information or a byte array should be used as the bar code's data.

- **Error Correction Level**

Specifies the amount of redundancy built into the bar code's coding, to compensate for calculation errors.

- **Rows**

Specifies the number of bar code rows, which allows you to control the logic height of the bar code.

- **Truncate Symbol**

Specifies whether the special end-symbol should be appended to the bar code.

- **Y to X Ratio**

Specifies the height-to-width ratio of a logical unit's graphic representation.

# PostNet

**PostNet** was developed by the United States Postal Service (USPS) to allow faster mail sorting and routing. **PostNet** codes are the familiar and unusual looking bar codes often printed on envelopes and business return mail.

Unlike most other bar codes, in which data is encoded in the width of the bars and spaces, **PostNet** actually encodes data in the height of the bars. That's why all the bars are of the same width, but not the same height.



0123456789

There are no properties specific to the **PostNet** bar code type.

# QR Code

A **QR Code** (**QR** is the abbreviation for **Quick Response**) is a two-dimensional code, readable by **QR** scanners, mobile phones with a camera, and smartphones. **QR Code** can encode textual, numeric and binary data.



The following properties are specific to the **QR** type and available in the [Properties](#) panel under the **Symbology** property:

- **Compaction Mode**

Specifies whether numeric, alpha-numeric or byte information should be used as the bar code's data.

- **Error Correction Level**

Specifies the amount of redundancy built into the bar code's coding, to compensate for calculation errors.

- **Logo**

Specifies the image that overlays the QR code.

- **Version**

Specifies the bar code's size.

# UPC Shipping Container Symbol (ITF-14)

The **UPC Shipping Container Symbol (ITF-14)** bar code is used to mark packaging materials that contain products labeled with a **UPC** or **EAN** product identification number.

This bar code provides a **GS1** implementation of an **Interleaved 2 of 5** bar code for encoding a **Global Trade Item Number** (an identifier for trade items developed by **GS1**). This bar code always uses a total of **14** digits.

The thick black border around the symbol (the **Bearer Bar**) is intended to improve bar code reading reliability.



1 23 45678 90123 1

The following properties are specific to the **ITF-14** type and listed in the [Properties](#) panel under the **Symbology** property:

- **Calculate a Checksum**

Specifies whether to calculate a checksum for the bar code.

- **Wide Narrow Ratio**

Specifies the density of a bar code's bars.

# UPC Supplemental 2

2-digit supplemental bar codes should only be used with magazines, newspapers and other periodicals.

The 2-digit supplement represents the issue number of the magazine. This is useful so that the product code itself (contained in the main bar code) is constant for the magazine, so that each issue of the magazine doesn't have to have its own unique bar code. Nevertheless, the 2-digit supplement can be used to track which issue of the magazine is being sold, for example, for sales analysis or restocking purposes.



There are no properties specific to the **UPC Supplemental 2** bar code type.

# UPC Supplemental 5

5-digit supplemental bar codes are used on books to indicate the suggested retail price.



There are no properties specific to the **UPC Supplemental 5** bar code type.

# UPC-A

The **UPC-A** bar code is by far the most common and well-known symbology, especially in the United States. A **UPC-A** bar code is the bar code you will find on virtually every consumer item on the shelves of your local supermarket, as well as books, magazines, and newspapers. It is called simply, a "UPC bar code" or "UPC Symbol."



The **UPC-A** bar code contains **12** digits, no letters or other characters. The first digit is the prefix signifying the product type. The last digit is the "check digit". The check digit is calculated using first eleven figures when the bar code is constructed. So, for the correct **UPC-A** you should specify only the first **11** digits.

The recommended dimensions are shown in the picture. The standard allows magnification up to **200%**, and reduction of up to **80%** of the recommended size.

There should be two quiet zones before and after the bar code. They provide reliable operation of the bar code scanner. The quiet zone recommended length is **2.97 mm** for the bar code of standard width and height.

## UPC-E0

**UPC-E** is a variation of **UPC-A** which allows for a more compact bar code by eliminating "extra" zeros. Since the resulting **UPC-E** bar code is about half the size as an **UPC-A** bar code, **UPC-E** is generally used on products with very small packaging, where a full **UPC-A** bar code could not reasonably fit.

The **UPC-E0** is a kind of **UPC-E** code with the number system set to **0**. In the human readable string of the bar code the first digit signifies the number system (always **0** for this code type), and the last digit is the check digit of the original **UPC-A** code.

In the example below, the original **UPC-A** code is "**04210000526**". We should remove the leading zero when assigning the string to the control's property, since the code format itself implies its presence. The checksum digit (**4**) is calculated automatically, and the symbology algorithm transforms the rest of the numeral string. The result is **425261**, and it is encoded along with the number system prefix and the check digit into the scanner-readable form.



Not every **UPC-A** code can be transformed into the **UPC-E0** (it must meet special requirements).

# UPC-E1

**UPC-E** is a kind of **UPC-A**, which allows a more compact bar code by eliminating "extra" zeros. Since the resulting **UPC-E** bar code is about half the size of the **UPC-A** bar code, **UPC-E** is generally used on products with a very small packaging where a full **UPC-A** bar code does not fit.

The **UPC-E1** is a variation of **UPC-E** code with the number system set to "1". In the human readable string of the bar code the first digit signifies the number system (always 1 for this code type), the last digit is the check digit of the original **UPC-A** code.

In the example below, the original **UPC-A** code is "**14210000526**". We should remove the leading "1" when assigning the string to the control's property, since the code format itself implies its presence. The checksum digit (**1**) is calculated automatically, and the symbology algorithm transforms the rest of the numeral string. The result is **425261**, and it is encoded along with the number system prefix and the check digit into the scanner-readable form.



Not every **UPC-A** code can be transformed into the **UPC-E1** (it must meet special requirements).

# Use Charts and Pivot Grids

Refer to the following topics for instructions on how to add charts and pivot grids to reports:

## Chart

Use the **Chart** control to add a chart to a report.

- [Use Charts in Reports](#)
- [Add a Chart \(Set Up Series Manually\)](#)
- [Add a Chart \(Use a Series Template\)](#)
- [Use Charts to Visualize Data in Report Groups](#)

## Pivot Grid

Use the **Pivot Grid** control to add a pivot grid to a report.

- [Create a Cross-Tab Report](#)

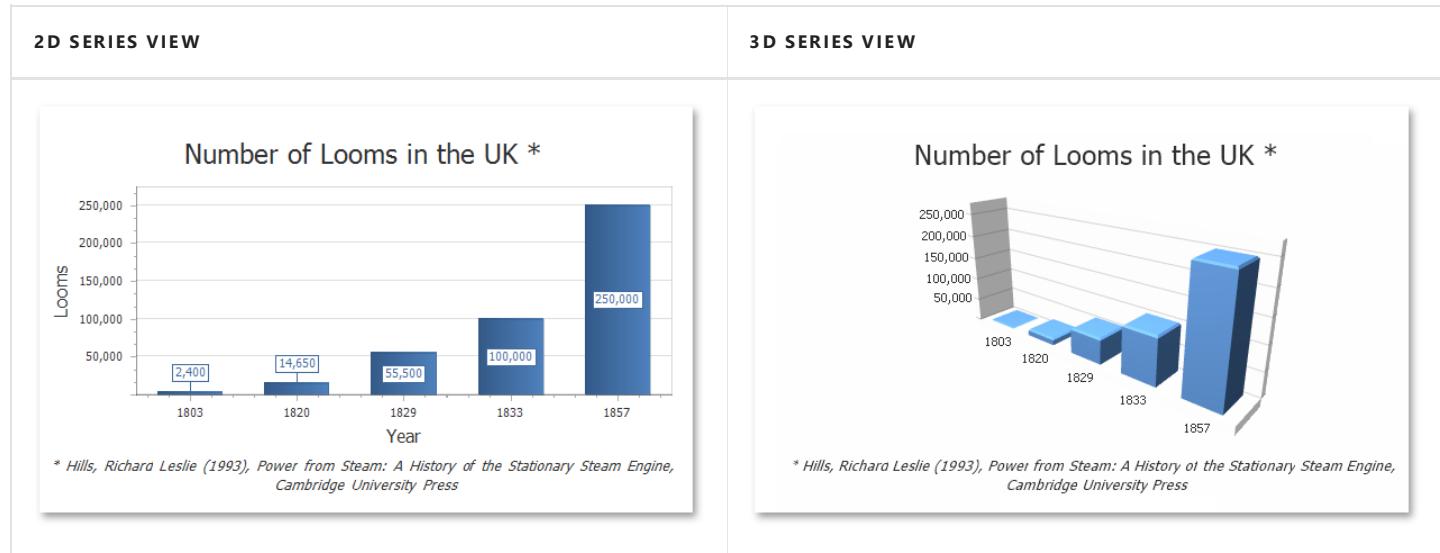
## Use Chart and Pivot Grid Linked Together

- [Link a Chart and a Pivot Grid](#)

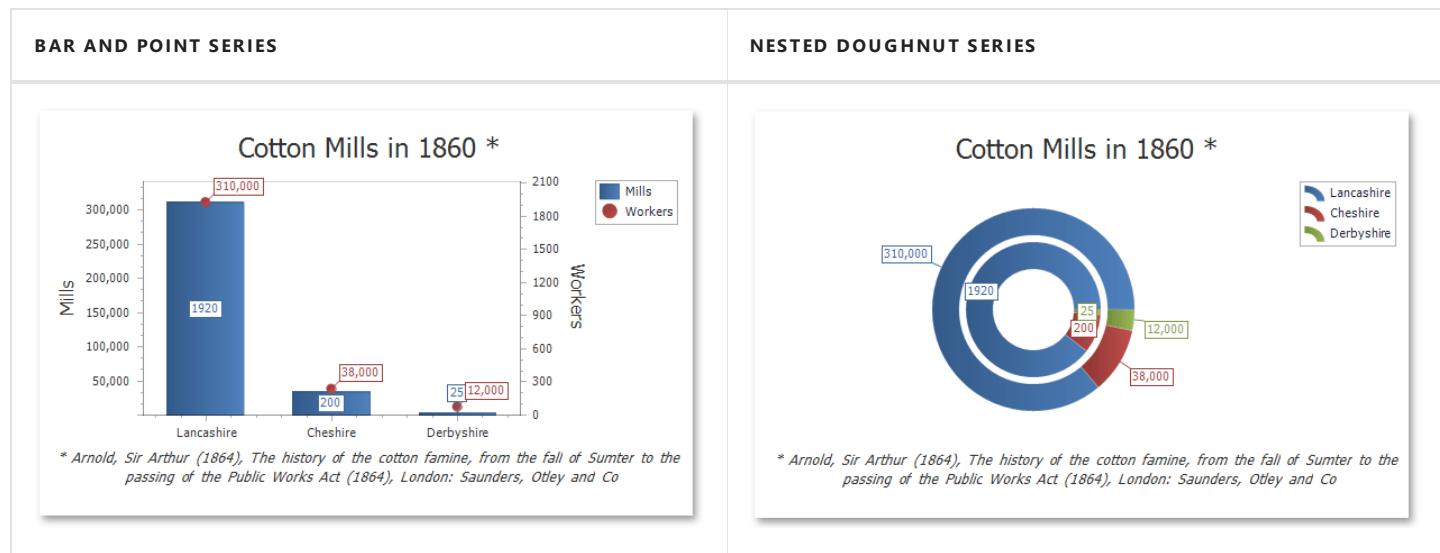
# Use Charts in Reports

## Overview

You can use the **Chart** control to add a chart to a report. This control provides 2D or 3D views to visualize data series (for instance, Bar, Point, Line, Pie and Doughnut, Area, etc.).



The **Chart** control can display multiple series.



The **Chart Designer** allows you to create and set up the **Chart** control and customize its visual elements (diagrams, series, legends, primary and secondary axes, titles and labels, etc.).

**Chart Designer**

**CHART STRUCTURE**

- Chart
  - Series Template
  - Series
    - Series1
- Diagram
- Titles
- Legend
- Legends

**PROPERTIES**

Name: Series1

► POINTS

► VIEW: Bar

Argument Data Member: ProductName

▼ VALUE DATA MEMBERS

Value: UnitPrice

Color Data Member:

Argument Scale Type: Auto

Series Points Sorting: Select...

**OK** **Cancel**

Category	Value
1	7.2
2	4.8
3	5.2
4	4.5
5	2.2
6	6.5
7	4.2
8	3.8
9	6.5

## Bind to Data

To provide data to a chart, use the **Data Source** property.

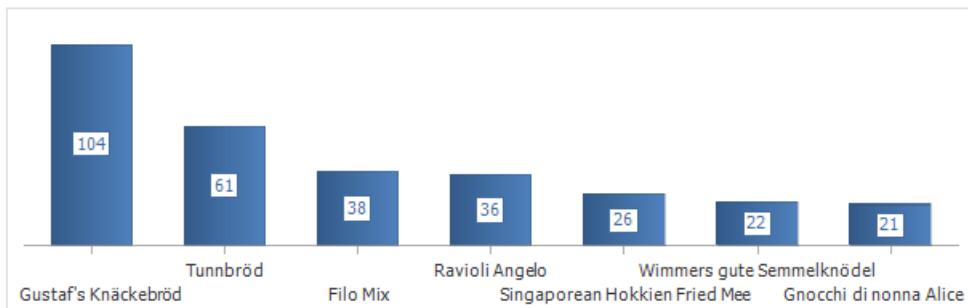
You can assign a **Pivot Grid** to a chart's data source. This allows the **Pivot Grid** to supply data to the chart. Refer to the [Link a Chart and a Pivot Grid](#) topic for details.

When the chart data source is not assigned, the chart obtains data from the report's data source

A chart can display report data in the following ways:

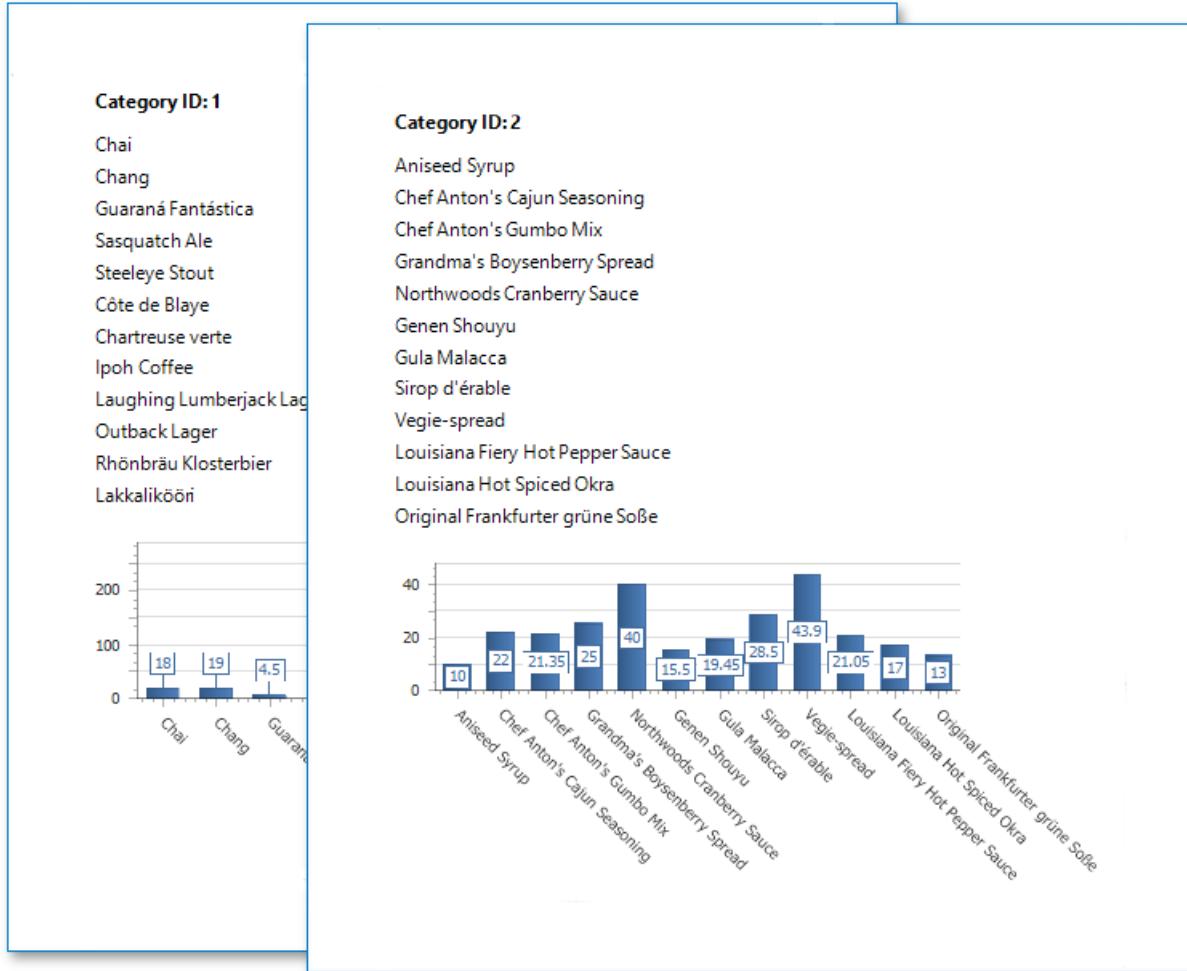
- Place a chart on the report header/footer band to display a summary for the detail report data.

## Grains/Cereals



Gustaf's Knäckebröd	104
Tunnbröd	61
Filo Mix	38
Ravioli Angelo	36
Singaporean Hokkien Fried Mee	26
Wimmers gute Semmelknödel	22
Gnocchi di nonna Alice	21

- Place a chart on a group header/footer to visualize data in each report group. Refer to the [Use Charts to Visualize Data in Report Groups](#) step-by-step tutorial for more information.



- The chart in the Detail band is printed as many times as there are records in the report's data source.

Specify the following settings to provide data to a chart's series.

- The **Argument Data Member** property specifies the data field that provides point arguments.
- The **Value Data Members** property specifies the data fields that supply point values.

You can specify these settings in the following ways:

- Bind each series individually**

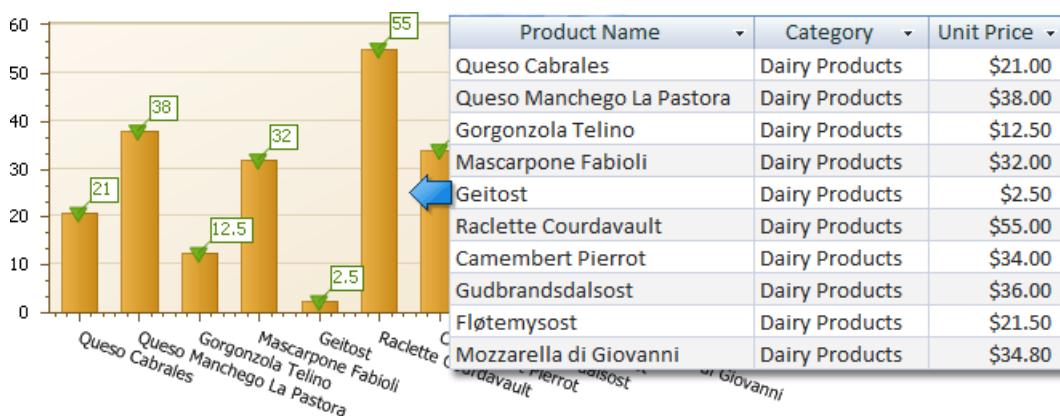
Add a new series to the chart and specify the argument and value data members. Refer to the [Add a Chart \(Set Up Series Manually\)](#) step-by-step tutorial for details.

- Create series dynamically**

Assign the data field that contains series names to the chart's **Series Data Member** property and specify the argument and value data members using the series template. Refer to the [Add a Chart \(Use a Series Template\)](#) step-by-step tutorial for more information.

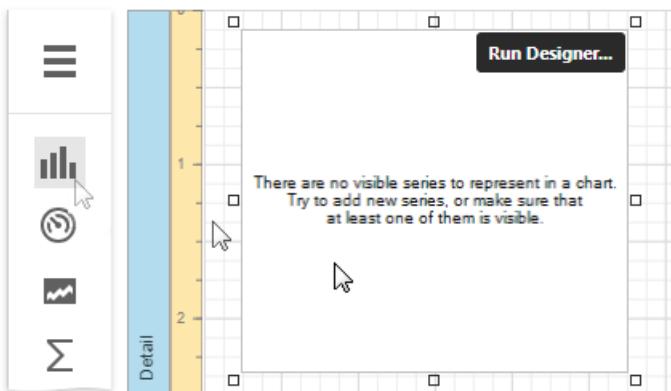
# Add a Chart (Set Up Series Manually)

This document describes how to add a chart to a report, provide data for the chart series, and set up a chart's elements. In this example, series data has a single data source. You can also use different data sources for different series.

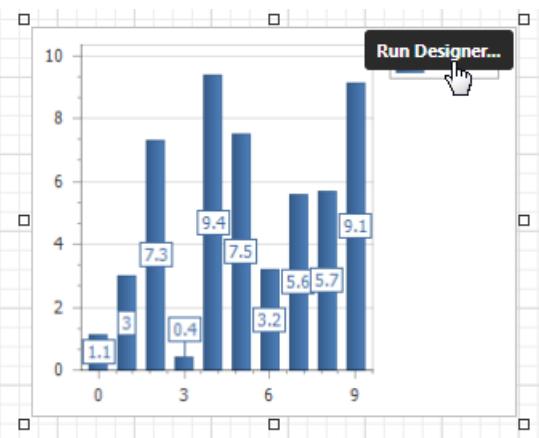


## Add a Chart to a Report

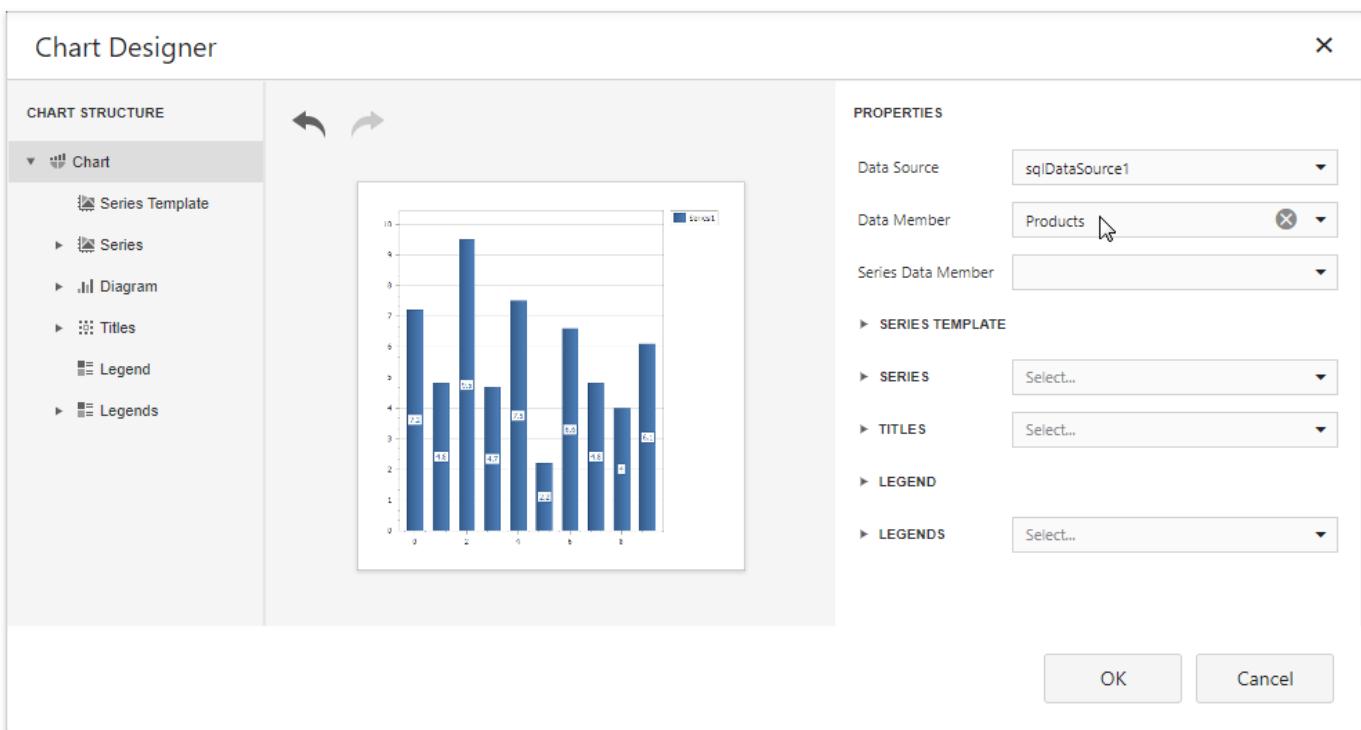
1. Drop the **Chart** control from the **Toolbox** onto the **Detail** band.



2. Click **Run Designer...** to invoke the Chart Designer.



3. Specify the **Data Source** and **Data Member** properties to bind the chart to data.

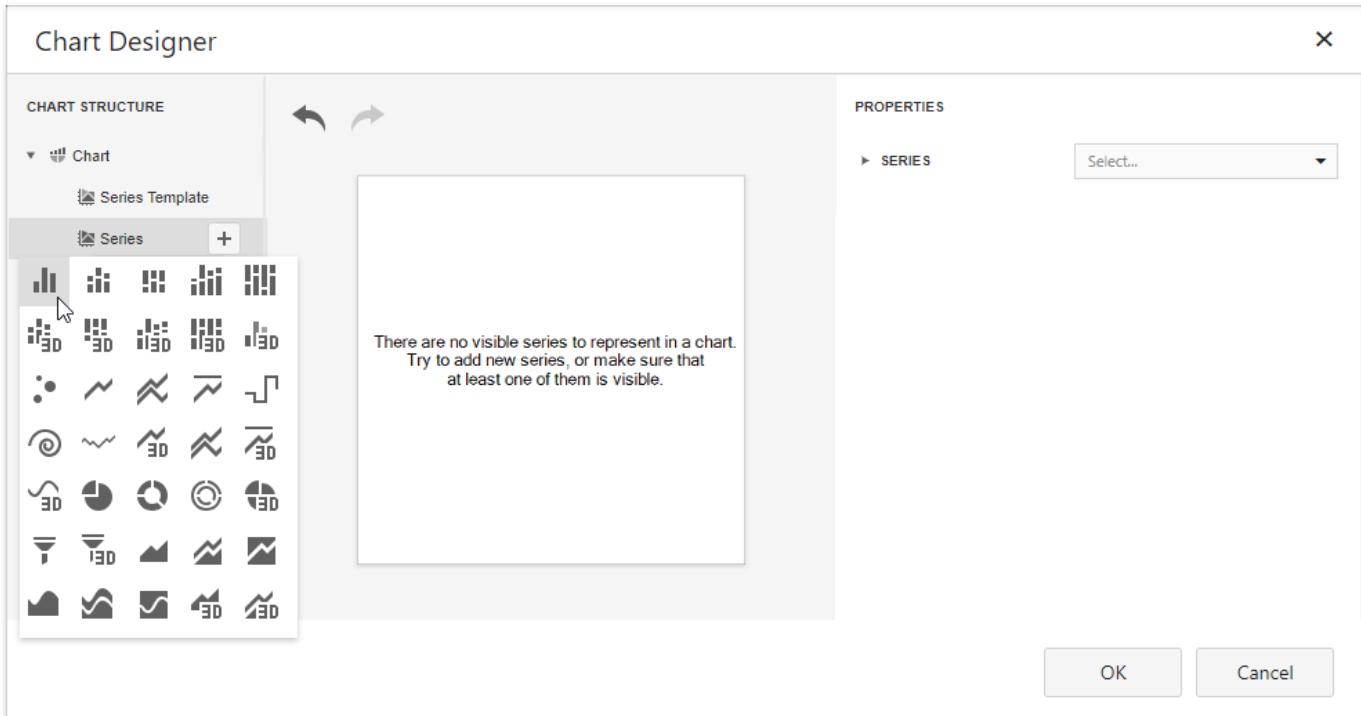


#### Note

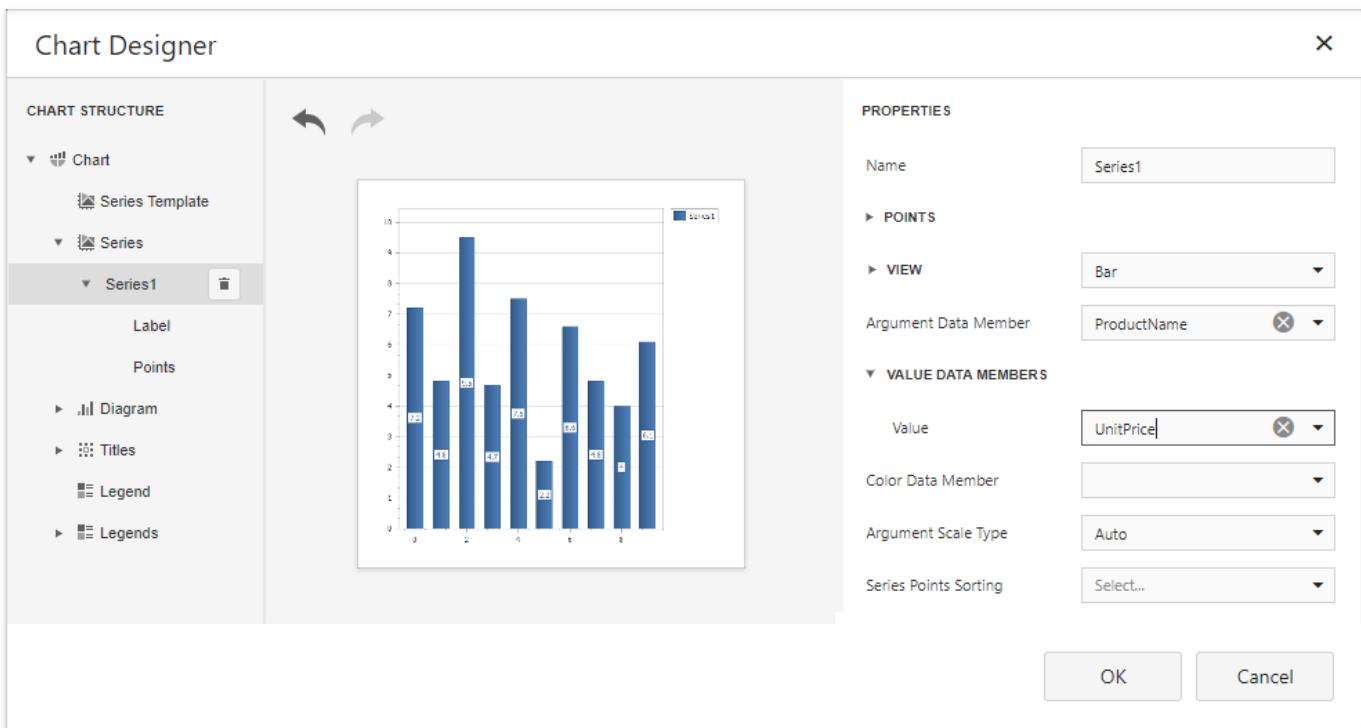
The report's **Data Source** property should be set to **None** because you placed the Chart in the Detail band. When a report has its **Data Source** property specified, the Chart is repeated in the preview as many times as there are records in the report's data source.

## Add Series to the Chart

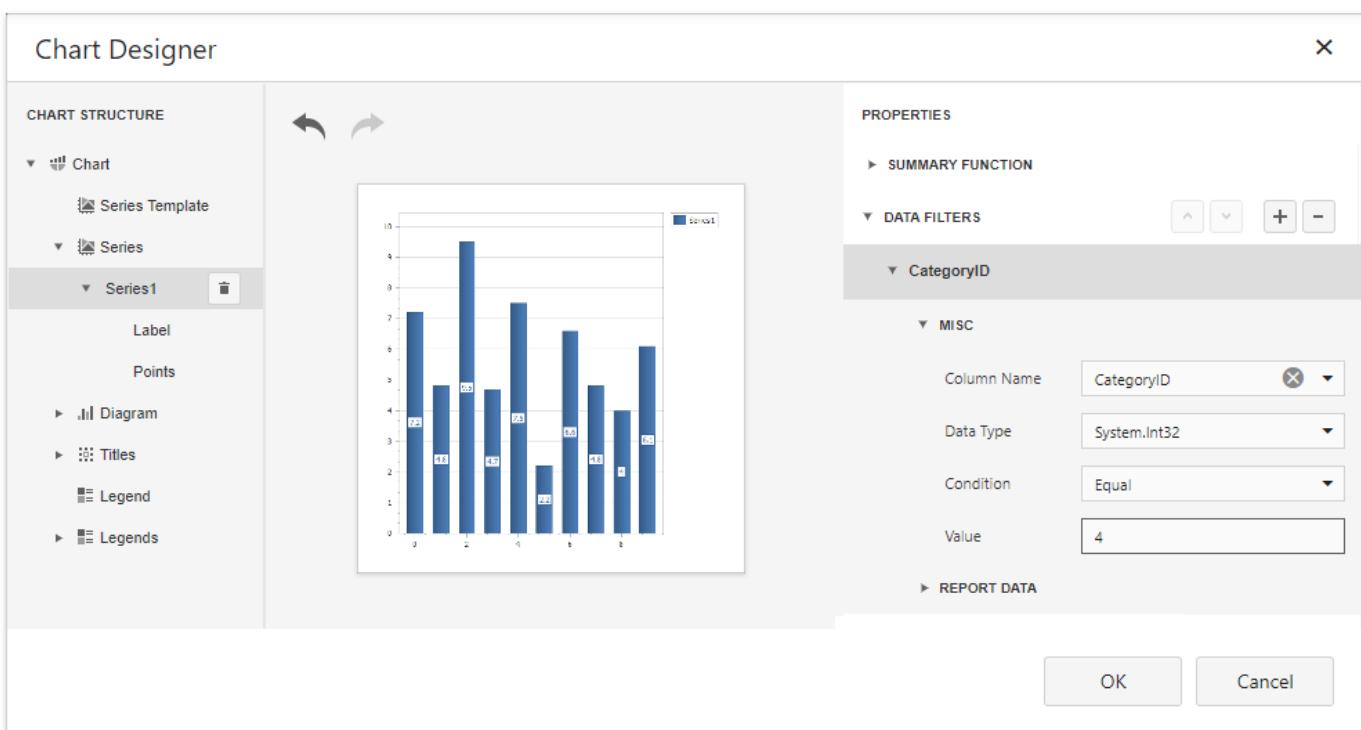
1. Locate the **Series** element in the chart elements tree and click the plus button. Select the type (for example, **Bar**) in the invoked series type list.



2. Specify the **Argument Data Member** and **Value** properties to populate the created series with points.



3. Expand the **Data Filters** category and click the plus button to add a new data filter. Adjust the filter criteria in the **Misc** node.



4. Create another series with the same settings. For instance, select the **Point** view type for this series.

5. You can do the following to see how the chart looks when it is populated with data:

- save changes made in the Chart Designer;
- close the Chart Designer;
- switch to [Print Preview](#).
- Return to the Report Designer and invoke the Chart Designer. The chart axes are now populated with actual data, and you can customize the chart.

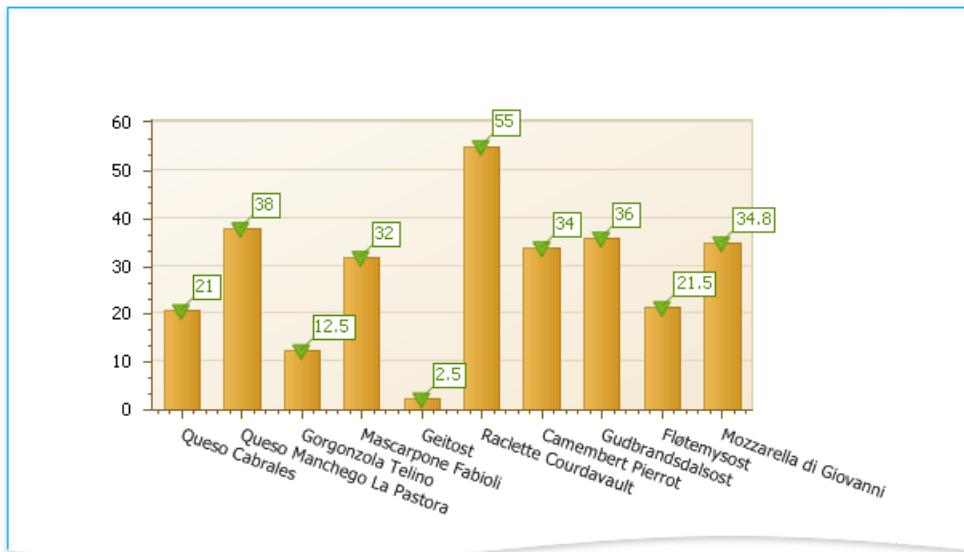
## Customize the Chart

Apply the following adjustments to improve the chart's appearance:

- Remove the chart's legend (the chart series are bound to the same data).
  - Select **Legend** in the chart elements tree.
  - Disable the **Visibility** check box in the **Options** tab.
- Select the **Label** node under this series and disable the **Visibility** check box to hide **Series1**'s point labels.
- Customize the **Series2** markers' appearance. Set the **View.Point Marker Options.Kind** property to **InvertedTriangle** and **View.Point Marker Options.Size** to **12** to replace the default circle with an upside down triangle.
- Customize the chart's appearance settings. For instance, select **Nature Colors** in the **Palette**'s drop-down list.

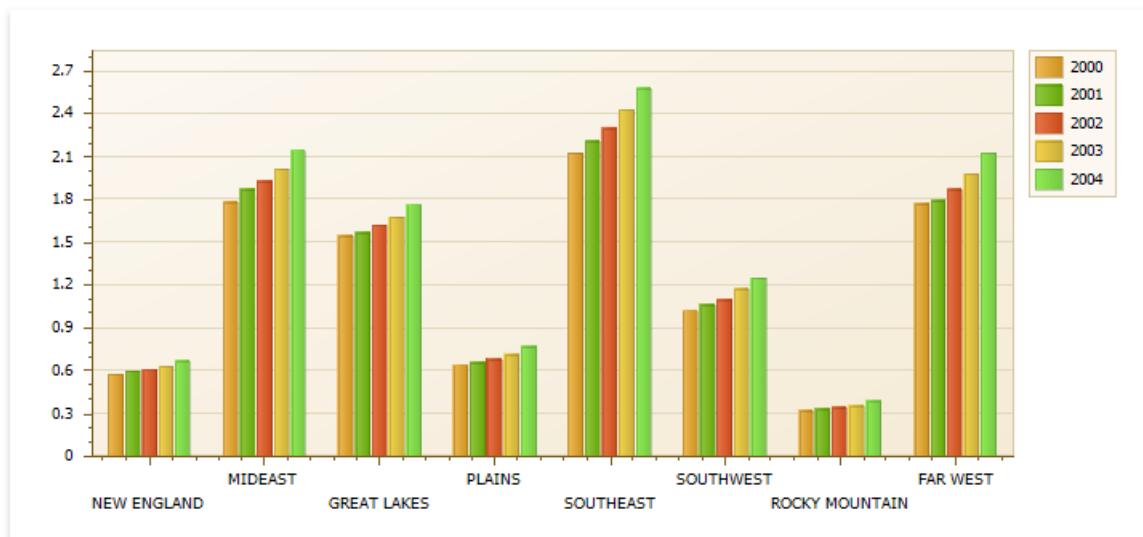
## View the Result

Switch to [Print Preview](#) to see the resulting report.



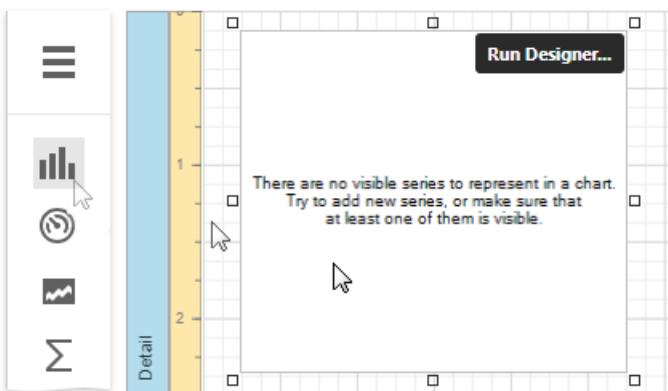
# Add a Chart (Use a Series Template)

This document describes how to create a report with a **Chart** control bound to data and generate all series automatically based on a common template.

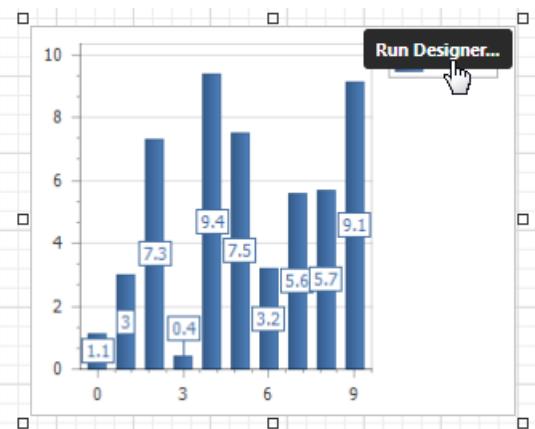


## Add a Chart to a Report

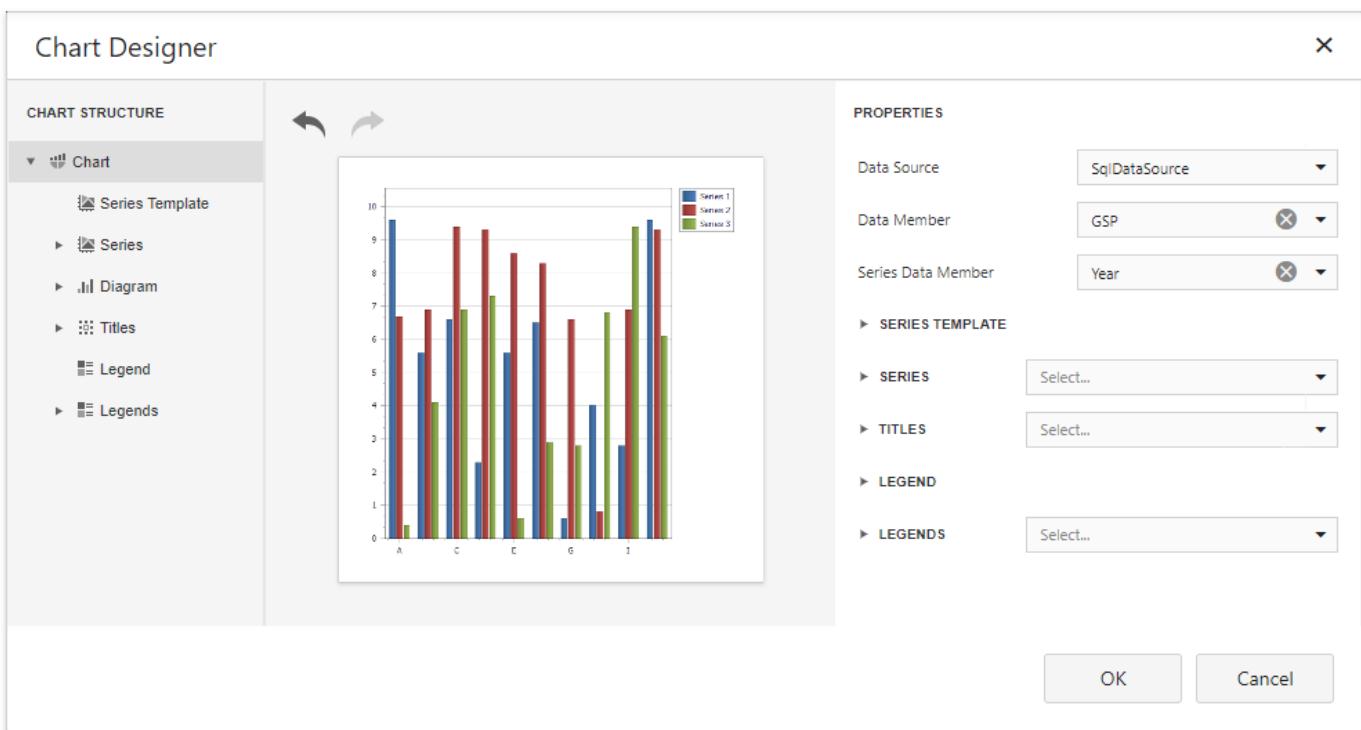
1. Drop the **Chart** control from the **Toolbox** onto the **Detail** band.



2. Click **Run Designer...** to invoke the Chart Designer.



3. Specify the **Data Source** and **Data Member** properties to bind the chart to data. The chart's **Series Data Member** property specifies a data field that should provide data for series names. A new series should be created for each record in this data field.

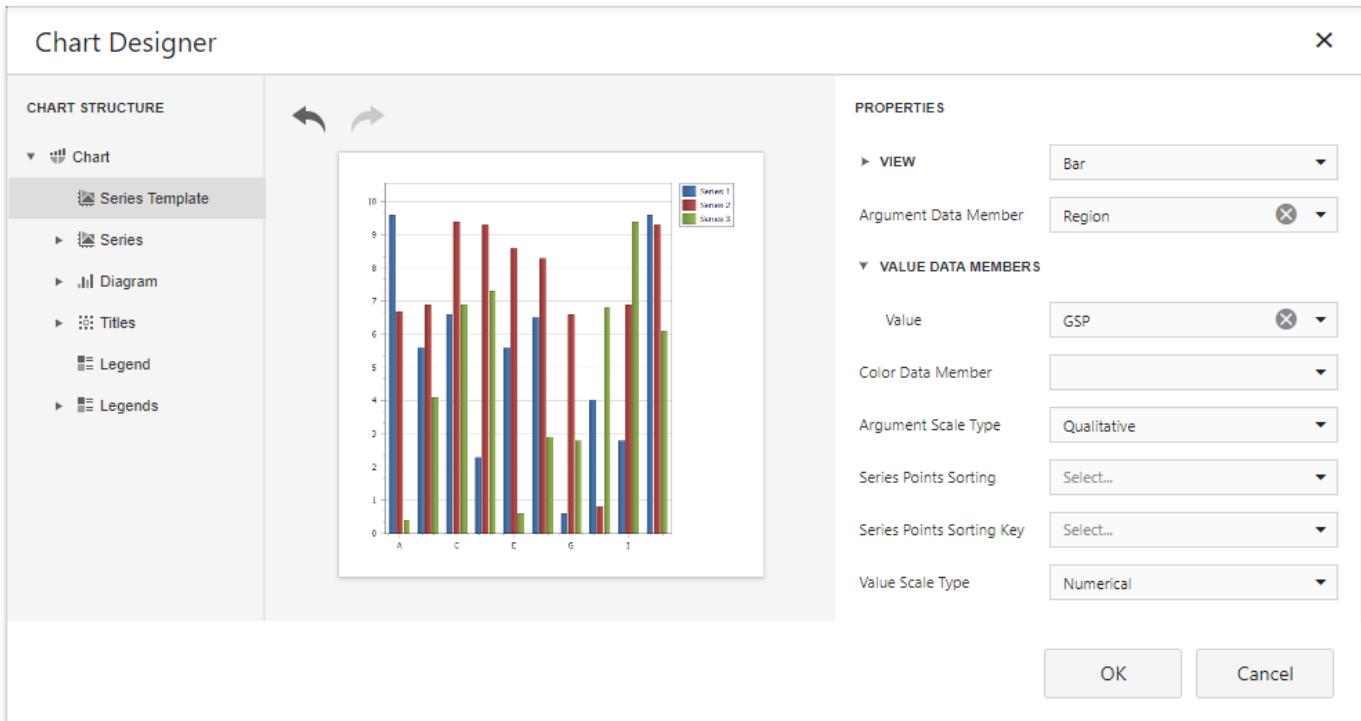


#### Note

The report's **Data Source** property should be set to **None** because the Chart is in the Detail band. When a report has its **Data Source** property specified, the Chart is repeated in preview as many times as there are records in the report data source.

## Adjust the Series Template

1. Use the **Argument Data Member** and **Value Data Members** properties to define where to get data for point arguments and values.



Make sure that the **Argument Scale Type** and **Value** properties are set to appropriate values.

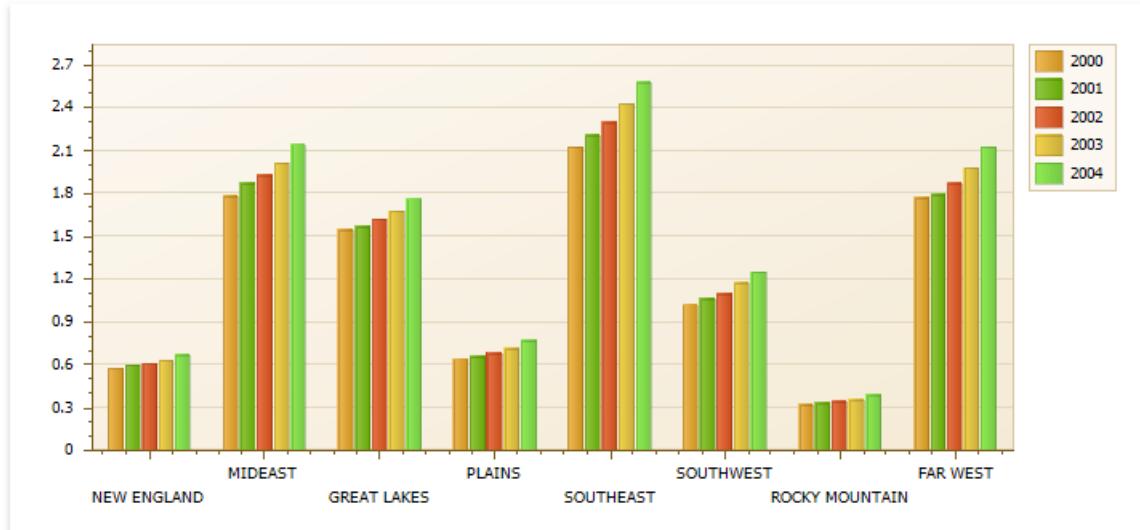
## Customize the Chart

Perform the following customization to improve the chart's appearance:

- Set the **Labels Visibility** property to **False** to avoid overlapping series labels.
- Specify the color settings used to draw the chart's series. For instance, select **Nature Colors** in the **Palette**'s drop-down list.

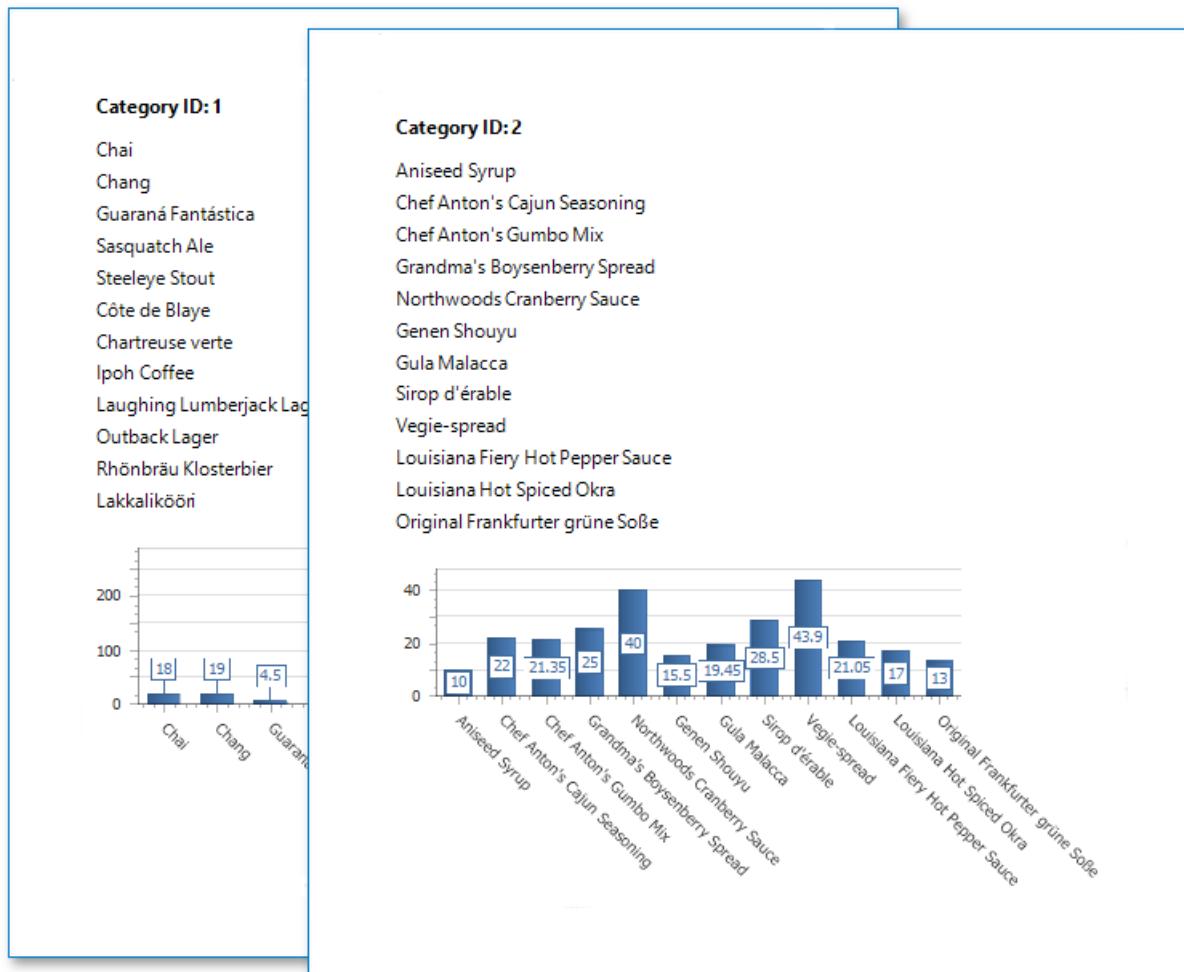
## View the Result

Switch to [Print Preview](#) to see the resulting report.



# Use Charts to Visualize Data in Report Groups

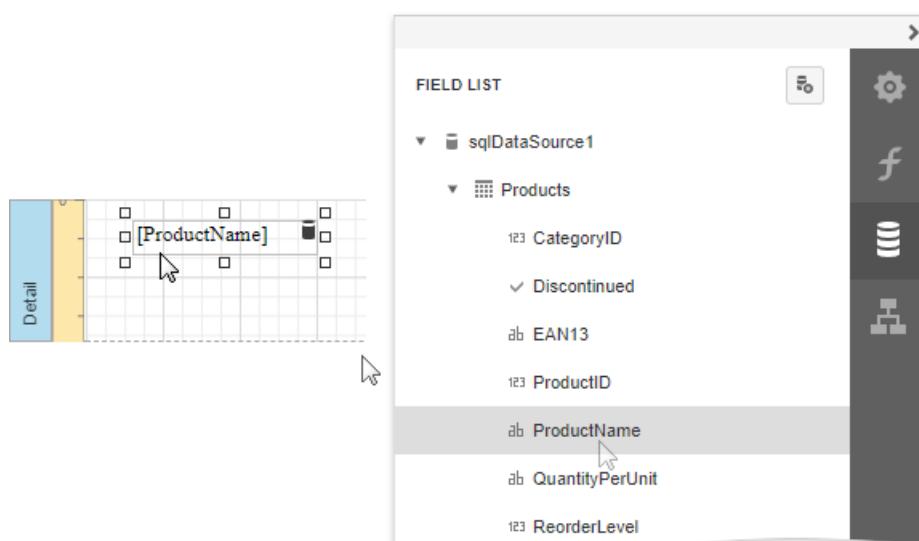
This tutorial describes how to use charts to visualize data in each report group.



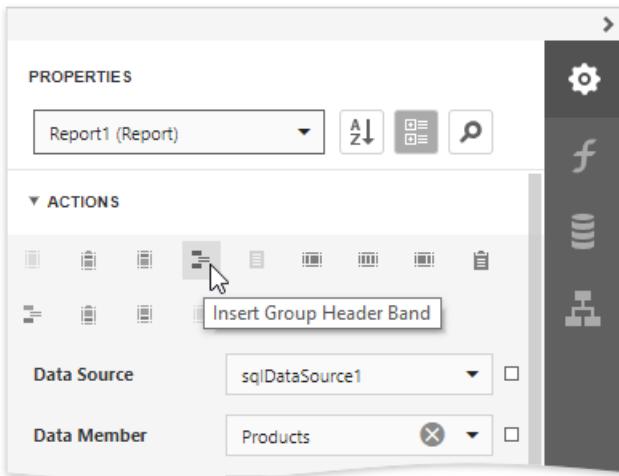
## Group Report Data

Do the following to group data in a report:

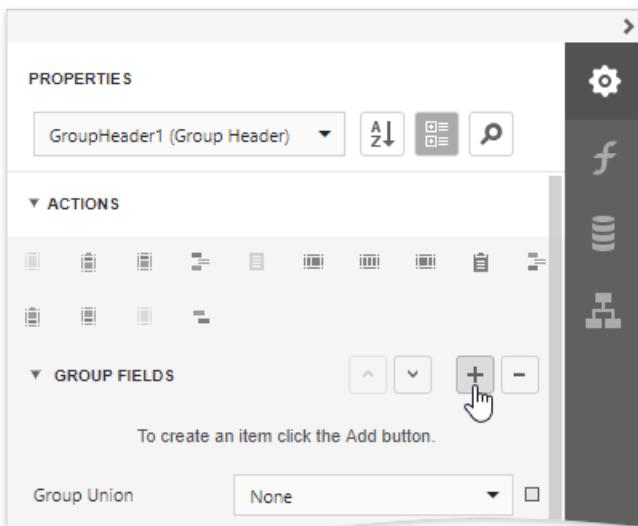
- Bind the report to the required database table (for instance, **Products**).
- Drop the **ProductName** field from the **Field List** onto the report's Detail band.



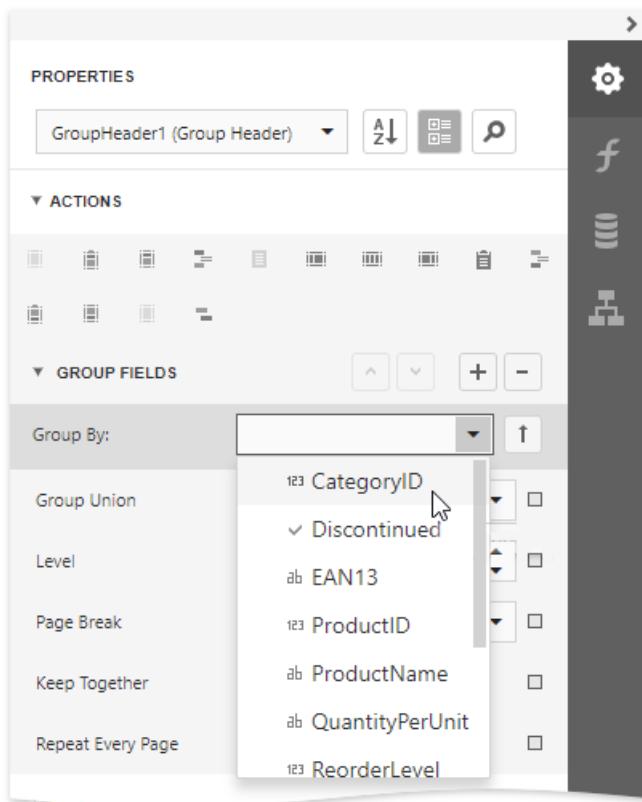
- Switch to the **Properties** panel and add a Group Header band to the report by clicking the corresponding button in the **Actions** category.



- Select the Group Header band and expand the **Actions** category. Then, in the **Group Fields** section, click the **Add** button to add a new grouping.

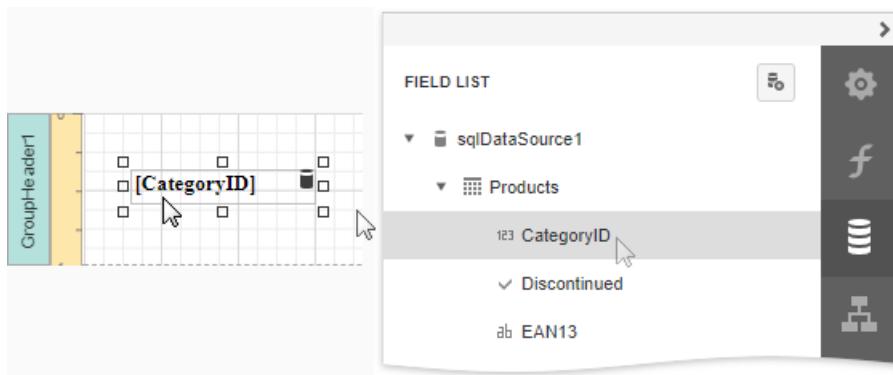


- Next, choose a data member across which the report is to be grouped (for example, the **CategoryID** field). Note that grouping across **calculated fields** is supported as well.



To manage the sorting order of the group's items, use the corresponding arrow button.

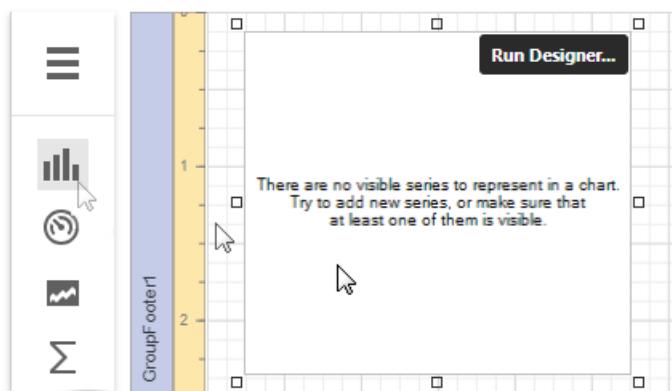
- Drop the **Category ID** field onto the Group Header to display group titles in the report.



## Create a Chart

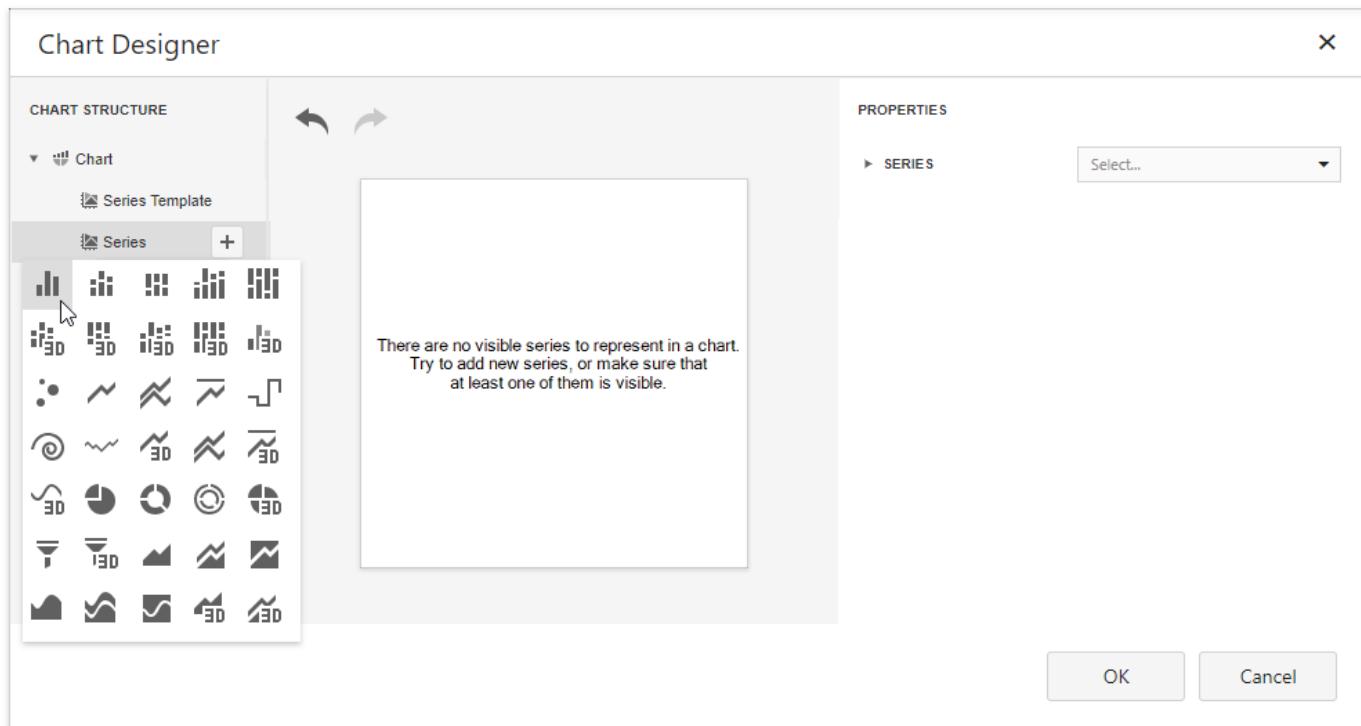
Do the following to add a chart to the report:

- Drop the **Chart** control from the **Toolbox** onto the Group Footer.

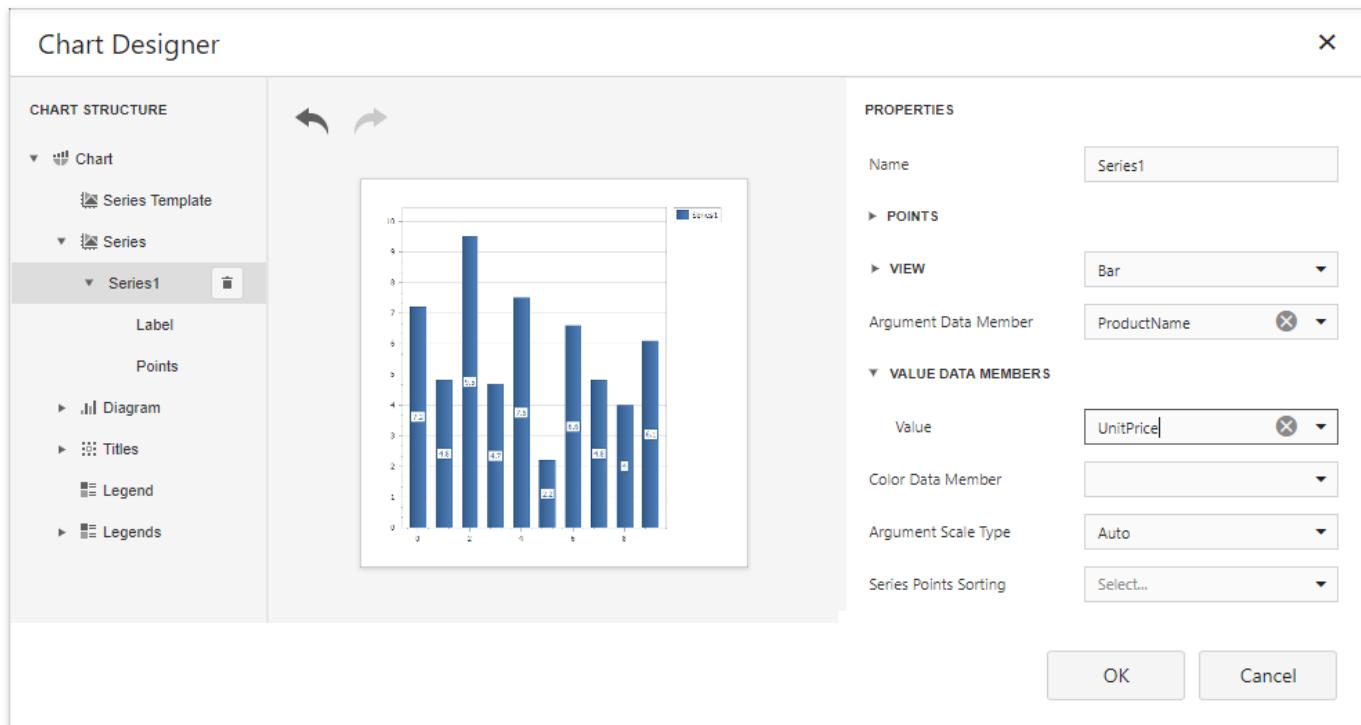


- Click **Run Designer** to invoke the Chart Designer. Locate the **Series** element in the chart elements tree and click the plus

button. Select the view type (for example, **Bar**) in the invoked series type list.

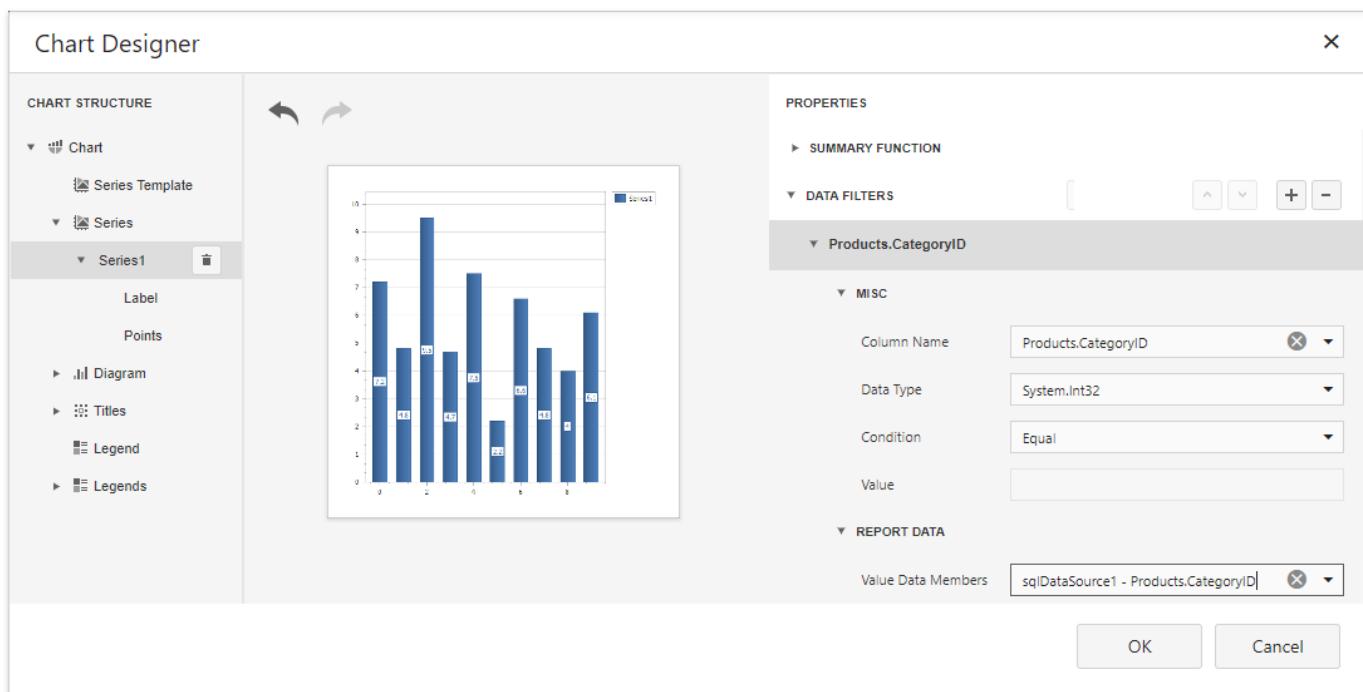


- Specify the **Argument Data Member** and **Value** properties.



- Expand the **Data Filters** category and click the plus button to add a new data filter.

Set the filter's **Column Name** and **Value Binding** properties to the **CategoryID** field that is used as group criteria in the report.



Only the **Value Binding** setting is taken into account when the **Value** and **Value Binding** properties are specified for a data filter.

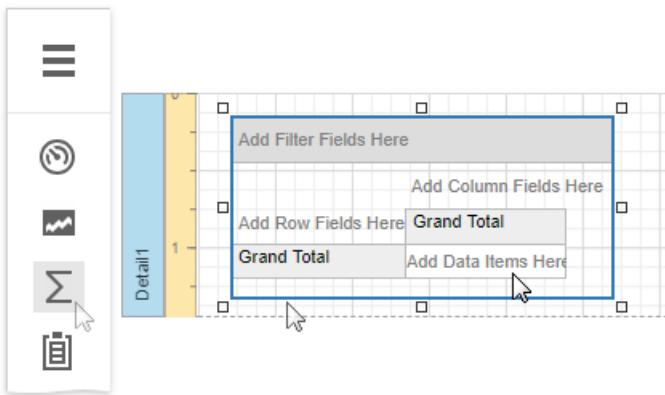
Switch to [Print Preview](#) to see the resulting report.

# Link a Chart and a Pivot Grid

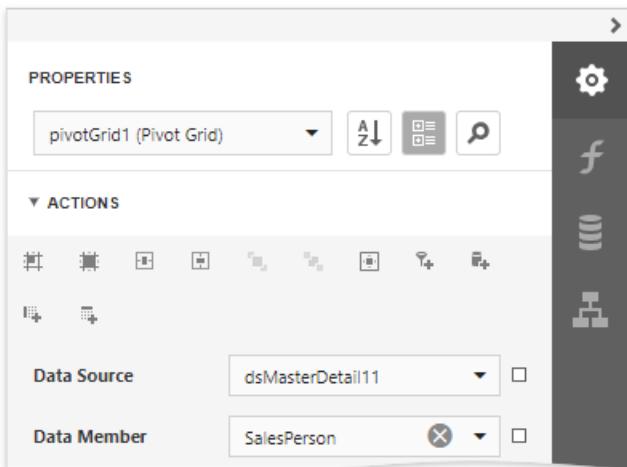
This tutorial demonstrates how to use the Chart control to visualize the Pivot Grid control's data.

## Create a Pivot Grid

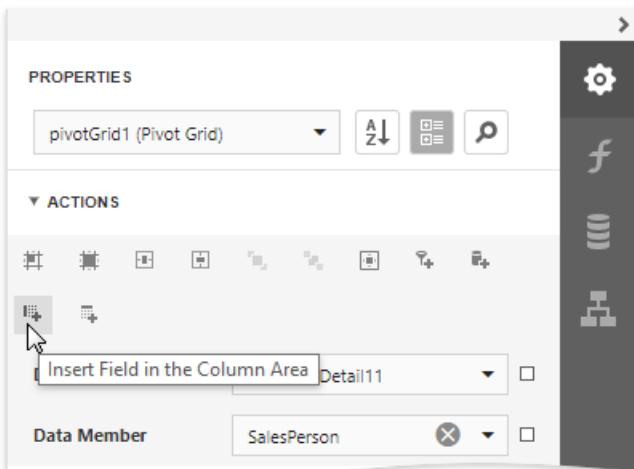
1. Drop the **Pivot Grid** control from the [Toolbox](#) onto the [Detail band](#).



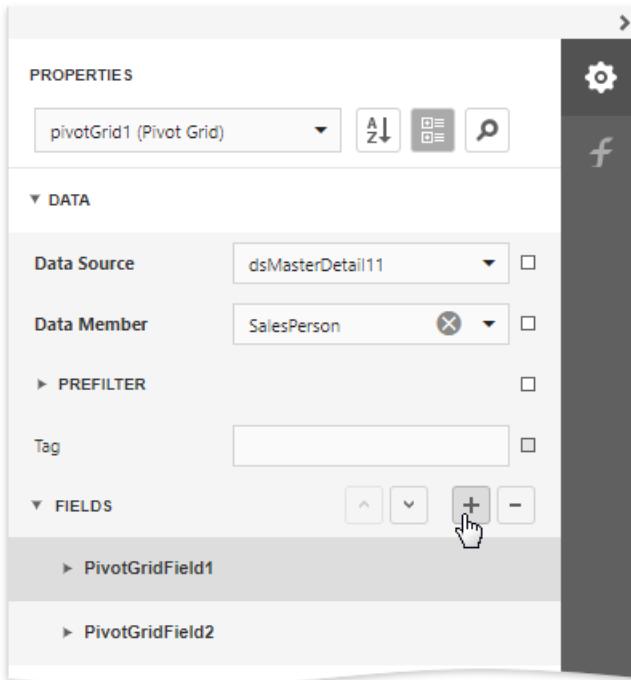
2. Specify the **Data Source** and **Data Member** properties to bind the Pivot Grid to data.



3. Insert fields in the **Filter**, **Data**, **Column** and **Row** areas to define the Pivot Grid's layout. Select the corresponding command in the **Actions** category.



Alternatively, select the Pivot Grid, expand the **Fields** node in the **Data** category to manage the control's fields and access their properties.



4. Select the Pivot Grid's field and specify its **Data Column Name** property to bind it to data.

	Year	Quarter
Grand Total		
Sales Person		
Grand Total		

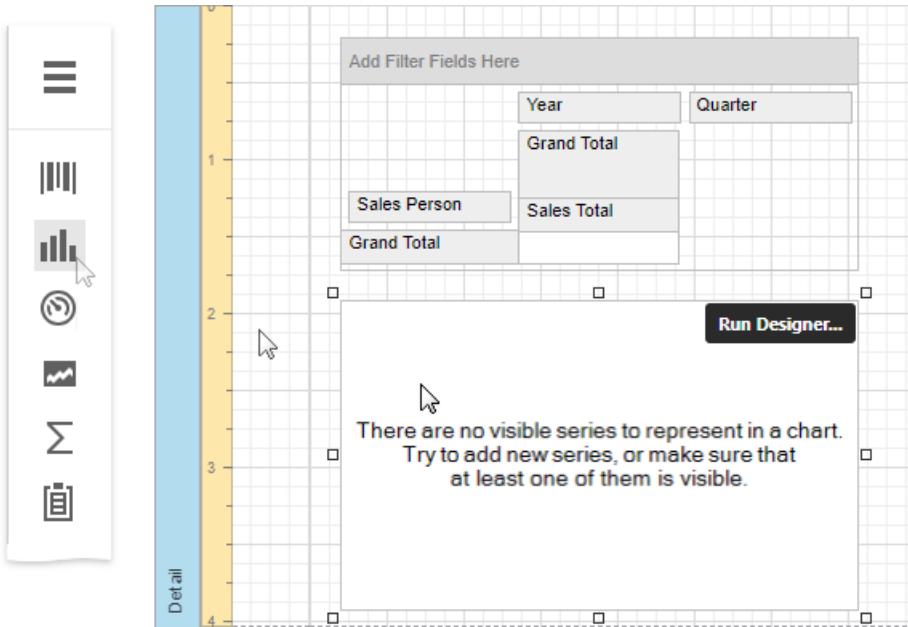
**Properties**

**ACTIONS**

- Area: Row Area
- Area Index: 0
- Data Column Name: FullName
- Caption: Sales Person
- Group Interval: Default
- Summary Type: Sum
- Summary Display Type: Count
- Unbound Type: Bound

## Link a Chart with the Pivot grid

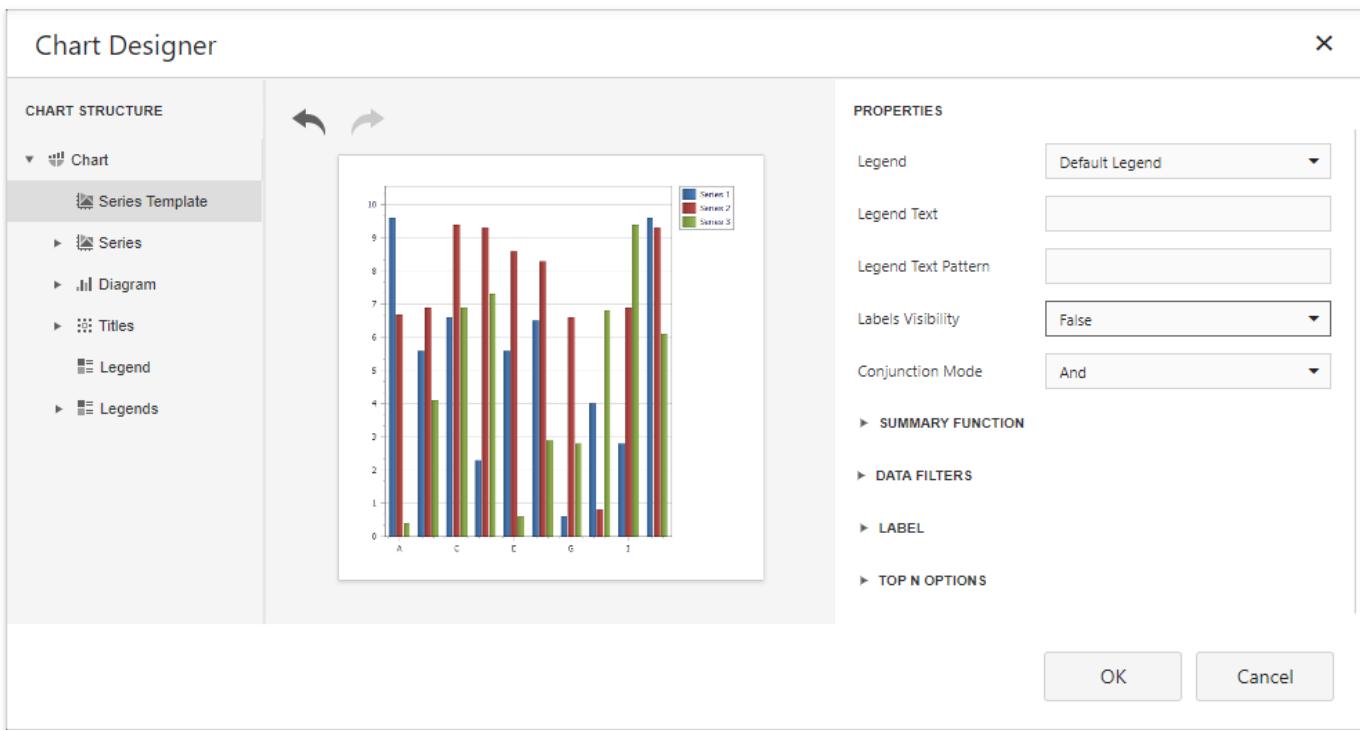
1. Drop the **Chart** control from the [Toolbox](#) onto the Detail band below the Pivot Grid.



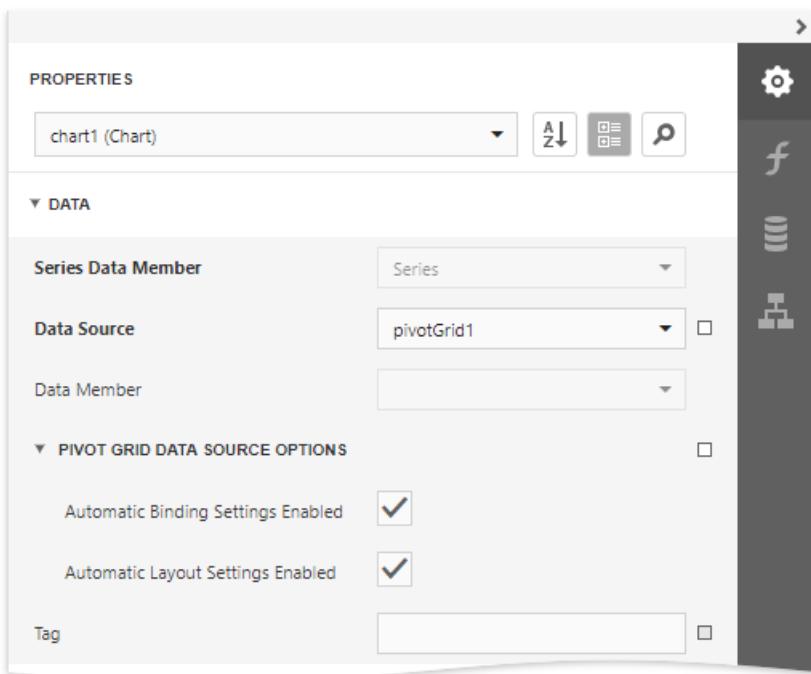
- Click **Run Designer** to invoke the **Chart Designer**. Choose the Pivot Grid in the **Data Source** property's drop-down list.

The screenshot shows the 'Chart Designer' dialog box. On the left, a tree view under 'CHART STRUCTURE' shows nodes like 'Chart', 'Series Template' (which is expanded), 'Series', 'Diagram', 'Titles', 'Legend', and 'Legends'. In the center, there's a preview of a bar chart with three series: 'Series 1' (blue), 'Series 2' (red), and 'Series 3' (green). The x-axis has categories A, C, E, G, I, and the y-axis ranges from 0 to 10. On the right, the 'PROPERTIES' panel shows the 'Data Source' dropdown set to 'pivotGrid1'. Other properties like 'Data Member', 'Series Data Member', and various 'SERIES' options are also present. At the bottom are 'OK' and 'Cancel' buttons.

- Select the **Series Template** node in the chart elements tree and disable the **Labels Visibility** check box to avoid overlapping series labels.



4. (optionally) You can customize various settings that determine a linked Chart and Pivot Grid pair's common behavior. To do this, use the Chart's **Pivot Grid Data Source Options** property. This property is synchronized with the Pivot Grid's **Options Chart Data Source** property.

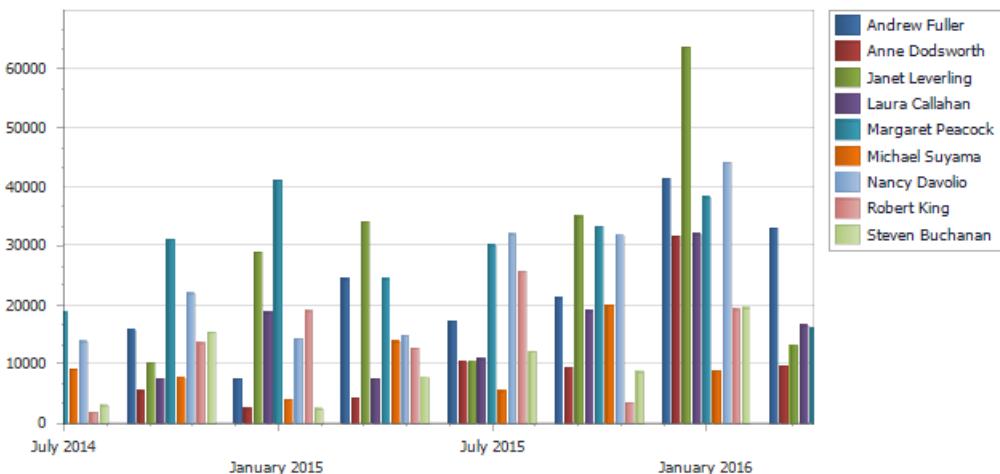


## View the Result

Switch to [Print Preview](#) to see the resulting report.

## Sales by Person

Sales Total	Year	Quarter	2014		2015		2016	
Sales Person	3	4	1	2	3	4	1	
Andrew Fuller	\$5,940.80	\$15,816.26	\$7,488.78	\$24,374.17	\$17,309.15	\$21,272.04	\$41,416.30	
Anne Dodsworth	\$4,364.30	\$5,530.21	\$2,471.98	\$4,187.10	\$10,245.95	\$9,405.36	\$31,601.64	
Janet Leverling	\$8,177.30	\$10,046.66	\$28,793.05	\$33,901.93	\$10,469.46	\$34,861.69	\$63,605.37	
Laura Callahan	\$14,781.30	\$7,458.82	\$18,684.31	\$7,465.81	\$10,800.40	\$19,082.08	\$32,097.84	
Margaret Peacock	\$18,815.52	\$31,129.59	\$41,088.53	\$24,474.10	\$29,947.73	\$33,299.42	\$38,187.48	
Michael Suyama	\$9,082.74	\$7,559.86	\$3,899.44	\$13,806.01	\$5,481.65	\$19,939.27	\$8,897.20	
Nancy Davolio	\$13,821.78	\$21,942.73	\$14,402.07	\$14,824.31	\$32,077.16	\$31,844.50	\$44,090.31	
Robert King	\$1,686.00	\$13,546.16	\$18,940.34	\$12,605.92	\$25,520.43	\$3,404.50	\$19,113.48	
Steven Buchanan	\$3,058.82	\$15,325.10	\$2,520.40	\$7,537.67	\$12,085.80	\$8,572.57	\$19,481.89	
Grand Total	\$79,728.56	\$128,355.39	\$138,288.90	\$143,177.02	\$153,937.73	\$181,681.43	\$298,491.51	



# Use Gauges and Sparklines

The topics in this section describe how to add graphical content to your reports:

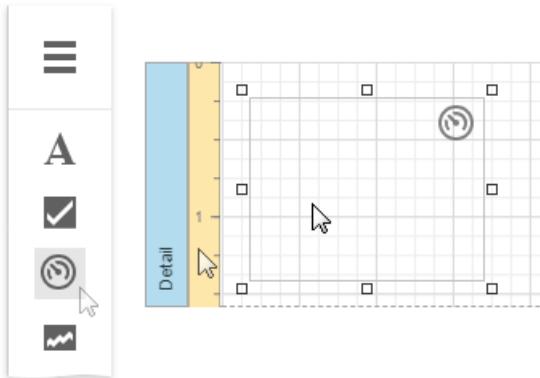
- [Add Gauges to a Report](#)
- [Add Sparklines to a Report](#)

# Add Gauges to a Report

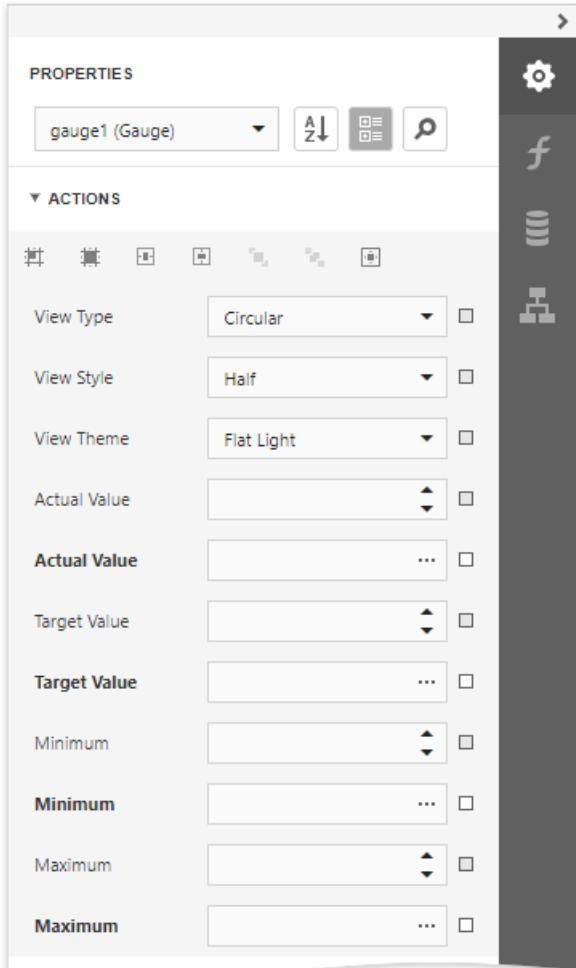
## Gauge Overview

The **Gauge** control provides you with the capability to embed graphical gauges into your report.

To add this control to the report, drag the **Gauge** item from the [Toolbox](#) and drop it onto the report.



Specify properties in the **Actions** category to set up a gauge's appearance.



### • View

Specifies the type of the displayed gauge. The following view types are available:

- **Linear**



Supported view styles: **Horizontal** and **Vertical**.

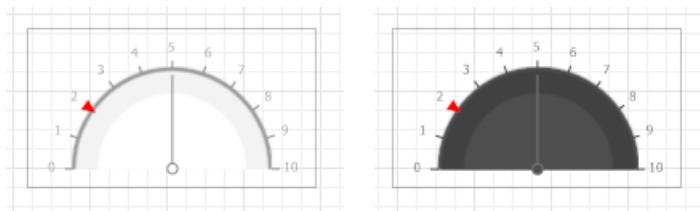
- **Circular**



Supported view styles: **Full**, **Half**, **Quarter Left**, **Quarter Right** and **Three Fourth**.

- **Theme**

Specifies the gauge's color theme. The **Flat Light** and **Flat Dark** view themes are supported.



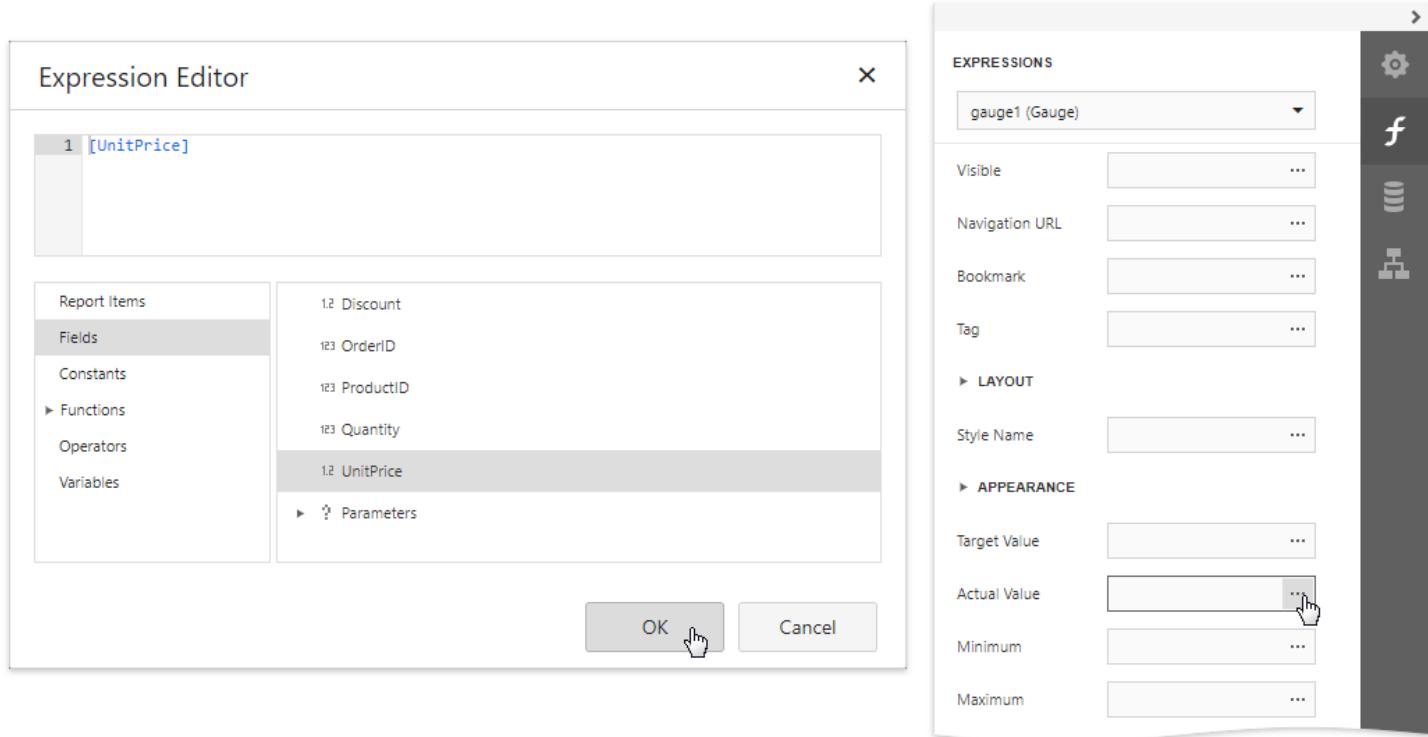
The following properties allow you to customize the gauge scale and specify its displayed values.

- **Actual Value** - specifies the value displayed by a gauge.
- **Target Value** - specifies the position of the target value marker.
- **Maximum** - specifies the gauge's maximum value.
- **Minimum** - specifies the gauge's minimum value.

A screenshot of a UI builder's properties panel for a 'gauge1 (Gauge)' component. The panel is divided into sections: 'PROPERTIES' (containing dropdowns for 'View Type' (Circular), 'View Style' (Half), and 'View Theme' (Flat Light)) and 'ACTIONS' (containing input fields for 'Actual Value', 'Target Value', 'Minimum', and 'Maximum'). A vertical toolbar on the right contains icons for settings, file, database, and other actions.

## Bind a Gauge to Data

To bind the gauge's displayed value to data, open the [Expressions](#) panel and click the **Actual Value** property's ellipsis button. Select the required data field or construct a complex binding expression involving two or more data fields in the invoked [Expression Editor](#).



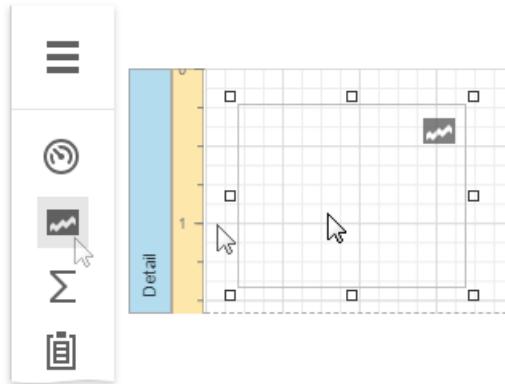
In the same way, you can bind the **Target Value**, **Minimum** and **Maximum** properties to data.

# Add Sparklines to a Report

## Sparkline Overview

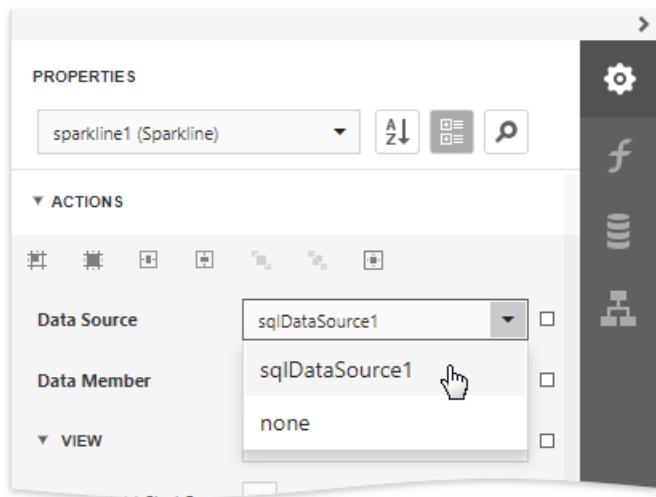
The **Sparkline** control displays a compact chart that is commonly used to illustrate the data flow for every row in a report.

To add this control to the report, drag the **Sparkline** item from the [Toolbox](#) and drop it onto the report.



## Bind the Sparkline to Data

You can connect the sparkline to individual data without accessing a report's data source. Click the **Data Source** property's drop-down list and select the required data source.



The sparkline uses the report's data source if you do not specify the **DataSource** property.

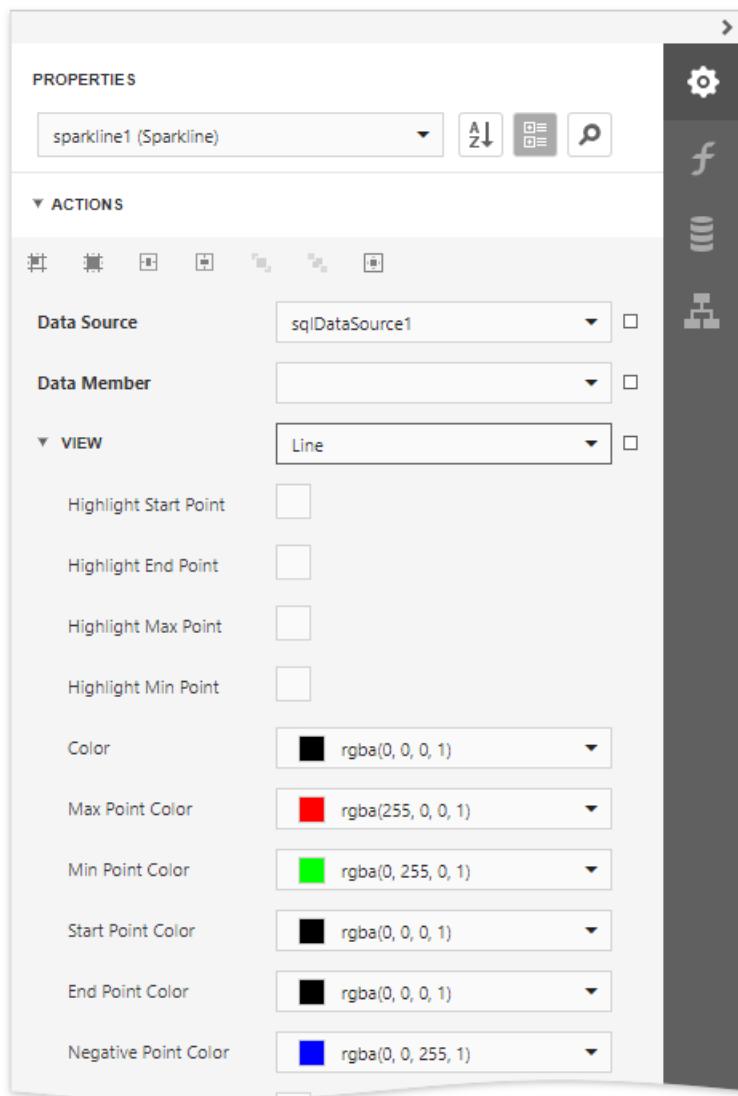
After that, specify the **Data Member** property and set the **Value Member** property to a data field that provides point values for the sparkline.

To create a new data source for a sparkline, click **Add Data Source...** in the [Menu](#). This invokes the [Data Source Wizard](#) that allows you to set up a required data source.

## Adjust the Sparkline View

The sparkline supports the **Line**, **Area**, **Bar** and **WinLoss** view types.

The **View** property provides access to options that change the sparkline's appearance.

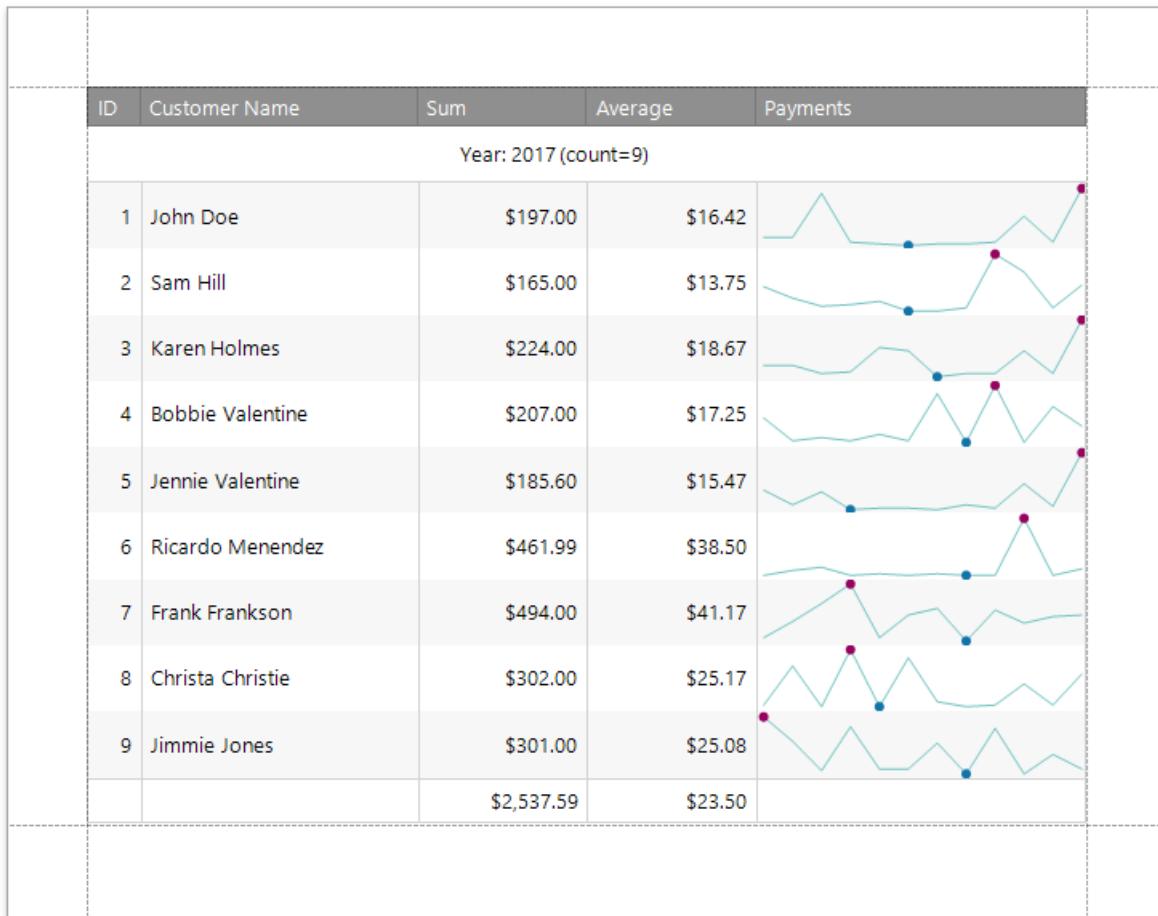


Each view type has properties that define the extreme values' visibility:

- **Highlight Start Point** and **Highlight End Point**;
- **Highlight Min Point** and **Highlight Max Point**.

Specific properties differ between view types, such as the **Highlight Negative Points** setting that is available only for the **Bar** sparkline.

The following image illustrates a [table report](#) containing sparklines that provide maximum and minimum value indicators in their data range:



# Draw Lines and Shapes

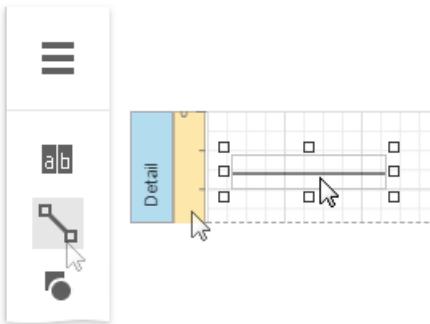
The topics in this section describe how to draw various lines and shapes in a report:

- [Draw Lines](#)
- [Draw Shapes](#)
- [Draw Cross-Band Lines and Boxes](#)

# Draw Lines

The **Line** control draws a line in a specified direction, style, width, and color. You can use it to decorate and visually separate a report's sections.

To add a line to a report, drag the **Line** item from the **Toolbox** onto the report's area.



The **Actions** category of the **Properties** panel provides the main control properties:

A screenshot of the 'Properties' panel in the Report Designer. The panel title is 'PROPERTIES' and the item selected is 'line1 (Line)'. The 'Actions' category is expanded, showing the following controls:

- Line Direction: Horizontal
- Line Style: Solid
- Line Width: 1
- Anchor Vertically: None
- Anchor Horizontally: None

A preview of the line is shown on the left, and a toolbar with various icons is visible at the top of the panel.

## • Line Direction

Enables you to draw a line horizontally, vertically, and across the rectangle the line occupies from one corner to another (**Horizontal**, **Vertical**, **Slant** and **Back Slant** types).



## • Line Style

You can select the solid (by default), dashed, dotted, or mixed line style.



## • Line Width

Specifies the line width in pixels as a floating point value.

## • Anchor Vertically

Specifies the vertical anchoring style, so that after page rendering a control stays attached to the top control, bottom control, or both.

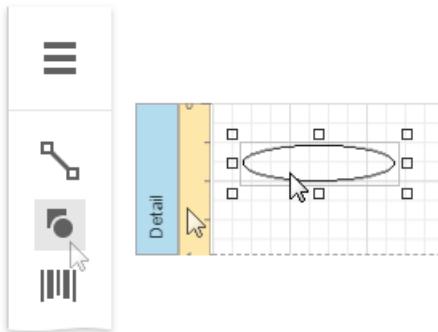
**Note**

The **Line** control cannot span several bands. See [Draw Cross-Band Lines and Boxes](#) to learn about drawing lines through several bands.

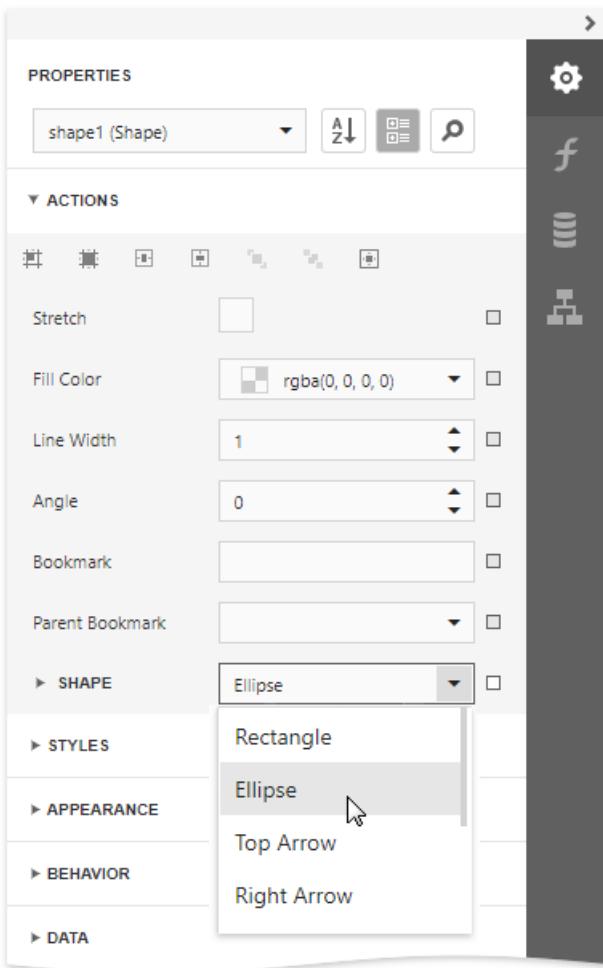
# Draw Shapes

The **Shape** control allows you to draw various shapes in a report.

To add a shape to a report, drag the **Shape** item from the [Toolbox](#) onto the report's area.



Expand the **Actions** category and use the **Shape** property to select the shape type.



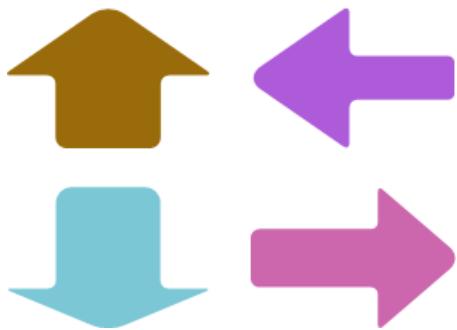
The **Actions** category provides the following main properties common to all shape types:

- **Fill Color** - specifies the the shape's color.
- **Stretch** - specifies whether to stretch a shape to fill its client rectangle area when it is rotated.
- **Line Width** - specifies the width of the line used to draw the shape.
- **Angle** - specifies the shape's rotation angle.

Each shape type provides its own specific set of properties which are detailed below.

## Arrow

The image below illustrates the **Arrow** type's shape.

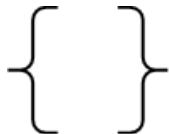


This shape type has the following additional properties:

- **Fillet** - specifies how the shape's corners are rounded (as a percentage). This value should be between **0** and **100**.
- **Arrow Height** - specifies the arrow's relative height (as a percentage). This value should be between **0** and **100**.
- **Arrow Width** - specifies the arrow's relative width (as a percentage). This value should be between **0** and **100**.

## Brace

The image below illustrates the **Brace** type's shape.

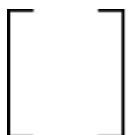


Use the following properties to set up a brace:

- **Tip's Length** - specify the length of a brace's tip.
- **Fillet** - specifies how the shape's corners are rounded (as a percentage). This value should be between **0** and **100**.
- **Tail's Length** specify the length of a brace's tail.

## Bracket

The following image demonstrates the **Bracket** type's shape:



The **Tip's Length** property is specific to this shape type and defines the length of a bracket's tip.

## Cross

The image below shows the **Cross** type's shape.



This shape type has the following properties:

- **Fillet** - specifies how the shape's corners are rounded (as a percentage). This value should be between **0** and **100**.
- **Horizontal Line Height** - specifies the relative width of a cross's horizontal line (as a percentage). This value should be between **0** and **100**.

- **Vertical Line Width** - specifies the relative width of a cross's vertical line (as a percentage). This value should be between **0** and **100**.

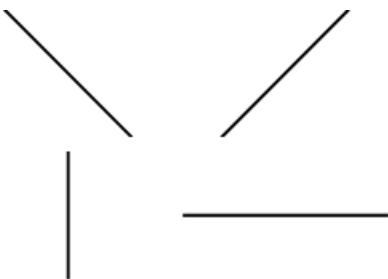
## Ellipse

The image below shows **Ellipse** type shapes.



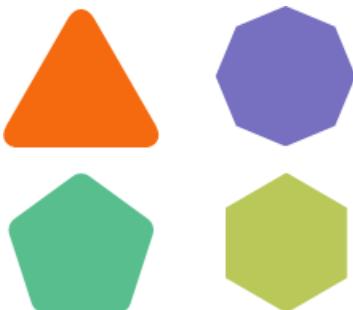
## Line

The following image demonstrates **Line** type shapes:



## Polygon

The image below illustrates the **Polygon** type's shape:



This shape type has the following properties:

- **Fillet** - specifies how the polygon's corners are rounded (as a percentage). This value should be between **0** and **100**.
- **Number Of Sides** - specifies the number of polygon sides.

## Rectangle

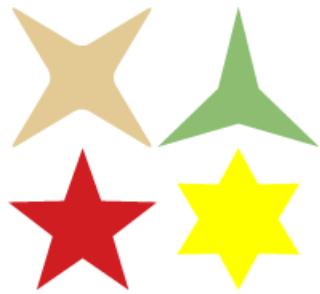
The image below illustrates **Rectangle** type shapes.



This shape type's **Fillet** property specifies the rectangle's relative roundness (as a percentage, between **0** and **100**).

## Star

The following image shows a **Star** type shape:



This shape type has the following properties:

- **Fillet** - specifies the relative roundness of the star's points (as a percentage). This value should be between **0** and **100**.
- **Count of Star Points** - specifies the number of points that make up the star.
- **Concavity** - specifies the concavity level (as a percentage) between two neighboring start points. This value should be between **0** and **100**.

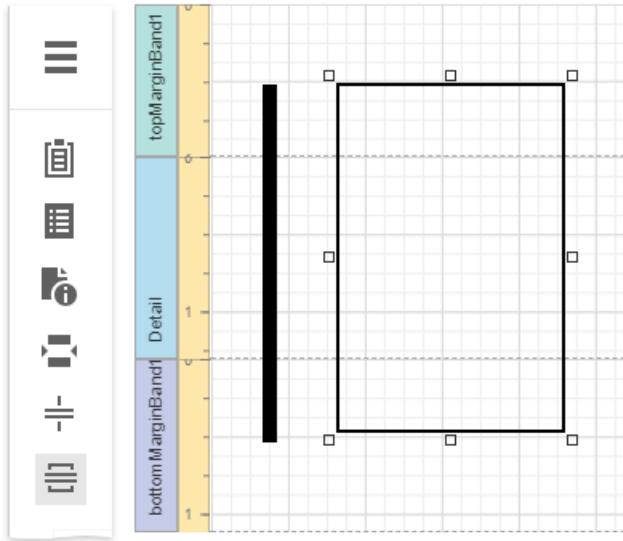
# Draw Cross-Band Lines and Boxes

Cross-band controls allow you to draw lines and rectangles through several [report bands](#).

The Report Designer provides the following two cross-band controls:

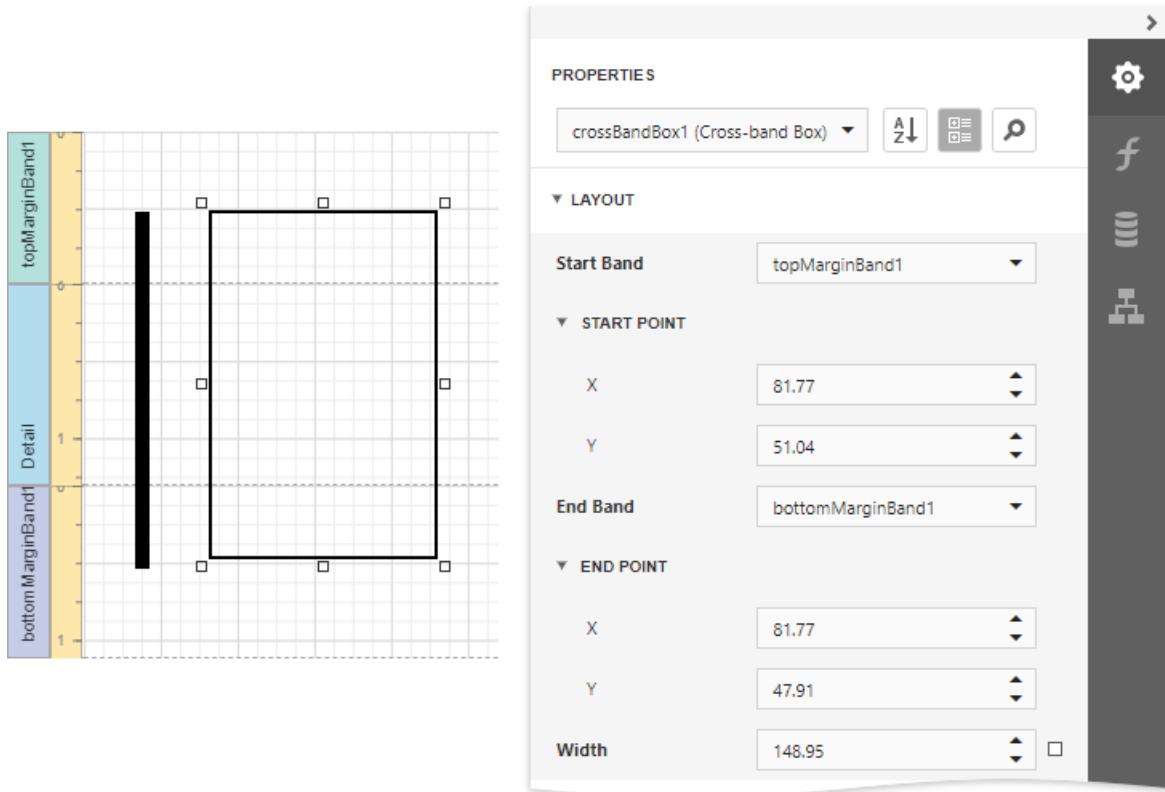
- The **Cross-Band Line** control draws vertical lines that can span multiple report bands. You can use this control to emphasize a report area that consists of different bands.
- The **Cross-Band Box** control draws rectangles through several report bands. You can use this control to encompass a report section that includes multiple band areas.

To add a cross-band control to a report, select the corresponding item in the [Toolbox](#) and draw a rectangle across required bands.

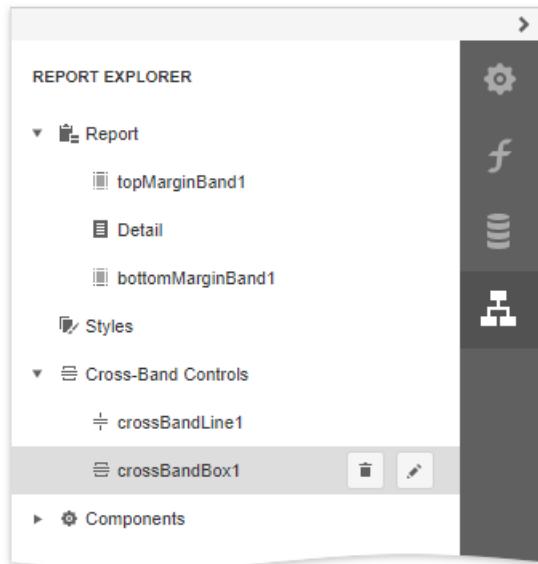


The following properties define a cross-band control's location in a report:

- **Start Band** - determines the band from which the control starts to draw;
- **Start Point** - specifies the exact coordinates (measured in [report units](#)) within the start band where the control starts to draw;
- **End Band** - determines the band where the cross-band control stops to draw;
- **End Point** - specifies the exact coordinates (measured in [report units](#)) within the end band where the control finishes to draw.



The following image illustrates how the [Report Explorer](#) reflects cross-band controls:



# Shape Report Data

The topics in this section describe the data shaping features reports support:

- [Filter Data](#)
- [Group and Sort Data](#)
- [Shape Data \(Expression Bindings\)](#)
- [Shaping Data \(Data Bindings\)](#)
- [Use Calculated Fields](#)
- [Use Report Parameters](#)

# Filter Data

The topics in this section describe different approaches to filtering data in your reports:

- [Filter Data at the Report Level](#)

Use the report's settings demonstrated in this tutorial if you want to load the entire dataset and filter it on the client.

- [Filter Data at the Data Source Level](#)

Filter records at data source level using your data connection query if you are binding to a large data source and want to speed up the retrieval process.

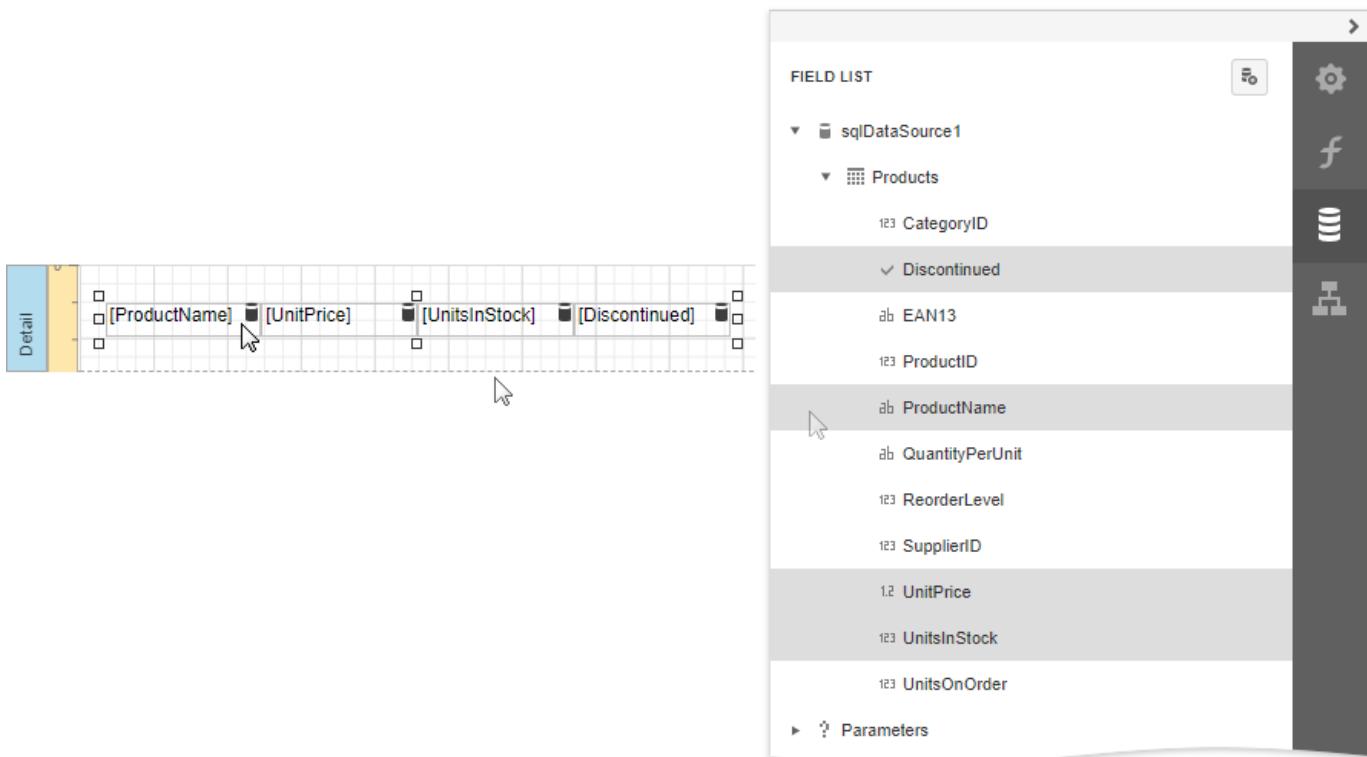
- [Limit the Number of Records to Display](#)

Options described in this topic allow you to emulate the Top N feature in a sorted report or increase the Print Preview performance by rendering only a subset of a report's data.

# Filter Data at the Report Level

This tutorial illustrates how to filter data at the report level, as opposed to the [data source level](#). This approach is useful when dealing with relatively small data sources, when data load times are acceptable.

1. [Create a new report](#) or open an existing one.
2. Bind your report to a required data source. See the [Bind to Data](#) section to learn more about providing data to reports.
3. Switch to the [Field List](#) panel and drop the required fields onto the report's [Detail](#) band.



4. Expand the **Actions** category and click the **Filter String** property's ellipsis button.

In the invoked [Filter Editor](#), construct an expression in which the data fields are compared with the required values.

Two side-by-side screenshots of the Report Designer. On the left is the 'Filter Editor' dialog box. It shows a logical structure starting with 'And': 'UnitPrice Is greater than parameter1', 'ProductName Contains c', and 'Discontinued Does not equal True'. Below this, the resulting expression is shown: '[UnitPrice] &gt; ?parameter1 And Contains([ProductName], 'c') And [Discontinued] &lt;&gt; True'. At the bottom of the dialog are 'Advanced Mode' (checked), 'OK', and 'Cancel' buttons. On the right is the 'Properties' panel for the report. It includes sections for 'Report1 (Report)', 'Actions' (with various icons), 'Data Source' set to 'sqlDataSource1', 'Data Member' set to 'Products', and a 'Filter String' property with an ellipsis button that has a cursor hovering over it. Other properties like 'Measure Units' are also visible.

Every filter condition consists of three parts:

- A field of a data source to which a report is bound or the name of the **calculated field**, which exists in this data source at the same level.
- Criteria operator, such as **Equals**, **Is less than**, **Is between**, etc.
- A static operand value, another data field or a **report parameter**. To access parameters, click the icon on the right until it turns into a question mark.

You can arrange specific conditions into groups with **And**, **Or**, **Not And**, and **Not Or** operators.

Your report is now ready to be generated. Switch to [Print Preview](#) to see the result.

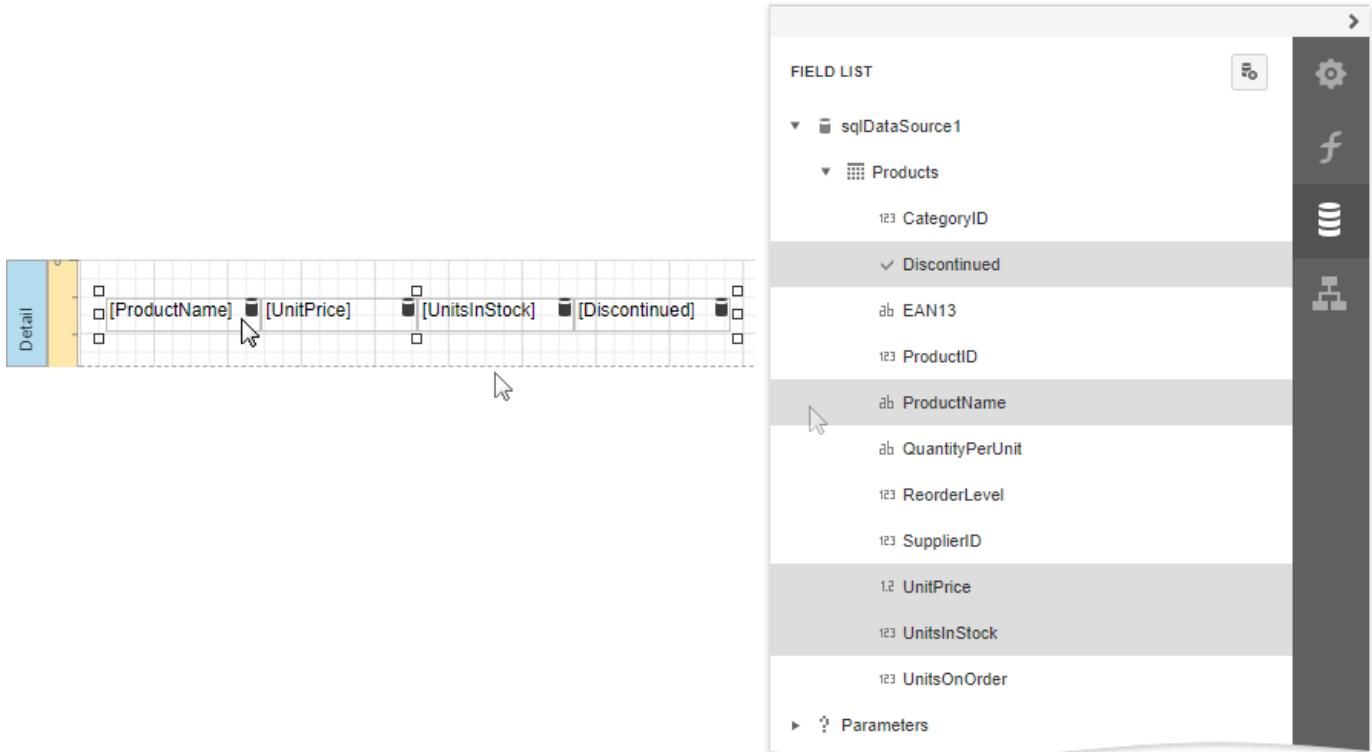
The screenshot shows a report preview interface. On the left, there is a table with columns: Product Name, Unit Price, Units In Stock, and Discontinued. The data consists of 12 rows of products. On the right, there is a panel titled "PREVIEW PARAMETERS" with a single input field labeled "Parameter1" containing the value "30". Below the input field are two buttons: "RESET" and "SUBMIT". To the right of the panel is a vertical toolbar with icons for filter, settings, and search.

Product Name	Unit Price	Units In Stock	Discontinued
Northwoods Cranberry Sauce	\$40.00	6	False
Queso Manchego La Pastora	\$38.00	86	False
Camarvon Tigers	\$62.50	42	False
Gumbär Gummibärchen	\$31.23	15	False
Schoggi Schokolade	\$43.90	49	False
Mascarpone Fabiolí	\$32.00	9	False
Côte de Blaye	\$263.50	17	False
Ipoh Coffee	\$46.00	17	False
Gnocchi dinonna Alice	\$38.00	21	False
Raclette Courdavault	\$55.00	79	False
Camembert Pierrot	\$34.00	19	False
Tarte au sucre	\$49.30	17	False

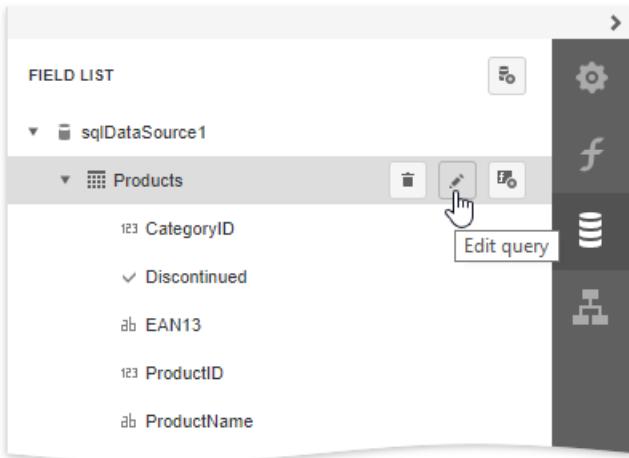
# Filter Data at the Data Source Level

This tutorial illustrates how to filter data at the report data source level, as opposed to the [report level](#). This approach is recommended when dealing with comparatively large data sources when the retrieval process is slow.

1. [Create a new report](#) or open an existing one.
2. Bind your report to a required data source. See the [Bind to Data](#) section to learn more about providing data to reports.
3. Switch to the [Field List](#) and drop the required fields onto the report's [Detail](#) band.



4. Select the data source and click **Edit query**.



Click **Run Query Builder** in the invoked [Data Source Wizard](#).

## Data Source Wizard

Create a query or select a stored procedure.

- Query  
 Stored Procedure

SQL string:

```
select [Orders].[OrderID],[Orders].[CustomerID],[Orders].[EmployeeID],[Orders]
.[OrderDate],[Customers].[CustomerID] as [Customers_CustomerID],[Customers]
.[CompanyName],[Customers].[ContactName],[Products].[ProductID],[Products]
.[ProductName],[OrderDetails].[OrderID] as [OrderDetails_OrderID],[OrderDetail
s].[ProductID] as [OrderDetails_ProductID] from [Customers] [Customers]
inner join [Orders] [Orders] on ([Orders].[CustomerID] = [Customers].[Custome
rID])
inner join [OrderDetails] [OrderDetails] on ([OrderDetails].[OrderID] =
```

Run Query Builder...

Cancel

Previous

Next

Finish

5. Expand the **Query Properties** section in the invoked **Query Builder**. Click the ellipsis button for the **Filter** property to construct a filtering expression in the invoked **Filter Editor**.

Query Builder

PRODUCTS

\* (All Columns)

Filter Editor

And

Products.UnitPrice Is greater than 30.0

Products.ProductName Does not contain c

Products.Discontinued Does not equal True

[UnitPrice] > 30.0 And Contains([ProductName], 'c')  
And [Discontinued] <> True

QUERY PROPERTIES

Name: Products

Filter: ...

Group Filter:

Select All (\*): No

Select Top: 0

Offset: 0

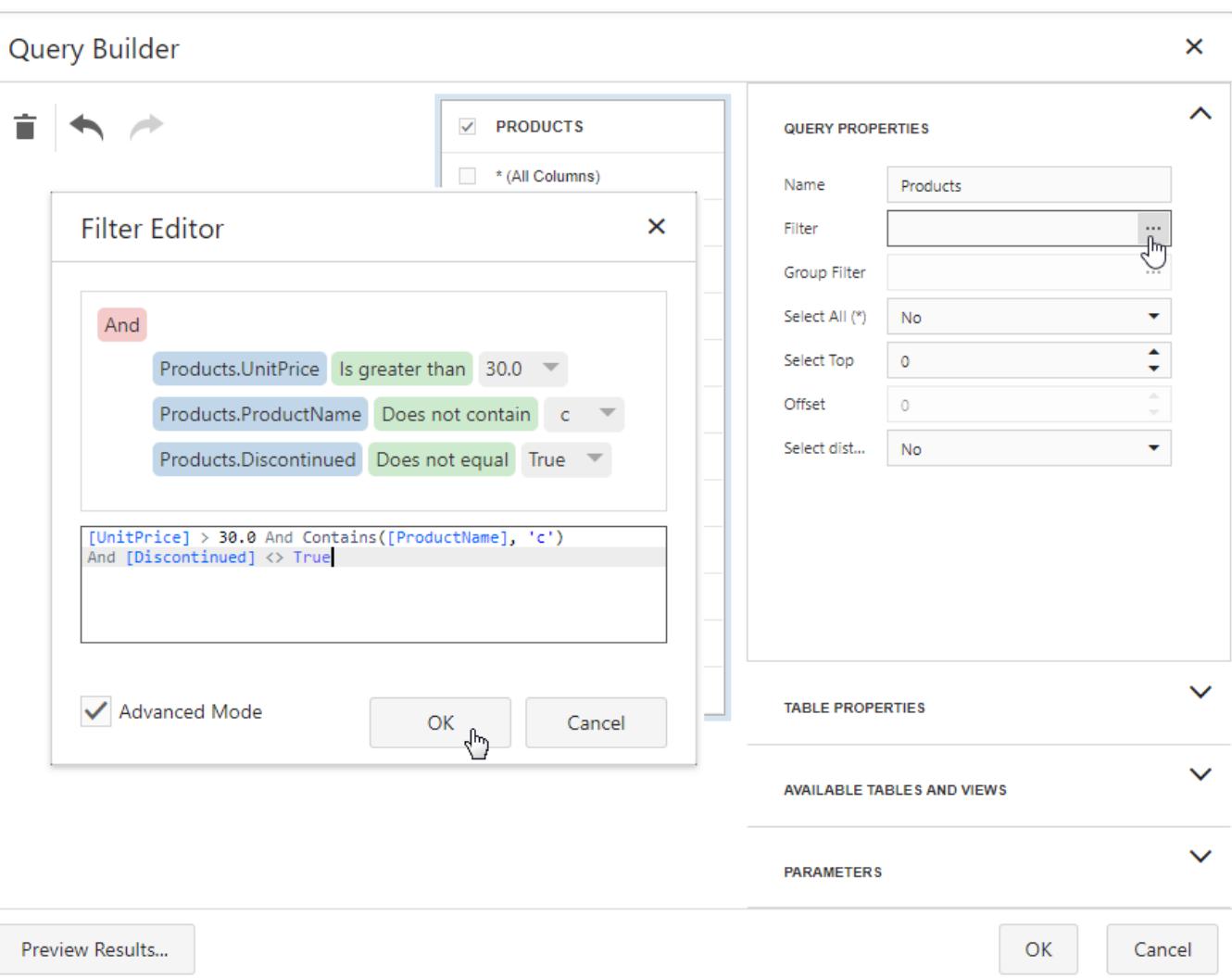
Select dist...: No

TABLE PROPERTIES

AVAILABLE TABLES AND VIEWS

PARAMETERS

Preview Results... OK Cancel



Every filter condition consists of three parts:

- A data field name.
- Criteria operator, such as **Equals**, **Is less than**, **Is between**, etc.
- A static operand value, another data field or a query parameter. See the [Use Query Parameters](#) topic to learn about embedding these parameters into filter conditions.

You can arrange specific conditions into groups with **And**, **Or**, **Not And**, and **Not Or** operators.

Switch to [Print Preview](#) to see the result.

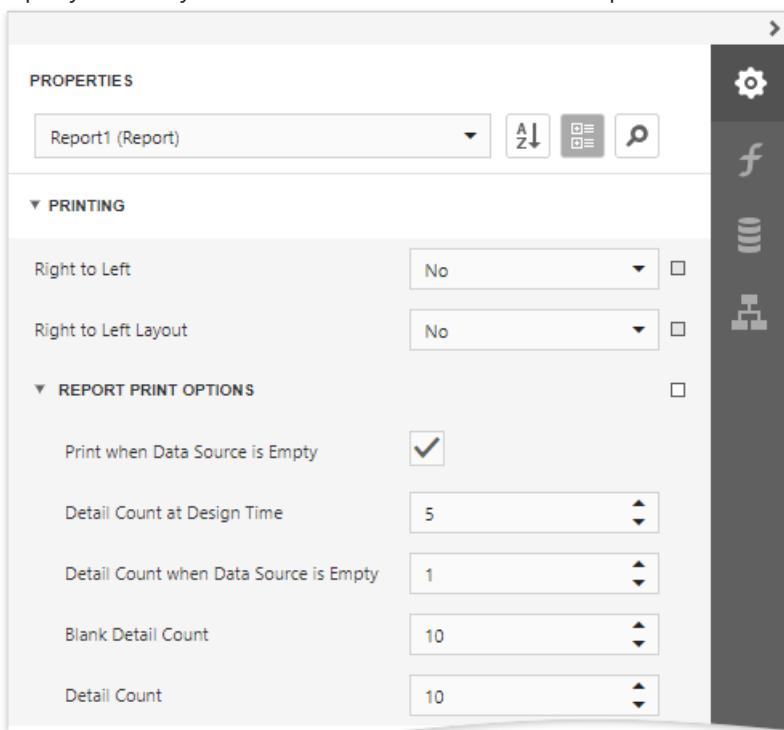
Product Name	Unit Price	Units In Stock	Discontinued
Northwoods Cranberry Sauce	\$40.00	6	False
Queso Manchego La Pastora	\$38.00	86	False
Camarvon Tigers	\$62.50	42	False
Gumbär Gummibärchen	\$31.23	15	False
Schoggi Schokolade	\$43.90	49	False
Mascarpone Fabio&#233;	\$32.00	9	False
Côte de Blaye	\$263.50	17	False
Ipoh Coffee	\$46.00	17	False
Gnocchi dinonna Alice	\$38.00	21	False
Raclette Courdavault	\$55.00	79	False
Camembert Pierrot	\$34.00	19	False
Tarte au sucre	\$49.30	17	False

# Limit the Number of Records to Display

Use **Report Print Options** to filter records displayed in [Print Preview](#). You can specify them in the [Properties](#) panel.

## Limit the Number of Records

The **Detail Count at Design Time** property enables you to limit the number of records a report shows in Print Preview



embedded into the Report Designer.

Use the **Detail Count** option to define how many times to print the Detail band when generating a report document to display in Print Preview.

## Print on Empty Data Source

Disable the **Print when Data Source is Empty** option to avoid generating a report when its data source is empty. You can use this setting in [master-detail reports](#) to hide the detail report if its data source contains no records.

The **Detail Count when Data Source is Empty** property allows you to specify how many times to print the Detail band when a report does not have a data source. You can use this property to create static reports that are not connected to a data source and display the same static content several times.

# Group and Sort Data

The following documents describe how to group and sort a report's data:

- [Sort Data](#)
- [Group Data](#)
- [Sort Data by a Custom Field](#)
- [Group Data by a Custom Field](#)
- [Sort Groups by a Summary Function's Result](#)

# Sort Data

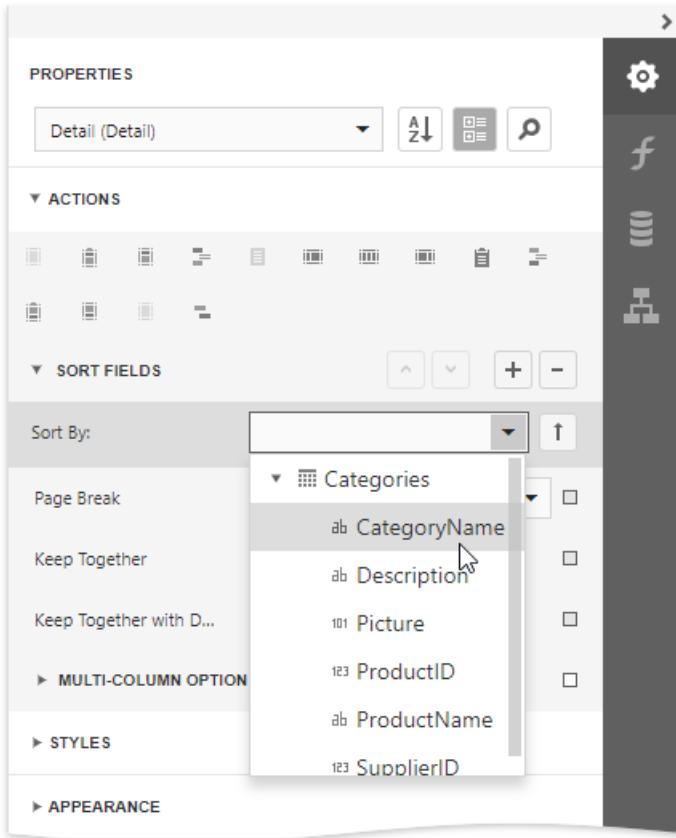
## Sort a Report's Data

Do the following to sort data in your report:

1. Create a new or open an existing data-bound report.

You cannot apply sorting unless your report is bound to a data source.

2. Switch to the **Properties** panel and select the **Detail** band. Select the **Sort Fields** section in the **Actions** category and add a new sort field to sort the report's data by the required data field.

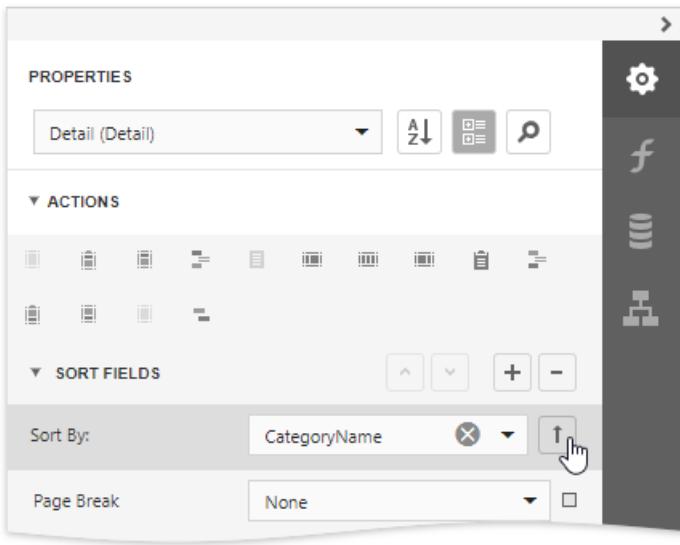


### Note

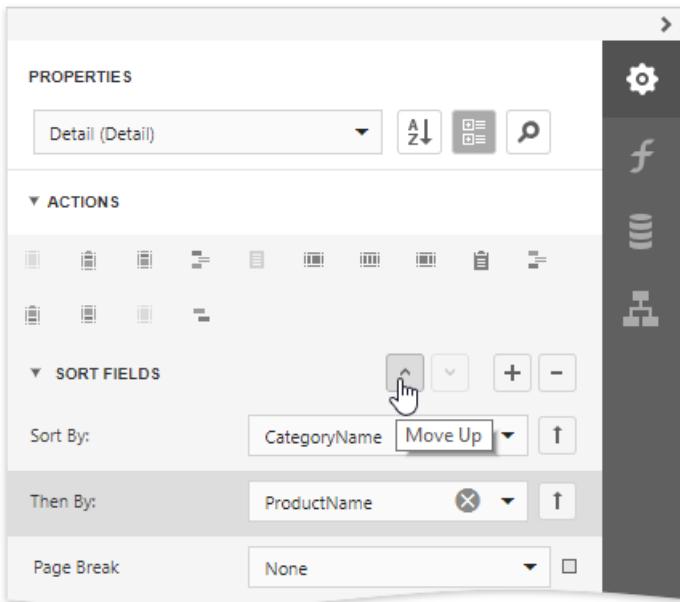
See the [Sort Data by a Custom Field](#) tutorial to learn how to sort a report's data by a custom field.

This adds a corresponding sort field to the **Sort Fields** collection. You can access this collection by expanding the sort field section.

3. Click the or buttons to define the sort order within the group (ascending or descending). Use the button to disable sorting in grouped data.



- When a report has multiple sort fields, you can change their order by clicking **Move Up** or **Move Down**.



- Drag the corresponding field from the **Field List** onto the report area and switch to **Print Preview** to see the result.

Beverages	Chai
Beverages	Chang
Beverages	Chartreuse verte
Beverages	Côte de Blaye
Beverages	Guaraná Fantástica
Beverages	Lakkalikööri
Beverages	Laughing Lumberjack Lager
Beverages	Sasquatch Ale
Condiments	Aniseed Syrup
Condiments	Gula Malacca
Condiments	Vegie-spread
Confections	Gumbär Gummibärchen
Confections	Maxilaku

## Interactive Sorting in Print Preview

You can allow sorting report data directly in Print Preview by clicking a designated element.

Beverages			
Product Name	Quantity Per Unit	Unit Price	
Steeleye Stout	24 - 12 oz bottles	\$18.00	
Sasquatch Ale	24 - 12 oz bottles	\$14.00	
Rhönbräu Klosterbier	24 - 0.5 l bottles	\$7.75	
Outback Lager	24 - 355 ml bottles	\$15.00	
Laughing Lumberjack Lager	24 - 12 oz bottles	\$14.00	
Lakkalikööri	500 ml	\$18.00	
Ipoh Coffee	16 - 500 g tins	\$46.00	
Guaraná Fantástica	12 - 355 ml cans	\$4.50	
Côte de Blaye	12 - 75 cl bottles	\$263.50	
Chartreuse verte	750 cc per bottle	\$18.00	
Chang	24 - 12 oz bottles	\$19.00	
Chai	10 boxes x 20 bags	\$18.00	

See [Sort a Report in Print Preview](#) for more information.

# Group Data

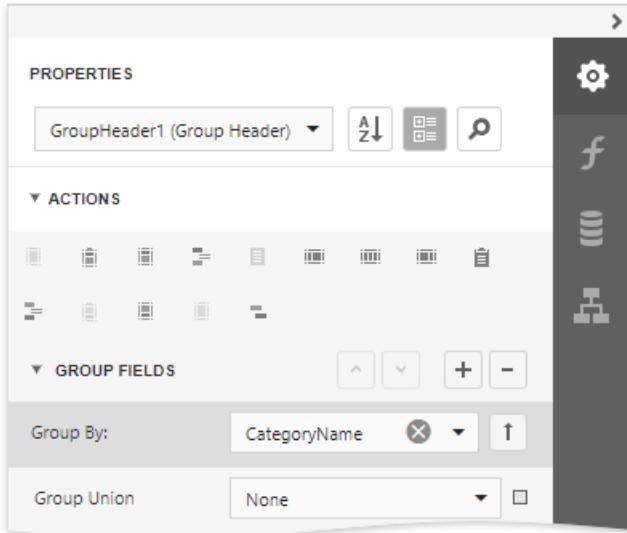
## Group a Report's Data

Do the following to group data in your report:

1. Create a new or open an existing data-bound report.

You cannot apply grouping unless your report is bound to a data source.

2. Insert the **Group Header** band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required data field.

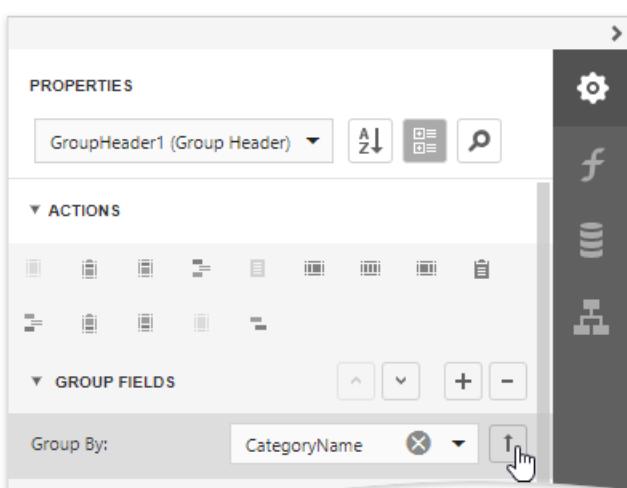


### Note

See the [Group Data by a Custom Field](#) tutorial to learn how to group a report's data by a custom field.

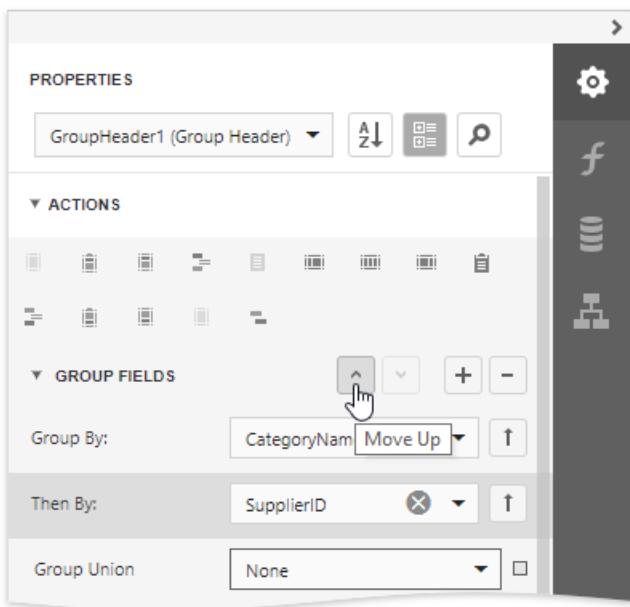
3. Click the or buttons to define the sort order within the group (ascending or descending).

Use the button if your groups are already ordered in the data source, and you do not need to sort them in the report.



4. Click the plus button for the **Group Fields** section to create a new group field and specify its **Field Name** property.

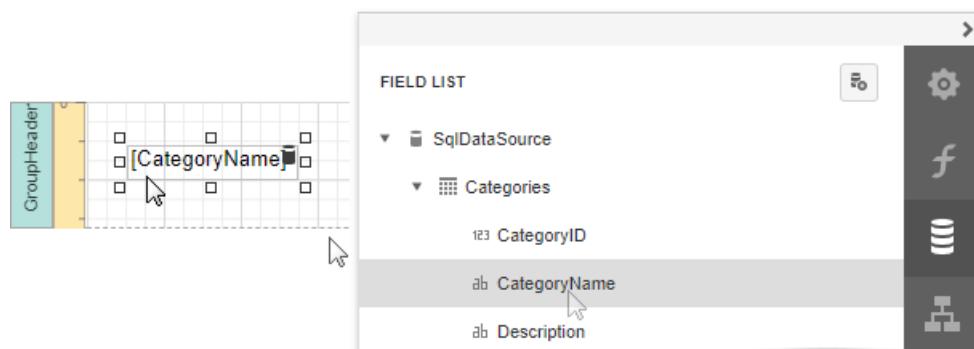
Use the **Move Up** and **Move Down** buttons to specify the order in which these criteria are applied to the report's data.



The following images illustrate how a report looks when it is grouped by multiple criteria:

A SINGLE GROUP WITH MULTIPLE GROUP FIELDS	NESTED GROUP HEADER BANDS
<p>Beverages      Supplier ID: 1 Chai Chang Condiments      Supplier ID: 1 Aniseed Syrup Condiments      Supplier ID: 2 Chef Anton's Cajun Seasoning Chef Anton's Gumbo Mix Louisiana Fiery Hot Pepper Sauce Louisiana Hot Spiced Okra Condiments      Supplier ID: 3 Grandma's Boysenberry Spread Northwoods Cranberry Sauce Meat/Poultry      Supplier ID: 4 Mishi Kobe Niku</p>	<p><b>Beverages</b>      Supplier ID: 1 Chai Chang <b>Condiments</b>      Supplier ID: 1 Aniseed Syrup <b>Condiments</b>      Supplier ID: 2 Chef Anton's Cajun Seasoning Chef Anton's Gumbo Mix Louisiana Fiery Hot Pepper Sauce Louisiana Hot Spiced Okra <b>Condiments</b>      Supplier ID: 3 Grandma's Boysenberry Spread Northwoods Cranberry Sauce <b>Meat/Poultry</b>      Supplier ID: 4 Mishi Kobe Niku</p>

- Drag the corresponding field from the **Field List** panel and drop it onto the group header to display the group field's value in the report.



The resulting report looks as follows:

**Beverages**

- Côte de Blaye
- Ipo Coffee

**Condiments**

- Chef Anton's Cajun Seasoning
- Chef Anton's Gumbo Mix
- Grandma's Boysenberry Spread
- Northwoods Cranberry Sauce
- Sirop d'érible
- Vegie-spread
- Louisiana Fiery Hot Pepper Sauce

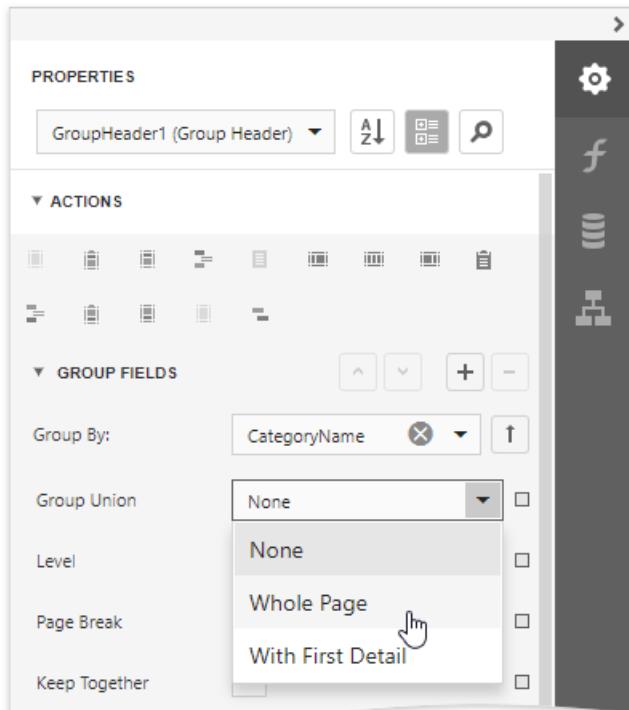
**Confections**

- Sir Rodney's Marmalade
- Gumbär Gummibärchen
- Schoggi Schokolade
- Tarte au sucre

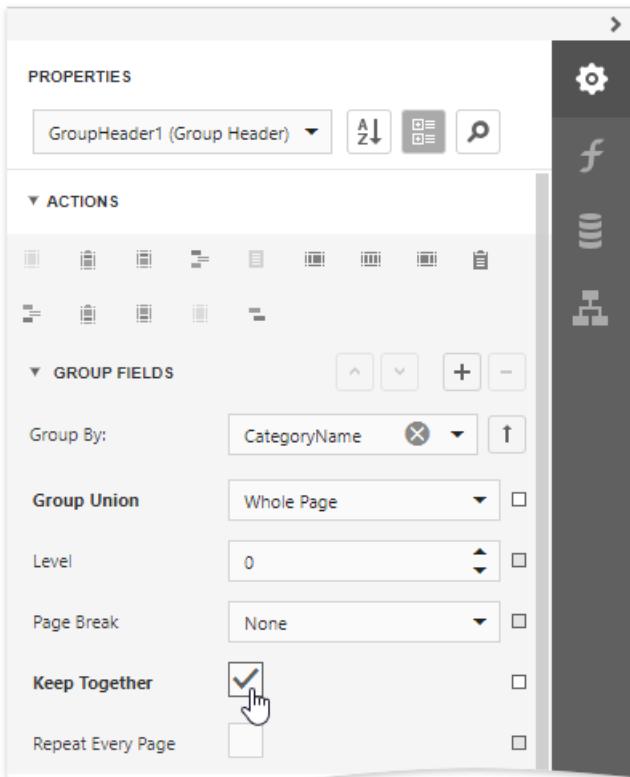
## Specify the Group's Settings

Expand the **Group Fields** section to customize the group's layout settings:

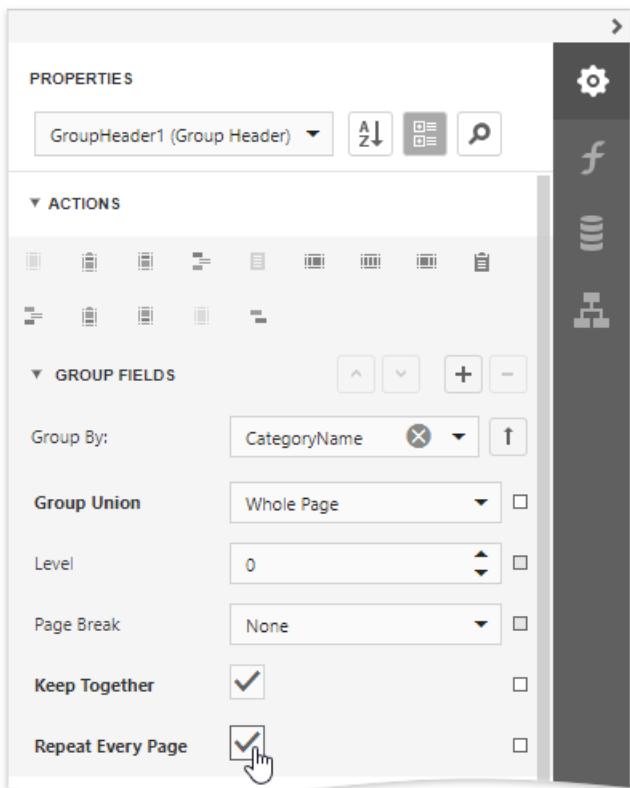
- Use the **Group Union** property to keep a group's content on the same page when possible.



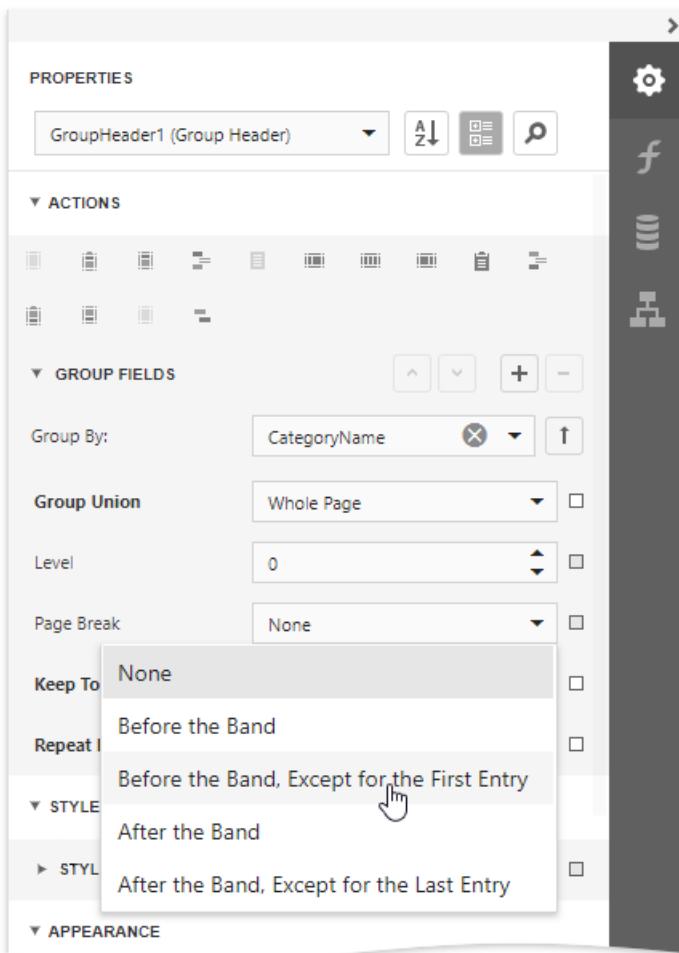
- Use the **Keep Together** property to print the Group Header/Footer on the same page as the group's contents.



- Use the **Repeat Every Page** property to print the group band on each page.



- Use the **Page Break** property to start a new page before or after each group.



When you need to display page numbers for individual groups, add the [Page Info](#) control to the Group Header or Footer and set its **Running Band** property to the Group Header's name.

Beverages

Côte de Blaye  
Chartreuse verte  
Ipoh Coffee  
Laughing Lumberjack Lager  
Outback Lager  
Rhönbräu Klosterbier  
Lakkalikööri

Group Page: 2 of 2

Accurate page numbering requires that different groups do not appear on the same page. For this reason, you need to set the Group Footer's **Page Break** property to **After Band**, or place the **Page Break** control at the band's bottom.

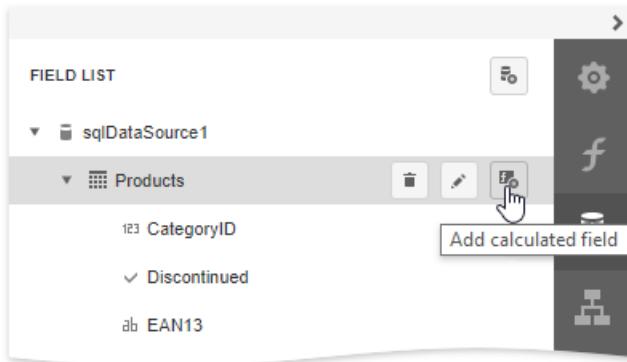
# Sort Data by a Custom Field

This tutorial illustrates how to sort a report against a custom criteria, in particular, sort data by the number of characters in the data field value.

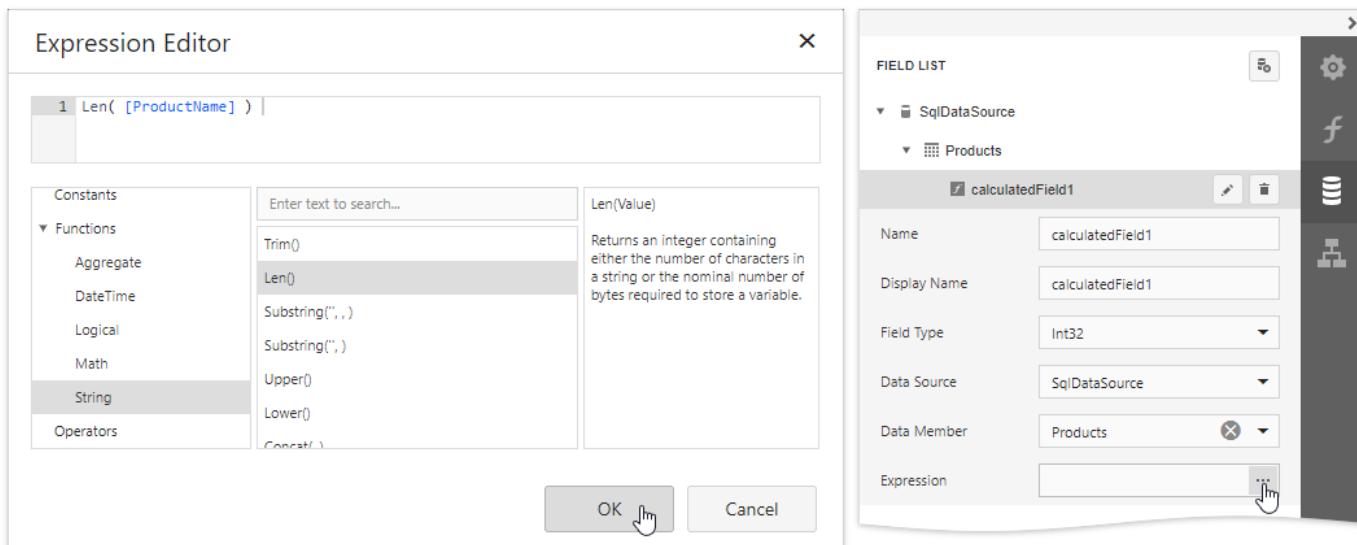
1. Create a new or open an existing data-bound report.

You cannot apply grouping unless your report is bound to a data source.

2. Create a **calculated field**. Switch to the **Field List** panel, select the data source or a table inside it and click **Add Calculated Field**.



3. Click the **Edit** button for the calculated field and then click the **Expression** property's ellipsis button. In the invoked **Expression Editor**, select the required date-time function and define the data field's name in **[square brackets]**. For example, use the **Len([ProductName])** function to return the number of characters extracted from the **ProductName** data field.



The left screenshot shows the Expression Editor dialog. The expression bar contains '1 Len( [ProductName] )'. The left pane shows categories like Constants, Functions (with String selected), Aggregate, DateTime, Logical, Math, and Operators. The right pane shows the 'Len(Value)' function with its description: 'Returns an integer containing either the number of characters in a string or the nominal number of bytes required to store a variable.' The OK and Cancel buttons are at the bottom.

The right screenshot shows the Field List panel. It lists 'calculatedField1' under the 'Products' table. The properties for 'calculatedField1' are displayed: Name (calculatedField1), Display Name (calculatedField1), Field Type (Int32), Data Source (SqlDataSource), Data Member (Products), and Expression (Len([ProductName])). The Expression ellipsis button is highlighted with a cursor.

Click **OK** to close the editor and save the changes.

4. Switch to the **Properties** panel and select the **Detail** band. Select the **Sort Fields** section in the **Actions** category and add a new sort field to sort the report's data by the calculated field.

The screenshot shows the 'Properties' pane of the Microsoft Report Designer. In the 'ACTIONS' section, there are several icons for report navigation and management. Below that is the 'SORT FIELDS' section. Under 'Sort By', the 'calculatedField1' field is selected and highlighted with a blue border. A context menu is open over this field, listing other fields: 'CategoryID', 'Discontinued', 'EAN13', 'ProductID', 'ProductName', and 'QuantityPerUnit'. Each item in the menu has a small checkbox to its left and a square icon to its right.

Click the or buttons to define the sort order within the group (ascending or descending). Use the button to disable sorting in grouped data.

5. Drag the corresponding field from the [Field List](#) onto the report area and switch to [Print Preview](#) to see the result.

Chai
Tofu
Chang
Konbu
Pavlova
Geitost
Maxilaku
Filo Mix
Spegesild
Chocolade
Inlagd Sill
Ipoх Coffee
Flotemysost

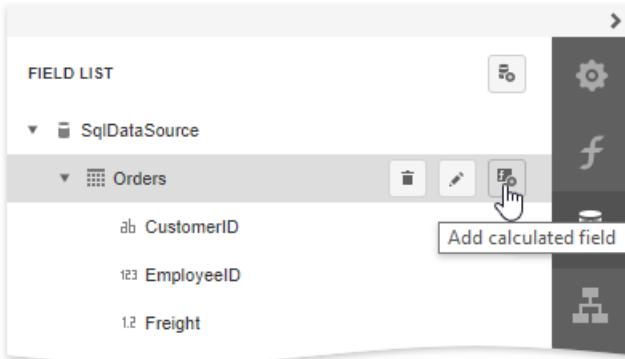
# Group Data by a Custom Field

This tutorial illustrates how to group a report against a custom criteria, in particular, group data by days of the week.

1. Create a new or open an existing data-bound report.

You cannot apply grouping unless your report is bound to a data source.

2. Create a **calculated field**. Switch to the **Field List** panel, select the data source or a table inside it and click **Add Calculated Field**.

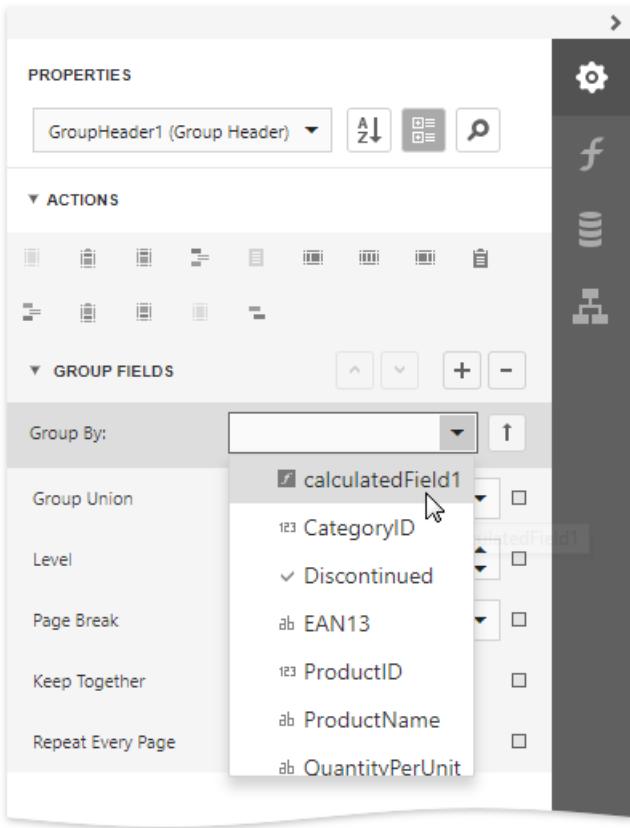


3. Click the **Edit** button for the calculated field and then click the **Expression** property's ellipsis button. In the invoked **Expression Editor**, select the required date-time function and define the data field's name in **[square brackets]**. For example, use the **GetDayOfWeek([OrderDate])** function to return a zero-based index of the day of the week, extracted from the **OrderDate** data field.

The left screenshot shows the Expression Editor dialog. The expression bar contains '1 GetDayOfWeek([OrderDate])'. The left pane shows a tree view of functions categorized by type: Constants, Functions (with Aggregate, DateTime, Logical, Math, String, Operators), and a search bar. The right pane shows the details for the 'GetDayOfWeek(DateTime)' function, which extracts a day of the week from a defined DateTime. The right screenshot shows the Field List panel with a new calculated field named 'calculatedField1' added to the 'Orders' table. The field properties are: Name: 'calculatedField1', Display Name: 'calculatedField1', Field Type: 'Int32', Data Source: 'SqlDataSource', Data Member: 'Orders', and Expression: 'GetDayOfWeek(OrderDate)'. The ellipsis button in the Expression field is highlighted.

Click **OK** to close the editor and save the changes.

4. Insert the **Group Header** band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the calculated field.



Click the or buttons to define the sort order within the group (ascending or descending). Use the button to disable sorting in grouped data.

5. Switch to the **Field List** and drop the required data fields onto the report's area.

6. Select the label in the Group Header and set the **Text Format String** property to **{0:ddd}**. This makes the label only display the day of the week, and not the date.

The screenshot shows a report designer interface with a table structure. The table has three columns: [OrderID], [OrderDate], and [Freight]. A label control named 'label1' is selected, and its properties are displayed in the Properties panel. The 'Expression' property is set to '[OrderDate]' and the 'Text Format String' is set to '{0:ddd}'.

Switch to [Print Preview](#) to see the result.

Monday		
11034	4/20/2017	\$40.32
11035	4/20/2017	\$0.17
11036	4/20/2017	\$149.47
11050	4/27/2017	\$59.41
11051	4/27/2017	\$2.79
11052	4/27/2017	\$67.26
11053	4/27/2017	\$53.05
11067	5/4/2017	\$7.98
11068	5/4/2017	\$81.75
11069	5/4/2017	\$15.67
Tuesday		
11037	4/21/2017	\$3.20
11038	4/21/2017	\$29.59
11039	4/21/2017	\$65.00
11054	4/28/2017	\$0.33

# Sort Groups by a Summary Function's Result

This tutorial explains how to sort groups by a summary function result, in particular, by the number of records groups contain.

1. Create a new or open an existing data-bound report.

You cannot apply grouping unless your report is bound to a data source.

2. **Group** the report by the required data field, [calculate the record count](#) in each group and construct the required report layout.

The screenshot shows a report editor interface. On the left, there are two bands: 'GroupHeader' and 'Detail'. In the 'GroupHeader' band, there is a single text box containing the expression '[CategoryID]' followed by a summary function 'sumCount([UnitsInStock])'. In the 'Detail' band, there is another text box containing the expression '[ProductName]'. To the right of the report area is the 'Properties' panel for the 'GroupHeader1 (Group Header)' item. The 'Actions' section is expanded, showing various icons for modifying the group. Below it, the 'GROUP FIELDS' section is expanded, showing 'Group By: CategoryID' and 'Group Union: None'. The 'Level' dropdown is set to '0'. The status bar at the bottom of the Properties panel shows '1 row(s) selected'.

3. Expand the **Behavior** category and select the **Sorting Summary** node. Turn on the **Enabled** option, set the **Field** option to the data field from the Detail band, and set the **Function** to **Count**.

The screenshot shows the same report editor interface as before, but the 'Behavior' category in the Properties panel is now expanded. Under the 'BEHAVIOR' section, the 'SORTING SUMMARY' node is selected. Its properties are displayed in the right-hand panel: 'Enabled' is checked, 'Function' is set to 'Count', 'Field Name' is set to 'ProductName', 'Ignore Null Values' is checked, and 'Sort Order' is set to 'Ascending'. The status bar at the bottom shows '1 row(s) selected'.

In this editor, you can also define the sorting direction for the group, as well as specify whether or not the **Null** values should be ignored.

Switch to [Print Preview](#) to see the result.

Category ID: 7

Product Count: 5

- Uncle Bob's Organic Dried Pears
- Tofu
- Rössle Sauerkraut
- Manjimup Dried Apples
- Longlife Tofu

Category ID: 6

Product Count: 6

- Mishi Kobe Niku
- Alice Mutton
- Thüringer Rostbratwurst
- Perth Pasties
- Tourtière
- Pâté chinois

Category ID: 5

Product Count: 7

- Gustaf's Knäckebrot

# Shape Data (Expression Bindings)

The tutorials in this section illustrate how to solve various tasks related to shaping report data when expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions](#) panel).

- [Format Data](#)
- [Conditionally Change a Control's Appearance](#)
- [Conditionally Change a Label's Text](#)
- [Conditionally Change a Band's Visibility](#)
- [Conditionally Filter Report Data](#)
- [Conditionally Suppress Controls](#)
- [Limit the Number of Records per Page](#)
- [Calculate a Summary](#)
- [Calculate an Advanced Summary](#)
- [Display Row Numbers in a Report, Group or Page](#)
- [Count the Number of Records in a Report or Group](#)
- [Count the Number of Groups in a Report](#)

## □ Note

See the [Shape Data \(Data Bindings\)](#) section if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions](#) panel).

# Format Data

This document demonstrates how to specify value formatting for report elements (for instance, format numeric values as a currency or apply a percent format).

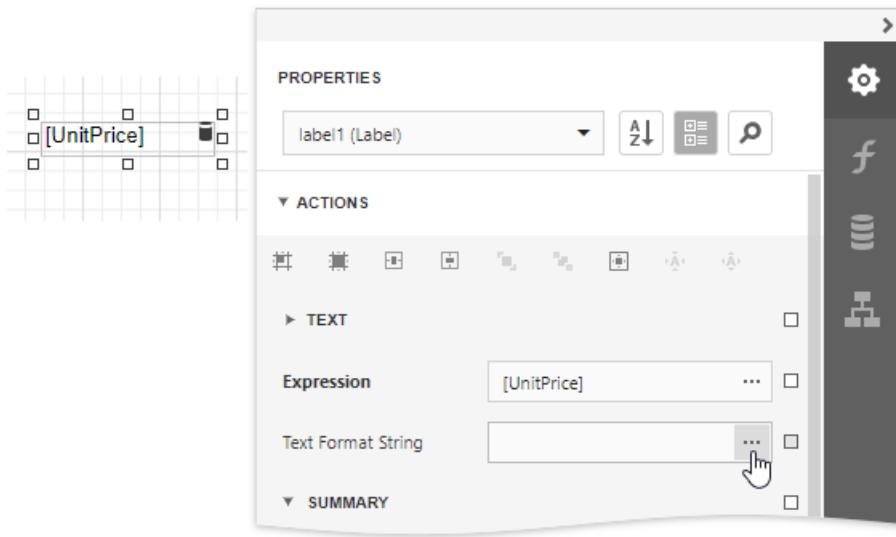
## Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions](#) panel).

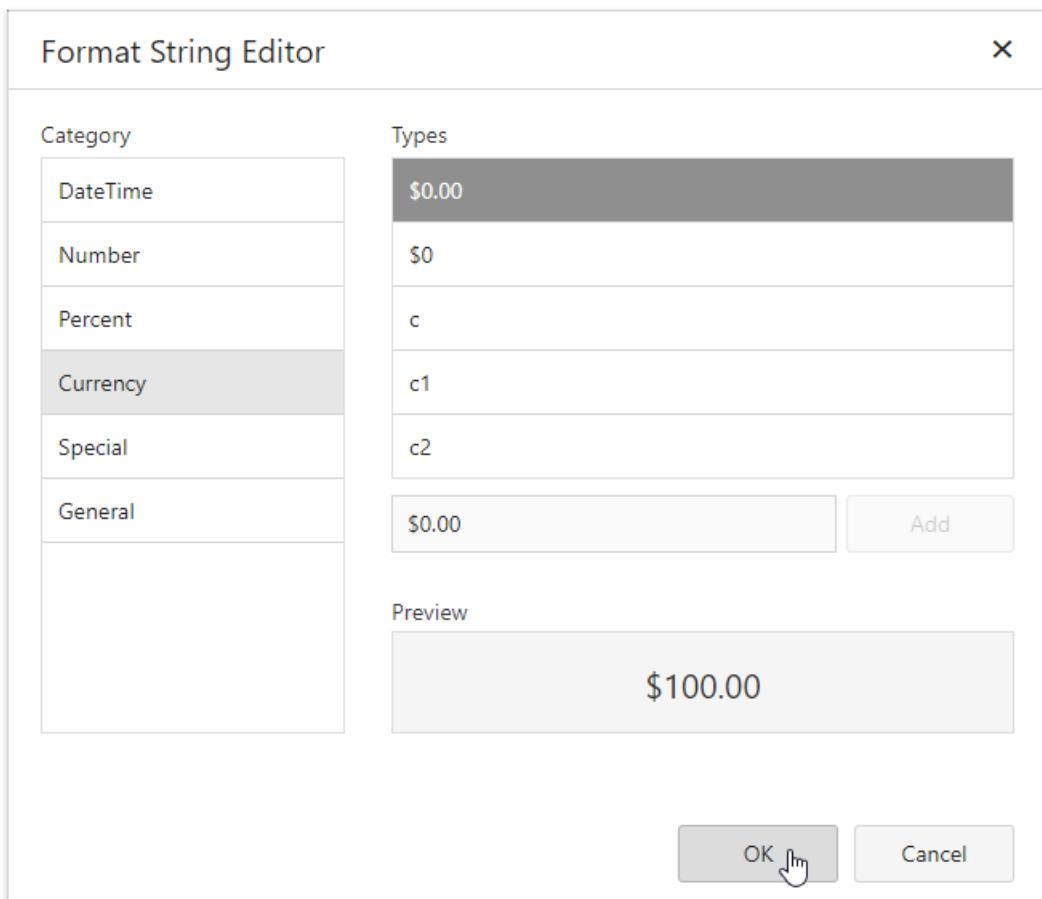
See [Format Data](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions](#) panel).

After you [bound your report to data](#) and specified a bound data field in a report control's **Expression** property, you can format data values in a report.

1. Expand the **Actions** category and click the **Text Format String** property's ellipsis button.



2. This invokes the **Format String Editor** where you can specify the required format.



Alternatively, you can use the **FormatString** function within the expression you specified for the report control.

The Expression Editor dialog box is open. In the main area, the expression '1 FormatString('{0:\$0.00}', [UnitPrice] )' is entered. To the right, the Properties panel shows 'label1 (Label)' and the Actions panel has 'TEXT' selected. In the Actions panel, the 'Expression' field contains 'FormatString({0} - {1:c}', [Column1], [Column2])'. A hand cursor is hovering over the ellipsis button in this field. At the bottom are 'OK' and 'Cancel' buttons.

When switching to **Print Preview**, you can view the report control displaying values with the specified format.

Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00

# Conditionally Change a Control's Appearance

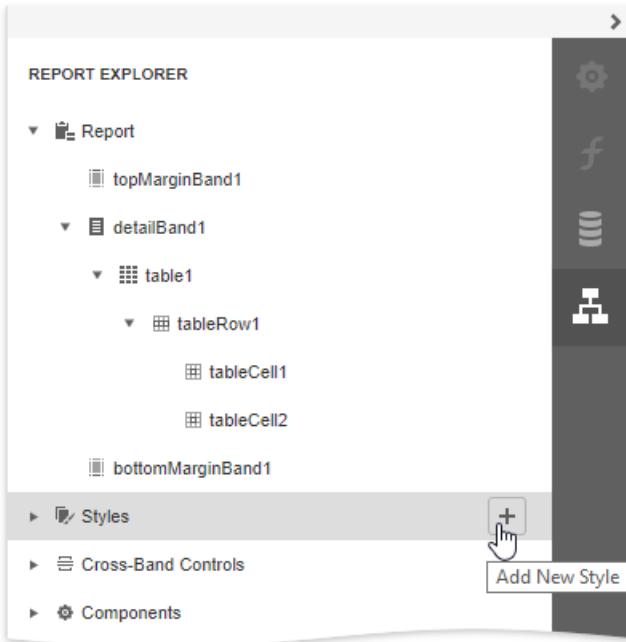
This document describes how to change a report control's appearance based on a specific condition.

## Warning

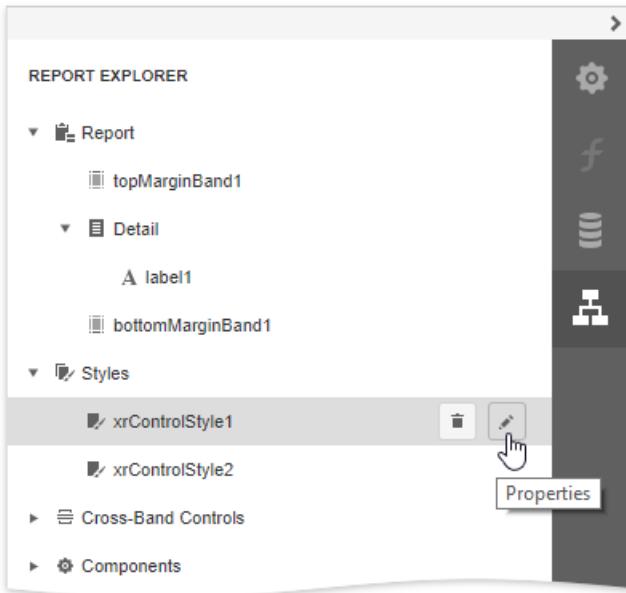
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Conditionally Change a Control's Appearance](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

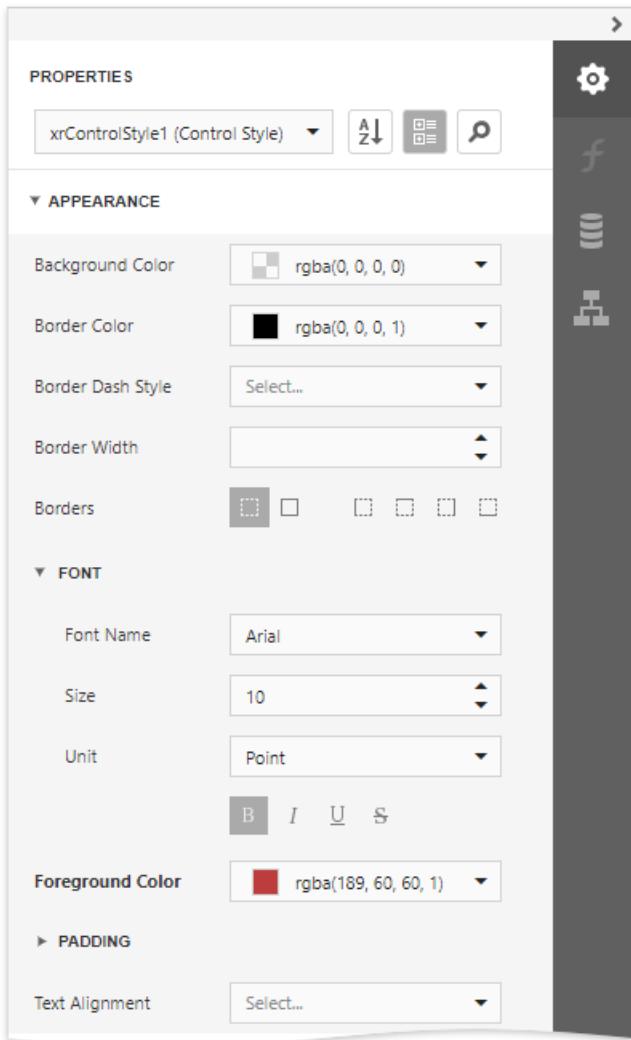
1. Switch to the [Report Explorer](#) panel, select the **Styles** node and click **Add New Style** to create a new visual style.



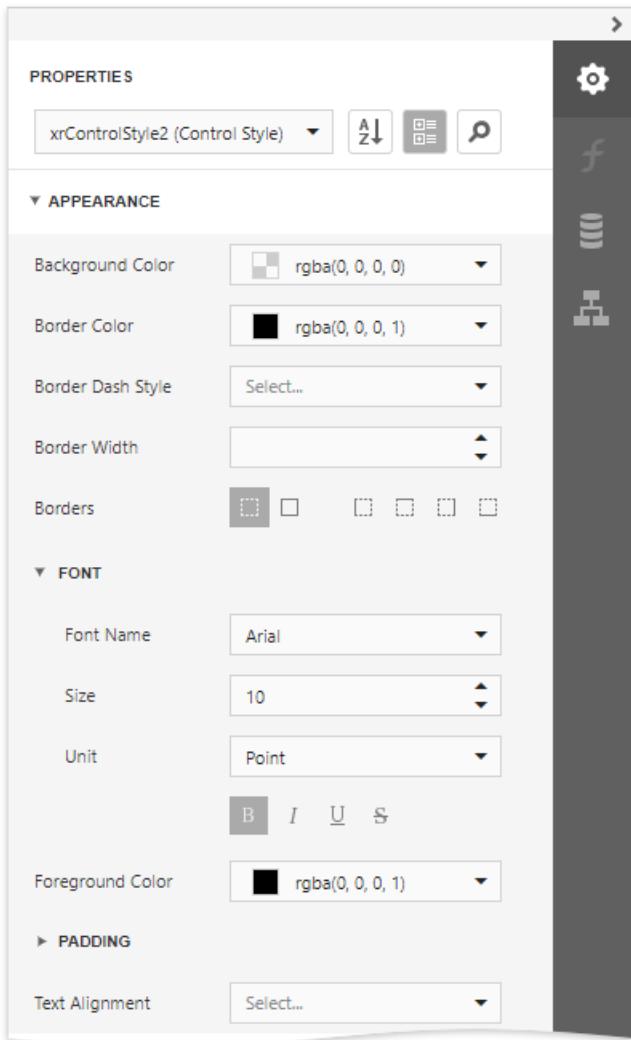
2. Click the created style and select **Properties**.



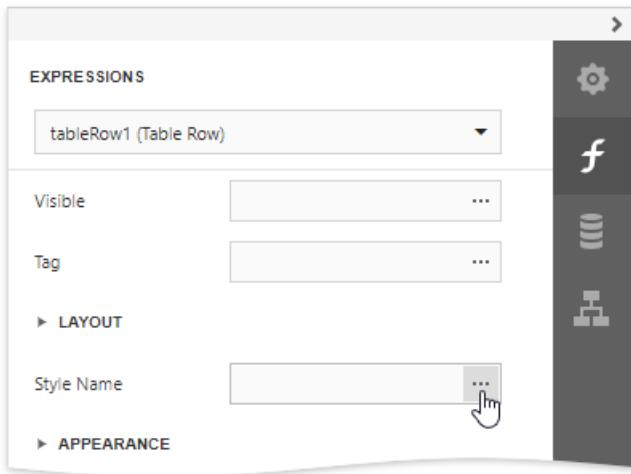
3. In the [Properties](#) panel, customize the created style's appearance settings.



4. Select another style and customize its appearance settings in the same way.



5. Switch to the [Expressions](#) panel, select a report element to which you wish to assign the created styles and click the ellipsis button for the control's **Style Name** property.



6. In the invoked [Expression Editor](#), specify the required condition for switching between the created styles.

## Expression Editor

X

```
1 Iif( [UnitPrice] >=30, 'xrControlStyle1', 'xrControlStyle2')
```

### Report Items

Fields

Constants

### Functions

Operators

Variables

### Report

topMarginBand1

detailBand1

bottomMarginBand1

OK

Cancel

Switch to [Print Preview](#) to view the resulting report.

Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00
Queso Manchego La Pastora	\$38.00
Konbu	\$6.00
Tofu	\$23.25
Genen Shouyu	\$15.50
Pavlova	\$17.45

# Conditionally Change a Label's Text

This document describes how to display different values in a report control based on a specified logical condition.

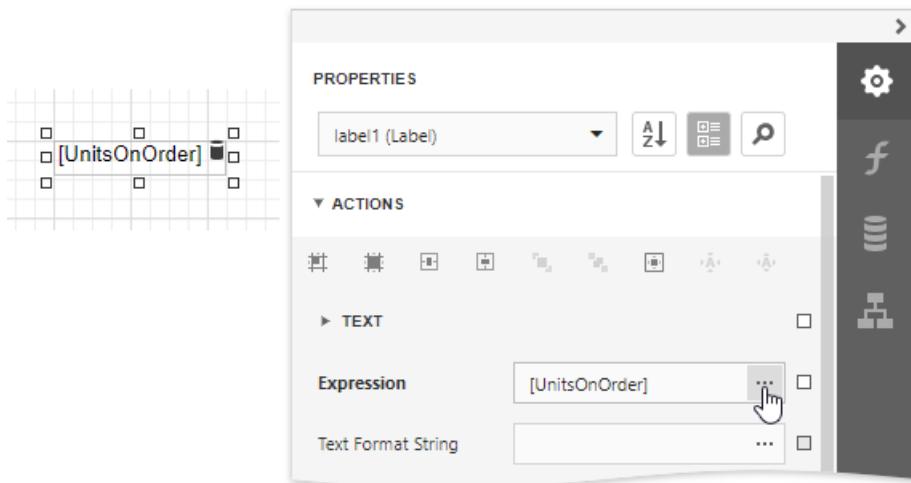
## Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

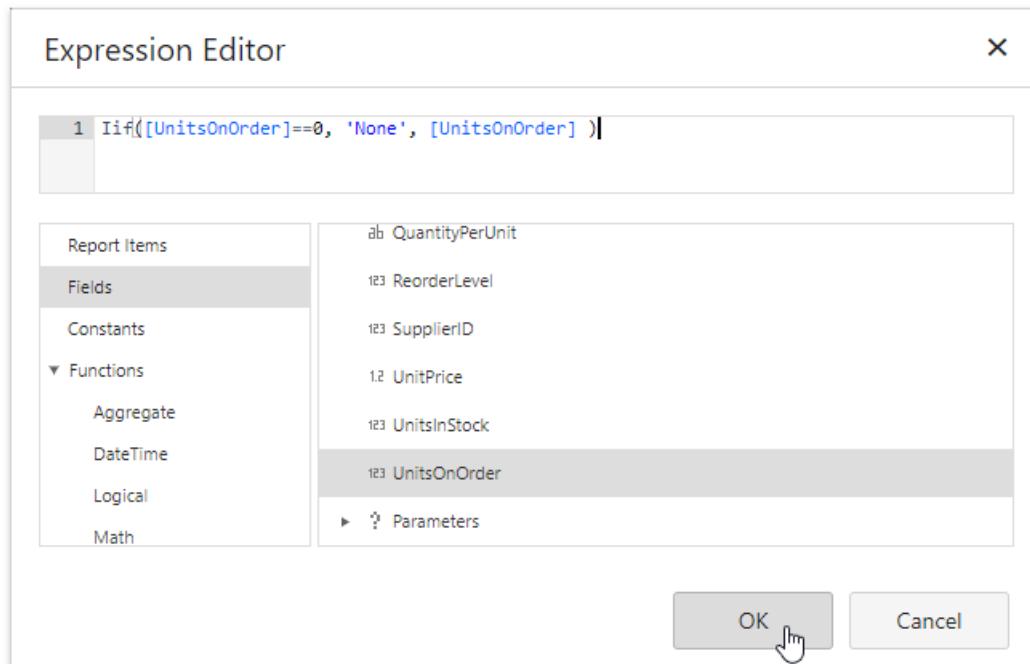
See [Conditionally Change a Label's Text](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

After you [bound your report to data](#) and specified a bound data field in a report control's **Expression** property, you can make this control display different values based on a specified logical condition:

1. Expand the **Actions** category and click the **Expression** property's ellipsis button.



2. In the invoked [Expression Editor](#), specify the required [expression](#).



Use the **lif** function to define the condition. For example:

```
lif([UnitsOnOrder] == 0, 'None', [UnitsOnOrder])
```

This expression means that if the data field's value is zero, the control's text is set to '**None**'; otherwise, it displays the actual

field value.

When switching to [Print Preview](#), you can see the report control displaying the assigned values.

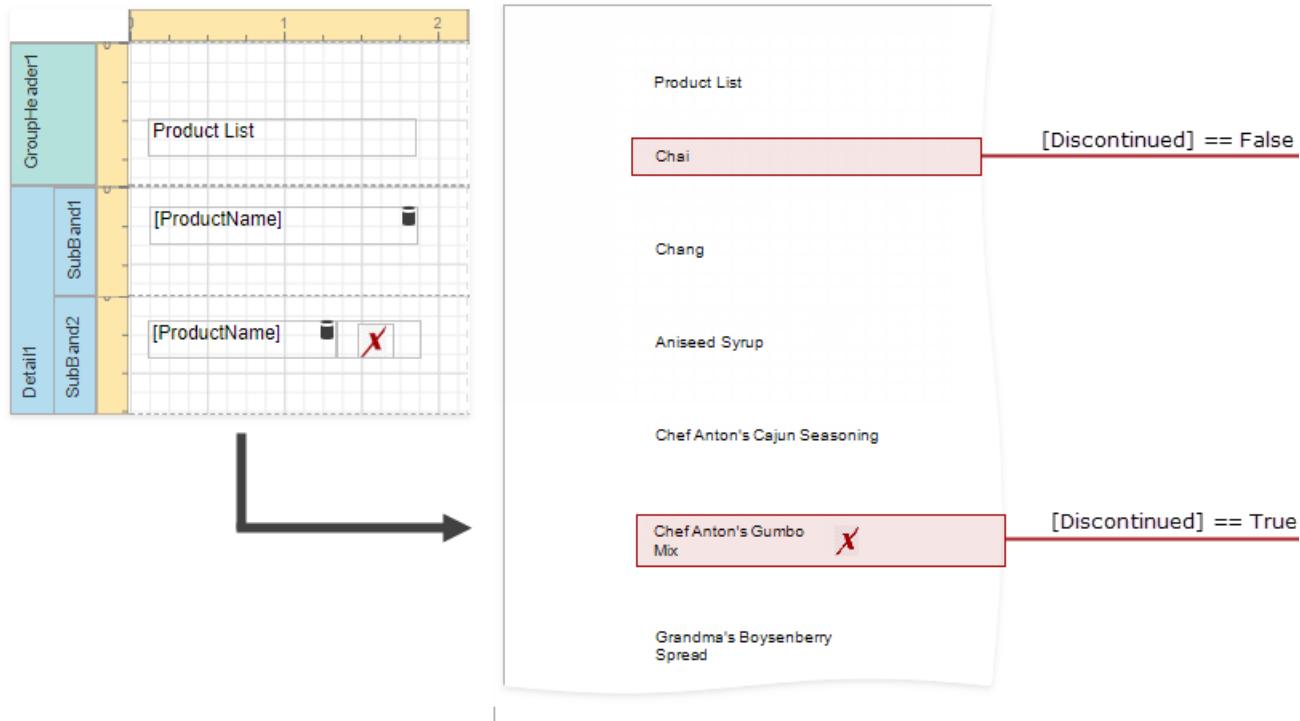
Chai	None
Chang	40
Guaraná Fantástica	None
Sasquatch Ale	None
Steeleye Stout	None
Côte de Blaye	None
Chartreuse verte	None
Ipoh Coffee	10
Laughing Lumberjack Lager	None
Outback Lager	10

# Conditionally Change a Band's Visibility

This topic describes how to change report band visibility.

Set a band's **Visible** property to an expression to conditionally change the band's visibility based on a field's value or a parameter.

The report created in this tutorial contains two Detail **sub-bands** with different report controls. These sub-bands are used to display discontinued and current products.



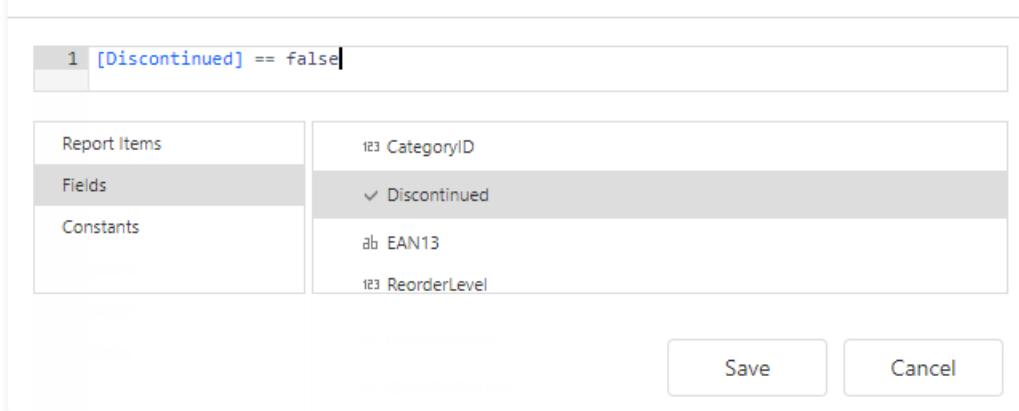
The steps below demonstrate how to change a band's visibility based on a field's value.

1. Select the required band and switch to the **Expressions** panel. Click the **Visible** property's ellipsis button.



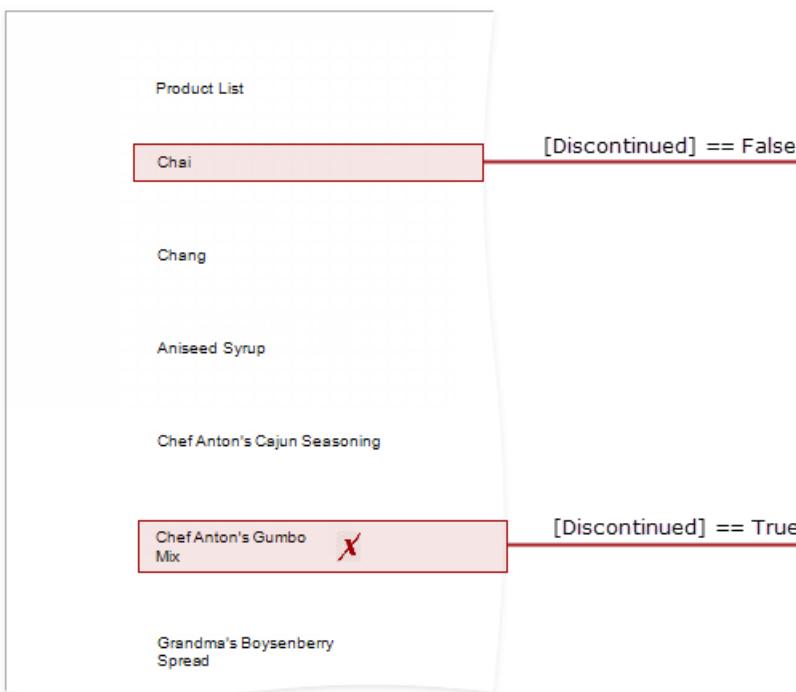
2. In the invoked **Expression Editor**, specify the required expression.

## Expression Editor



Here, the **[Discontinued] == false** expression is set for the **SubBand1** and the **[Discontinued] == true** expression for the **SubBand2**. These expressions specify the **Visible** property based on the **Discontinued** data field's value.

The **Preview** below displays how changes to band visibility influence the Product List. The **SubBand1** is used to display products that have the **Discontinued** field set to **false**, and the **SubBand2** is used to display discontinued products.



# Conditionally Filter Report Data

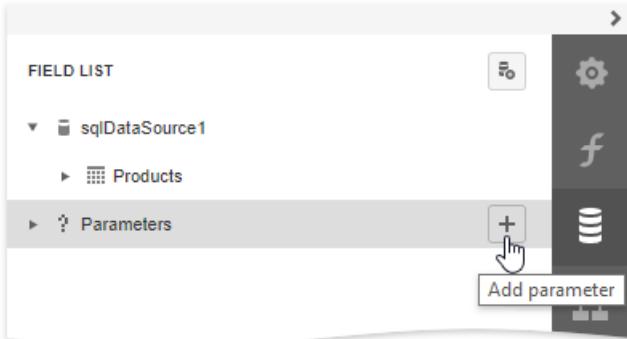
This document describes how to filter a report's data based on a specific condition.

## Warning

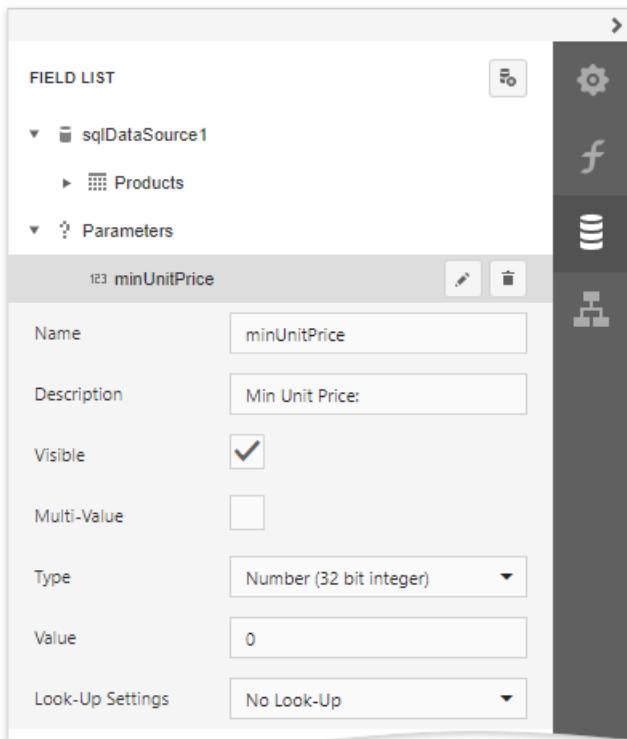
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Conditionally Filter Report Data](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

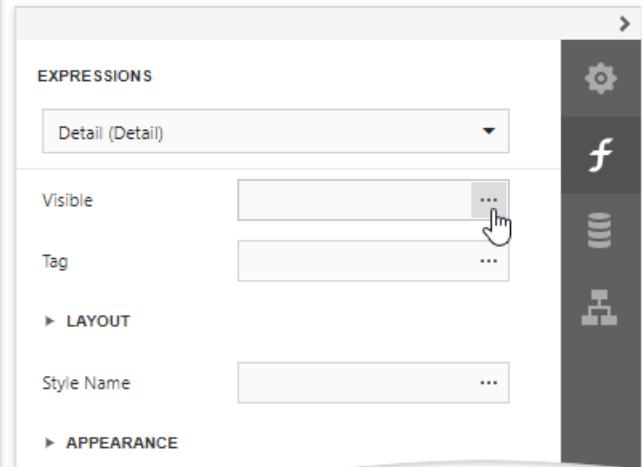
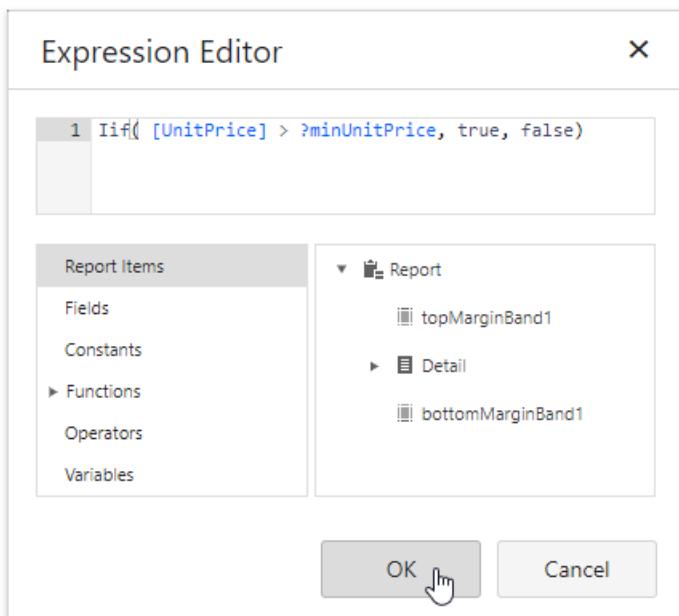
1. Switch to the [Field List](#) panel, select the **Parameters** node and click **Add parameter**.



2. Specify the parameter's description in Print Preview and set its type to **Number (Integer)**.



3. Select the report's detail band, switch it to the [Expressions](#) panel and click the **Visible** property's ellipsis button. In the invoked [Expression Editor](#), specify the required visibility condition. For example:



The expression above makes the **Visible** property return **True** or **False** depending on whether the field value is below the specified parameter value.

Switch to [Print Preview](#) to see the result.

The screenshot shows the Print Preview interface. On the left, a table displays product details:

Mishi Kobe Niku	\$97.00
Carnarvon Tigers	\$62.50
Sir Rodney's Marmalade	\$81.00
Thüringer Rostbratwurst	\$123.79
Côte de Blaye	\$263.50
Manjimup Dried Apples	\$53.00
Raclette Courdavault	\$55.00

On the right, a 'PREVIEW PARAMETERS' panel is open, showing a parameter named 'Min Unit Price' with the value '50' entered. It also contains 'RESET' and 'SUBMIT' buttons and a search icon.

# Conditionally Suppress Controls

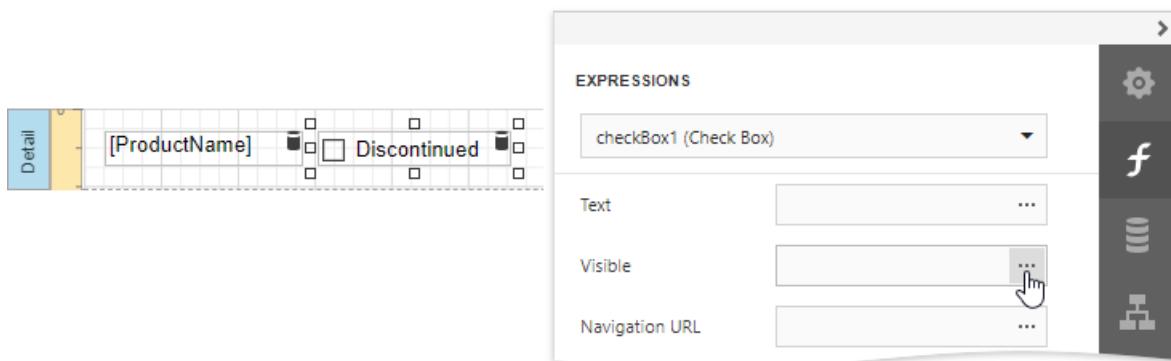
This document describes how to display or hide a report control in a published document based on a specified logical condition.

## Warning

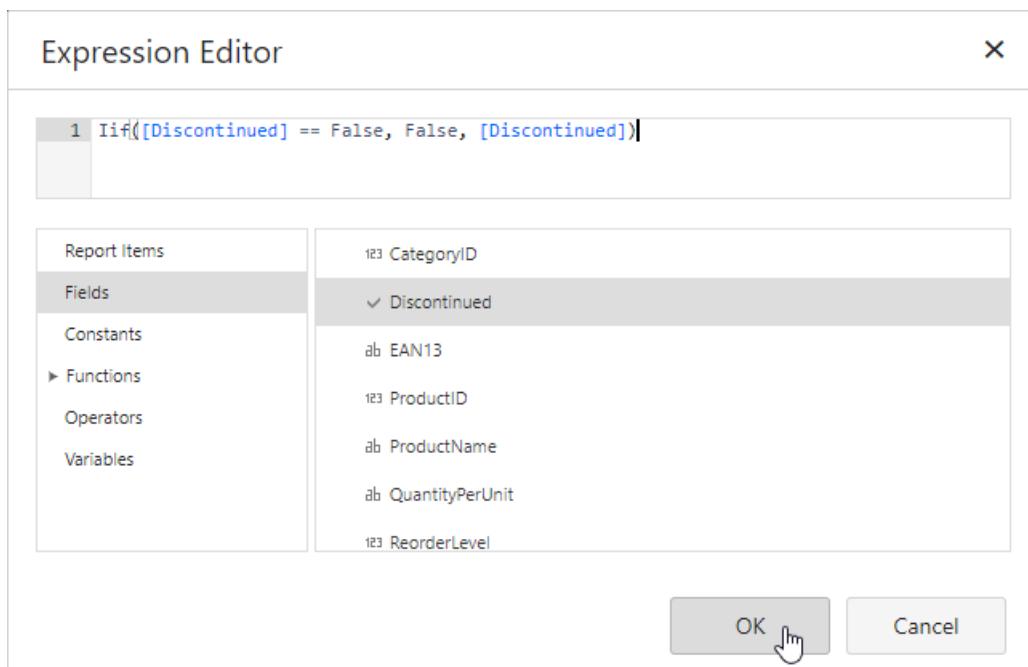
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Conditionally Suppress Controls](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

1. [Create a new report](#) or open an existing one and prepare the report layout.
2. Select the required control, switch to the [Expressions](#) panel and click the **Visible** property's ellipsis button.



3. In the invoked [Expression Editor](#), specify the required [expression](#).



Use the **if** function to define the required condition. For example:

**if([Discontinued] == False, False, [Discontinued])**

This expression means that if the data field's value is **False**, the control's **Visible** property's value is also **False**.

When switching to [Print Preview](#), you can view the report control's visibility changes according to the assigned condition.

Pavlova	
Mishi Kobe Niku	<input checked="" type="checkbox"/> True
Gula Malacca	
Flotemysost	
Gudbrandsdalsost	
Singaporean Hokkien Fried Mee	<input checked="" type="checkbox"/> True
Rössle Sauerkraut	<input checked="" type="checkbox"/> True
Teatime Chocolate Biscuits	

#### Note

See [Hide Table Cells](#) to learn how to conditionally suppress table cells and define the mode for processing them.

# Limit the Number of Records per Page

This document describes how to specify the number of data source records displayed on report pages.

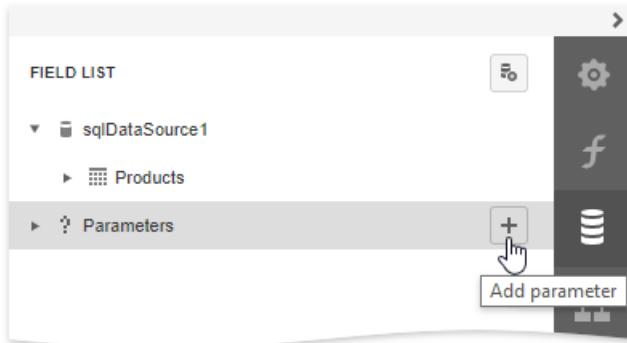
## Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

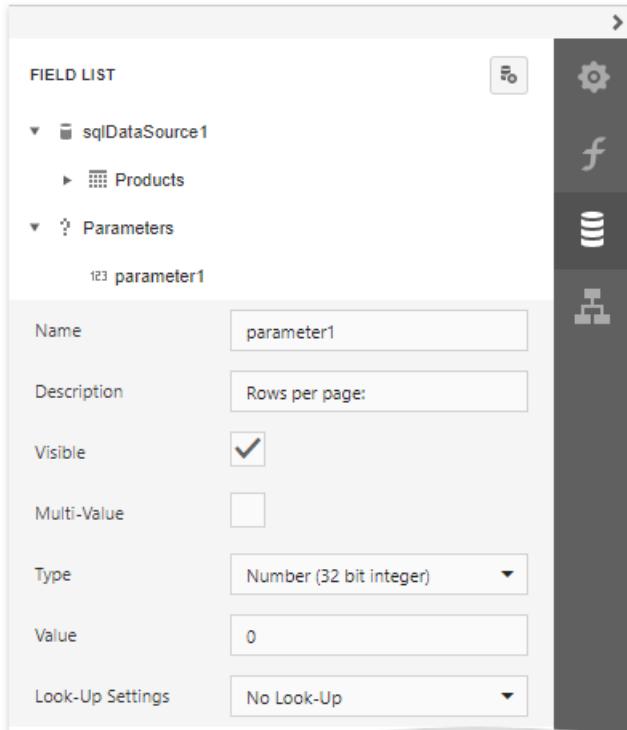
See [Limit the Number of Records per Page](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

After you [bind your report to data](#) and provided content to the report's [Detail band](#), you can limit the number of records each report page displays. This example demonstrates how to pass the required record count as a parameter value.

1. Switch to the [Field List](#) panel, select the **Parameters** node and click **Add parameter** to add a new report parameter.



2. Specify the parameter's description displayed in Print Preview and set its type to **Number (Integer)**.



3. Drop a [Page Break](#) control onto the report's detail band.

4. Switch to the [Expressions](#) panel and click the **Visible** property's ellipsis button. In the invoked [Expression Editor](#), specify the required expression.

For example:

**([DataSource.CurrentRowIndex] % [Parameters.parameter1] == 0) And ([DataSource.CurrentRowIndex] != 0)**

When switching to [Print Preview](#), you can specify how many rows each report page should display by entering the corresponding parameter value:

Product Name	Quantity Per Unit	Unit Price
Chai	10 boxes x20 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

# Calculate a Summary

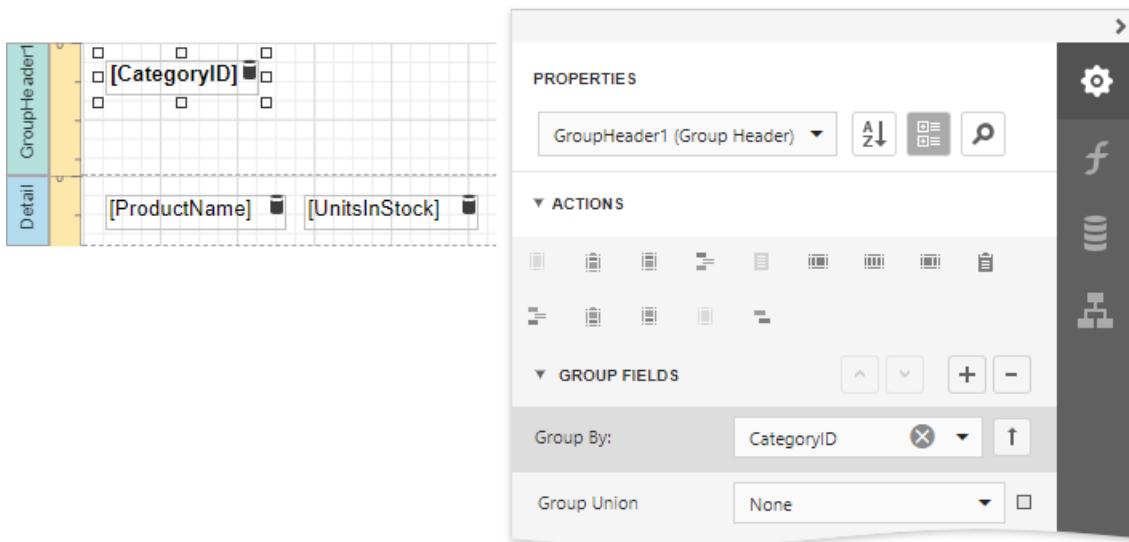
This document describes how to calculate various summaries across a report and its groups.

## Warning

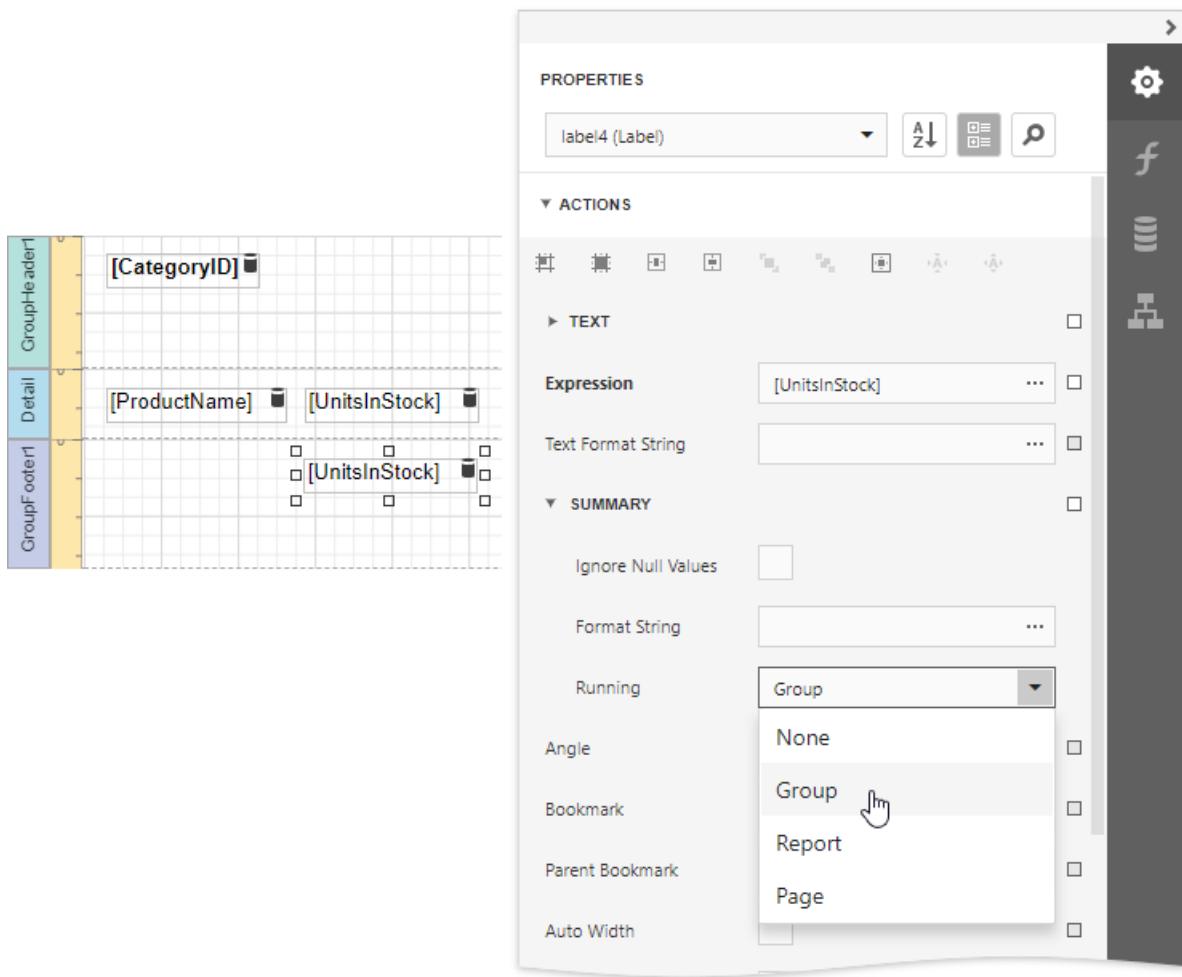
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Calculate a Summary](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

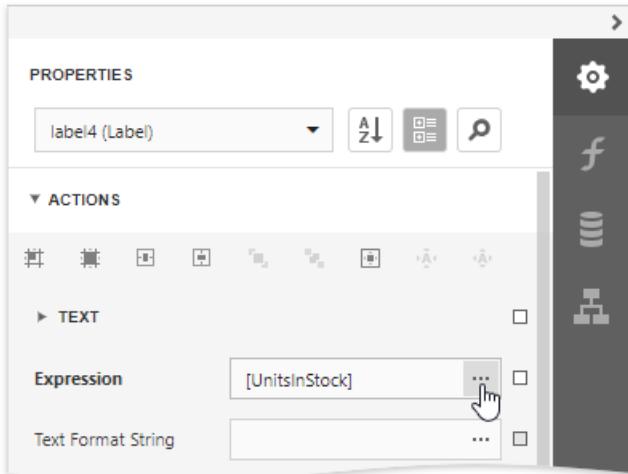
1. [Create a new report](#) or open an existing one and [bind it to a data source](#).
2. Insert the [Group Header](#) band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



3. Insert the Group Footer band. Prepare the report layout and drop a required data field onto the group footer to display the summary result.
4. Select the label, expand the **Summary** section and invoke the **Running** drop-down list. Select the range for which to calculate a summary (the entire report, a specific report group or document page).



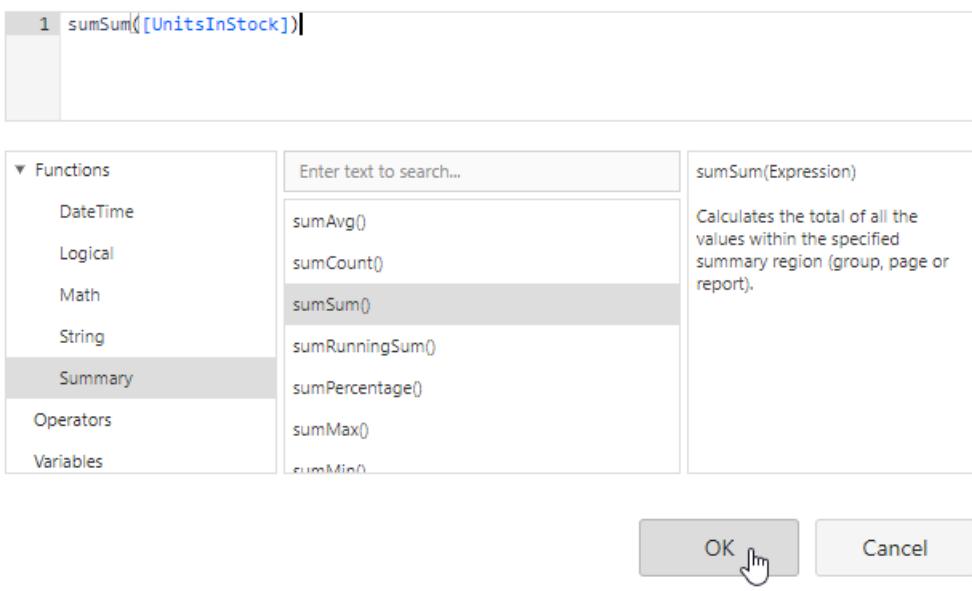
5. Click the **Expression** property's ellipsis button.



6. This invokes the [Expression Editor](#) where you can select the required summary in the **Functions | Summary** section. Report summary functions start with the "sum" prefix to make it easy to differentiate them from aggregate functions.

## Expression Editor

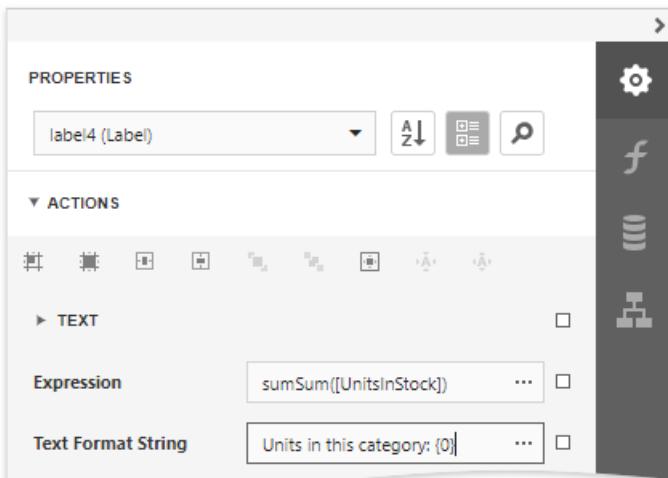
X



### Tip

See the [Expression Constants, Operators, and Functions](#) topic for a complete list of supported summary functions.

7. You can use the **Text Format String** property to format the summary's value.



Switch to [Print Preview](#) to see the result.

**Category ID: 1**

Chai	39
Chang	17
Guaraná Fantástica	20
Sasquatch Ale	111
Steeleye Stout	20
Côte de Blaye	17
Chartreuse verte	69
Ipoh Coffee	17
Laughing Lumberjack Lager	52
Outback Lager	15
Rhönbräu Klosterbier	125
Lakkaliköön	57

**Units in this category: 559**

# Calculate an Advanced Summary

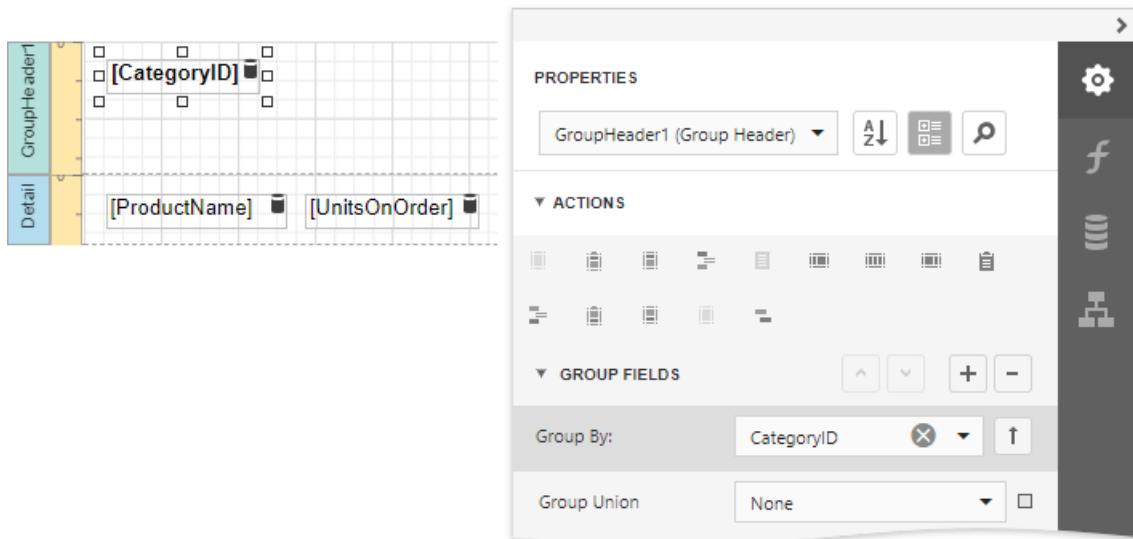
This document describes how to calculate an advanced summary for report groups using a built-in summary function and arithmetical or logical functions.

## Warning

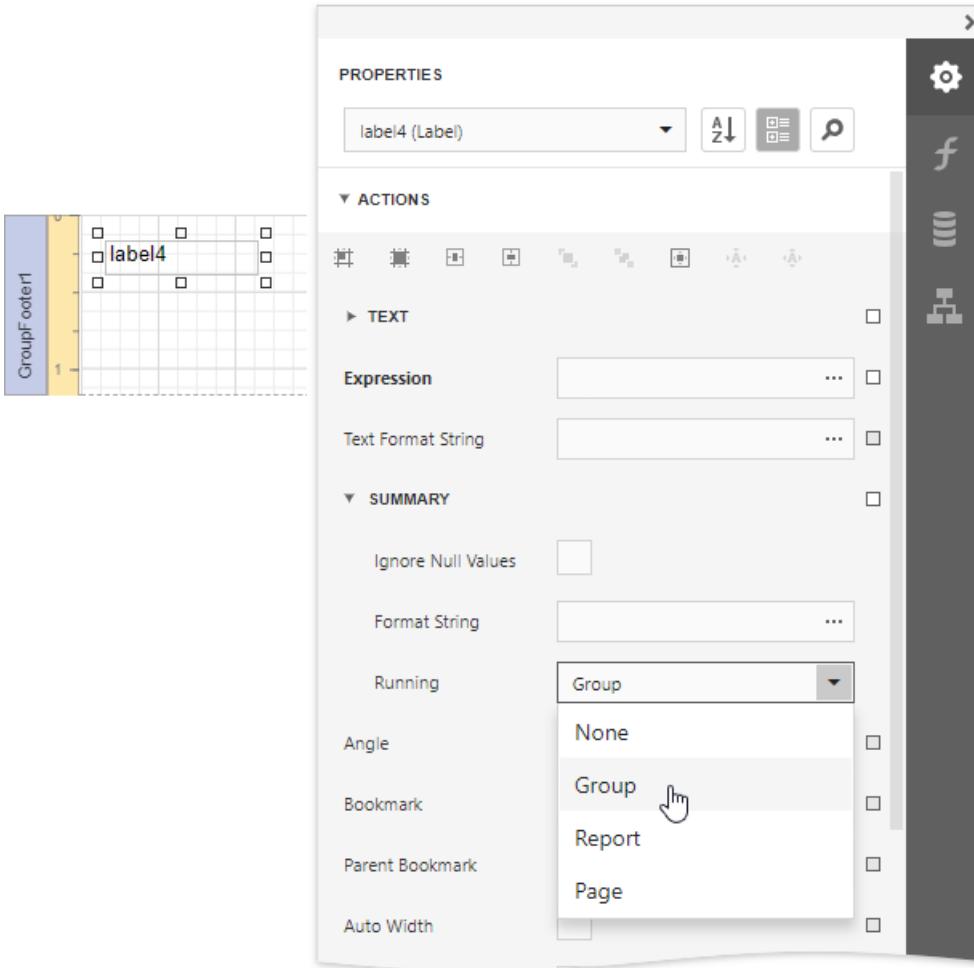
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions](#) panel).

See [Calculate a Custom Summary](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions](#) panel).

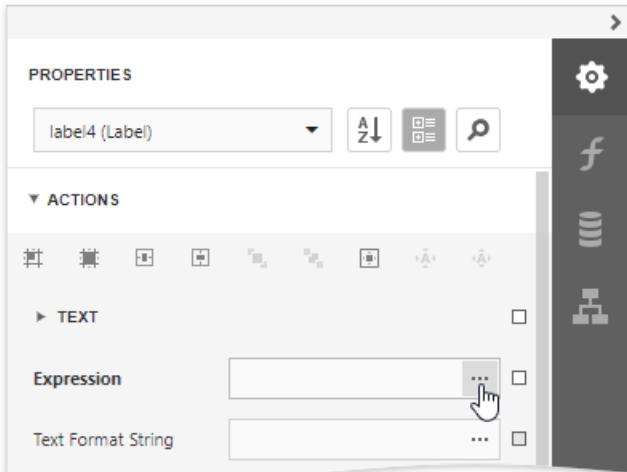
1. Create a new report or open an existing one and [bind it to a data source](#).
2. Insert the [Group Header](#) band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



3. Insert the Group Footer band and drop a [Label](#) onto it to display the summary result. Expand the **Summary** section in the **Actions** category and set the **Running** property to **Group**.

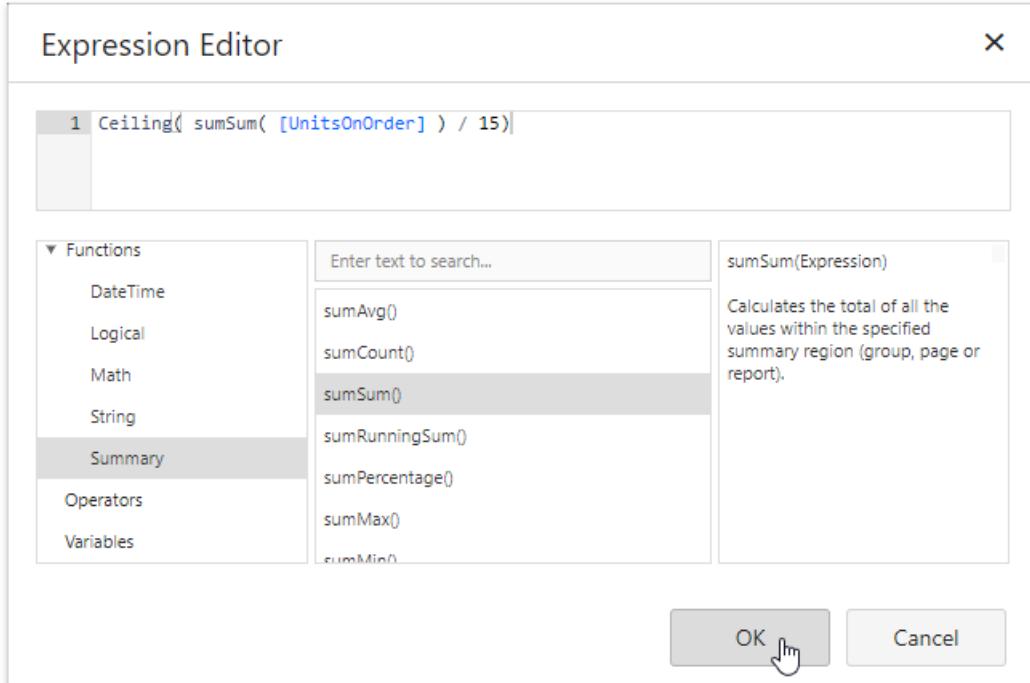


4. Click the ellipsis button for the label's **Expression** property.



5. This invokes the [Expression Editor](#) where you can specify a custom expression with the required summary functions and other logical or arithmetical functions. For example:

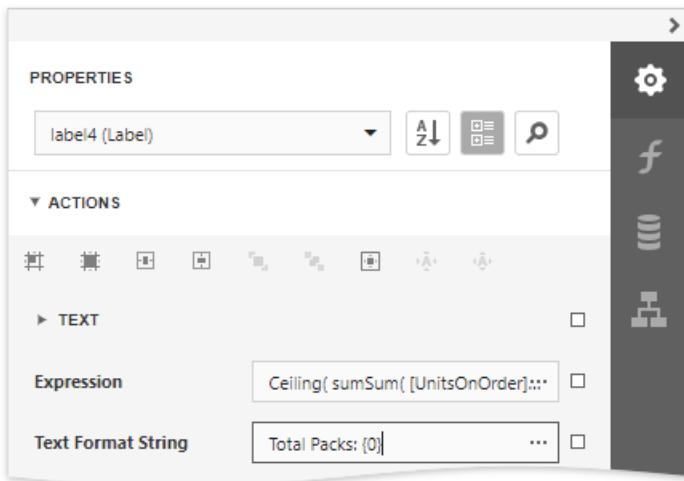
## Expression Editor



### Tip

See the [Expression Constants, Operators, and Functions](#) topic for a complete list of supported summary functions.

6. You can use the **Text Format String** property to format the summary's value.



Switch to [Print Preview](#) to see the result.

**Product Category ID: 1**

<b>Product Name</b>	<b>Units On Order</b>
Chang	40
Ipooh Coffee	10
Outback Lager	10

**Total Packs: 4**

**Product Category ID: 2**

<b>Product Name</b>	<b>Units On Order</b>
Aniseed Syrup	70
Louisiana Hot	100
Spiced Okra	

**Total Packs: 12**

# Display Row Numbers in a Report, Group or Page

This document describes how to show the current row number for each data source value displayed in a report.

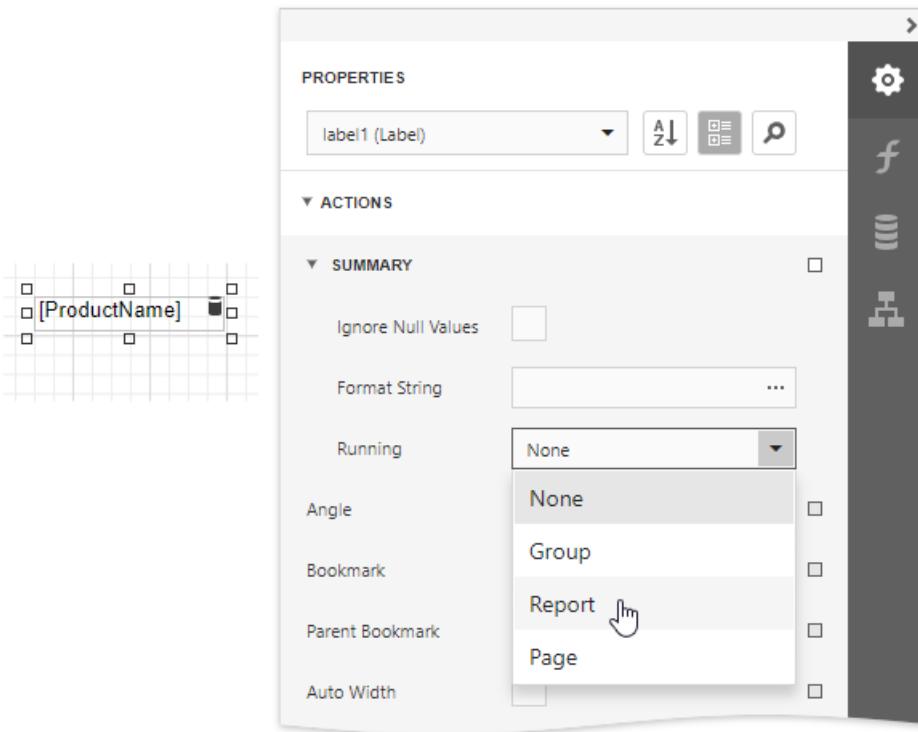
## Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

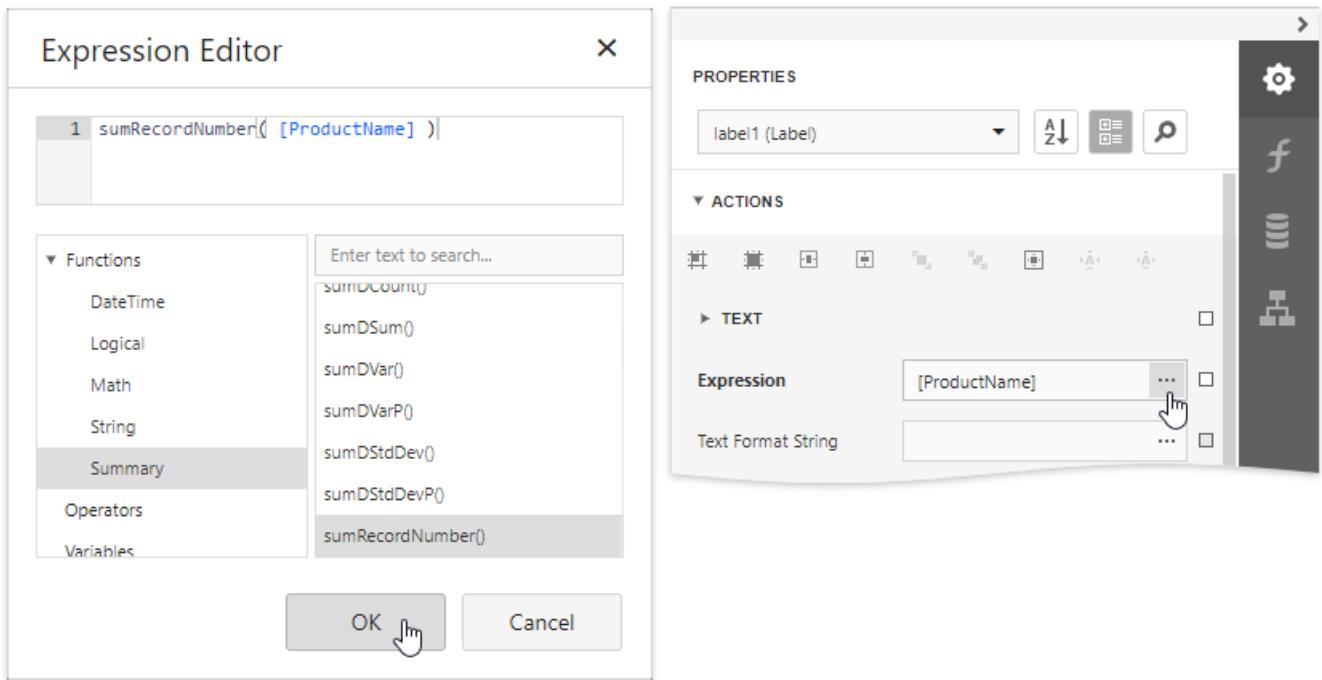
See [Display Row Numbers in a Report, Group or Page](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

A label can display row numbers after [binding your report to data](#) and specifying a bound data field in the Label's **Expression** property.

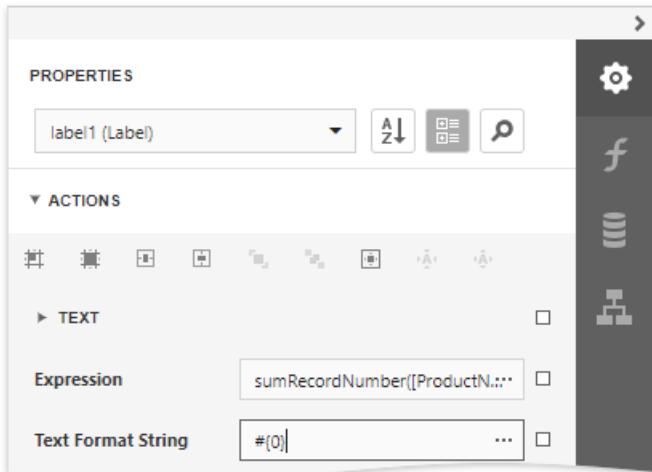
1. Expand the **Summary** section in the **Actions** category and invoke the **Running** drop-down list. Select **Report** to increment the row numbers throughout the entire report, or select **Group** or **Page** to reset the row numbers for every group or page.



2. Click the ellipsis button for the **Expression** property. In the invoked [Expression Editor](#), select the **sumRecordNumber** function in the **Functions | Summary** section.



3. Use the **Text Format String** property to format the resulting value.



You can switch to [Print Preview](#) to see the record numbers displayed for the specified range.

- #1 Uncle Bob's Organic Dried Pears
- #2 Mishi Kobe Niku
- #3 Tofu
- #4 Alice Mutton
- #5 Rössle Sauerkraut
- #6 Thüringer Rostbratwurst
- #7 Manjimup Dried Apples
- #8 Perth Pasties
- #9 Tourtière
- #10 Pâté chinois
- #11 Longlife Tofu

# Count the Number of Records in a Report or Group

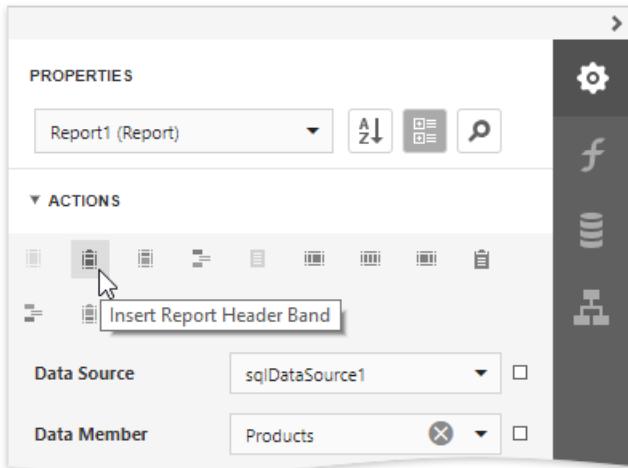
This document describes how to display the number of records in a report or group.

## ■ Warning

Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Count the Number of Records in a Report or Group](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

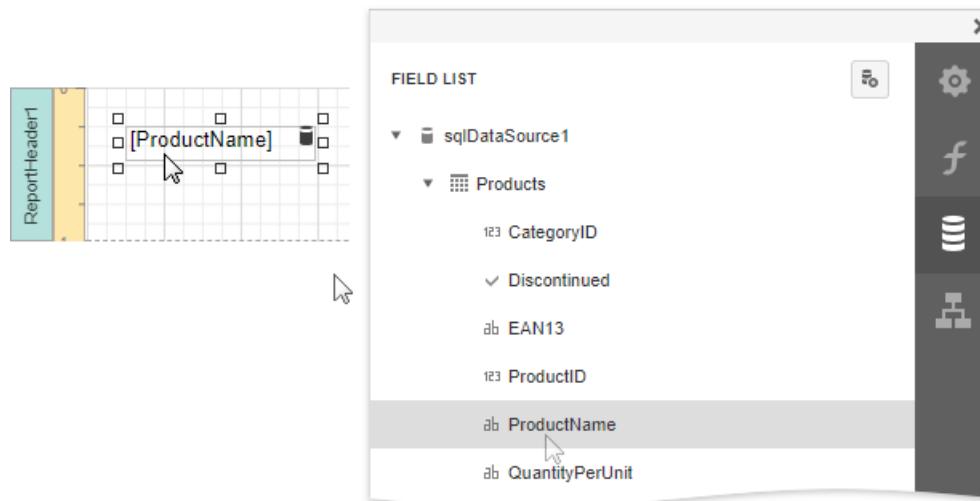
1. Select the corresponding command in the **Actions** category and insert a [Report Header](#) or Footer to display the record count for the entire report.



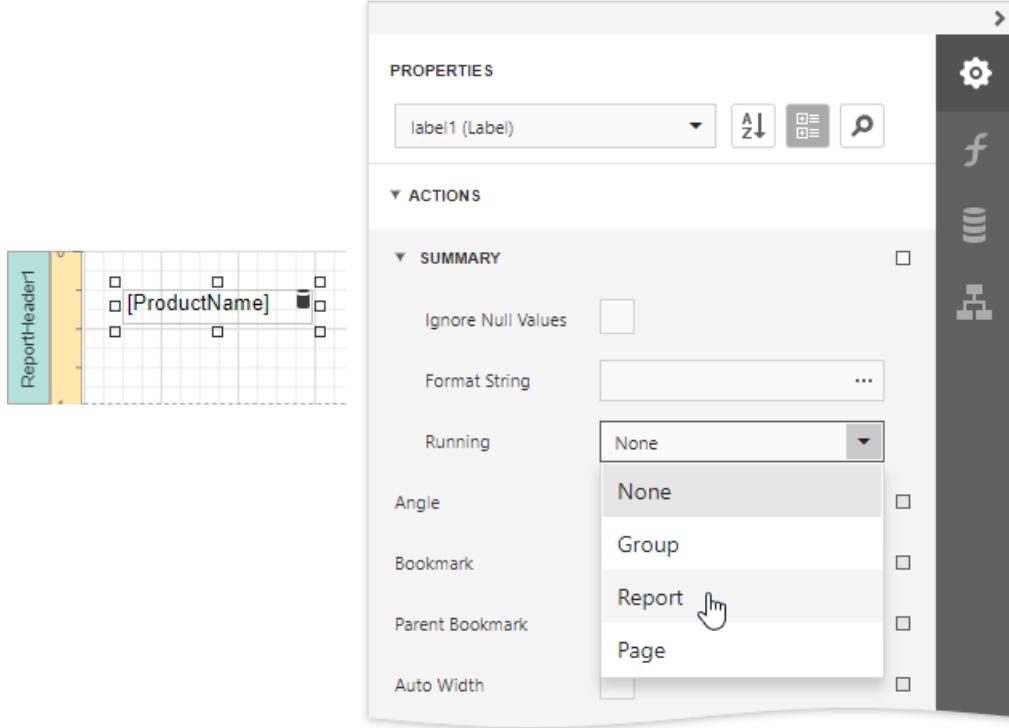
## ■ Note

Use a Group Header/Footer for displaying record counts for groups, and a Page Header/Footer for displaying record counts for pages.

2. Switch to the [Field List](#) panel and drop the corresponding data table field onto the created band to create a data-bound label.



3. Expand the **Summary** section in the **Actions** category and invoke the **Running** drop-down list. Select **Report** to count the records throughout the entire report, or select **Group** or **Page** to reset the record count for every group or page.



4. Click the **Expression** property's ellipsis button. In the invoked **Expression Editor**, select the **sumCount** function in the **Functions | Summary** section.

**Expression Editor**
X

```
1 sumCount( [ProductName] )
```

**Functions**

- DateTime**
- Logical**
- Math**
- String**
- Summary**
- Operators**
- Variables**

OK
Cancel

**Properties**

**label1 (Label)**

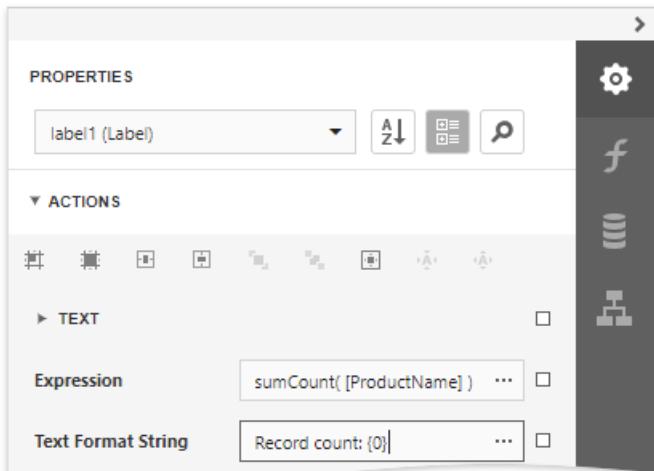
**ACTIONS**

**TEXT**

**Expression**

**Text Format String**

5. Use the **Text Format String** property to format the resulting value.



You can switch to [Print Preview](#) to see the resulting report.

Record count: 77

Chai  
Chang  
Aniseed Syrup  
Chef Anton's Cajun Seasoning  
Grandma's Boysenberry Spread  
Uncle Bob's Organic Dried Pears  
Northwoods Cranberry Sauce  
Ikura

# Count the Number of Groups in a Report

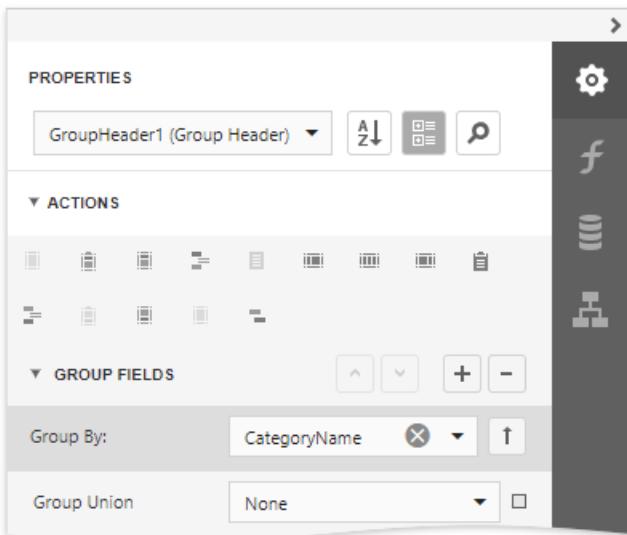
This document describes how to count the number of groups in a report.

## Warning

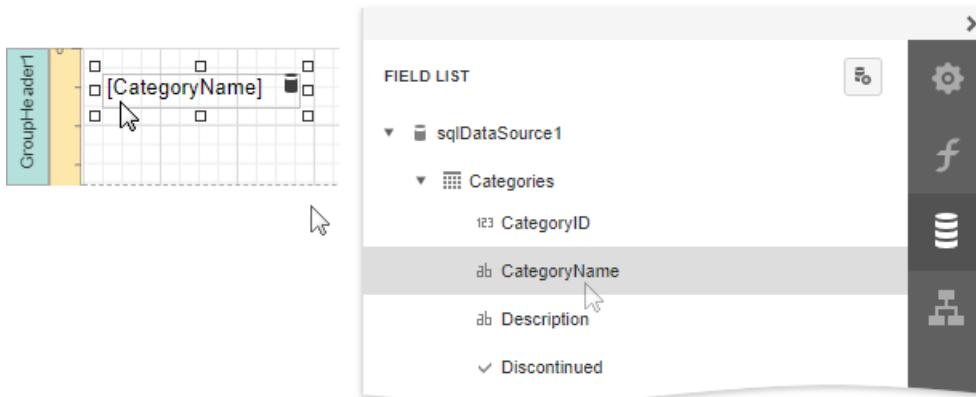
Use the approach below if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions panel](#)).

See [Count the Number of Groups in a Report](#) if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions panel](#)).

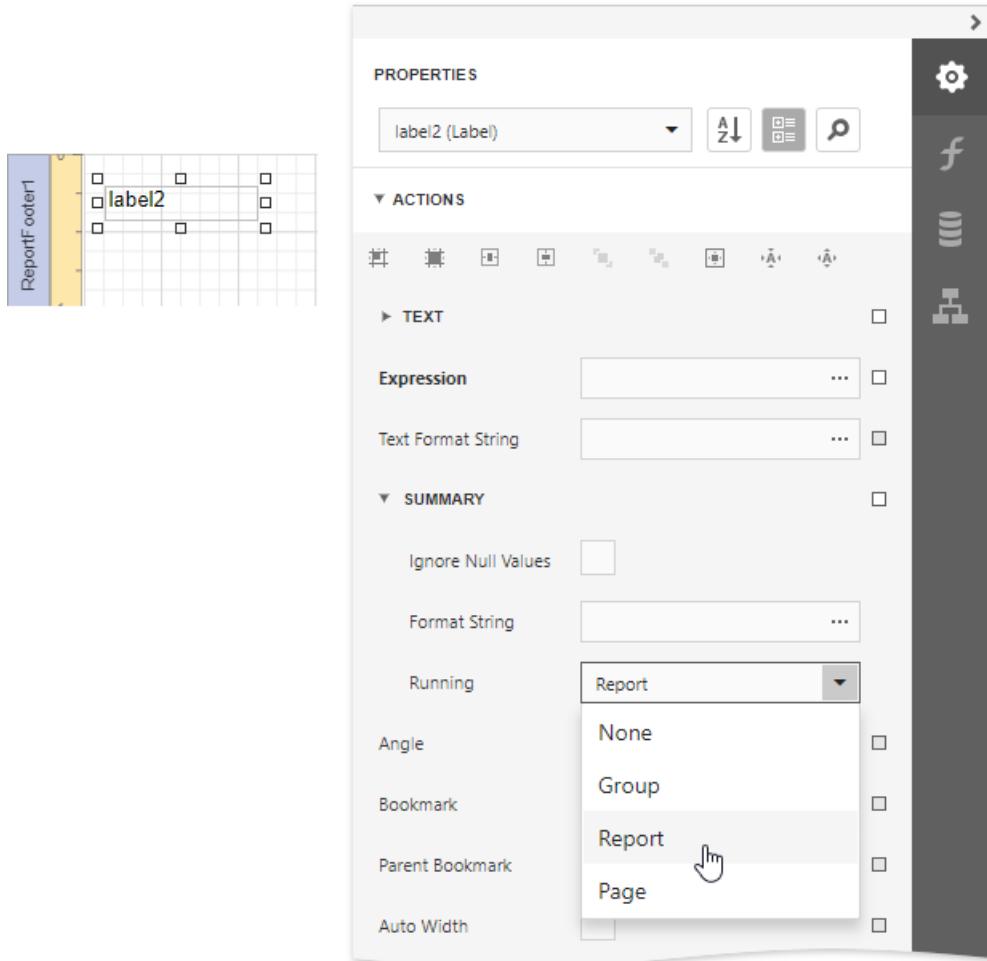
1. Insert the [Group Header](#) band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



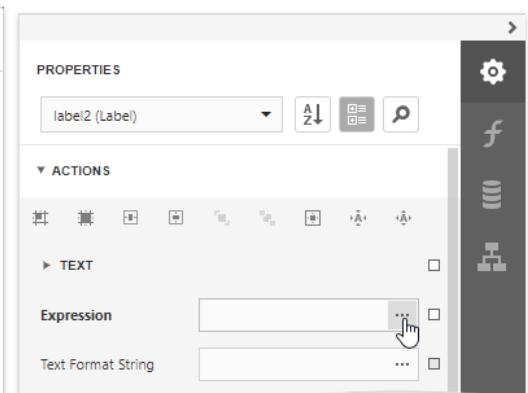
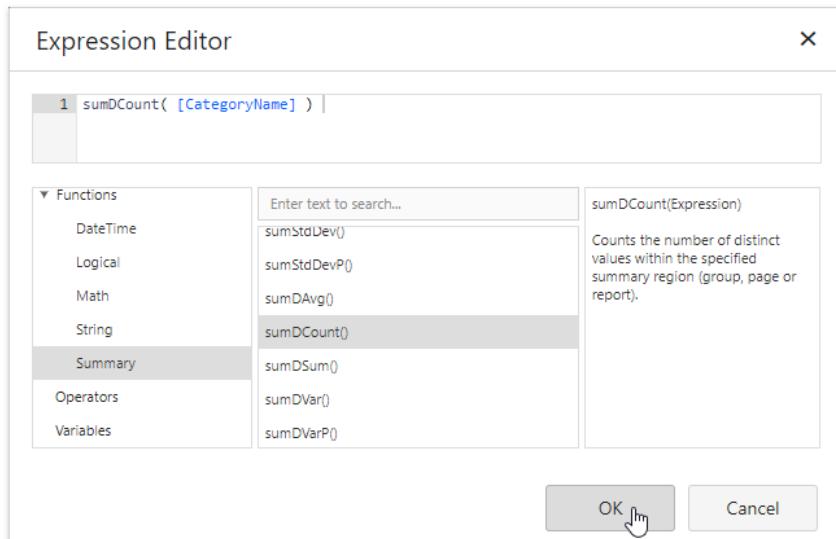
2. Switch to the [Field List](#) and drop the group field onto the created Group Header.



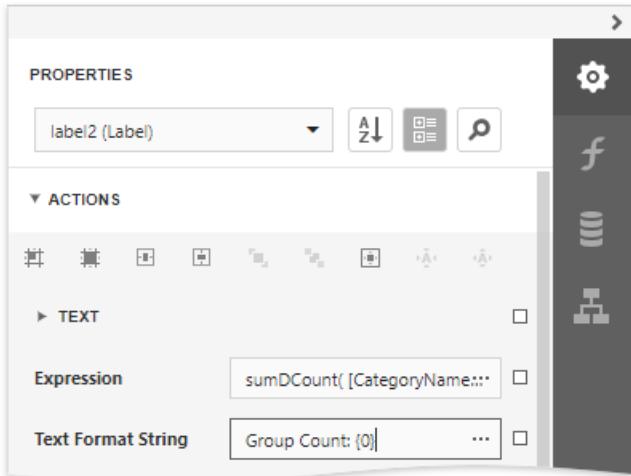
3. Drop a label onto the Report Footer, expand the **Summary** section in the **Actions** category and set the **Running** property to **Report**.



4. Click the ellipsis button for the label's **Expression** property. In the invoked [Expression Editor](#), select the **sumDCount** summary function in the **Functions | Summary** section.



5. Use the **Text Format String** property to format the summary's value.



You can see the group count in the report footer when switching to [Print Preview](#).

**Meat/Poultry**

- Mishi Kobe Niku
- Alice Mutton
- Thüringer Rostbratwurst
- Perth Pasties
- Tourtière
- Pâté chinois

**Produce**

- Uncle Bob's Organic Dried Pears
- Tofu
- Rössle Sauerkraut
- Manjimup Dried Apples
- Longlife Tofu

**Group Count: 2**

# Shape Data (Data Bindings)

The tutorials in this section illustrate how to solve various tasks related to shaping report data when expression bindings **are not enabled** in the Report Designer (the Designer does not provide the [Expressions](#) panel).

- [Format Data](#)
- [Conditionally Change a Control's Appearance](#)
- [Conditionally Change a Label's Text](#)
- [Conditionally Change a Band's Visibility](#)
- [Conditionally Filter Report Data](#)
- [Conditionally Suppress Controls](#)
- [Limit the Number of Records per Page](#)
- [Calculate a Summary](#)
- [Calculate a Custom Summary](#)
- [Display Row Numbers in a Report, Group or Page](#)
- [Count the Number of Records in a Report or Group](#)
- [Count the Number of Groups in a Report](#)

## Note

See the [Shape Data \(Expression Bindings\)](#) section if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions](#) panel).

# Format Data

This document demonstrates how to specify value formatting for report elements (for instance, format numeric values as a currency or apply a percent format).

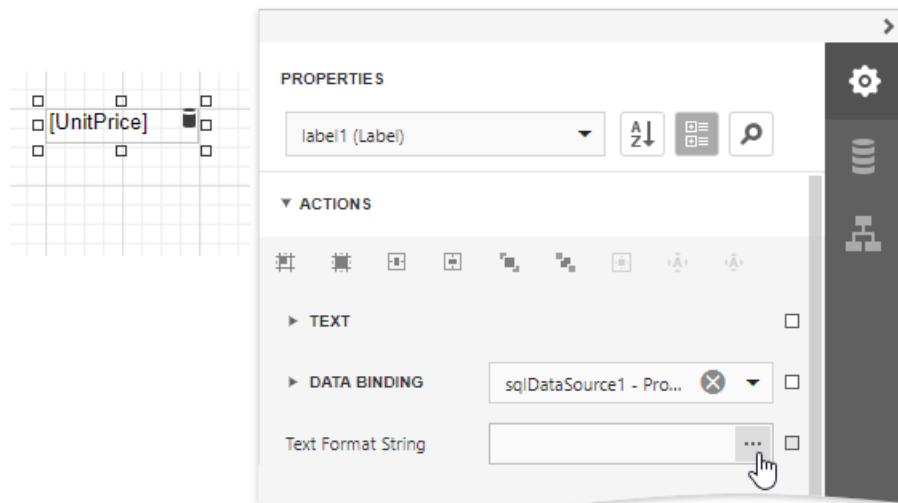
## Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

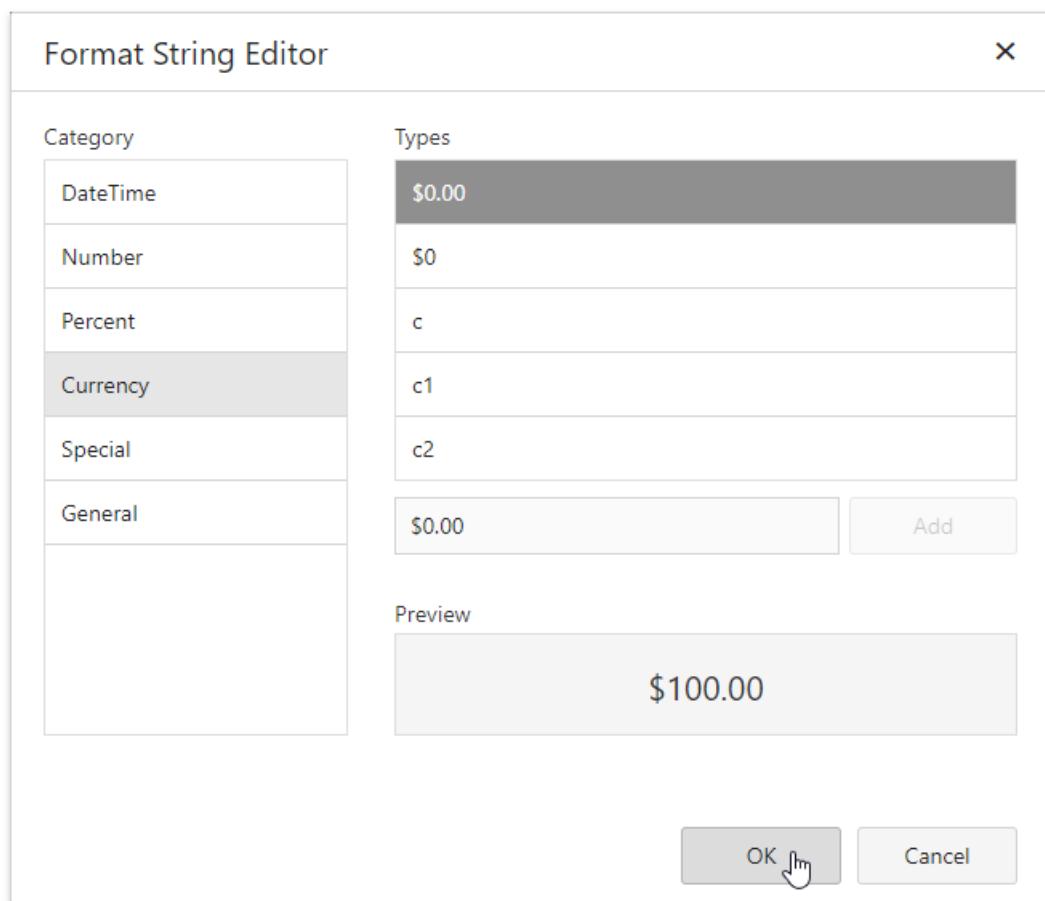
See [Format Data](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

After you [bound your report to data](#) and specified a bound data field in a report control's **Data Binding** property, you can format data values in a report.

1. Expand the **Actions** category and click the **Text Format String** property's ellipsis button.



2. This invokes the **Format String Editor** where you can specify the required format.



When switching to [Print Preview](#), you can view the report control displaying values with the specified format.

Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00

# Conditionally Change a Control's Appearance

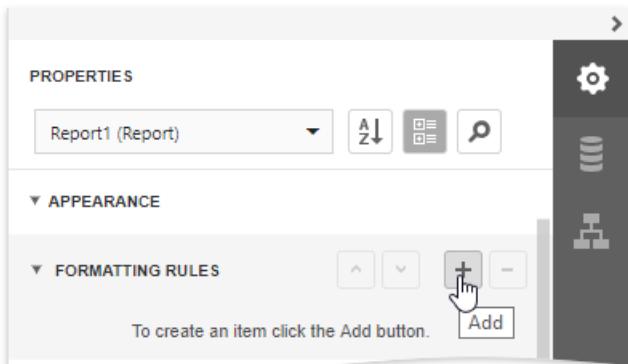
This document describes how to change a report control's appearance based on a specific condition.

## Warning

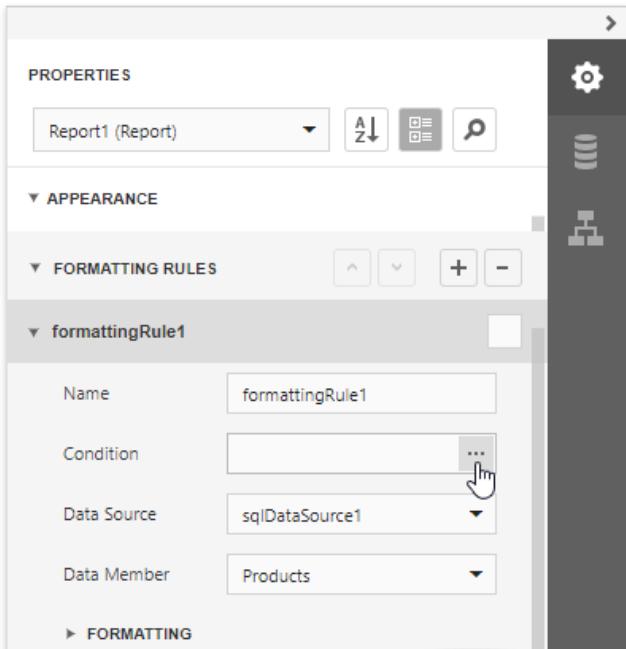
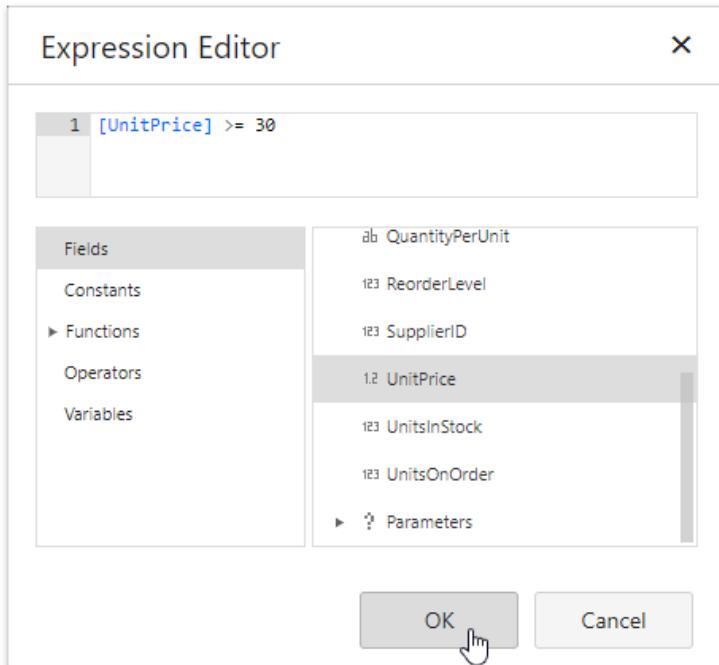
Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Conditionally Change a Control's Appearance](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

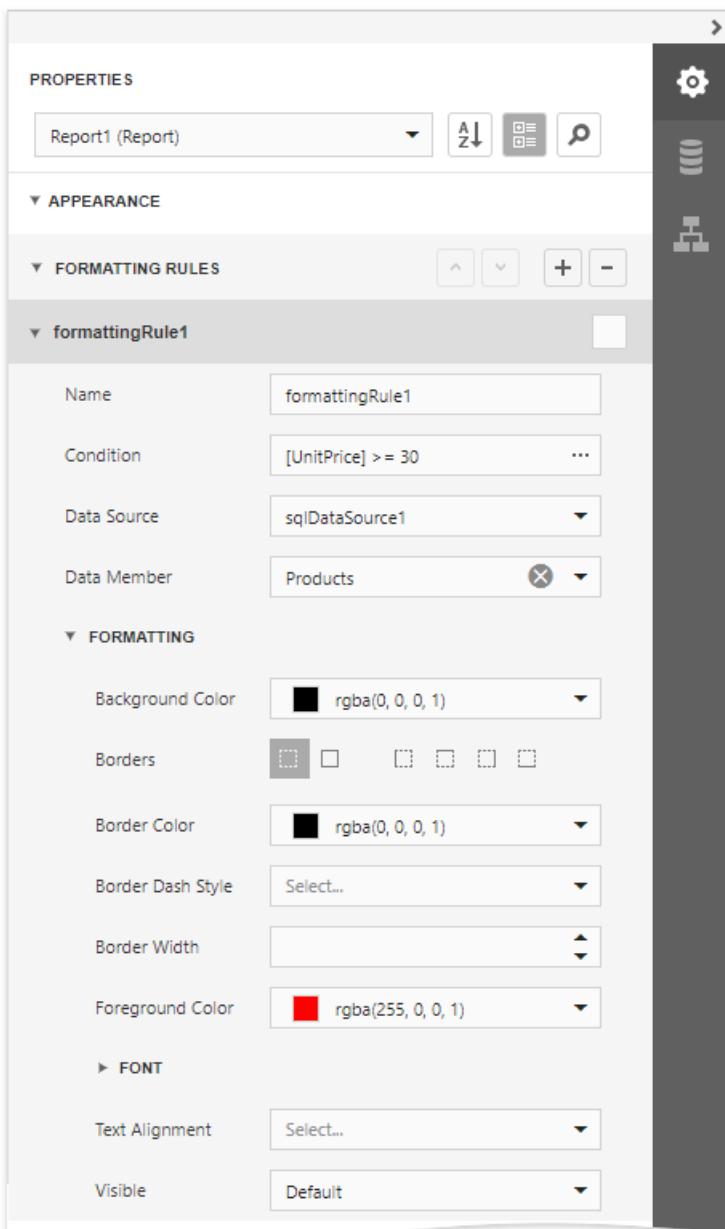
1. Select the report and expand the **Appearance** category in the **Properties** panel. Select the **Formatting rules** node and click the plus button to add a new formatting rule.



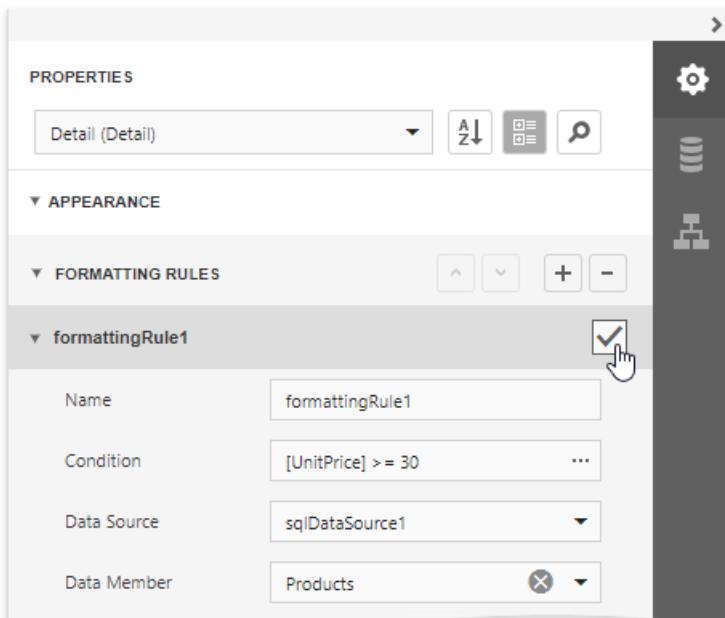
2. Click the **Condition** property's ellipsis button. In the invoked [Expression Editor](#), specify the required Boolean condition (which means that its result is either *true* or *false*) and click **OK**.



3. Define the formatting to be applied (e.g. specify the desired font color).



4. Select a required band or control to which the formatting rule should be applied and enable the formatting rule's check box.



You can also customize the precedence of formatting rules using the up and down arrow buttons on the right of the

Formatting rules node. 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 to [Print Preview](#) to view the resulting report.

Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00
Queso Manchego La Pastora	\$38.00
Konbu	\$6.00
Tofu	\$23.25
Genen Shouyu	\$15.50
Pavlova	\$17.45

# Conditionally Change a Label's Text

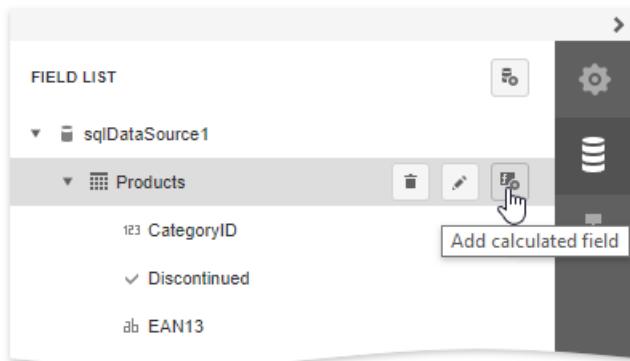
This document describes how to display different values in a report control based on a specified logical condition.

## Warning

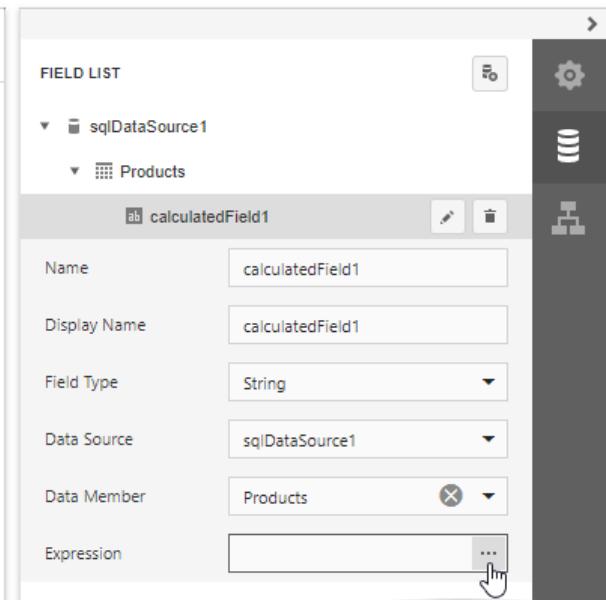
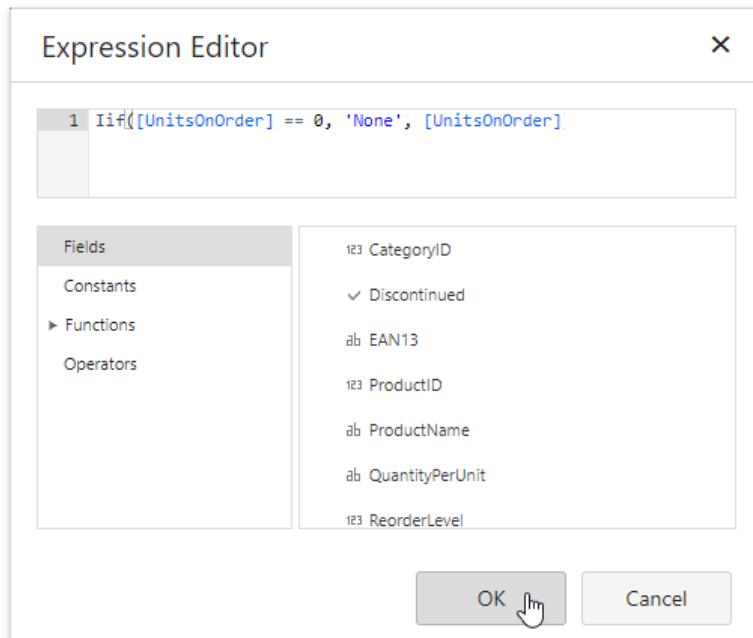
Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Conditionally Change a Label's Text](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

1. Create a new report or open an existing one and [bind it to a data source](#).
2. Switch to the [Field List](#) and select **Add calculated field**.



3. Click the **Edit** button and set the **Field Type** property to **String**. Then, click the **Expression** property's ellipsis button and define the required condition for the calculated field in the invoked [Expression Editor](#).



Use the **if** function to define the condition. For example:

**if([UnitsOnOrder] == 0, 'None', [UnitsOnOrder])**

This expression means that if the data field's value is zero, the control's text is set to '**None**'; otherwise, it displays the actual field value.

4. Drop the required data fields and the created calculated field from the [Field List](#) on the report's Detail band.

The screenshot shows the Report Designer interface. On the left, a report detail view displays two fields: '[ProductName]' and '[calculatedField1]'. On the right, the 'FIELD LIST' pane is open, showing the 'Products' table from 'sqlDataSource1'. It lists fields such as 'calculatedField1' (selected), 'CategoryID', and 'Discontinued'.

When switching to [Print Preview](#), you can see the report control displaying the assigned values.

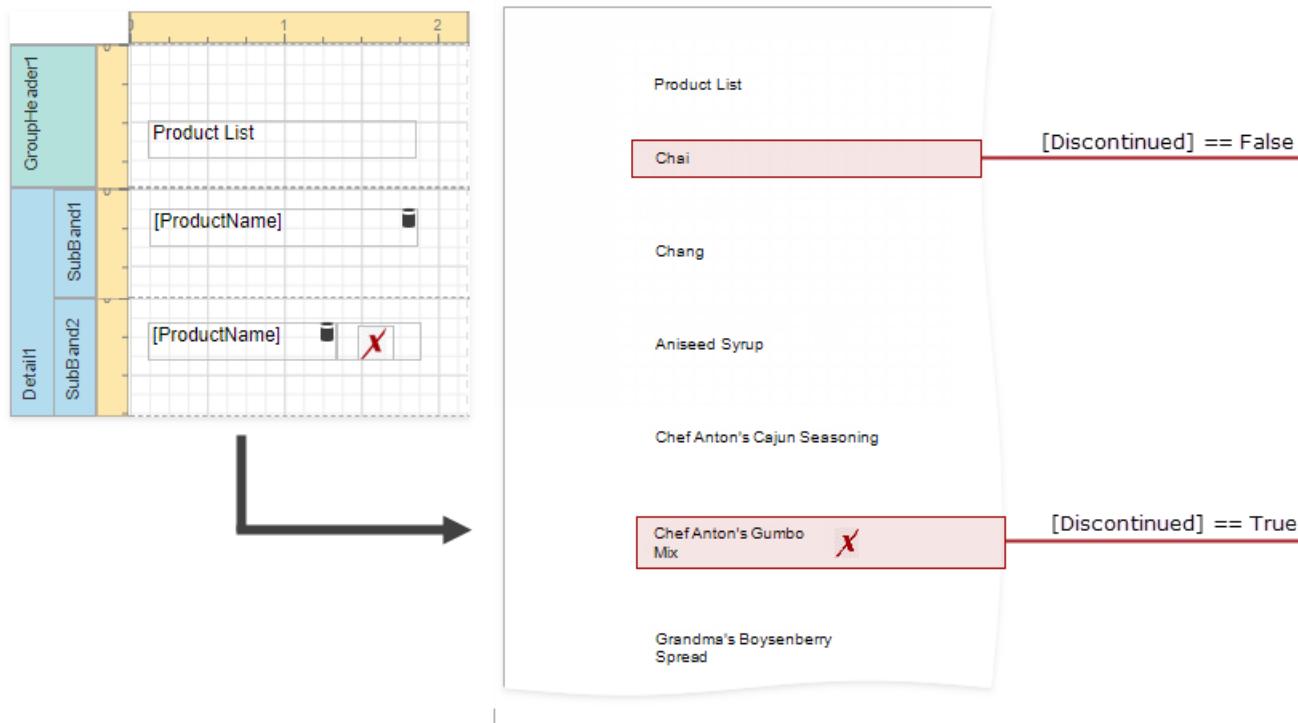
Chai	None
Chang	40
Guaraná Fantástica	None
Sasquatch Ale	None
Steeleye Stout	None
Côte de Blaye	None
Chartreuse verte	None
Ipoh Coffee	10
Laughing Lumberjack Lager	None
Outback Lager	10

# Conditionally Change a Band's Visibility

This topic describes how to change report band visibility.

Create a formatting rule for a band's **Visible** property to conditionally change the band's visibility based on a field's value or a parameter.

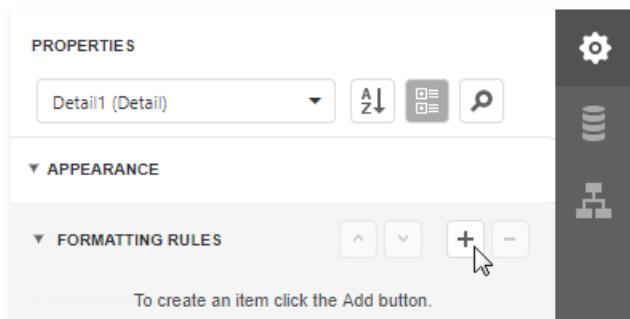
The report created in this tutorial contains two Detail **sub-bands** with different report controls. These sub-bands are used to display discontinued and current products.



The steps below demonstrate how to change a band's visibility based on a field's value.

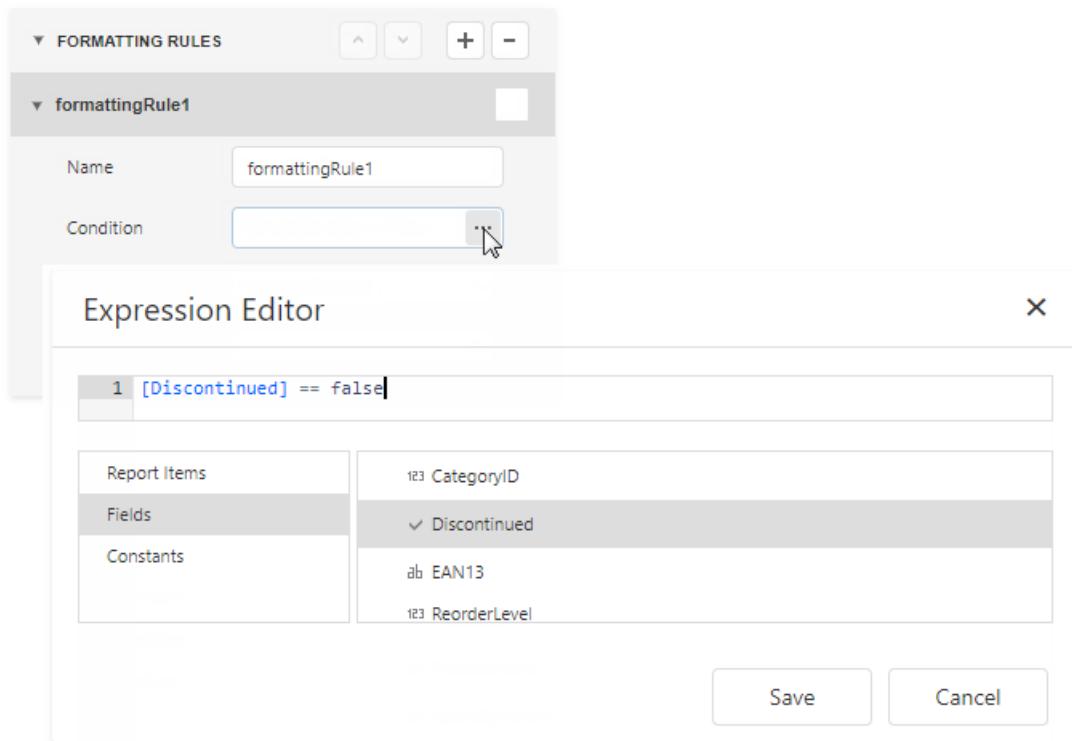
1. Create formatting rule(s).

- Select the report and switch to the **Appearance** category in the **Properties** panel. Select the **Formatting rules** node and click the plus button to add a new formatting rule.



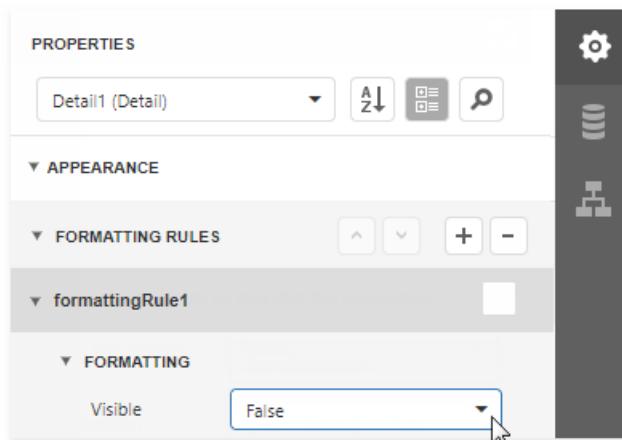
In the tutorial's report, two rules are added.

- Specify a condition for each rule. Click a rule's **Condition** property's ellipsis button. In the invoked **Expression Editor**, specify the required expression.



Here, the **[Discontinued] == false** expression is set for the **formattingRule1** and the **[Discontinued] == true** expression - for the **formattingRule2**.

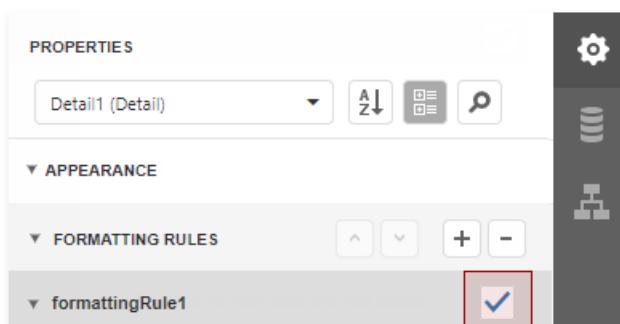
- Specify the **Visible** property for the rules.



Here, the **Visible** property is set to **False** for both rules.

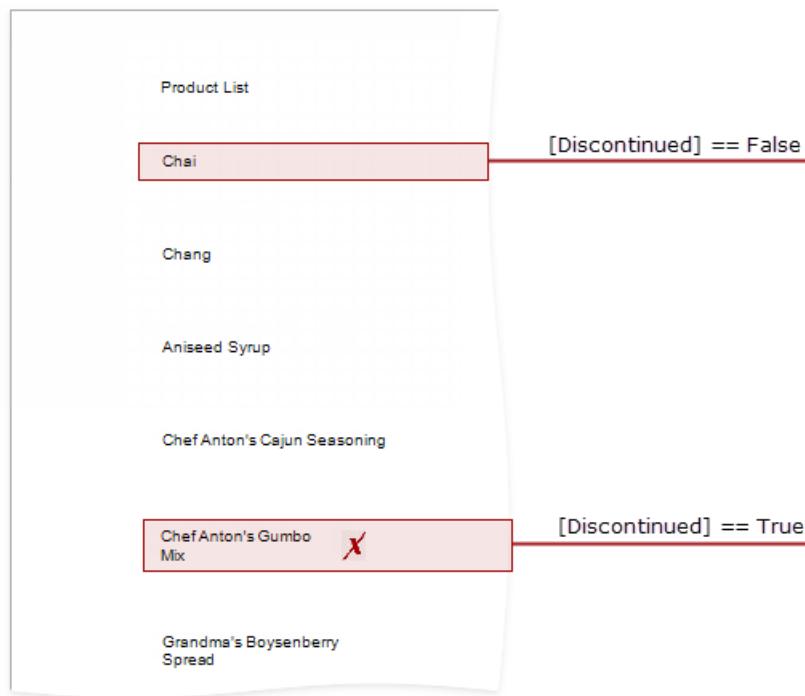
## 2. Apply the rule(s) to the required band(s).

Select a band and check a rule.



Here, each sub-band has a rule.

The **Preview** below displays how changes to band visibility influence the Product List. The **SubBand1** is used to display products that have the **Discontinued** field set to **false**, and the **SubBand2** is used to display discontinued products.



# Conditionally Filter Report Data

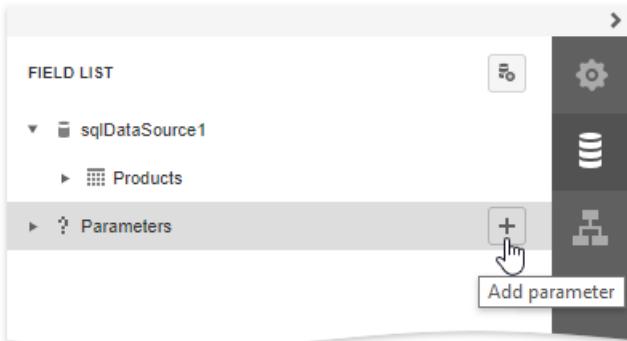
This document describes how to filter a report's data based on a specific condition.

## Warning

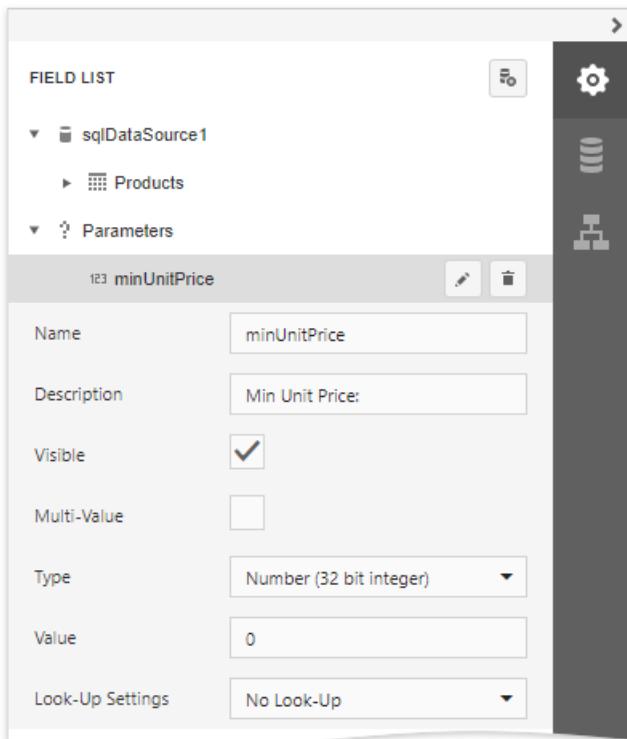
Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Conditionally Filter Report Data](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

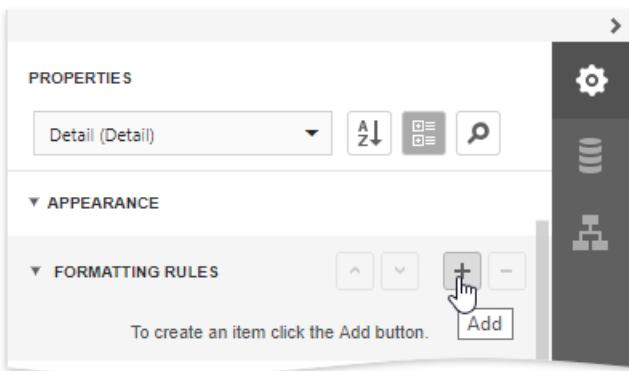
1. Switch to the [Field List](#), select the **Parameters** node and click **Add parameter**.



2. Specify the parameter's description in Print Preview and set its type to **Number (Integer)**.

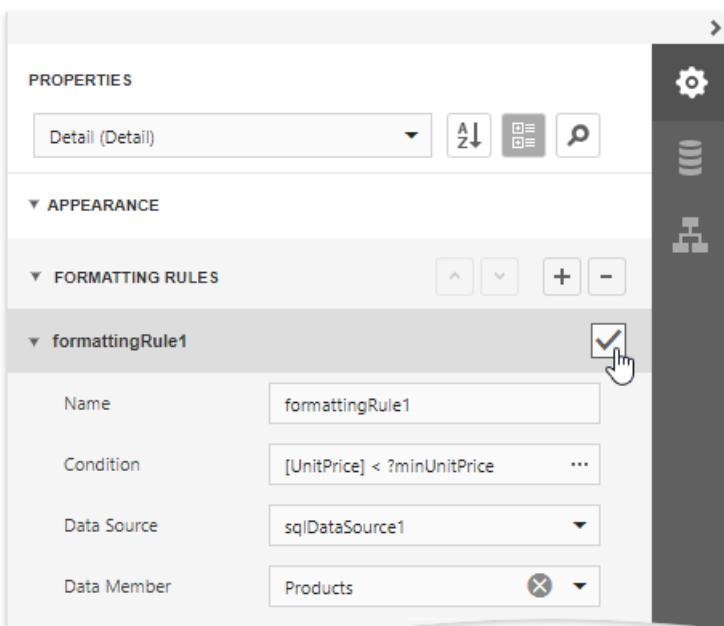


3. Select the Detail band, expand the **Appearance** node, select the **Formatting rules** and click the plus button to add a new formatting rule.



4. Expand the **Formatting** node and set the **Visible** property to **No**. Click the **Condition** property's ellipsis button. In the invoked [Expression Editor](#), specify the required visibility condition.

5. Enable the formatting rule's check box to apply the created formatting rule to the Detail band.



In this editor, you can also customize the precedence of formatting rules using the up and down arrow buttons on the right of the dialog box. 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 to [Print Preview](#) to see the result.

Mishi Kobe Niku	\$97.00
Carnarvon Tigers	\$62.50
Sir Rodney's Marmalade	\$81.00
Thüringer Rostbratwurst	\$123.79
Côte de Blaye	\$263.50
Manjimup Dried Apples	\$53.00
Raclette Courdavault	\$55.00

PREVIEW PARAMETERS

Min Unit Price:

[RESET](#) [SUBMIT](#)



# Conditionally Suppress Controls

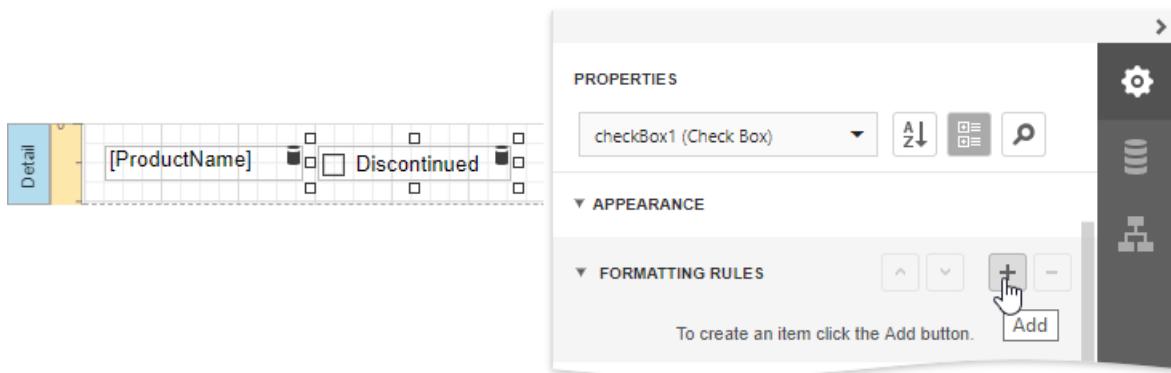
This document describes how to display or hide a report control in a published document based on a specified logical condition.

## Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Conditionally Suppress Controls](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

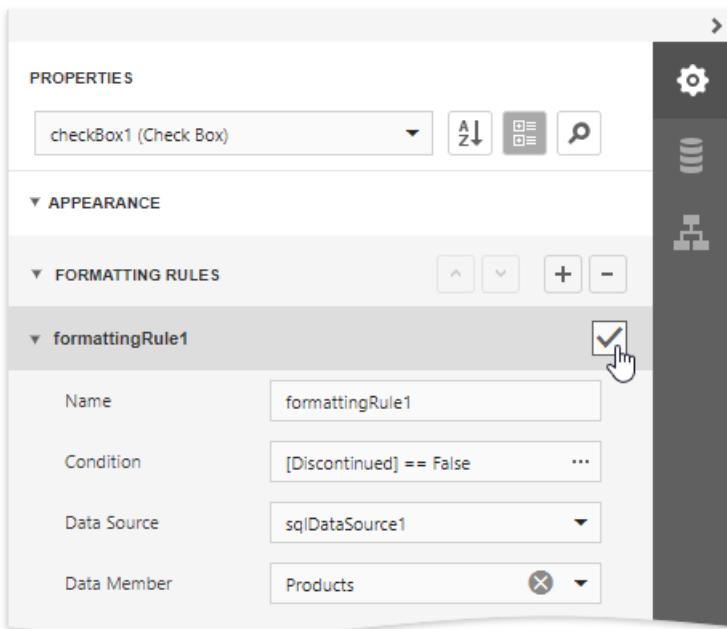
1. [Create a new report](#) or open an existing one and prepare the report layout.
2. Select the required control and expand the **Appearance** category in the [Properties](#) panel. Select the **Formatting rules** node and click the plus button to add a new formatting rule.



3. Expand the **Formatting** node and set the **Visible** property to **No**. Click the **Condition** property's ellipsis button. In the invoked [Expression Editor](#), specify the required visibility condition.

The image contains two side-by-side screenshots of the Report Designer. The left screenshot shows the 'Expression Editor' dialog box. It has a code editor with the line '1 [Discontinued] == False' and a preview area below it. To the right of the code editor is a 'Fields' pane listing various database fields like 'QuantityPerUnit', 'ReorderLevel', 'SupplierID', etc. The right screenshot shows the 'Properties' panel for a checkbox control. It has sections for 'Appearance' and 'Formatting Rules'. A new rule named 'formattingRule1' is selected. Its properties are shown: 'Name' is 'formattingRule1', 'Condition' is empty (with an ellipsis button), 'Data Source' is 'sqlDataSource1', and 'Data Member' is 'Products'. The 'Condition' field in the properties panel is also highlighted with a cursor.

4. Enable the formatting rule's check box to apply the created formatting rule to the required control.



In this editor, you can also customize the precedence of formatting rules using the up and down arrow buttons on the right of the dialog box. 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.

When switching to [Print Preview](#), you can view the report control's visibility changes according to the assigned condition.

Pavlova	
Mishi Kobe Niku	<input checked="" type="checkbox"/> True
Gula Malacca	
Flotemysost	
Gudbrandsdalsost	
Singaporean Hokkien Fried Mee	<input checked="" type="checkbox"/> True
Rössle Sauerkraut	<input checked="" type="checkbox"/> True
Teatime Chocolate Biscuits	

# Limit the Number of Records per Page

This document describes how to specify the number of data source records displayed on report pages.

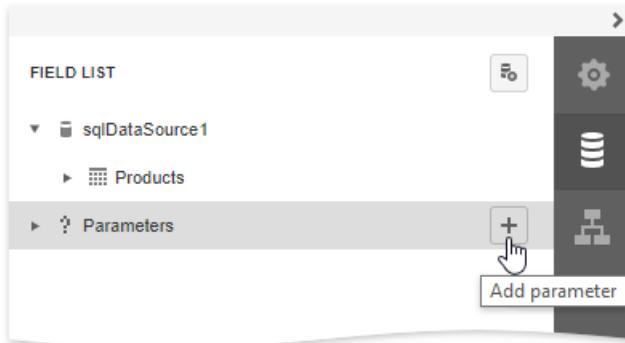
## Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

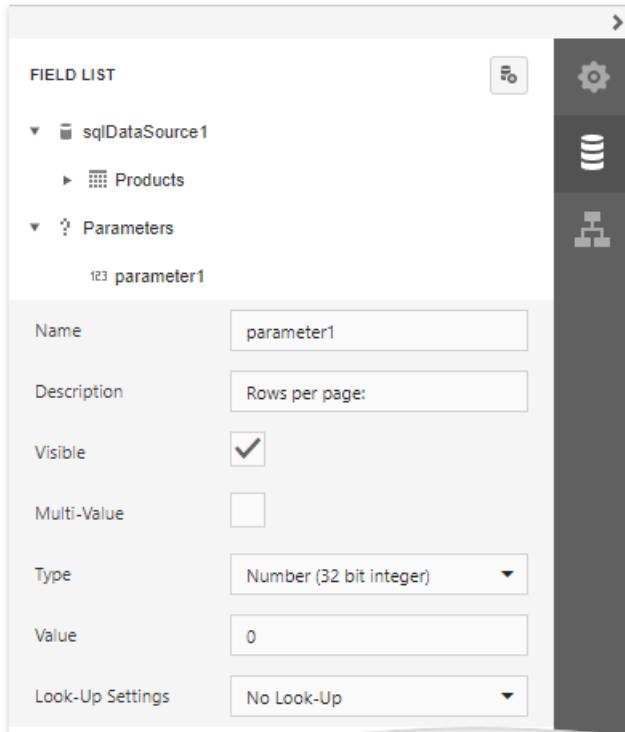
See [Limit the Number of Records per Page](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

After you [bind your report to data](#) and provided content to the report's [Detail band](#), you can limit the number of records each report page displays. This example demonstrates how to pass the required record count as a parameter value.

1. Switch to the [Field List](#) panel, select the **Parameters** node and click **Add parameter** to add a new report parameter.



2. Specify the parameter's description displayed in Print Preview and set its type to **Number (Integer)**.



3. Drop a [Page Break](#) control onto the report's Detail band and disable the control's **Visible** property.

4. Expand the **Appearance** node, select the **Formatting rules** and click the plus button to add a new formatting rule.

5. Expand the **Formatting** node and set the **Visible** property to **Yes**. Click the **Condition** property's ellipsis button. In the invoked **Expression Editor**, specify the required visibility condition.

```

1 ( [DataSource.CurrentRowIndex] % ?parameter1 ==0)
2 And ([DataSource.CurrentRowIndex] !=0)

```

**Properties**

pageBreak1 (Page Break)

**APPEARANCE**

**FORMATTING RULES**

**formattingRule1**

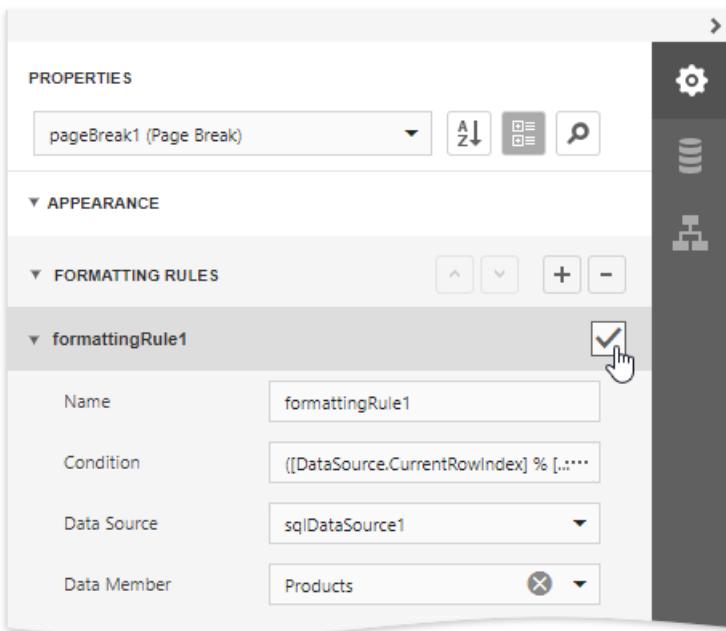
- Name: formattingRule1
- Condition: ...
- Data Source: sqlDataSource1
- Data Member: Products
- FORMATTING**
- Background Color: black
- Borders: solid
- Border Color: black
- Border Dash Style: Select...
- Border Width: 1px
- Foreground Color: black
- FONT**
- Text Alignment: Select...
- Visible: Yes

For example:

**([DataSource.CurrentRowIndex] % [Parameters.parameter1] == 0) And ([DataSource.CurrentRowIndex] !=0)**

Click **OK**, to save the changes and close the dialog.

6. Enable the formatting rule's check box to apply the created formatting rule to the control.



When switching to **Print Preview**, you can specify how many rows each report page should display by entering the corresponding parameter value:

The screenshot shows a report preview with a table of products and a separate 'PREVIEW PARAMETERS' dialog.

**Report Preview Table Data:**

Product Name	Quantity Per Unit	Unit Price
Chai	10 boxes x20 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

**Preview Parameters Dialog:**

- ROWS PER PAGE:** 5
- RESET:** Button
- SUBMIT:** Button (highlighted with a mouse cursor)

# Calculate a Summary

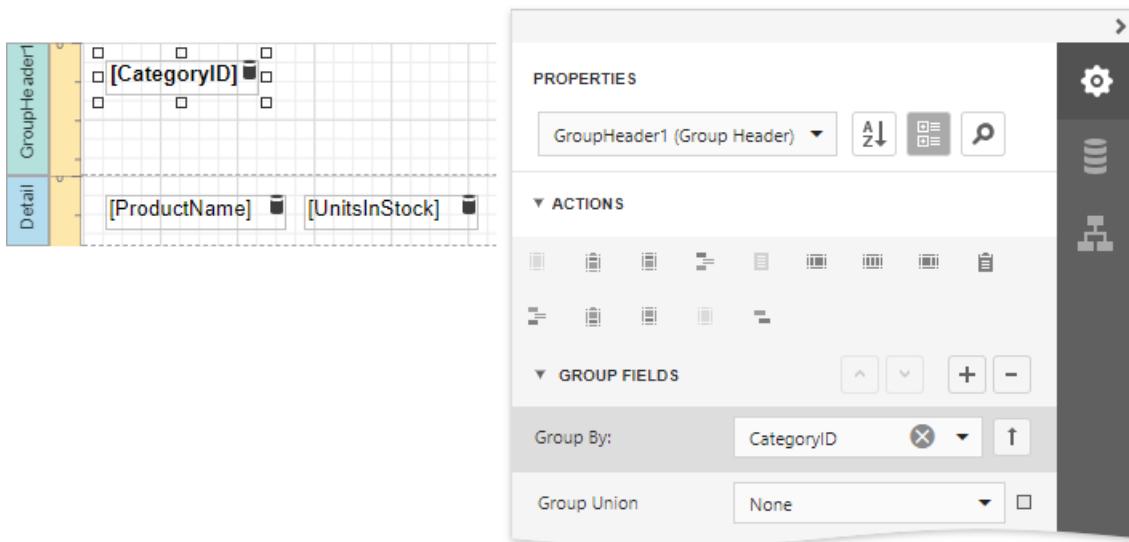
This tutorial describes the steps required to calculate one of the built-in summary functions in your report.

## Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Calculate a Summary](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

1. [Create a new report](#) or open an existing one and [bind it to a data source](#).
2. Insert the **Group Header** band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



3. Insert the Group Footer band. Prepare the report layout and drop a required data field onto the group footer to display the summary result.
4. Select the label, expand the **Summary** section in the **Actions** category and invoke the **Running** drop-down list. Select the range for which to calculate a summary (the entire report, a specific report group or document page).

The screenshot shows the SSRS report designer interface. On the left is a report preview window displaying a grouped report structure with three sections: GroupHeader1, Detail, and GroupFooter1. In the Detail section, there are three text boxes: [CategoryID], [ProductName], and [UnitsInStock]. The [UnitsInStock] box is selected. On the right is the 'Properties' pane. Under the 'ACTIONS' tab, the 'SUMMARY' section is expanded, showing the 'Function' dropdown menu. The 'Group' option is currently selected, with a mouse cursor hovering over it. Other options in the menu are 'Report' and 'Page'.

- Set the **Function** property to **Sum** and use the **Format String** property to format the summary's value.

The screenshot shows the SSRS report designer interface. The report preview window on the left is identical to the previous one. The Properties pane on the right has been updated. In the 'SUMMARY' section of the 'ACTIONS' tab, the 'Function' dropdown is now set to 'Sum'. The 'Format String' field contains the text 'Units in this category: {0}'. The other properties like 'Text Format String' and 'Running' are also visible.

Switch to [Print Preview](#) to see the result.

**Category ID: 1**

Chai	39
Chang	17
Guaraná Fantástica	20
Sasquatch Ale	111
Steeleye Stout	20
Côte de Blaye	17
Chartreuse verte	69
Ipoh Coffee	17
Laughing Lumberjack Lager	52
Outback Lager	15
Rhonbräu Klosterbier	125
Lakkaliköön	57

**Units in this category: 559**

# Calculate a Custom Summary

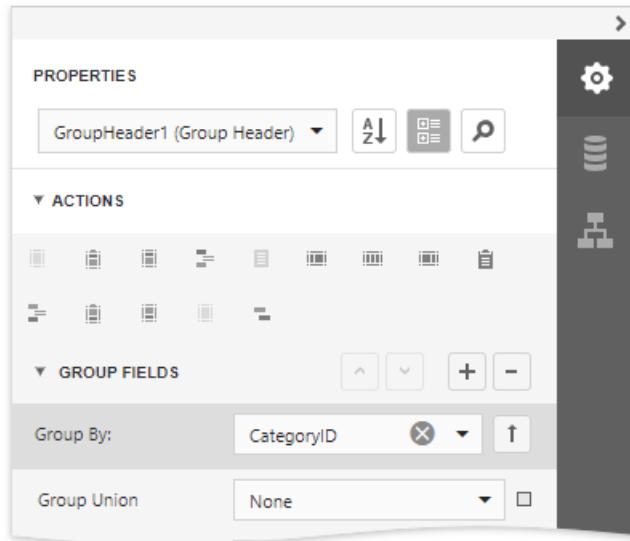
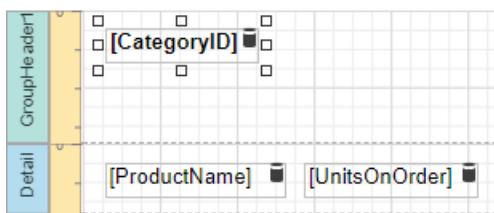
This tutorial describes the steps required to calculate a custom summary that is not one of the built-in summary functions.

## ⚠ Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Calculate an Advanced Summary](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

1. [Create a new report](#) or open an existing one and [bind it to a data source](#).
2. Insert the **Group Header** band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



3. Insert the Group Footer band. Drop a required data field onto the group footer to display the summary result.
4. Select the label, expand the **Summary** section in the **Actions** category and set the **Running** property to **Group**. Set the **Function** property to **Custom** and use the **Format String** property to format the summary's value.

5. When selecting the **Custom** option, three more events are added to the available events' drop-down list: **Summary Get Result**, **Summary Reset** and **Summary Row Changed**.

You can handle these events in the following way using the [Script Editor](#).

**C#**

```

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

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

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

private void OnSummaryGetResult(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

Switch to [Print Preview](#) to see the result.

Product Category ID: 1	
Product Name	Units On Order
Chang	40
Ipooh Coffee	10
Outback Lager	10
<b>Total Packs: 4</b>	

Product Category ID: 2	
Product Name	Units On Order
Aniseed Syrup	70
Louisiana Hot	100
Spiced Okra	
<b>Total Packs: 12</b>	

# Display Row Numbers in a Report, Group or Page

This document describes how to show the current row number for each data source value displayed in a report.

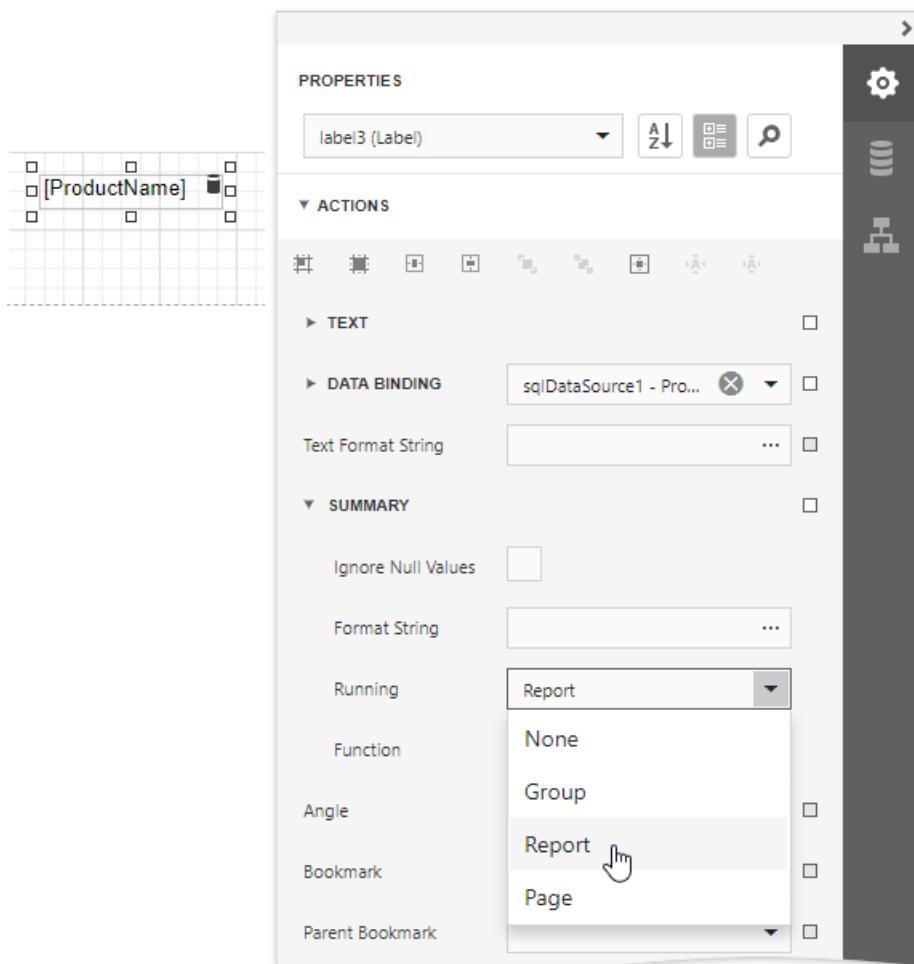
## Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

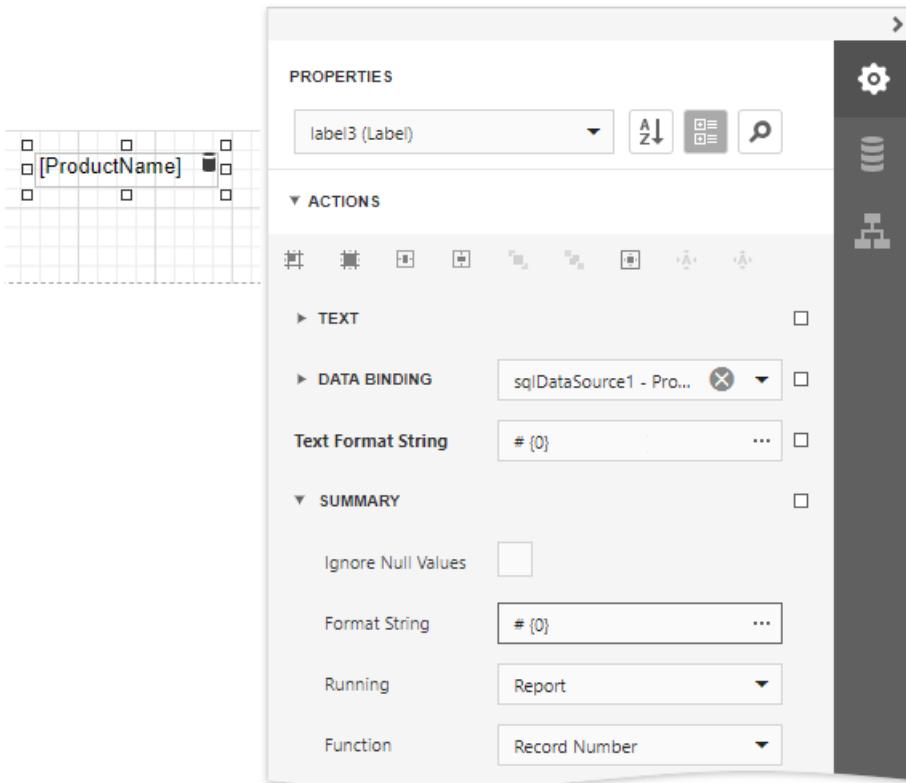
See [Display Row Numbers in a Report, Group or Page](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

A label can display row numbers after [binding your report to data](#) and specifying a bound data field.

1. Select the label and expand the **Summary** section in the **Actions** category and specify the **Running** property. Select **Report** to increment the row numbers throughout the entire report, or select **Group** or **Page** to reset the row numbers for every group or page.



2. Set the **Function** property to **Record Number** and use the **Format String** property to format the summary's value.



You can switch to [Print Preview](#) to see the record numbers displayed for the specified range.

#1	Uncle Bob's Organic Dried Pears
#2	Mishi Kobe Niku
#3	Tofu
#4	Alice Mutton
#5	Rössle Sauerkraut
#6	Thüringer Rostbratwurst
#7	Manjimup Dried Apples
#8	Perth Pasties
#9	Tourtière
#10	Pâté chinois
#11	Longlife Tofu

# Count the Number of Records in a Report or Group

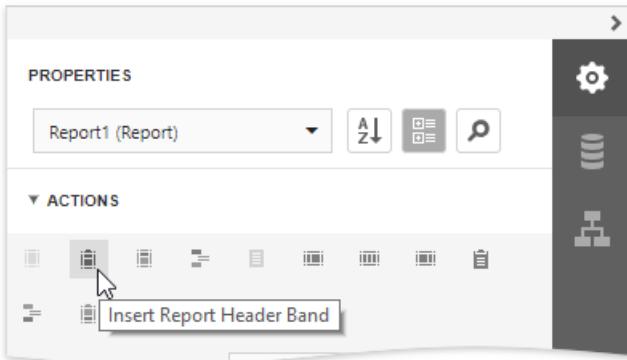
This document describes how to display the number of records in a report or group.

## ⚠ Warning

Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Count the Number of Records in a Report or Group](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

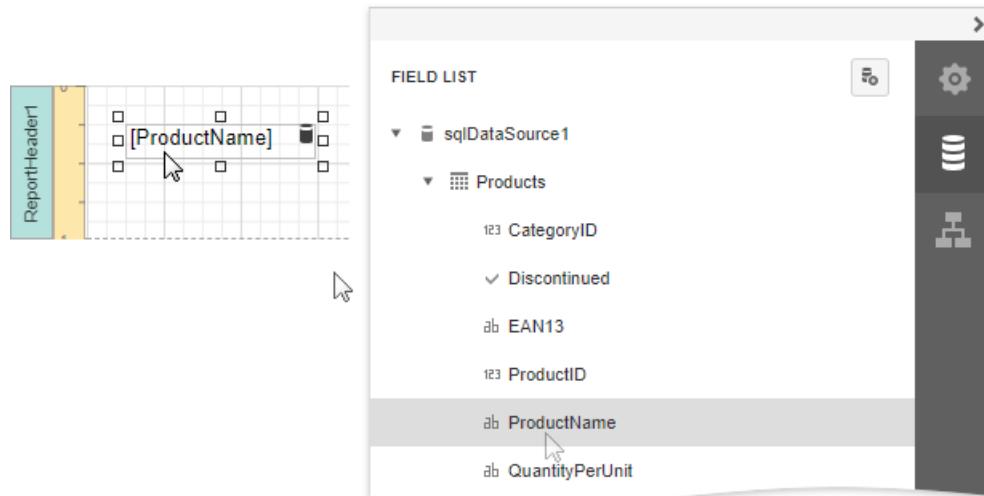
1. Expand the **Actions** category and insert a [Report Header](#) or Footer to display the record count for the entire report.



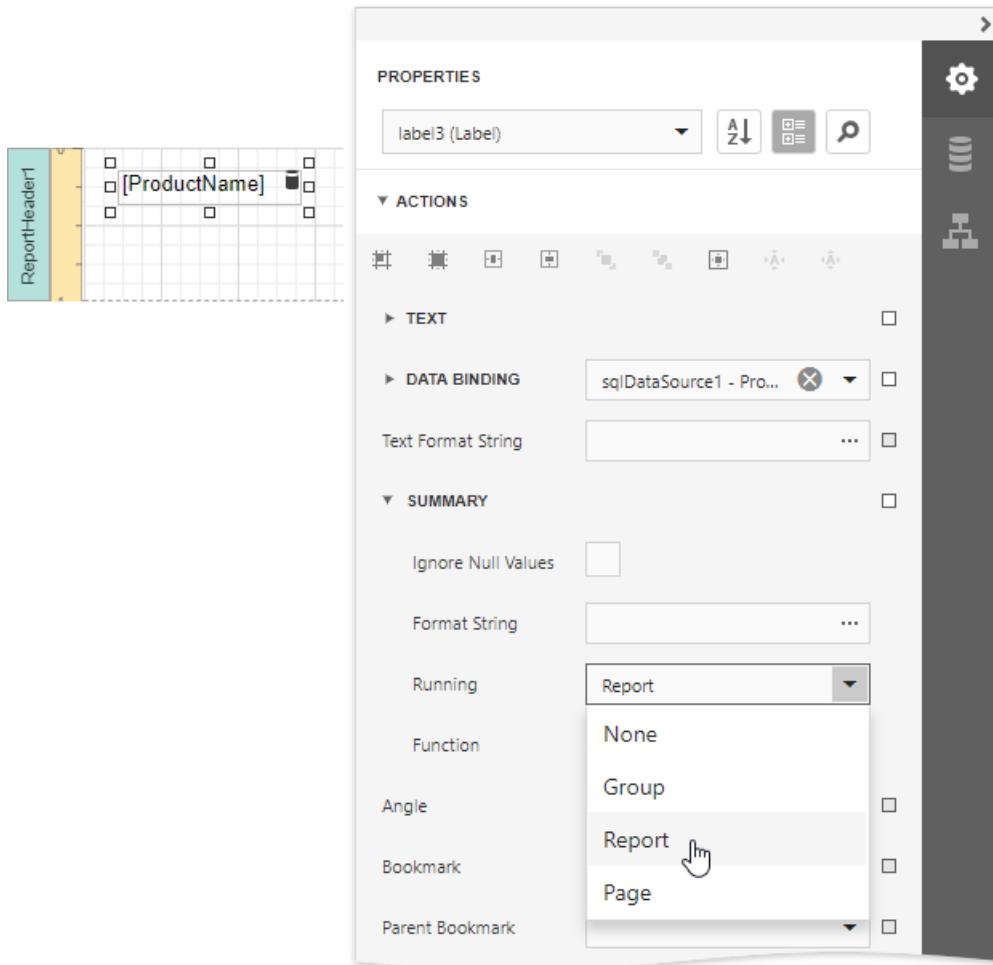
## 💡 Note

Use a Group Header/Footer for displaying record counts for groups, and a Page Header/Footer for displaying record counts for pages.

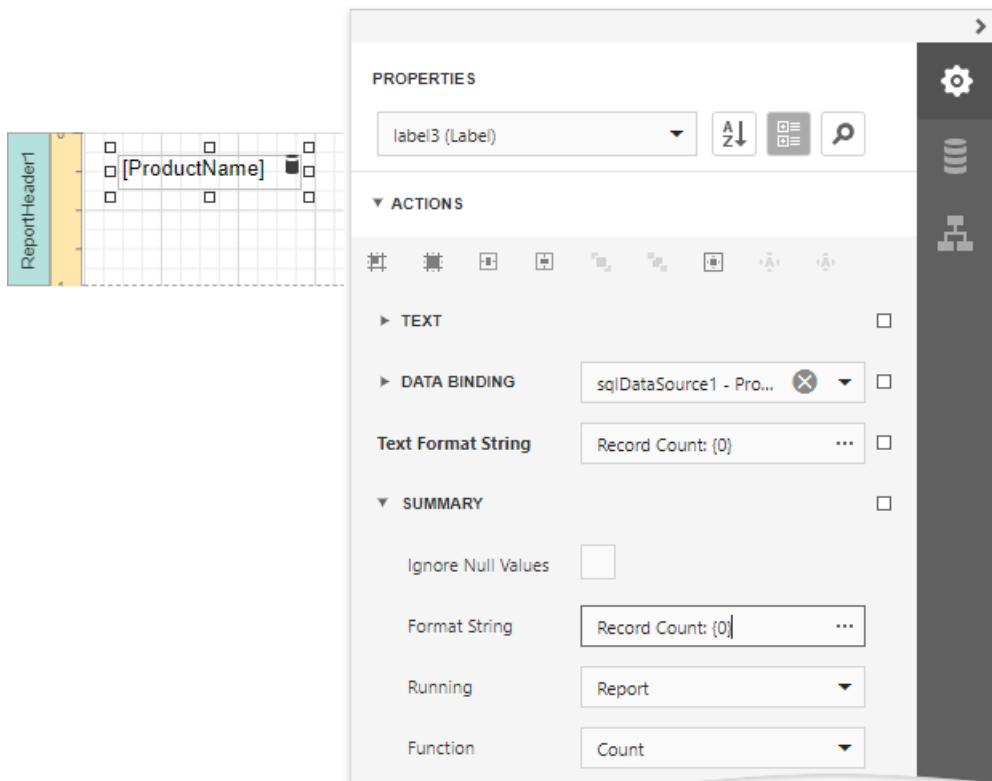
2. Switch to the [Field List](#) and drop the corresponding data table field onto the created band to create a data-bound label.



3. Expand the **Summary** section in the **Actions** category and specify the **Running** property. Select **Report** to count the records throughout the entire report, or select **Group** or **Page** to reset the record count for every group or page.



4. Set the **Function** property to **Count** and use the **Format String** property to format the summary's value.



You can switch to [Print Preview](#) to see the resulting report.

**Record count: 77**

Chai

Chang

Aniseed Syrup

Chef Anton's Cajun Seasoning

Grandma's Boysenberry Spread

Uncle Bob's Organic Dried Pears

Northwoods Cranberry Sauce

Ikura

# Count the Number of Groups in a Report

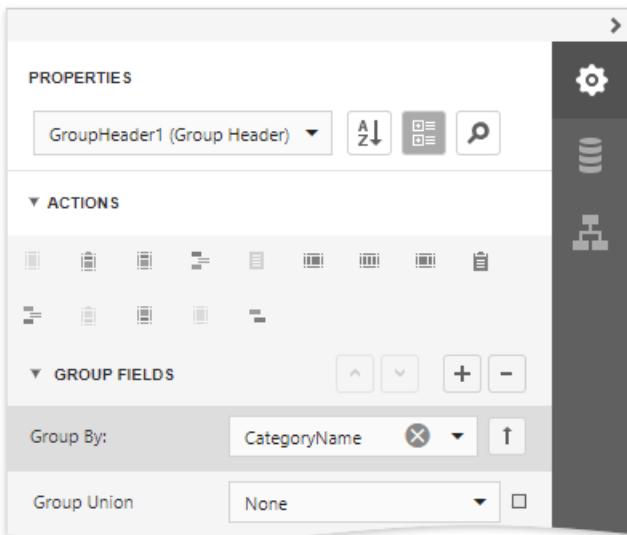
This document describes how to count the number of groups in a report.

## Warning

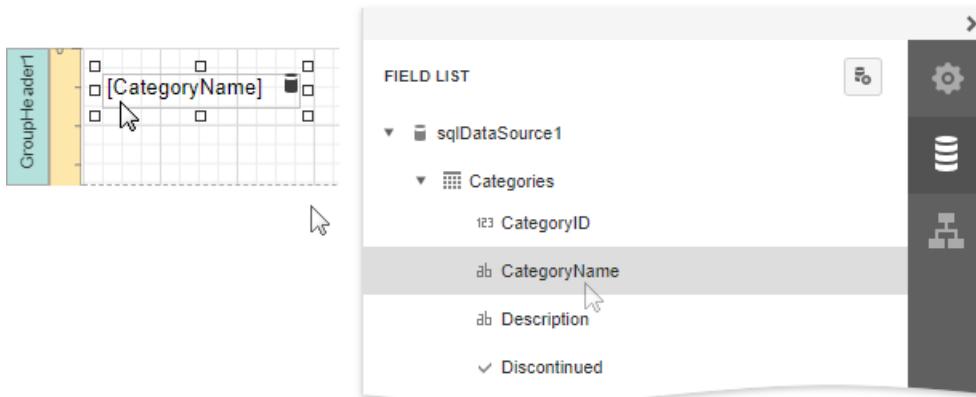
Use the approach below if expression bindings **are not enabled** in the Report Designer (the Designer does not provide the Expressions panel).

See [Count the Number of Groups in a Report](#) if expression bindings **are enabled** in the Report Designer (the Designer provides the Expressions panel).

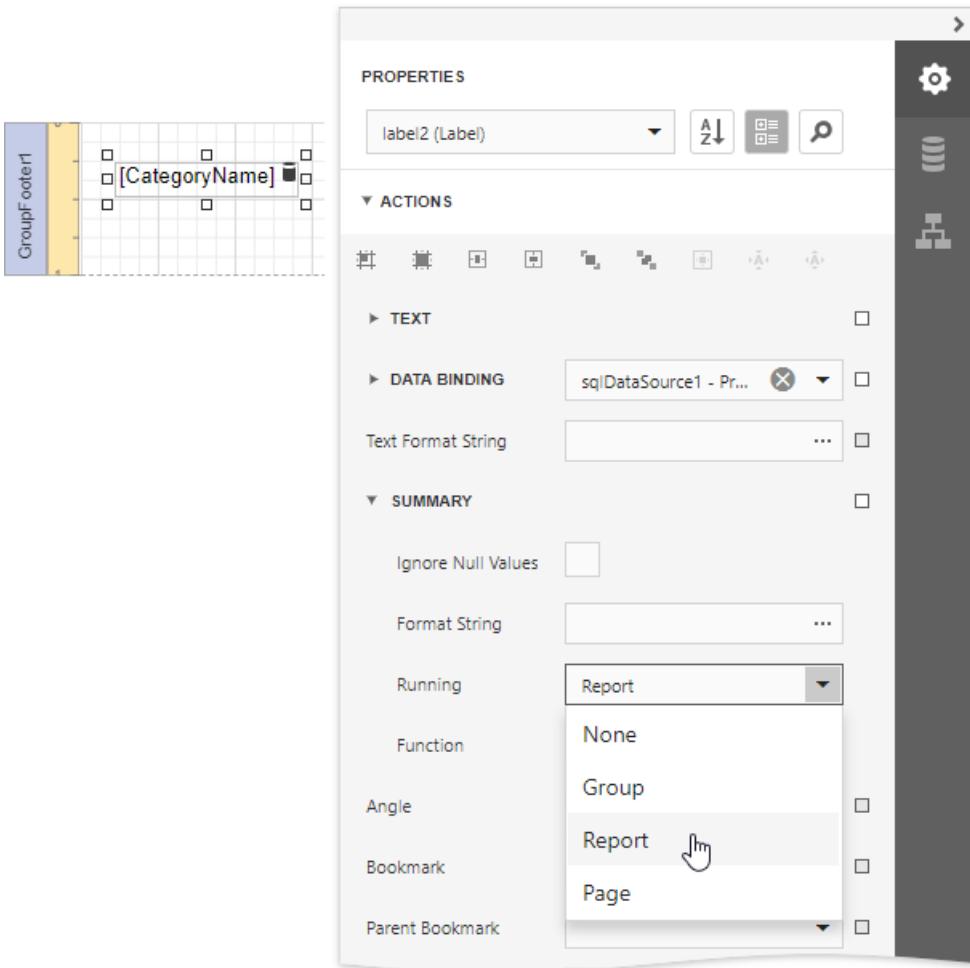
1. Insert the **Group Header** band, select the **Group Fields** section in the **Actions** category and add a new group field to group the report's data by the required field.



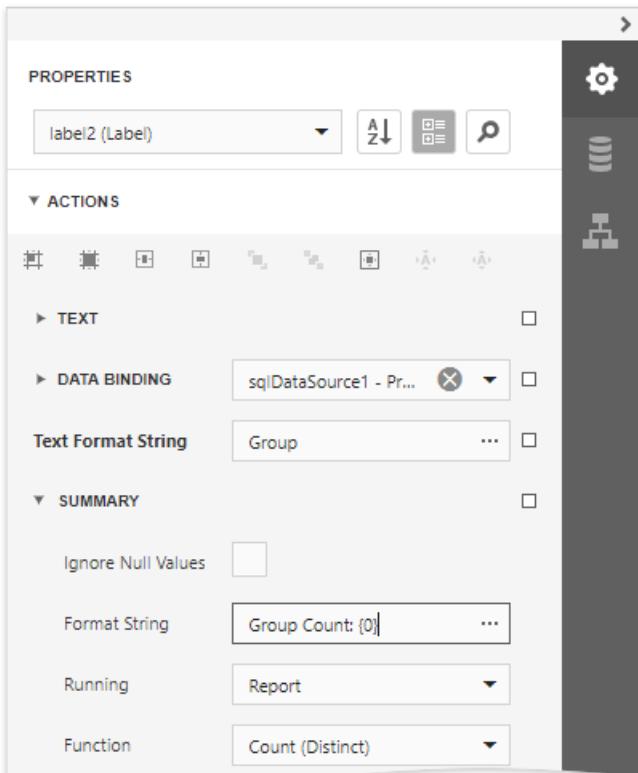
2. Switch to the **Field List** and drop the group field onto the created Group Header.



3. Drop a label onto the Report Footer, expand the **Summary** section in the **Actions** category and set the **Running** property to **Report**.



4. Set the **Function** property to **Count (Distinct)** and use the **Format String** property to format the summary's value.



You can see the group count in the report footer when switching to [Print Preview](#).

**Meat/Poultry**

Mishi Kobe Niku  
Alice Mutton  
Thüringer Rostbratwurst  
Perth Pasties  
Tourtière  
Pâté chinois

**Produce**

Uncle Bob's Organic Dried Pears  
Tofu  
Rössle Sauerkraut  
Manjimup Dried Apples  
Longlife Tofu

**Group Count: 2**

# Use Calculated Fields

The topics in this section describe how to add custom fields to a report's data source and use them to perform various calculations in the report:

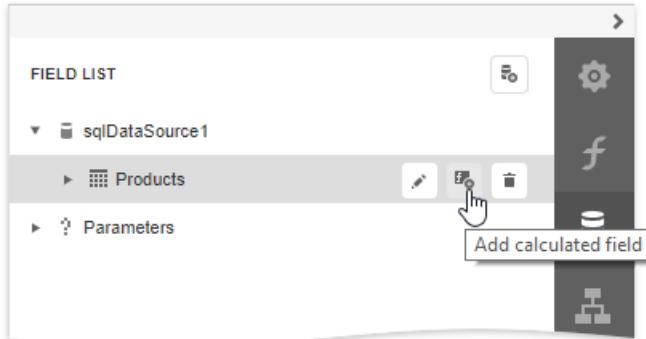
- [Calculated Fields Overview](#)
- [Calculate an Aggregate Function](#)
- [Calculate a Weighted Average Function](#)

# Calculated Fields Overview

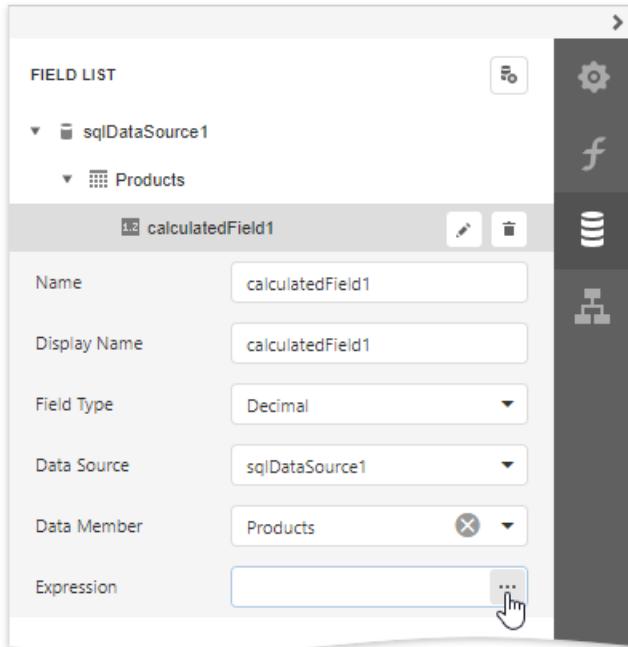
Calculated fields are primarily used in data-aware reports when using both [standard data binding](#) and [mail merge](#). Calculated fields allow you to pre-process a report's input data, based on a certain expression. So, using calculated fields allows you to apply complex expressions to one or more data fields that are obtained from your report's underlying data source. Moreover, you can both [group](#) and [sort](#) your report data based on a calculated field's value.

## Calculated Fields Overview

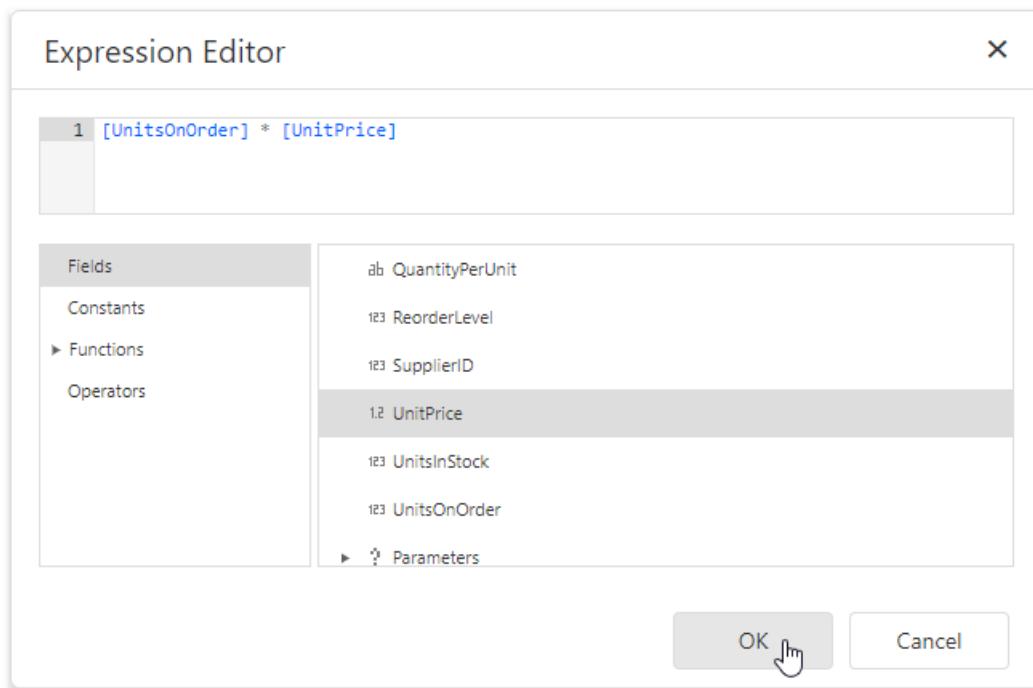
To create a calculated field, switch to the [Field List](#), select a data table and click **Add calculated field**.



Click the **Edit** button for the calculated field to display calculated field properties. Click the **Expression** property's ellipsis button.



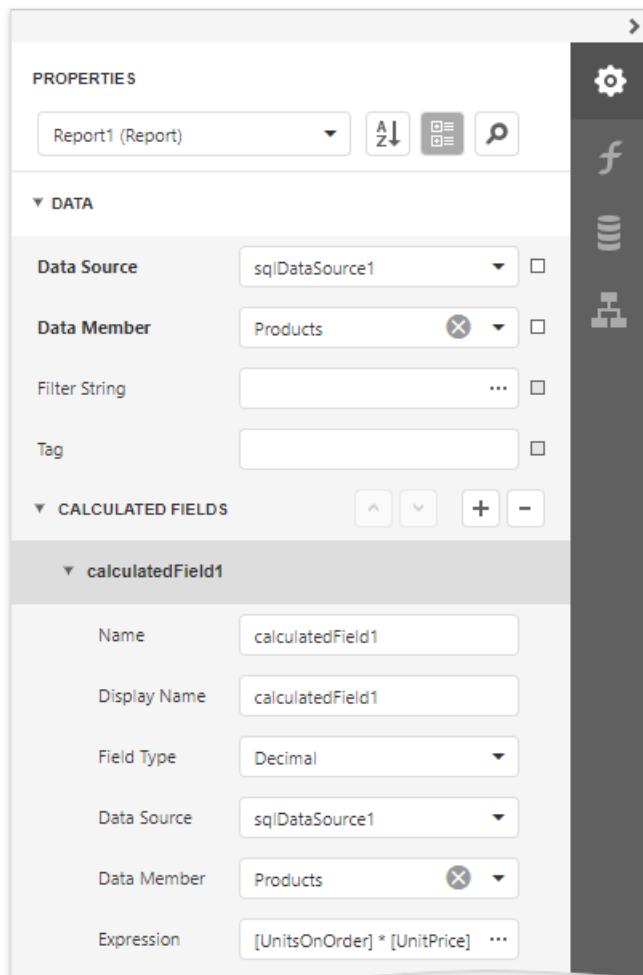
In the invoked [Expression Editor](#), construct the required expression. You can use data fields, [report parameters](#), predefined constants as well as various date-time, logical, math and string functions. See the next document section for more information about expression syntax.



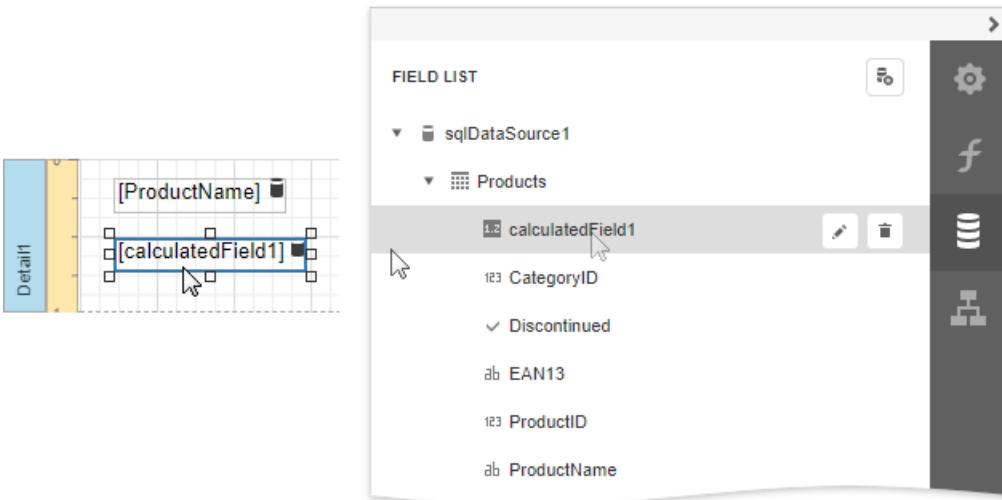
#### Note

The Expression Editor displays only those data fields that are obtained from a data source specified by the calculated field's **Data Source** and **Data Member** property values.

Switch to the [Properties Panel](#), select the **Data** category and expand the **Calculated Fields** section to display the calculated fields collection and manage its items.



You can drag the calculated field from the **Field List** onto the required band like an ordinary data field.



You can also group and sort your report data based on the calculated field values.

## Expression Syntax

A data field is inserted into the expression's text using its name in [square brackets], and parameters are inserted using the "?" prefix before their names.

A calculated field's expression can evaluate the values of other calculated fields if you make sure to avoid circular references.

### Note

When creating calculated fields, avoid dots in their names, because reports use them to address data source members.

Date-time constants must be wrapped in hashtags (#) (e.g., **[OrderDate]** >= #1/1/2009#). To represent a null reference (one that does not refer to any object), use a question mark (e.g., **[Region]** != ?). To denote strings, use apostrophes ('), otherwise an error will occur.

To embed an apostrophe into an expression's text, it should be preceded by another apostrophe (e.g., 'It's sample text').

The type of a value returned by a calculated field is defined by its **Field Type** property.

If a calculated field expression involves the use of different types, it is necessary to convert them to the same type (e.g., **Max(ToDecimal([Quantity]),[UnitPrice])**)

Although a value that is returned by a calculated field is usually converted to a string (to be displayed in a text-aware report control), it can return a value of any kind. For example, if a database field contains an image, you can set a calculated field's expression to "=...", after which this calculated field can be bound to the **Picture Box** control.

To construct a valid aggregate expression, use the following format, which consists of four parts.

**[<Collection>][<Condition>].<Aggregate>(<Expression>)**

- **<Collection>** - Specifies a collection against which an aggregated value should be calculated. It can be the relationship name in a case of a master-detail relationship, or the name of a collection property exposed by the target class. For example, **[CategoriesProducts][[CategoryId]>5].Count()**. Empty brackets [] indicate the root collection.
- **<Condition>** - Specifies a condition defining which records should participate in calculating an aggregate function. To obtain an aggregated value against all records, delete this logical clause along with square brackets (for example, **[],().Count()**).
- **<Aggregate>** - Specifies one of the available aggregate functions.
- **<Expression>** - Specifies an expression evaluating values to be used to perform calculation. For example, **[],[[CategoryID]>5].Sum([UnitPrice]\*[Quantity])**. The **Count** function does not require field values to count the records, so leave the round brackets empty for this function.

You can refer to the currently processed group using the Parent Relationship Traversal Operator (^). This allows you to calculate

aggregates within groups using expressions like the following: `[]/[^.CategoryID] == [CategoryID].Sum([UnitPrice])`.

For more information, see [Expression Syntax](#).

## Examples

The following tutorials demonstrate the use of calculated fields in various environments:

- [Calculate an Aggregate Function](#)
- [Calculate a Weighted Average Function](#)
- [Sort Data by a Custom Field](#)
- [Group Data by a Custom Field](#)

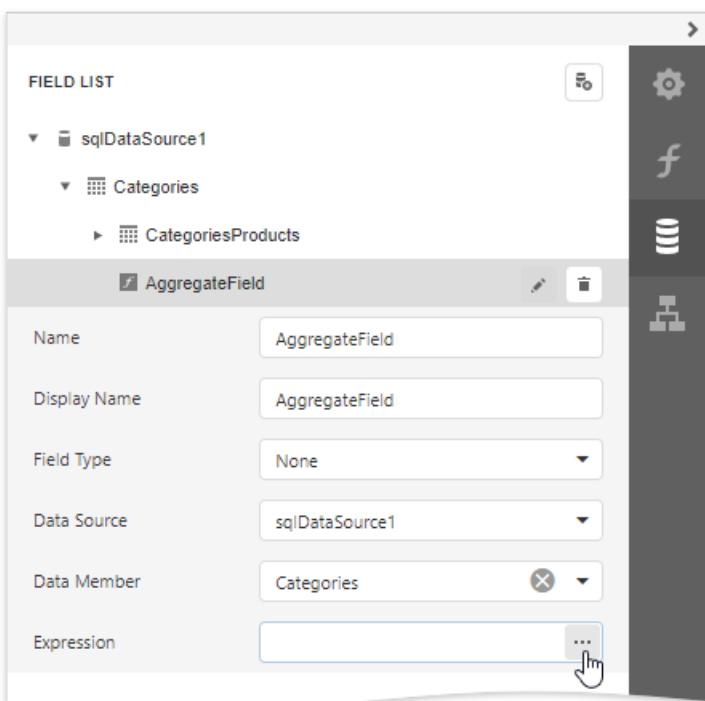
# Calculate an Aggregate Function

This tutorial describes the steps required to create a report with an *aggregate function*. In this example, products that are not discontinued and have a total unit value greater than \$500 will be displayed.

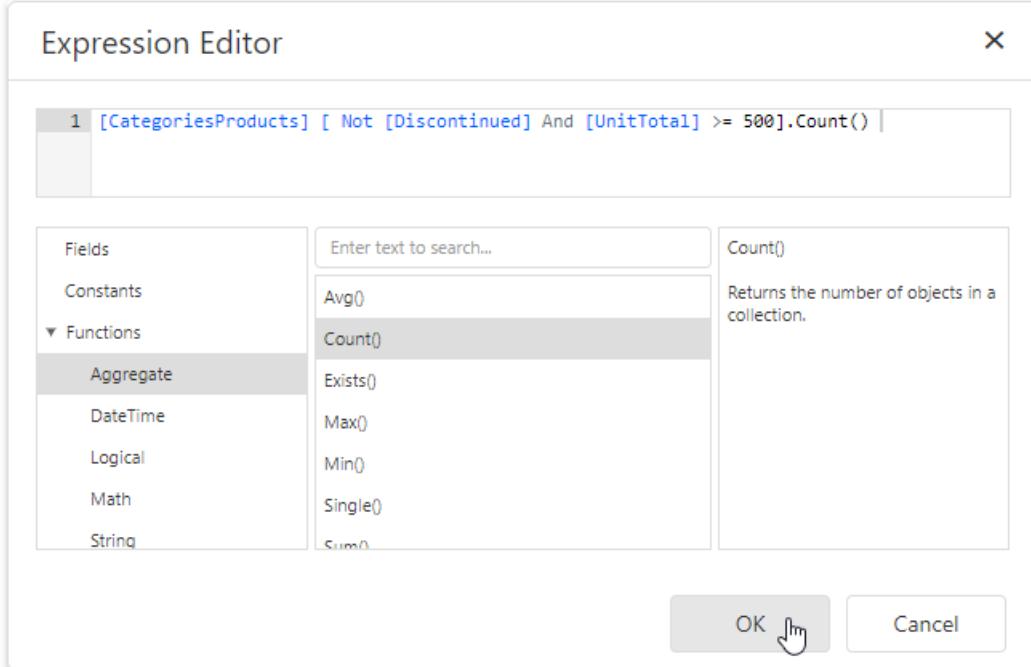
1. Create a new or open an existing data-bound report. This tutorial starts with the following report layout:

Product Name	Units In Stock	Unit Price	Total Unit Value	Discontinued
[ProductName]	[UnitsInStock]	[UnitPrice]	[UnitTotal]	[Discontinued]

2. Create a new **calculated field** and set the field name to "AggregateField".
3. Click the **Edit** button for the calculated field and click the **Expression** property's ellipsis button.



4. In the invoked **Expression Editor**, double click the **[CategoriesProducts]** field and choose **Functions | Aggregate**. Then, double click the **Count()** function and insert the following text into the empty square brackets:  
"Not[Discontinued]And[UnitTotal] >= 500".



To construct a valid aggregate expression, use the following format, which consists of four parts.

[<Collection>][<Condition>].<Aggregate>(<Expression>)

- <Collection> - Specifies a collection against which an aggregated value should be calculated. It can be the relationship name in a case of a master-detail relationship, or the name of a collection property exposed by the target class. For example, [CategoriesProducts][[CategoryID]>5].Count(). Empty brackets [] indicate the root collection.
- <Condition> - Specifies a condition defining which records should participate in calculating an aggregate function. To obtain an aggregated value against all records, delete this logical clause along with square brackets (for example, []).Count()).
- <Aggregate> - Specifies one of the available aggregate functions.
- <Expression> - Specifies an expression evaluating values to be used to perform calculation. For example, [] [[CategoryID] > 5].Sum([UnitPrice]\*[Quantity]). The **Count** function does not require field values to count the records, so leave the round brackets empty for this function.

You can refer to the currently processed group using the Parent Relationship Traversal Operator ('^'). This allows you to calculate aggregates within groups using expressions like the following: [][[^.CategoryID] == [CategoryID]].Sum([UnitPrice]).

For more information, see [Expression Syntax](#).

5. Click **OK** to close the dialog and save the expression.

6. Add three **Labels** to the **Detail Band** and customize their content as shown in the following image:

The report is now ready. Switch to [Print Preview](#) to see the result.

## Beverages

### Aggregated value\* for this category: 8

\* The number of entries in this category that are not discontinued and have a total unit value greater than \$500 (in the following report, these entries are highlighted in red).

Product Name	Units in Stock	Unit Price	Total Unit Value	Discontinued
Chai	39	\$18.00	\$702.00	False
Chang	17	\$19.00	\$323.00	False
Guaraná Fantástica	20	\$4.50	\$90.00	True
Sasquatch Ale	111	\$14.00	\$1554.00	False
Steeleye Stout	20	\$18.00	\$360.00	False
Côte de Blaye	17	\$263.50	\$4479.50	False
Chartreuse verte	69	\$18.00	\$1242.00	False
Ipoh Coffee	17	\$46.00	\$782.00	False
Laughing Lumberjack Lager	52	\$14.00	\$728.00	False
Outback Lager	15	\$15.00	\$225.00	False
Rhönbräu Klosterbier	125	\$7.75	\$968.75	False
Lakkalikööri	57	\$18.00	\$1026.00	False

# Calculate a Weighted Average Function

This tutorial demonstrates how to calculate a weighted average function in a report, for instance, calculate a weighted average price for the units in stock within each product category:  $\text{Sum}(\text{Unit Price} * \text{Units In Stock}) / \text{Sum}(\text{Units In Stock})$ .

<b>Beverages</b>			
Product	Unit Price	Units In Stock	Extended Price
Chai	\$18.00	39	\$702.00
Chang	\$19.00	17	\$323.00
Guaraná Fantástica	\$4.50	20	\$90.00
Sasquatch Ale	\$14.00	111	\$1,554.00
Steeleye Stout	\$18.00	20	\$360.00
Côte de Blaye	\$263.50	17	\$4,479.50
Chartreuse verte	\$18.00	69	\$1,242.00
Ipoh Coffee	\$46.00	17	\$782.00
Laughing Lumberjack Lager	\$14.00	52	\$728.00
Outback Lager	\$15.00	15	\$225.00
Rhönbräu Klosterbier	\$7.75	125	\$968.75
Lakkaliköön	\$18.00	57	\$1,026.00

**Weighted Average Price: \$22.33**

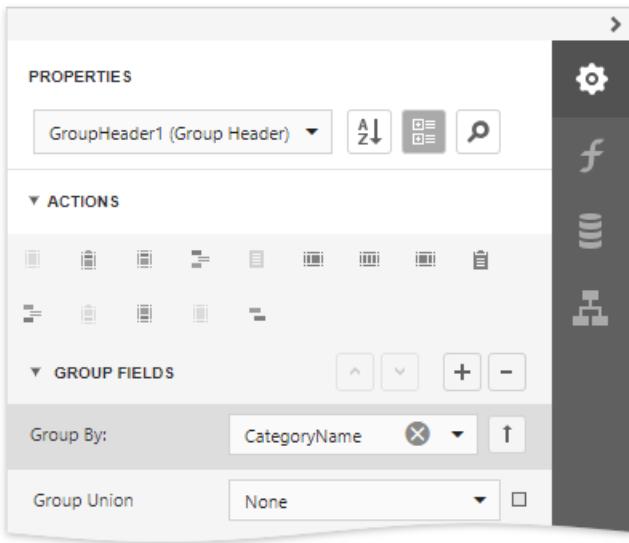
## Use Report Summary Functions (Recommended)

You can calculate a weighted average by specifying a control's expression using several built-in report summary functions.

### Note

You can use this approach if expression bindings **are enabled** in the Report Designer (the Designer provides the [Expressions](#) panel).

1. [Open an existing report](#) or [create a new one from scratch](#).
2. [Bind a report](#) to a required data source.
3. Insert the [Group Header](#) band, select the **Group Fields** section in the **Actions** category and add a new group field to [group the report's data](#) by the required data field.

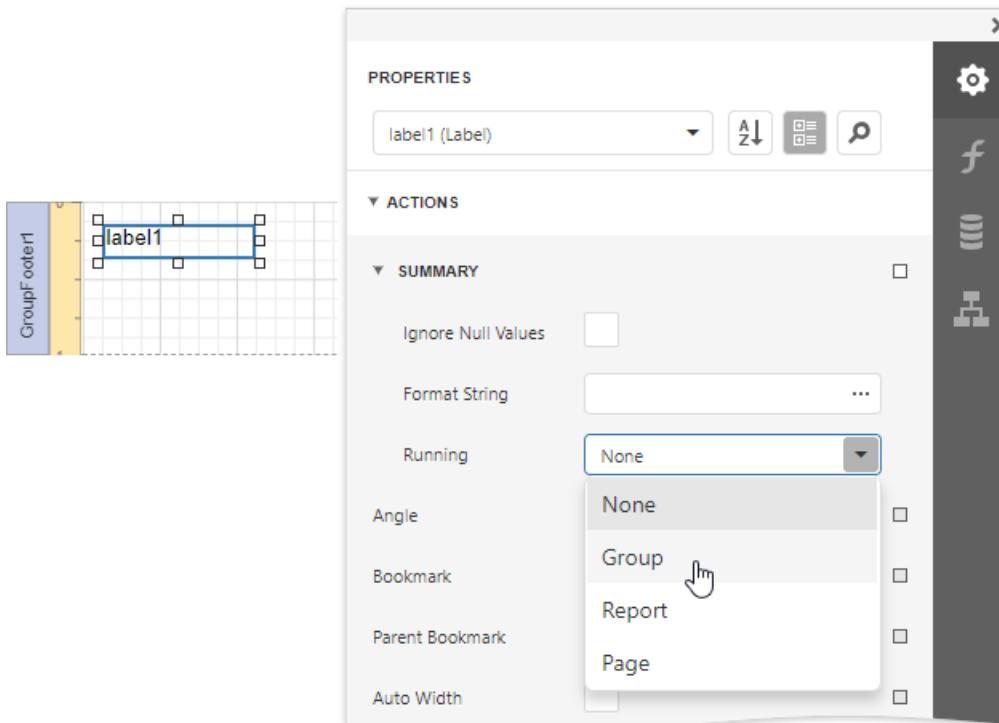


4. Construct a layout like the following:

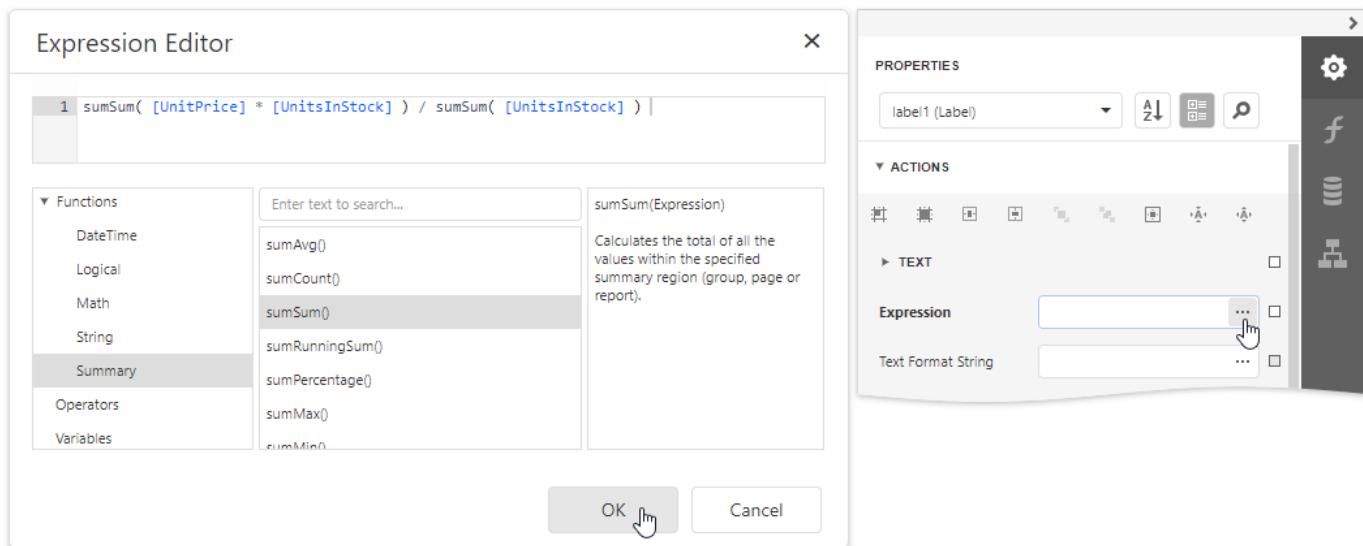
The diagram illustrates a report layout. It features a 'GroupHeader1' band at the top containing a label '[CategoryName]'. Below it is a 'Detail1' band containing a table with four columns: 'Product Name', 'Unit Price', 'Units In Stock', and 'Extended Price'. Each column contains a placeholder expression like '[ProductName]' or '[UnitPrice]'. The 'Detail1' band has a blue header bar labeled 'Detail1'.

5. Add the **Group Footer** band to the report and drop a **Label** control on this band to display the summary result.

Expand the **Summary** section in the **Actions** category and set the **Running** property to **Group**.



6. Click the **Expression** property's ellipsis button. This invokes the **Expression Editor** where you can specify a custom expression with multiple built-in functions from the **Functions | Summary** section. Report summary functions start with the "sum" prefix to help differentiate them from aggregate functions.

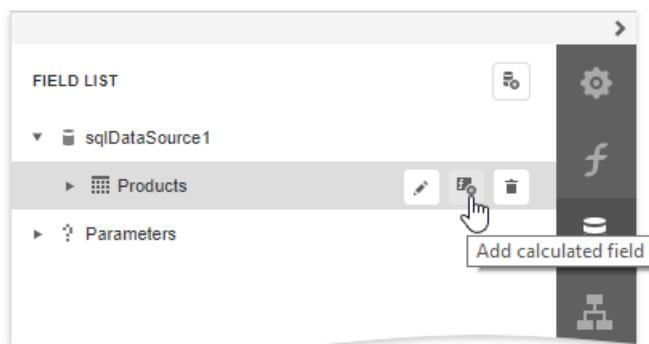


7. You can also use the control's **Format String** property to format the summary's value. For instance, set this property to **Weighted Average Price: {0:c2}**.

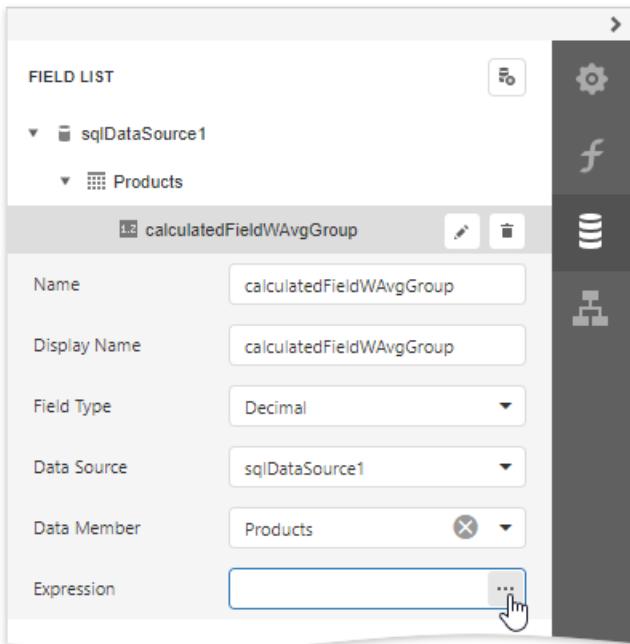
## Use Aggregate Functions

You can create a [calculated field](#) and use a standard aggregate function in its expression to evaluate a weighted average.

1. Open an existing report or [create a new one from scratch](#).
2. [Bind a report](#) to a required data source and construct the required report layout.
3. Switch to the [Field List](#), select a data table and click **Add calculated field**.

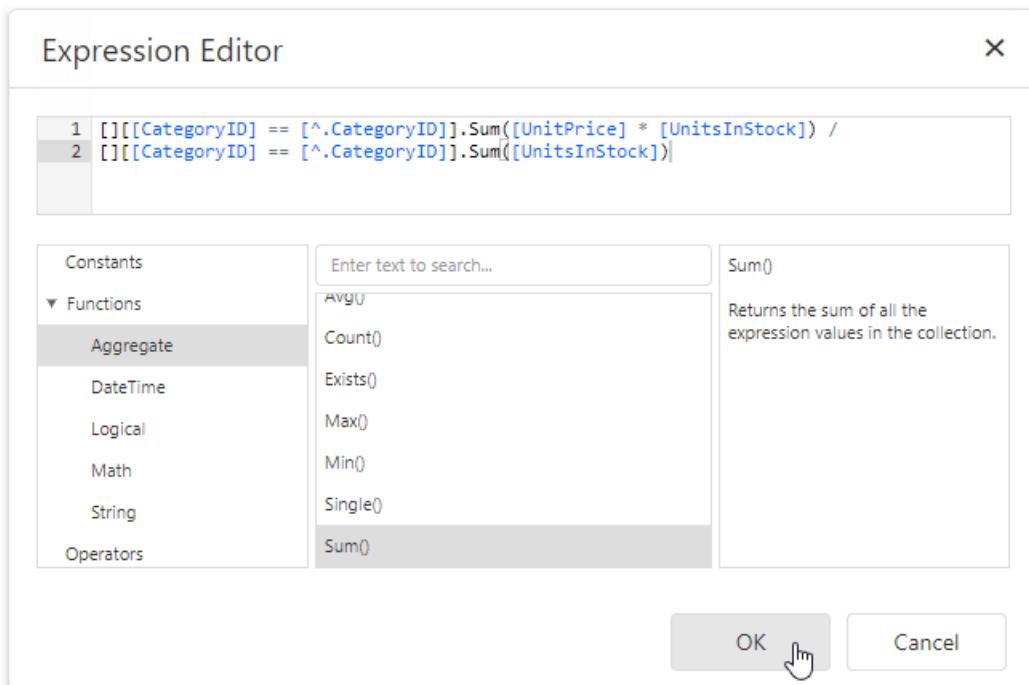


4. Click the **Edit** button for the calculated field to display calculated field properties. Specify the **Name** property, set the **Field Type** to **Decimal** and click the **Expression** property's ellipsis button.



5. In the invoked [Expression Editor](#), specify the expression using the **Sum** aggregate function. For example:

```
[[[CategoryID] == [^.CategoryID]].Sum([UnitPrice] * [UnitsInStock]) / [[CategoryID] ==  
[^.CategoryID]].Sum([UnitsInStock])
```



To construct a valid aggregate expression, use the following format, which consists of four parts.

`[<Collection>][<Condition>].<Aggregate>(<Expression>)`

- o `<Collection>` - Specifies a collection against which an aggregated value should be calculated. It can be the relationship name in a case of a master-detail relationship, or the name of a collection property exposed by the target class. For example, `[CategoriesProducts][[CategoryId]>5].Count()`. Empty brackets [] indicate the root collection.
- o `<Condition>` - Specifies a condition defining which records should participate in calculating an aggregate function. To obtain an aggregated value against all records, delete this logical clause along with square brackets (for example, `[]`.`Count()`).
- o `<Aggregate>` - Specifies one of the available aggregate functions.
- o `<Expression>` - Specifies an expression evaluating values to be used to perform calculation. For example, `[]`

$[[CategoryID] > 5].Sum([UnitPrice]*[Quantity])$ . The **Count** function does not require field values to count the records, so leave the round brackets empty for this function.

You can refer to the currently processed group using the Parent Relationship Traversal Operator ('^'). This allows you to calculate aggregates within groups using expressions like the following:  $[[^.CategoryID] == [CategoryID]].Sum([UnitPrice])$ .

For more information, see [Expression Syntax](#).

6. Add the created calculated field to the report as an ordinary data field and format its value.

# Use Report Parameters

The topics in this section describe how to use parameters in your report:

- [Parameters Overview](#)

Provides general information about using report parameters.

- [Create Multi-Value and Cascading Report Parameters](#)

Describes how to enable report parameters to accept multiple values at once, and filter the values of one parameter based on another parameter's value.

- [Request and Pass Report Parameter Values](#)

Lists the standard editors available for submitting report parameter values in a Print Preview.

- [Use Query Parameters](#)

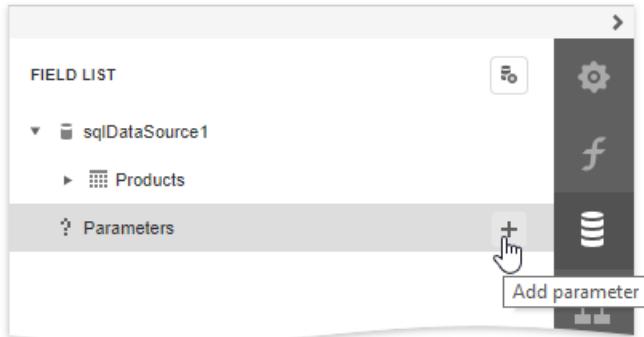
Explains how to link report parameters with query parameters defined in your report's data source.

# Parameters Overview

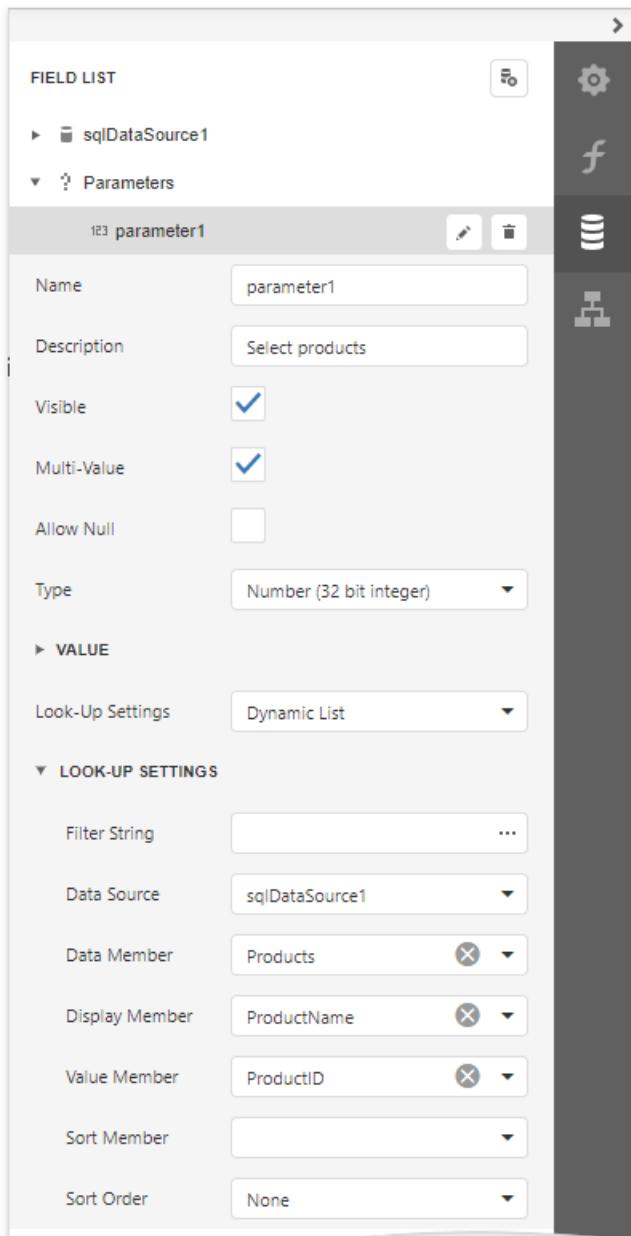
You can use report parameters to pass data to a report before it has been published. Parameter values are specified in the **Preview Parameters** panel.

## Create Parameters

To create a report parameter, switch to the **Field List**, select the **Parameters** node and click **Add parameter**.



Click the **Edit** button to specify parameter properties.



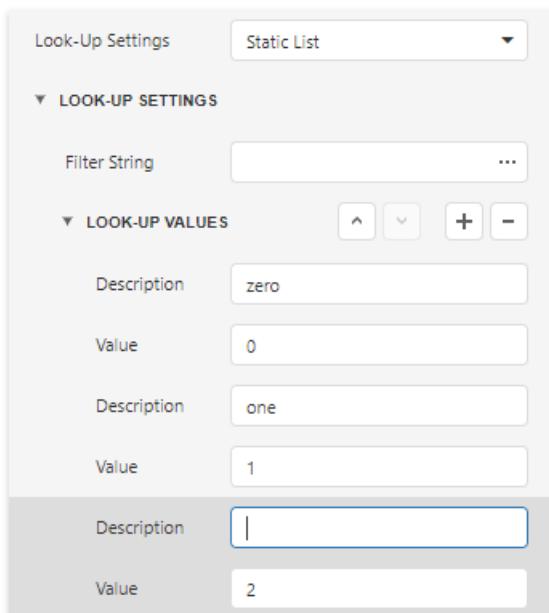
The parameter provides the following options:

- **Name** - specifies the unique name by which the parameter can be referred to.
- **Description** - specifies the text that will be displayed in a Print Preview along with the corresponding value editor.
- **Visible** - enable this option to request the parameter value in a Print Preview. Otherwise, the default parameter value is silently passed to the report.
- **Multi-Value** - when this option is enabled, a parameter can be assigned a [collection of values](#).
- **Allow Null** - specifies whether the parameter's value can be unspecified.
- **Type** - specifies the parameter's value type, according to which an appropriate value editor is displayed in a Print Preview.
- **Value** - specifies the default parameter value.
- **Look-Up Settings** - specifies whether to choose the parameter's value from a predefined list. You can either manually populate this list with possible values, or specify a data source from where these values should be obtained.
  - **No Look-Up**

There is no a predefined list of a parameter's values.

- **Static List**

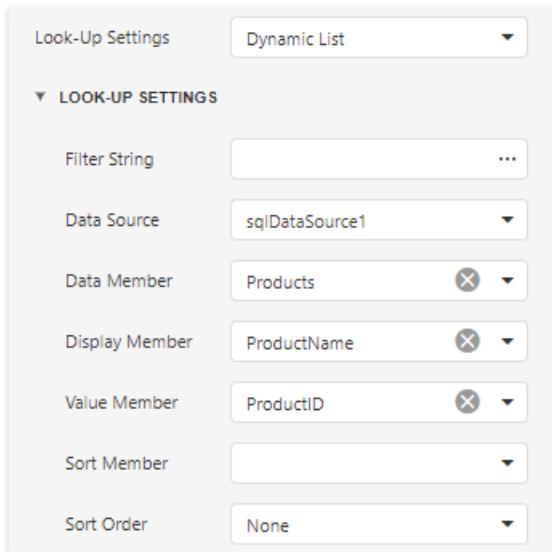
A parameter obtains a list of values from a static list of possible values. Each value should have a description that is displayed in Print Preview.



You can filter the list of values by specifying the **Filter String** property. Using this property, you can implement [cascading parameters](#).

- **Dynamic List**

A parameter obtains a list of values from a specified data source. Look-Up settings contain a data source, and data member storing parameter values. The value member defines a data field that will provide values to the parameter. The display member defines a data field storing values displayed in Print Preview.



The value type of the specified data member should match the specified parameter type.

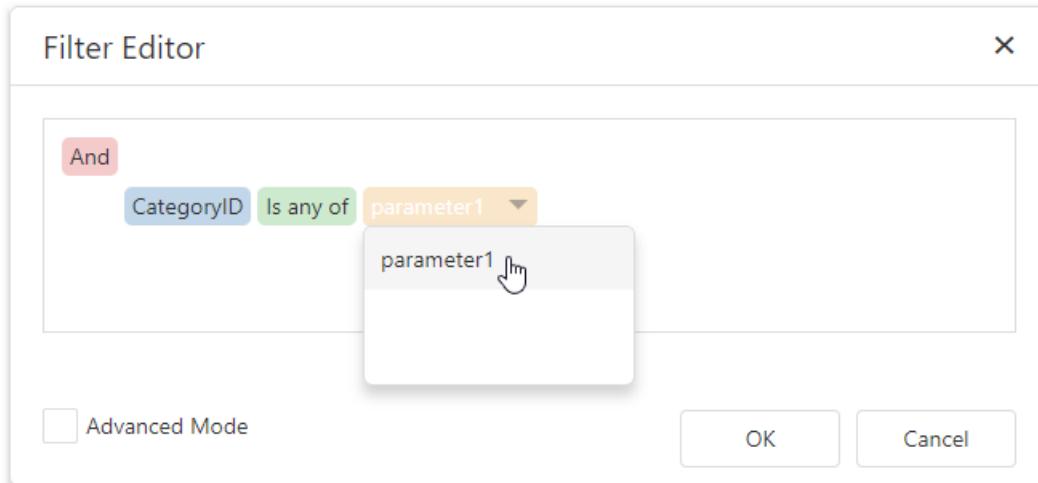
Specify the **Sort Order** and **Sort Member** properties to sort the list of values.

## Use Parameters

You can use report parameters to solve the following tasks:

- **Filter Data**

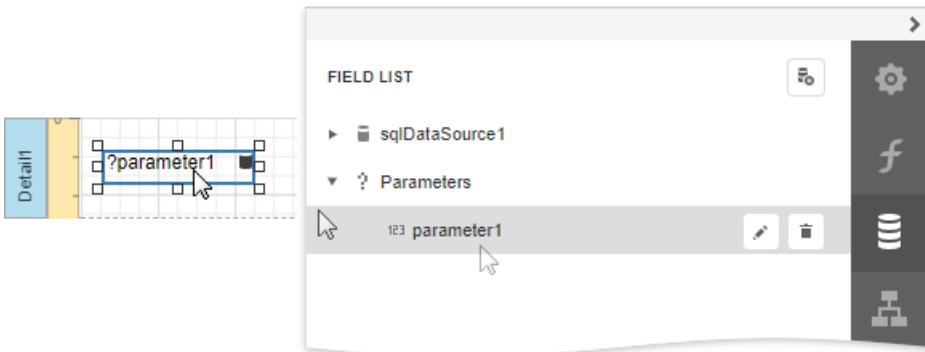
When [filtering report data](#), parameters can be used for providing values to a report's **Filter String** property.



When [filtering data at the level of a data source](#), you can link report parameter to [query parameters](#) that are used in the SELECT statement of a SQL string.

- **Bind to Data**

You can bind a report control to a parameter and display its value in the report. To create a new label bound to a parameter, drag the parameter from the [Field List](#) and drop it onto the required band.



When using [mail merge](#), you can refer to a parameter by adding the **?** prefix before its name.

## • Specify Expressions

Parameters can be used as part of [expressions](#). To refer to a report parameter, use the **?** prefix before its name.

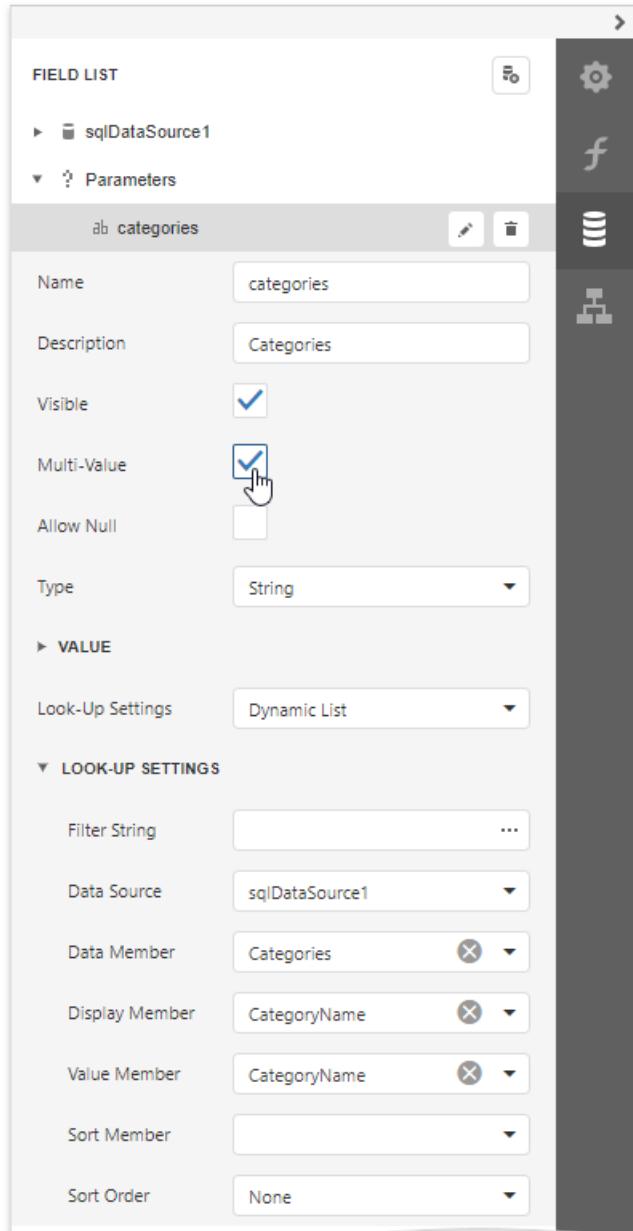
This screenshot shows two panels side-by-side. On the left is the 'Expression Editor' window. It has a code editor containing the expression `1 [UnitPrice] * (1 - ?discount )`. Below the editor is a navigation pane with sections like 'Report Items', 'Fields' (which is selected), 'Constants', 'Functions', 'Operators', and 'Variables'. Under 'Fields', 'Parameters' is expanded, showing 'discount'. At the bottom are 'OK' and 'Cancel' buttons. On the right is the 'Properties' panel for a 'label1 (Label)' control. It shows the 'Caption' field set to '(label1 (Label))'. Under the 'Actions' section, there's a 'TEXT' group with a dropdown menu open, and an 'Expression' input field containing the same expression as the editor. There are also 'Text Format String' and other property settings. Both panels have a dark sidebar on the right with various icons.

# Create Multi-Value and Cascading Parameters

This document describes the implementation of multi-value and cascading parameters. Multi-value parameters can accept more than a single value, and cascading parameters display values corresponding to current values of other parameters.

## Multi-Value Parameters

To assign a collection of values to a parameter, enable its **Multi-Value** property.



Multi-value parameters are useful when you need to [filter report data](#) against a list of values. The following image illustrates a correct filtering expression that incorporates a multi-value parameter. This expression is assigned to the report's **Filter String** property.



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

The Print Preview interface displays a list of products grouped by category. The columns are 'Category Name' and 'Product Name'. The data includes:

Category Name	Product Name
Beverages	Chai
Beverages	Chang
Produce	Uncle Bob's Organic Dried Pears
Produce	Tofu
Beverages	Guaraná Fantástica
Produce	Rössle Sauerkraut
Beverages	Sasquatch Ale
Beverages	Steeleye Stout
Beverages	Côte de Blaye
Beverages	Chartreuse verte
Beverages	Ipoh Coffee
Produce	Manjimup Dried Apples

On the right, a 'PREVIEW PARAMETERS' sidebar shows a 'Categories' section with two selected items: 'Beverages' and 'Produce'. A list of categories is shown with checkboxes, where 'Beverages' and 'Produce' are checked. A hand cursor is over the 'Produce' checkbox.

## Cascading Parameters

The list of values available for a parameter in a Print Preview can be filtered based on the current value of another parameter.

To filter the list of parameter values, click the ellipsis button for the parameter's **Filter String** property and specify a filter string that refers to another parameter.

The screenshot shows the Filter Editor and the Properties panel side-by-side.

**Filter Editor:**

- Shows a single filter condition: **CategoryName** Is any of **categories**.
- Buttons: Advanced Mode, OK, Cancel.

**Properties Panel (FIELD LIST):**

- sqlDataSource1
- Parameters:
  - products

**parameters properties:**

- Name: products
- Description: Products
- Visible: checked
- Multi-Value: checked
- Allow Null: unchecked
- Type: String

**LOOK-UP SETTINGS:**

- Filter String: (ellipsis button)
- Data Source: sqlDataSource1
- Data Member: Categories.CategoriesProducts
- Display Member: ProductName
- Value Member: ProductName
- Sort Member: (empty)
- Sort Order: None

Switch to the **Properties** panel and click the ellipsis button for the report's **Filter String** property in the **ACTIONS** category. In the invoked **Filter Editor**, construct an expression that uses both parameters:

The screenshot shows the Filter Editor and the Properties panel side-by-side.

**Filter Editor:**

- Shows two filter conditions: **CategoryName** Is any of **categories** and **ProductName** Is any of **products**.
- Buttons: Advanced Mode, OK, Cancel.

**Properties Panel (ACTIONS):**

- Report1 (Report)
- Data Source: sqlDataSource1
- Data Member: Categories.CategoriesProducts
- Filter String: (ellipsis button)
- Measure Units: Hundredths of an Inch

The following image illustrates cascading parameters.

Category Name	Product Name
Beverages	Chai
Beverages	Chang
Produce	Tofu
Beverages	Guaraná Fantástica

## PREVIEW PARAMETERS

Categories

 Beverages  Produce

Products

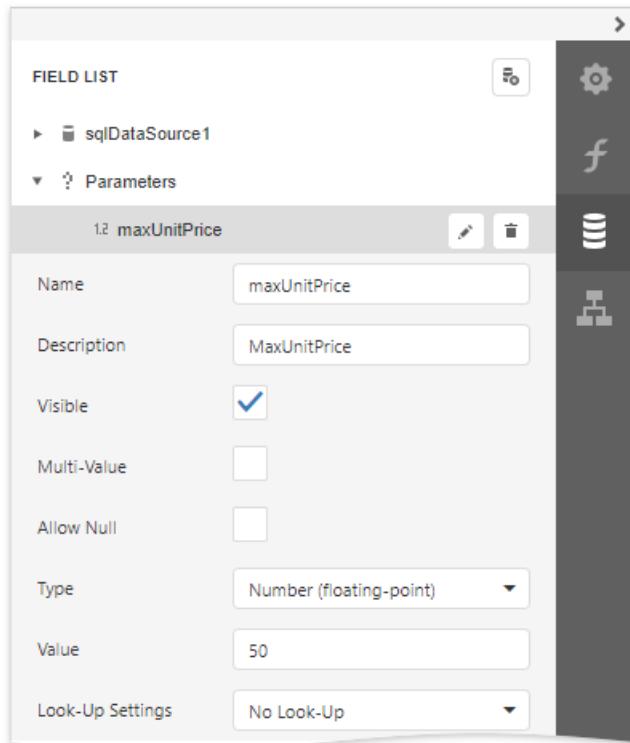
 Guaraná Fantástica  Tofu Select All Chai Chang Guaraná Fantástica Sasquatch Ale Tofu Rössle Sauerkraut

# Request and Pass Report Parameter Values

This document illustrates how to assign the default and custom values to a report's parameters and describes the editors that are used to request these values in a Print Preview.

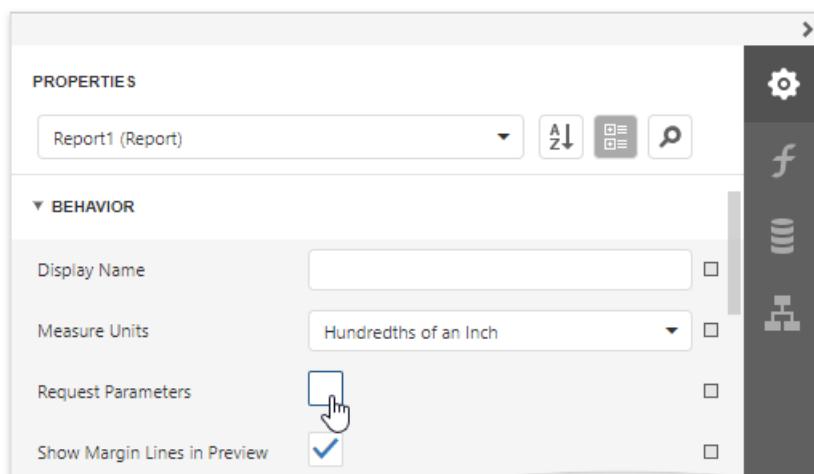
## Requesting Parameter Values in Print Preview

The parameter's **Value** property specifies the parameter's actual value. This value should correspond to the parameter's value type the **Type** property defines.



A parameter's value is not requested from end-users and is automatically passed to the report when the parameter's **Visible** property is set to **false**. When a report has at least one visible parameter, Print Preview provides the **Parameters** panel for submitting parameter values.

When loading Print Preview, a report document is not created by default unless values for all visible parameters are submitted. To create report documents without requesting parameter values (and using their default values instead), disable the report's **Request Parameters** property.

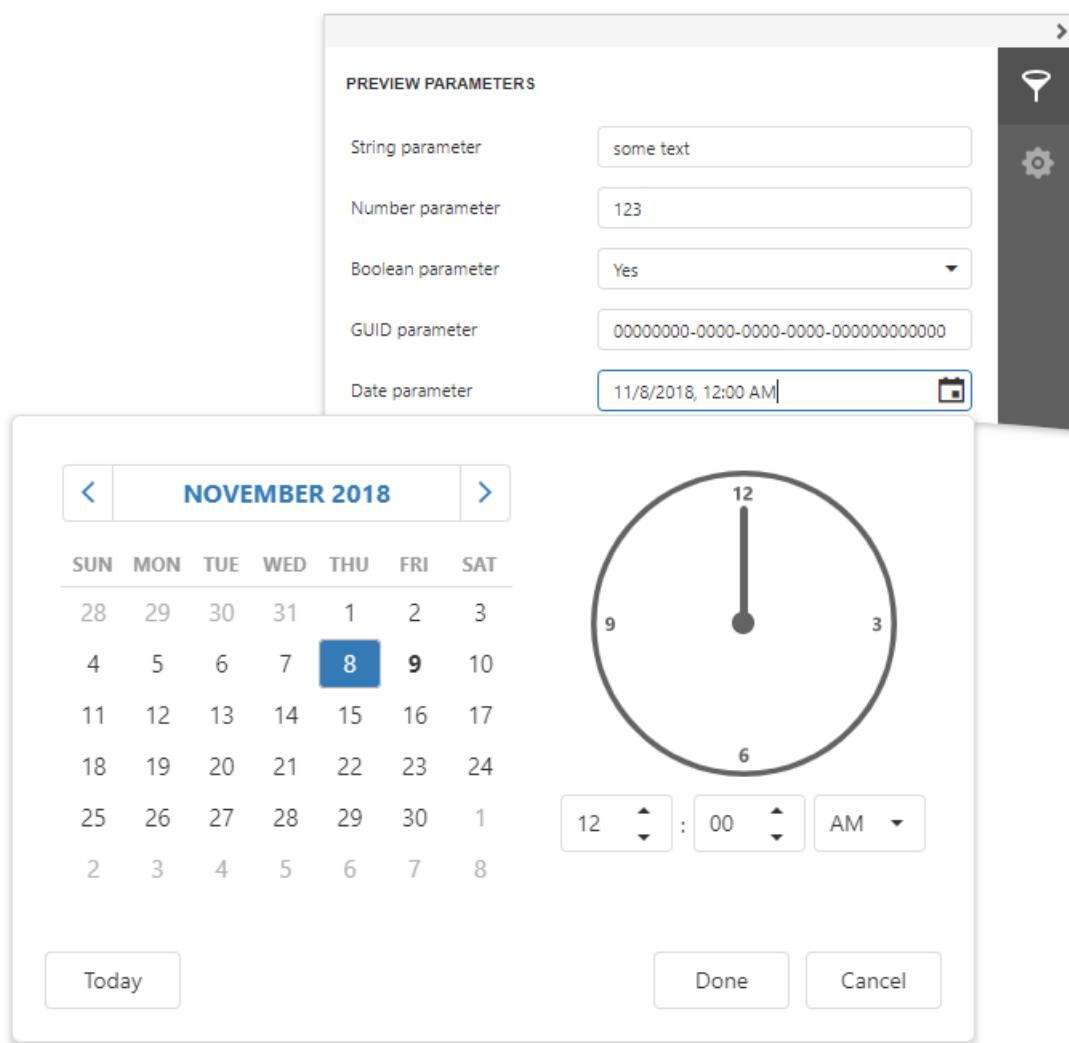


## Standard Parameter Editors

The parameter's **Type** property determines which values a parameter can accept. The corresponding value editors are created automatically for the following standard parameter types:

- String
- Date
- Number
  - 16-bit integer
  - 32-bit integer
  - 64-bit integer
  - floating point
  - double-precision floating point
  - decimal
- Boolean
- GUID (Globally Unique Identifier)

The following image illustrates the standard editors for parameter values:



## Look-Up Parameter Editors

You can list a parameter's values in a lookup editor:

- **Assign a Static List of Values to a Parameter**

A parameter can be provided with a predefined set of static values, without creating a separate data source. Each value is accompanied by a description that appears in the Print Preview's user interface.

Look-Up Settings      Static List

▼ LOOK-UP SETTINGS

Filter String      ...

▼ LOOK-UP VALUES      + -

Description	zero
Value	0
Description	one
Value	1
Description	
Value	2

- **Assign a Dynamic List of Values to a Parameter**

A parameter can obtain a list of values from a specified data source.

Look-Up Settings      Dynamic List

▼ LOOK-UP SETTINGS

Filter String      ...

Data Source      sqlDataSource1

Data Member      Products

Display Member      ProductName

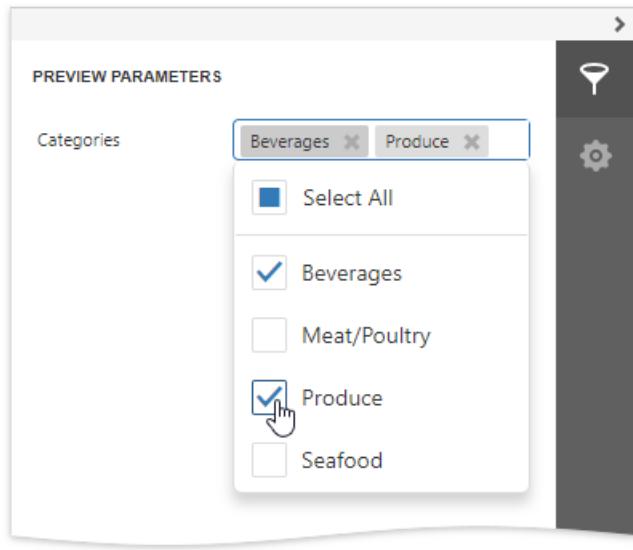
Value Member      ProductID

Sort Member

Sort Order      None

## Assign Multiple Values to a Parameter

A parameter can also be allowed to accept multiple values by enabling its **Multi-Value** property.



When creating cascading parameters, the list of values available for one parameter is filtered based on another parameter's current value. See [Create Multi-Value and Cascading Report Parameters](#) for more information.

# Use Query Parameters

This document provides general information on query parameters and describes common ways of utilizing parametrized SQL queries to filter data at the data source level.

## Query Parameters Overview

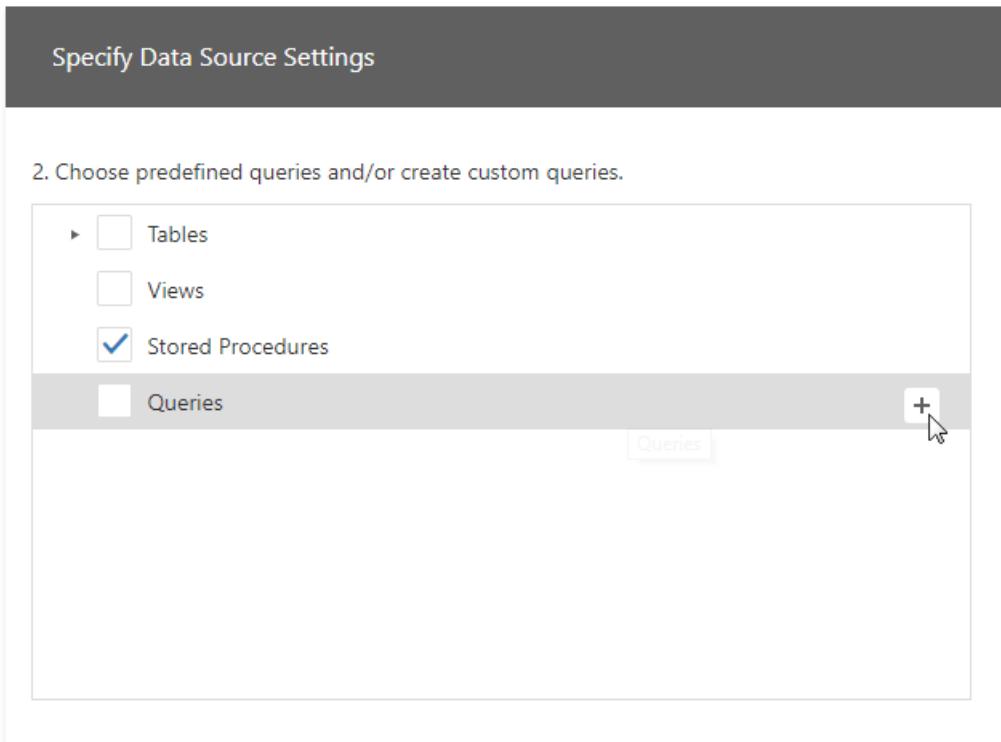
A query parameter holds an external value that is inserted into an SQL statement before query execution. This value can be either static or dynamically generated by an associated expression.

The query parameter value is inserted into the resulting SQL query string in the "@QueryParameterName" placeholder's position.

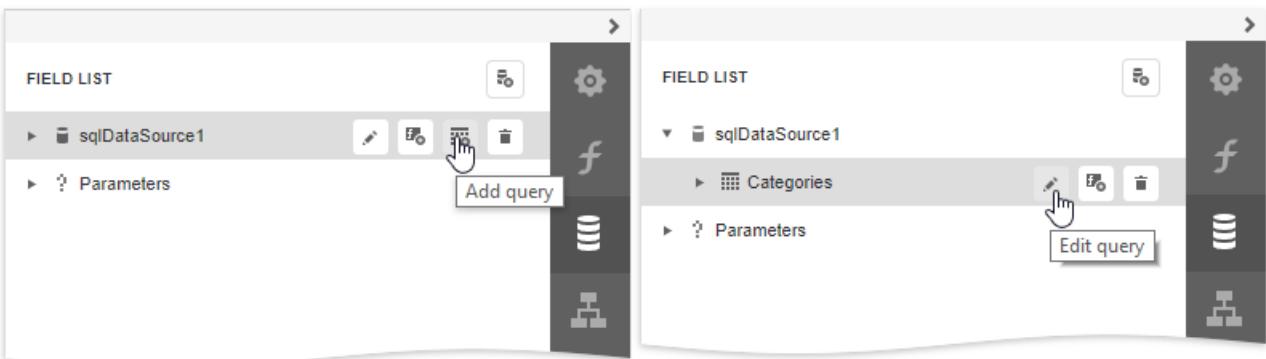
Query parameters are used in the following scenarios:

- When filtering report data at the data source level using the [Query Builder](#).

The Query Builder helps you construct SQL queries when creating a new data-bound report or [binding an existing report to an SQL data source](#),



... or when adding queries to an existing SQL data source or editing existing queries.



You can filter the constructed queries using query parameters. Expand the **Parameters** section in the **Query Builder** to add a new query parameter.

## Query Builder

X



PRODUCTS
<input checked="" type="checkbox"/> * (All Columns)
<input type="checkbox"/> ProductID
<input type="checkbox"/> ProductName
<input type="checkbox"/> SupplierID
<input type="checkbox"/> CategoryID
<input type="checkbox"/> QuantityPerUnit
<input type="checkbox"/> UnitPrice
<input type="checkbox"/> UnitsInStock
<input type="checkbox"/> UnitsOnOrder
<input type="checkbox"/> ReorderLevel
<input type="checkbox"/> Discontinued
<input type="checkbox"/> EAN13

► QUERY PROPERTIES

► TABLE PROPERTIES

► AVAILABLE TABLES AND VIEWS

▼ PARAMETERS



▼ parameter1

Name parameter1

Type Number (decimal)

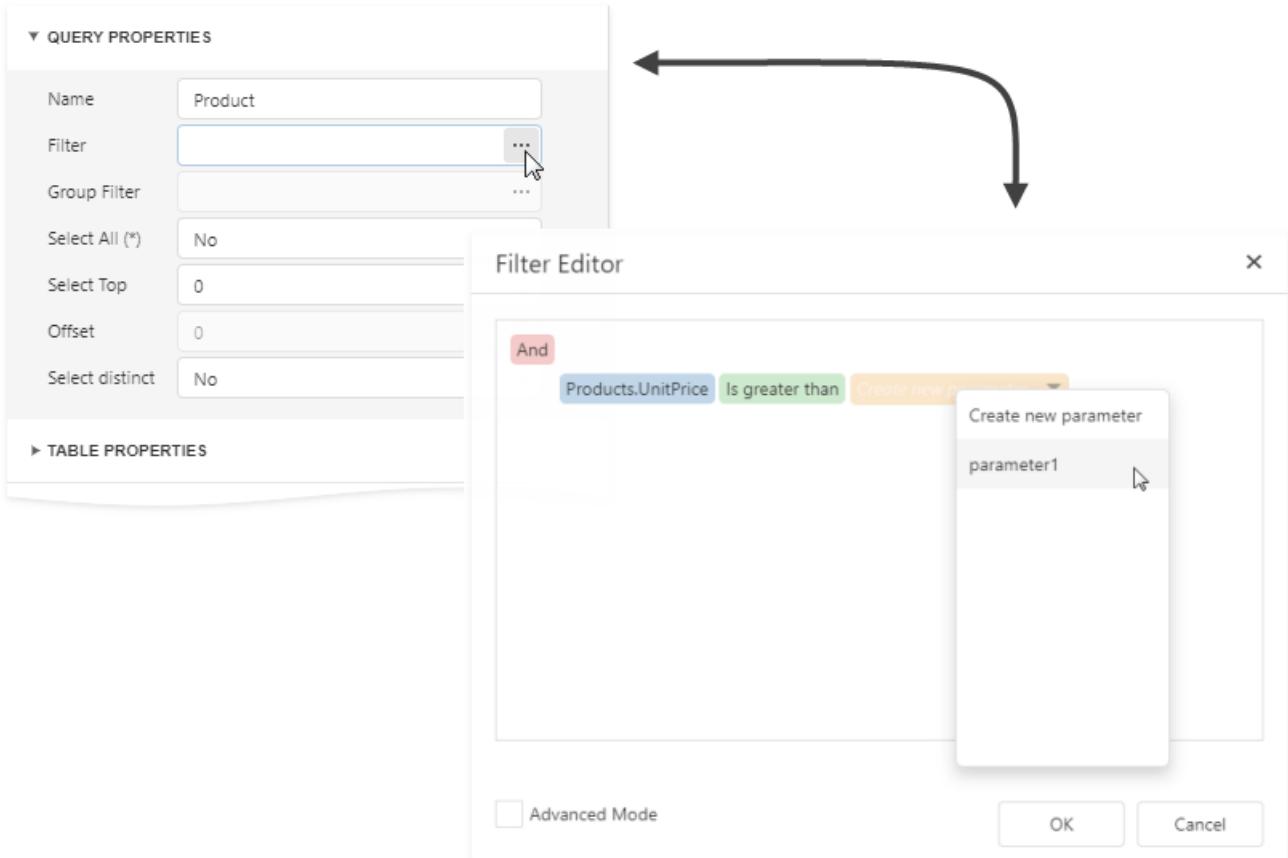
Value 0

Preview Results...

OK

Cancel

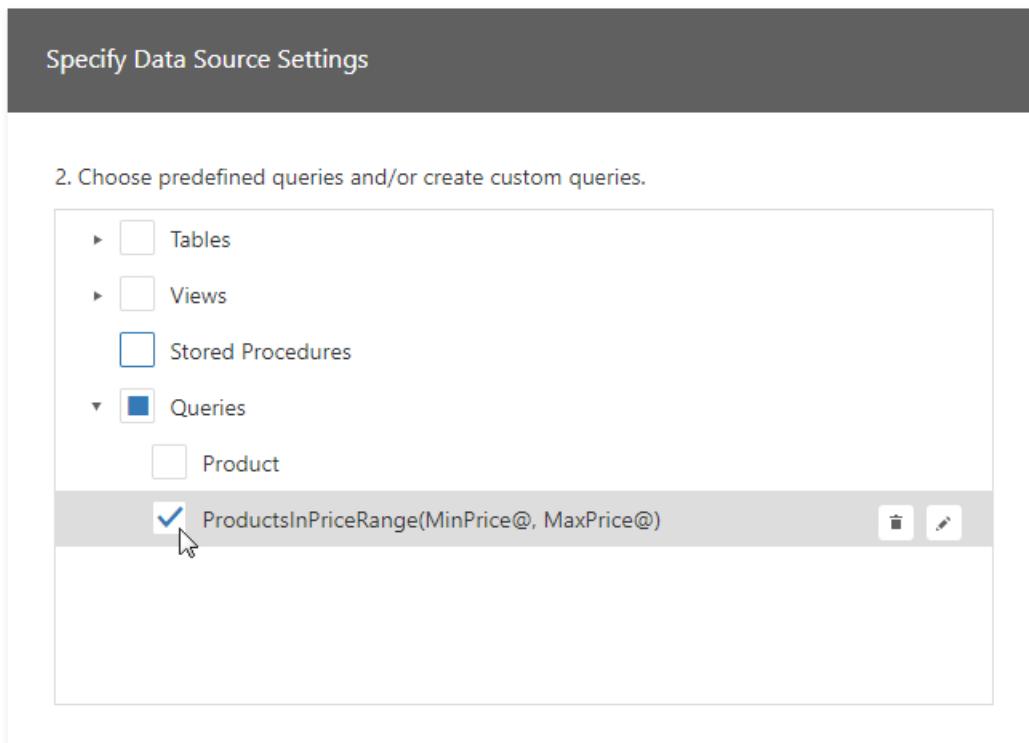
Expand the **Query Properties** section and click the **Filter** property's ellipsis button to invoke the Filter Editor and filter data using the created query parameters.



The criteria based on the specified query parameters are added as an SQL statement's WHERE part.

- When binding a report to a stored procedure provided by an SQL data source.

The Data Source Wizard includes the following page.



If you select a stored procedure, the wizard creates a query parameter for each procedure parameter and allows you to configure the query parameters in the next **Configure query parameters** page.

#### 4. Configure query parameters.

The screenshot shows the 'Configure query parameters' step of the Data Source Wizard. A dropdown menu is open, showing the option 'ProductsInPriceRange(@MinPrice, @MaxPrice)'. Below it, two parameters are listed: '@MinPrice' and '@MaxPrice'. '@MinPrice' has its Name set to '@MinPrice', Type set to 'Number (decimal)', and Value set to '20'. '@MaxPrice' has its Name set to '@MaxPrice'. There are also delete and edit icons for each parameter entry.

## Configure Query Parameters

The following properties are available for each query parameter:

- **Name** - specifies the parameter's name.
- **Type** - specifies the parameter value's data type.
- **Expression** - determines whether the actual parameter value is static or generated dynamically.
- **Value** - determines the query parameter's actual value. If the **Expression** option is enabled, the actual parameter value is produced dynamically by calculating an associated expression. This is useful when you map the query parameter value to the [report parameter](#) value. Refer to the next document section for more information.

## Provide the Query Parameter Value

Below, you can see how a value is specified for a query parameter within the Data Source Wizard's page. You can also specify query parameter values in the Report Wizard or the Query Parameters dialog in the same way.

- **Specifying a static value**

Choose a query parameter's value type and set a static value to the **Value** property according to the selected type.

4. Configure query parameters.

The screenshot shows the 'Configure query parameters' dialog for a report. It displays two parameters: '@MinPrice' and '@MaxPrice'. Both parameters are of type 'Number (decimal)'. The value for '@MinPrice' is set to 20, and the value for '@MaxPrice' is set to 30. There are 'Previous' and 'Next' buttons at the bottom, along with a 'Finish' button.

Name	Type	Value
@MinPrice	Number (decimal)	20
@MaxPrice	Number (decimal)	30

Previous    Next    Finish

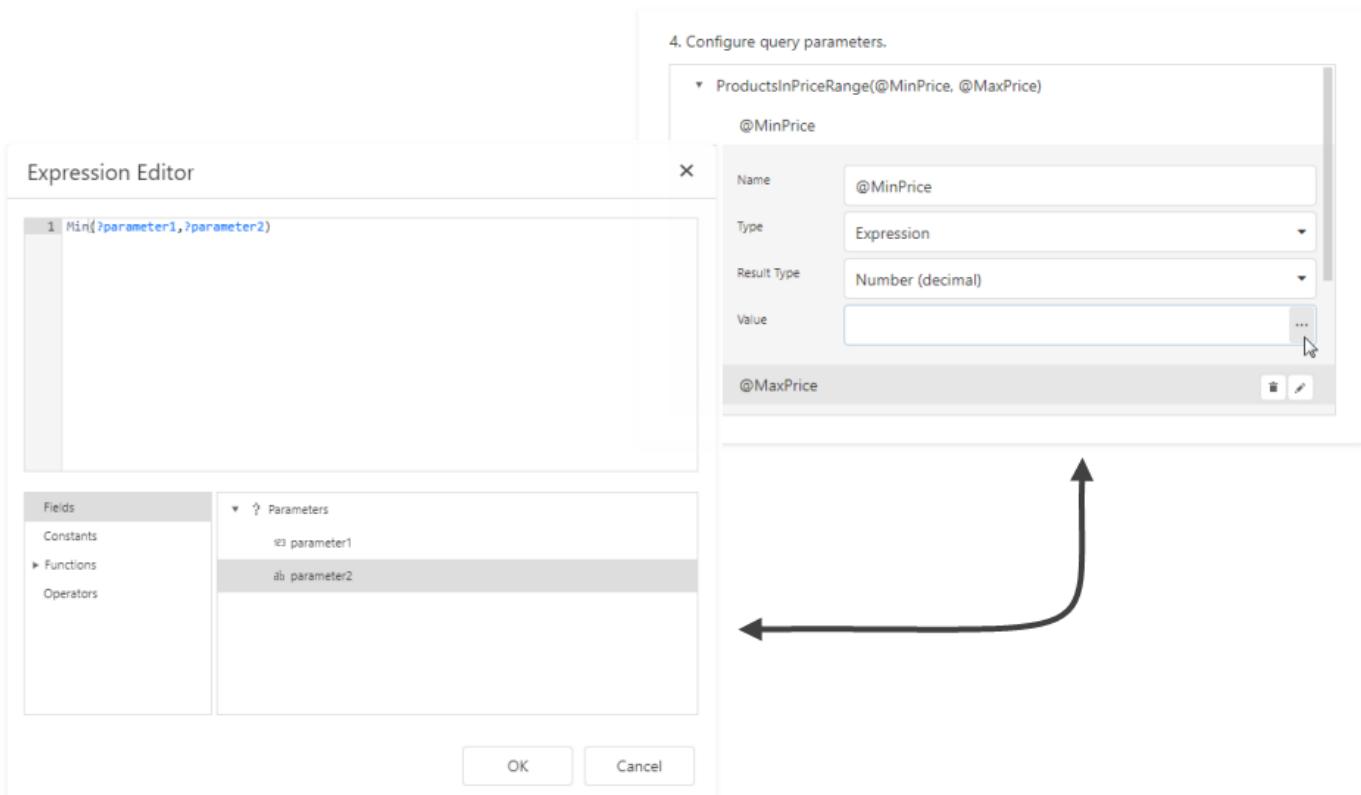
- **Providing a dynamic value**

Create a complex expression by expanding the **Type** property's drop-down list and selecting **Expression**.

The screenshot shows the 'Configure query parameters' dialog for a report. It displays a parameter '@MinPrice' with its 'Type' property expanded. The dropdown menu shows several options: 'Number (decimal)' (which is currently selected), 'Boolean', 'Guid', and 'Expression'. The 'Expression' option is highlighted with a blue selection bar. The 'Name' property for '@MinPrice' is also visible.

Name	Type	Value
@MinPrice	Number (decimal)	

Click the **Value** property's ellipsis button and construct an expression in the invoked [Expression Editor](#). You can map a report parameter that already exists in a report to a query parameter.



## Pass a Multi-Value Parameter Value to a Query

You can map [multi-value parameters](#) to query parameters. For instance, the following query selects the orders whose IDs can be found within the values the @OrderID query parameter provides.

The screenshot shows the Data Source Wizard. On the left, under "FIELD LIST", there are two data sources: "sqlDataSource1" and "sqlDataSource2". Under "Parameters", there are two parameters: "parameter1" and "parameter2". A cursor is hovering over the edit icon next to "sqlDataSource1". On the right, the "Data Source Wizard" dialog is open. It has a title "Data Source Wizard" and a subtitle "Create a query or select a stored procedure.". There are two radio buttons: "Query" (selected) and "Stored Procedure". Below them is a "SQL string:" text area containing a complex SQL query. At the bottom of the dialog are buttons for "Run Query Builder...", "Cancel", "Previous", "Next", and "Finish".

```

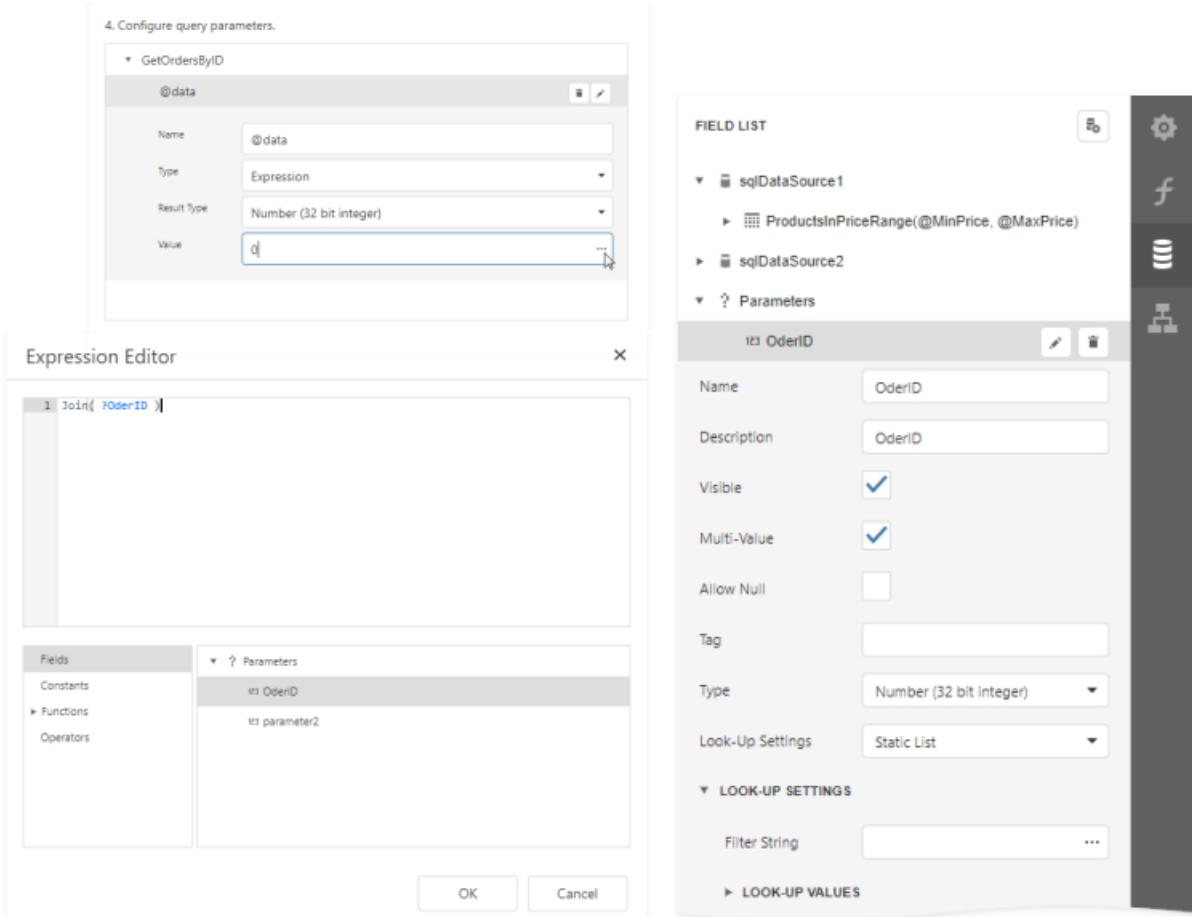
select [ProductsAboveAveragePrice].[UnitPrice],[ProductsAboveAveragePrice]
.[ProductName],[Products].[ProductName] as [Products_ProductName],[Products]
.[ProductID],[Products].[UnitPrice] as [Products_UnitPrice],[Products]
.[UnitsOnOrder],[OrderDetails].[ProductID] as [OrderDetails_ProductID]
,[OrderDetails].[UnitPrice] as [OrderDetails_UnitPrice],[Employees].[EmployeeID]
,[Orders].[EmployeeID] as [Orders_EmployeeID],[Employees].[LastName]
,[Employees].[FirstName] from [Employees] [Employees]
inner join [Orders] [Orders] on ([Orders].[EmployeeID] = [Employees].[EmployeeID])

```

## Pass a Multi-Value Report Parameter Value to a Stored Procedure

You cannot pass a [multi-value parameter](#) value to a stored procedure directly. Use one of the following expression functions:

- Use the [Join\(\) expression function](#) to convert the array of parameter values to a string if you use MS SQL Server, MySQL or Oracle database systems.



- Use the [CreateTable\(\) expression function](#) to prepare a table using values of several multi-value parameters.

## 4. Configure query parameters.

**GetOrdersByID**

**@data**

Name: @data  
Type: Expression  
Result Type: Number (32 bit integer)  
Value: q

**FIELD LIST**

- sqlDataSource1
  - ProductsInPriceRange(@MinPrice, @MaxPrice)
- sqlDataSource2
- Parameters

**OderID**

Name: OderID  
Description: OderID  
Visible:   
Multi-Value:   
Allow Null:   
Tag:   
Type: Number (32 bit integer)  
Look-Up Settings: Static List

**LOOK-UP SETTINGS**

Filter String:

**LOOK-UP VALUES**

OK Cancel

Expression Editor

```
1. CreateTable(?parameter1,?parameter2)
```

Fields

- Constants
- Functions
- Operators

Parameters

# Lay out Dynamic Report Content

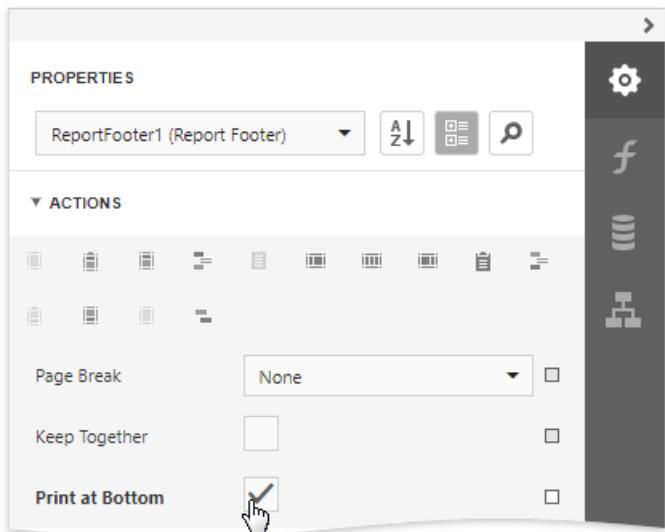
You can use [Print Preview](#) to see what the resulting document looks like because data-aware controls' contents are not available at design time.

This section contain topics describe how to maintain report elements' correct location in a published document:

- [Maintain the Band Location on a Page](#)
- [Keep Content Together](#)
- [Maintain the Size and Content of Data-Bound Controls](#)
- [Anchor Controls](#)
- [Suppress Controls](#)

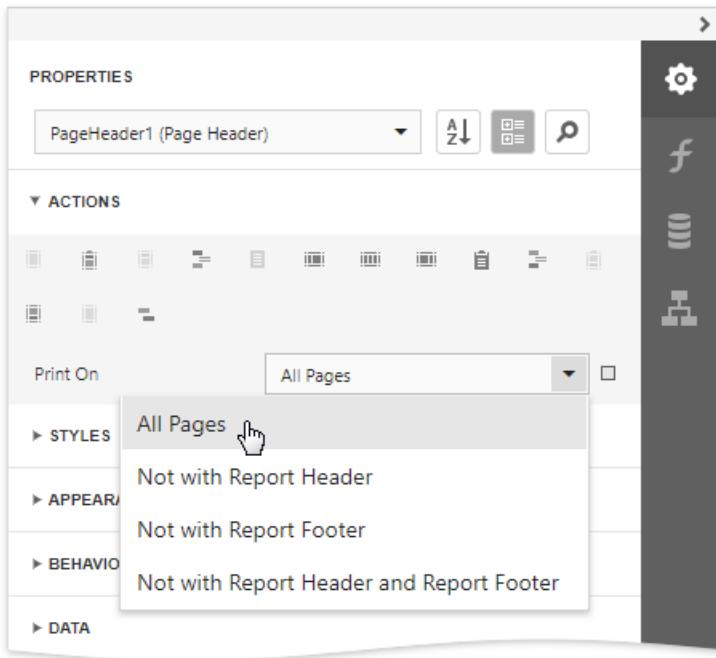
# Maintain the Band Location on a Page

Use the [Group and Report Footer's Print at Bottom](#) property to choose whether these bands should appear at the bottom of a page or immediately after the previous band.



PRINT AT BOTTOM = NO	PRINT AT BOTTOM = YES
A report layout showing several 'A sample report' entries in the main body. A 'Report Footer' band is located at the bottom of the page, below the main content.	A report layout showing the same 'A sample report' entries. In this case, the 'Report Footer' band is positioned directly after the last 'A sample report' entry in the main body, indicating it did not start a new page.

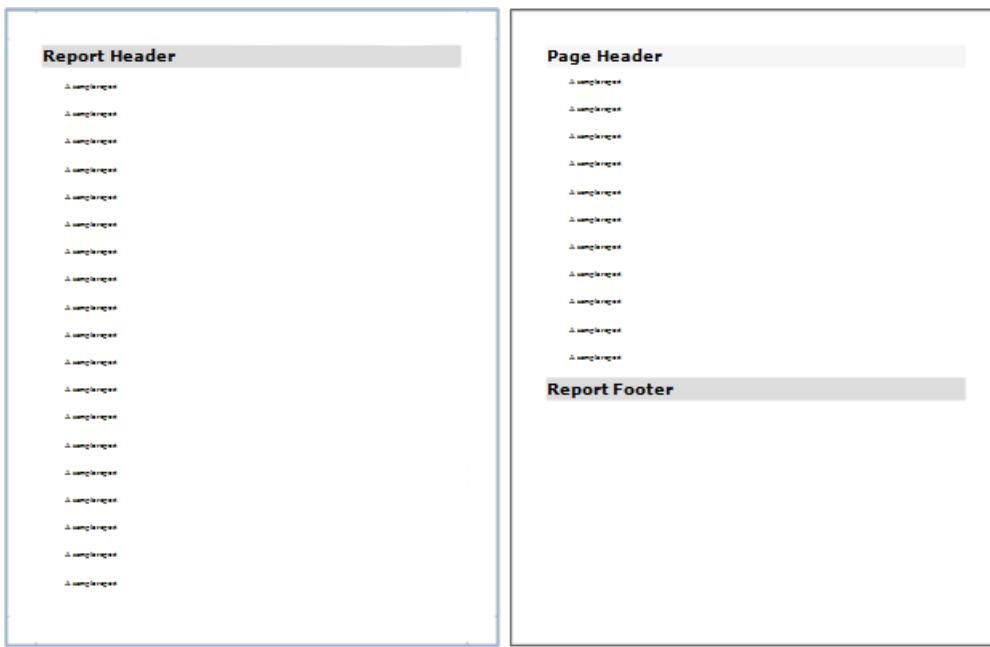
Use the Page Header and Footer's **Print On** property to avoid printing these bands on the same page with a Report Header and/or Footer.



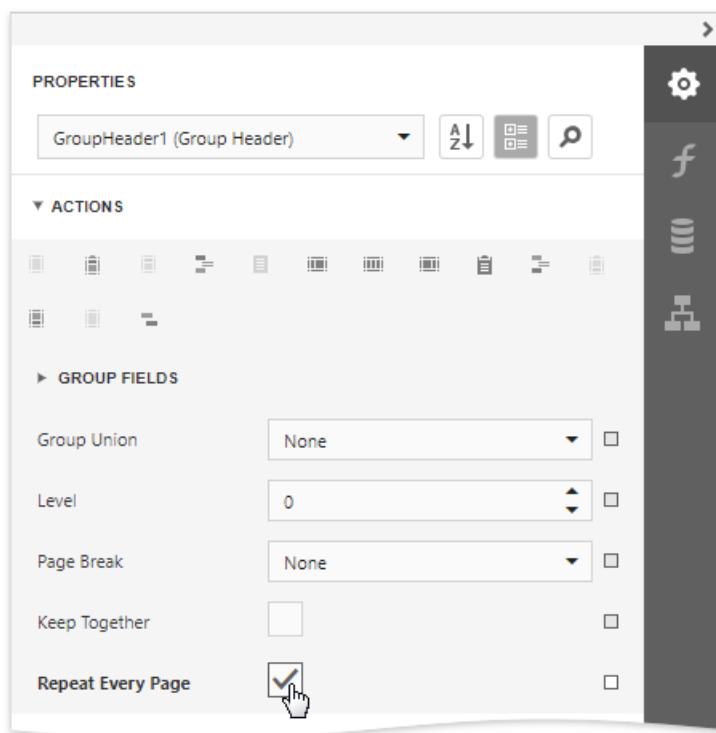
- Print On = All Pages

This screenshot displays the SAP Fiori report structure. It consists of three main horizontal sections: 'Report Header' at the top, 'Page Header' in the middle, and 'Report Footer' at the bottom. The 'Page Header' section contains multiple rows of data, each with a small icon and some text. The 'Report Footer' section is currently empty.

- Print On = Not With Report Header



Use the Group Header and Footer's **Repeat Every Page** property to repeat these bands on every page.



- **Repeat Every Page = No**

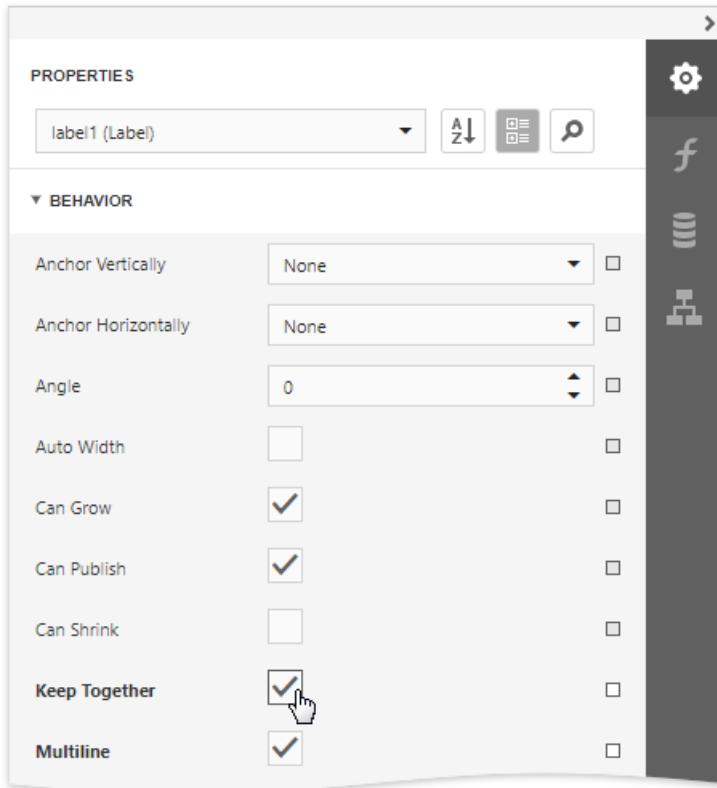
<b>Category ID: 1</b>	
One	Output Log
Two	Database Cluster
Three	Database
<b>Category ID: 2</b>	
Four	Input Log
Five	Output Log
Six	Output Log
Seven	Output Log
Eight	Output Log
Nine	Output Log
Ten	Output Log

- Repeat Every Page = Yes

<b>Category ID: 1</b>	
One	Output Log
Two	Database Cluster
Three	Database
<b>Category ID: 1</b>	
Four	Input Log
Five	Output Log
Six	Output Log
Seven	Output Log
Eight	Output Log
Nine	Output Log
Ten	Output Log

# Keep Content Together

You can choose whether a control's content can be split across several pages using its **Keep Together** property.



KEEP TOGETHER = NO	KEEP TOGETHER = YES
A screenshot of a report page. It contains two separate rectangular boxes. The top box contains the text: "A label with some lengthy text... A label with some lengthy text...". The bottom box contains the text: "lengthy text... A label with some lengthy text...".	A screenshot of a report page. It contains a single large rectangular box that spans both the top and bottom sections of the previous screenshot. This box contains the same text as the two separate boxes: "A label with some lengthy text... A label with some lengthy text...".

Enabling this property for a single control makes the same band's controls behave like this option is enabled.

Use the band's **Keep Together** property to enable this feature for all controls within a specific band.

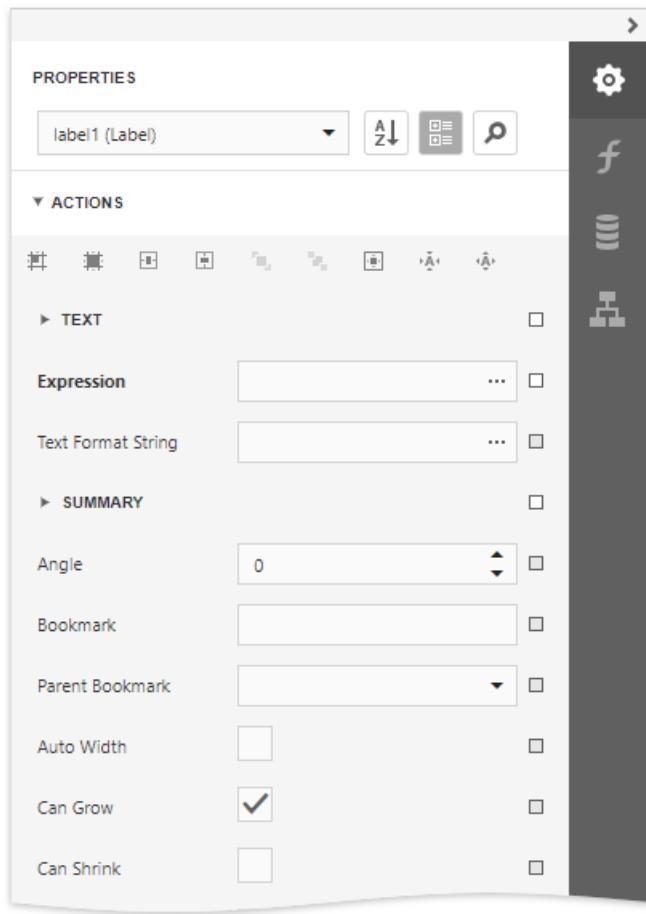
## Note

This feature is not available for the [Chart](#), [Sparkline](#) and [Subreport](#) controls.

In a master-detail report, you can print the detail band on the same page as the detail report band using the detail band's **Keep Together with Detail Reports** property.

## Maintain the Size and Content of Data-Bound Controls

Use the control's **Can Grow** and **Can Shrink** properties to make a data-bound control automatically adjust its height to its contents.



## □ Note

This feature does not work with [anchoring](#) enabled, as well as for labels that are used to display [summary function results](#).

Use the **Auto Width** property to make a data-bound [Label](#) or [Character Comb](#) automatically adjust its width to its content. This option behavior depends on the control's current horizontal alignment ([Text Alignment](#) property value).

- **Text Alignment = Left**

xrLabel1

- **Text Alignment = Right**

xrLabel1

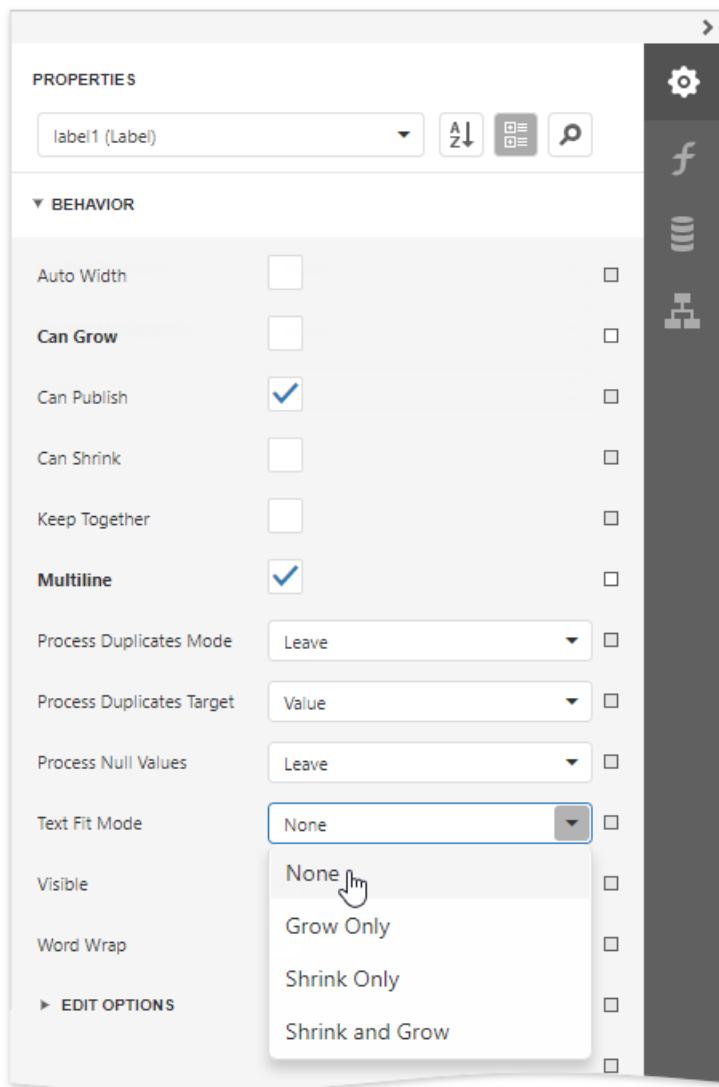
- **Text Alignment = Center**

xrLabel1

The control's **Word Wrap** property allows you to make a control display its contents in multiple lines when it does not fit into the control's dimensions.

AUTO WIDTH = NO, WORD WRAP = NO	AUTO WIDTH = NO, WORD WRAP = YES
Some lengthy text assigned to a label.	Some lengthy text assigned to a label.
AUTO WIDTH = YES, WORD WRAP = NO	AUTO WIDTH = YES, WORD WRAP = YES
Some lengthy text assigned to a label.	Some lengthy text assigned to a label.

You can also use the opposite **Text Fit Mode** property to adjust a label or table cell's font size to fit the control's bounds. Images below show how the **Word Wrap** property affects the label's font size.



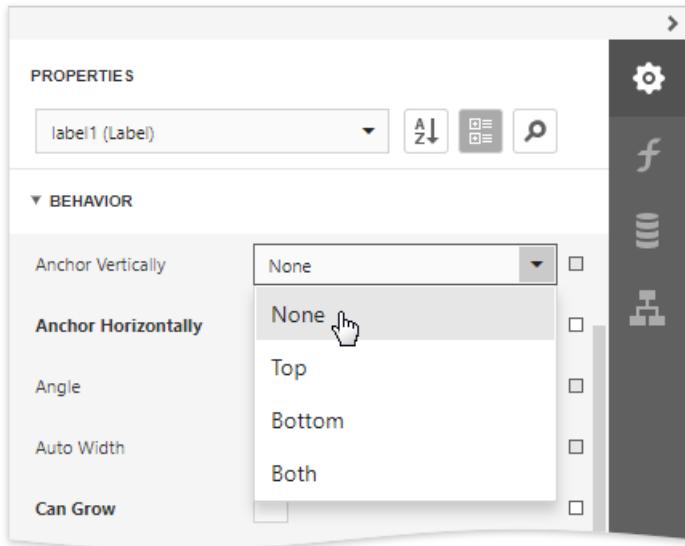
TEXT FIT MODE = NONE	TEXT FIT MODE = GROW ONLY	TEXT FIT MODE = SHRINK ONLY	TEXT FIT MODE = SHRINK AND GROW
Alabel with some lengthy content...	Alabel with some lengthy content...	Alabel with some lengthy content...	Alabel with some lengthy content...
Alabel with some lengthy content...	A label with some lengthy content...	A label with some lengthy content...	A label with some lengthy content...

This property is not available in the following cases:

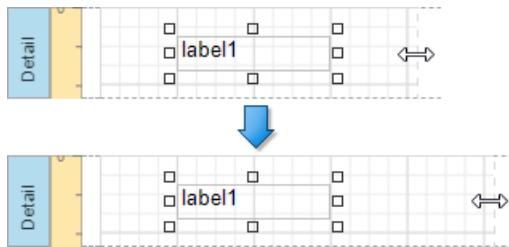
- The **Can Grow**, **Can Shrink** or **Auto Width** option is enabled;
- The label's **Angle** property is specified;
- The control's **Anchor Horizontally** or **Anchor Vertically** property is set to **Both**.

# Anchor Controls

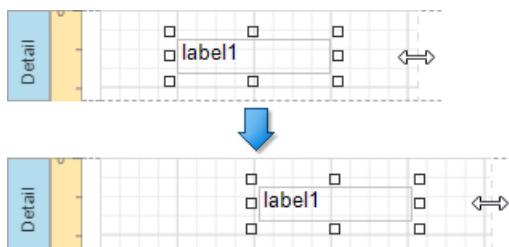
You can anchor a control to the top, bottom, or both edges of its parent container using the **Anchor Horizontally** and **Anchor Vertically** properties.



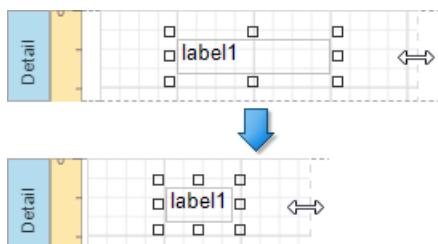
- **Anchor Horizontally = None**



- **Anchor Horizontally = Right**



- **Anchor Horizontally = Both**



# Suppress Controls

## Avoid Duplicated and Empty Values

When identical or null values appear in a report's data source, you can suppress these values in a report using the following properties:

- **Process Duplicates Mode**

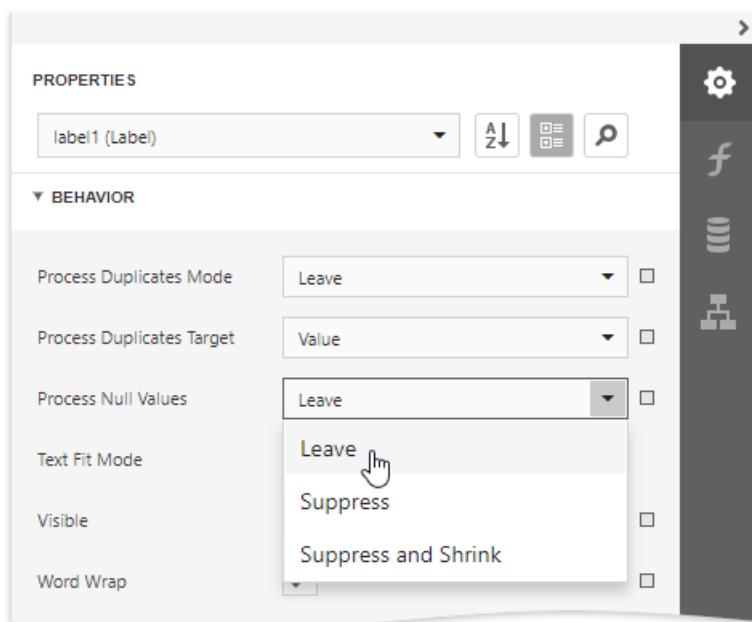
Specifies how to process report controls with identical values (leave them as is, merge, suppress, or suppress and shrink).

- **Process Null Values**

Specifies how to process report controls receiving null values from a data source (leave them as is, suppress, or suppress and shrink).

- **Process Duplicates Target**

Specifies whether to process duplicate the control's **Text** or **Tag** property values.



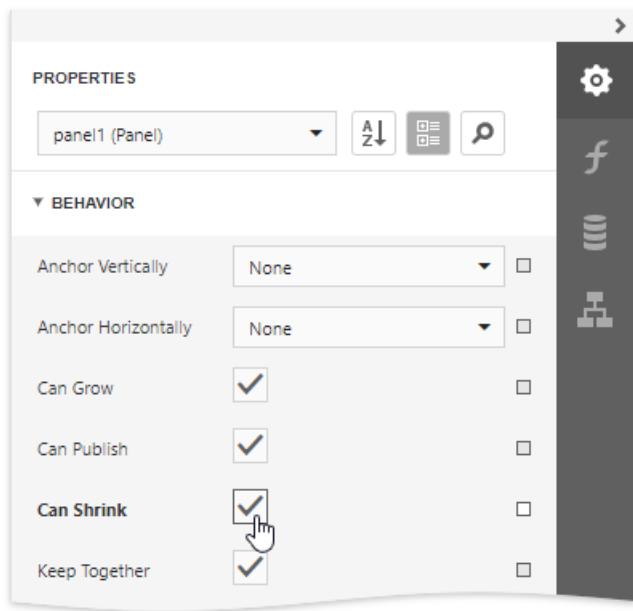
These properties are available for the following controls:

- [Bar Code](#)
- [Label](#)
- [Character Comb](#)
- [Rich Text](#)
- [Table Cell](#)
- [Picture Box](#)

## Conditionally Suppress a Control

You can suppress a control when a specified logical condition is met by specifying the required **Visible** property expressions as described in the [Conditionally Suppress Controls](#) topic.

In this case, a space remains in the band at the control's location. You can avoid this by placing these controls onto an [Panel](#) and setting its **Can Shrink** property to **true**.



For this feature to work correctly, consider the following:

- Specify the **Visible** property's expression to the controls in the panel (and not to the panel itself).
- Do not assign borders to the panel container. Otherwise, they are printed when the panel's content is suppressed.

# Customize Appearance

The topics in this section describe how to customize the report elements' appearance:

- [Appearance Properties](#)
- [Report Visual Styles](#)

# Appearance Properties

This document describes the purpose and implementation of the appearance properties - a special set of properties that allow you to customize the appearance of a report or any of its elements.

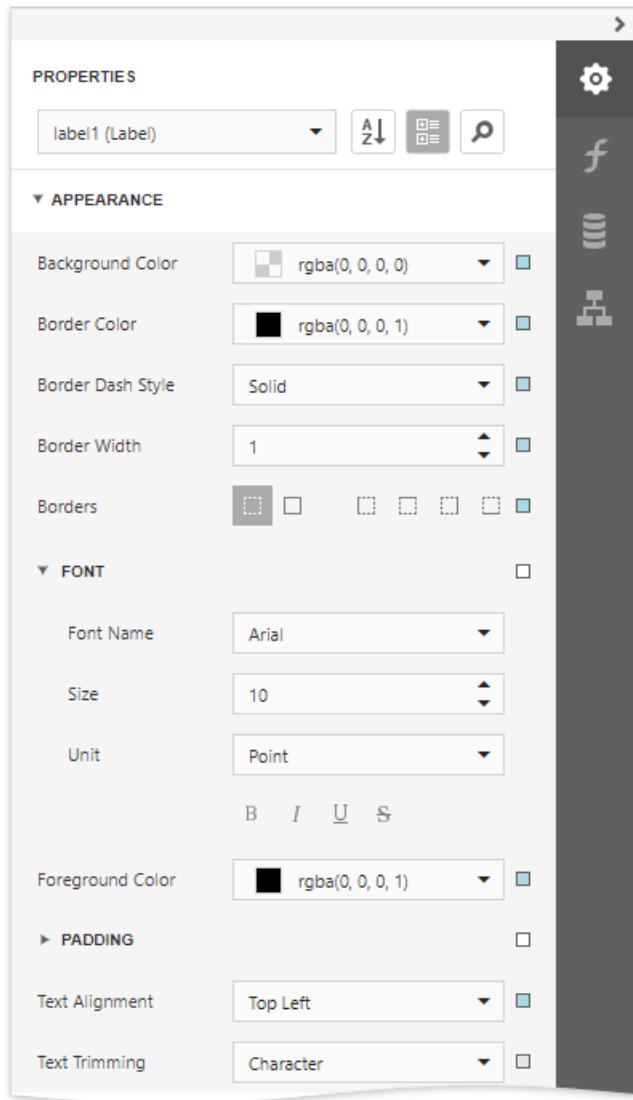
## Properties Overview

Every report element ([control](#) or [band](#)), and a report itself, has a set of properties that specify its appearance. They are listed in the following table.

PROPERTY NAME	DESCRIPTION
<b>BackgroundColor</b>	Gets or sets a background color to a report element and its child controls.
<b>BorderColor</b>	Gets or sets a border color to a report element and its child controls.
<b>BorderDashStyle</b>	Gets or sets a border dash style to a report element and its child controls.
<b>Borders</b>	Gets or sets borders (top, right, bottom, left), which should be visible for a report element and its child controls.
<b>BorderWidth</b>	Gets or sets a border width to a report element and its child controls.
<b>Font</b>	Gets or sets the font options (its name, size, etc.) to a report element and its child controls.
<b>ForegroundColor</b>	Gets or sets the foreground color to a report element and its child controls.
<b>Padding</b>	Gets or sets the indent values which are used to render the contents of a report element and its child controls.
<b>TextAlignment</b>	Gets or sets the text alignment to a report element and its child controls.

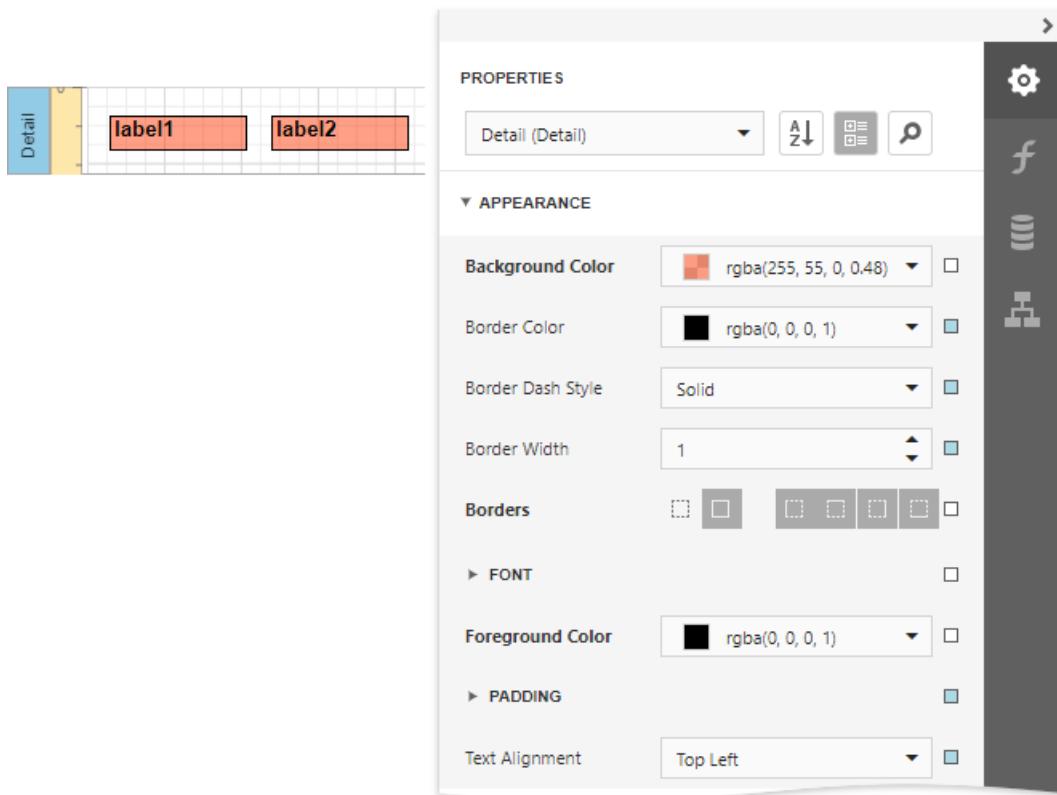
## Access Appearance Properties

Use the Report Designer's [Properties](#) panel to access the appearance properties.



## Property Value Inheritance

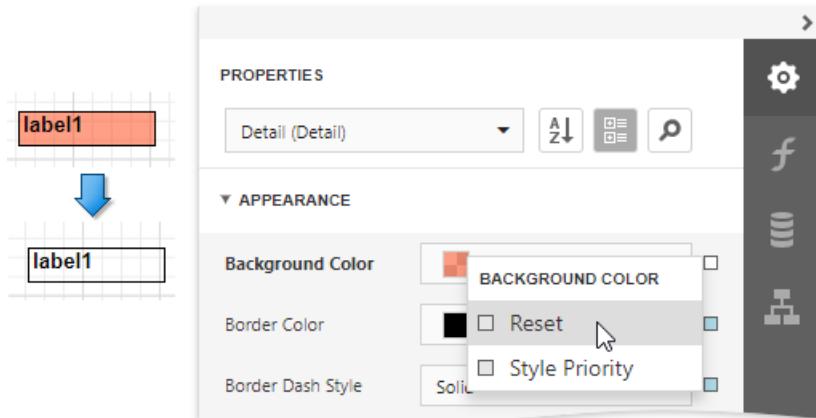
By default, appearance properties for every control or a band are set to empty values, which means that their real values are obtained from a control's parent, or a parent of its parent and so on.



#### Note

The appearance properties may not be used by all descendants of the current report element for which they are defined. For example, the **PageBreak** element ignores the **BackColor** property.

To reset values of these properties, click the  button to the right of the editor, and in the invoked popup menu, select **Reset**. Then, the control's actual appearance will be determined by the appropriate properties settings of its parent.



If a report element has a [style](#) assigned to it, the priority of the properties defined by this style is determined by the **StylePriority** property. Note that when a [conditional formatting](#) is involved, the appearance it defines is of greater priority than the properties described above.

# Report Visual Styles

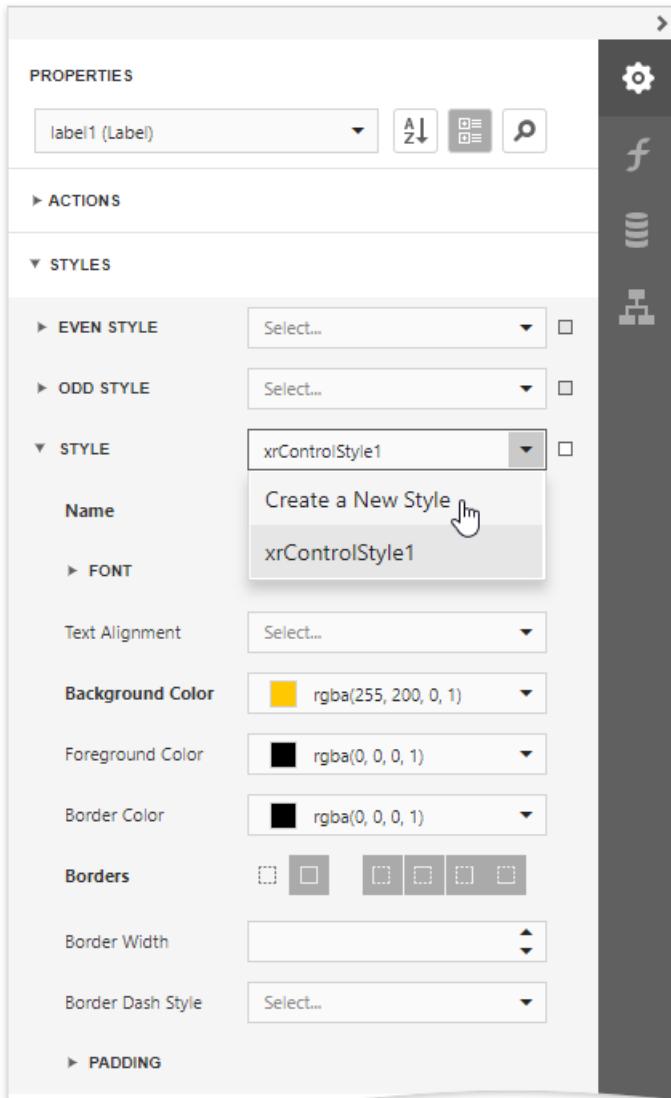
This topic describes how to combine [appearance properties](#) into styles and apply them to report elements.

## Create a Report Style

Use the following approaches to create a visual style in your report:

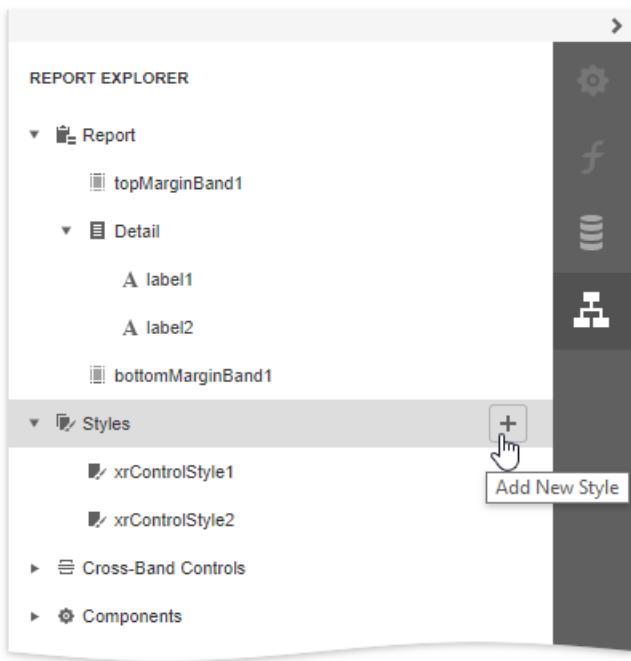
- **Use the Properties Panel**

Expand the [Properties](#) panel's **Styles** category, click the drop-down list for the **Style** property and select **Create a New Style**.



- **Use the Report Explorer**

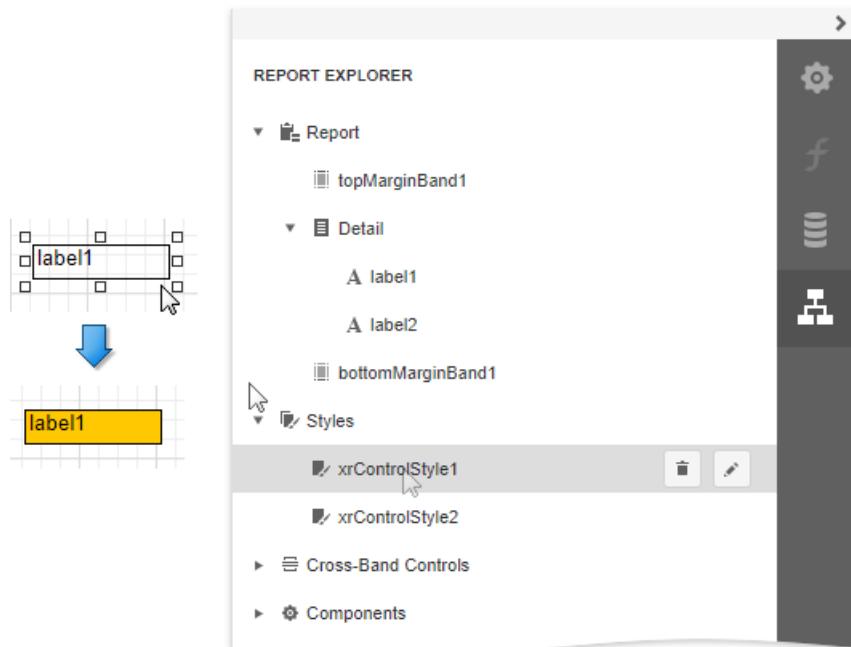
Switch to the [Report Explorer](#) panel, select the **Styles** node and click the plus button to add a new report visual style.



To access the collection of added report visual styles, expand the **Styles** category in the [Report Explorer](#).

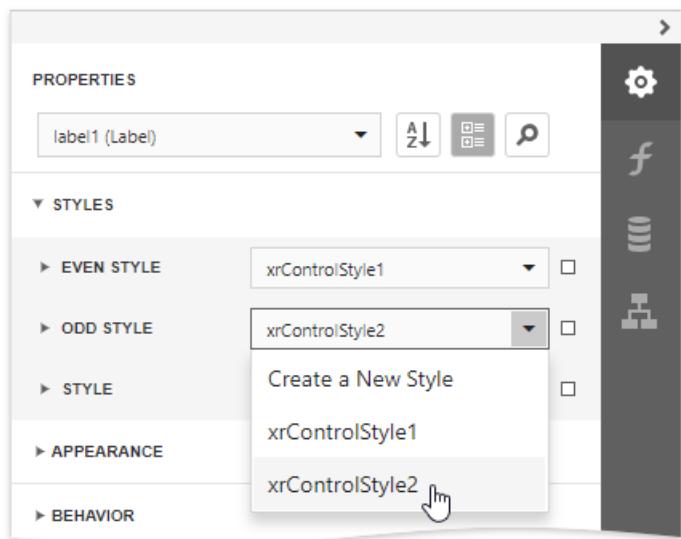
## Assign a Style to a Report Element

Drag a report style from the Report Explorer onto a report control. This assigns the style to the report element's **Style** property.



## Assign Odd and Even Styles

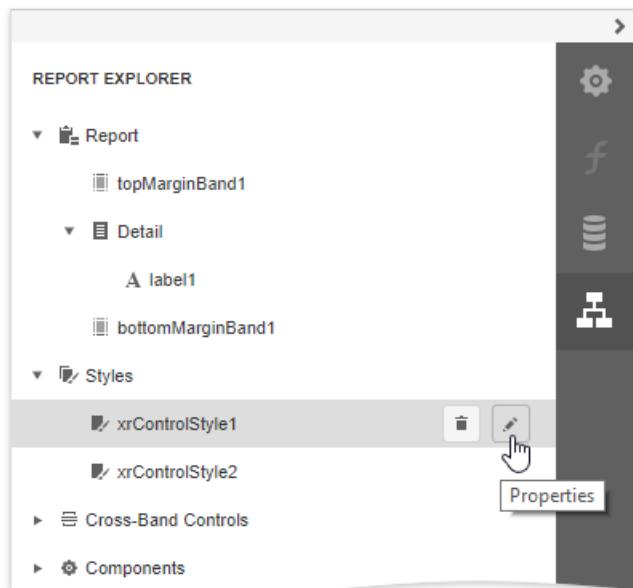
You can use the **Odd Style** and **Even Style** properties to apply different styles to alternating rows in a report.



Product Name	Quantity per Unit	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

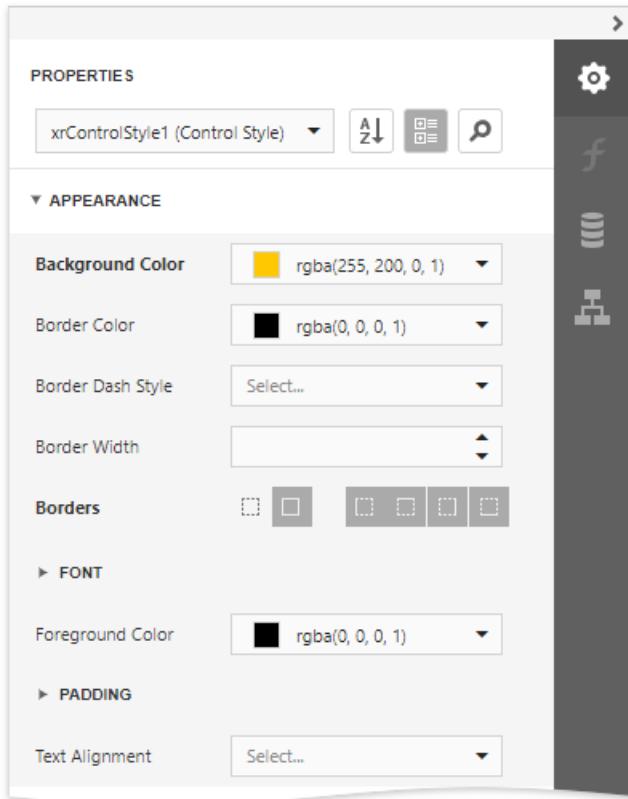
## Customize a Style

Select a style and click the **Properties** button in the Report Explorer.



This opens the Properties panel where you can adjust the settings of the selected style. All the report elements apply the updated

style immediately.



## Style Inheritance

Nested elements inherit their parent element's style if they do not have an applied style.

## Override Styles

You can specify a different value for a report element's appearance property to override the corresponding property value in the report element's style.

### Note

If you apply [conditional formatting](#), its appearance property values have a higher priority than both the individually specified properties and the style's properties.

# Add Navigation

The topics in this section describe how to use navigation features in your reports:

- [Add Page Numbers](#)
- [Add Cross-References and Hyperlinks](#)
- [Add Bookmarks and a Document Map](#)
- [Add a Table of Contents](#)

## Note

See [Provide Interactivity](#) to learn how to create drill-down reports.

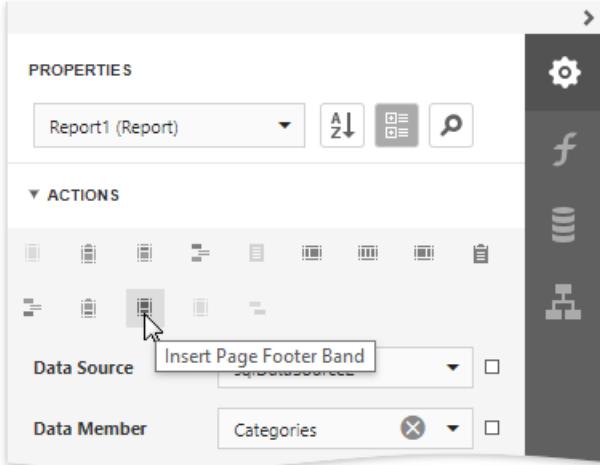
# Add Page Numbers

The tutorial describes how to add page numbers to your reports.

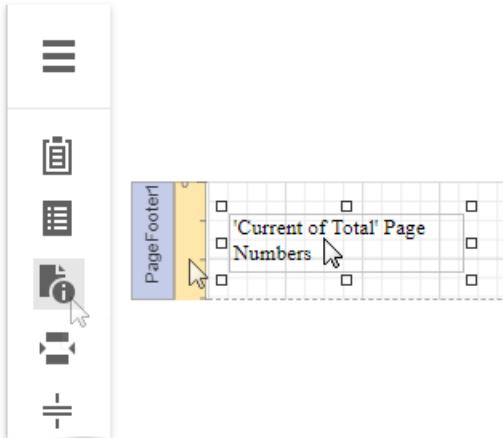
## Add Page Numbers

Do the following to add page numbers to a report:

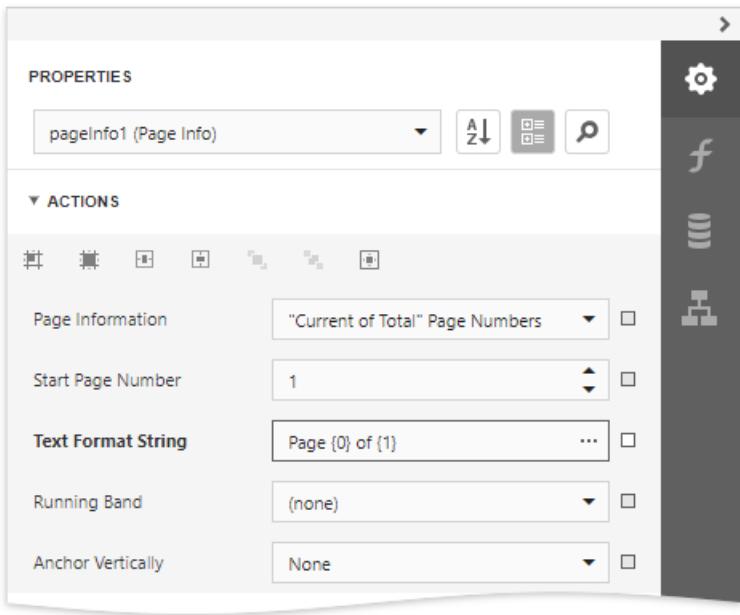
- Create a [PageFooterBand](#) in your report. To do this, click **Insert Page Footer Band** in the **Actions** category.



- Drop the [PageInfo](#) control from the [Toolbox](#) to the **Page Footer** band.



- To change the control's display format, specify the **Text Format String** property (e.g., **Page {0} of {1}**, to display the current page number out of the total number of pages) in the **Actions** category.



The following image illustrates the resulting report:

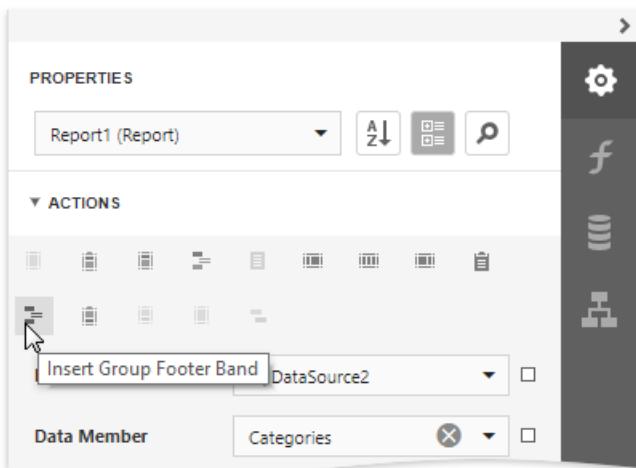
Gula Malacca	\$19.45
Røgede sild	\$9.50
Spegesild	\$12.00
Zaanse koeken	\$9.50
Chocolade	\$12.75
Maxilaku	\$20.00
Valkoinen suklaa	\$16.25
Manjimup Dried Apples	\$53.00
Filo Mix	\$7.00
Perth Pasties	\$32.80
Tourtière	\$7.45
Pâté chinois	\$24.00
Gnocchi di nonna Alice	\$38.00
Ravioli Angelo	\$19.50
Escargots de Bourgogne	\$13.25
Raclette Courdavault	\$55.00
Camembert Pierrot	\$34.00

Page 2 of 3

## Add Page Numbers for Groups

Do the following to make your report display page numbers for groups or detail reports:

- Add the **Group Footer** band. To do this, click **Insert Group Footer Band** in the **Actions** category.

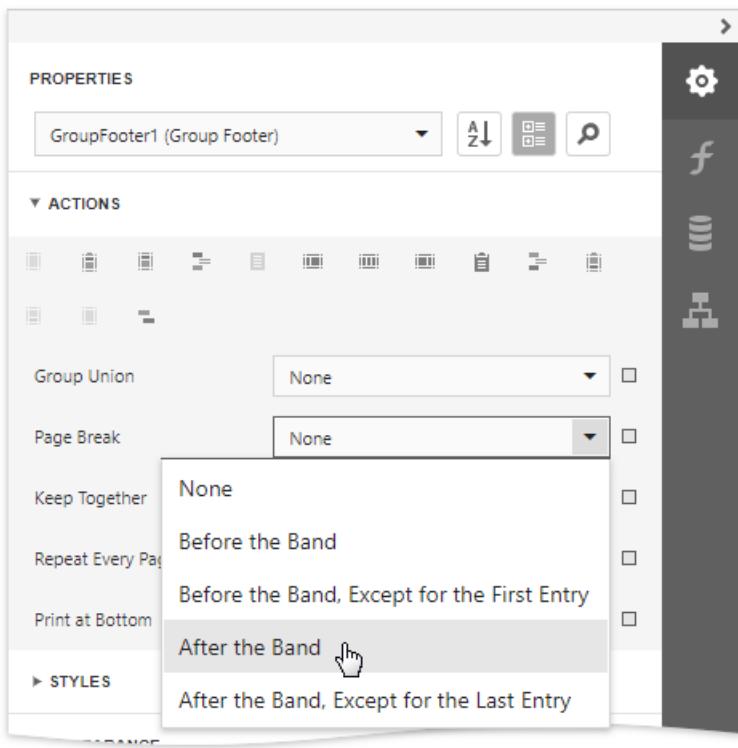


#### ■ Note

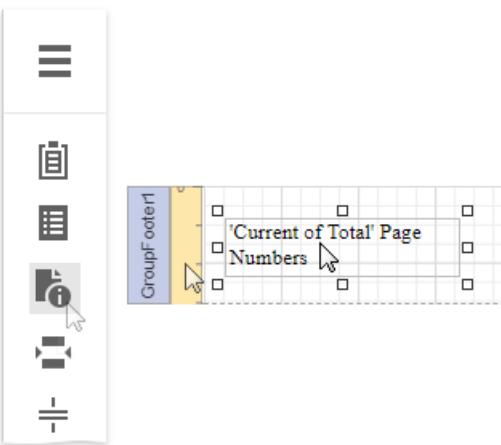
You can force the group header and/or the group footer to be repeated on each page, using the GroupBand's **Repeat Every Page** property.

- Next, force each new group to start on a separate page. Otherwise, group page numbers will be calculated incorrectly.

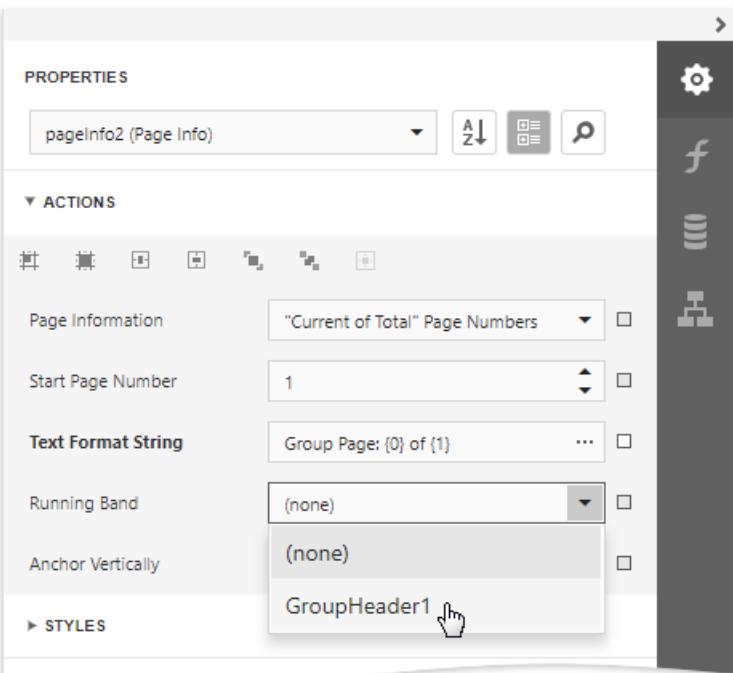
To do this, select the Group Footer, and set its **Page Break** property to *After the Band*.



- Drop the **PageInfo** control from the **Toolbox** onto the **Group Footer** (or **Group Header**) band.



- Select the created control, and set its **Running Band** property to *GroupHeader1*.



#### Tip

You can use the **Text Format String** and **Page Information** properties to adjust the way the control represents its contents.

The following image illustrates the resulting report:

## Beverages

Côte de Blaye  
Chartreuse verte  
Ipoh Coffee  
Laughing Lumberjack Lager  
Outback Lager  
Rhönbräu Klosterbier  
Lakkalikööri

Group Page: 2 of 2

# Add Cross-References and Hyperlinks

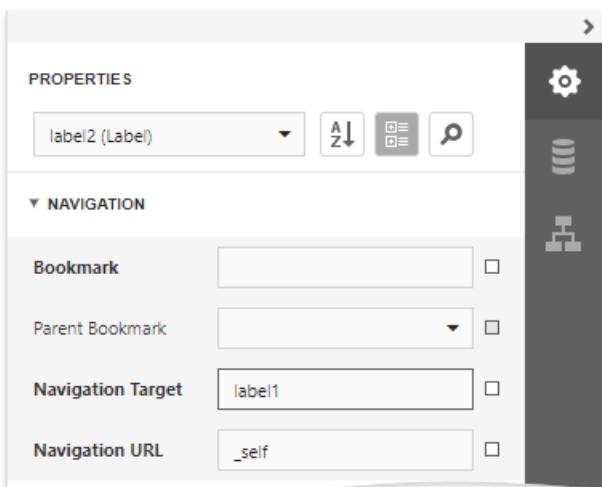
This document describes how to make an element navigate to other elements in a report or external resources by clicking it in a Print Preview.

## Add Cross-References

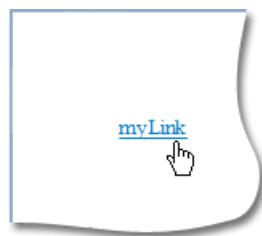
You can improve report navigation using a cross-reference because the link's target is in the same document.

You can add a cross-reference for a [report control](#) by setting the following properties:

1. Set the **Navigation Target** property to `_self` to specify that the link is in the same document.
2. Set the **Navigation Url** property to the target control's **Name** property value.



In this case, the control behaves like a link meaning that the cursor automatically changes to a hand in a report's preview when hovering the control. You can make a control resemble a link by specifying its [appearance properties](#) (for example, change the text's color to blue and underline it).



The link uses the first occurrence if there are multiple instances of an object marked as a link's target.

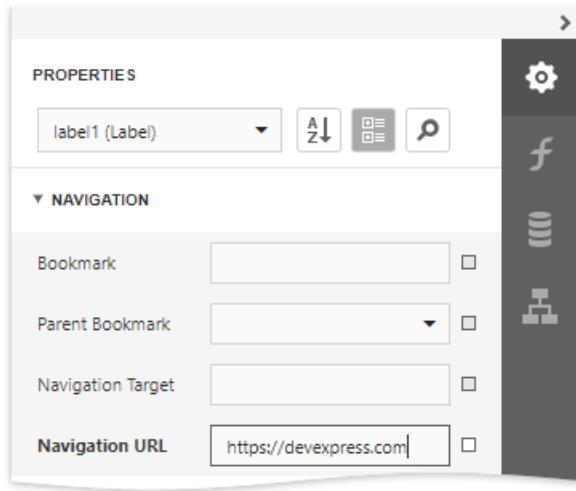
### Did You Know?

A report's cross-references are preserved when [exporting it to PDF](#).

## Add Hyperlinks

A hyperlink means that a link's target is outside the report.

You can use any control as a link by setting the **Navigation Url** property to the required target document's URL.



#### **Note**

Remember to use the "http://" or "https://" prefix when specifying the URL.

You can make a control resemble a link by specifying its [appearance properties](#) (for instance, set the underlined text and blue color).

The cursor automatically changes to a hand when hovering the control in a report's preview.



Use the link's **Navigation Target** property to specify where to open the target document (in the same preview window, in a new blank window, etc.).

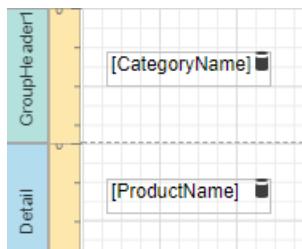
#### **Tip**

A link's behavior is preserved when [exporting a report](#) to most of the available formats (in particular to PDF, HTML, MHT, RTF and Excel).

# Add Bookmarks and a Document Map

This document describes how to use bookmarks for mapping the report elements' hierarchy to the Document Map that is displayed in a [Print Preview](#), and speeds up the navigation through complex reports.

The example below is based on the following report:



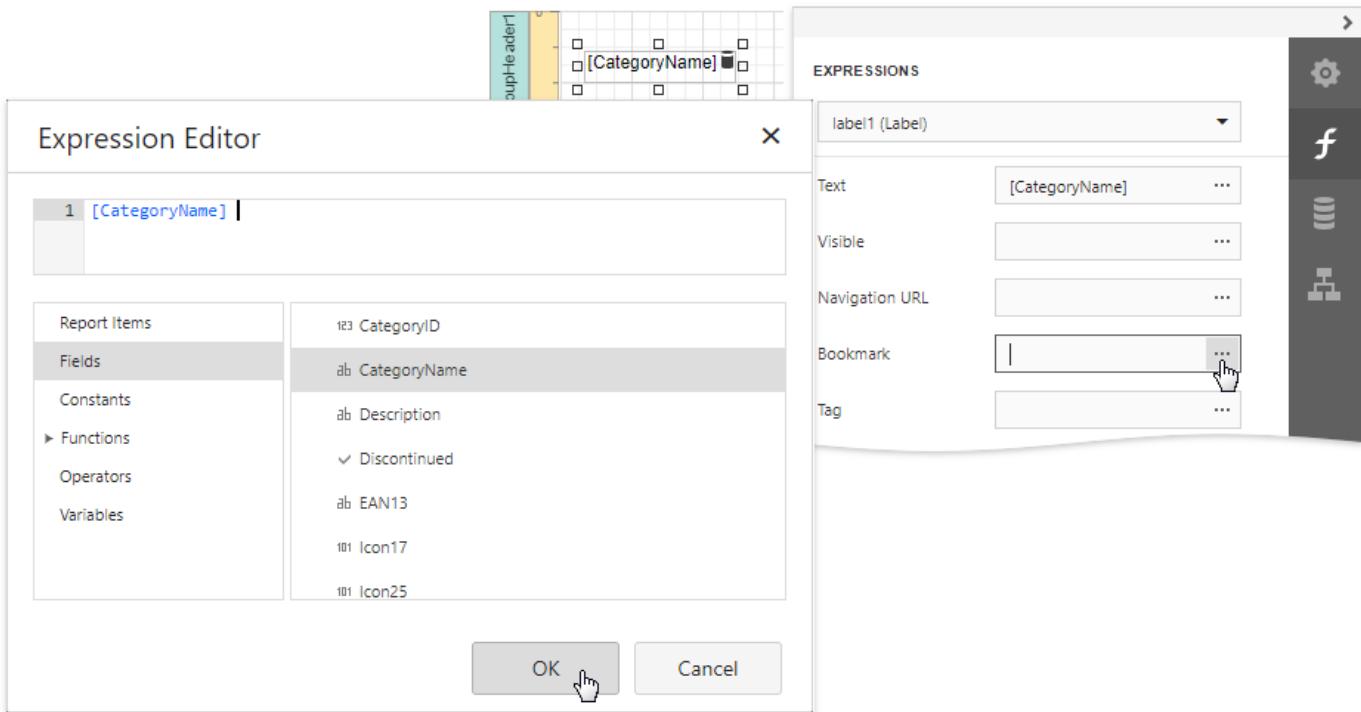
This report displays products that are [grouped](#) by the **CategoryName** field.

The following image illustrates the resulting report with a hierarchical Document Map. Clicking any bookmark navigates the Print Preview to the document section containing the associated element.

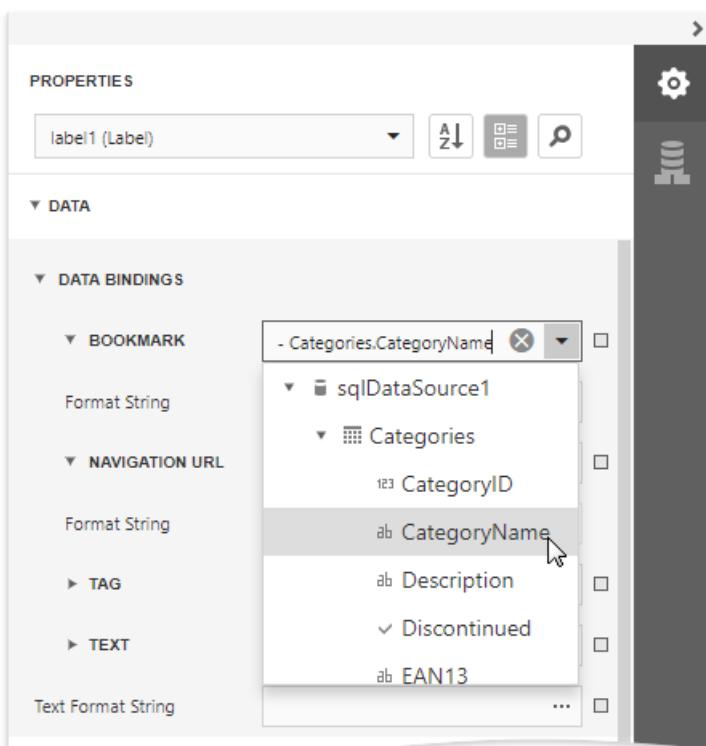
A screenshot of a report preview window. On the left, the report content is displayed in two sections: 'Beverages' and 'Condiments'. The 'Beverages' section lists products like Chai, Chang, etc. The 'Condiments' section lists products like Aniseed Syrup, Chef Anton's Cajun Seasoning, etc. On the right, a 'DOCUMENT MAP' sidebar is open, showing a hierarchical tree structure. The root node is 'Table of Contents', which branches into 'Beverages' and 'Condiments'. Under 'Beverages', all the product names from the report content are listed. Under 'Condiments', the same product names are listed. The sidebar also includes icons for settings, search, and refresh.

Use the following steps to generate a Document Map in your grouped report.

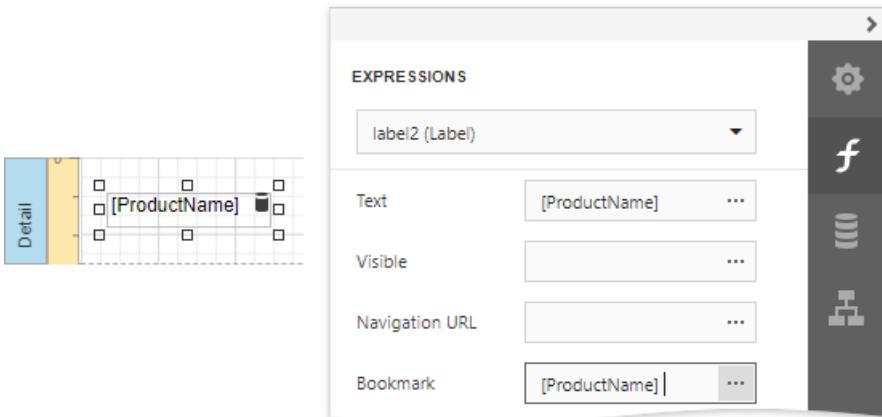
1. Select the label placed in the **Group Header** band and switch to the [Expressions](#) panel. Click the **Bookmark** property's ellipsis button, and in the invoked [Expression Editor](#), select the **CategoryName** data field.



In the legacy binding mode (if the Designer does not provide the **Expressions** panel), you can specify this property in the **Properties** panel's **Data Bindings** category.

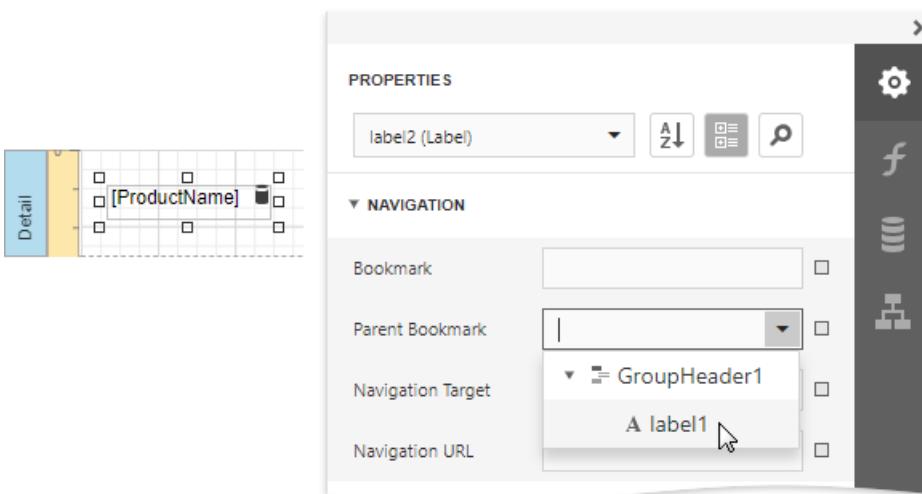


2. In the same way, select the label in the **Detail** band and bind its **Bookmark** property to the **ProductName** data field.



Most of the reporting controls (for example, [Table](#), [TableCell](#), [CheckBox](#), etc.) supports the **Bookmark** property.

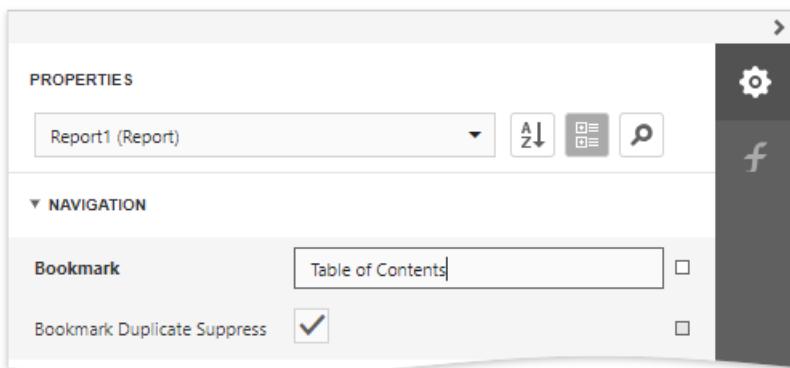
- Set the same label's **Parent Bookmark** property to the label in the group band. This arranges bookmarks into a parent-child structure reflecting the report elements' hierarchy in the Document Map.



#### **Note**

Avoid cyclic bookmarks that occur when you assign two bookmarks as parents to each other. In this scenario, an exception raises when you attempt to create the report document.

- Select the report itself and assign text to its **Bookmark** property to determine the root node's caption in the **Document Map**.



The root bookmark displays the report name if you do not specify this property.

#### **Note**

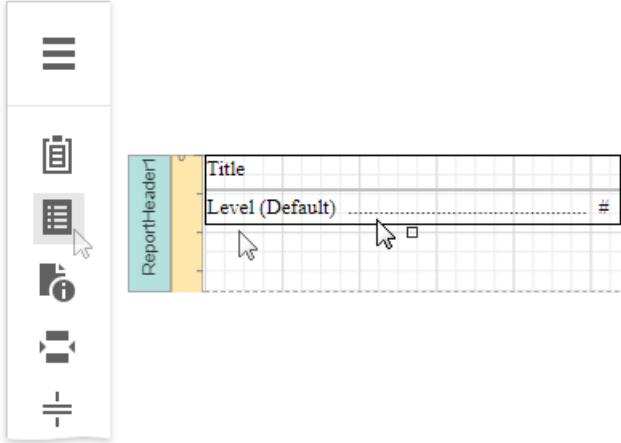
Duplicated bookmarks are suppressed to prevent adding multiple bookmarks with the same name to a final document. You can disable the report's **Bookmark Duplicate Suppress** property to allow duplicated bookmarks.

# Create a Table of Contents

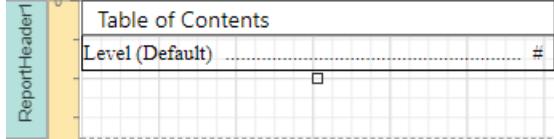
This tutorial describes the steps to create a report with a table of contents. A table of contents is automatically created based on the [bookmarks](#) existing in a report.

To create a table of contents in a report, do the following.

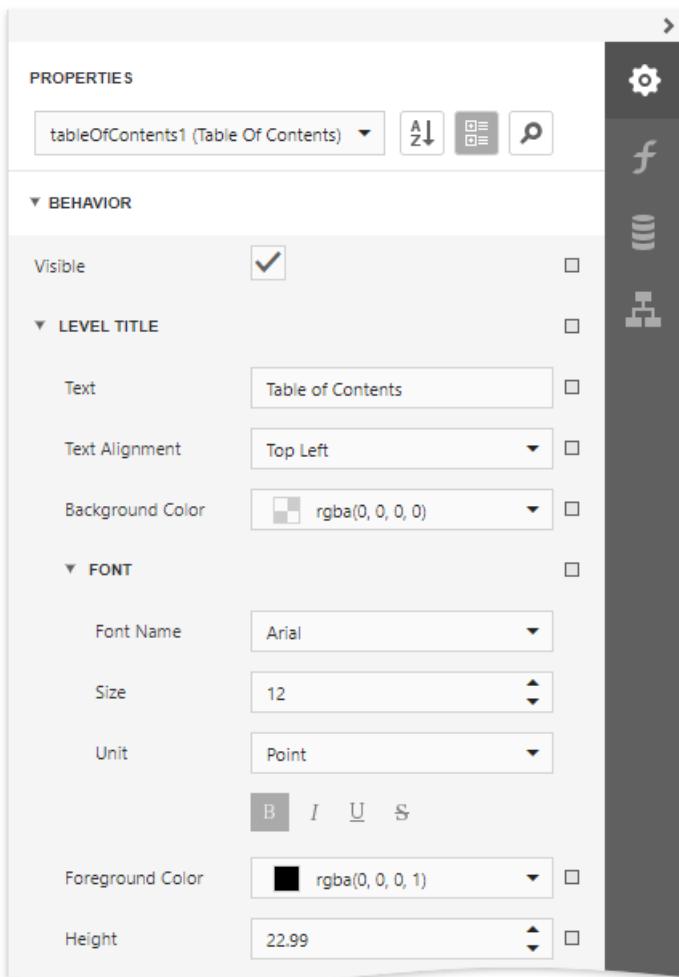
1. From the [Toolbox](#), drop the [Table of Contents](#) control onto the [Report Header](#) band.



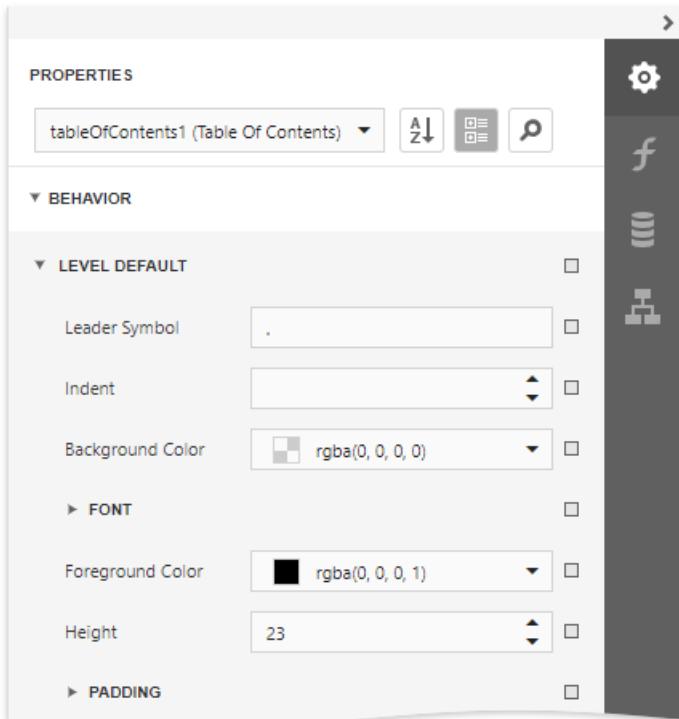
2. Double-click the title of the table of contents and specify its text.



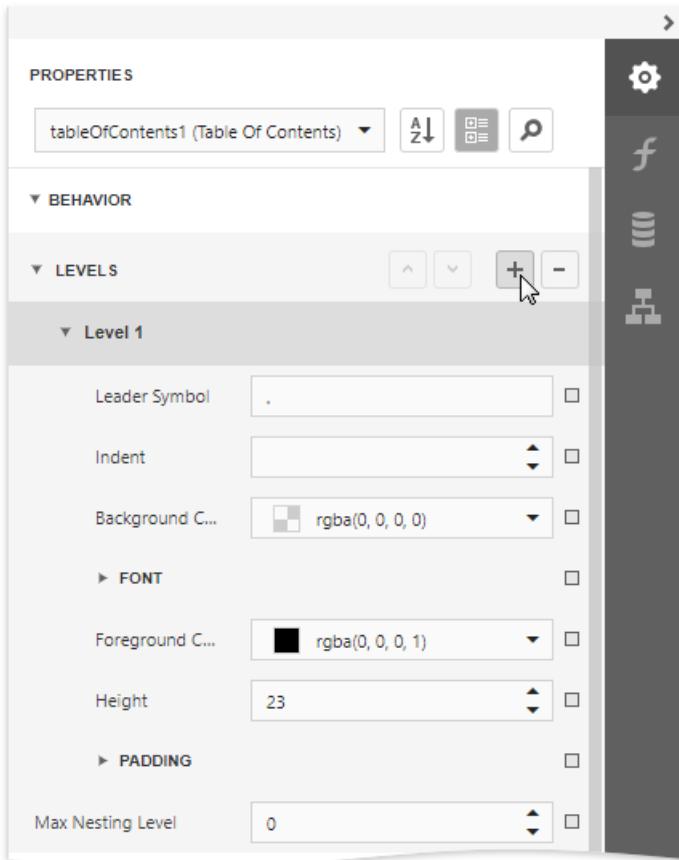
3. To customize the title appearance, use the **Level Title** option's settings available in the [Properties](#) panel.



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 and customize its properties.



The following image demonstrates the result in [Print Preview](#):

Table of Contents	
<b>Beverages .....</b>	<b>4</b>
Chai .....	4
Chang .....	4
Guaraná Fantástica .....	5
Sasquatch Ale .....	5
Steeleye Stout .....	5
Côte de Blaye .....	6
Chartreuse verte .....	6
Ipoh Coffee .....	6
Laughing Lumberjack Lager .....	7
Outback Lager .....	7
Rhönbräu Klosterbier .....	7
Lakkalikööri .....	8

# Provide Interactivity

The documents in this section provide information on the interactive features that enable report customization in Print Preview.

- [Create Drill-Down Reports](#)
- [Sort a Report in Print Preview](#)
- [Edit Content in Print Preview](#)

# Create Drill-Down Reports

This tutorial describes how to create a drill-down report. Clicking a link in such a report displays the previously hidden detailed information in the same report:

**Beverages**

*Soft drinks, coffees, teas, beers, and ales*



[Hide Details](#) 

Product Name	Quantity Per Unit	Unit Price
Chang	24 - 12 oz bottles	\$19.00
Ipooh Coffee	16 - 500 g tins	\$46.00
Outback Lager	24 - 355 ml bottles	\$15.00

**Condiments**

*Sweet and savory sauces, relishes, spreads, and seasonings*



[Show Details](#)

Do the following to create a drill-down report:

1. Create a master-detail report using **Detail Report bands**.
2. Drop a label onto the report's detail band. Clicking this label should expand or collapse the hidden report details.
3. Select the **detail report band**, open the **Behavior** category and expand drop-down menu for the band's **Drill-Down Control** property in the **Properties** panel.

This menu displays all report controls available on the report band that is one level above the current band in the report bands' hierarchy. Select the corresponding label in the menu to make the label expand or collapse the detail report's band when clicked in the Print Preview.

The screenshot shows the SSRS Report Designer interface. On the left, there's a report structure tree with nodes like 'Detail1', 'ReportHeader', and 'Detail'. In the center, a table is displayed with columns 'Product Name', 'Quantity Per Unit', and 'Unit Price'. Below the table, fields [ProductName], [QuantityPerUnit], and [UnitPrice] are mapped to their respective columns. On the right, the 'PROPERTIES' pane is open for 'DetailReport1 (Detail Report)'. Under the 'BEHAVIOR' section, the 'Drill-Down Control' dropdown is expanded, showing three items: 'label1' (which is selected), 'label2', and 'label3'. Other options like 'Keep Together' and 'Keep Together with ...' are also visible.

You can also specify the band's **Drill-Down Expanded** property to define whether or not the band is initially expanded. This property is enabled by default.

4. Select the label, expand the **Actions** category and click the **Expression** property's ellipsis button.

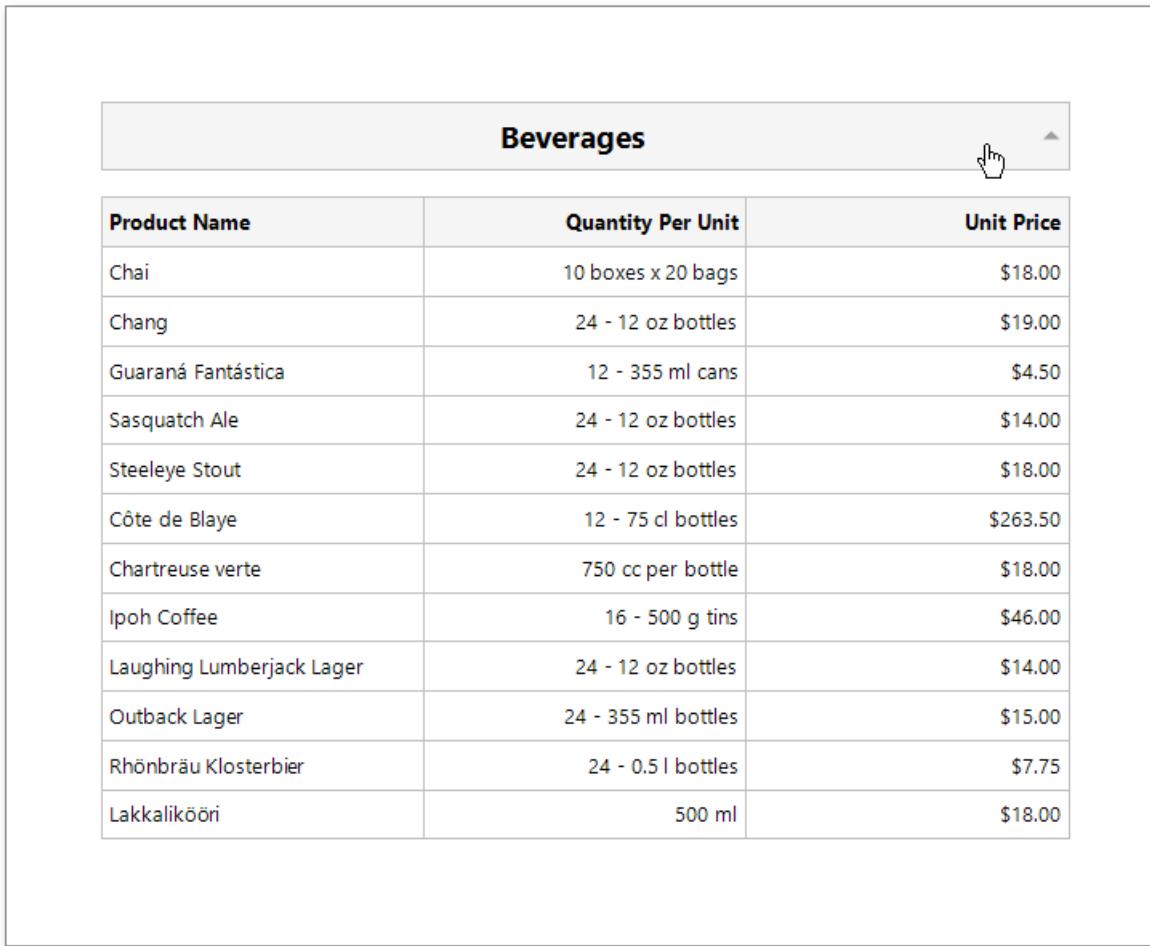
This screenshot shows the SSRS Report Designer with a label 'label1' selected in the report structure. The 'PROPERTIES' pane is open, showing the 'Actions' category. Within the 'Actions' category, the 'Expression' property has its ellipsis button ('...') highlighted with a cursor, indicating it is being selected to invoke the Expression Editor.

This invokes the [Expression Editor](#) where you can make the label display different text based on the detail report's **DrillDownExpanded** property value.

The screenshot shows the 'Expression Editor' dialog box. The main area contains the expression: `Iif( [ReportItems.DetailReport1.DrillDownExpanded], 'Hide Details', 'Show Details' )`. To the left is a navigation pane with categories like 'Report Items', 'Fields', 'Constants', 'Functions', 'Operators', and 'Variables'. The 'Functions' category is expanded, showing 'Report', 'Detail1', 'DetailReport1', and 'TopMargin1', 'BottomMargin1'. The 'DetailReport1' function is currently selected. To the right of the expression is a detailed description of the 'Iif' function, which states: 'Returns either a value defined for the first Boolean condition that is True, or the last value if none of these conditions is True.' Below the description is a note: 'This function can accept any number of arguments.' At the bottom of the dialog are 'OK' and 'Cancel' buttons, with 'OK' having a cursor icon over it.

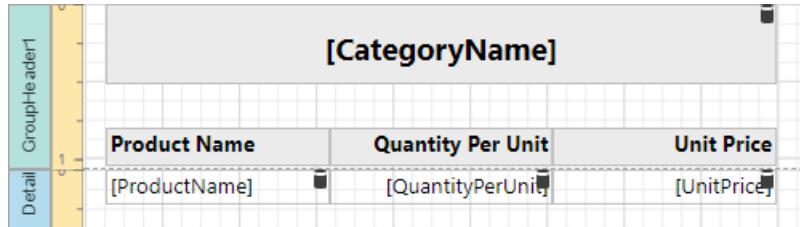
# Sort a Report in Print Preview

This tutorial illustrates how to enable sorting report data in Print Preview.



Beverages		
Product Name	Quantity Per Unit	Unit Price
Chai	10 boxes x 20 bags	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Guaraná Fantástica	12 - 355 ml cans	\$4.50
Sasquatch Ale	24 - 12 oz bottles	\$14.00
Steeleye Stout	24 - 12 oz bottles	\$18.00
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Ipooh Coffee	16 - 500 g tins	\$46.00
Laughing Lumberjack Lager	24 - 12 oz bottles	\$14.00
Outback Lager	24 - 355 ml bottles	\$15.00
Rhönbräu Klosterbier	24 - 0.5 l bottles	\$7.75
Lakkalikööri	500 ml	\$18.00

In this tutorial, we will start with the following report displaying products [grouped](#) by category names.

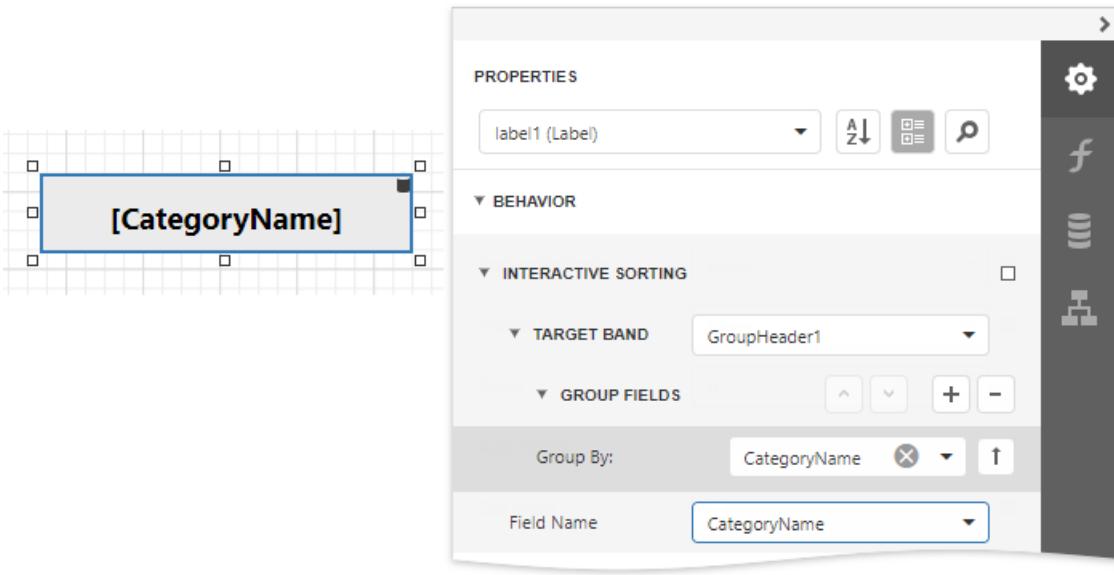


The screenshot shows the Microsoft Report Designer interface. On the left, there's a navigation pane with 'GroupHeader1' and 'Detail'. The main area has a 'CategoryName' label in the Group Header and a table with three columns ('Product Name', 'Quantity Per Unit', 'Unit Price') in the Detail section. Fields like '[ProductName]', '[QuantityPerUnit]', and '[UnitPrice]' are visible within the table cells.

You can implement interactive sorting for both the detail data and report groups.

## Sort Report Groups

To enable sorting report groups in Print Preview, select the label displaying product category names located in the **Group Header** band and switch to the [Properties](#) panel.



Expand the **Behavior** category, select the **Interactive Sorting** section, and set the **Target Band** property to *GroupHeader1*. Set the **Field Name** property to *CategoryName*.

Switch to the **Preview** tab to sort report groups by the **CategoryName** field. When a mouse pointer hovers over the category name, it changes to a hand indicating the sorting capability. The arrow displayed at the element's right edge indicates the sorting order.

Product Name	Quantity Per Unit	Unit Price
Chai	10 boxes x 20 bags	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Guaraná Fantástica	12 - 355 ml cans	\$4.50
Sasquatch Ale	24 - 12 oz bottles	\$14.00
Steeleye Stout	24 - 12 oz bottles	\$18.00
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Ipoх Coffee	16 - 500 g tins	\$46.00
Laughing Lumberjack Lager	24 - 12 oz bottles	\$14.00
Outback Lager	24 - 355 ml bottles	\$15.00
Rhönbräu Klosterbier	24 - 0.5 l bottles	\$7.75
Lakkalikööri	500 ml	\$18.00

## Sort Detail Data

To enable sorting data in the Detail band, select the table cell displaying the **Product Name** title and switch to the **Properties** panel.

The screenshot shows the Report Designer interface. On the left, there's a visual representation of a report with a header section containing the text "[CategoryName]" and a detail section containing a table with three columns: "Product Name", "Quantity Per Unit", and "Unit Price". The "Product Name" column contains the expression "[ProductName]". On the right, the "PROPERTIES" panel is open for a table cell named "tableCell1 (Table Cell)". Under the "BEHAVIOR" section, "INTERACTIVE SORTING" is expanded, showing the "TARGET BAND" set to "Detail1". In the "SORT FIELDS" section, "Sort By:" is set to "ProductName" and "Field Name" is also set to "ProductName". A note at the bottom of this section states: "Set the table cell's Field Name property to the ProductName field." The status bar at the bottom of the designer shows the message "1 item(s) selected".

Set the **Target Band** property to *Detail* and expand the **Sort Fields** section and add a new sort field to sort detail data by the product name. Set the table cell's **Field Name** property to the *ProductName* field.

On switching to the Preview tab, you can now sort data in the Detail band by the **ProductName** field.

Product Name	Quantity Per Unit	Unit Price
Steeleye Stout	24 - 12 oz bottles	\$18.00
Sasquatch Ale	24 - 12 oz bottles	\$14.00
Rhönbräu Klosterbier	24 - 0.5 l bottles	\$7.75
Outback Lager	24 - 355 ml bottles	\$15.00
Laughing Lumberjack Lager	24 - 12 oz bottles	\$14.00
Lakkalikööri	500 ml	\$18.00
Ipoh Coffee	16 - 500 g tins	\$46.00
Guaraná Fantástica	12 - 355 ml cans	\$4.50
Côte de Blaye	12 - 75 cl bottles	\$263.50
Chartreuse verte	750 cc per bottle	\$18.00
Chang	24 - 12 oz bottles	\$19.00
Chai	10 boxes x 20 bags	\$18.00

If you provide interactive sorting to multiple fields, clicking another field clears all the previously applied data sorting. Hold the SHIFT key while clicking to preserve the existing sorting settings and thus sort against multiple fields.

To disable data sorting against a specific field, hold the CTRL key on its caption click.

#### ■ Note

Reports embedded into the current report using the **Subreport** control do not support interactive data sorting.

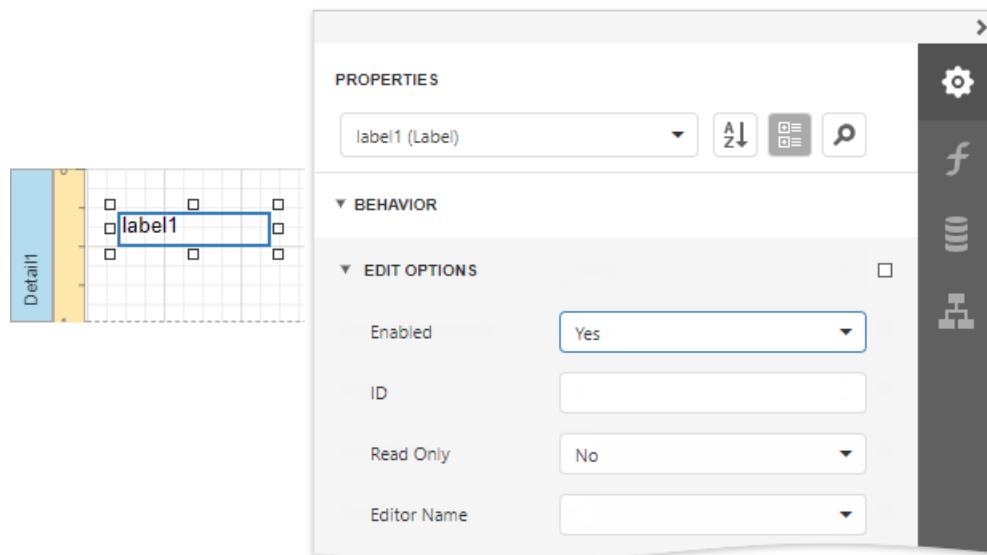
# Edit Content in Print Preview

This document provides information about interactive document editing in Print Preview that enables you to customize field values directly in a previewed document before printing or exporting it.

## Content Editing Overview

When content editing is enabled for a report control (either unbound or data-aware), it is possible to customize the corresponding field values in Print Preview.

To enable content editing for a report control, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes**.



When the **Enabled** property is set to **Yes** and the **ReadOnly** property is set to **No**, the control's content can be edited in Print Preview (clicking a field will invoke the appropriate editor).

To highlight all editing fields available in a document, click the **Editing Fields** button on the Print Preview toolbar. This button is disabled when there are no such fields in a document.

A screenshot of the Print Preview toolbar. The 'Highlight Editing Fields' button is highlighted with a mouse cursor. Below the toolbar, a sample form is shown with several input fields: 'First Name' (text input with 'N A N C Y'), 'Last Name' (text input with 'D A V O L I O'), 'Phone' (text input with '(206) 555-9857'), 'Date of Birth' (text input with '12/8/1976'), 'Gender' (checkboxes for 'Female' and 'Male'), and 'Skills' (checkboxes for 'WinForms', 'ASP.NET', 'WPF', 'C#', 'HTML', and 'CSS').

First Name: N A N C Y

Last Name: D A V O L I O

Phone: (206) 555-9857

Date of Birth: 12/8/1976

Gender:

Skills:

Female  WinForms  ASP.NET  WPF

Male  C#  HTML  CSS

When enabling content editing in your report, consider the following.

- 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).
- A control's **Can Grow** setting is ignored for editing fields.

Multi-line values can only be entered when no mask is applied to an editing field. The editing area of a field cannot exceed the original dimensions of a control.

- Values entered into editing fields are reset back to their defaults after refreshing the document (e.g., when submitting [report parameter](#) values and expanding or collapsing data in a [drill-down report](#)).
- It is impossible to edit content of a control that has its **Drill-Down Control** property specified.
- Field values entered in Print Preview for controls placed onto the Top Margin and Bottom Margin bands are not preserved when the report is exported to TXT or CSV, as well as the following formats as a single file.
  - HTML
  - MHT
  - RTF
  - XLS
  - XLSX
  - image

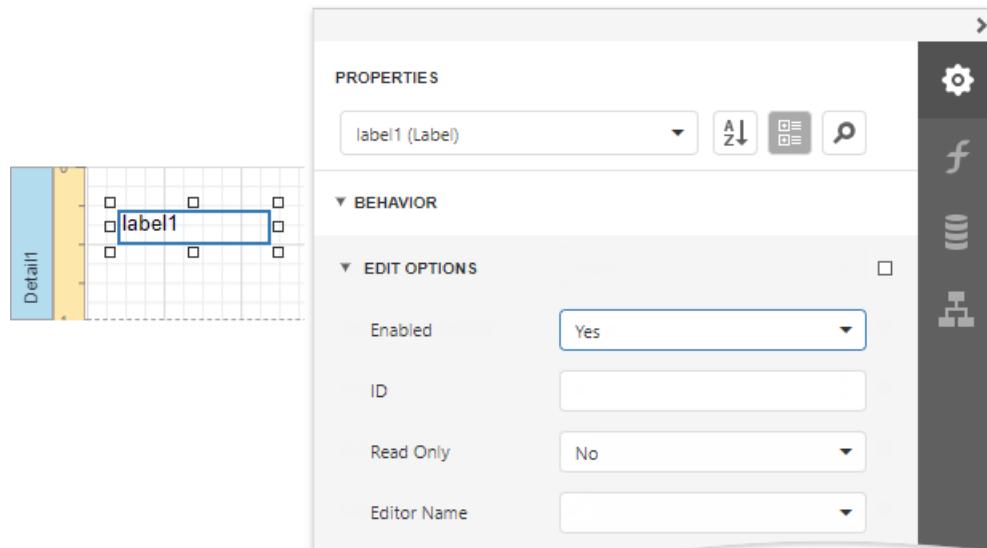
To learn about the specifics of editing different kinds of content, see the following sections in this document.

- [Text Editors](#)
- [Check Box Editor](#)
- [Image Editors](#)

## Text Editors

The [Label](#), [Table Cell](#) and [Character Comb](#) controls can be assigned editors to customize their content in Print Preview.

To enable content editing for these controls, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes**.



The following editors can be used to customize a field's content in Print Preview.

- **Default Editor**

By default, the **Editor Name** property is not specified, and a memo edit is used as a standard editor.

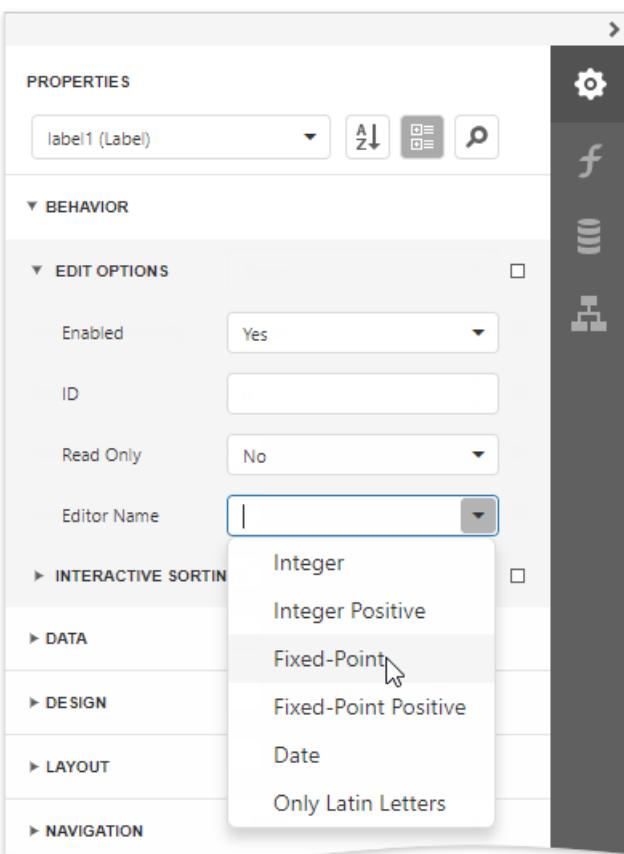
Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00

- **Specific Value Editors**

You can assign a specific editor to a control using its **Editor Name** property.

**Note**

This option is disabled for the **Character Comb** control.



**Note**

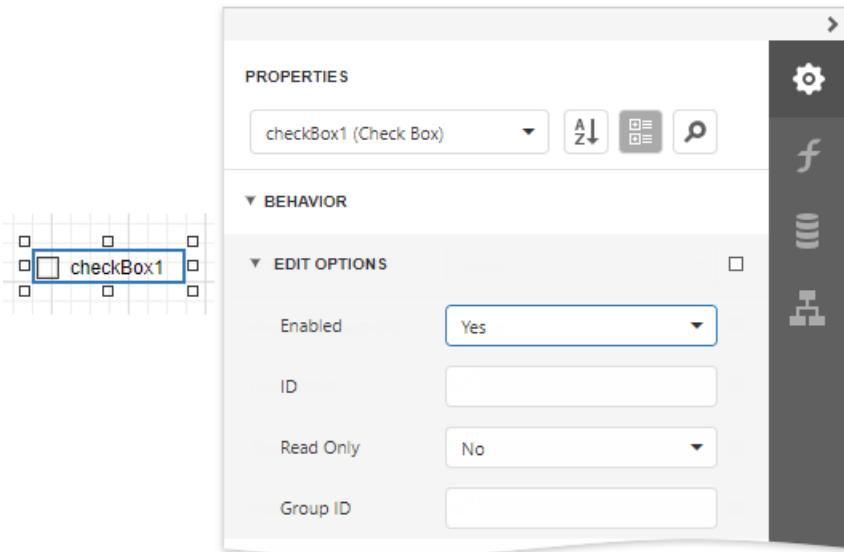
If a table cell contains other controls, its editing is disabled (but not the editing of the controls contained in this cell), which is illustrated in the following image.

Employee	Status
First Name: Nancy	<input checked="" type="checkbox"/> Employed
Last Name: Davolio	<input type="checkbox"/> Retired

## Check Box Editor

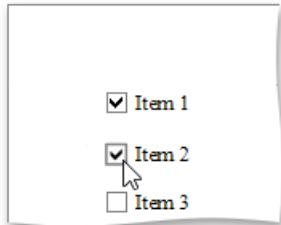
The **Check Box** control's value can be edited in Print Preview.

To enable content editing for a check box, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes**.



In Print Preview, the control's behavior depends on the **Group ID** setting.

- When this property is set to **null** or an empty string value, a check box can be switched either to the "checked" or "unchecked" state (the "intermediate" state is not supported) independently on other available check boxes.

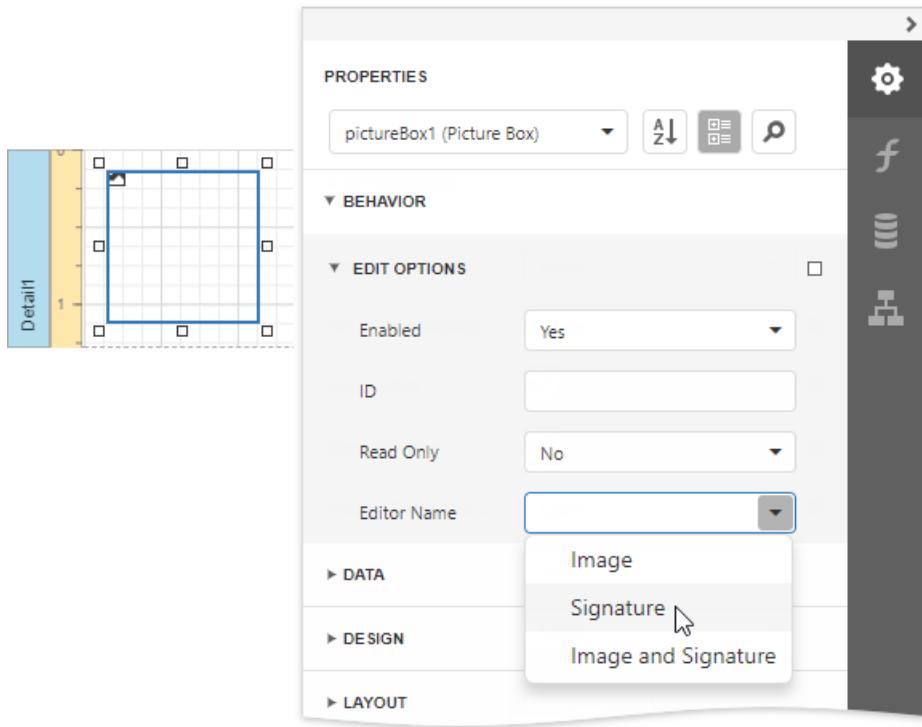


- Otherwise, the field editor behaves like a radio button, and editors with the same **Group ID** value belong to a single logical group (i.e., only one option can be selected within a group at a time).

## Image Editors

Image editors are used to customize the [Picture Box](#) report control's content in Print Preview.

To enable content editing for a picture box, expand the **Behavior** category, select the **Edit Options** section and set the **Enabled** property to **Yes**.



Use the control's **Editor Name** property to assign one of the following image editors.

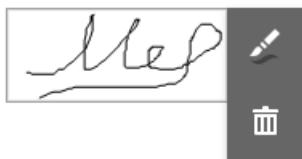
- **Image Editor**

Allows you to load an image and specify the image's size options.



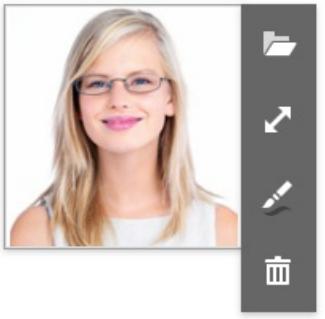
- **Signature Editor**

Allows you to specify brush options and draw a signature.



- **Image and Signature Editor (default)**

Allows you to load an image and draw a signature. The image's size options and brush options are available.



All the image editors listed above can include the  menu item. This item is available only when the Picture Box control has an original image.

# Add Extra Information

The topics in this section describe how to identify your reports by displaying information about their context:

- [Add Watermarks to a Report](#)
- [Display the Current Date and Time in a Report](#)
- [Display the User Name in a Report](#)

## Note

See [Add Navigation](#) to learn how to add page numbers and a table of contents to your reports.

# Add Watermarks to a Report

This tutorial describes how to add watermarks to a report and use preprinted forms.



**Andrew Fuller**

Birth Date: 2/19/1952

Phone: (206) 555-9482

Country: USA

City: Tacoma

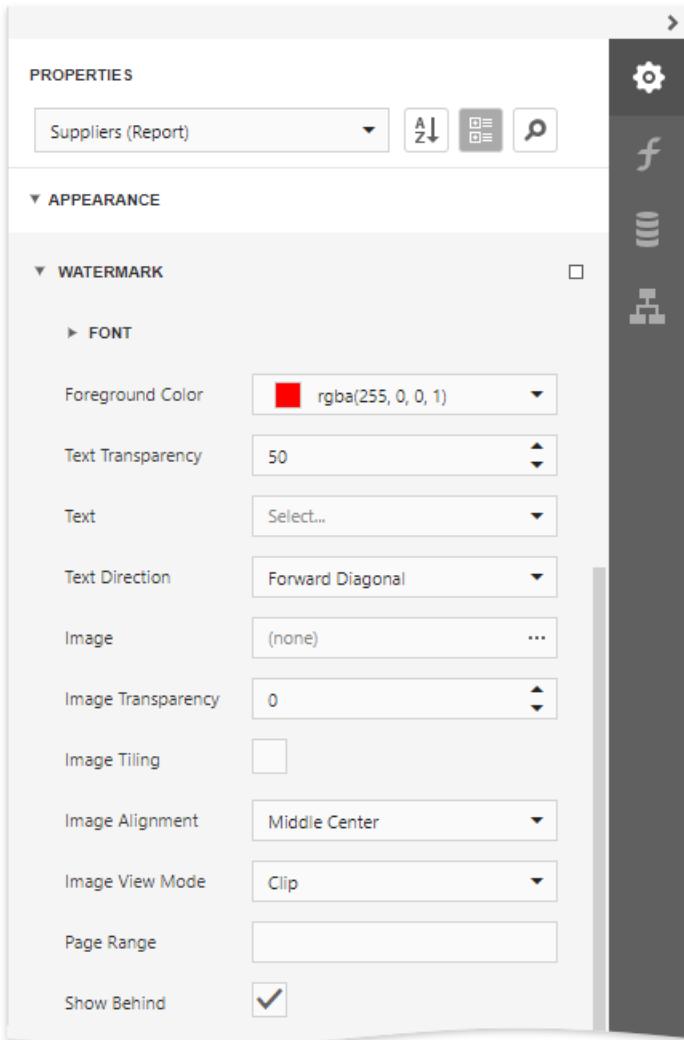
Andrew received his BTS commercial in 1974 and a Ph.D. in international marketing from the University of Dallas in 1981. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager in January 1992 and to vice president of sales in March 1993. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.

*SAMPLE*

## Add a Watermark to a Report

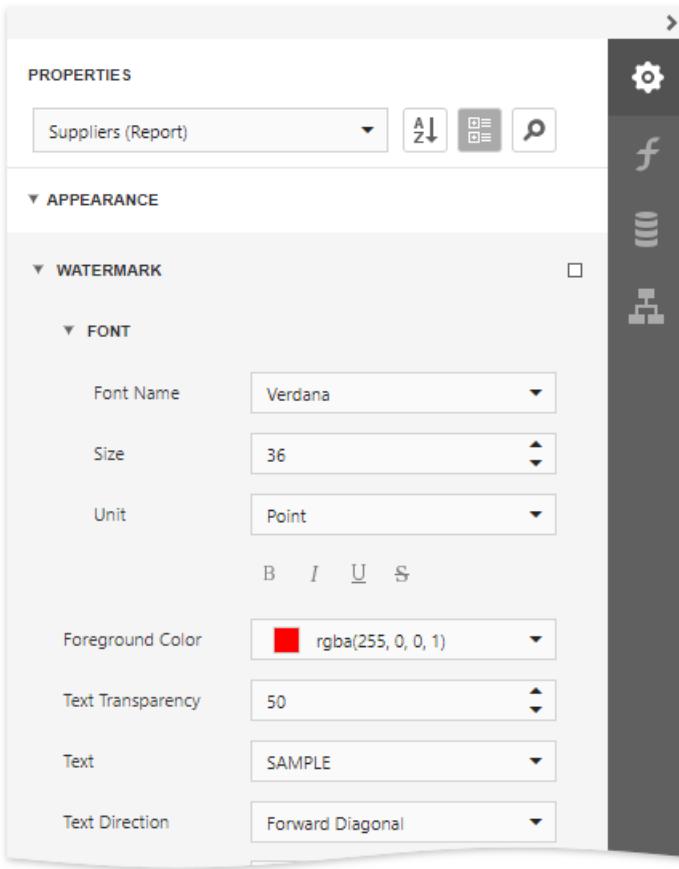
To add a watermark to a report, do the following.

1. Switch to the **Properties** panel and expand the **Watermark** node in the **Appearance** category.

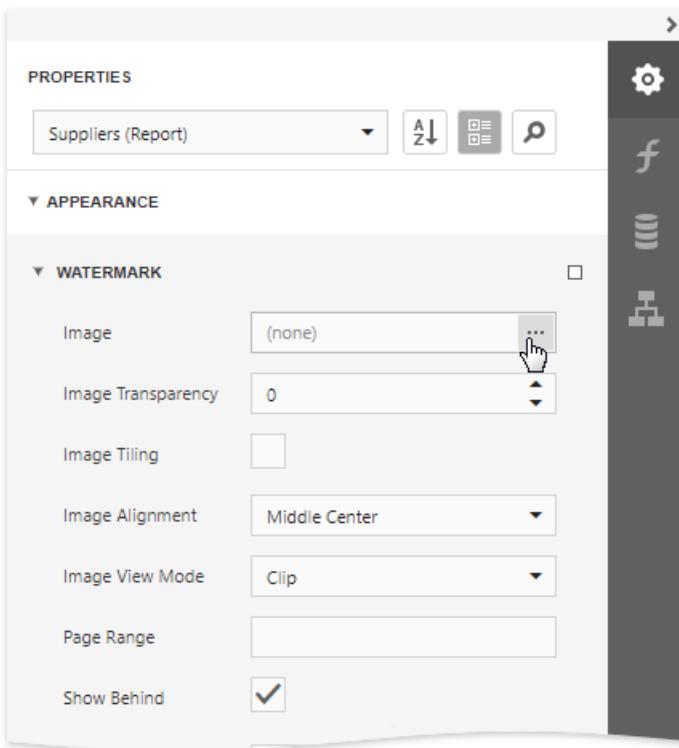


2. In the **Watermark** node, specify the **Text** or **Image** property, depending on the type of watermark you wish to add.

For a text watermark, specify the text, direction and font options.



For a picture watermark, you need to specify an image. To do this, click the ellipsis button for the **Image** property.



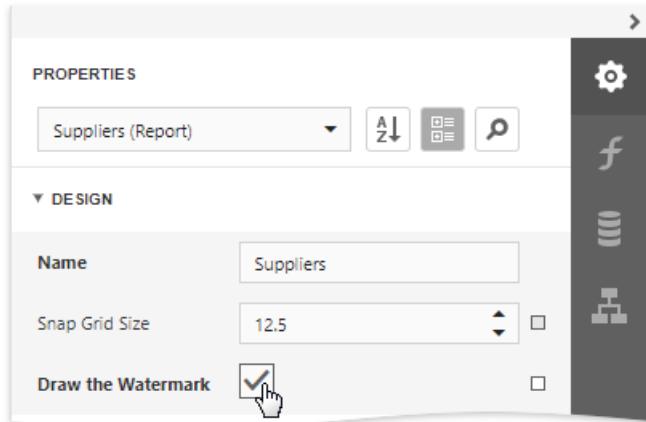
In the invoked dialog, select the file containing the image that you wish to use as a watermark and click **Open**. Next, specify the size mode and alignment options for the picture.

Additionally, for both textual and picture watermarks, you can adjust the transparency, position (in front of or behind the document content), and the page range in which the watermark will be printed.

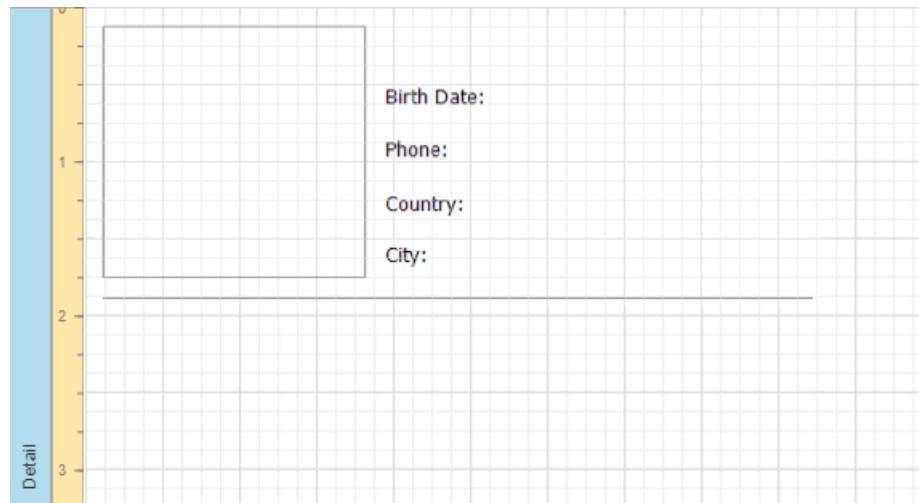
## Supply a Preprinted Form

You can use a picture watermark as a template, to display an image of the preprinted form on the report's body at design time.

To display a watermark at design time, expand the **Design** category and enable the **Draw the Watermark** property.



The following image illustrates a report with a watermark shown at design time that contains a template of a preprinted form.



Place report controls on the report's body according to the layout of the preprinted form.

The report design surface now shows several report controls placed on the grid. In the first column, there is a large rectangle placeholder. In the second column, there are four text boxes with labels: 'Birth Date: [BirthDate]', 'Phone: [HomePhone]', 'Country: [Country]', and 'City: [City]'. In the third column, there is a text box with the label '[Notes]'. To the right of the report, the 'FIELD LIST' pane is open, showing the structure of the 'Employees' data source. The 'Notes' field is highlighted with a gray background, indicating it is selected.

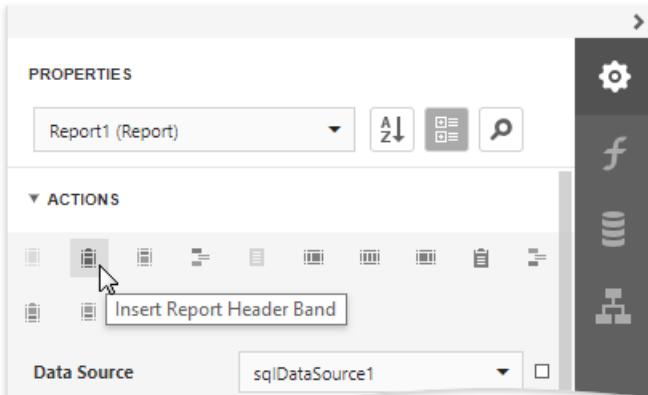
# Display the Current Date and Time in a Report

This tutorial demonstrates how to insert the current system date and time into a report using the [PageInfo](#) control.

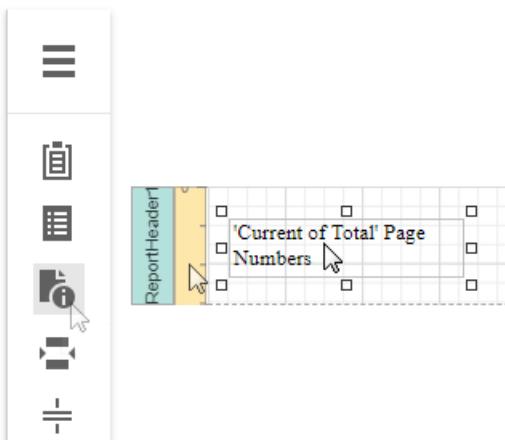
Product Name	Unit Price
Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00
Queso Manchego La Pastora	\$38.00
Konbu	\$6.00
Tofu	\$23.25
Genen Shouyu	\$15.50

Do the following to include information about the current date and time into a report:

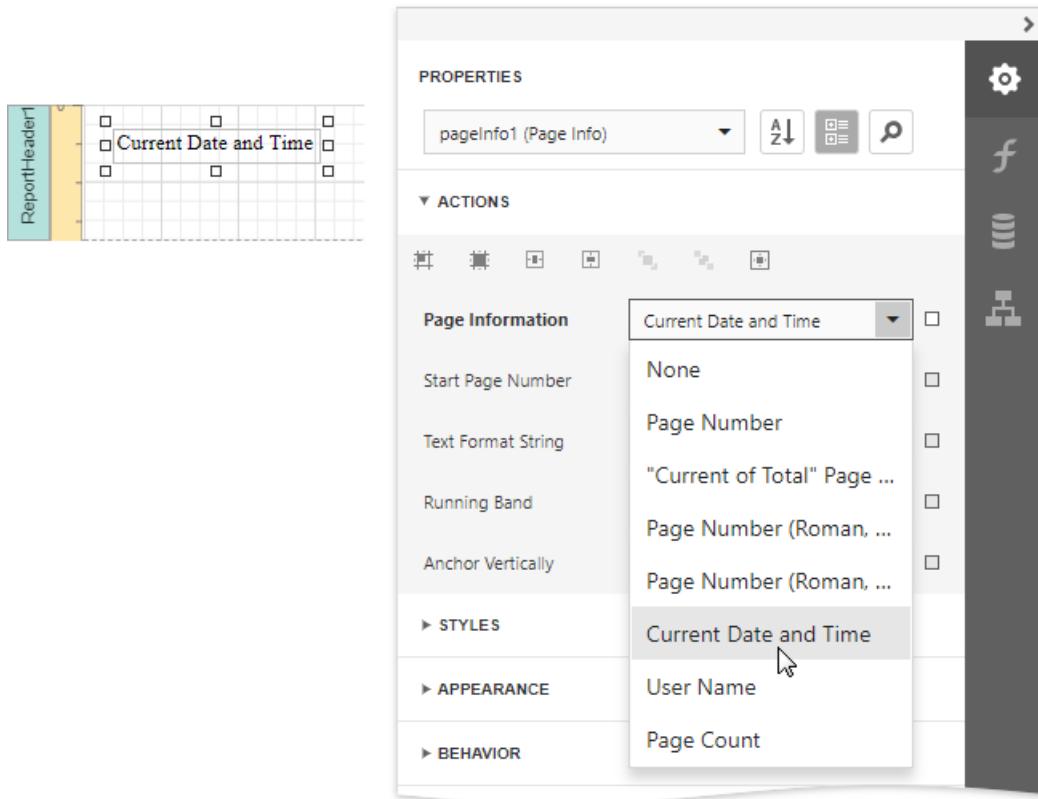
1. Typically, the current date and time are displayed within the [Report Header](#) band. To add it to the report, click **Insert Report Header Band** in the **Actions** category.



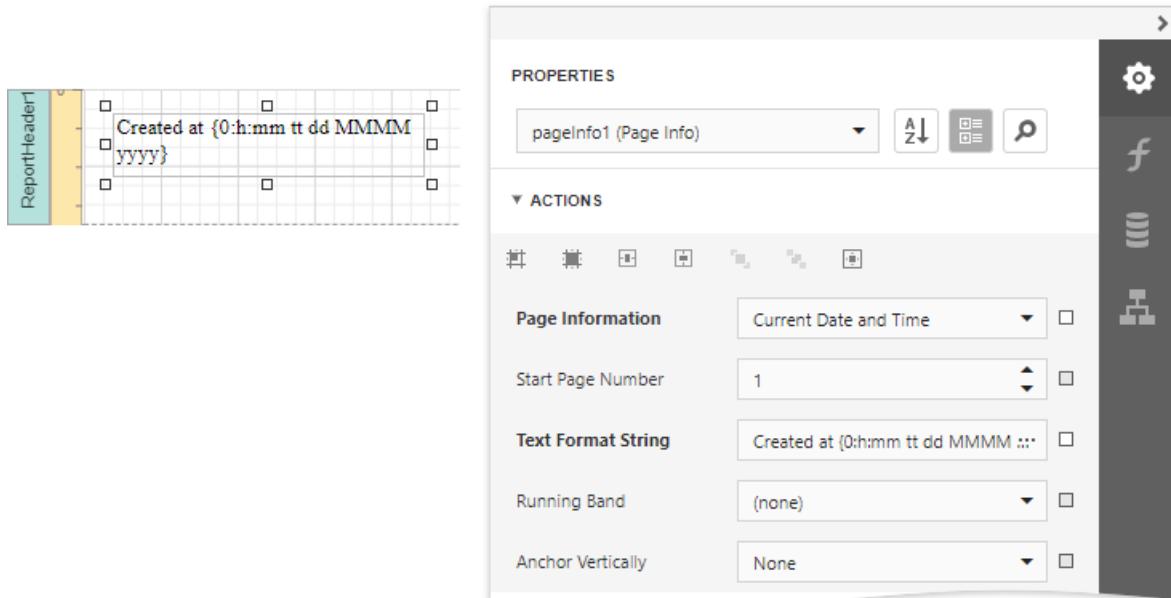
2. Drop the [PageInfo](#) control from the [Toolbox](#) onto the **Report Header** band.



3. Set the control's **Page Information** property to *Current Date and Time*.



4. To apply a format string to the control's contents, type **Created at {0:h:mm tt dd MMMM yyyy}** into its **Text Format String** property.



# Display the User Name in a Report

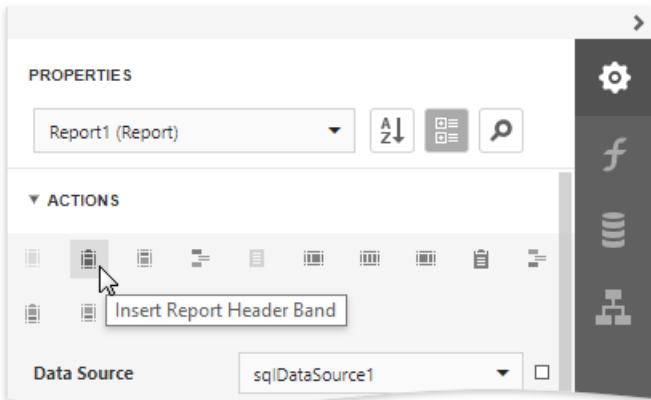
This tutorial demonstrates how to insert the current user name in a report using the [PageInfo](#) control.

The screenshot shows a report interface with a table of product data. At the top left, there is a header line that reads "Current User: Andrew Fuller". The table lists various products with their names in the first column and prices in the second column. The data is as follows:

Product Name	Unit Price
Chai	\$18.00
Chang	\$19.00
Aniseed Syrup	\$10.00
Chef Anton's Cajun Seasoning	\$22.00
Chef Anton's Gumbo Mix	\$21.35
Grandma's Boysenberry Spread	\$25.00
Uncle Bob's Organic Dried Pears	\$30.00
Northwoods Cranberry Sauce	\$40.00
Mishi Kobe Niku	\$97.00
Ikura	\$31.00
Queso Cabrales	\$21.00
Queso Manchego La Pastora	\$38.00
Konbu	\$6.00
Tofu	\$23.25
Genen Shouyu	\$15.50
Pavlova	\$17.45
Alice Mutton	\$39.00
Carnarvon Tigers	\$62.50

Do the following to insert the user name into a report:

1. Typically, the user name is displayed within the [Report Header](#) band. To add it to the report, click **Insert Report Header Band** in the **Actions** category.



2. Drop the [PageInfo](#) control from the [Toolbox](#) onto the **Report Header** band.



3. Set the control's **Page Information** property to **User Name**.

The screenshot shows the Report Designer interface. On the left, there is a visual representation of the report structure with a 'ReportHeader1' band highlighted in blue. In the center, a text box containing the text 'User Name' is selected. To the right, the Properties panel is open for the selected control. The 'Page Information' dropdown menu is expanded, showing various options like 'None', 'Page Number', and 'User Name'. The 'User Name' option is highlighted with a mouse cursor.

4. Next, to apply a format string to the control's contents, type **Current User: {0}** into its **Text Format String** property.

The screenshot shows the Report Designer interface with the same report structure as the previous screenshot. The text box now contains the placeholder 'Current User: {0}'. The Properties panel is open, and the 'Text Format String' property is set to 'Current User: {0}'. Other properties like 'Start Page Number' (set to 1) and 'Page Information' (set to 'User Name') are also visible.

# Merge Reports

You may have report pages that do not fit within an entire report template in the following cases:

- Title pages or custom pages at the end of the report;
- Charts within a table report;

You can create pages in a separate report and merge them into your base report. This enables you to print and export merged pages as a single document, and preserve the original report page settings and orientation.

The image displays a 2x3 grid of report pages from the Northwind Traders database. The top row contains a logo page, a title page, and a table page. The bottom row contains a table page, a chart page, and another table page.

**Logo Page:** Shows the Northwind Traders logo featuring a lighthouse and the company name.

**Title Page:** Displays the title "Tourists' Gunpowder Worldwide" and "Normalized Product". It includes a detailed description of the report's purpose and methodology.

**Table Page:** Shows a table titled "Produce" with columns for Product ID, Name, Unit, and Price per Unit.

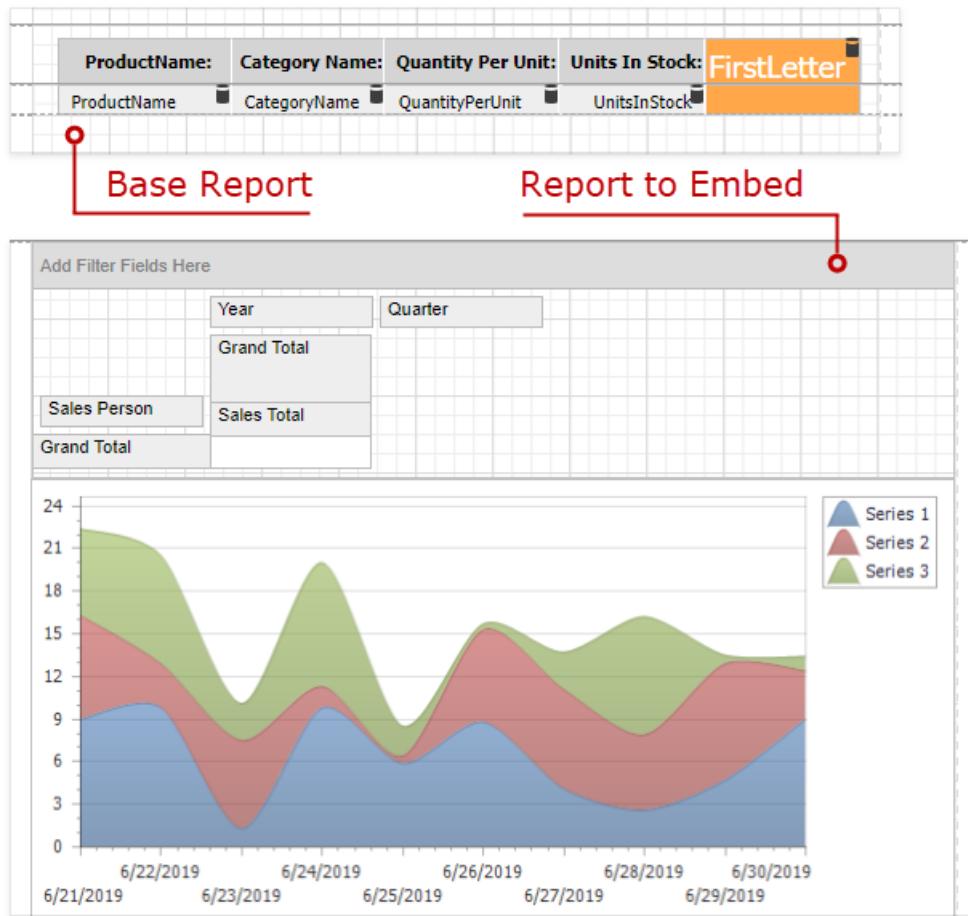
**Table Page:** Shows a table titled "Grains/Cereals" with columns for Product ID, Name, Unit, and Price per Unit.

**Chart Page:** A bar chart titled "Category: Grains/Cereals" showing the quantity of various grain products. The categories on the x-axis are Wheat, Oats, Barley, Rye, Corn, and Rice. The y-axis shows quantities from 0 to 30.

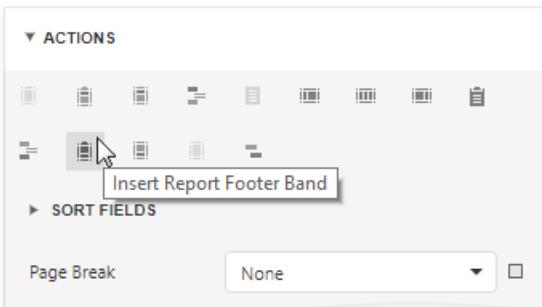
**Table Page:** Shows a table titled "Dairy Products" with columns for Product ID, Name, Unit, and Price per Unit.

# Add a Report to the End/Beginning

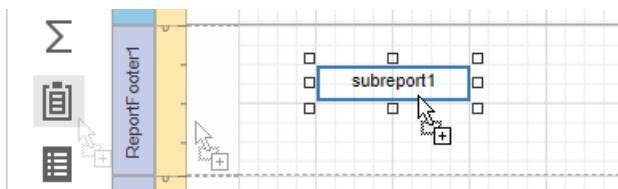
Follow the steps below to add a separate report to the end of another report and print it as a single job.



1. Click **Insert Report Footer Band** in the **Actions** group.



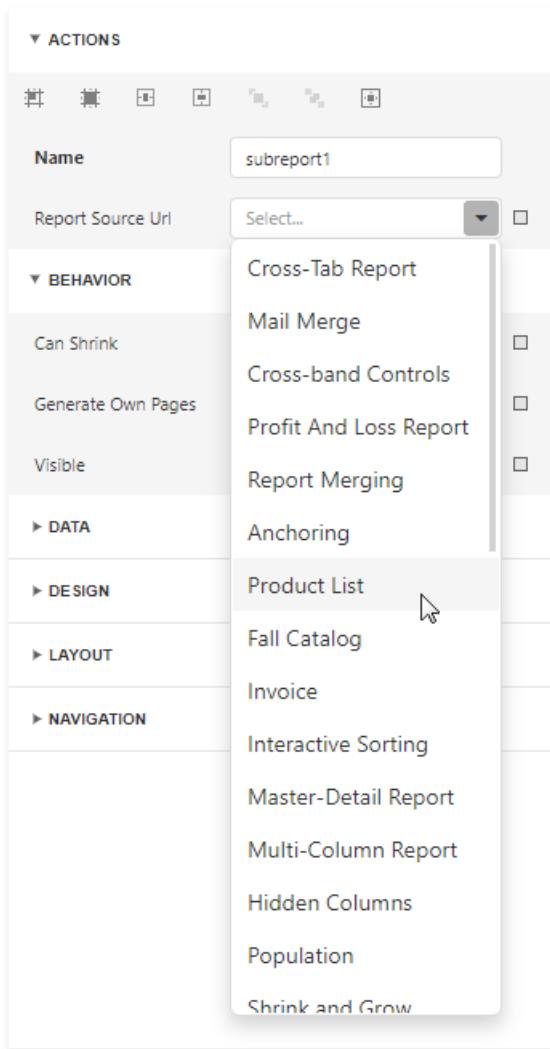
2. Drag a Subreport item from the Toolbox onto the created Report Footer band.



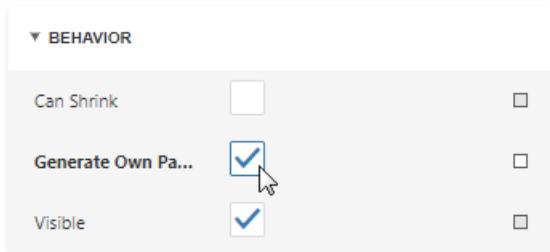
## Did Tip

To add a report to the beginning of another report (for instance, to add a title page), use the **Report Header** band instead.

3. In the Subreport's **Actions** group, set the **Report Source Url** parameter to the report that you want to insert.



4. Enable the **Generate Own Pages** option in the Subreport's **Behavior** group to print the embedded report on separate pages and use its own page settings.



5. Switch to Preview mode to see the combined report.

## Alphabetical List of Products



4/26/2019

ProductName	Category Name	Quantity Per Unit	Units In Stock	
Alice Mutton	Meat/Poultry	20 - 1 kg tins	0	
Aniseed Syrup	Condiments	12 - 350 ml bottles	13	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Boston Crab Meat	Seafood	24 - 4 oz cans	123	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Cameroun Pierrot	Dairy Products	15 - 300 g pouches	19	
Carribean Trollers	Seafood	16 kg pck.	42	
Chai	Beverages	10 boxes x 20 bags	39	
Chang	Beverages	24 - 12 oz bottles	17	
Chartreuse verte	Beverages	730 cc per bottle	69	
Chef Anton's Cajun Seasoning	Condiments	48 - 6 oz jars	53	
Chef Anton's Gumbo Mix	Condiments	36 boxes	0	
Chocolate	Confetions	10 pcks.	15	
Côte de Boeuf	Beverages	12 - 75 cl bottles	17	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Escarpolette de Bourgogne	Seafood	24 pieces	62	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Filo Mix	Grains/Cereals	16 - 2 kg boxes	38	
Flottmanns	Dairy Products	10 - 300 g pcks.	26	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Gelato	Dairy Products	300 g	112	
Genen Shouyu	Condiments	24 - 250 ml bottles	39	
Gnocchi di nonna Alice	Grains/Cereals	24 - 250 g pcks.	21	
Gorgonzola Telmo	Dairy Products	12 - 100 g pcks.	0	
Grandma's Boysenberry Spread	Condiments	12 - 8 oz jars	120	
Granita Iaxi	Seafood	12 - 300 g pcks.	11	
Guaraná Fandango	Beverages	12 - 335 ml cans	20	
Guanbaracatocot	Dairy Products	10 kg pck.	26	
Gula Melaka	Condiments	20 - 1 kg bags	27	
Gumbor Gummibärchen	Confetions	100 - 230 g bags	19	
Gus's Kitchens	Grains/Cereals	24 - 300 g pcks.	104	

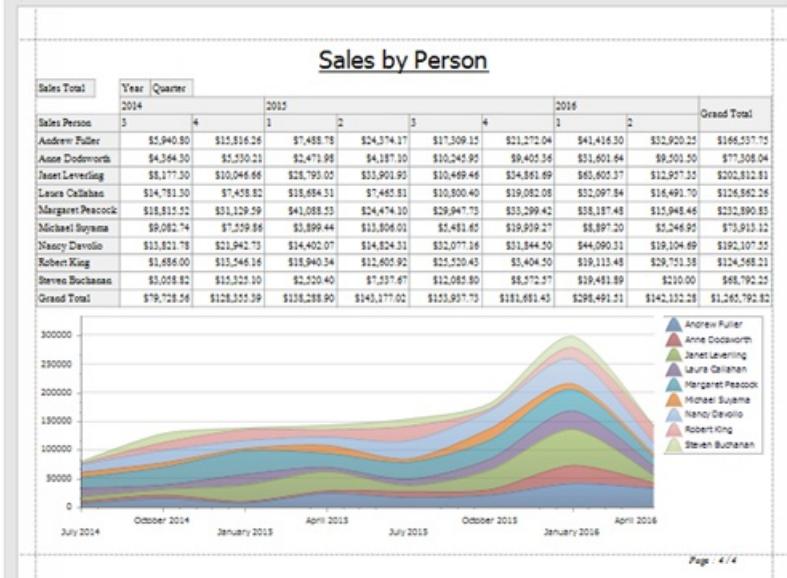
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ProductName	Category Name	Quantity Per Unit	Units In Stock	
Ikura	Seafood	12 - 200 ml jars	31	
Inago Slik	Seafood	24 - 230 g jars	112	
Ipan Coffee	Beverages	16 - 300 g tins	17	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Japon New England Dam Chocicer	Seafood	12 - 12 oz cans	83	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Konbu	Seafood	2 kg box	24	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Lakawonlon	Beverage	300 ml	37	
Laughing Lumberjack Lager	Beverage	24 - 12 oz bottles	32	
Longlife Tofu	Produce	5 kg pck.	4	
Louisiana Fiery Hot Pepper Sauce	Condiments	32 - 8 oz bottles	76	
Louisiana Hot Spiced Oysters	Condiments	24 - 8 oz jars	4	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Mangimbo Dried Apples	Produce	30 - 300 g pcks.	20	
Mascarpone Patisol	Dairy Products	24 - 200 g pcks.	9	
Mari Kobo Niku	Meat/Poultry	18 - 300 g pcks.	29	
Mozzarella di Giovanni	Dairy Products	24 - 200 g pcks.	14	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Mono-Dot Herringberry	Seafood	10 - 200 g glasses	10	
NorthwoodsCranberry	Condiments	12 - 12 oz jars	6	
Multivita Nut-Nougat	Confetions	20 - 450 g glasses	76	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Original Frankfurter grüne Soße	Condiments	12 boxes	32	
Outback Lager	Beverage	24 - 335 ml bottles	15	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Pâté chinois	Meat/Poultry	24 boxes x 2 pks	113	
Pavlova	Confetions	32 - 300 g boxes	29	
Pork Rentes	Meat/Poultry	48 pieces	0	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Queso Cabrero	Dairy Products	1 kg pck.	32	

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Queso Manchego La Pastora	Dairy Products	10 - 300 g pcks.	86	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Raclette Courteau	Dairy Products	5 kg pck.	79	
Raviooli Angelo	Grains/Cereals	24 - 250 g pcks.	36	
Ribondu Kusterbier	Beverages	24 - 0.5 l bottles	123	
Rod Kavir	Seafood	24 - 150 g jars	101	
Rogede Aard	Seafood	1kg pck.	3	
Rosie's Sauvignon	Product	25 - 825 g cans	26	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Saskatch Ale	Beverages	24 - 12 oz bottles	111	
Schöppi Schokolade	Confetions	100 - 100 g pieces	49	
Scottish Longnoseads	Confetions	10 boxes x 8 pieces	6	
Singaporean Hotten Fried Bee	Grains/Cereals	32 - 1 kg pcks.	26	
Sir Rooney's Hamalaise	Confetions	30 gift boxes	40	
Sir Rooney's Scones	Confetions	24 pcks. x 4 pieces	3	
Sishop crème	Confetions	24 - 300 ml bottles	113	
Sopeadil	Seafood	4 - 450 g glasses	95	
SteelEye Stout	Beverages	24 - 12 oz bottles	20	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Tarte au sucre	Confetions	48 pks.	17	
Teatime Chocolate Blaumil	Confetions	10 boxes x 12 pieces	29	
Thüringer Rostbratwurst	Meat/Poultry	30 bags x 30 sausages	0	
Tofu	Produce	40 - 100 g pcks.	35	
Tourtilla	Meat/Poultry	16 pks.	21	
Tunabrod	Grains/Cereals	12 - 250 g pcks.	61	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Uncle Bob's Organic Dried Pearls	Product	12 - 1 lb pcks.	19	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Valkonen suissa	Confetions	12 - 100 g bars	69	
Vegan-spread	Condiments	15 - 625 g jars	24	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Wimmer gute Semmelknödels	Grains/Cereals	20 bags x 4 pieces	22	
ProductName	Category Name	Quantity Per Unit	Units In Stock	
Zitronen lecken	Confetions	10 - 4 oz boxes	36	

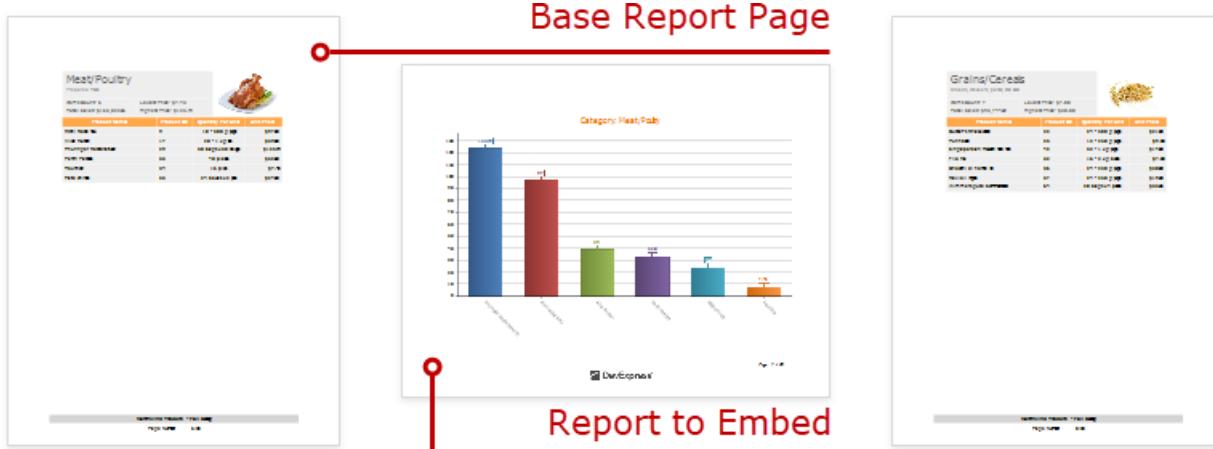
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# Use Data-Driven Page Sequence

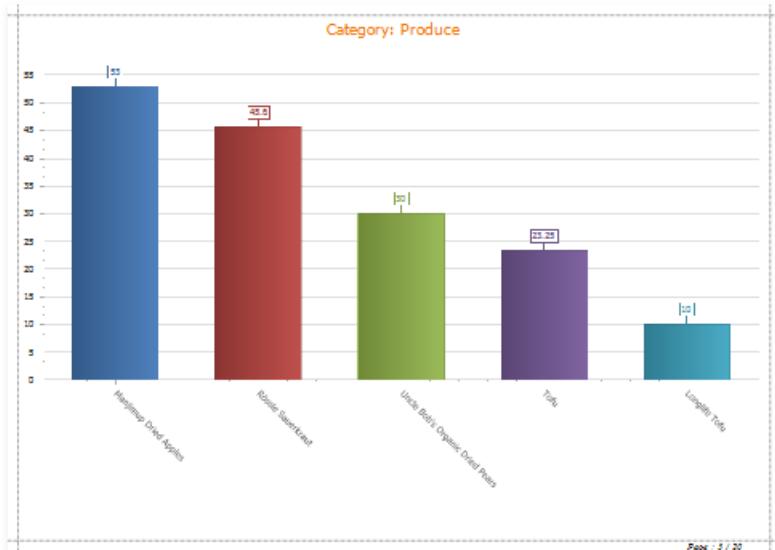
This topic describes how to combine a table report that uses Portrait page orientation and a chart report that uses Landscape page orientation.



Follow the steps below to create a combined report:

## Create a Chart Report

1. Create a report that shows data in the chart form. **Bind** the report to a data source. Set the report's **Landscape** property to **true** to enable the Landscape page orientation.



2. Add a parameter to your chart report to identify which data to use for the chart. Switch to the **Field List** tab and click the **Parameters** node's plus button.



3. Click the created parameter's edit button and set its **Name** and **Type**, and uncheck the **Visible** option.

**FIELD LIST**

- sqlDataSource1
- Parameters

**Parameter1**

Name	CatID
Description	Parameter1
Visible	<input type="checkbox"/>
Multi-Value	<input type="checkbox"/>
Allow Null	<input type="checkbox"/>
Tag	
Type	Number (32 bit integer)
Value	
Look-Up Settings	No Look-Up

4. Switch to the report's **Properties** tab. Click the **Filter String** option's ellipsis button.

**PROPERTIES**

ProductListReport (Report)

**ACTIONS**

Data Source	sqlDataSource1
Data Member	Products
Filter String	<input type="text"/> ...
Measure Units	Hundredths of an Inch



5. In the **Filter Editor** dialog, construct an expression to compare the key data field to the created parameter.



6. Save the report.

## Create the Base Report

1. Create a report **bound** to the same data source as the chart report, and arrange a layout like the one shown below:

CategoryName			
Description			
sumCount([ProductID])	sumMin(UnitPrice)	sumSum(ProductSales)	sumMax(UnitPrice)
ProductName	ProductID	QuantityPerUnit	UnitPrice

2. Switch to the **Actions** tab and click **Insert Group Footer**.

**ACTIONS**

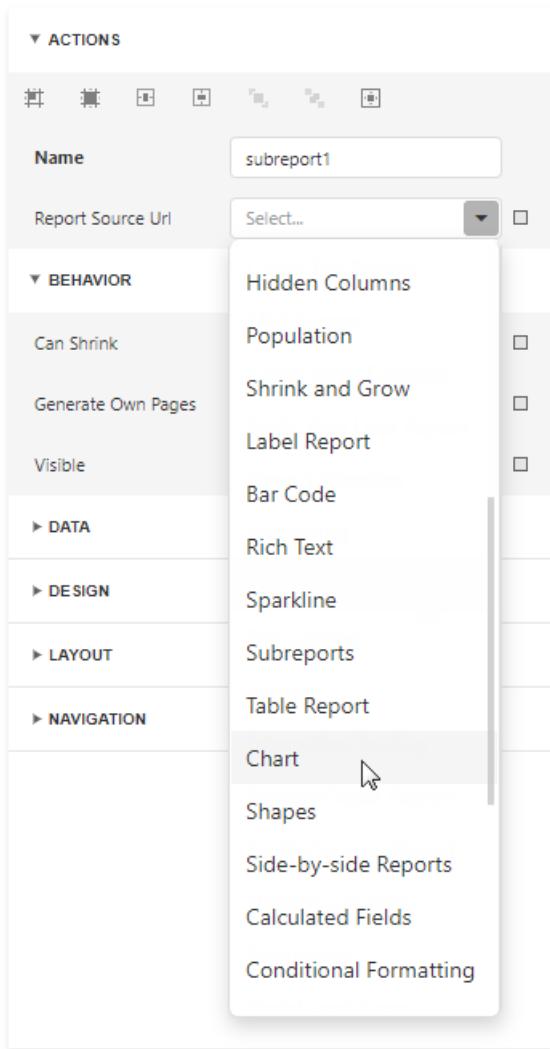
► GROUP FIELDS

Group Union: Whole Page

Level: 0

3. Drag a **Subreport** item from the Toolbox onto the added group footer band.

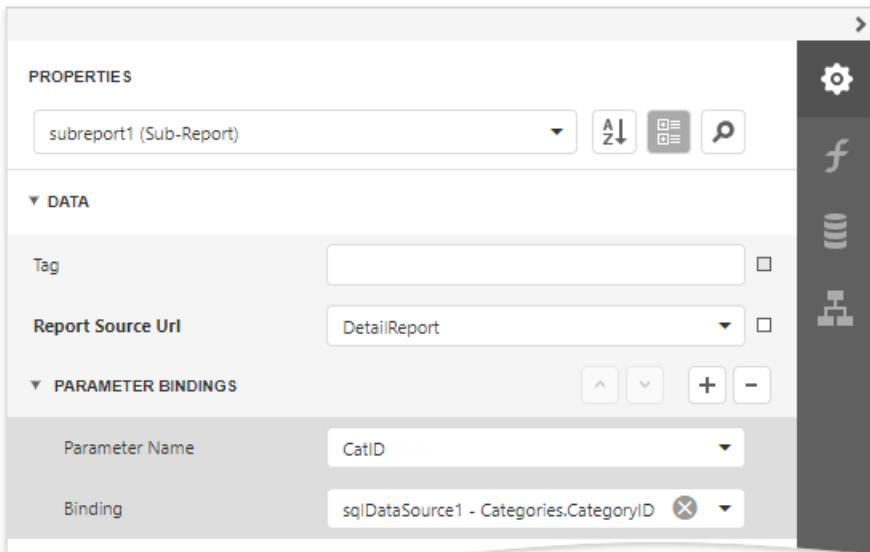
4. Select the subreport control. In the **Actions** group, set the **Report Source Url** parameter to the chart report.



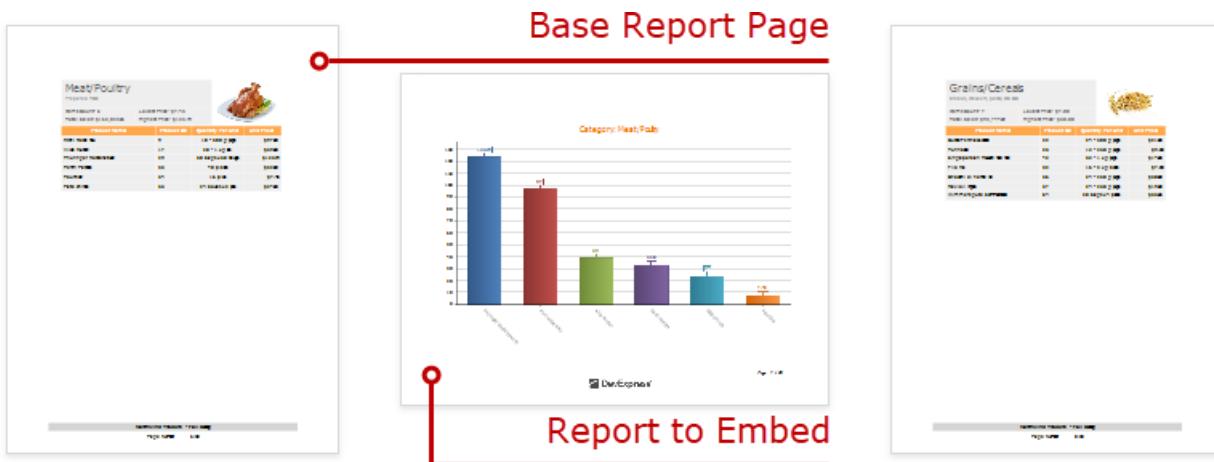
5. Enable the **Generate Own Pages** option to print the embedded report on separate pages and use its own page settings.



6. Bind the subreport's parameter used as a filter criterion to the master report's data field that serves as a source of the parameter value. Expand the **Data** category, select the **Parameter Bindings** section and add a new parameter binding. In the binding properties list, specify the data field to bind a subreport parameter to, and the parameter you want to bind.



7. Switch to Preview mode to see the combined report.



Your base report's **Table of Contents** and **Document Map** include bookmarks from the embedded report. Use the **Parent Bookmark** property to specify the nesting level for the embedded report's bookmarks.

# Use Expressions

Expressions are used to specify criteria for [retrieving and formatting data](#), [creating calculated fields](#) and [calculating summaries](#), [conditionally shaping data](#) and [changing a report control's appearance](#).

## Expression Syntax

An expression is a string that, when parsed and processed, evaluates a value. Expressions consist of field names, constants, operators, and functions. Field names must be wrapped in brackets. Here are examples of expressions:

"[Quantity] \* [UnitPrice] \* (1 - [BonusAmount])"

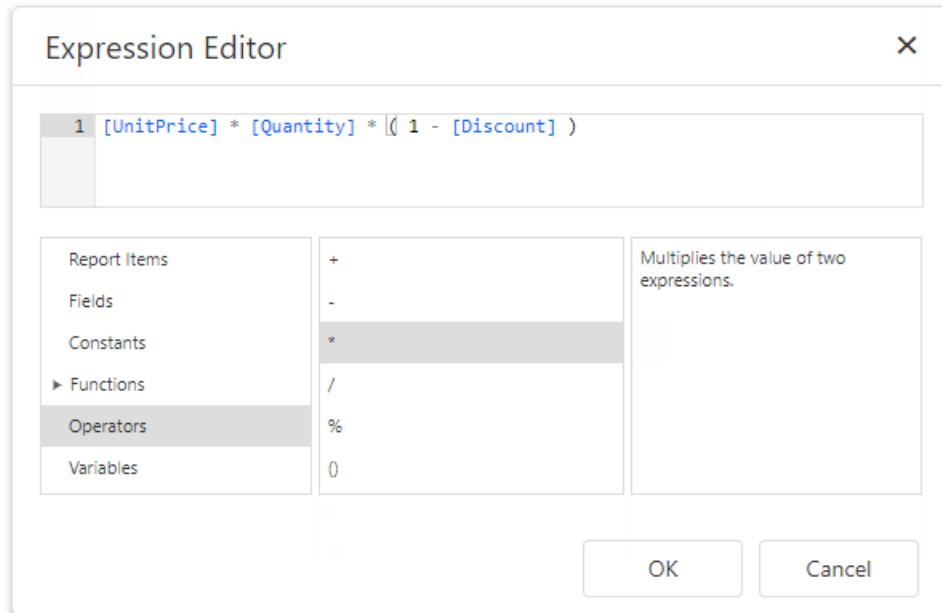
"[FirstName] + ' ' + [LastName]"

"[Country] == 'USA'""[OrderDate] > #8/16/1994# AND [Quantity] > 20"

There is a list of operators, constants and functions that you can use in expressions. Refer to the [Expression Syntax](#) topic for details on their usage.

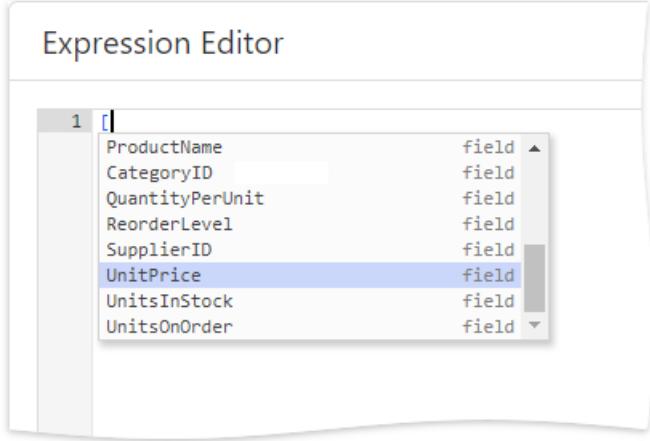
## Expression Editor

The Report Designer allows you to use the [Expression Editor](#) that provides functions, operators, data source fields, report elements, constants and variables to construct expressions.



The Expression Editor supports syntax highlighting and intelligent code completion (suggesting functions and available data elements as you type).

## Expression Editor

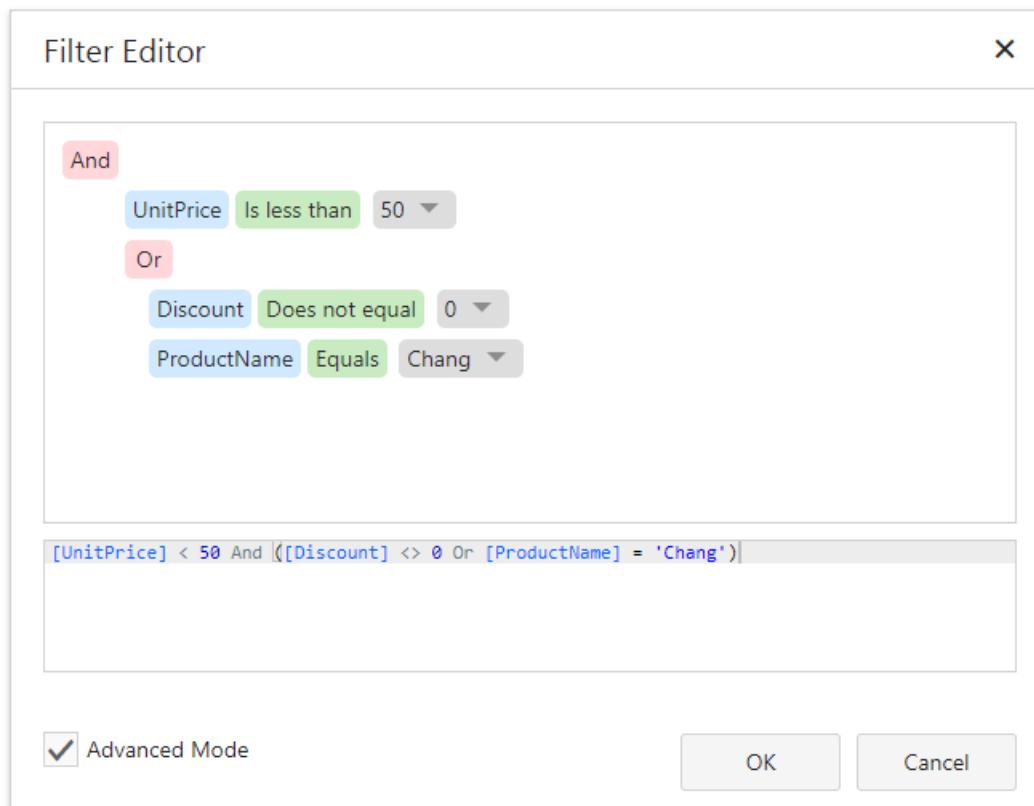


The Expression Editor displays all the errors it finds in the specified expression.



## Filter Editor

The Report Designer allows you to use the [Filter Editor](#) to specify filter criteria. The Filter Editor provides a visual interface for constructing filter criteria with an unlimited number of filter conditions combined by logical operators. You can also switch to the Text mode to type a filter string manually.



The Filter Editor supports intelligent code completion (suggesting functions and available data elements as you type) and error validation features.

[UnitPrice] < 50 And [Dis

[Discount]	field
[DiscountTotal]	field

# Expression Constants, Operators, and Functions

The table below contains constants, operators, and functions you can use in [expressions](#).

## Constants

CONSTANT	DESCRIPTION	EXAMPLE
String constants	Wrap string constants in apostrophes. If a string contains an apostrophe, double the apostrophe.	[Country] == 'France' [Name] == 'O''Neil'
Date-time constants	Wrap date-time constants in '#'. The date-time constant must be enclosed in quotes.	[OrderDate] >= #2018-03-22 13:18:51.94944#
True	Represents the Boolean True value.	[InStock] == True
False	Represents the Boolean False value.	[InStock] == False
Enumeration	Specify an enumeration value using its underlying integer value.  You cannot specify an enumeration value using its qualified name. The following criteria <b>is incorrect</b> : [Status] = Status.InProgress	[Status] == 1
Guid	Wrap a Guid constant in curly braces. Use Guid constants in a relational operation with equality or inequality operators only.	[OrderID] == {513724e5-17b7-4ec6-abc4-0ae12c72c1f}
Numeric	Specify different numeric constant types in a string form using suffixes: <ul style="list-style-type: none"><li>• Int32 (int) - 1</li><li>• Int16 (short) - 1s</li><li>• Byte (byte) - 1b</li><li>• Double (double) - 1.0</li><li>• Single (float) - 1.0f</li><li>• Decimal (decimal) - 1.0m</li></ul>	[Price] == 25.0m
?	Represents a null reference that does not refer to any object.  We recommend using the <b>IsNull</b> unary operator (for example, "[Region] is null") or the <b>IsNull</b> logical function (for example, "IsNull([Region])") instead.	[Region] != ?

## Operators

OPERATOR	DESCRIPTION	EXAMPLE
+	Adds the value of one numeric expression to another or concatenates two strings.	[UnitPrice] + 4 [FirstName] + '' + [LastName]
-	Finds the difference between two numbers.	[Price1] - [Price2]
*	Multiplies the value of two expressions.	[Quantity] * [UnitPrice] * (1 - [BonusAmount])
/	Divides the first operand by the second.	[Quantity] / 2
%	Returns the remainder (modulus) obtained by dividing one numeric expression by another.	[Quantity] % 3
	Performs a bitwise inclusive OR on two numeric expressions. Compares each bit of its first operand to the corresponding bit of its second operand. If either bit is 1, the corresponding resulting bit is set to 1. Otherwise, the corresponding resulting bit is set to 0.	[Number]   [Number]
&	The bitwise AND operator. Compares each bit of its first operand to the corresponding bit of its second operand. If both bits are 1, the corresponding resulting bit is set to 1. Otherwise, the corresponding resulting bit is set to 0.	[Number] & 10
^	Performs a bitwise exclusive OR on two numeric expressions.	[Number] ^ [Number]
==	Returns true if both operands have the same value; otherwise, it returns false.	[Quantity] == 10
=		
!=	Returns true if the operands do not have the same value; otherwise, it returns false.	[Country] != 'France'
<	Less than operator. Used to compare expressions.	[UnitPrice] < 20
<=	Less than or equal to operator. Used to compare expressions.	[UnitPrice] <= 20
>=	Greater than or equal to operator. Used to compare expressions.	[UnitPrice] >= 30

>	Greater than operator. Used to compare expressions.	[UnitPrice] > 30
In (,,)	Tests for the existence of a property in an object.	[Country] In ('USA', 'UK', 'Italy')
Between ()	Specifies a range to test. Returns true if a value is greater than or equal to the first operand and less than or equal to the second operand.	[Quantity] Between (10, 20)
And &&	Performs a logical conjunction on two Boolean expressions.	[InStock] And ([ExtendedPrice]>100) [InStock] && ([ExtendedPrice]>100)
Or	Performs a logical disjunction on two Boolean expressions.	[Country]=='USA' Or [Country]=='UK' [Country]=='USA'    [Country]=='UK'
~	Performs a bitwise negation on a numeric expression.	~[Roles] = 251
Not !	Performs a logical negation on a Boolean expression.	Not [InStock] ![InStock]
+	Returns a numeric expression's value (a unary operator).	+ [Value] = 10
-	Returns the negative of a numeric expression's value (a unary operator).	- [Value] = 20
Is Null	Returns true if an expression is a null reference, the one that does not refer to any object.	[Region] is null

## Functions (Basic)

### Aggregate Functions

FUNCTION	DESCRIPTION	EXAMPLE
Avg(Value)	Evaluates the average of the values in the collection.	[Products].Avg([UnitPrice])

FUNCTION	DESCRIPTION	EXAMPLE
Count()	Returns the number of objects in a collection.	[Products].Count()
Exists()	Determines whether the object exists in the collection.	[Categories][[CategoryID] == 7].Exists()
Max(Value)	Returns the maximum expression value in a collection.	[Products].Max([UnitPrice])
Min(Value)	Returns the minimum expression value in a collection.	[Products].Min([UnitPrice])
Single()	Returns a single object from the collection.	[Accounts].Single() is not null
Sum(Value)	Returns the sum of all the expression values in the collection.	[Products].Sum([UnitsInStock])

## Date-time Functions

FUNCTION	DESCRIPTION	EXAMPLE
AddDays(DateTime, DaysCount)	Returns a date-time value that is the specified number of days from the specified DateTime.	AddDays([OrderDate], 30)
AddHours(DateTime, HoursCount)	Returns a date-time value that is the specified number of hours from the specified DateTime.	AddHours([StartTime], 2)
AddMilliSeconds(DateTime, MilliSecondsCount)	Returns a date-time value that is the specified number of milliseconds from the specified DateTime.	AddMilliSeconds(([StartTime], 5000))
AddMinutes(DateTime, MinutesCount)	Returns a date-time value that is the specified number of minutes from the specified DateTime.	AddMinutes([StartTime], 30)
AddMonths(DateTime, MonthsCount)	Returns a date-time value that is the specified number of months from the specified DateTime.	AddMonths([OrderDate], 1)
AddSeconds(DateTime, SecondsCount)	Returns a date-time value that is the specified number of seconds from the specified DateTime.	AddSeconds([StartTime], 60)
AddTicks(DateTime, TicksCount)	Returns a date-time value that is the specified number of ticks from the specified DateTime.	AddTicks([StartTime], 5000)
AddTimeSpan(DateTime, TimeSpan)	Returns a date-time value that is from the specified DateTime for the given TimeSpan.	AddTimeSpan([StartTime], [Duration])
AddYears(DateTime, YearsCount)	Returns a date-time value that is the specified number of years from the specified DateTime.	AddYears([EndDate], -1)
DateDiffDay(startDate, endDate)	Returns the number of day boundaries between two non-nullable dates.	DateDiffDay([StartTime], Now())
DateDiffHour(startDate, endDate)	Returns the number of hour boundaries between two non-nullable dates.	DateDiffHour([StartTime], Now())
DateDiffMilliSecond(startDate, endDate)	Returns the number of millisecond boundaries between two non-nullable dates.	DateDiffMilliSecond([StartTime], Now())

FUNCTION	DESCRIPTION	EXAMPLE
DateDiffMinute(startDate, endDate)	Returns the number of minute boundaries between two non-nullable dates.	DateDiffMinute([StartTime], Now())
DateDiffMonth(startDate, endDate)	Returns the number of month boundaries between two non-nullable dates.	DateDiffMonth([StartTime], Now())
DateDiffSecond(startDate, endDate)	Returns the number of second boundaries between two non-nullable dates.	DateDiffSecond([StartTime], Now())
DateDiffTick(startDate, endDate)	Returns the number of tick boundaries between two non-nullable dates.	DateDiffTick([StartTime], Now())
DateDiffYear(startDate, endDate)	Returns the number of year boundaries between two non-nullable dates.	DateDiffYear([StartTime], Now())
GetDate(DateTime)	Extracts a date from the defined DateTime.	GetDate([OrderDateTime])
GetDay(DateTime)	Extracts a day from the defined DateTime.	GetDay([OrderDate])
GetDayOfWeek(DateTime)	Extracts a day of the week from the defined DateTime.	GetDayOfWeek([OrderDate])
GetDayOfYear(DateTime)	Extracts a day of the year from the defined DateTime.	GetDayOfYear([OrderDate])
GetHour(DateTime)	Extracts an hour from the defined DateTime.	GetHour([StartTime])
GetMillisecond(DateTime)	Extracts milliseconds from the defined DateTime.	GetMillisecond([StartTime])
GetMinute(DateTime)	Extracts minutes from the defined DateTime.	GetMinute([StartTime])
GetMonth(DateTime)	Extracts a month from the defined DateTime.	GetMonth([StartTime])
GetSecond(DateTime)	Extracts seconds from the defined DateTime.	GetSecond([StartTime])
GetTimeOfDay(DateTime)	Extracts the time of the day from the defined DateTime in ticks.	GetTimeOfDay([StartTime])
GetYear(DateTime)	Extracts a year from the defined DateTime.	GetYear([StartTime])
IsApril(DateTime)	Returns True if the specified date falls within April.	IsApril([OrderDate])
IsAugust(DateTime)	Returns True if the specified date falls within August.	IsAugust([OrderDate])
IsDecember(DateTime)	Returns True if the specified date falls within December.	IsDecember([OrderDate])
IsFebruary(DateTime)	Returns True if the specified date falls within February.	IsFebruary([OrderDate])
IsJanuary(DateTime)	Returns True if the specified date falls within January.	IsJanuary([OrderDate])

FUNCTION	DESCRIPTION	EXAMPLE
IsJuly(DateTime)	Returns True if the specified date falls within July.	IsJuly([OrderDate])
IsJune(DateTime)	Returns True if the specified date falls within June.	IsJune([OrderDate])
IsLastMonth(DateTime)	Returns True if the specified date falls within the previous month.	IsLastMonth([OrderDate])
IsLastYear(DateTime)	Returns True if the specified date falls within the previous year.	IsLastYear([OrderDate])
IsMarch(DateTime)	Returns True if the specified date falls within March.	IsMarch([OrderDate])
IsMay(DateTime)	Returns True if the specified date falls within May.	IsMay([OrderDate])
IsNextMonth(DateTime)	Returns True if the specified date falls within the next month.	IsNextMonth([OrderDate])
IsNextYear(DateTime)	Returns True if the specified date falls within the next year.	IsNextYear([OrderDate])
IsNovember(DateTime)	Returns True if the specified date falls within November.	IsNovember([OrderDate])
IsOctober(DateTime)	Returns True if the specified date falls within October.	IsOctober([OrderDate])
IsSameDay(DateTime)	Returns True if the specified date/time values fall within the same day.	IsSameDay([OrderDate])
IsSeptember(DateTime)	Returns True if the specified date falls within September.	IsSeptember([OrderDate])
IsThisMonth(DateTime)	Returns True if the specified date falls within the current month.	IsThisMonth([OrderDate])
IsThisWeek(DateTime)	Returns True if the specified date falls within the current week.	IsThisWeek([OrderDate])
IsYearToDate(DateTime)	Returns True if the specified date falls within the year-to-date period. This period starts from the first day of the current year and continues to the current date (including the current date).	IsYearToDate([OrderDate])
IsThisYear(DateTime)	Returns True if the specified date falls within the current year.	IsThisYear([OrderDate])
LocalDateTimeDayAfterTomorrow()	Returns a date-time value corresponding to the day after Tomorrow.	AddDays(LocalDateTimeDayAfterTomorrow(), 5)
LocalDateTimeLastMonth()	Returns the DateTime value corresponding to the first day of the previous month.	AddMonths(LocalDateTimeLastMonth(), 5)

FUNCTION	DESCRIPTION	EXAMPLE
LocalDateTimeLastWeek()	Returns a date-time value corresponding to the first day of the previous week.	AddDays(LocalDateTimeLastWeek(), 5)
LocalDateTimeLastYear()	Returns the DateTime value corresponding to the first day of the previous year.	AddYears(LocalDateTimeLastYear(), 5)
LocalDateTimeNextMonth()	Returns a date-time value corresponding to the first day of the next month.	AddMonths(LocalDateTimeNextMonth(), 5)
LocalDateTimeNextWeek()	Returns a date-time value corresponding to the first day of the following week.	AddDays(LocalDateTimeNextWeek(), 5)
LocalDateTimeNextYear()	Returns a date-time value corresponding to the first day of the following year.	AddYears(LocalDateTimeNextYear(), 5)
LocalDateTimeNow()	Returns a date-time value corresponding to the current moment in time.	AddDays(LocalDateTimeNow(), 5)
LocalDateTimeThisMonth()	Returns a date-time value corresponding to the first day of the current month.	AddMonths(LocalDateTimeThisMonth(), 5)
LocalDateTimeThisWeek()	Returns a date-time value corresponding to the first day of the current week.	AddDays(LocalDateTimeThisWeek(), 5)
LocalDateTimeThisYear()	Returns a date-time value corresponding to the first day of the current year.	AddYears(LocalDateTimeThisYear(), 5)
LocalDateTimeToday()	Returns a date-time value corresponding to Today.	AddDays(LocalDateTimeToday(), 5)
LocalDateTimeTomorrow()	Returns a date-time value corresponding to Tomorrow.	AddDays(LocalDateTimeTomorrow(), 5)
LocalDateTimeTwoMonthsAway()	Returns the DateTime value corresponding to the first day of the following month.	AddMonths(LocalDateTimeTwoMonthAway(), 5)
LocalDateTimeTwoWeeksAway()	Returns the DateTime value corresponding to the first day of the following week.	AddDays(LocalDateTimeTwoWeeksAway(), 5)
LocalDateTimeTwoYearsAway()	Returns the DateTime value corresponding to the first day of the following year.	AddYears(LocalDateTimeTwoYearsAway(), 5)
LocalDateTimeYearBeforeToday()	Returns the DateTime value corresponding to the day one year ago.	AddYears(LocalDateTimeYearBeforeToday(), 5)
LocalDateTimeYesterday()	Returns a date-time value corresponding to Yesterday.	AddDays(LocalDateTimeYesterday(), 5)
Now()	Returns the current system date and time.	AddDays(Now(), 5)
Today()	Returns the current date. Regardless of the actual time, this function returns midnight of the current date.	AddMonths(Today(), 1)

FUNCTION	DESCRIPTION	EXAMPLE
UtcNow()	Returns the current system date and time, expressed as Coordinated Universal Time (UTC).	AddDays(UtcNow(), 7)

## Logical Functions

FUNCTION	DESCRIPTION	EXAMPLE
Iif(Expression1, True_Value1, ..., ExpressionN, True_ValueN, False_Value)	<p>Returns one of several specified values depending upon the values of logical expressions.</p> <p>The function can take <math>2N + 1</math> arguments (<math>N</math> - the number of specified logical expressions):</p> <ul style="list-style-type: none"> <li>• Each odd argument specifies a logical expression;</li> <li>• Each even argument specifies the value that is returned if the previous expression evaluates to <b>true</b>;</li> <li>• ...</li> <li>• The last argument specifies the value that is returned if the previously evaluated logical expressions yielded <b>false</b>.</li> </ul>	Iif(Name = 'Bob', 1, Name = 'Dan', 2, Name = 'Sam', 3, 4))
IsNull(Value)	Returns True if the specified Value is NULL.	IsNull([OrderDate])
IsNull(Value1, Value2)	Returns Value1 if it is not set to NULL; otherwise, Value2 is returned.	IsNull([ShipDate], [RequiredDate])
IsNullOrEmpty(String)	Returns True if the specified String object is NULL or an empty string; otherwise, False is returned.	IsNullOrEmpty([ProductName])

## Math Functions

FUNCTION	DESCRIPTION	EXAMPLE
Abs(Value)	Returns the given numeric expression's absolute, positive value.	Abs(1 - [Discount])
Acos(Value)	Returns a number's arccosine (the angle in radians, whose cosine is the given float expression).	Acos([Value])
Asin(Value)	Returns a number's arcsine (the angle in radians, whose sine is the given float expression).	Asin([Value])
Atn(Value)	Returns a number's arctangent (the angle in radians, whose tangent is the given float expression).	Atn([Value])
Atn2(Value1, Value2)	Returns the angle whose tangent is the quotient of two specified numbers in radians.	Atn2([Value1], [Value2])
BigMul(Value1, Value2)	Returns an Int64 containing the full product of two specified 32-bit numbers.	BigMul([Amount], [Quantity])

FUNCTION	DESCRIPTION	EXAMPLE
Ceiling(Value)	Returns the smallest integer that is greater than or equal to the numeric expression.	Ceiling([Value])
Cos(Value)	Returns the angle's cosine, in radians.	Cos([Value])
Cosh(Value)	Returns the angle's hyperbolic cosine, in radians.	Cosh([Value])
Exp(Value)	Returns the float expression's exponential value.	Exp([Value])
Floor(Value)	Returns the largest integer less than or equal to the numeric expression.	Floor([Value])
Log(Value)	Returns a specified number's natural logarithm.	Log([Value])
Log(Value, Base)	Returns the logarithm of a specified number in a specified Base.	Log([Value], 2)
Log10(Value)	Returns a specified number's base 10 logarithm.	Log10([Value])
Max(Value1, Value2)	Returns the maximum value from the specified values.	Max([Value1], [Value2])
Min(Value1, Value2)	Returns the minimum value from the specified values.	Min([Value1], [Value2])
Power(Value, Power)	Returns a specified number raised to a specified power.	Power([Value], 3)
Rnd()	Returns a random number that is less than 1, but greater than or equal to zero.	Rnd()*100
Round(Value)	Rounds the given value to the nearest integer.	Round([Value])
Round(Value, Precision)	Rounds the given value to the nearest integer, or to a specified number of decimal places.	Round([Value], 2)
Sign(Value)	Returns the positive (+1), zero (0), or negative (-1) sign of the given expression.	Sign([Value])
Sin(Value)	Returns the sine of the angle defined in radians.	Sin([Value])
Sinh(Value)	Returns the hyperbolic sine of the angle defined in radians.	Sinh([Value])
Sqr(Value)	Returns the square root of a given number.	Sqr([Value])
Tan(Value)	Returns the tangent of the angle defined in radians.	Tan([Value])
Tanh(Value)	Returns the hyperbolic tangent of the angle defined in radians.	Tanh([Value])
ToDecimal(Value)	Converts Value to an equivalent decimal number.	ToDecimal([Value])
ToDouble(Value)	Converts Value to an equivalent 64-bit double-precision floating-point number.	ToDouble([Value])
ToFloat(Value)	Converts Value to an equivalent 32-bit single-precision floating-point number.	ToFloat([Value])
ToInt(Value)	Converts Value to an equivalent 32-bit signed integer.	ToInt([Value])

FUNCTION	DESCRIPTION	EXAMPLE
ToLong(Value)	Converts Value to an equivalent 64-bit signed integer.	ToLong([Value])

## String Functions

FUNCTION	DESCRIPTION	EXAMPLE
Ascii(String)	Returns the ASCII code value of the leftmost character in a character expression.	Ascii('a')
Char(Number)	Converts an integerASCIICode to a character.	Char(65) + Char(51)
CharIndex(String1, String2)	Returns the starting position of String1 within String2, beginning from the zero character position to the end of a string.	CharIndex('e', 'devexpress')
CharIndex(String1, String2, StartLocation)	Returns the starting position of String1 within String2, beginning from the StartLocation character position to the end of a string.	CharIndex('e', 'devexpress', 2)
Concat(String1, ..., StringN)	Returns a string value containing the concatenation of the current string with any additional strings.	Concat('A', '[ProductName]')
Contains(String1, SubString1)	Returns True if SubString1 occurs within String1; otherwise, False is returned.	Contains([ProductName], 'dairy')
EndsWith(String1, SubString1)	Returns True if the end of String1 matches SubString1; otherwise, False is returned.	EndsWith([Description], 'The end.')
Insert(String1, StartPosition, String2)	Inserts String2 into String1 at the position specified by StartPosition	Insert([Name], 0, 'ABC-')
Len(Value)	Returns an integer containing either the number of characters in a string or the nominal number of bytes required to store a variable.	Len([Description])
Lower(String)	Returns String in lowercase.	Lower([ProductName])
PadLeft(String, Length)	Left-aligns the defined string's characters, padding its left side with white space characters up to a specified total length.	PadLeft([Name], 30)
PadLeft(String, Length, Char)	Left-aligns the defined string's characters, padding its left side with the specified Char up to a specified total length.	PadLeft([Name], 30, '<')
PadRight(String, Length)	Right-aligns the defined string's characters, padding its left side with empty space characters up to a specified total length.	PadRight([Name], 30)
PadRight(String, Length, Char)	Right-aligns the defined string's characters, padding its left side with the specified Char up to a specified total length.	PadRight([Name], 30, '>')
Remove(String, StartPosition)	Deletes all the characters from this instance, beginning at a specified position.	Remove([Name], 3)
Remove(String, StartPosition, Length)	Deletes a specified number of characters from this instance, beginning at a specified position.	Remove([Name], 0, 3)
Replace(String, SubString2, String3)	Returns a copy of String1, in which SubString2 has been replaced with String3.	Replace([Name], 'The ', '')

FUNCTION	DESCRIPTION	EXAMPLE
Reverse(String)	Reverses the order of elements within String.	Reverse([Name])
StartsWith(String1, SubString1)	Returns True if the beginning of String1 matches SubString1; otherwise, False.	StartsWith([Title], 'The best')
Substring(String, StartPosition, Length)	Retrieves a substring from String. The substring starts at StartPosition and has a specified Length.	Substring([Description], 2, 3)
Substring(String, StartPosition)	Retrieves a substring from String. The substring starts at StartPosition.	Substring([Description], 2)
ToStr(Value)	Returns a string representation of an object.	ToStr([ID])
Trim(String)	Removes all leading and trailing SPACE characters from String.	Trim([ProductName])
Upper(String)	Returns String in uppercase.	Upper([ProductName])

## Functions for Expression Bindings and Calculated Fields

Below is a list of functions that are used to construct [expression bindings](#) and [calculated fields](#):

FUNCTION	DESCRIPTION	EXAMPLE
NewLine()	Returns the newline string defined for the current environment.	[CategoryName]+NewLine()+[Description]  Result: <i>Beverages</i> <i>Soft drinks, coffees, teas, beers and ales.</i>
FormatString(Format, Value1, ... , ValueN)	Returns the specified string with formatted field values. See <a href="#">Format Data</a> for details.	FormatString('{0:\$0.00}', [UnitPrice])  Result: \$45.60
Rgb(Red, Green, Blue)	Returns a string defining a color using the Red, Green, and Blue color channel values.	Rgb(30,200,150)  Result: '30,200,150'
Argb(Alpha, Red, Green, Blue)	Returns a string defining a color using the Alpha, Red, Green, and Blue color channel values.	Argb(1,200, 30, 200)  Result: '1,200,30,200'

	<p>Concatenates the <a href="#">multi-value report parameter</a>'s values into a string. This function is useful when you <a href="#">bind a multi-value parameter to a label</a> to display the parameter's values in a report.</p> <p>This function has two overloads:</p> <ul style="list-style-type: none"> <li>• <code>Join(parameter)</code> - concatenates the specified parameter's values using comma as a separator.</li> <li>• <code>Join(parameter, separator)</code> - concatenates the specified parameter's values using the specified separator.</li> </ul>	<code>Join(?CategoriesParameter)</code> Result: <i>Beverages, Condiments</i>
<code>Join()</code>		<code>Join(?CategoriesParameter, newline())</code> Result: <i>Beverages</i> <i>Condiments</i>

## Functions for Stored Procedure Binding

The following functions are specific for [binding reports to a stored procedure](#)

FUNCTION	DESCRIPTION	EXAMPLE
<code>Join()</code>	<p>Concatenates the <a href="#">multi-value report parameter</a>'s values into a string. This function can be used when mapping multi-value report parameters to query parameters generated from a stored procedure's parameters. Refer to the <a href="#">Query Parameters</a> topic for more information.</p> <p>This function has two overloads:</p> <ul style="list-style-type: none"> <li>• <code>Join(parameter)</code> - concatenates the specified parameter's values using comma as a separator.</li> <li>• <code>Join(parameter, separator)</code> - concatenates the specified parameter's values using the specified separator.</li> </ul>	<code>Join(?Parameter1)</code>
<code>CreateTable(Column1, ..., ColumnN)</code>	<p>Creates a table from several multi-value parameters' values. This function can be used when mapping multi-value report parameters to the query parameter that is generated from a stored procedure's <a href="#">User Defined Table Type</a> parameter. Refer to the <a href="#">Query Parameters</a> topic for more information.</p>	<code>CreateTable(?Parameter1, ..., ?ParameterN)</code>

## Functions for Summary Expression Editor

Use the following functions when [calculating summaries](#) across a report and its groups:

FUNCTION	DESCRIPTION	EXAMPLE
<code>sumAvg(Expression)</code>	Calculates the average of all the values within the specified summary region (group, page or report).	<code>sumAvg([UnitPrice])</code>

	<p>Counts the number of values within the specified summary region (group, page or report). In a simple scenario, you may not pass a parameter.</p> <p>When using this function in a <a href="#">master-detail report</a>'s master band and passing a detail's field as a parameter, it counts the number of records within the detail's band.</p> <p>See also: <a href="#">Counting the Number of Records in a Report or Group</a>, <a href="#">Counting the Number of Groups in a Report</a></p>	
sumCount(Expression)		sumCount([UnitPrice])
sumDAvg(Expression)	Calculates the average of all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDAvg([UnitPrice])
sumDCount(Expression)	Counts the number of <b>distinct</b> values within the specified summary region (group, page or report). In a simple scenario, you may not pass a parameter.	sumDCount([UnitPrice])
sumDStdDev(Expression)	Calculates the standard deviation of all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDStdDev([UnitPrice])
sumDStdDevP(Expression)	Calculates the standard population deviation of all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDStdDevP([UnitPrice])
sumDSum(Expression)	Calculates the total of all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDSum([UnitPrice])
sumDVar(Expression)	Calculates the amount of variance for all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDVar([UnitPrice])
sumDVarP(Expression)	Calculates the population variance of all the <b>distinct</b> values within the specified summary region (group, page or report).	sumDVarP([UnitPrice])
sumMax(Expression)	Calculates the maximum of all the values within the specified summary region (group, page or report).	sumMax([UnitPrice])
sumMedian(Expression)	<p>Finds the middle number within a sequence.</p> <p>Note that if the total number of elements is odd, this function returns the value of the middle number in a sequence. If the total number of elements is even, this function returns the arithmetical mean of the two middle numbers.</p>	sumMedian([UnitPrice])

sumMin(Expression)	Calculates the minimum of all the values within the specified summary region (group, page or report).	sumMin([UnitPrice])
sumPercentage(Expression)	Calculates the percent ratio of the current data row's value to the total of all the values within the specified summary region (group, page or report).	sumPercentage([UnitPrice])
sumRecordNumber(Expression)	<p>Returns the current record number in the specified summary region (group, page or report). This means for instance, if the summary is calculated for a group, then the record number is calculated only within that group, and is reset every time a new group is started.</p> <p>In a simple scenario, you may not pass a parameter.</p> <p>See also: <a href="#">Displaying Row Numbers in a Report, Group or Page</a></p>	sumRecordNumber()
sumRunningSum(Expression)	Summarizes all the values, which were printed before the current data row, with the current data row's value.	sumRunningSum([UnitPrice])
sumStdDev(Expression)	Calculates the standard deviation of all the values within the specified summary region (group, page or report).	sumStdDev([UnitPrice])
sumStdDevP(Expression)	Calculates the standard population deviation of all the values within the specified summary region (group, page or report).	sumStdDevP([UnitPrice])
sumSum(Expression)	Calculates the total of all the values within the specified summary region (group, page or report).	sumSum([UnitsInStock])
sumVar(Expression)	Calculates the amount of variance for all the values within the specified summary region (group, page or report).	sumVar([UnitPrice])
sumVarP(Expression)	Calculates the population variance of all the values within the specified summary region (group, page or report).	sumVarP([UnitPrice])
sumWAvg(Expression, Expression)	Calculates the weighted average of all the values within the specified summary region (group, page or report). This type of summary returns the result of the following operation: $\text{Sum}(\text{Expression1} * \text{Expression2}) / \text{Sum}(\text{Expression2})$ .	sumWAvg([UnitPrice])

## Report Items In Expressions

A report's elements are displayed in the Report Designer's Report Explorer. You can access these elements and their properties in expressions. The following example demonstrates how to set a label's BackColor property to the other label's BackColor property value.

[ReportItems].[xrLabel2].[BackColor]

#### Tip

**[ReportItems]** is a plain list that provides access to all report items at one level.

#### Note

You cannot use the ReportItems collection in a [Calculated Field](#)'s expression.

## Images for Picture Boxes

When you construct an expression for the [Picture Box](#)'s **ImageSource** property, you can use image **Ids** from the report's **ImageResources** collection.

`IIf([MarchSales]>20, [Images.ArrowUp],[Images.ArrowDown])`

## Variables

VARIABLE	DESCRIPTION	EXAMPLE
DataSource.RowCount	Returns the total amount of data rows in a data source.	<code>[DataSource.RowCount] != 0</code>  Result: When using this expression for a control's <b>Visible</b> property, the control is not displayed if there is no data in the data source.
DataSource.CurrentRowIndex	Returns a zero-based index of the current data row in a data source.	<code>Iif([DataSource.CurrentRowIndex] % 2 = 0, 'red', 'green')</code>  Result: When this expression is used for a table row's <b>BackColor</b> property, odd rows are colored in red and even rows - in green.
DataSource.CurrentRowHierarchyLevel	Returns a zero-based level of the current row in a <a href="#">hierarchical report</a> .	<code>Iif([DataSource.CurrentRowHierarchyLevel] == 0, Rgb(231,235,244), ?)</code>  Result: When this expression is used for the <b>BackColor</b> property of the Detail band that is printed in tree mode, the root level rows are highlighted.

#### Note

These variables are not valid when the report includes a [table or contents](#).

## Report Parameters

Use the following syntax to insert [parameters](#) into expressions:

- Type a question mark before a parameter's name.

`?parameter1`

- (*Obsolete approach*) Use the "Parameters." prefix before a [report parameter](#)'s name.

`[Parameters.parameter1]`

## Collection Elements Verification

Use brackets "[]" to check if a collection contains an element that satisfies a condition. The following expression returns *true* if the Accounts collection contains at least one element that satisfies the *[Amount] == 100* condition:

```
[Accounts][[Amount] == 100]
```

The following expression returns *false* if the Accounts collection is empty:

```
[Accounts][]
```

Refer to the topic to see an example how to use this syntax.

## Parent Relating Operator

Use the parent relating operator ('^' character) to refer to a parent in expressions written in the context of a child. You can apply this operator successively to navigate multiple parent relationships.

You can use this operator to refer to the currently processed report group. This allows you to calculate aggregates within groups using expressions like the following:

```
[[[^.CategoryID] == [CategoryID]].Sum([UnitPrice])]
```

Refer to the topic for details.

## Grouping Clauses with Brackets

It is important to use brackets to ensure that your expression returns the intended results.

For instance, the following expression for objects of the Customer type returns all of the Customers where an Account exists with a Date of 8/25/2006 and where an account exists with an Amount of 100:

```
[Accounts][[Date] == #8/25/2006# && [Accounts][[Amount] == 100]
```

Construct the expression as in the following example to search for all Customers that have an Account with both a Date of 8/25/2006 and an Amount of 100:

```
[Accounts][[Date] == #8/25/2006# && [Amount] == 100]
```

## Operator Precedence

When an expression contains multiple operators, their precedence controls the order in which expression elements are evaluated.

- Literal values
- Parameters
- Identifiers
- OR (left-associative)
- AND (left-associative)
- '.' relationship qualifier (left-associative)
- ==, !=
- <, >, <=, >=
- -, + (left-associative)
- \*, /, % (left-associative)
- NOT
- unary -
- In

- `!if`
- `Trim()`, `Len()`, `Substring()`, `IsNull()`
- `'[]'` (for set-restriction)
- `'()'`

The default precedence can be changed by grouping elements with parentheses. For instance, the operators are performed in a default order in the first of the following two code samples. In the second code sample, the addition operation is performed first, because its associated elements are grouped with parentheses, and the multiplication operation is performed last.

```
Accounts[Amount == 2 + 48 * 2]
```

```
Accounts[Amount == (2 + 48) * 2]
```

## Case Sensitivity

Operators are case insensitive. Although field values' case sensitivity depends on the data source.

### Note

A data source affects certain operators' behavior. For instance, by default, the SQL Server Express 2005 is configured as case insensitive. In this case, the following expression always evaluates to **true**:

```
Lower(Name) == Upper(Name)
```

## Escaping Keywords

You can mark a keyword-like field name with an escape character (@ sign). In the expression below, the **CriteriaOperator.Parse** method interprets `@Or` as the field named "Or", not the logical operator OR.

```
@Or = 'value'
```

## Escape Characters

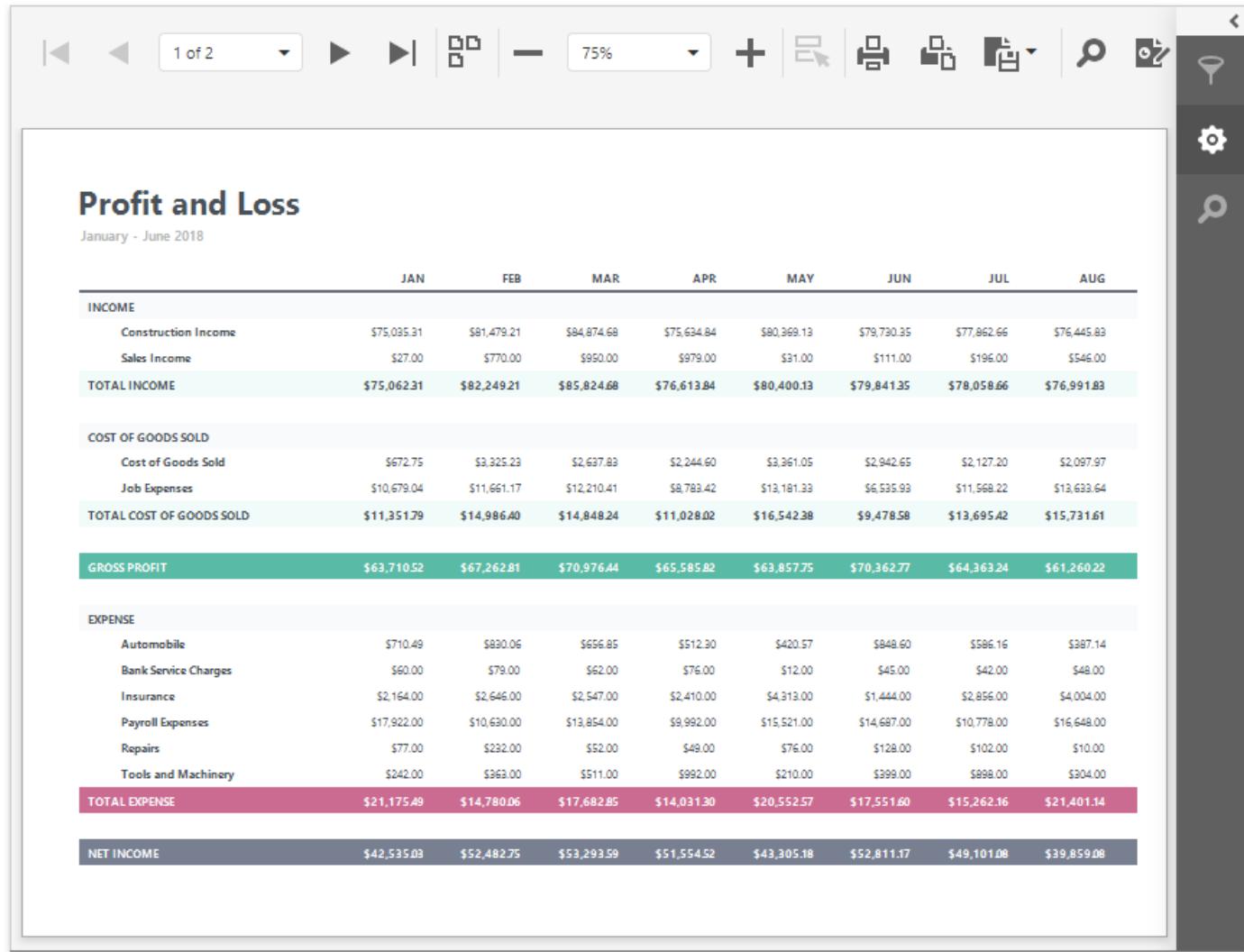
Use a backslash () as an escape character for characters in expressions. Examples:

- `\[`
- `\\`
- `\'`

# Preview, Print and Export Reports

## Preview a Report

To switch a report to the print preview mode, click the **Preview**  button on the [toolbar](#). You will see your report populated with data and broken down into pages, as specified.



The screenshot shows the 'Profit and Loss' report for January - June 2018. The toolbar at the top includes buttons for back, forward, search, and various document operations. A red box highlights the 'Print' button, which is located next to the 'Print Preview' button. The report table below shows income, cost of goods sold, gross profit, and expense details with columns for each month from JAN to AUG.

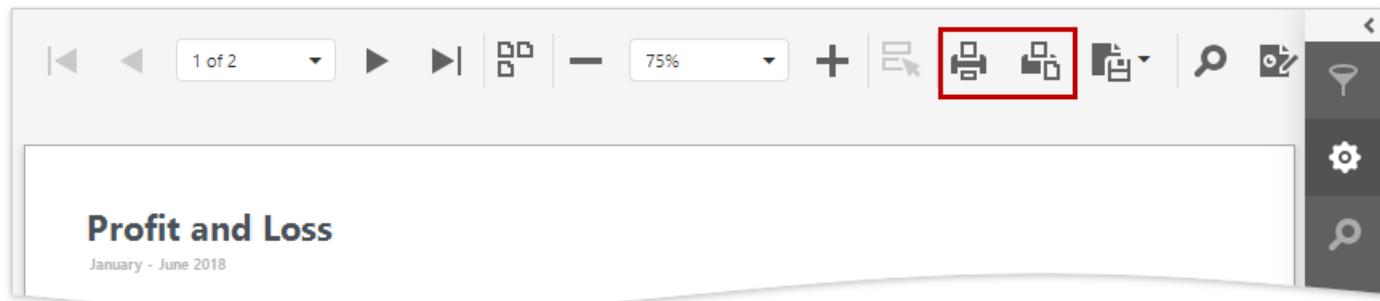
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
<b>INCOME</b>								
Construction Income	\$75,095.31	\$81,479.21	\$84,874.68	\$75,634.84	\$80,369.13	\$79,730.35	\$77,862.66	\$76,445.83
Sales Income	\$27.00	\$770.00	\$950.00	\$979.00	\$31.00	\$111.00	\$196.00	\$546.00
<b>TOTAL INCOME</b>	<b>\$75,062.31</b>	<b>\$82,249.21</b>	<b>\$85,824.68</b>	<b>\$76,613.84</b>	<b>\$80,400.13</b>	<b>\$79,841.35</b>	<b>\$78,058.66</b>	<b>\$76,991.83</b>
<b>COST OF GOODS SOLD</b>								
Cost of Goods Sold	\$672.75	\$3,325.23	\$2,637.83	\$2,244.60	\$3,361.05	\$2,942.65	\$2,127.20	\$2,097.97
Job Expenses	\$10,679.04	\$11,661.17	\$12,210.41	\$8,783.42	\$13,181.33	\$6,535.93	\$11,568.22	\$13,633.64
<b>TOTAL COST OF GOODS SOLD</b>	<b>\$11,351.79</b>	<b>\$14,986.40</b>	<b>\$14,848.24</b>	<b>\$11,028.02</b>	<b>\$16,542.38</b>	<b>\$9,478.58</b>	<b>\$13,695.42</b>	<b>\$15,731.61</b>
<b>GROSS PROFIT</b>	<b>\$63,710.52</b>	<b>\$67,262.81</b>	<b>\$70,976.44</b>	<b>\$65,585.82</b>	<b>\$63,857.75</b>	<b>\$70,362.77</b>	<b>\$64,363.24</b>	<b>\$61,260.22</b>
<b>EXPENSE</b>								
Automobile	\$710.49	\$830.06	\$656.85	\$512.30	\$420.57	\$848.60	\$586.16	\$387.14
Bank Service Charges	\$60.00	\$79.00	\$62.00	\$76.00	\$12.00	\$45.00	\$42.00	\$48.00
Insurance	\$2,164.00	\$2,646.00	\$2,547.00	\$2,410.00	\$4,313.00	\$1,444.00	\$2,856.00	\$4,004.00
Payroll Expenses	\$17,922.00	\$10,630.00	\$13,854.00	\$9,992.00	\$15,521.00	\$14,687.00	\$10,778.00	\$16,648.00
Repairs	\$77.00	\$232.00	\$52.00	\$49.00	\$76.00	\$128.00	\$102.00	\$10.00
Tools and Machinery	\$242.00	\$363.00	\$511.00	\$992.00	\$210.00	\$399.00	\$898.00	\$304.00
<b>TOTAL EXPENSE</b>	<b>\$21,175.49</b>	<b>\$14,780.06</b>	<b>\$17,682.85</b>	<b>\$14,031.30</b>	<b>\$20,552.57</b>	<b>\$17,551.60</b>	<b>\$15,262.16</b>	<b>\$21,401.14</b>
<b>NET INCOME</b>	<b>\$42,535.03</b>	<b>\$52,482.75</b>	<b>\$53,293.59</b>	<b>\$51,554.52</b>	<b>\$43,305.18</b>	<b>\$52,811.17</b>	<b>\$49,101.08</b>	<b>\$39,859.08</b>

### Note

To learn more about the options available in the print preview mode, refer to the [Document Viewer](#) section of this documentation.

## Print a Report

When in the Preview mode, you can print out your report using the appropriate toolbar commands.



The screenshot shows the same 'Profit and Loss' report in Preview mode. A red box highlights the 'Print' button in the toolbar, which is located next to the 'Print Preview' button. The report table and page navigation controls are visible below the toolbar.

# Export a Report

When in the Preview mode, you can export your report to files in different formats.

The screenshot shows a report preview interface with a toolbar at the top and a sidebar on the right. The main area displays a 'Profit and Loss' statement for the period January - June 2018. The sidebar contains a dropdown menu for export formats: PDF (selected), XLS, XLSX, RTF, DOCX, MHT, HTML, Text, CSV, and Image. The 'CSV EXPORT OPTIONS' section is expanded, showing the following settings:

- Encoding: Windows-1252
- Text Export Mode: Text
- Quote Strings with Separators:
- Separator: ,(Using System Separator)
- Skip Empty Rows:
- Skip Empty Columns:

Other collapsed sections include: HTML EXPORT OPTIONS, IMAGE EXPORT OPTIONS, MHT EXPORT OPTIONS, PDF EXPORT OPTIONS, RTF EXPORT OPTIONS, TEXT EXPORT OPTIONS, XLS EXPORT OPTIONS, XLSX EXPORT OPTIONS, and DOCX EXPORT OPTIONS.

The following documents describe the basics of report exporting and format-specific export options.

- [Export a Document](#)
- [CSV-Specific Export Options](#)
- [HTML-Specific Export Options](#)
- [Image-Specific Export Options](#)
- [MHT-Specific Export Options](#)
- [PDF-Specific Export Options](#)
- [RTF-Specific Export Options](#)
- [Text-Specific Export Options](#)
- [XLS-Specific Export Options](#)
- [XLSX-Specific Export Options](#)
- [DOCX-Specific Export Options](#)

# Report Designer Tools

The topics in this section describe the main tools and features available in the [Web Report Designer](#).

The Web Report Designer provides the following two kinds of wizards that enable you to create new reports and bind them to data.

- [Report Wizard](#)
- [Data Source Wizard](#)

The following main elements make up the user interface of the Web Report Designer.

- [Design Surface](#)
- [Main Menu](#)
- [Main Toolbar](#)
- [Toolbox](#)
- [Query Builder](#)
- [Chart Designer](#)

The following editors are available in the Web Report Designer.

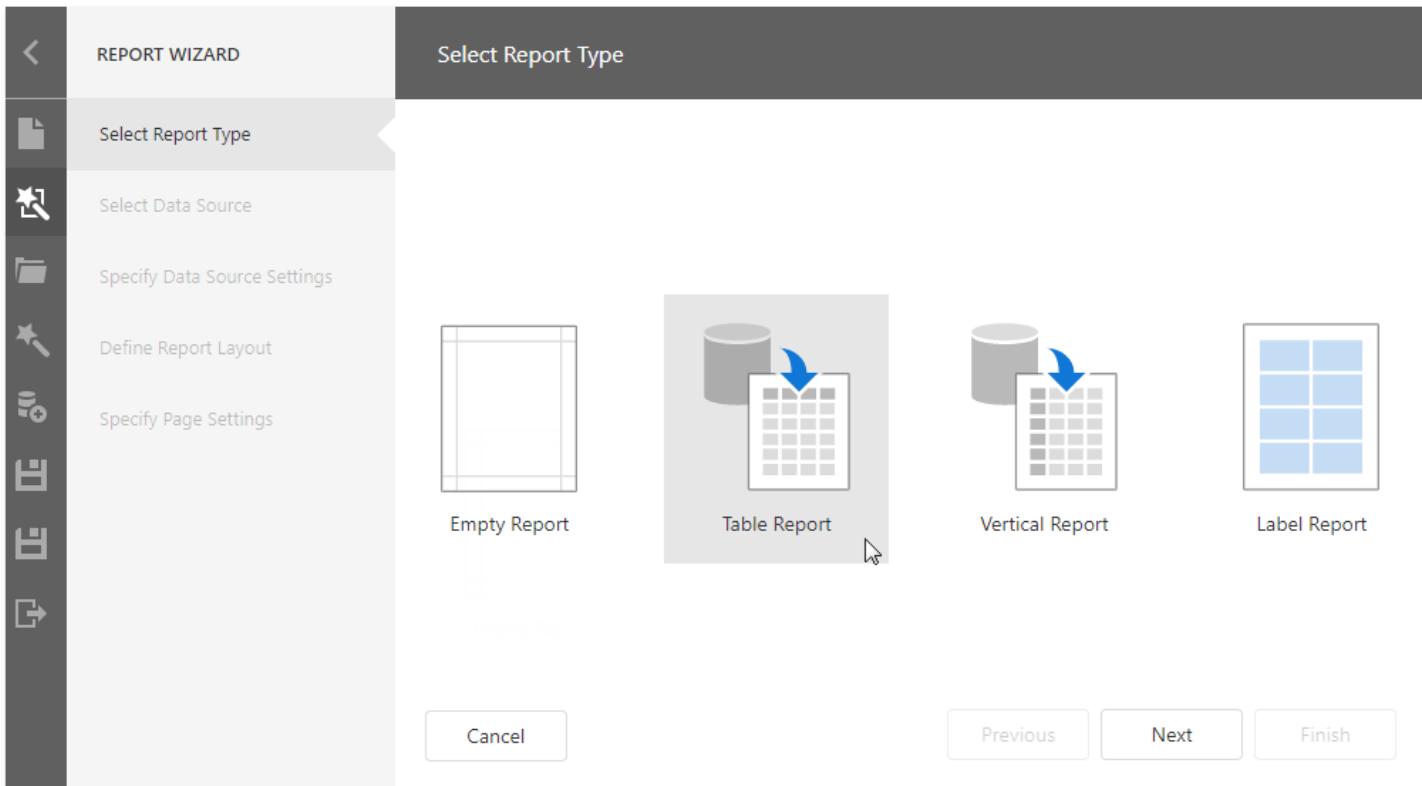
- [Expression Editor](#)
- [Filter Editor](#)
- [Format String Editor](#)
- [Master-Detail Relation Editor](#)
- [Script Editor](#)

The following panels are available in the Web Report Designer.

- [Properties Panel](#)
- [Expressions Panel](#)
- [Field List](#)
- [Report Explorer](#)

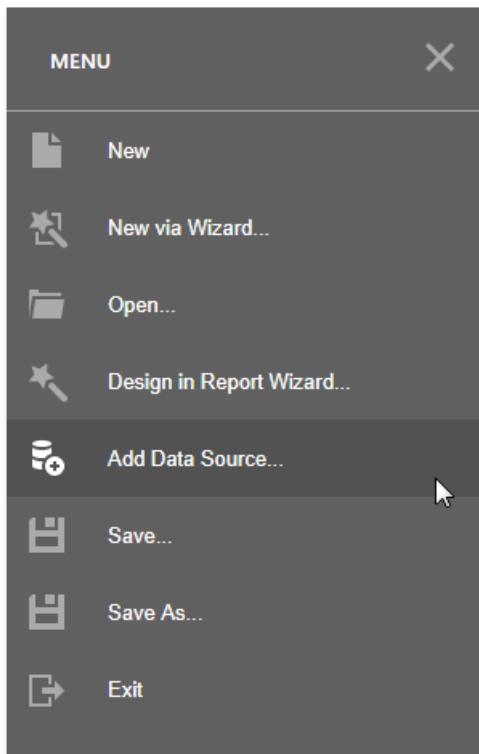
# Report Wizard

The Report Wizard enables you to create reports or modify existing reports based on predefined templates.



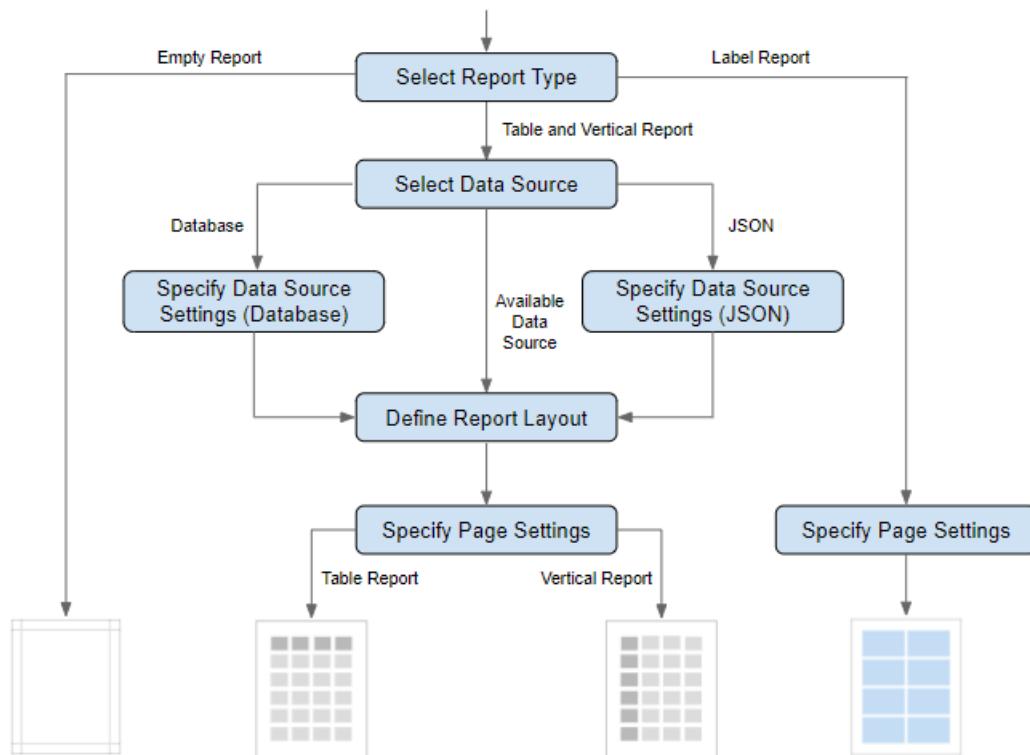
The Designer's Menu has the following commands:

- **New via Wizard** - runs the Report Wizard and creates a new report.
- **Design in Report Wizard** - runs the Report Wizard and modifies the current report.



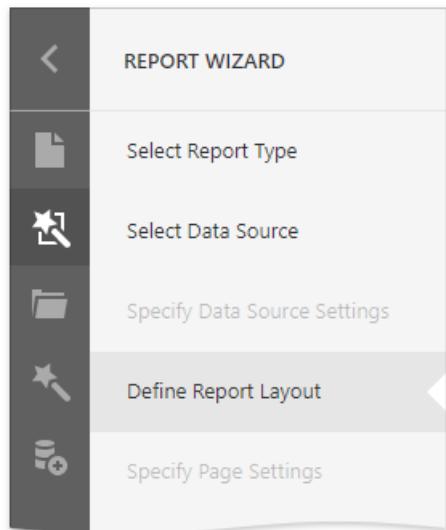
## Report Wizard Pages

The following image shows the wizard's navigation structure:



The wizard's navigation panel at the left-hand side:

- displays the entire page list;
- highlights the current page;
- grays out disabled pages;
- allows you to switch between pages.



## Select the Report Type

On the start page, choose the report type you want to create.

- [Empty Report](#)

Creates a blank report that is not bound to a data source. Choose this option to design your report from scratch without the wizard.

- [Table Report](#)

Creates a [table report](#) and binds it to data.

- [Vertical Report](#)

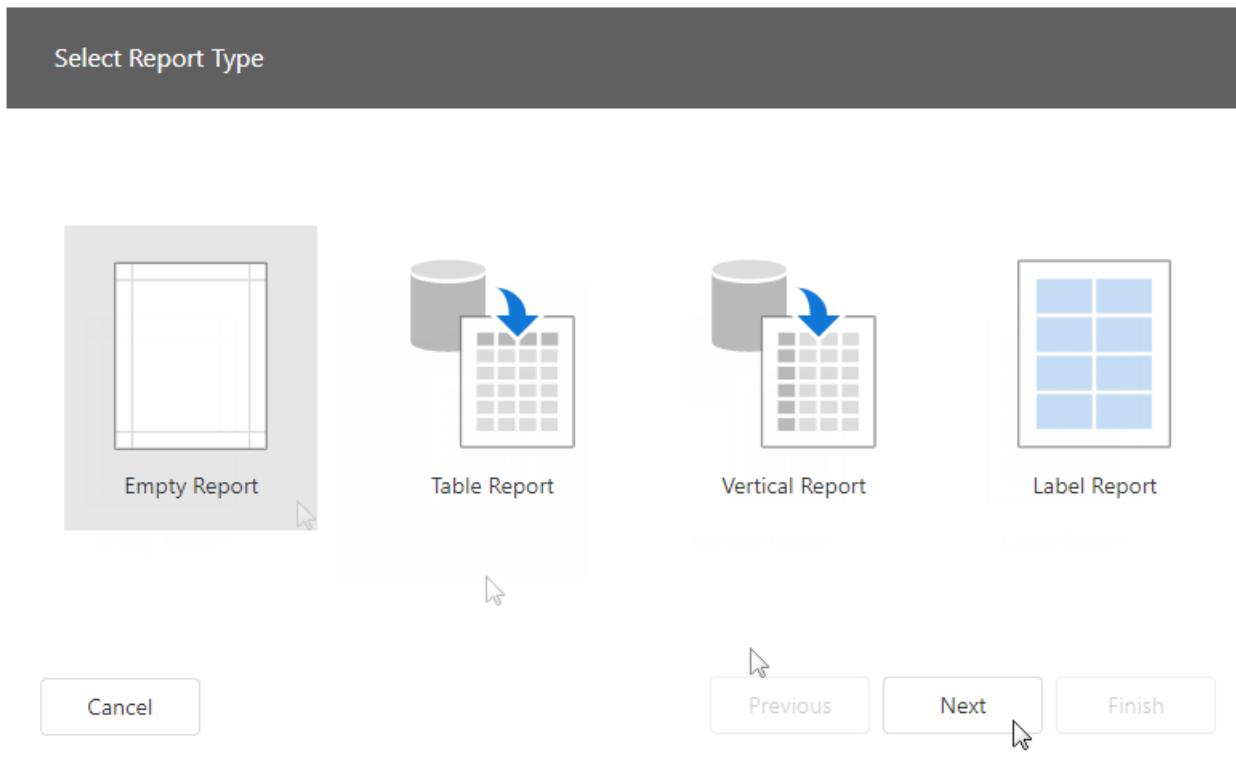
Creates a [vertical report](#) and binds it to data.

- [Label Report](#)

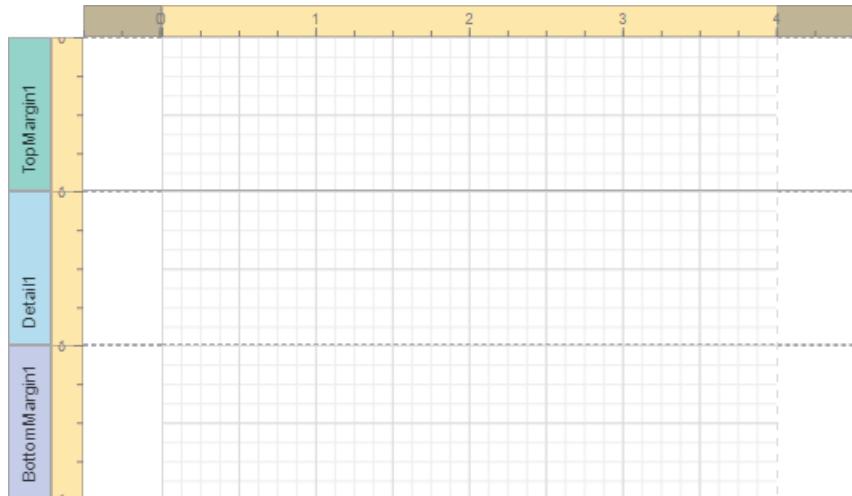
Creates badges, business cards, price tags and other label types.

# Empty Report

To create an empty report, [run the Report Wizard](#), select **Empty Report** and click **Finish**.



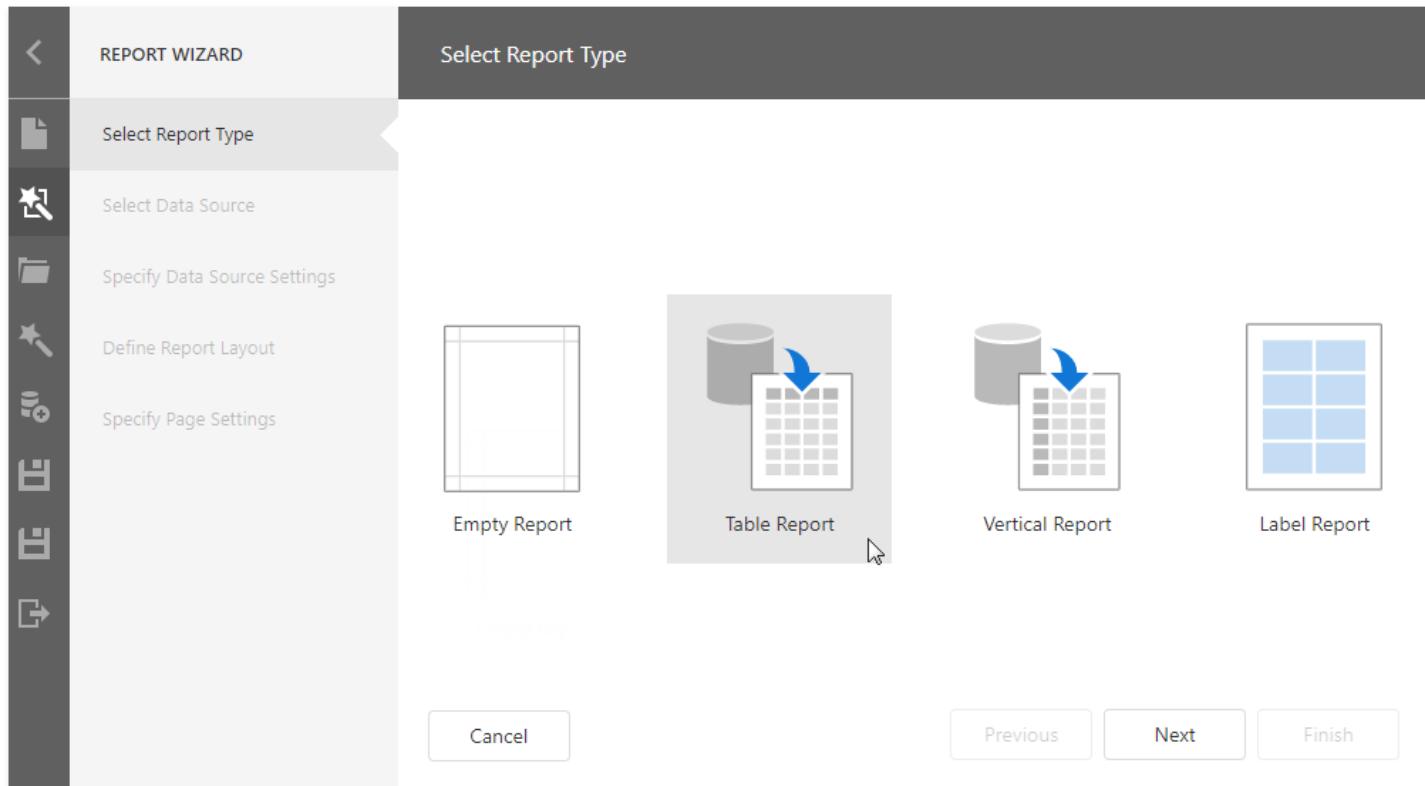
The following image illustrates the newly added empty report's layout.



Refer to the [Use Report Elements](#) section for details on how to add controls to the report, and the [Bind to Data](#) section for details on how to provide data.

# Table and Vertical Report

Select **Table Report/Vertical Report** on the start page to create a [table/vertical](#) report and bind it to data.



The wizard includes the following steps:

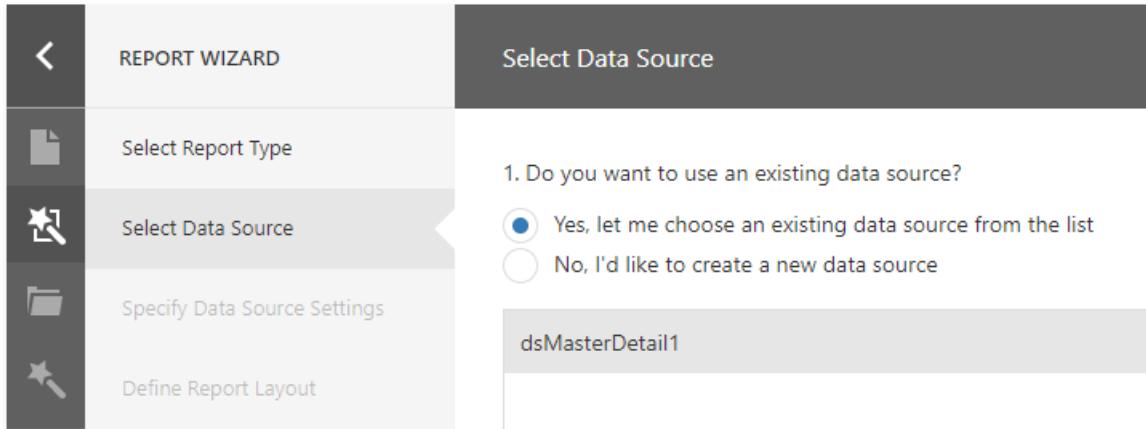
- [Select Data Source](#)
- [Spesify Data Source Setting \(Database\) / Spesify Data Source Setting \(JSON\)](#)
- [Define Report Layout](#)
- [Specify Page Settings](#)

# Select Data Source

On this wizard page, you can select an existing data source or create a new data source.

## Select an Existing Data Source

Select the first option and choose a data source from the list.



- If you create a new report, the list displays the Report Designer's predefined data sources.
- If you edit an existing report, the list contains the Report Designer's predefined data sources and data sources added to the current report with the [Data Source Wizard](#).

If the report and Report Designer have data sources with identical names, this list displays the report's data source.

Click **Next** to go to the [Define Report Layout](#) page.

## Create a New Data Source

Choose '*No, I'd like to create a new data source*' and select the data source type.

REPORT WIZARD

Select Data Source

Select Report Type

Select Data Source

Specify Data Source Settings

Define Report Layout

Specify Page Settings

dsMasterDetail1

1. Do you want to use an existing data source?

Yes, let me choose an existing data source from the list

No, I'd like to create a new data source

2. Select the data source type.

 Database

 JSON

 No Data

**Note**

You can create new data sources only if corresponding data connections are registered in the Report Designer.

Click **Next** to proceed:

- [Specify Data Source Setting \(Database\)](#) if you selected **Database**;
- [Specify Data Source Setting \(JSON\)](#) if you selected **JSON**.

# Specify Data Source Settings (Database)

This page appears if you selected **Database** on the [previous page](#).

REPORT WIZARD

Specify Data Source Settings

1. Choose a data connection.  
Homes  
Contacts  
**Northwind**  
Vehicles
2. Choose predefined queries and/or create custom queries.
  - Tables
  - Views
  - Stored Procedures
  - Queries
3. Configure master-detail relationships.  
Categories  
CategoriesProducts  
Categories . CategoryID = Products . CategoryID  
Products  
Customers
4. Configure query parameters.  
▼ Customers  
parameter1

Cancel Previous Next Finish

## Choose a Data Connection

Select a data connection from the list.

REPORT WIZARD

Specify Data Source Settings

1. Choose a data connection.  
Homes  
Contacts  
**Northwind**  
Vehicles

## Choose Queries

Check tables, views and/or stored procedures to include them in a data source as separated queries.

2. Choose predefined queries and/or create custom queries.

- ▼  Tables
  - ▶  Categories
  - ▶  Customers
  - ▶  EmployeeCustomers
  - ▶  Employees
  - ▶  EmployeeTerritories

You can also check specific data fields.

2. Choose predefined queries and/or create custom queries.

- ▼  Products
  - ProductID
  - ProductName
  - SupplierID
  - CategoryID
  - QuantityPerUnit

To join multiple data tables and shape the resulting data, click the **Queries** category's plus button to invoke the [Query Builder](#) and create a custom query.

**Query Builder**

The Query Builder interface displays two tables: **CATEGORIES** and **PRODUCTS**. The **CATEGORIES** table includes columns for CategoryID, CategoryName, Description, Picture, Icon17, and Icon25. The **PRODUCTS** table includes columns for ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, UnitPrice\_Sum (with a sum icon), UnitsInStock, UnitsOnOrder\_Sum (with a sum icon), ReorderLevel, Discontinued, and EAN13. A join condition is shown between CategoryID in the Categories table and CategoryID in the Products table.

**QUERY PROPERTIES**

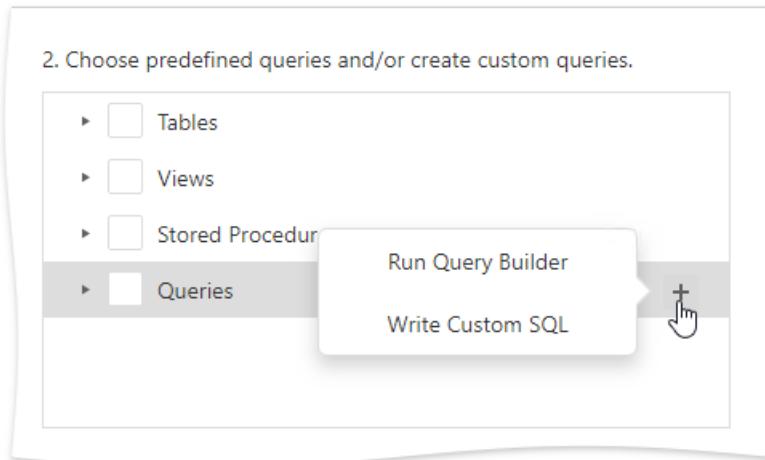
Name	UnitPrice
Type	Decimal
Alias	UnitPrice_Sum
Output	Yes
Sort Type	Unsorted
Sort Order	
Group By	No
Aggregate	Sum

**AVAILABLE TABLES AND VIEWS**

**PARAMETERS**

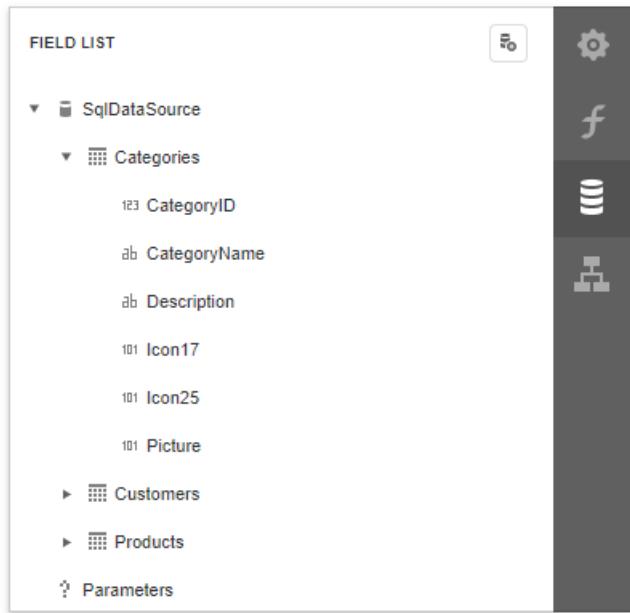
**Buttons:** Preview Results..., OK (with a mouse cursor icon), Cancel

If you enabled custom SQL queries, the plus button invokes a context menu. You can choose whether to run the Query Builder or Custom SQL Editor.



You can click the button to customize the query or the button to remove the query.

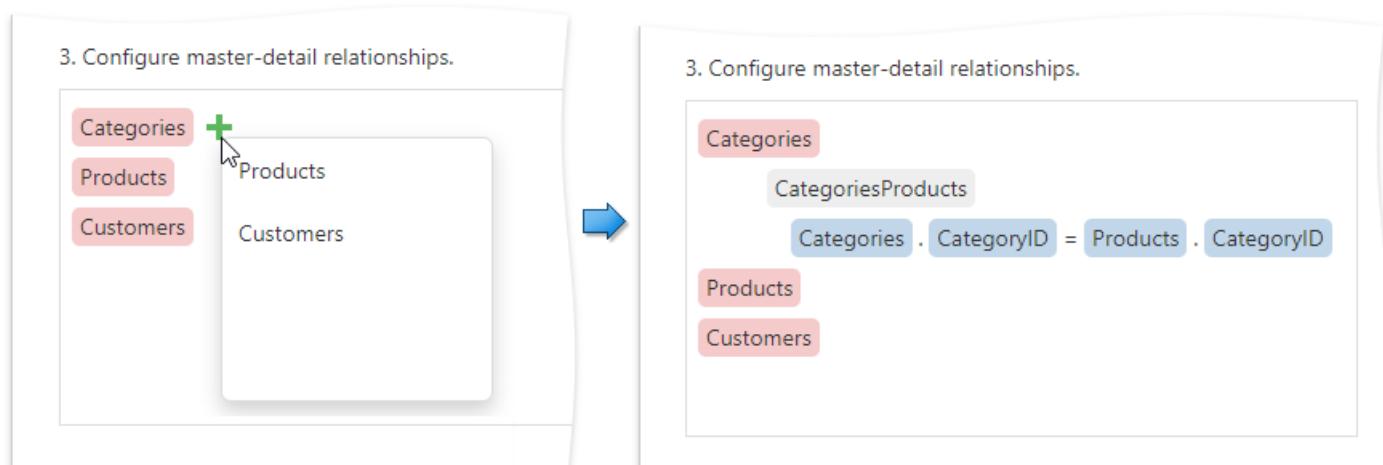
Once you finished the wizard, the data source becomes available in the [Report Explorer's Components node](#). The [Field List](#) reflects the data source structure.



## Configure Master-Detail Relationships

This step is available when you selected two or more queries.

To create a master-detail relationship, click the master query's plus button, select the detail query in the invoked list, and connect the key fields.



After the wizard is completed, the Field List reflects the master-detail hierarchy.

The screenshot shows the 'FIELD LIST' panel on the left side of the interface. It displays a hierarchical tree structure of data sources and their fields. At the top level is 'SqlDataSource'. Under 'SqlDataSource' are 'Categories', 'CategoriesProducts', and 'Parameters'. 'Categories' has fields: 'CategoryID', 'CategoryName', 'Description', 'Icon17', 'Icon25', and 'Picture'. 'CategoriesProducts' has fields: 'CustomerID' and 'ProductID'. 'Parameters' is a placeholder node. On the right side of the panel is a vertical toolbar with icons for settings, refresh, search, and other operations.

## Configure Query Parameters

This step is available if you selected a parameterized stored procedure or created a custom query.

Select a query and click the plus button to add a new parameter.

The screenshot shows a modal dialog titled '4. Configure query parameters.' It lists a single parameter named 'Customers'. To the right of the parameter name is a plus sign (+) button, which is highlighted with a cursor icon, indicating it can be clicked to add more parameters. The background of the dialog is light gray.

Click the button to customize the parameter or the button to remove it.

You can use the following approaches to specify a parameter value:

- **Assign a static value**

Select a query parameter's type from the **Type** drop-down list and specify a value based on the selected type.

#### 4. Configure query parameters.

The screenshot shows the 'Configure query parameters' dialog for a 'Customers' query. A single parameter named 'parameter1' is defined. Its 'Name' is 'parameter1', 'Type' is 'Number (32 bit integer)', and its 'Value' is '20'.

- **Provide a dynamic parameter value**

Set the **Type** option to **Expression** and specify the **Result Type**. Click the **Value** option's ellipsis button and construct an expression in the invoked.

The screenshot shows the 'Configure query parameters' dialog for a 'Customers' query. The 'parameter1' entry has its 'Type' set to 'Expression' and its 'Result Type' set to 'Date'. The 'Value' field contains an ellipsis button, which is being clicked to open the 'Expression Editor' window.

**Expression Editor**

1 `LocalDateTimeNow()`

Fields: Enter text to search... LocalDateTimeNow()  
Constants: LocalDateTimeLastWeek()  
Functions:

- ▼ Functions
- Aggregate: LocalDateTimeThisWeek()
- DateTime: LocalDateTimeYesterday()
- Logical: LocalDateTimeToday()
- Math: LocalDateTimeNow()

LocalDateTimeNow()  
Returns a DateTime value corresponding to the current moment in time.

OK Cancel

If you design the current report in the wizard, you can map a query parameter to an existing report parameter. To do this, use the **?parameterName** syntax.

## Expression Editor

X

1 ?reportParameter

Fields

- Constants
- Functions
- Operators

Parameters

- ab reportParameter

OK Cancel

# Specify Data Source Settings (JSON)

This page appears if you selected **JSON** on the [previous page](#).

The screenshot shows the 'Specify Data Source Settings' step of a report wizard. On the left, a vertical toolbar has icons for Report Wizard, Select Report Type, Select Data Source, Specify Data Source Settings (which is highlighted), Define Report Layout, and Specify Page Settings. The main area has a title 'Specify Data Source Settings'. Step 1 asks 'Do you want to use an existing data connection?' with two options: 'Yes, let me choose an existing data connection from the list' (radio button) and 'No, I'd like to create a new data connection' (radio button, selected). Step 2 asks 'Select data fields.' It shows a 'Root element:' dropdown set to 'root.Products' and a list of fields under 'Products': CategoryID, Discontinued, EAN13, ProductID, ProductName, QuantityPerUnit, ReorderLevel, SupplierID, UnitPrice, UnitsInStock, and UnitsOnOrder. Most fields have checkboxes checked. At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

## Select an Existing Data Connection

Select the first option and choose a data connection from the list.

The screenshot shows the 'Select an Existing Data Connection' step of the report wizard. The left toolbar is identical to the previous screenshot. The main area has a title 'Specify Data Source Settings'. Step 1 asks 'Do you want to use an existing data connection?' with two options: 'Yes, let me choose an existing data connection from the list' (radio button, selected) and 'No, I'd like to create a new data connection' (radio button). Step 2 shows a list titled 'Products (JSON)' which is currently empty. At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

## Create a New Data Connection

Select the second option to create a new connection.

REPORT WIZARD

Select Report Type

Select Data Source

Specify Data Source Settings

Define Report Layout

Specify Data Source Settings

1. Do you want to use an existing data connection?

Yes, let me choose an existing data connection from the list

No, I'd like to create a new data connection

Connection Name: MyConnection

Specify the connection name and select the JSON source.

- **Web Service Endpoint (URI)**

Connection Name: MyConnection

JSON Source: Web Service Endpoint (URI)

Web Service Endpoint (URI): http://northwind.servicestack.net/customers.json

► BASIC HTTP AUTHENTICATION

► QUERY PARAMETERS

► HTTP HEADERS

You can also specify the Web Service Endpoint's request parameters (username and password, HTTP headers, or query parameters)

Connection Name: MyConnection

JSON Source: Web Service Endpoint (URI)

Web Service Endpoint (URI): http://northwind.servicestack.net/customers.json

▼ BASIC HTTP AUTHENTICATION

Username: user

Password: \*\*\*\*\*

► QUERY PARAMETERS

► HTTP HEADERS

- **JSON String**

Connection Name: MyConnection

JSON Source: JSON String

JSON String

```
1 [ {  
2   "Id": "ALFKI",  
3   "CompanyName": "Alfreds Futterkiste",  
4   "ContactName": "Maria Anders",  
5   "ContactTitle": "Sales Representative",  
6   "Address": "Obere Str. 57",  
7   "City": "Berlin",  
8   "PostalCode": "12209",  
9   "Country": "Germany",  
10  "Phone": "030-0074321",  
11  "Fax": "030-0076545"}, {  
12    "Id": "ANATR",  
13    "CompanyName": "Ana Trujillo Emparedados y helados",  
14    "ContactName": "Ana Trujillo",  
15    "ContactTitle": "Owner",  
16  } ]
```

You can also click the **Upload JSON** button to load the JSON string from a JSON file.

## Select Data Fields

At this step, the wizard shows JSON schema. Check the data fields you want to include in your report.

2. Select data fields.

Root element: root.Products

Products

- CategoryID
- Discontinued
- EAN13
- ProductID
- ProductName
- QuantityPerUnit
- ReorderLevel
- SupplierID
- UnitPrice
- UnitsInStock
- UnitsOnOrder

Click **Next** to proceed.

# Define Report Layout

On this page, you can specify options to generate the report layout.

REPORT WIZARD

Select Data Source

Select Report Type

Select Data Source

Specify Data Source Settings

Define Report Layout

1. Do you want to use an existing data source?

Yes, let me choose an existing data source from the list  
 No, I'd like to create a new data source

dsMasterDetail1

## Select Queries

Select queries for the report and its detail reports. If you selected the **Table Report** and bound it to a database, the query list can also contain master-detail relationships.

REPORT WIZARD

Select Data Source

Select Report Type

Select Data Source

Specify Data Source Settings

Define Report Layout

Specify Page Settings

1. Do you want to use an existing data source?

Yes, let me choose an existing data source from the list  
 No, I'd like to create a new data source

dsMasterDetail1

2. Select the data source type.

 Database

 JSON

 No Data

1. Select queries for the report and its detail reports.

<input type="checkbox"/> Categories
<input checked="" type="checkbox"/> Products
<input type="checkbox"/> Customers

- If you select one query, the wizard assigns it to the report's **DataMember** property.
- If you select two or more queries, the wizard creates the **Detail Report Band** for each query at the same hierarchical level and assigns the band's **DataMember** property to the corresponding query.
- If you select a master-detail relationship, the wizard creates the **Detail Report Band** under the corresponding master report and assigns the band's **DataMember** property to this relationship's name.

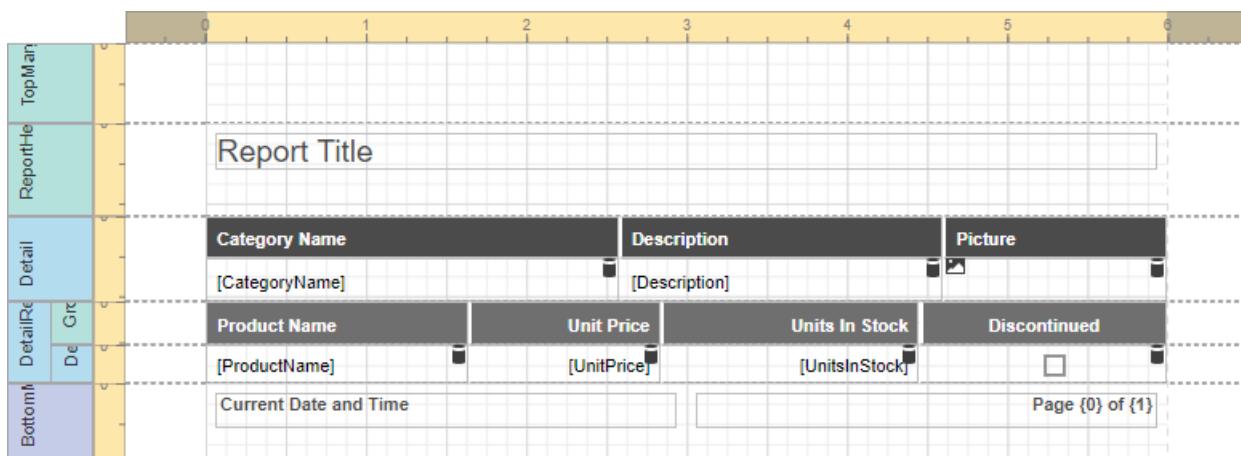
## Select Data Fields

Choose data fields from the selected queries to display them in the report.

2. Select data fields to display in the report.

<input type="checkbox"/> Categories
<input type="checkbox"/> CategoriesProducts
<input type="checkbox"/> CategoryID
<input checked="" type="checkbox"/> CategoryName
<input checked="" type="checkbox"/> Description
<input checked="" type="checkbox"/> Picture

Click **Finish** if you do not need to group fields and/or display summaries. The created report looks similar to the image below.



## Add Group Fields

Click the **Add Group** button and select data fields in the drop-down list.

3. Add group fields.

**Categories.CatagoriesProducts**

- ProductName
- UnitPrice
- UnitsInStock
- Discontinued

Use arrow buttons to change the group order.

The following image demonstrates group types:

No grouping				
BMW	525i	1/1/2009	1	
BMW	525i	1/2/2009	2	
BMW	740i	1/3/2009	3	
Toyota	Camry	1/4/2009	4	
Toyota	Prius	1/5/2009	5	
Toyota	Prius	1/6/2009	6	

One-level Grouping				
<b>BMW</b>				
525i	1/1/2009	1		
525i	1/2/2009	2		
740i	1/3/2009	3		
<b>Toyota</b>				
Camry	1/4/2009	4		
Prius	1/5/2009	5		
Prius	1/6/2009	6		

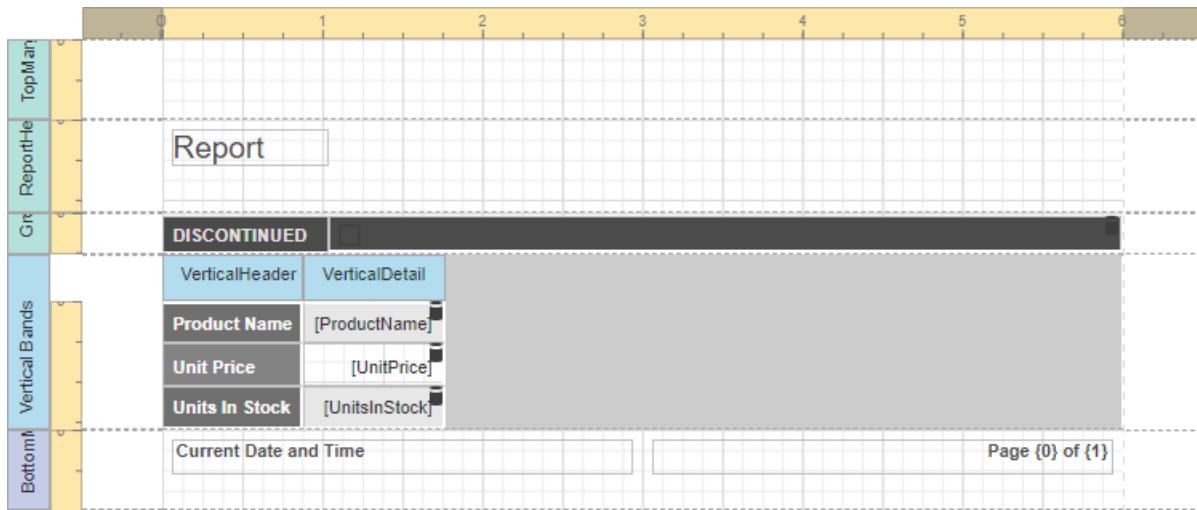
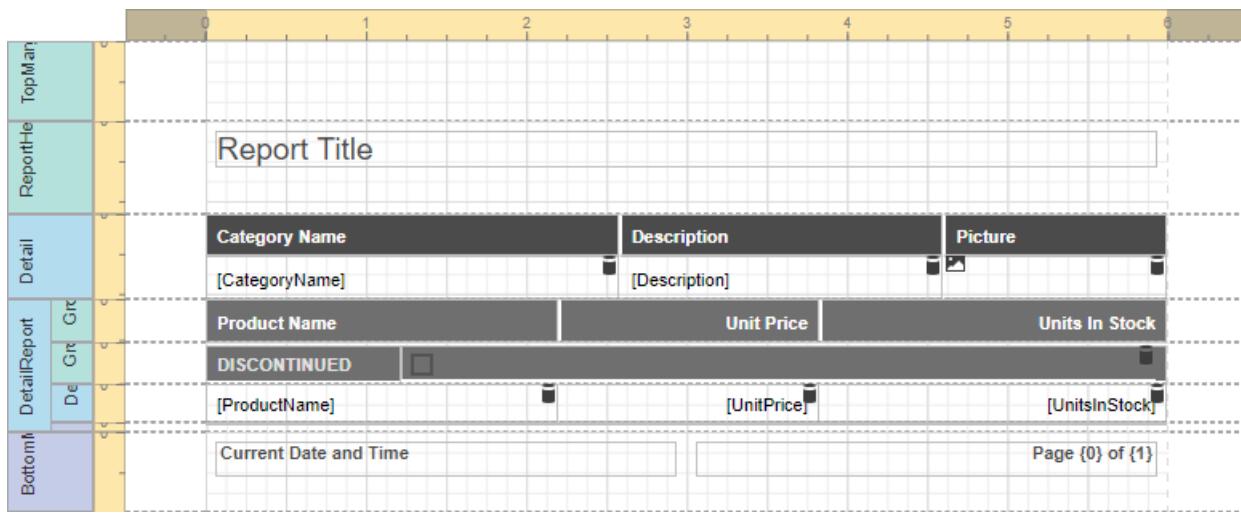
  

Nested Grouping				
<b>BMW</b>				
525i	1/1/2009	1		
525i	1/2/2009	2		
740i	1/3/2009	3		
<b>Toyota</b>				
Camry	1/4/2009	4		
Prius	1/5/2009	5		
Prius	1/6/2009	6		

Multiple Fields				
<b>BMW 525i</b>	1/1/2009	1		
BMW 525i	1/2/2009	2		
<b>BMW 740i</b>	1/3/2009	3		
<b>Toyota Camry</b>	1/4/2009	4		
<b>Toyota Prius</b>	1/5/2009	5		
Toyota Prius	1/6/2009	6		

You can stop the wizard at this step and get the report layout similar to the image below.



## Add Summary Fields

To add a summary, select a data field (numeric, date-time or Boolean) and summary function(s).

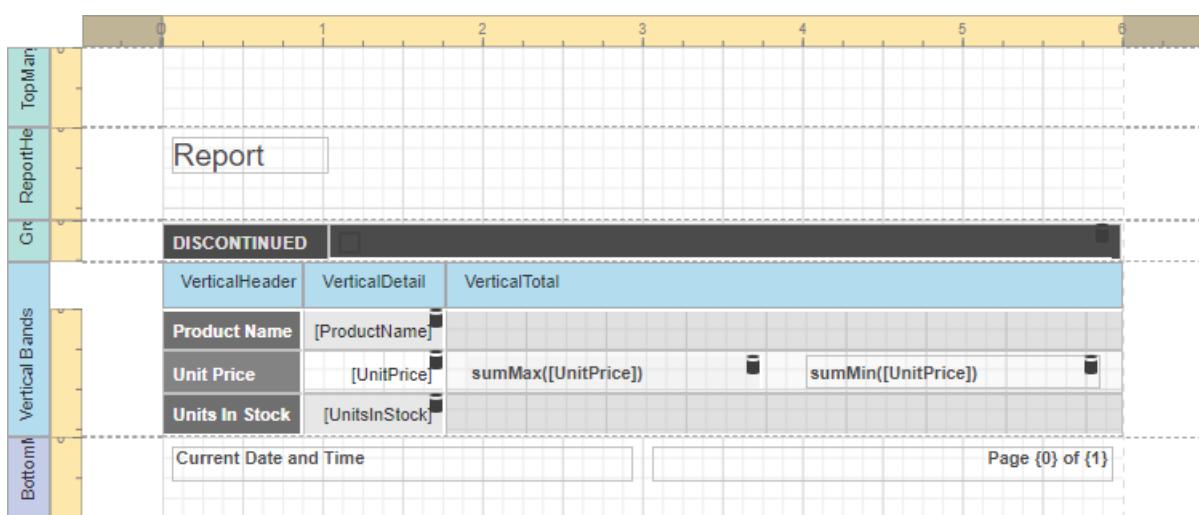
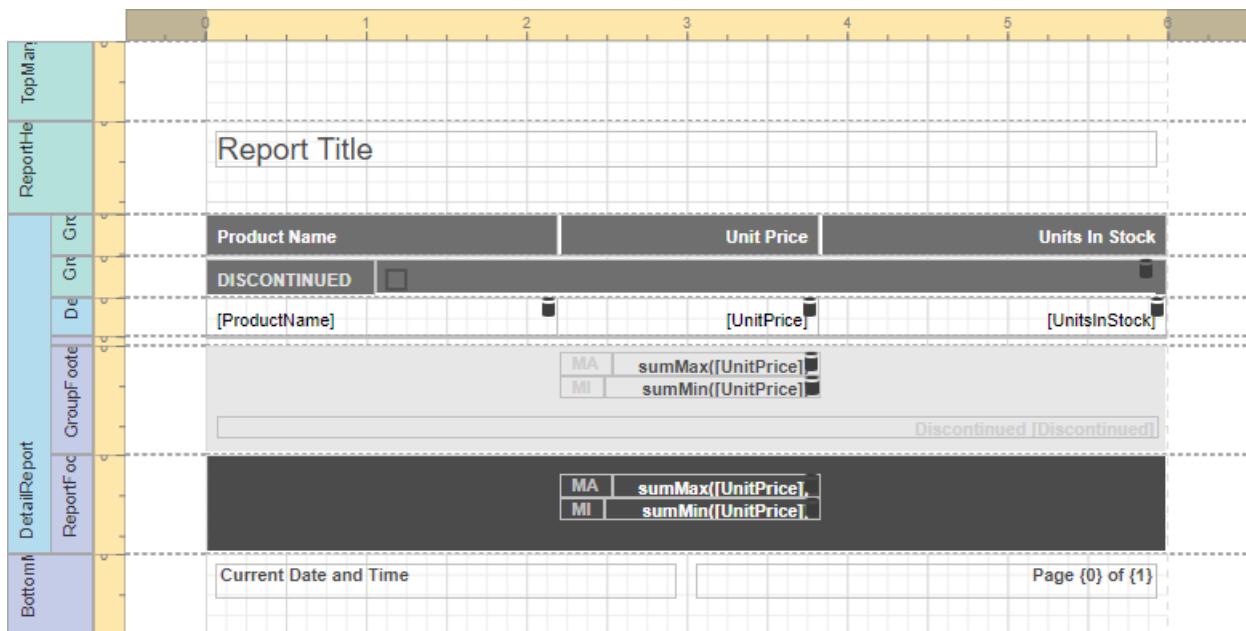
4. Add summary fields.

Fields	Summary functions
Categories.CATEGORIESProducts.UnitPrice <span style="font-size: small;">X</span> ▾	Max <span style="font-size: small;">X</span> Min <span style="font-size: small;">X</span> ▾ <span style="float: right;"><span style="border: 1px solid #ccc; padding: 2px;">X</span></span>
Select... ▾	Select... ▾ <span style="float: right;"><span style="border: 1px solid #ccc; padding: 2px;">X</span></span>

Ignore null values

- Table Reports display summaries in the Report Footer and Group Footers.
- Vertical Reports display summaries in the Vertical Total band.

Select the **Ignore null values** checkbox to do not take data fields' empty values into account. Otherwise, these values are treated as zeros for numeric and Boolean fields and the earliest system date is used for date-time fields.



# Specify Page Settings

This wizard page allows you to setup the report's page.

## Specify Page Settings

The screenshot shows the 'Specify Page Settings' step of a report wizard. On the left, a vertical toolbar contains icons for back, forward, and various report operations. The main area has a title bar 'Specify Page Settings' and a sub-instruction '1. Specify page settings and a report color scheme.' Below this, the 'Paper' section is active, showing dropdowns for 'Size' (Letter), 'Unit' (Inch), 'Width' (8.50"), and 'Height' (11.00"). To the right of these fields are two preview icons: a portrait-oriented page and a landscape-oriented page. Below the paper section is a 'Page Margins' section with input fields for 'Left' (1.00"), 'Right' (1.00"), 'Top' (1.00"), and 'Bottom' (1.00").

You can specify the following report properties:

- **Size**
- **Unit**
- **Width and Height**

Choose between *Inch*, *Millimeter* and *Pixel* to specify size options at this step. After you finish the wizard, the Report Designer transforms the specified units to *HundredthsOfAnInch*, *TenthsOfAMillimeter* or *Pixels*.

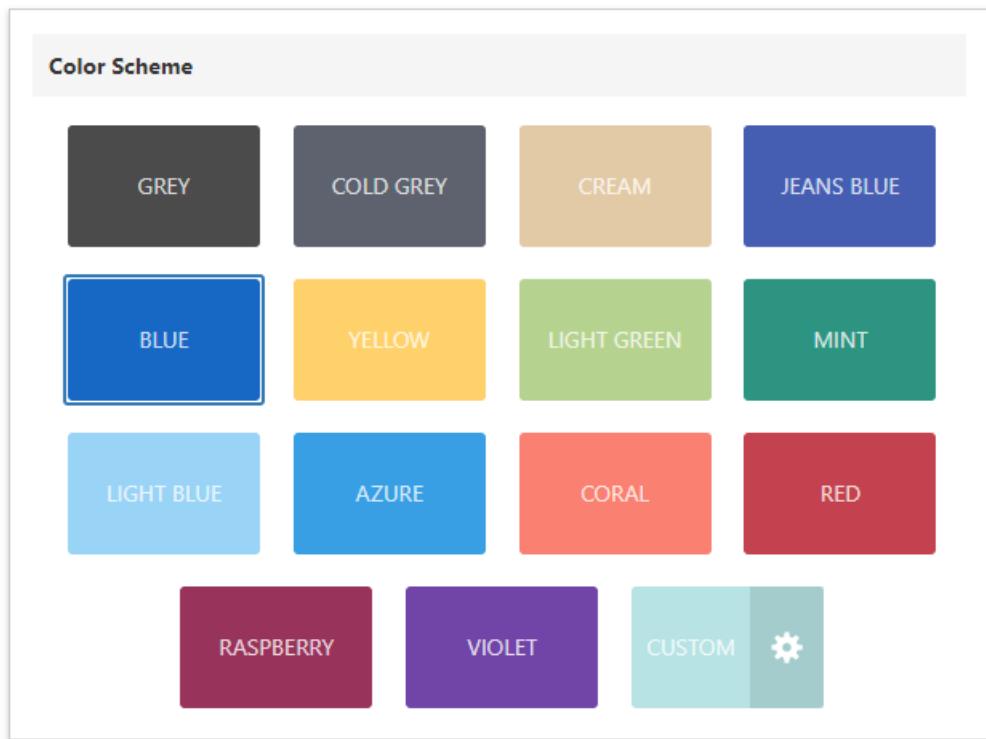
- **Page Margins**
- **Orientation**

The wizard's right-hand side shows the page preview based on the specified settings.

After you complete the wizard, you can change these settings in the Report Designer's Properties Panel.

## Specify a Report Color Scheme

Choose the report's color scheme. The wizard creates [report styles](#) based on the selected color for the first-level report controls and applies styles with more transparent colors to controls at deeper levels.



## Specify the Report Title

Click the placeholder and enter the report title.

2. Specify the report title.

## Result

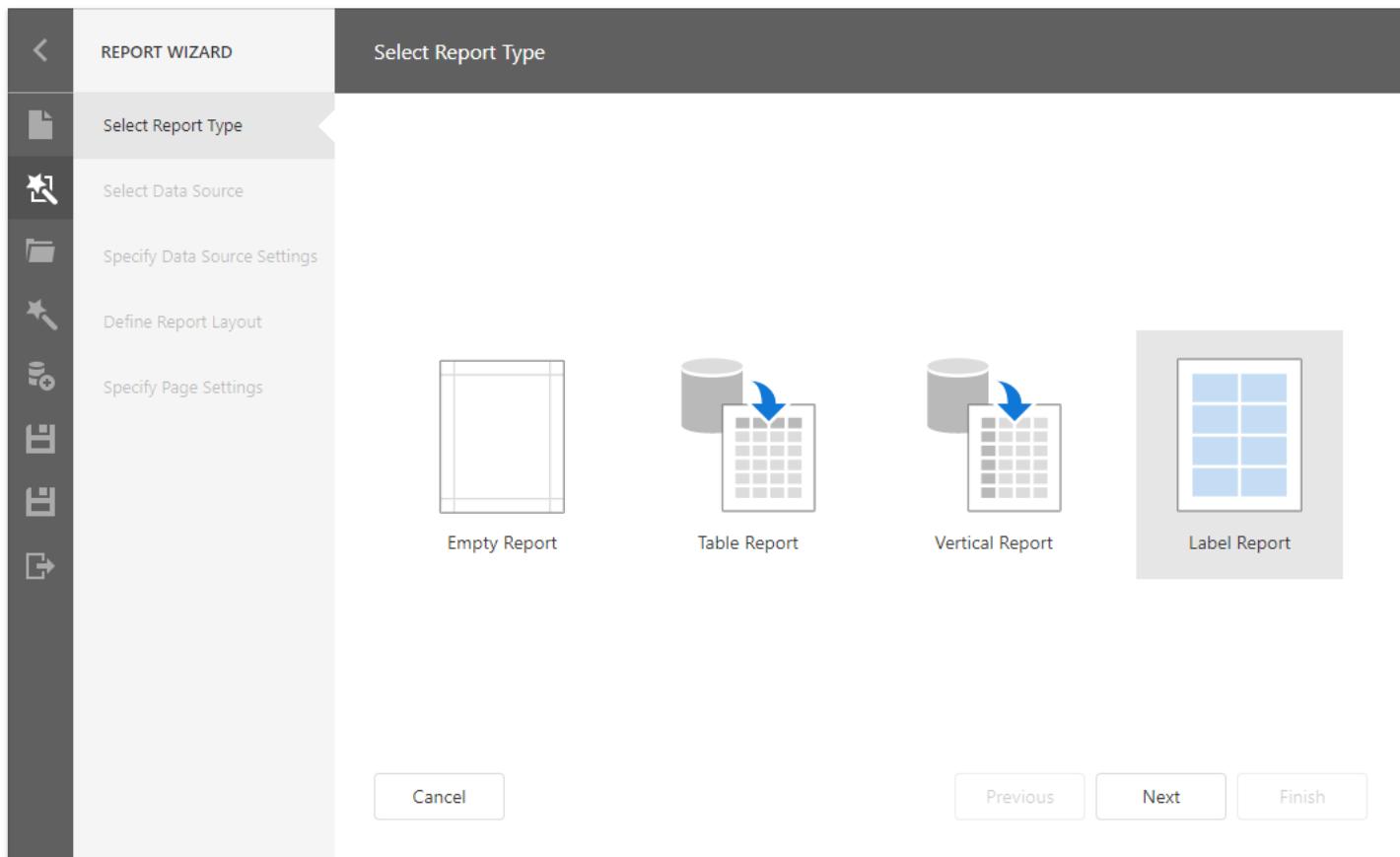
The following images show the resulting report layout:

Top	0	1	2	3	4	5	6		
TopMan									
ReportHe									
	Products by Categories								
Detail									
	Category Name			Description		Picture			
	[CategoryName]			[Description]					
	Product Name			Unit Price		Units In Stock			
	DISCONTINUED		<input type="checkbox"/>						
	[ProductName]			[UnitPrice]		[UnitsInStock]			
					MA	sumMax([UnitPrice])			
					MI	sumMin([UnitPrice])			
ReportFo	Discontinued [Discontinued]								
DetailReport									
BottomM									
	Current Date and Time								
					Page {0} of {1}				

The screenshot shows the Topaz report editor interface. The left sidebar lists sections: Top Margin, Report Header, Grid, Report Body, Vertical Bands, and Bottom Margin. The main area displays a report structure for 'Products'. The 'Report Body' section contains a table with three rows. The first row has a blue header cell containing 'DISCONTINUED' and two white detail cells. The second row has a blue header cell containing 'Product Name' and two white detail cells containing '[ProductName]' and 'sumMax([UnitPrice])'. The third row has a blue header cell containing 'Unit Price' and two white detail cells containing '[UnitPrice]' and 'sumMin([UnitPrice])'. The bottom margin section contains a 'Current Date and Time' placeholder and a 'Page {0} of {1}' page number placeholder.

# Label Report

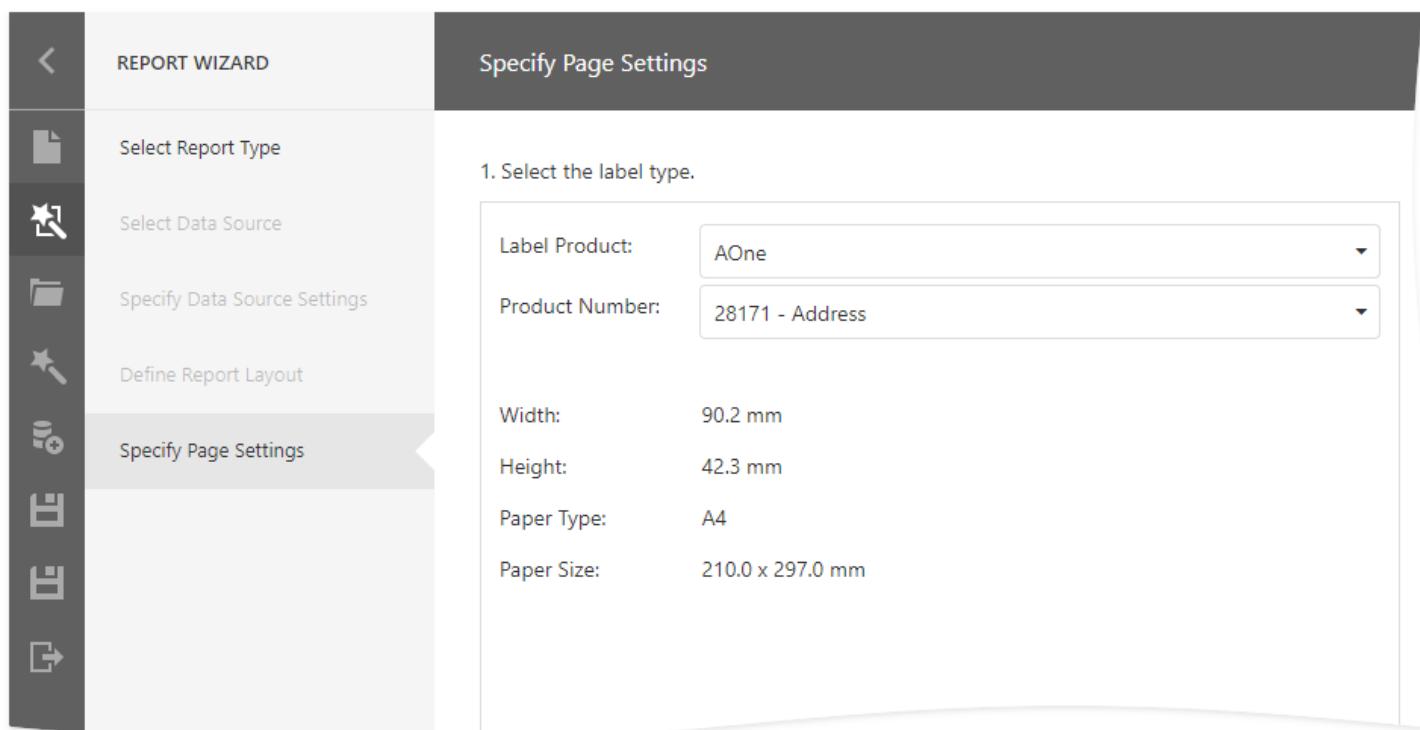
Select **Label Report** on the start page to create a report with labels.



Click **Next** to go to the **Specify Page Settings** page.

## Select the Label Type

Choose a label standard from the **Label Product** drop-down list. Select a label type from the **Product Number** drop-down list. The type defines the label's default size, layout, and paper type.



# Customize Label Parameters

At this step, you can customize the page size and label settings.

The screenshot shows the 'Specify Page Settings' step of the Report Wizard. On the left, a vertical toolbar lists steps: REPORT WIZARD, Select Report Type, Select Data Source, Specify Data Source Settings, Define Report Layout, Specify Page Settings (which is highlighted), and Finish. The main area is titled 'Specify Page Settings' and contains the following information:

2. Choose the page size and customize the label's parameters.

Page Size: A4 (dropdown menu) | Inch (radio button) | Millimeter (radio button, selected)

210.0 x 297.0 mm

Label Width: 90.2

Label Height: 42.3

Horizontal Pitch: 92.7

Vertical Pitch: 42.3

Top Margin: 20

Left Margin: 13

Right Margin: 14.1

Bottom Margin: 23.2

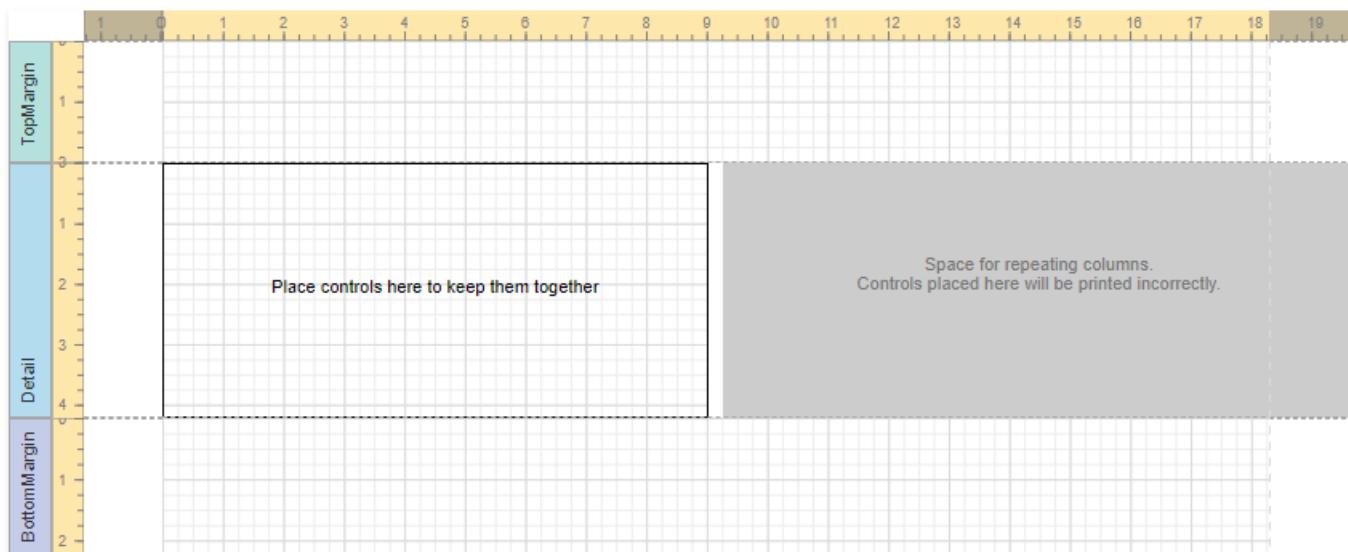
A diagram on the right illustrates the label layout: a grid of 12 labels arranged in 2 rows and 6 columns. Labels are labeled with 'HORIZONTAL PITCH' (horizontal distance between columns), 'WIDTH' (width of one column), 'VERTICAL PITCH' (vertical distance between rows), and 'LEFT MARGIN' (margin from the left edge of the page to the first column). Below the grid, the text '12 labels on the page, 2 x 6' is displayed.

Click **Finish** to complete report creation.

## Result

After the wizard is finished, it divides the report's **Detail band** into three differently colored areas:

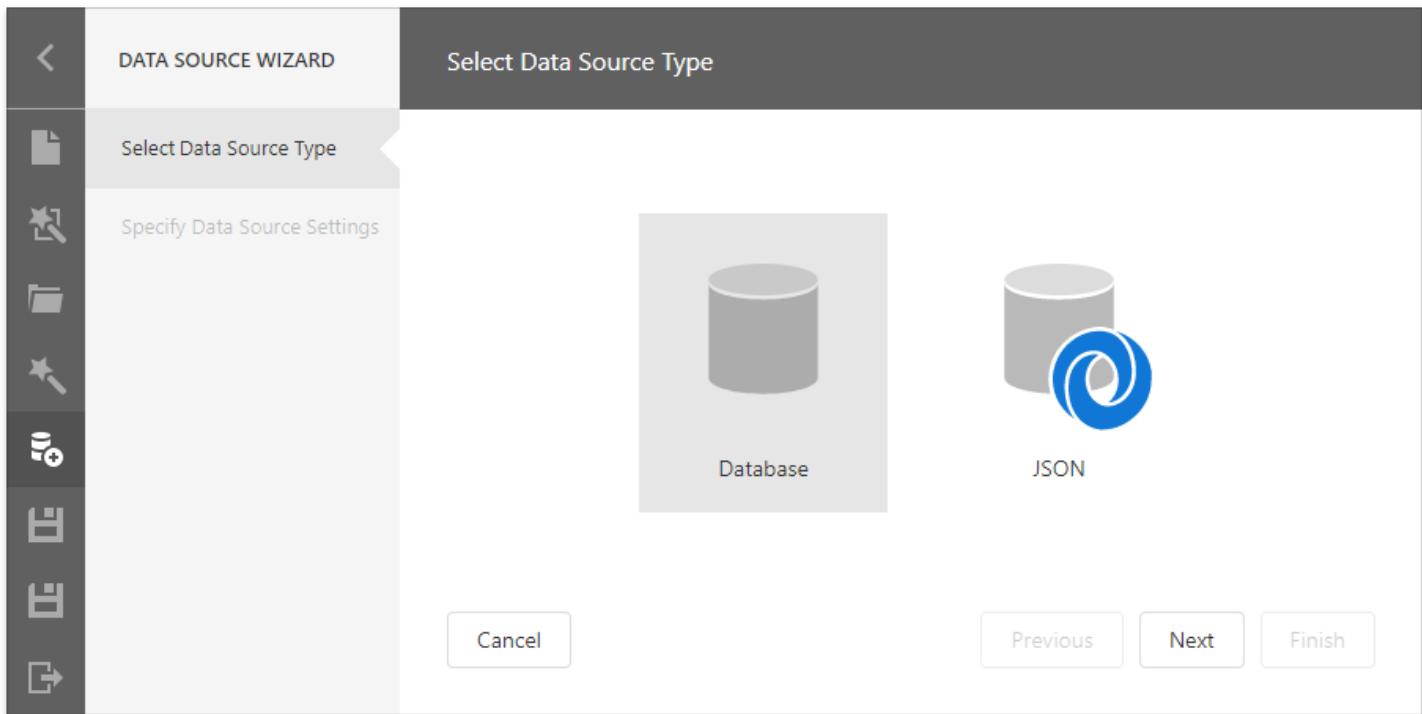
- The area at the left-hand side indicates the actual band area where you can place [controls](#).
- The gray area at the right-hand side defines the space where label columns are repeated. Do not place controls in this area.
- The white space specifies the indent between labels.



To provide report data, use the [Data Source Wizard](#).

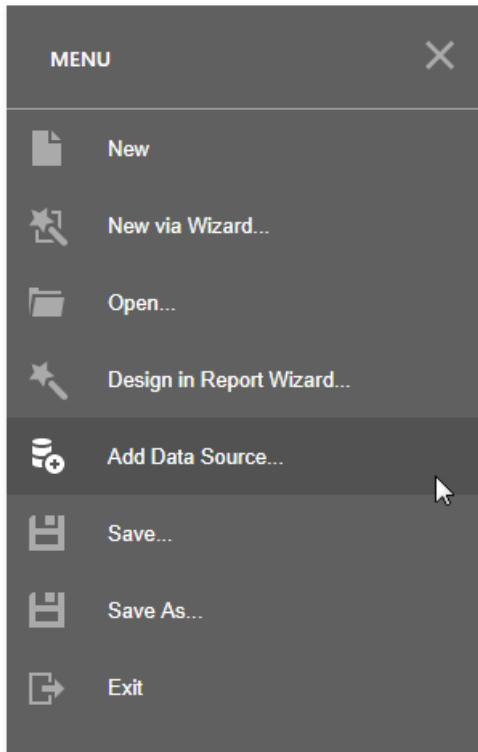
# Data Source Wizard

The Data Source Wizard enables you to add data sources to a report.



This wizard is available in the Report Designer if corresponding data connections are registered.

Click the **Add Data Source...** command in the Designer's menu to run the Data Source Wizard.



On the start page, choose the data source type and click **Next** to proceed:

- [Specify Data Source Setting \(Database\)](#) if you selected **Database**;
- [Specify Data Source Setting \(JSON\)](#) if you selected **JSON**.

# Specify Data Source Settings (Database)

This page appears if you selected **Database** on the start page.

The screenshot shows the 'Specify Data Source Settings' step of a report wizard. On the left, a vertical toolbar contains icons for Report Wizard, Select Report Type, Select Data Source, Specify Data Source Settings (which is highlighted), Define Report Layout, and Specify Page Settings. The main area is titled 'Specify Data Source Settings' and contains four numbered steps:

1. Choose a data connection.  
A list includes 'Homes', 'Contacts', 'Northwind' (selected), and 'Vehicles'.
2. Choose predefined queries and/or create custom queries.  
Options include 'Tables' (selected), 'Views', 'Stored Procedures', and 'Queries' (checked).
3. Configure master-detail relationships.  
A diagram shows 'Categories' connected to 'Products' via 'CategoryID', which is also connected to 'Products' via 'CategoryID'. 'Customers' is also listed.
4. Configure query parameters.  
A section for 'Customers' shows a parameter named 'parameter1'.

At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

## Choose a Data Connection

Select a data connection from the list.

The screenshot shows the 'Specify Data Source Settings' step of a report wizard. The 'Select Data Source' icon in the toolbar is highlighted. The main area is titled 'Specify Data Source Settings' and contains step 1: 'Choose a data connection.' The list includes 'Homes', 'Contacts', 'Northwind' (selected and highlighted in blue), and 'Vehicles'.

## Choose Queries

Check tables, views and/or stored procedures to include them in a data source as separated queries.

2. Choose predefined queries and/or create custom queries.

- ▼  Tables
  - ▶  Categories
  - ▶  Customers
  - ▶  EmployeeCustomers
  - ▶  Employees
  - ▶  EmployeeTerritories

You can also check specific data fields.

2. Choose predefined queries and/or create custom queries.

- ▼  Products
  - ProductID
  - ProductName
  - SupplierID
  - CategoryID
  - QuantityPerUnit

To join multiple data tables and shape the resulting data, click the **Queries** category's plus button to invoke the [Query Builder](#) and create a custom query.

**Query Builder**

The Query Builder interface displays two tables: **CATEGORIES** and **PRODUCTS**. The **CATEGORIES** table includes columns for CategoryID, CategoryName, Description, Picture, Icon17, and Icon25. The **PRODUCTS** table includes columns for ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, UnitPrice\_Sum (with a sum icon), UnitsInStock, UnitsOnOrder\_Sum (with a sum icon), ReorderLevel, Discontinued, and EAN13. A join condition is shown between CategoryID in the Categories table and CategoryID in the Products table.

**QUERY PROPERTIES**

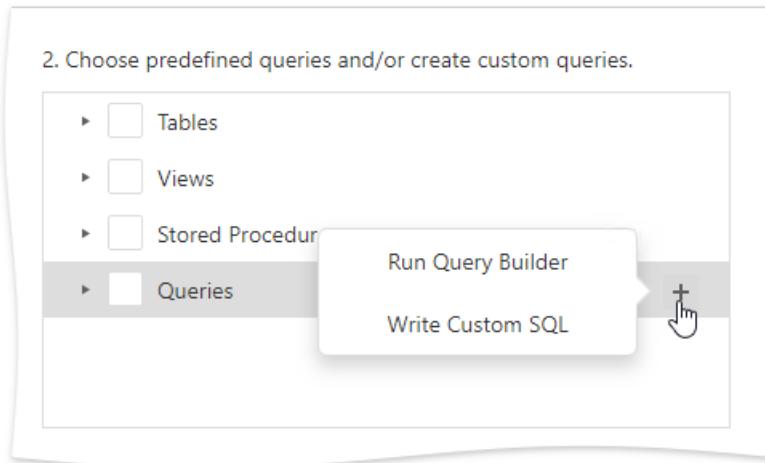
Name	UnitPrice
Type	Decimal
Alias	UnitPrice_Sum
Output	Yes
Sort Type	Unsorted
Sort Order	
Group By	No
Aggregate	Sum

**AVAILABLE TABLES AND VIEWS**

**PARAMETERS**

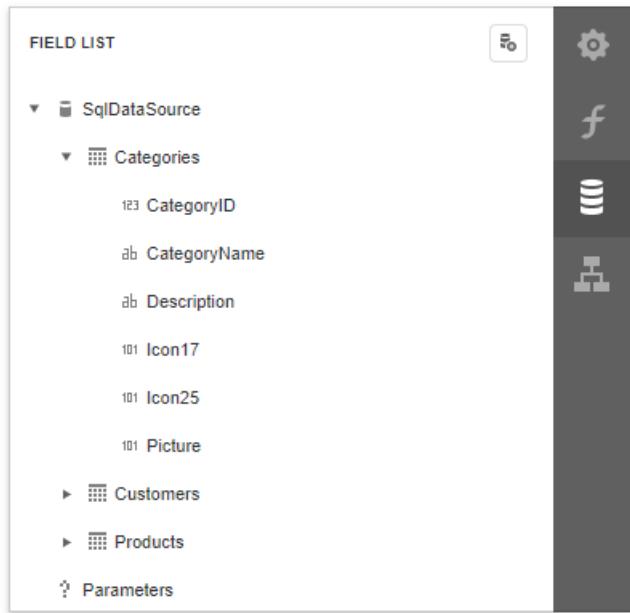
**Buttons:** Preview Results..., OK (with a mouse cursor icon), Cancel

If you enabled custom SQL queries, the plus button invokes a context menu. You can choose whether to run the Query Builder or Custom SQL Editor.



You can click the button to customize the query or the button to remove the query.

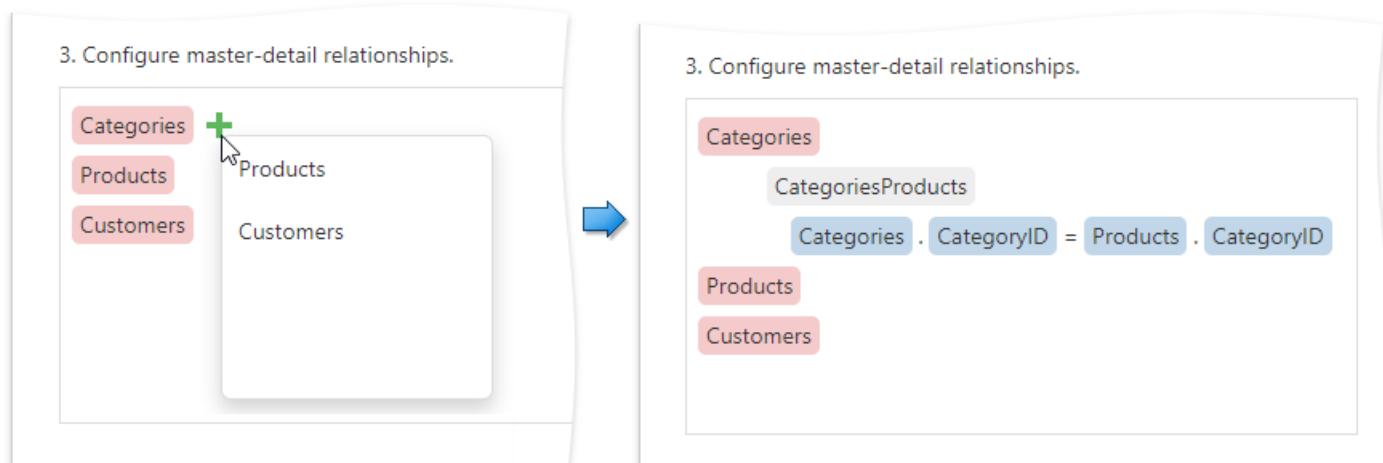
Once you finished the wizard, the data source becomes available in the [Report Explorer's Components node](#). The [Field List](#) reflects the data source structure.



## Configure Master-Detail Relationships

This step is available when you selected two or more queries.

To create a master-detail relationship, click the master table's plus button, select the detail table in the invoked list, and connect the key fields.



After the wizard is completed, the Field List reflects the master-detail hierarchy.

The screenshot shows the 'FIELD LIST' panel on the left side of the interface. It displays a hierarchical tree structure of data sources and their fields. At the top level is 'SqlDataSource'. Under 'SqlDataSource' are 'Categories', 'CategoriesProducts', and 'Parameters'. 'Categories' has fields: 'CategoryID', 'CategoryName', 'Description', 'Icon17', 'Icon25', and 'Picture'. 'CategoriesProducts' has no visible fields. 'Parameters' has no visible fields. To the right of the tree is a vertical toolbar with icons for gear, file, database, and other operations.

## Configure Query Parameters

This step is available if you selected a parameterized stored procedure or created a custom query.

Select a query and click the plus button to add a new parameter.

The screenshot shows a modal dialog titled '4. Configure query parameters.' It lists a single parameter named 'Customers'. To the right of the parameter name is a plus sign (+) button, which is highlighted with a cursor icon, indicating it can be clicked to add a new parameter.

Click the button to customize the parameter or the button to remove it.

You can use the following approaches to specify a parameter value:

- **Assign a static value**

Select a query parameter's type from the **Type** drop-down list and specify a value based on the selected type.

#### 4. Configure query parameters.

The screenshot shows the 'Configure query parameters' dialog for a 'Customers' node. A single parameter named 'parameter1' is listed. Its 'Name' is 'parameter1', 'Type' is 'Number (32 bit integer)', and its 'Value' is '20'.

- **Provide a dynamic parameter value**

Set the **Type** option to **Expression** and specify the **Result Type**. Click the **Value** option's ellipsis button and construct an expression in the invoked.

The screenshot shows the 'Configure query parameters' dialog with a parameter named 'parameter1'. The 'Type' is set to 'Expression' and the 'Result Type' is 'Date'. The 'Value' field contains an ellipsis button, which is being clicked to open the 'Expression Editor'.

**Expression Editor**

1 `LocalDateTimeNow()`

Fields: Enter text to search... LocalDateTimeNow()  
Constants: LocalDateTimeLastWeek()  
Functions:

- ▼ Functions
- Aggregate: LocalDateTimeThisWeek()
- DateTime: LocalDateTimeYesterday()
- Logical: LocalDateTimeToday()
- Math: LocalDateTimeNow()

LocalDateTimeNow()  
Returns a DateTime value corresponding to the current moment in time.

OK Cancel

If you design the current report in the wizard, you can map a query parameter to an existing report parameter. To do this, use the **?parameterName** syntax.

## Expression Editor

X

1 ?reportParameter

Fields

- Constants
- Functions
- Operators

Parameters

- ab reportParameter

OK Cancel

# Specify Data Source Settings (JSON)

This page appears if you selected **JSON** on the start page.

The screenshot shows the 'Specify Data Source Settings' step of a report wizard. On the left, a vertical toolbar has icons for Report Wizard, Select Report Type, Select Data Source, Specify Data Source Settings (which is highlighted), Define Report Layout, and Specify Page Settings. The main area has a title 'Specify Data Source Settings'. Step 1 asks 'Do you want to use an existing data connection?' with two options: 'Yes, let me choose an existing data connection from the list' (radio button) and 'No, I'd like to create a new data connection' (radio button, selected). Step 2 asks 'Select data fields.' It shows a 'Root element:' dropdown set to 'root.Products' and a list of fields under 'Products': CategoryID, Discontinued, EAN13, ProductID, ProductName, QuantityPerUnit, ReorderLevel, SupplierID, UnitPrice, UnitsInStock, and UnitsOnOrder. Most fields have checkboxes checked. At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

## Select an Existing Data Connection

Select the first option and choose a data connection from the list.

The screenshot shows the 'Select an Existing Data Connection' step of the report wizard. The left sidebar shows icons for Report Wizard, Select Report Type, Select Data Source, Specify Data Source Settings (highlighted), Define Report Layout, and Specify Page Settings. The main area has a title 'Specify Data Source Settings'. Step 1 asks 'Do you want to use an existing data connection?' with two options: 'Yes, let me choose an existing data connection from the list' (radio button selected) and 'No, I'd like to create a new data connection' (radio button). Step 2 shows a list titled 'Products (JSON)' which is currently empty. At the bottom are 'Cancel', 'Previous', 'Next', and 'Finish' buttons.

## Create a New Data Connection

Select the second option to create a new connection.

The screenshot shows the 'Report Wizard' interface. The left sidebar has icons for Back, Select Report Type, Select Data Source, Specify Data Source Settings (which is highlighted in grey), and Define Report Layout. The main area is titled 'Specify Data Source Settings'. It asks '1. Do you want to use an existing data connection?' with two options: 'Yes, let me choose an existing data connection from the list' (radio button) and 'No, I'd like to create a new data connection' (radio button, selected). Below is a section for 'Connection Name:' with a text input field containing 'MyConnection'.

Specify the connection name and select the JSON source type.

- **Web Service Endpoint (URI)**

This screenshot shows the configuration for a 'Web Service Endpoint (URI)'. The 'Connection Name:' is set to 'MyConnection'. The 'JSON Source:' dropdown is set to 'Web Service Endpoint (URI)'. The 'Web Service Endpoint (URI):' input field contains 'http://northwind.servicestack.net/customers.json'. Below this, there are three expandable sections: 'BASIC HTTP AUTHENTICATION', 'QUERY PARAMETERS', and 'HTTP HEADERS'.

You can also specify the Web Service Endpoint's request parameters (username and password, HTTP headers, or query parameters)

This screenshot shows the same configuration as above, but with additional authentication details. Under 'BASIC HTTP AUTHENTICATION', the 'Username:' is 'user' and the 'Password:' is '.....'. The other sections ('QUERY PARAMETERS' and 'HTTP HEADERS') remain collapsed.

- **JSON String**

Connection Name: MyConnection

JSON Source: JSON String

JSON String

```
1 [ { "Id": "ALFKI", "CompanyName": "Alfreds Futterkiste", "ContactName": "Maria Anders", "ContactTitle": "Sales Representative", "Address": "Obere Str. 57", "City": "Berlin", "PostalCode": "12209", "Country": "Germany", "Phone": "030-0074321", "Fax": "030-0076545"}, { "Id": "ANATR", "CompanyName": "Ana Trujillo Emparedados y helados", "ContactName": "Ana Trujillo", "ContactTitle": "Owner", "Address": "Avda. de la Constitución 222", "City": "Mérida", "PostalCode": "5602", "Country": "Mexico", "Phone": "010-12345678", "Fax": "010-12345678"} ]
```

You can also use the **Upload JSON** button to load content from the selected JSON file.

## Select Data Fields

At this step, the wizard shows the JSON schema. Check the data fields you want to include in your report.

2. Select data fields.

Root element: root.Products

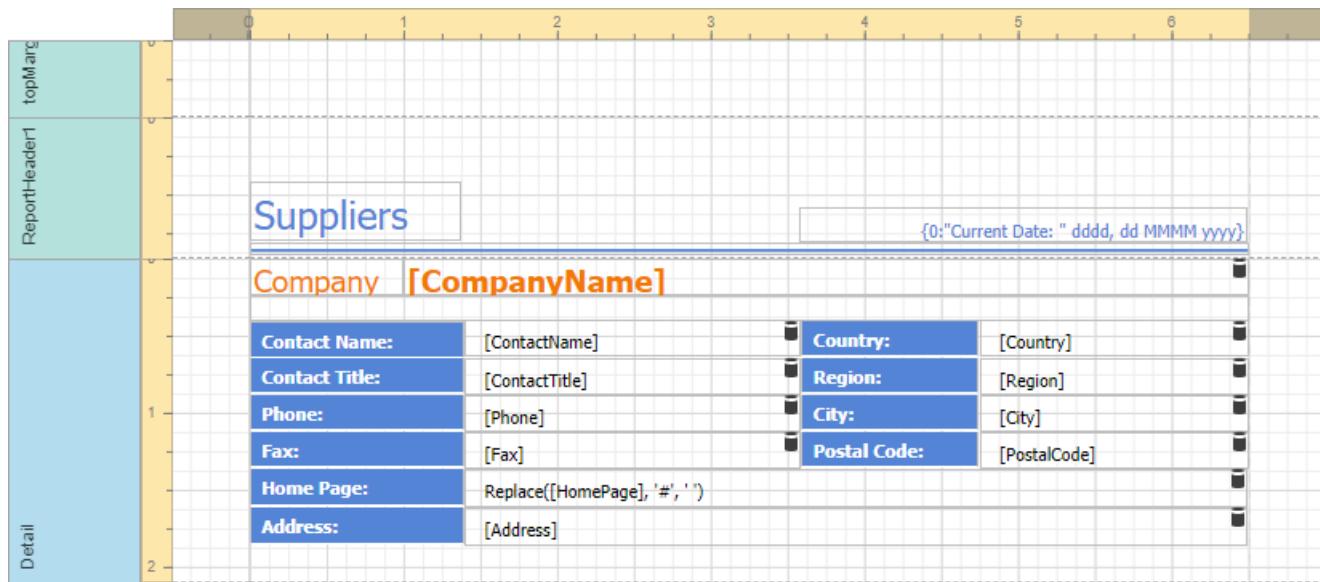
Products

- CategoryID
- Discontinued
- EAN13
- ProductID
- ProductName
- QuantityPerUnit
- ReorderLevel
- SupplierID
- UnitPrice
- UnitsInStock
- UnitsOnOrder

Click **Next** to proceed.

# Design Surface

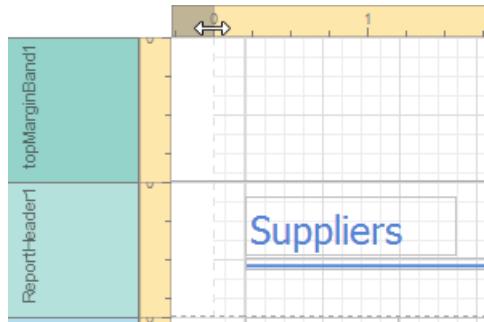
The **Design Surface** displays a report that is being edited in the [Web Report Designer](#).



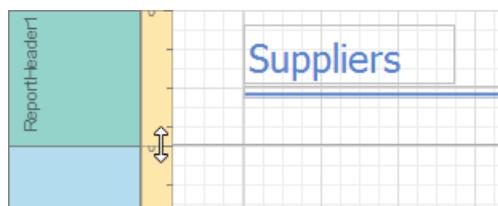
## Rulers

The horizontal and vertical rulers display tickmarks in your report's specified [measurement units](#). Click an element to evaluate its size and location using the rulers.

The horizontal ruler also allows you to modify the report's side margins (the report's **Margins** property value) by moving the left and right sliders on the ruler.



You can move a report band's vertical ruler resizing rectangles to change its height.



## Band Captions

In the Report Designer, each [report band](#) carries a caption, the tab title and color, which depends on the band kind. These captions are not printed in the resultant report document and are only visible at design time.

You can expand or collapse a band's content at design time by clicking the tab on the left side of the band.

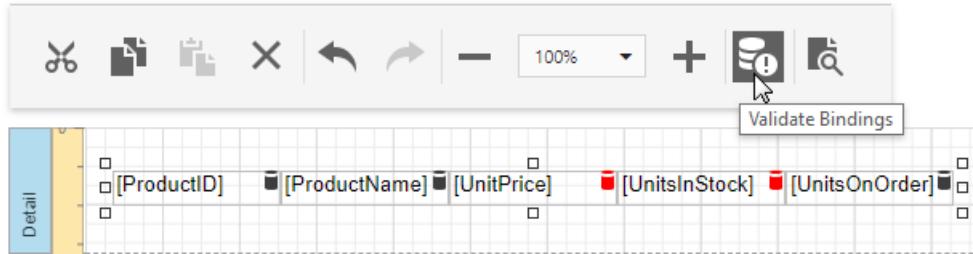
DetailReportBand	Detail1		Product Name	Product ID	Category	Quantity per Unit	Unit Price
DETAILREPORT2							

To access a band's properties, click the band's caption and switch to the [Properties Panel](#).

## Data Binding Indication

The Report Designer displays a database barrel icon above [data-bound](#) report controls.

You can click the [Validate Bindings](#) toolbar button to highlight report controls with invalid [expression/data bindings](#). This allows you to determine if the specified expression has an incorrect syntax or uses non-existing data source fields.



## In-Place Editors

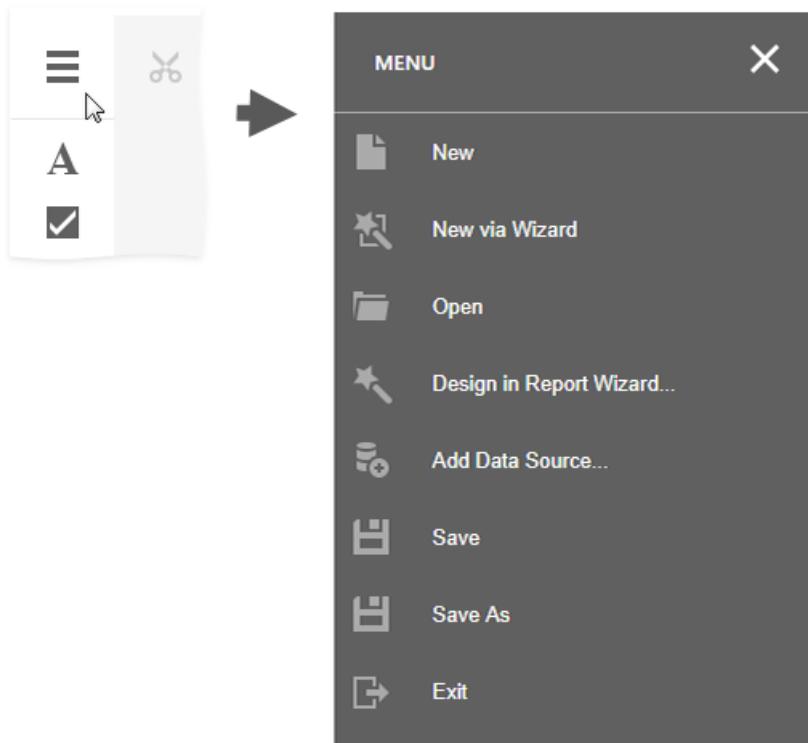
In-place editors allow you to edit the text-oriented controls' content ([Bar Code](#), [Character Comb](#), [Check Box](#), [Label](#), [Table Cell](#)) by double-clicking them.



You can switch between a report's **Design** and **Preview** mode using the corresponding buttons in the [Main Toolbar](#).

# Main Menu

The Web Report Designer menu is invoked by clicking the menu button in the upper-left corner of the designer's user interfaces.



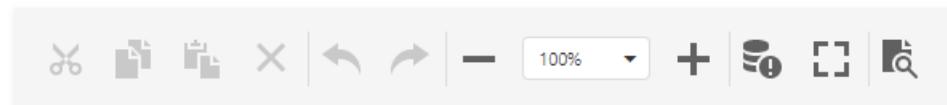
Note that some of the menu commands listed in this topic are only available when specific conditions are met. Visibility conditions for such commands are provided in the command description.

The menu contains the following commands.

COMMAND	ICON	DESCRIPTION
New	📄	Creates a report and opens it in a new tab. This command is only available when the Report Designer is provided with a report storage.
New via Wizard	🛠️	Invokes the <a href="#">Report Wizard</a> to create a new report. This command is only available when the Report Designer is provided with a report storage.
Open	📁	Invokes the <b>Open Report</b> dialog to retrieve a report from the list of <a href="#">saved reports</a> and <a href="#">open</a> it in a new tab. This command is only available when the Report Designer is provided with a report storage.
Design in Report Wizard	⭐️	Invokes the <a href="#">Report Wizard</a> to edit the current report and generate the report layout.
Add Data Source	➕	Invokes the <a href="#">Data Source Wizard</a> to create a new data source and configure it. This command is only available when the Report Designer is provided with a set of default data connections.
Save	💾	<a href="#">Saves</a> the current report. This command is only available when the Report Designer is provided with a report storage.
Save As	💾	Invokes the <b>Save Report</b> dialog to save the current report to the report storage under a new URL. This command is only available when the Report Designer is provided with a report storage.
Exit	➡️	Closes the <a href="#">Web Report Designer</a> .

# Main Toolbar

The Main Toolbar provides access to the report editing commands in the [Web Report Designer](#).



COMMAND	ICON	DESCRIPTION
Cut		Cuts the selected control to the clipboard.
Copy		Copies the selected control to the clipboard.
Paste		Pastes a control from the clipboard onto the selected report band.
Delete		Deletes the selected control.
Undo		Cancels the last change made to the document.
Redo		Reverses the last undo action.
Zoom Out		Decreases the document's current zoom factor by 5 percent.
Zoom Factor	<input type="button" value="100% ▾"/>	Zooms to a specific zoom factor selected from the dropdown list.
Zoom In		Increases the document's current zoom factor by 5 percent.
Validate Bindings		Highlights report controls with <a href="#">invalid data bindings</a> or incorrect expressions.
Full Screen		Toggles between the Report Designer's full screen and default size.
Preview		Toggles between a report's Design and Preview mode.

# Toolbox

The **Toolbox** lists all available [controls](#) and allows you to add them to your report.



## Available Controls

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

### General Content

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

Bar Code	Check Box	Gauge	Label	Character Comb	Picture Box	Rich Text	Table

### Extended Data

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

Chart	Pivot Grid	Sparkline

### Report Layout

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

Cross-Band Line	Cross-Band Box	Line	Page Break	Panel	Shape	Subreport

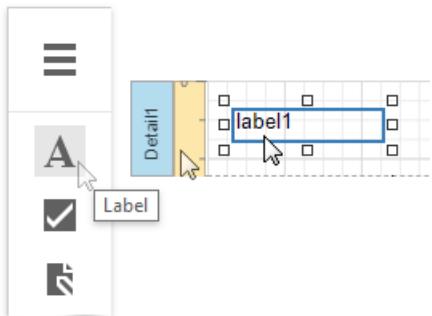
### Document Statistics

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

[Page Info](#)[Table of Contents](#)

## Add a Control to a Report

To add a control from the Toolbox, drag and drop an item from the Toolbox onto the required location within a report.

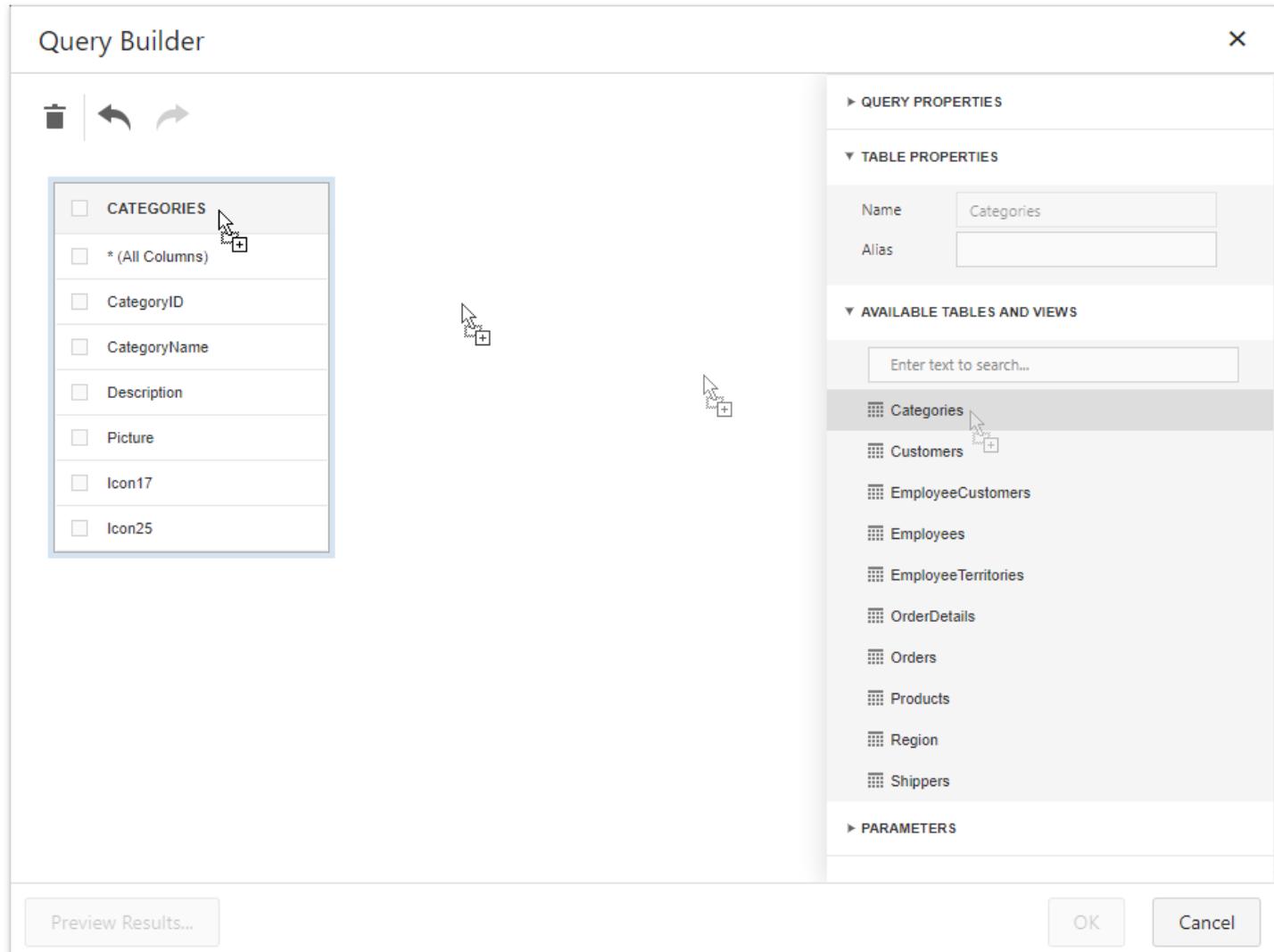


# Query Builder

The **Query Builder** is a visual queries editor. You can invoke it from the [Data Source Wizard](#).

## Select Tables

Drag and drop a specific table or view onto the Query Builder design surface to include it into a query result set.



The Query Builder provides a toolbar with the following commands:

ICON	DESCRIPTION
	Removes the selected table or view from the query.
	Reverses the most recent action.
	Performs the previously undone action.

Enable check boxes for the table columns you want to include into the query result set.

<input type="checkbox"/>	CATEGORIES
<input type="checkbox"/>	* (All Columns)
<input checked="" type="checkbox"/>	CategoryID
<input checked="" type="checkbox"/>	CategoryName
<input checked="" type="checkbox"/>	Description
<input checked="" type="checkbox"/>	Picture
<input type="checkbox"/>	Icon17
<input type="checkbox"/>	Icon25

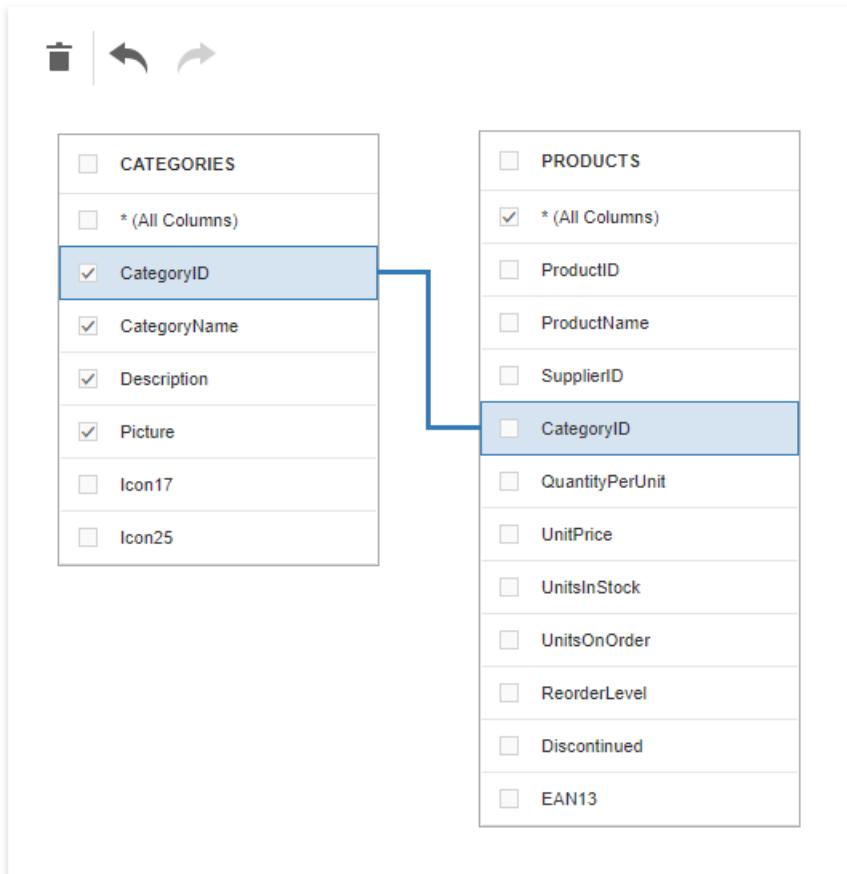
Use the dedicated search box to find a specific table or view.

▼ AVAILABLE TABLES AND VIEWS

- Categories
- CategoryProducts
- ProductsByCategory
- SalesByCategory

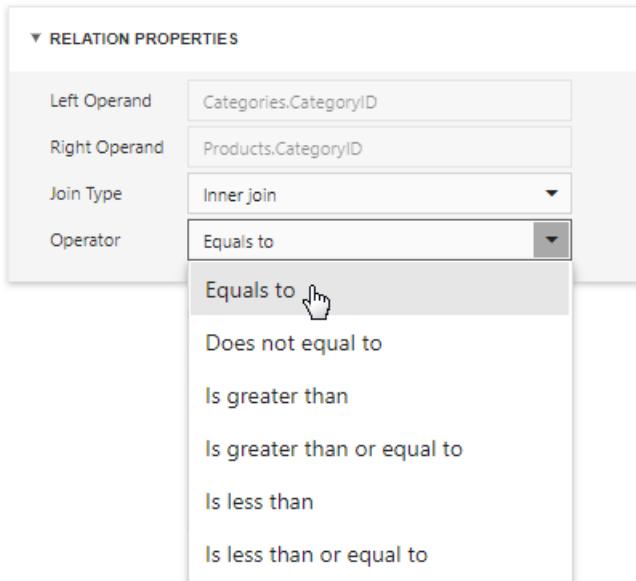
## Join Tables

The Query Builder allows you to join tables and/or views. Use drag and drop to connect corresponding columns (key fields). The connected columns should have identical data types.



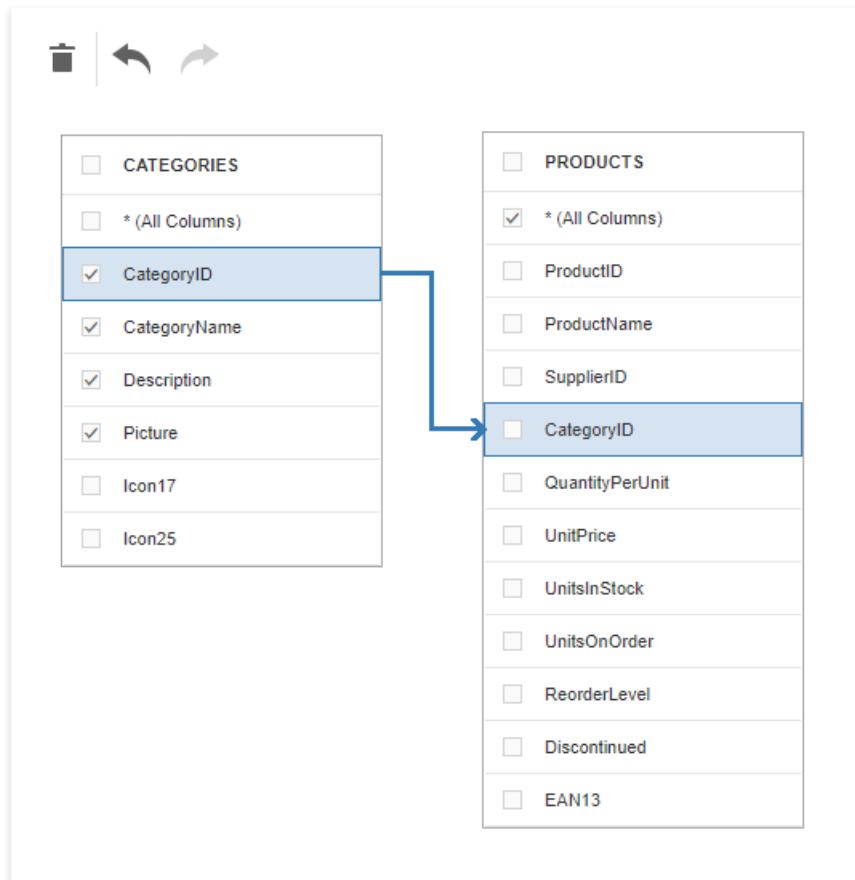
Click the data relation to display the **Relation Properties** section. Properties in this section define the join type (**Inner** or **Left**

**Outer**) and applied logical operator.



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 and includes rows with NULL (empty) values in the key field.

If you select the left outer join, the relationship line displays an arrow which points at the "right" table of the join clause.



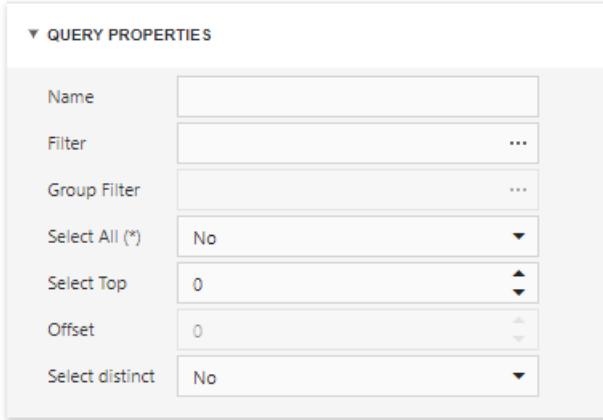
The executed query returns a "flat" table which joins different tables within a single query. The specified join options define which data records compose the query result set.

#### Note

We recommend you to use [hierarchical data sources](#) because the reporting engine generates master-detail reports faster than similar-looking reports which obtains data from "flat" data sources.

## Filter Data

Expand the **Query Properties** section to display the query options.



The query provides the following options:

- **Name**

Specifies a custom query name (alias).

- **Filter**

Runs the [Filter Editor](#) where you can specify filter conditions for the resulting data. Filter criteria may contain [query parameters](#).

- **Group Filter**

Runs the Filter Editor where you can specify filter conditions for grouped and aggregated data. This option is enabled only for grouped data.

- **Select All (\*)**

Specifies whether to include all columns from the selected tables and/or views to the query result set, regardless of their individual settings.

The default value is **No**.

- **Select Top**

Specifies the number of first records to include to the query result set. The default value is **0** and indicates that the query result set contains all records that meet all other filter conditions.

- **Offset**

Specifies the number of records to skip before the report engine retrieves data. This option is available only for sorted data.

- **Select distinct**

Specifies whether to include only distinct values to the result set.

The default value is **No**.

## Shape Data

Select a table or view and click a data column to display the data column options.

COLUMN PROPERTIES	
Name	CategoryName
Type	String(15)
Alias	
Output	Yes
Sort Type	Unsorted
Sort Order	
Group By	No
Aggregate	None

The **Column Properties** section contains the following options:

- **Name**

Indicates the column name which the Query Builder obtains from the database.

- **Type**

Indicates the column's data type.

The Query Builder provides information about the maximum string length for string columns.

- **Alias**

Specifies a custom column name (alias).

Include a column into a query to enable this option.

- **Output**

Specifies whether to include the column into the query result set.

- **Sort Type**

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

- **Sort Order**

Apply sorting to the data column's records to enable this option.

It defines the sorting priority for multiple columns (the less this number is, the higher the priority).

For example, set the sort order to **1** for the column **A** and set it to **2** for the column **B**. The Query Builder first sorts the query by column **A** and then by the column **B**.

All columns' sort order automatically updates when you change this setting for one column. It allows you to avoid conflict of priorities.

- **Group By**

Specifies whether to group the query result set by this column.

**Note**

You should apply grouping and/or aggregation to each selected column.

- **Aggregate**

Specifies whether to aggregate the column's data records.

You can use the following aggregate functions: **Count**, **Max**, **Min**, **Avg**, **Sum**, **CountDistinct**, **AvgDistinct**, **SumDistinct**.

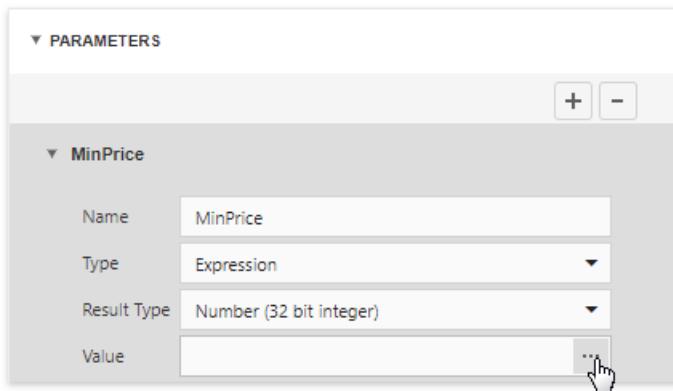
The Query Builder discards individual data records from the query result set and keep only the aggregate function result when you apply any of these functions.

**Note**

Use aggregation/grouping either for all selected columns or for none of them. The Query Builder applies grouping to all selected columns automatically if you apply the aggregation to one column. The Query Builder resets grouping against other columns when you remove all aggregation functions.

## Use Query Parameters

Use the **Parameters** section to add, remove and edit [query parameters](#).



Each query parameter provides the following properties:

- **Name**

Specifies the query parameter's name.

- **Type**

Specifies the parameter value's data type.

Set this property to **Expression** to generate parameter values dynamically.

- **Result Type**

Specifies the data type of the expression's result value.

This property is enabled if the query parameter's type is **Expression**.

- **Value**

Determines the query parameter's actual value.

You can specify a static actual value according to the selected value's data type.

Alternatively, construct an expression to generate actual parameter values dynamically. Click this property's ellipsis button to invoke the [Expression Editor](#) and create an expression. This ellipsis button is enabled if you set the query parameter's type to **Expression**.

## Preview Results

Click the **Preview Results** button to test a query on the actual data's limited subset at any time.

The opened **Data Preview** screen displays the first **100** data records of the query result set.

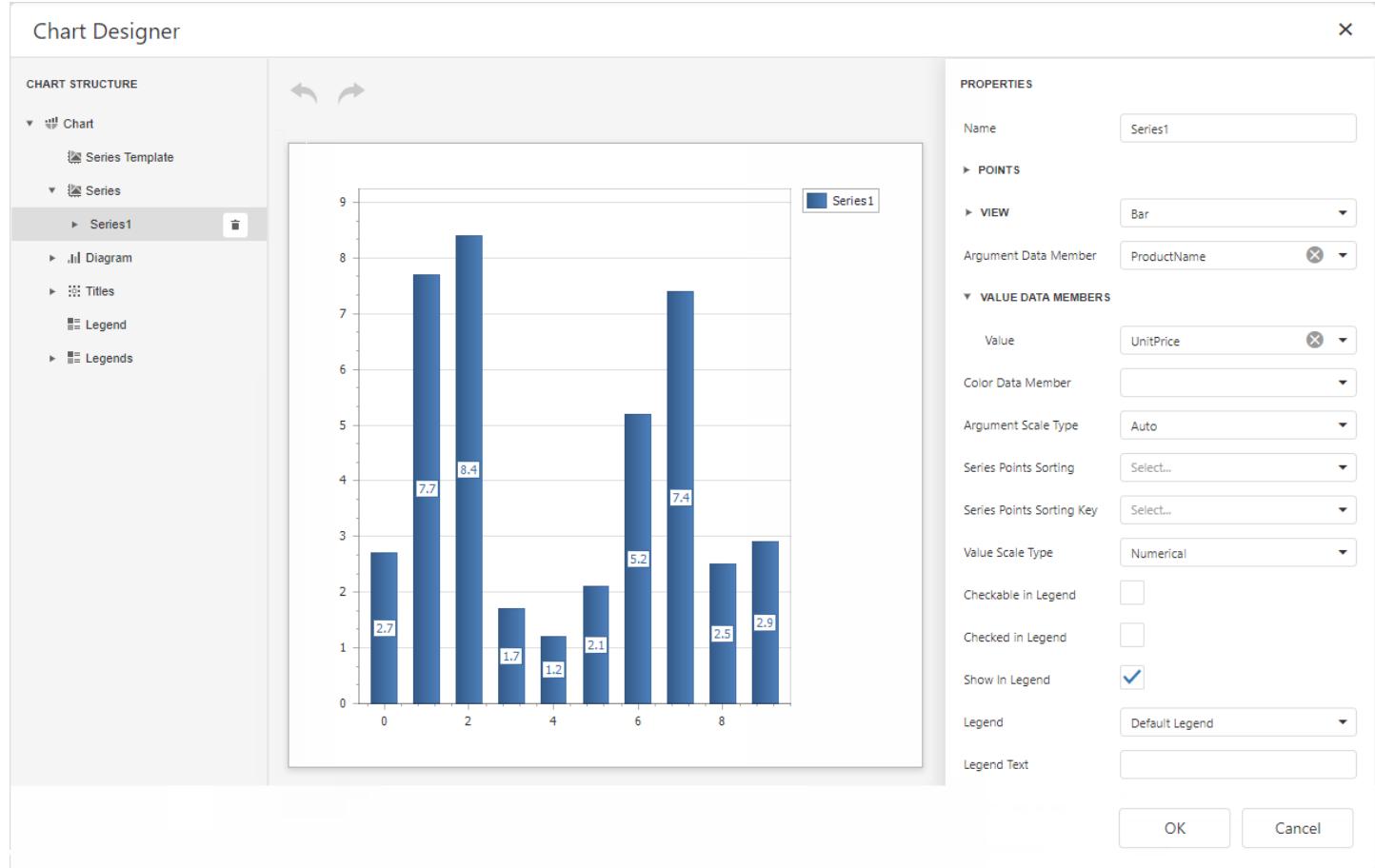
Data Preview (First 100 Rows Displayed)		X
CategoryID	Description	CategoryName
1	Soft drinks, coffees, teas, beers, and ales	Beverages
2	Sweet and savory sauces, relishes, spreads, and seasonings	Condiments
3	Desserts, candies, and sweet breads	Confections
4	Cheeses	Dairy Products
5	Breads, crackers, pasta, and cereal	Grains/Cereals
6	Prepared meats	Meat/Poultry
7	Dried fruit and bean curd	Produce
8	Seaweed and fish	Seafood

**OK**

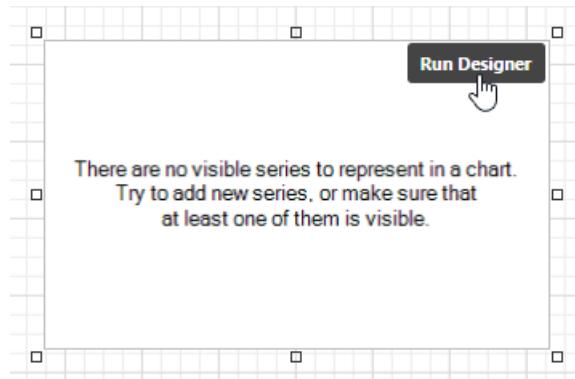
# Chart Designer

## Chart Designer Overview

The **Chart Designer** allows you to quickly create and customize [charts](#) in the [End-User Report Designer](#).



To invoke the Chart Designer, click the **Run Designer** button over the chart control.



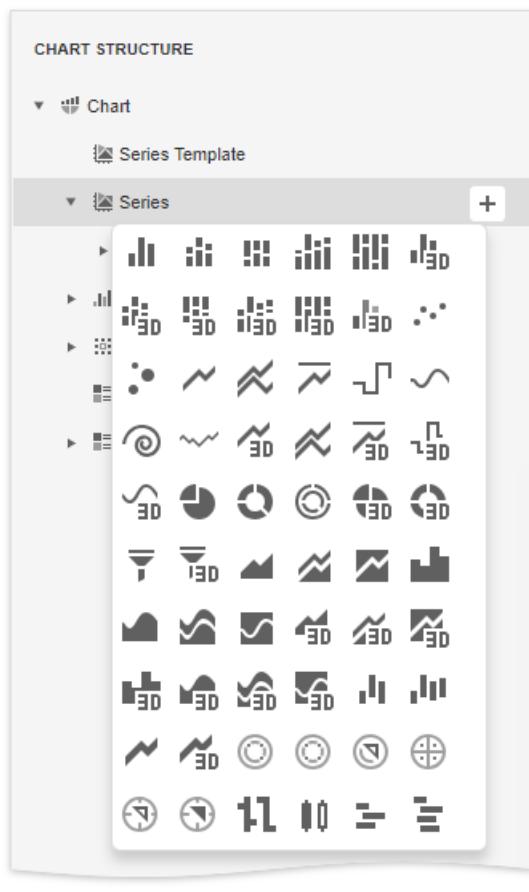
The Chart Designer consists of three main parts that are described below.

## Chart Structure

The **Chart Structure** tree enables you to explore and manage a structure of a chart and its elements.

When you click a chart element in the tree, the designer's **Properties** panel displays settings of this element.

To create a new series, click the plus button for the **Series** collection and select a required series type in the invoked window.

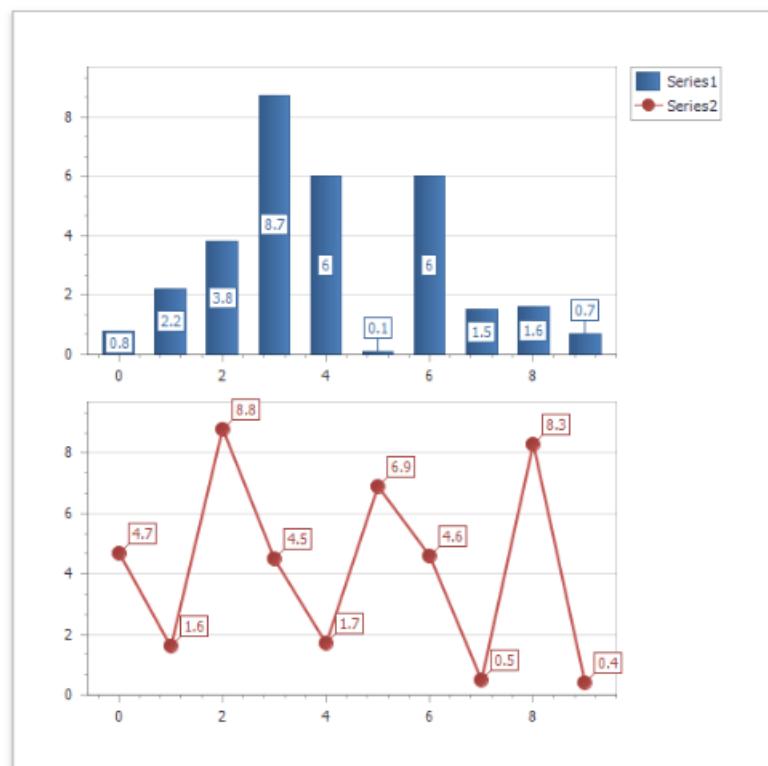


To add elements to other collections (**Titles**, **Legends**, etc.), simply click the plus button.

To delete an element, select it and click the **Remove** .

## Chart Layout

The **Chart Layout** area displays the preview of the created chart.

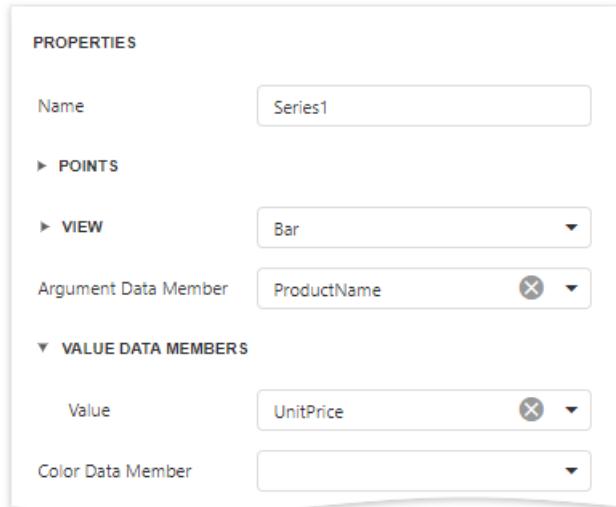


This part also provides the following buttons:

ICON	DESCRIPTION
↶	Reverses the most recent action.
↷	Performs the action you have previously undone.

## Chart Properties

The **Properties** panel allows you to view and change settings of a chart and its elements. Changing any property updates the chart layout to display the current state.

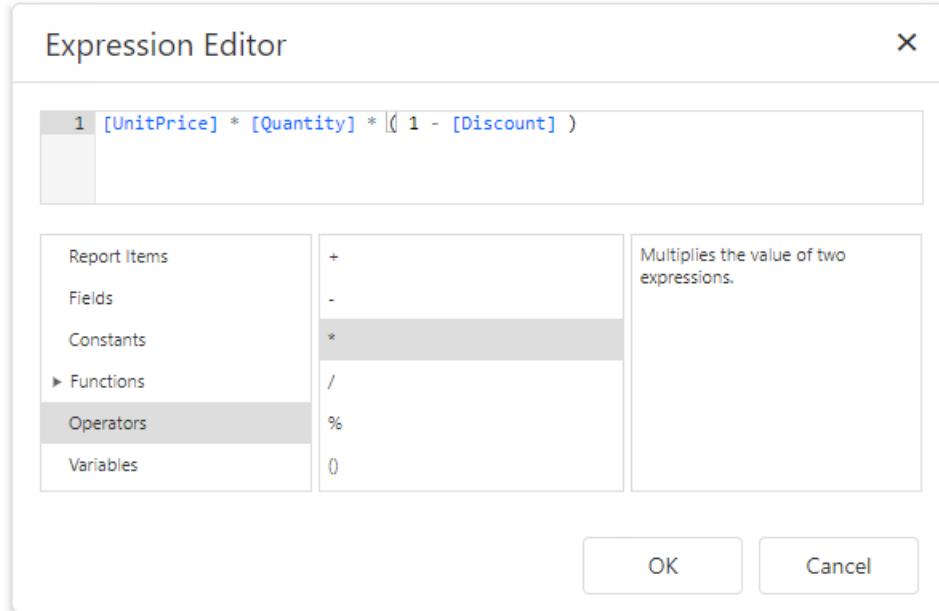


# Expression Editor

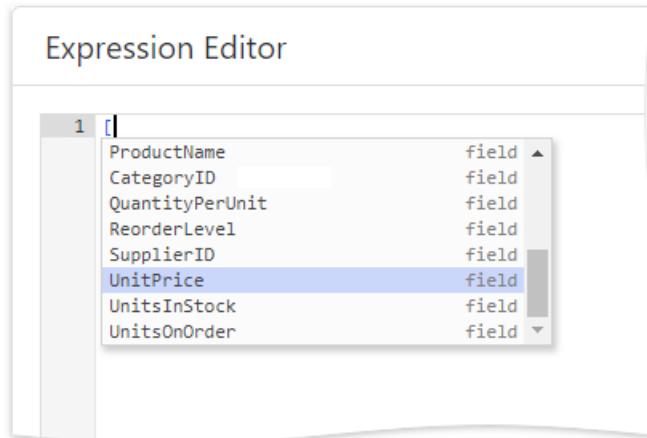
This document describes the **Expression Editor** used for constructing expressions in the [End-User Report Designer](#).

## Expression Editor Overview

The Expression Editor provides a variety of aggregate, date-time, logical, math and string functions. You can also use logical and arithmetic operators, fields of a data source to which a report is bound, report elements, constants, and variables.



This editor supports syntax highlighting and intelligent code completion (suggesting functions and available data elements as you type).



An error icon appears if an expression contains any errors. Hovering over this icon with the mouse invokes the popup indicating the error's position.



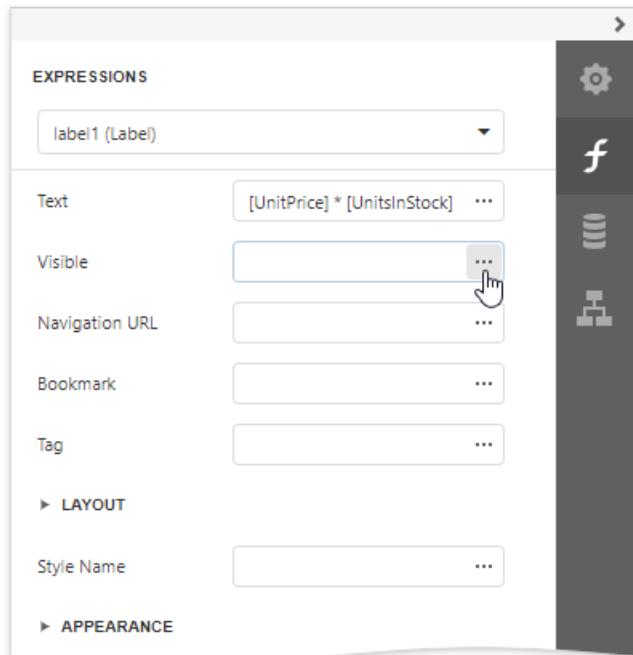
# Expression Syntax

Take into account the following syntax conventions when using the Expression Editor:

- Reference a data field in the expression by enclosing its name in the square brackets (for example, **[ProductName]**).
- Insert **report parameters** and **query parameters** by typing a question mark before their names (for instance, **?parameter1**).
- Denote string values with apostrophes. Type a double apostrophe to embed an apostrophe into an expression's text (for example, **'It's sample text'**).
- Enclose date-time constants with hashtags (**[OrderDate] >= #1/1/2016#**).
- Use a question mark to specify a null reference (one that does not refer to any object) (**[Region] != ?**).
- If an expression involves the use of different types, you can convert them to the same type using dedicated functions (for instance, **Max.ToDecimal([Quantity]),[UnitPrice])**).

## Using the Expression Editor

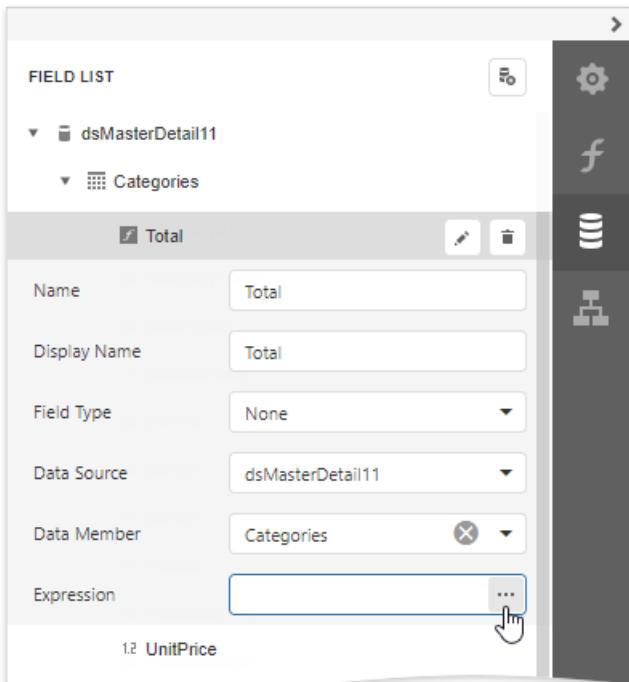
When **expression bindings** are enabled in your reports, the Report Designer contains the **Expressions** tab allowing you to assign values to various element properties. Clicking any property's ellipsis button invokes the Expression Editor, in which you can specify custom expressions with the available data fields.



In the **data binding** mode, you can use the Expression Editor in the following cases:

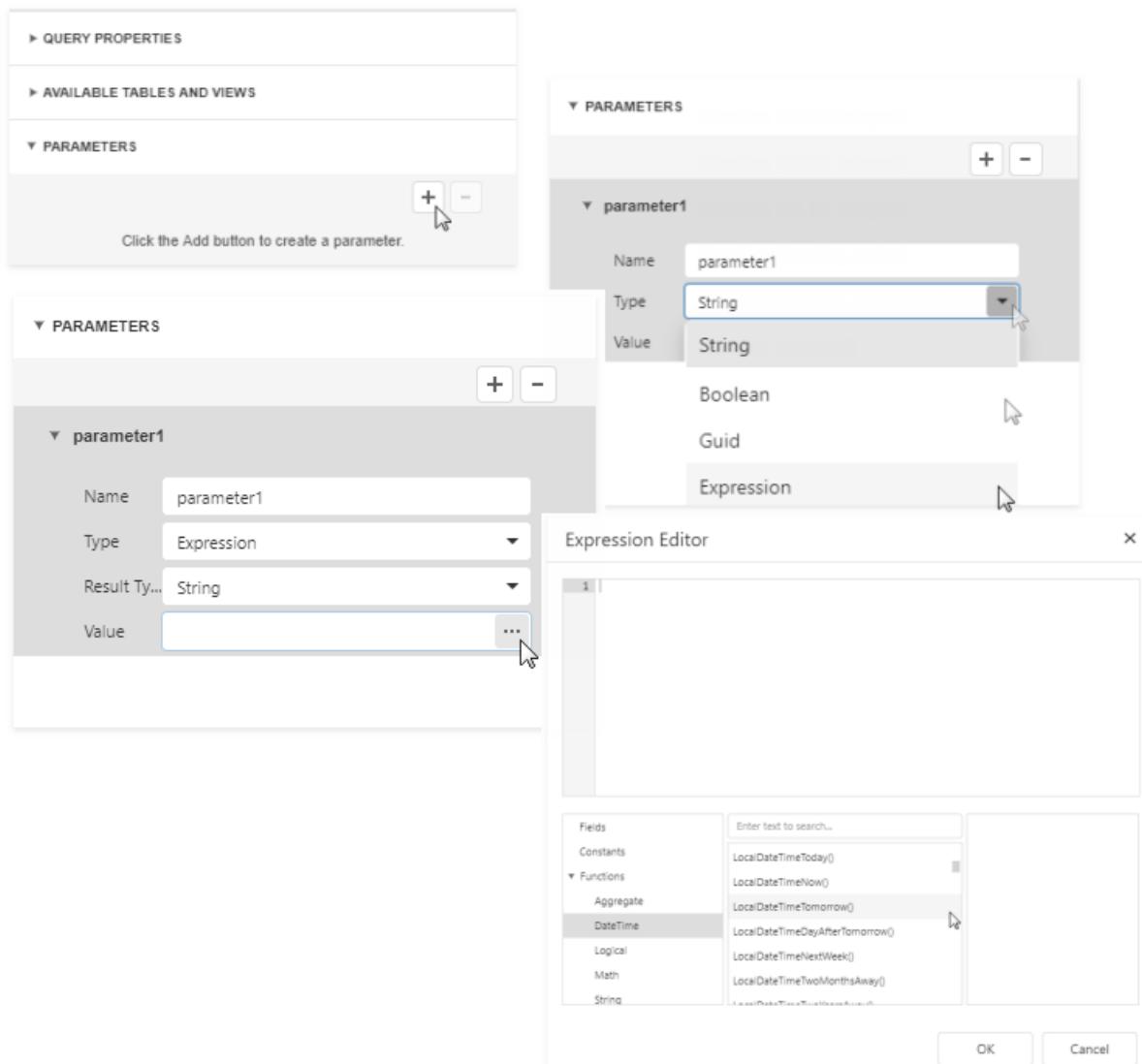
- **Edit a Calculated Field's Expression**

Access a **calculated field**'s settings in the Field List and click **Expression** property's ellipsis button.



- **Specify a Query Parameter's Value**

In the [Configure Query Parameters](#) wizard page, set the parameter type to **Expression** and click the **Value** property's the ellipsis button.



- **Construct a Formatting Rule's Condition**

Access the [formatting rule](#)'s settings in the [Properties](#) panel and click the **Condition** property's ellipsis button.

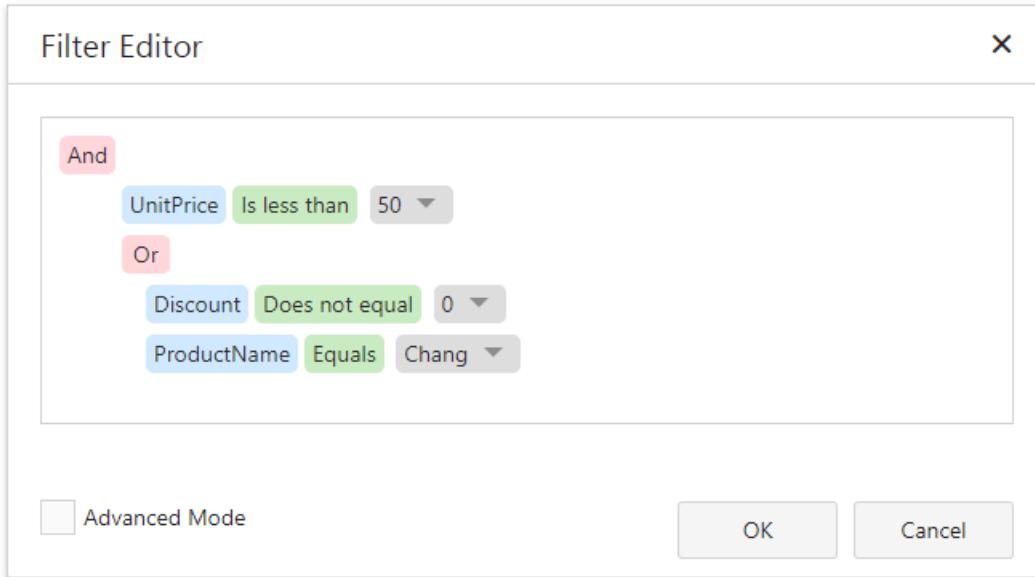
The screenshot shows two windows side-by-side. On the left is the 'Expression Editor' window, which contains a text input field with the expression '1 [UnitPrice] >= 30'. Below this field is a tree view under the 'Fields' category, listing various database fields like 'QuantityPerUnit', 'ReorderLevel', 'SupplierID', 'UnitPrice', 'UnitsInStock', and 'UnitsOnOrder'. At the bottom of the Expression Editor are 'OK' and 'Cancel' buttons, with a hand cursor pointing at the 'OK' button. On the right is the 'Properties' panel for 'Report1 (Report)'. Under the 'FORMATTING RULES' section, there is a single rule named 'formattingRule1'. The 'Condition' property for this rule has an ellipsis button (...), which is highlighted with a hand cursor. Other properties shown include 'Data Source' set to 'sqlDataSource1' and 'Data Member' set to 'Products'. The 'APPEARANCE' and 'FORMATTING' sections are also visible in the Properties panel.

# Filter Editor

This document describes the Filter Editor available in the [End-User Report Designer](#).

## Filter Editor Overview

The **Filter Editor** provides a visual interface for constructing filter criteria of varying complexity with an unlimited number of filter conditions combined by logical operators.



A filter condition consists of three parts:

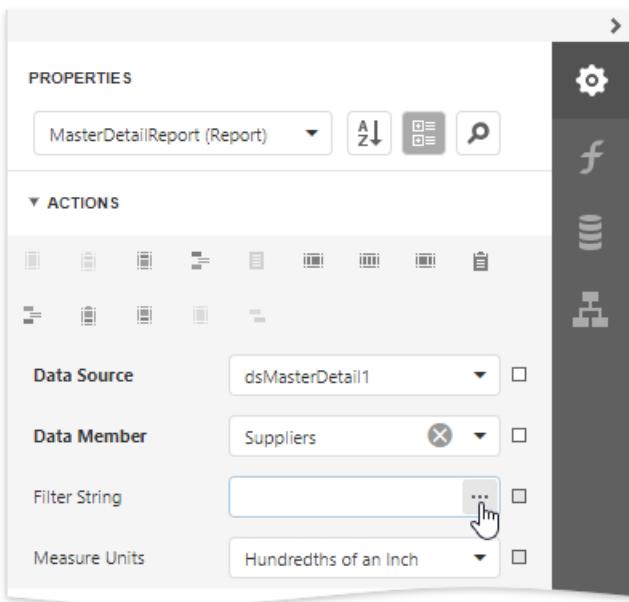
- A field of a data source to which a report is bound.
- Criteria operator, such as **Equals**, **Is less than**, **Is between**, etc.
- A static operand value, another data field or a report parameter.

You can arrange specific conditions into groups with **And**, **Or**, **No And**, and **Not Or** operators.

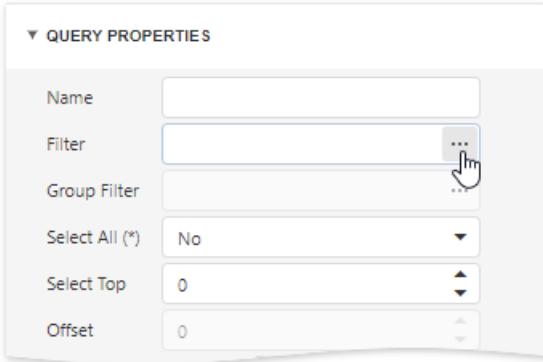
## Invoking the Filter Editor

You can invoke the Filter Editor in one of the following ways:

- In the [Properties](#) panel, click the ellipsis button for the report's **Filter String** property to filter data at the report level.



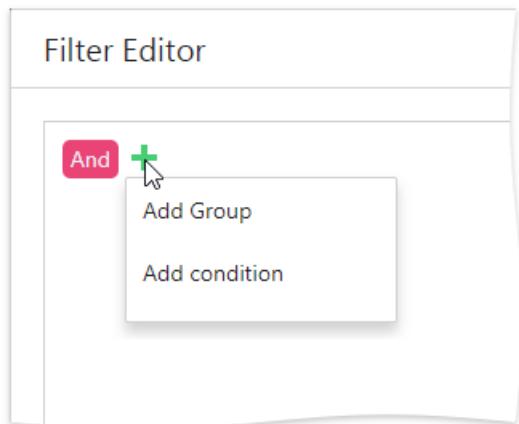
- In the [Query Builder](#), click the ellipsis button for the **Filter** or **Group Filter** property to filter data at the data source level.



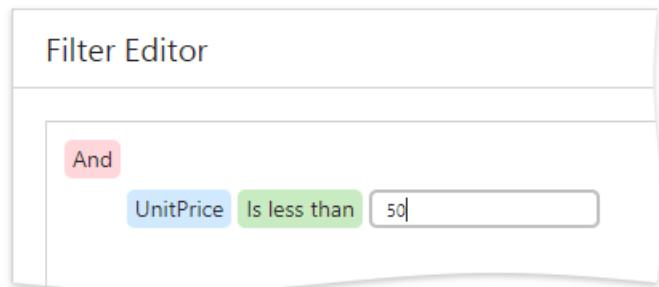
## Tree-Like Filtering

The Filter Editor displays filter criteria as a tree where individual nodes specify simple filter conditions. The root node is the logical operator combining all the conditions.

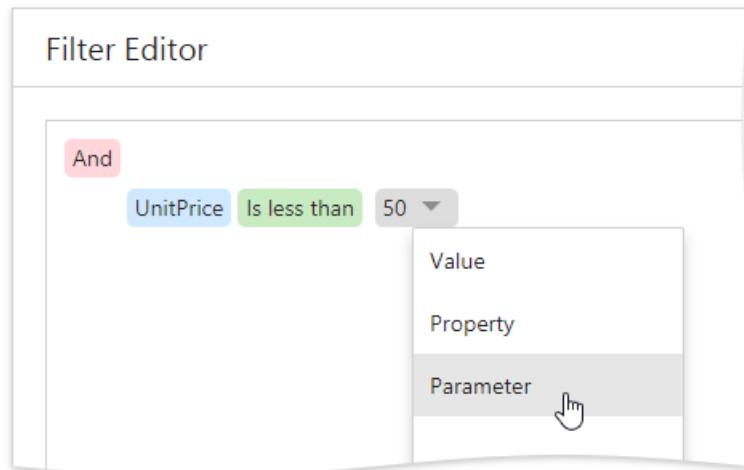
Click the plus button next to the operator to add a new condition or group.



You can select the required data field and comparison operator from the corresponding drop-down lists and enter an operand value in the dedicated value box.



Expand the drop-down menu for a value placeholder and select **Property** or **Parameter** to compare a data field with another data field or a report parameter. Then, click the converted placeholder and select the required item.



You can change the logical operator by clicking it and selecting the desired type.



Click the filter condition's **X** button to delete it.

## Text-Based Filtering

In the advanced mode, the Filter Editor allows you to type a filter string manually.

## Filter Editor

X

And

UnitPrice Is less than 50

Or

Discount Does not equal 0

ProductName Equals Chang

```
[UnitPrice] < 50 And ([Discount] >> 0 Or [ProductName] = 'Chang')
```

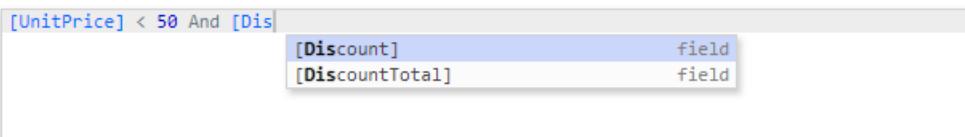
Advanced Mode

OK

Cancel

Refer to the [Expression Constants, Operators, and Functions](#) topic for the list of available operators and functions and for details on their usage.

This editor supports intelligent code completion (suggesting functions and available data columns as you type).



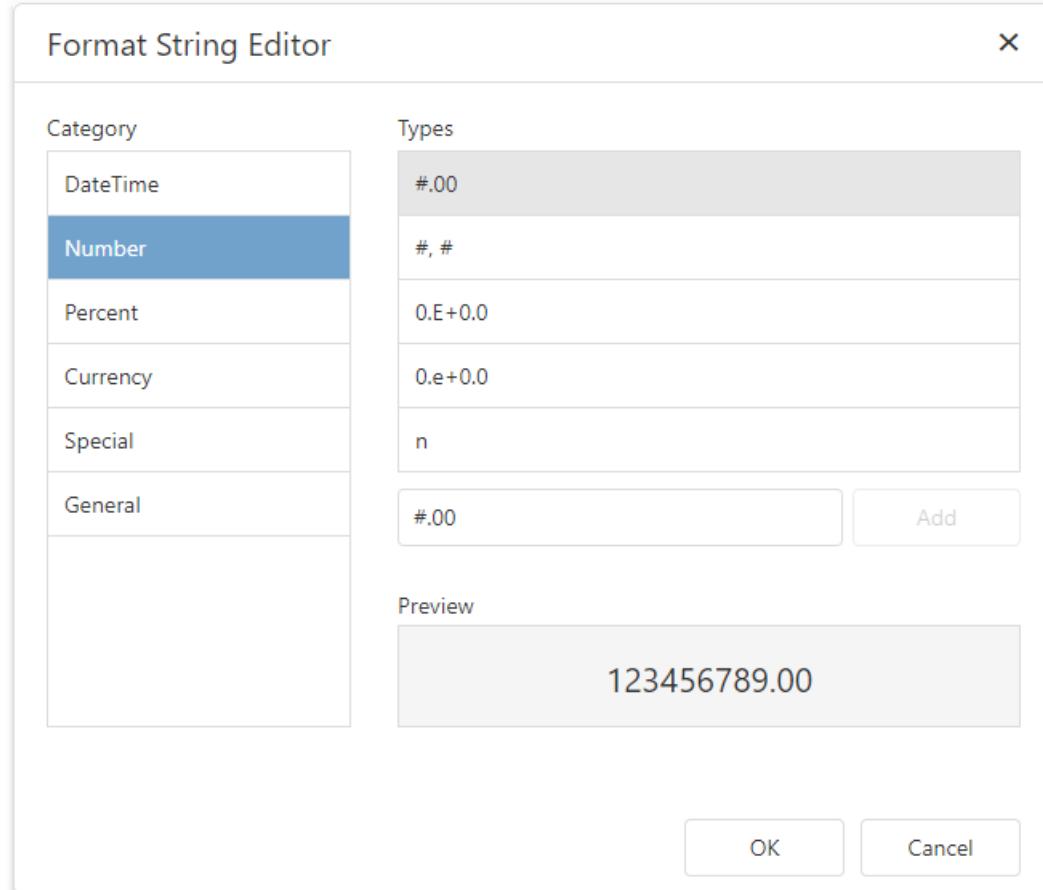
The ! icon appears if a condition contains any errors.

# Format String Editor

The **Format String Editor** provides the capability to apply the required formatting for report elements to display their incoming data. It allows you to easily select one of the built-in formats or create your own. For instance, you can format a numeric value as currency, display a date/time value in one of the standard forms depending on the culture, etc.

## Use Standard Formats

The Format String Editor contains numerous built-in formatting presets grouped by categories.



All categories are displayed in the **Category** list on the left side. The **Types** list on the right side contains formats available within the selected category. The editor also allows you to see the preview of the selected format in the **Preview** section.

## Use General Formats

In the **General** category, you can enter the **Prefix** and **Suffix** specifying custom text that will be added before and after the output value, respectively.

## Format String Editor

X

Category
DateTime
Number
Percent
Currency
Special
General

Prefix  
()

Suffix  
)

Preview

(###)

OK

Cancel

## Create Custom Formats

To create a custom format, enter the format string in the dedicated editor and click **Add**. The format will be added to the end of the **Types** list and automatically selected.

## Format String Editor

X

Category
DateTime
Number
Percent
Currency
Special
General

Types

- #.00
- #, #
- 0.E+0.0
- 0.e+0.0
- n

#.000

Add



Preview

(###)

OK

Cancel

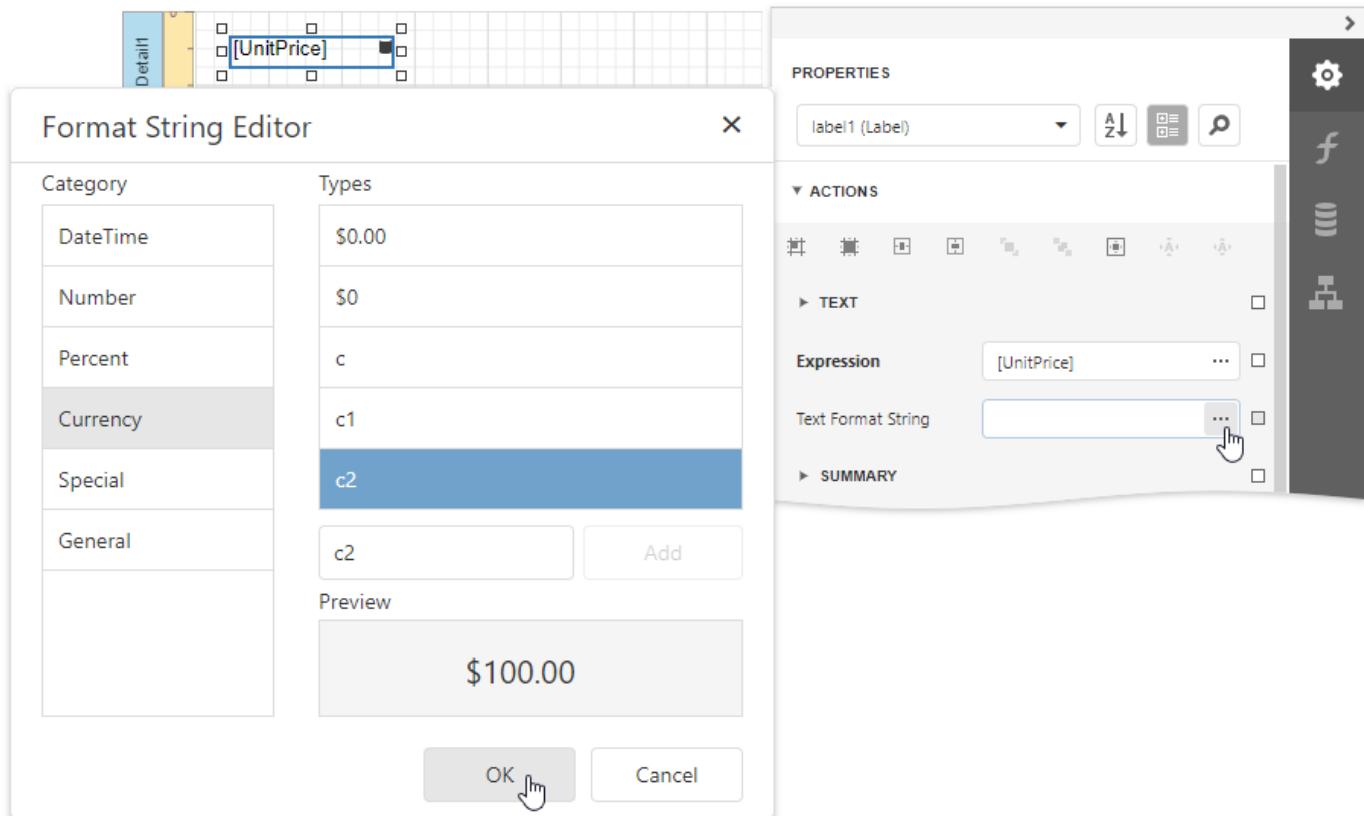
You can then remove a custom format by clicking the corresponding  button.

## Run the Format String Editor

You can invoke the Format String Editor to format values of a control's bindable properties (not the control's static content) and summary values.

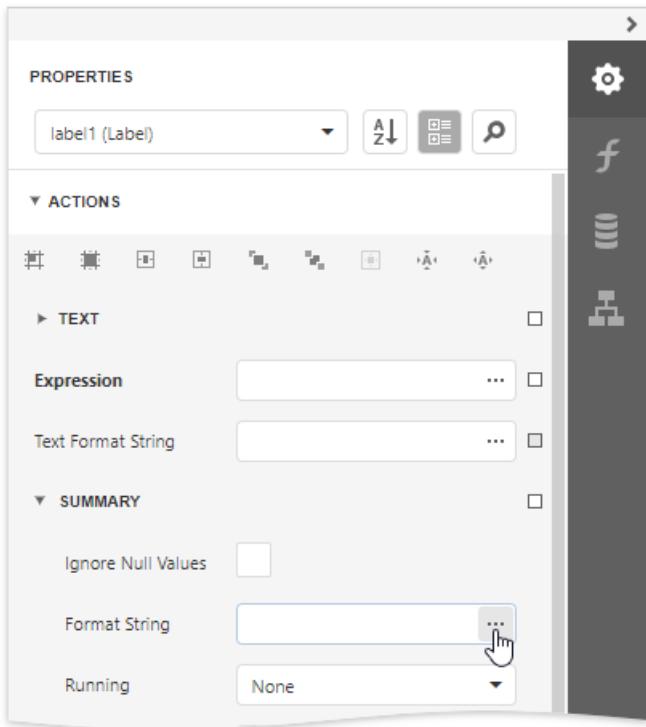
- **Basic Formatting**

It is common to format an [Label](#)'s **Text** property. To do this, expand the **Actions** or **Data** category and click the ellipsis button for the **Text Format String** property.



- **Formatting Summaries**

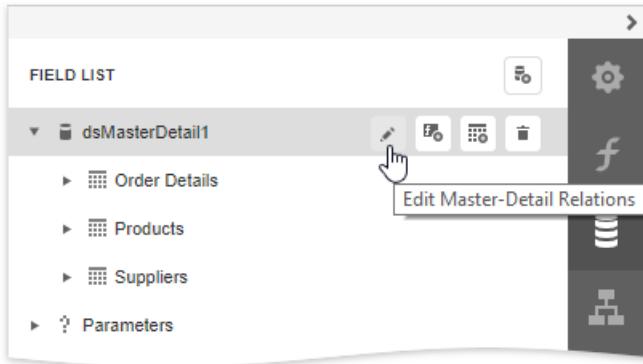
When a summary function is applied to a control's dynamic content, value formatting is specified separately. To do this, expand the **Actions** or **Data** category. Then, in the **Summary** section, click the ellipsis button for the **Format String** property.



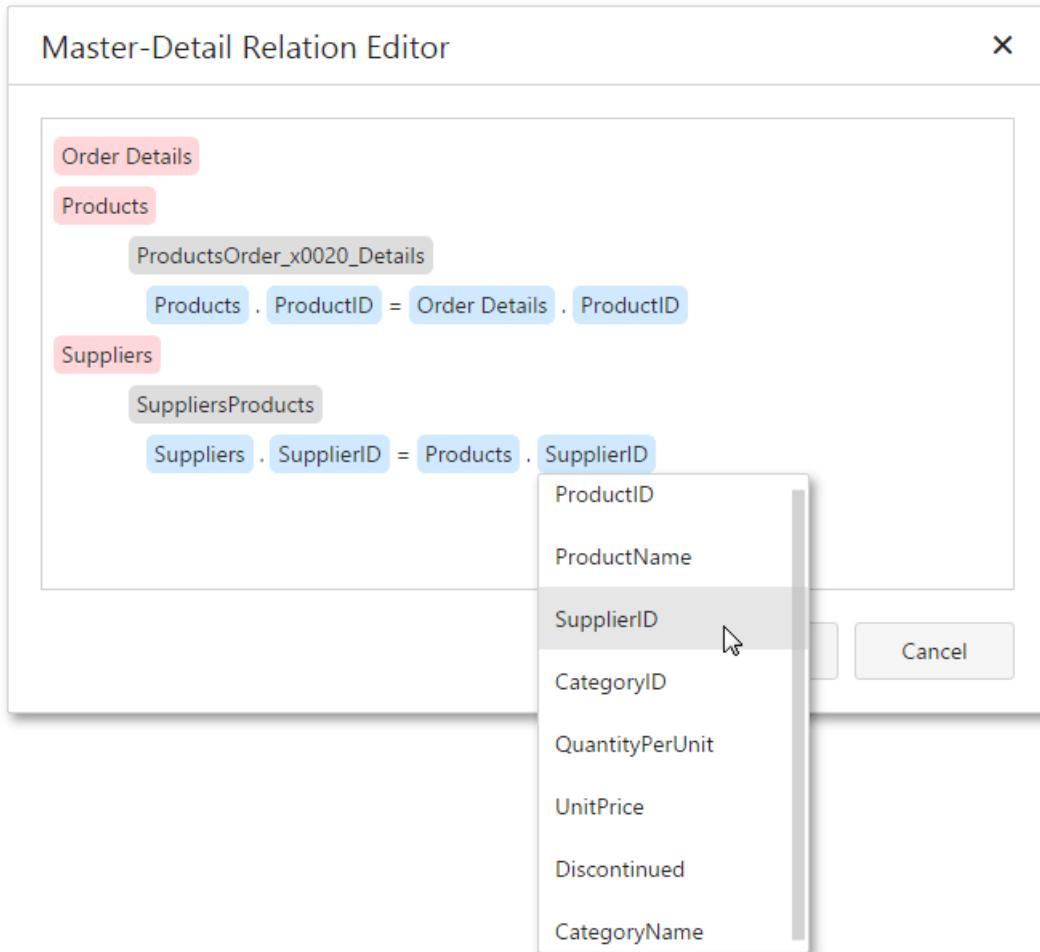
The summary format has priority over the general value format.

# Master-Detail Relation Editor

When a data source contains two or more [queries](#), clicking the  button in the [Field List](#) will invoke the **Master-Detail Relation Editor**.



Using this editor, you can define master-detail relationships between queries by specifying their corresponding key fields.



The 'Master-Detail Relation Editor' dialog is open, showing three relationships:

- Order Details**: A relationship named "ProductsOrder\_x0020\_Details" is defined between **Products** (.ProductID) and **Order Details** (.ProductID).
- Products**: A relationship named "SuppliersProducts" is defined between **Suppliers** (.SupplierID) and **Products** (.SupplierID).
- Suppliers**: A relationship named "SuppliersProducts" is defined between **Suppliers** (.SupplierID) and **Products** (.SupplierID).

A dropdown menu is open over the 'SupplierID' field in the 'Products' relationship, listing fields from the 'Products' table: ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, UnitPrice, Discontinued, and CategoryName.

This allows you to create hierarchical data sources that are used to create nested [master-detail reports](#).

## Note

Although it is also possible to [join different tables](#) within a single query, creating hierarchical data sources is preferred in most cases to provide better performance (in general, master-detail reports are generated faster than similar-looking reports created by grouping "flat" data sources).

# Script Editor

## Warning

Both the execution of all report scripts and the capability to view and edit scripts in the Web Report Designer are disabled by default for security reasons. Make sure that your software vendor allows you to use scripts.

The **Script Editor** allows you to write code for specific event handlers in the [End-User Report Designer](#) to adjust the behavior of report controls, bands, or a report itself. This topic describes the basic principles of using scripts, the Script Editor interface and shows how scripting can be used in a report.

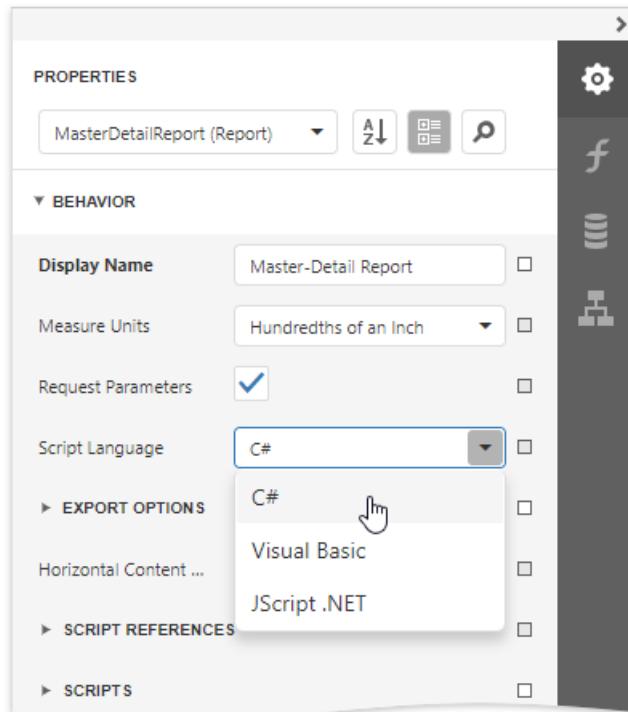
## Overview

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.

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 Script Editor provides you the capability to write and execute scripts. Use this editor if you want to slightly customize a report in the End-User Report Designer.

The Script Editor supports **C#**, **Visual Basic .NET** and **JScript .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. The selected scripting language must be the same for all scripts used in a report.



The Script Editor supports intelligent code completion that makes it easier and faster to write scripts. Context-aware hints are displayed on pressing CTRL+spacebar. This feature is only supported for the **C#** and **Visual Basic .NET** script languages.

```
1 private void lbTitle_BeforePrint(object sender, System.Drawing.Printing.PrintEventArgs e) {  
2     (sender as XRLabel).  
3 }  
4     AfterPrint  
5     AnchorHorizontal  
6     AnchorVertical  
7     Angle  
8     AutoWidth  
9     BackColor  
10    Band
```

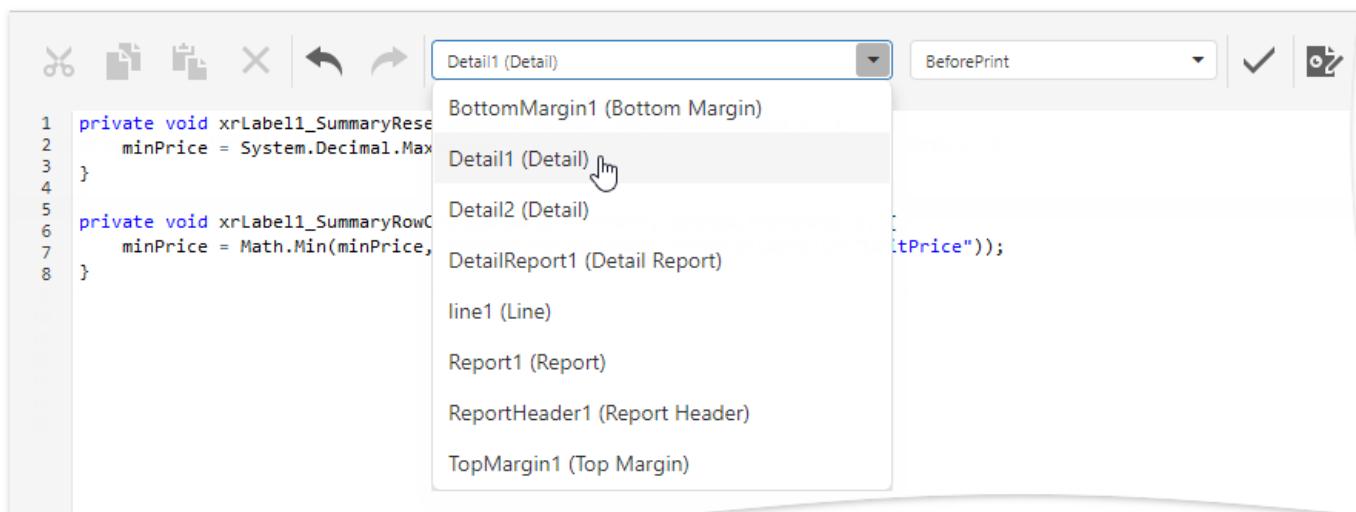
The screenshot shows a code editor window with C# code. A dropdown menu is open over the word 'AfterPrint' in line 4, listing various report element events: AfterPrint, AnchorHorizontal, AnchorVertical, Angle, AutoWidth, BackColor, and Band. The 'Event' option is highlighted at the top of the list.

Intelligent code completion is available only for .NET Framework and DevExpress libraries deployed with the application and cannot be provided for custom assemblies.

## Maintaining Scripts

Each report element has its own set of events that can be handled by the Script Editor. To handle an event of a report element, do the following.

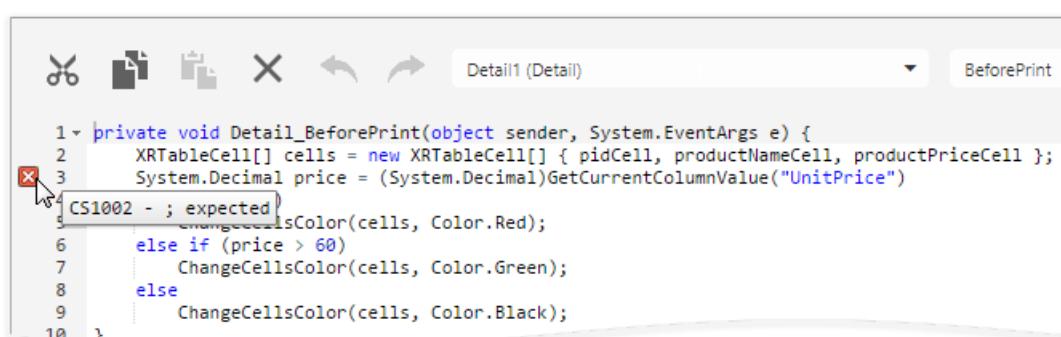
1. Click the **Scripts** button located on the End-User Report Designer's Main Toolbar.
2. In the displayed Script Editor, specify the report control and its event by the toolbar. The toolbar contains all scripts written for all report elements, and allows you to quickly navigate through them by choosing the required report element in the corresponding drop-down list and specifying one of its available events in another menu.



After the event is specified, a code template is generated in the current scripting language.

3. To check for errors in the report's script, click the **Validate** button.

If an error is found, the string containing this error is marked with an icon. When a mouse pointer hovers over this icon, the text of the error is displayed.



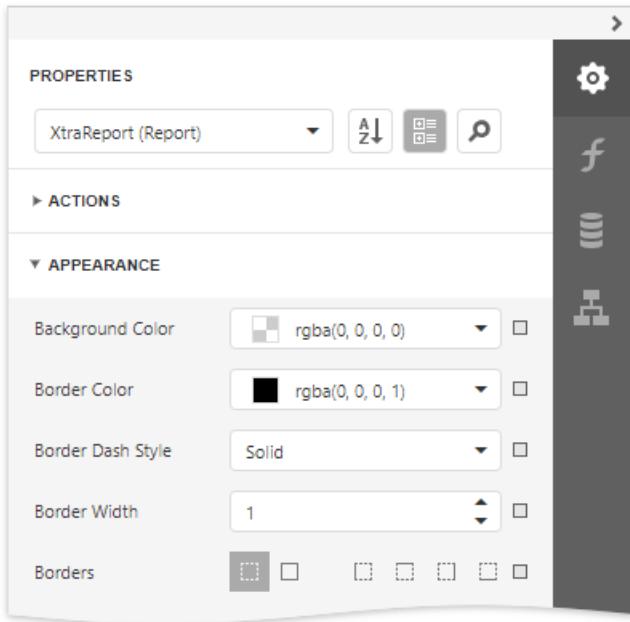
# UI Panels

The following panels are available in the Web Report Designer.

- [Properties Panel](#)
- [Expressions Panel](#)
- [Field List](#)
- [Report Explorer](#)

# Properties Panel

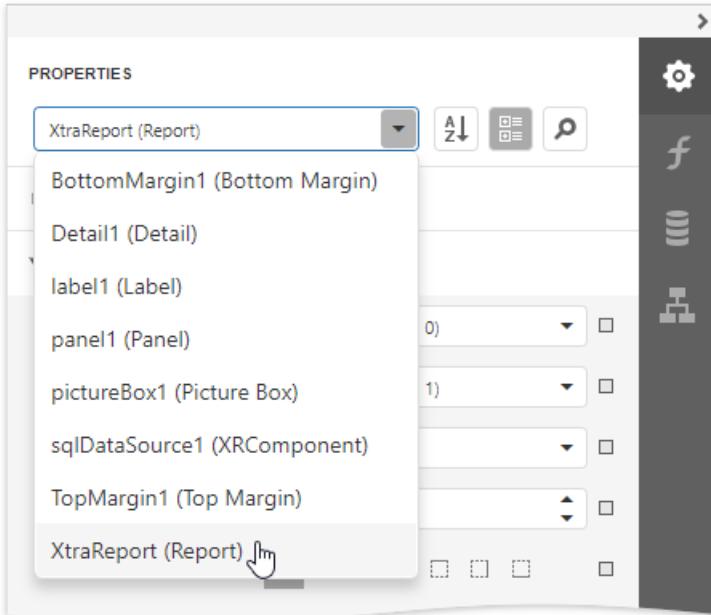
The **Properties Panel** allows you to access and customize the report's and report elements' settings.



## Select a Report Element

Do one of the following to select an element and show its properties in the Properties Panel:

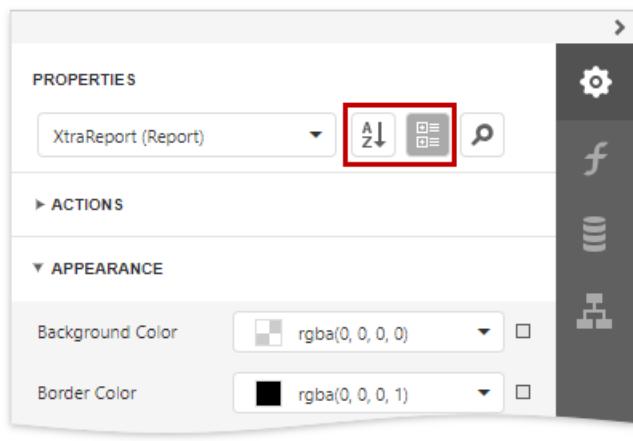
- Select a required element in the drop-down list at the top of the Properties Panel.



- Click a required element in the [design surface](#).
- Select a required element in the [Report Explorer](#).

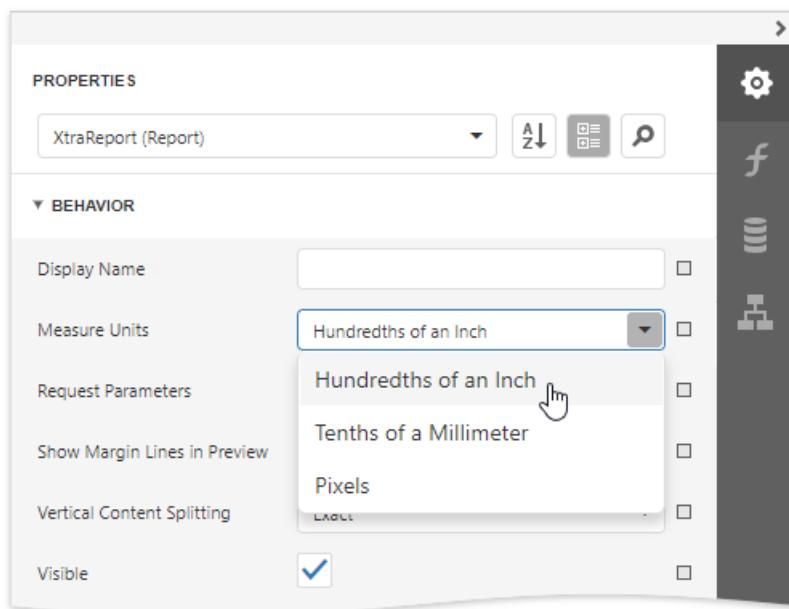
## Display Modes

The Properties Panel can display element properties in the alphabetical flat order or combine them into categories depending on their purposes. Use the dedicated buttons to switch between these display modes.



## Change Property Values

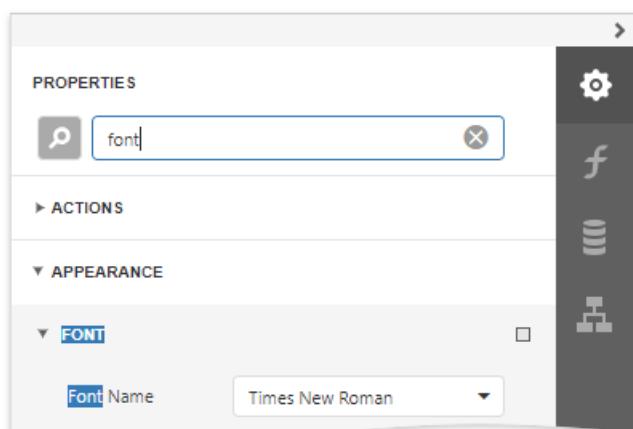
To set a property value, locate this property and specify its value using the corresponding editor.



Specific properties contain nested properties, which you can access by clicking the property caption's expand button.

## Search for Properties

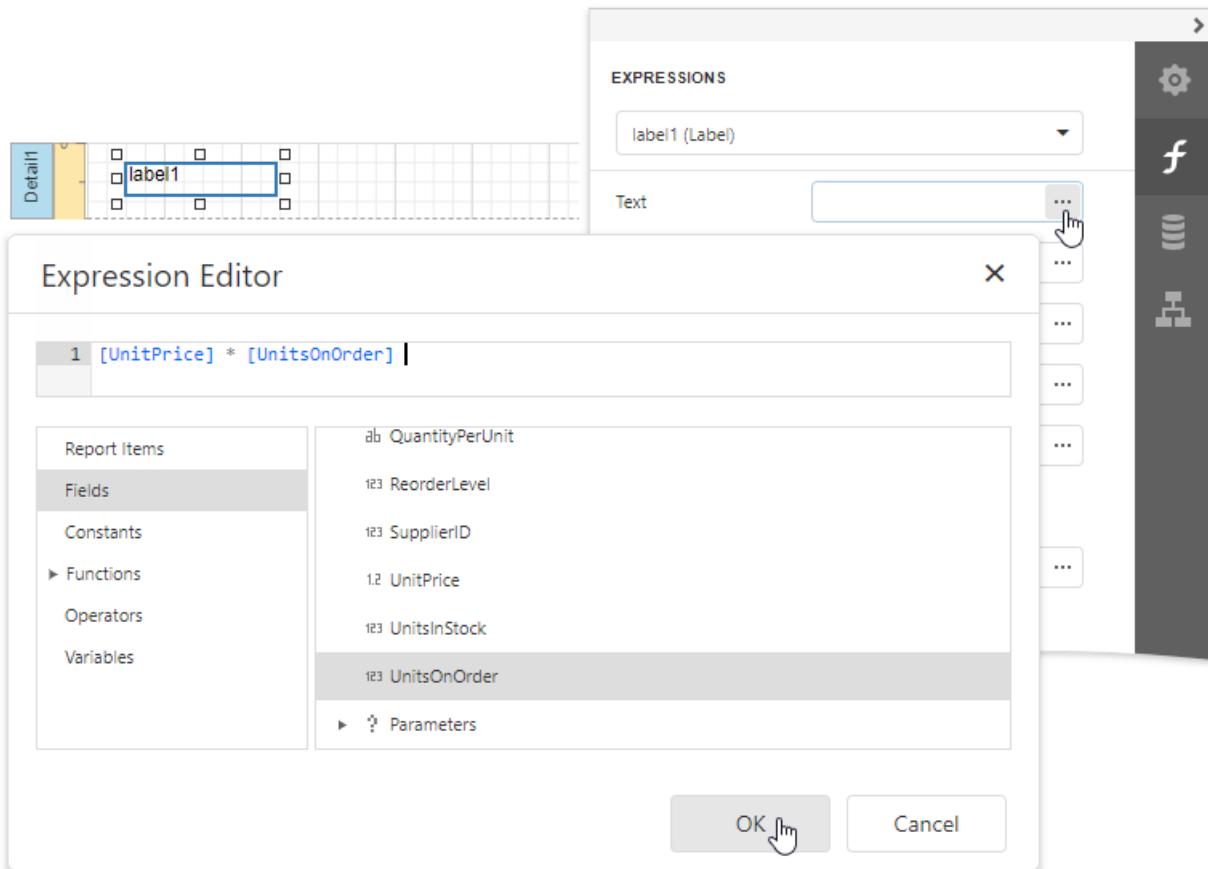
The Properties Panel includes the search box that allows you to search for a required property. Click the **Search** button at the top of the Properties Panel. In the displayed editor, enter text to search. The Properties Panel automatically creates a search criteria based on the entered text and filters the list of available properties.



# Expressions Panel

The **Expressions Panel** allows you to assign values to various element properties. The Report Designer provides this panel if expression bindings **are enabled**.

Clicking any property's ellipsis button invokes the [Expression Editor](#), in which you can specify custom expressions with available data fields.

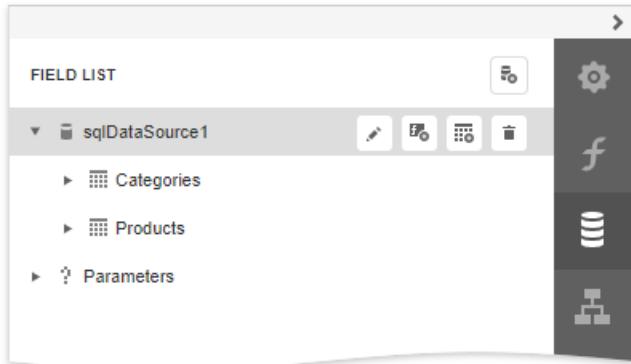


# Field List

The **Field List** displays the schema of a report's data sources. This panel enables you to manage report data sources and parameters, add calculated fields and create bound report controls.

## Manage Report Data Sources

The Field List shows available report data sources and their structure.



The following actions are available in the Field List for data source customization:

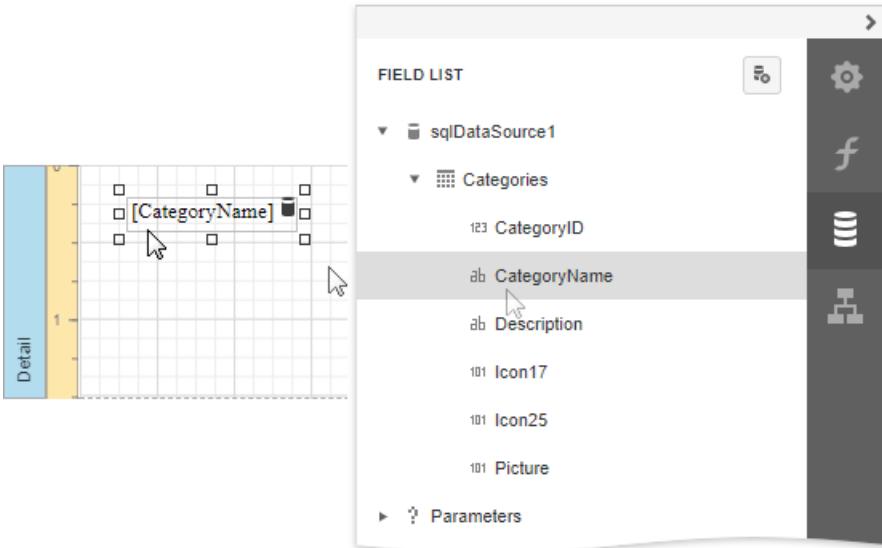
BUTTON	DESCRIPTION
	Invokes a list of default data sources that you can add to a report.
	Removes the selected data source.
	Invokes the <a href="#">Master-Detail Relation Editor</a> .
	Invokes the <a href="#">Create a Query or Select a Stored Procedure</a> wizard page.

The following actions are available for query customization:

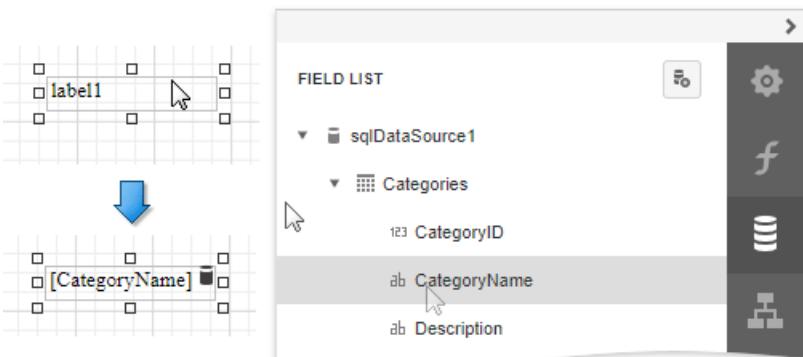
BUTTON	DESCRIPTION
	Removes the selected query.
	Invokes the <a href="#">Create a Query or Select a Stored Procedure</a> wizard page.

## Bind controls to data

Dropping a field onto a report's surface creates a new report control bound to a corresponding field.

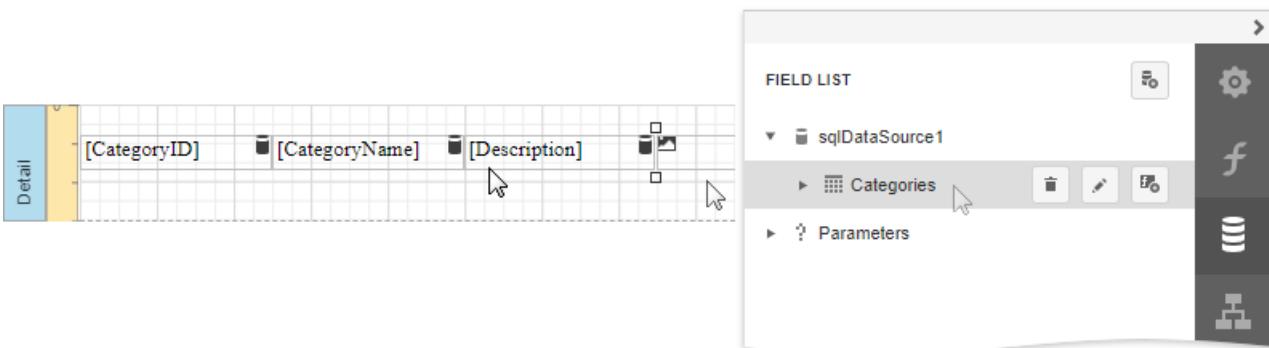


Dropping a field onto an existing control binds this control to a corresponding field.

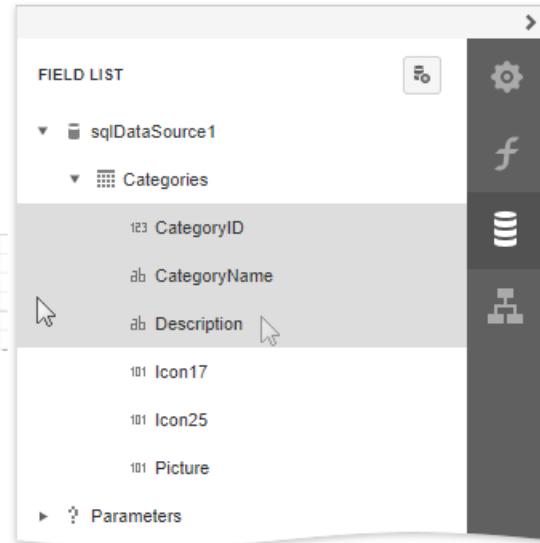


## Create tables

Dropping an entire data table onto a report creates a table with its columns bound to fields contained in the data table.



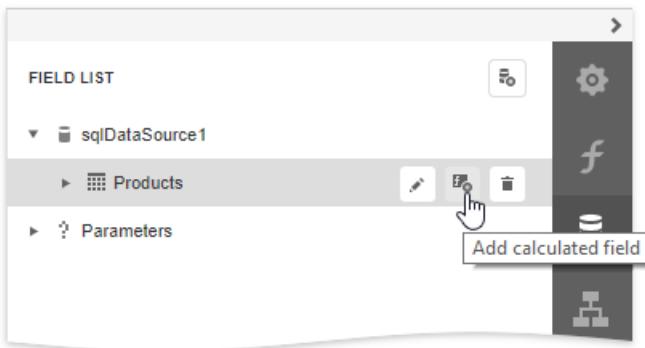
To select multiple fields, click them with holding the CTRL or SHIFT key. Dropping these fields onto a report creates a new table with its cells bound to the corresponding fields.



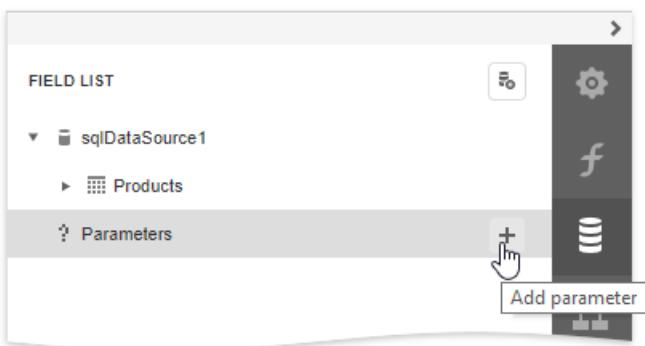
## Data shaping operations

In addition, the Field List can help you solve the following tasks:

- Add [calculated fields](#) to data columns for performing various calculations in a report.

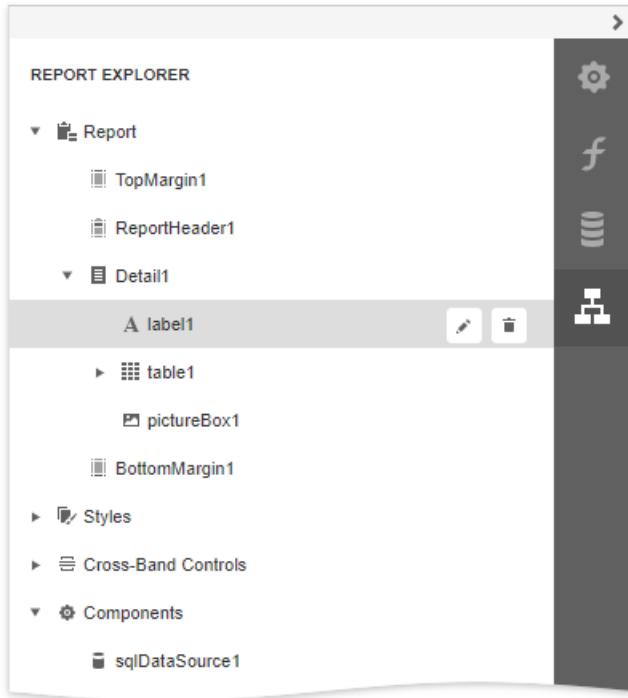


- Manage the collection of [report parameters](#).



# Report Explorer

The **Report Explorer** shows 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.

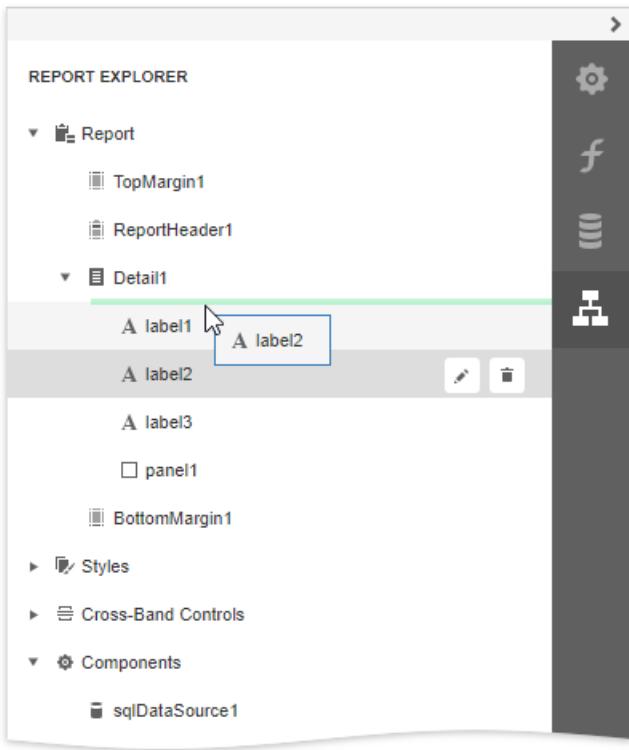


The following actions are available for report element customization:

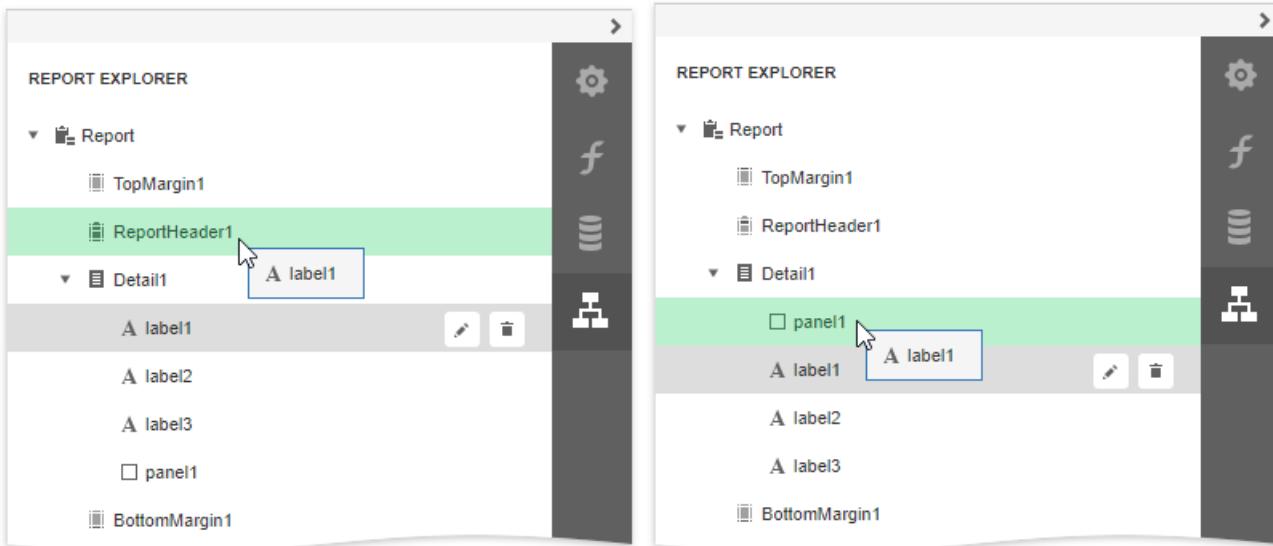
BUTTON	DESCRIPTION
	Switches to the <a href="#">Properties Panel</a> where you can adjust the selected report element's or the entire report's settings.
	Removes the selected report element. This button is not available for the <b>Detail</b> , <b>TopMargin</b> , and <b>BottomMargin</b> bands.

You can use drag-and-drop operations to do the following in the Report Explorer:

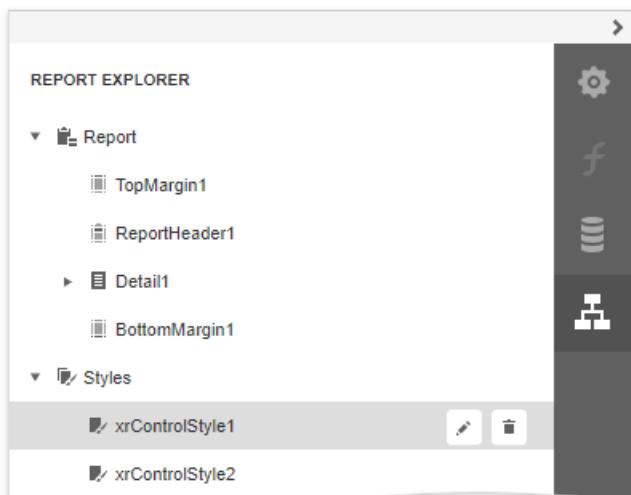
- Reorder report controls and specific bands.



- Move report controls between bands and containers.



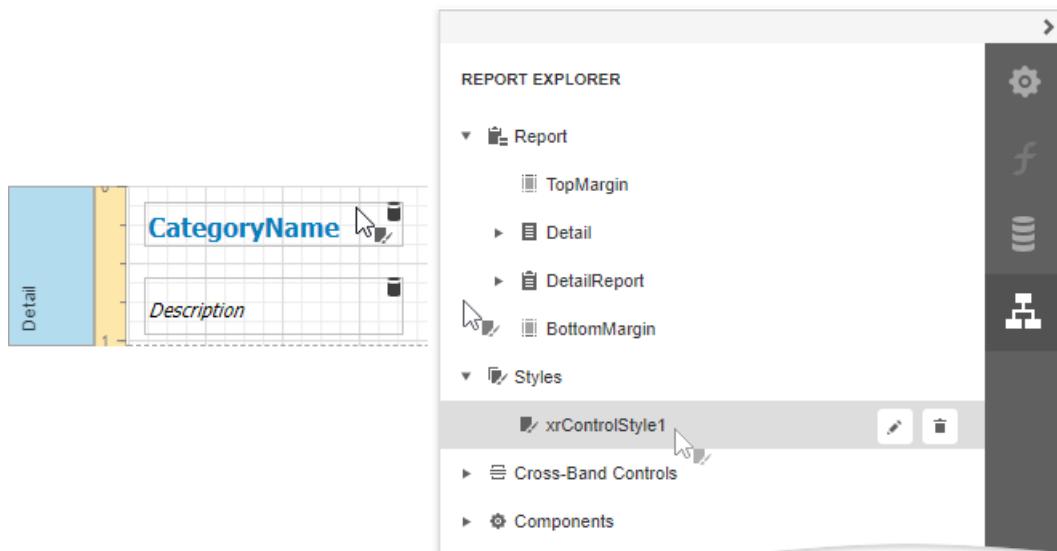
The **Report Explorer** also provides quick access to all [styles](#) available for a report.



You can manage styles using the following commands.

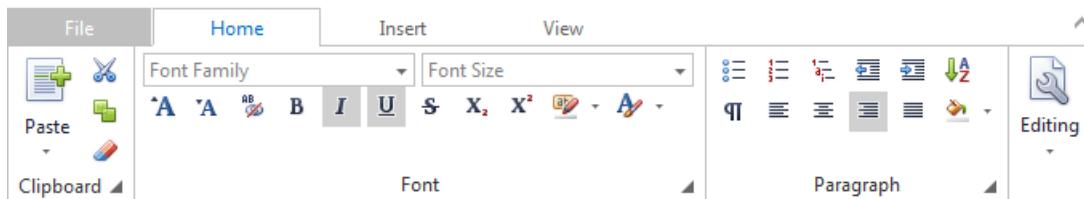
BUTTON	DESCRIPTION
	Creates a new style.
	Switches to the <a href="#">Properties Panel</a> where you can adjust the selected style's settings.
	Removes the selected style.

To apply a style to a report control, drag it from the Report Explorer onto the required report control.



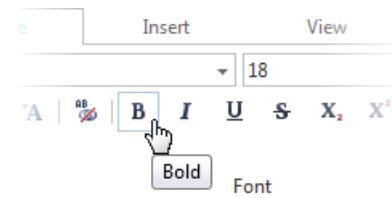
# Ribbon

The Ribbon provides a rich toolbar functionality.

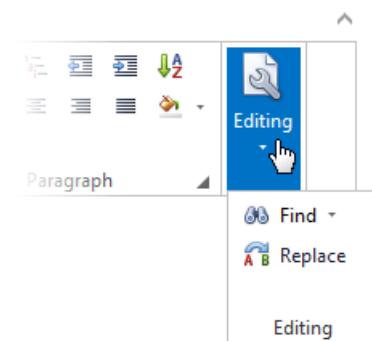


If a ribbon contains several tabs, click a tab header to switch to the tab and display its items. However, the **File** tab does not contain items. Click it to display the **File** menu.

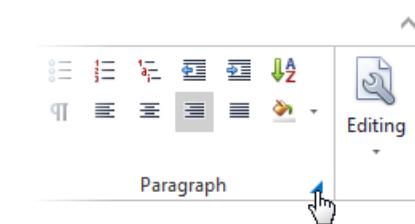
Click the ribbon items to perform specific item actions. You can see an item action hint by hovering the item.



Ribbon items are categorized by groups. You can view the group name under the items. When the ribbon has insufficient space to display all of its items, a group can automatically be collapsed. Click the group's button to display the content of the group.



Ribbon groups can display a dialog box launcher, which is an arrow icon located in the bottom right corner of a group. Click the launcher to display a dialog box related to the group.

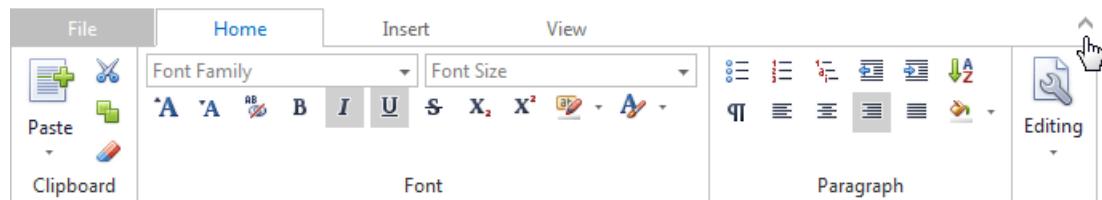


If an item displays a drop-down button (an arrow), click it to display the item's drop-down menu.



# Minimizing the Ribbon

To minimize a ribbon, use the **Minimize** button displayed in the top right corner of the ribbon.



When the ribbon is minimized, it displays a tab header only. Click a tab to display the content of that specific tab.



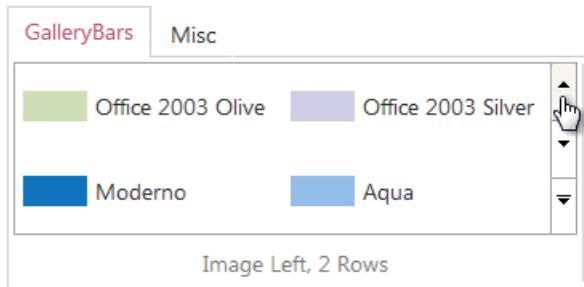
To maximize the ribbon, click the **Minimize** button once again.

# Gallery Bar

The **Gallery Bar** provides a gallery of items that you can select by clicking them.



You can scroll items contained in the **Gallery Bar** using the scroll buttons, or invoke the drop-down window containing the items by clicking the pop-out button.



# Invoke Ribbon Commands

To select a specific command, you can click it with the mouse or invoke it via its access key. See below for more information.

Access keys are associated with each tab and command in the Ribbon. Access keys can be visualized using **key tips**. The key tips are little boxes displaying access keys. To see the key tips, press CTRL+SHIFT+[access key]. The access key is defined by your application vendor. Key tips will appear next to the corresponding tabs and commands.



Access keys can be composed of one, two or three symbols. If an access key is represented by one symbol, you can invoke the command by pressing the symbol shown in the key tip. If an access key is represented by two or three symbols, to invoke the command, press the symbols shown in the key tip one after another.

Initially, when pressing CTRL+SHIFT+[access key], key tips are displayed for tabs.

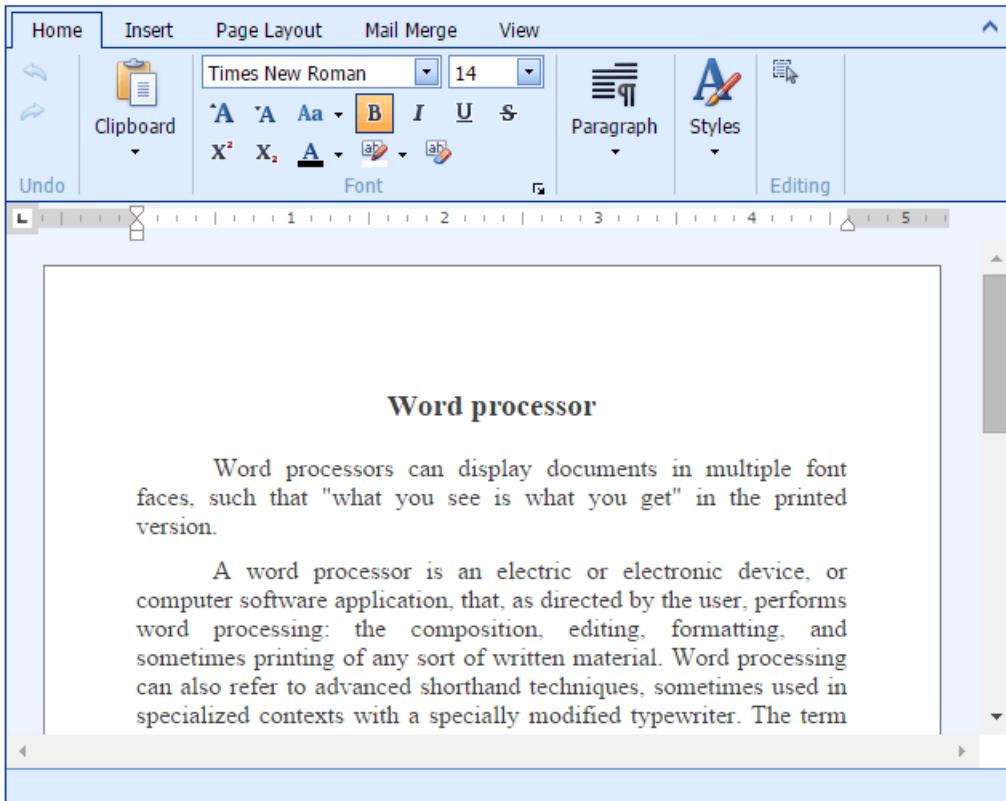
To invoke key tips for commands within a specific tab, press the access key associated with this tab. To move from a specific tab back to displaying key tips for all tabs press ESC.

For example, to display key tips for commands within the **Home** tab (see the image above), press H:



# Rich Text Editor

This section describes the capabilities provided by the **Rich Text Editor**.



## Text Editor UI

- [Editor Elements](#)
- [Ribbon Interface](#)

## File Operations

- [Create a New Document](#)
- [Open a Document](#)
- [Save a Document](#)
- [Print a Document](#)

## Document Layout and Page Setup

- [Insert a Page Break](#)
- [Divide a Documents into Sections](#)
- [Adjust Page Settings](#)
- [Lay Out Text in Columns](#)
- [Page Color](#)

## Viewing and Navigating

- Document Views
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- Find and Replace

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## **Table of Contents**

- [Table of Contents](#)

## **Mail Merge**

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## **Keyboard Shortcuts**

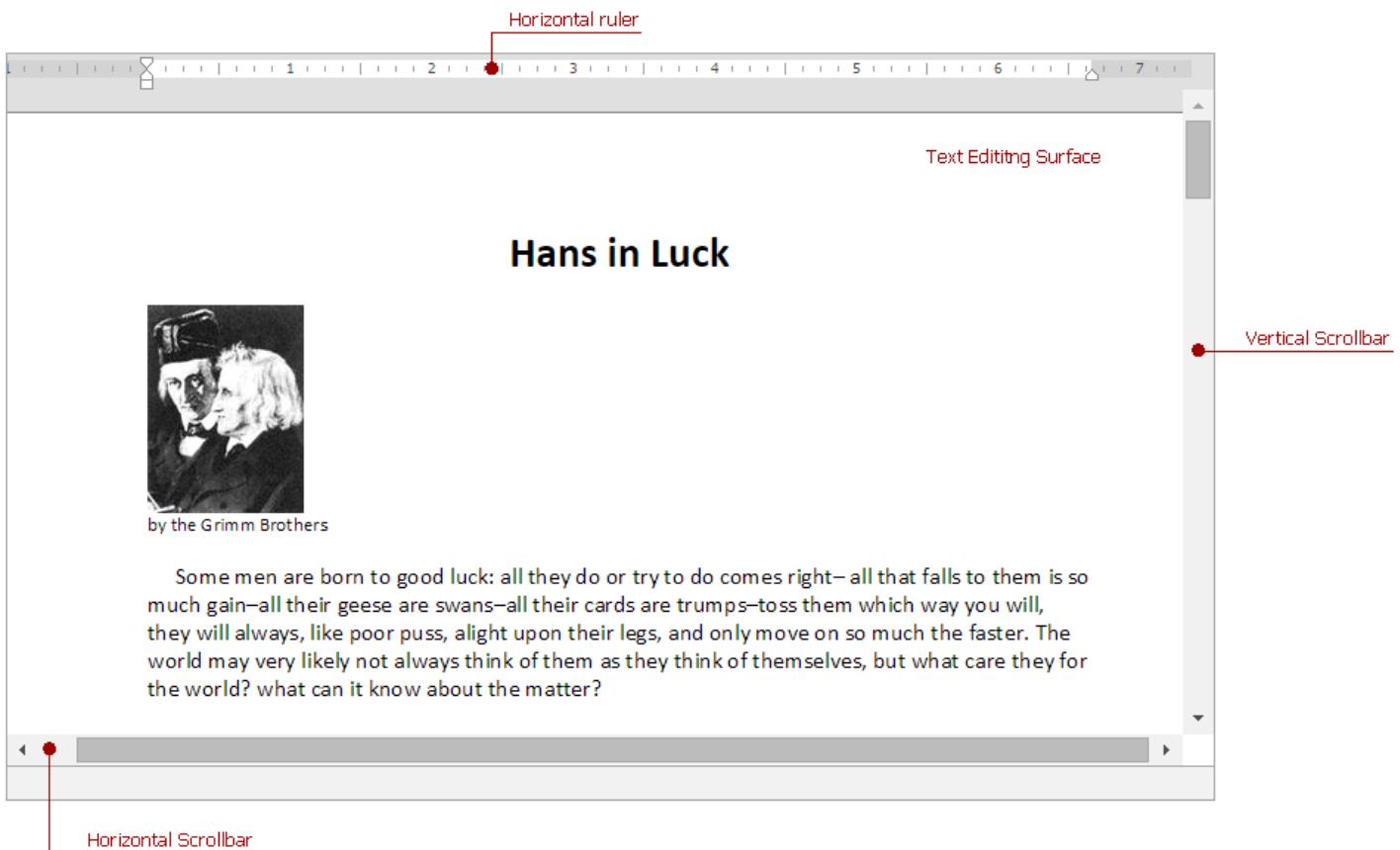
- [File Operations](#)
- [Navigation inside Documents](#)
- [Work with Selections](#)
- [Copy, Paste and Edit the Content](#)
- [Text Formatting](#)

## **Miscellaneous**

- [Bookmark and Hyperlink](#)
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# Editor Elements

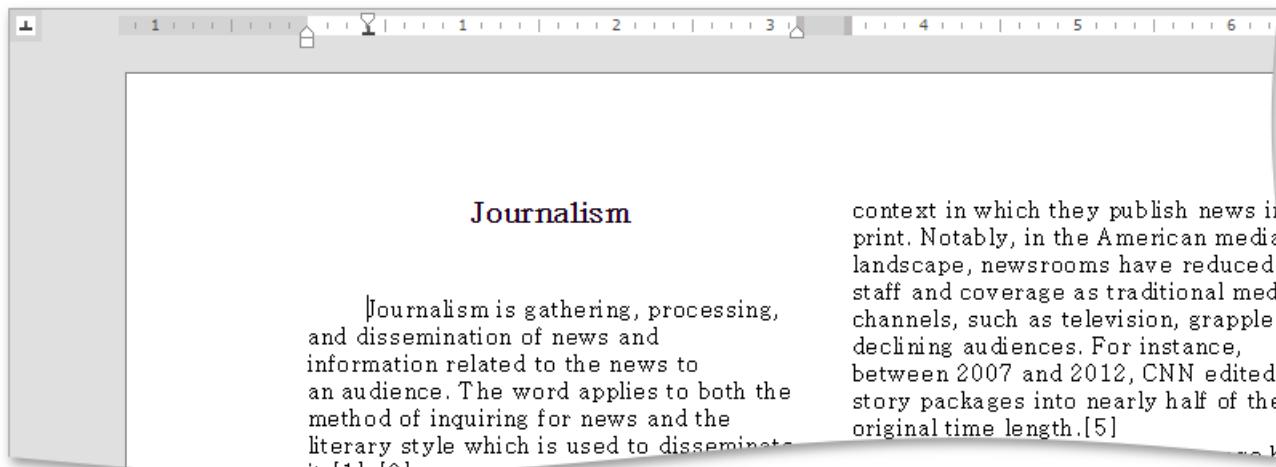
The **Rich Text Editor** consists of visual elements that provide you with the capability to edit and view documents.



## Main Elements

The main area of the **Rich Text Editor** control is the **Text Editing Surface** that displays a document to be edited. Here, a document looks as it will appear when you print it.

At the top of the **Text Editing Surface**, the **Rich Text Editor** displays a horizontal **ruler**, which you can use to align text, graphics, and other elements in a document. The horizontal **ruler** controls the width of table columns and the horizontal spacing of paragraph margins, columns and tabs. You can control the [ruler visibility](#).

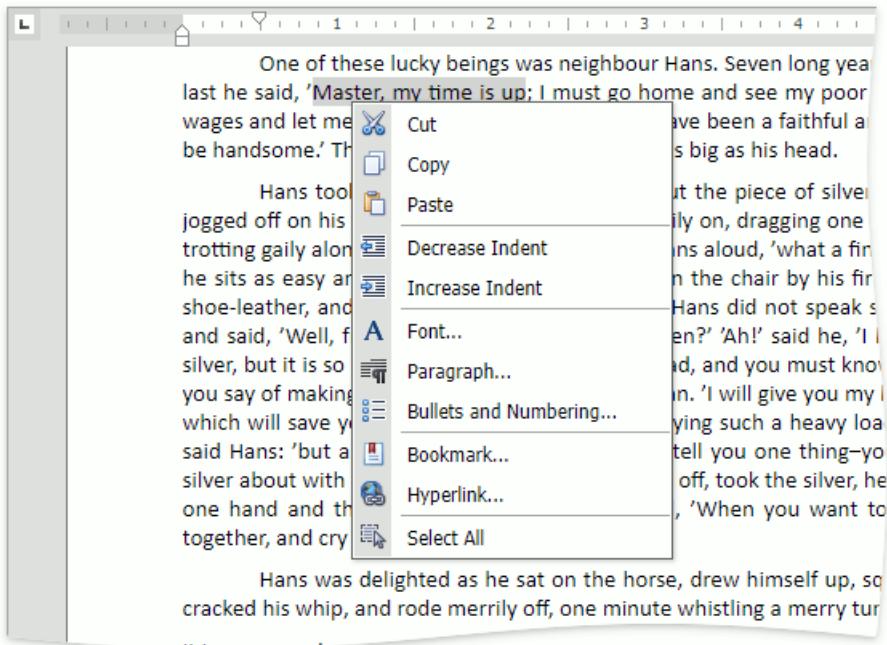


At the bottom and at the right of the **Text Editing Surface** there are horizontal and vertical **scrollbars**, which allow you to navigate through a document.

context in which they publish news in print. Notably, in the American media landscape, newsrooms have reduced staff and coverage as traditional media channels, such as television, grapple with declining audiences. For instance, between 2007 and 2012, CNN edited story packages into nearly half of the original time length.[5]

## Context Menu

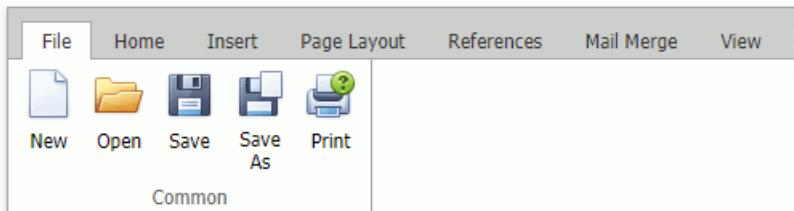
The **Rich Text Editor** supports the **Context Menu** that appears when you right-click on the **Text Editing Surface**.



# Ribbon Interface

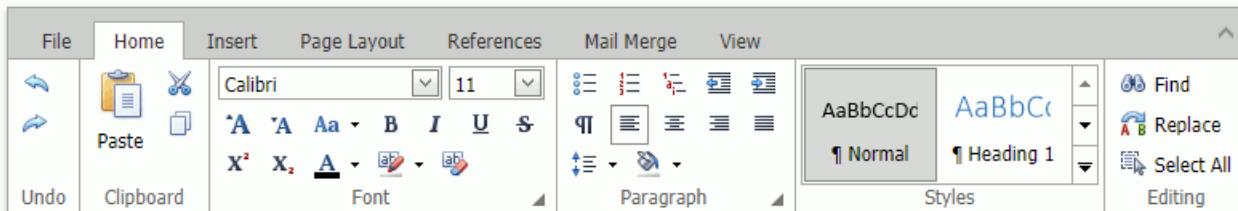
The comprehensive functionality for the **Rich Text** control can be provided via a set of **Ribbon** tabbed pages. **Ribbon** pages are divided into logical groups that include commands with common features.

## File



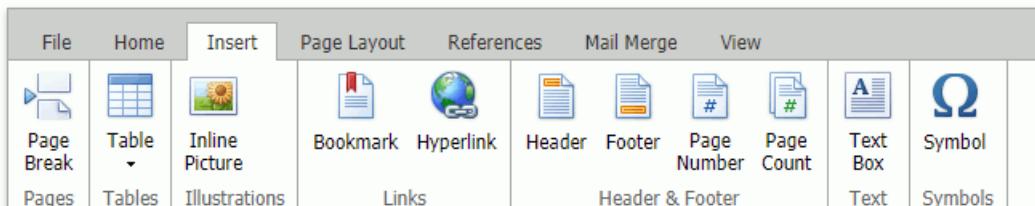
- Create a New Document
- Open a Document
- Save a Document
- Print a Document

## Home



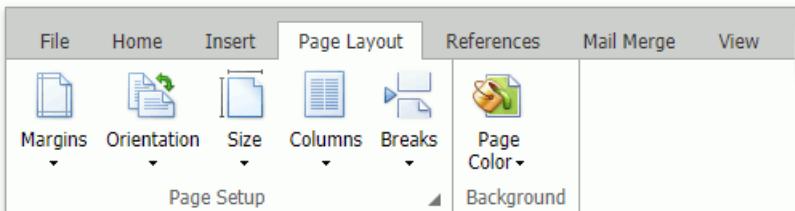
- Undo and Redo Last Operations
- Cut, Copy and Paste Editor's Content
- Format Text
- Format Paragraphs
- Using Indents
- Using Tabs
- Apply Predefined Styles
- Find and Replace

## Insert



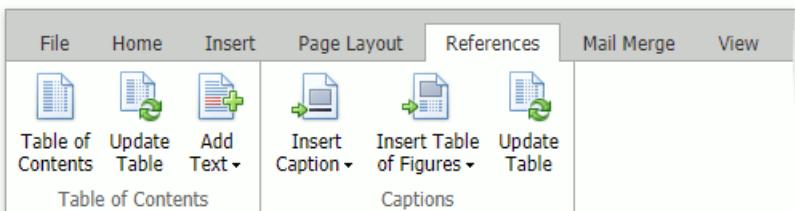
- Insert a Page Break
- Tables
- Insert, Select, Copy or Delete a Picture or Text Box
- Bookmark and Hyperlink
- Header and Footer
- Page Number and Count
- Insert a Symbol

## Page Layout



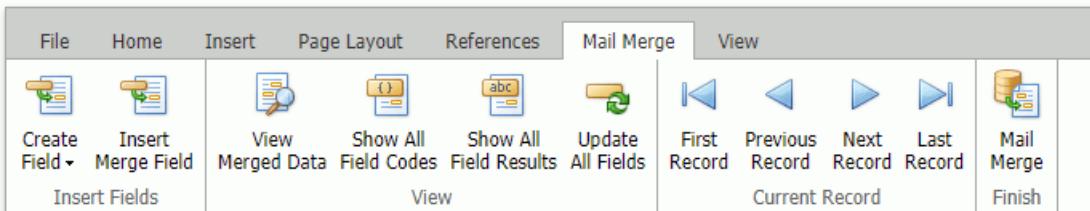
- [Adjust Page Settings](#)
- [Lay Out Text in Columns](#)
- [Insert a Page Break](#)
- [Divide a Document into Sections](#)
- [Page Color](#)

## References



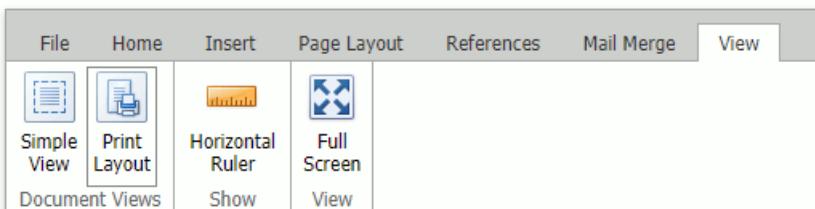
- [Table of Contents](#)

## Mail Merge



- [Mail Merge](#)

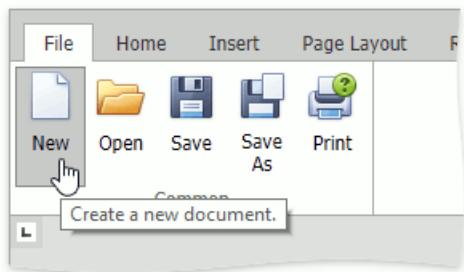
## View



- [Document Views](#)
- [Show Horizontal Ruler](#)
- [Full Screen Mode](#)

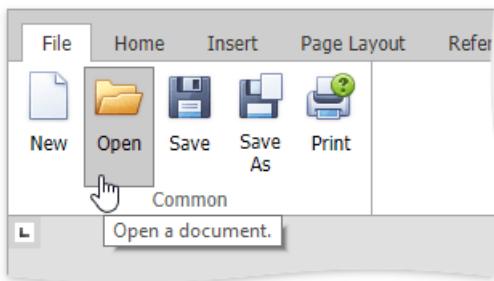
# Create a New Document

To create a new empty document, select the **File** tab, and click the **New** button in the **Common** group; or press CTRL+N.

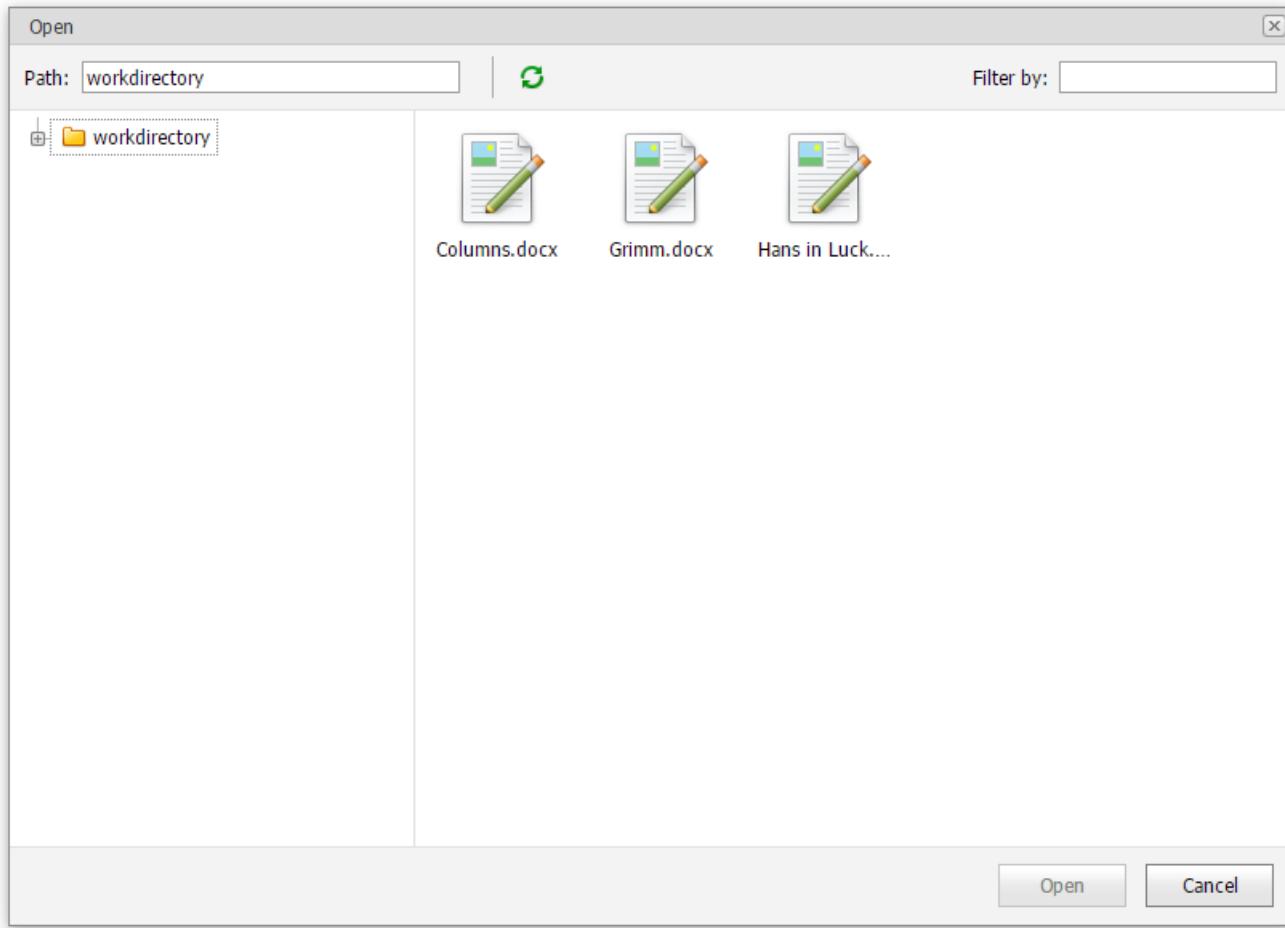


# Open a Document

To open a document, select the **File** tab, and click the **Open** button in the **Common** group; or press CTRL+O.



The **Open** dialog appears, allowing you to select a file from your working directory.

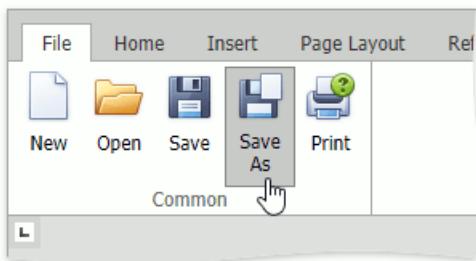


The **Rich Editor** enables you to open documents of the following types:

- Rich Text Format (\*.rtf)
- Text Files format (\*.txt)
- Hyper Text Markup Language format (\*.htm, \*.html)
- Web page archive format (\*.mht)
- Microsoft Word 97-2003 format (\*.doc)
- WordML (\*.xml)
- Open Office XML format (aka Office 2007 or \*.docx)
- Open Document Format (\*.odt)
- Electronic Publication (\*.epub)

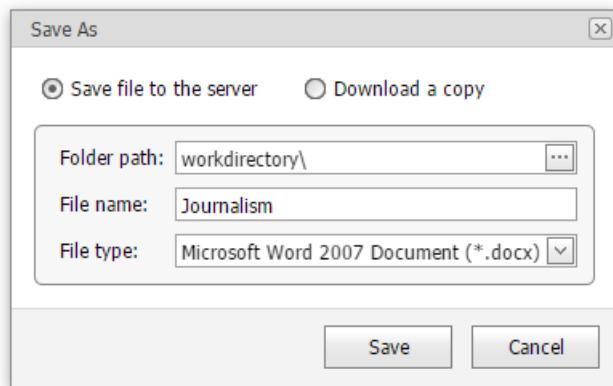
# Save a Document

To save a document, go to the **File** tab, and then click the **Save as** button in the **Common** group; or press CTRL+S.



After that, the **Save as** dialog box is invoked.

Specify whether the file should be saved to the server or downloaded as a copy. Then, specify the folder path, file name and the file format in which to save the document.



The **Rich Edit** control allows you to save documents in the following formats:

- Rich Text Format (\*.rtf)
- Text Files format (\*.txt)
- Hyper Text Markup Language format (\*.htm, \*.html)
- Web page archive format (\*.mht)
- Microsoft Word 97-2003 format (\*.doc)
- WordML (\*.xml)
- Open Office XML format (aka Office 2007 or \*.docx)
- Open Document Format (\*.odt)
- Electronic Publication (\*.epub)

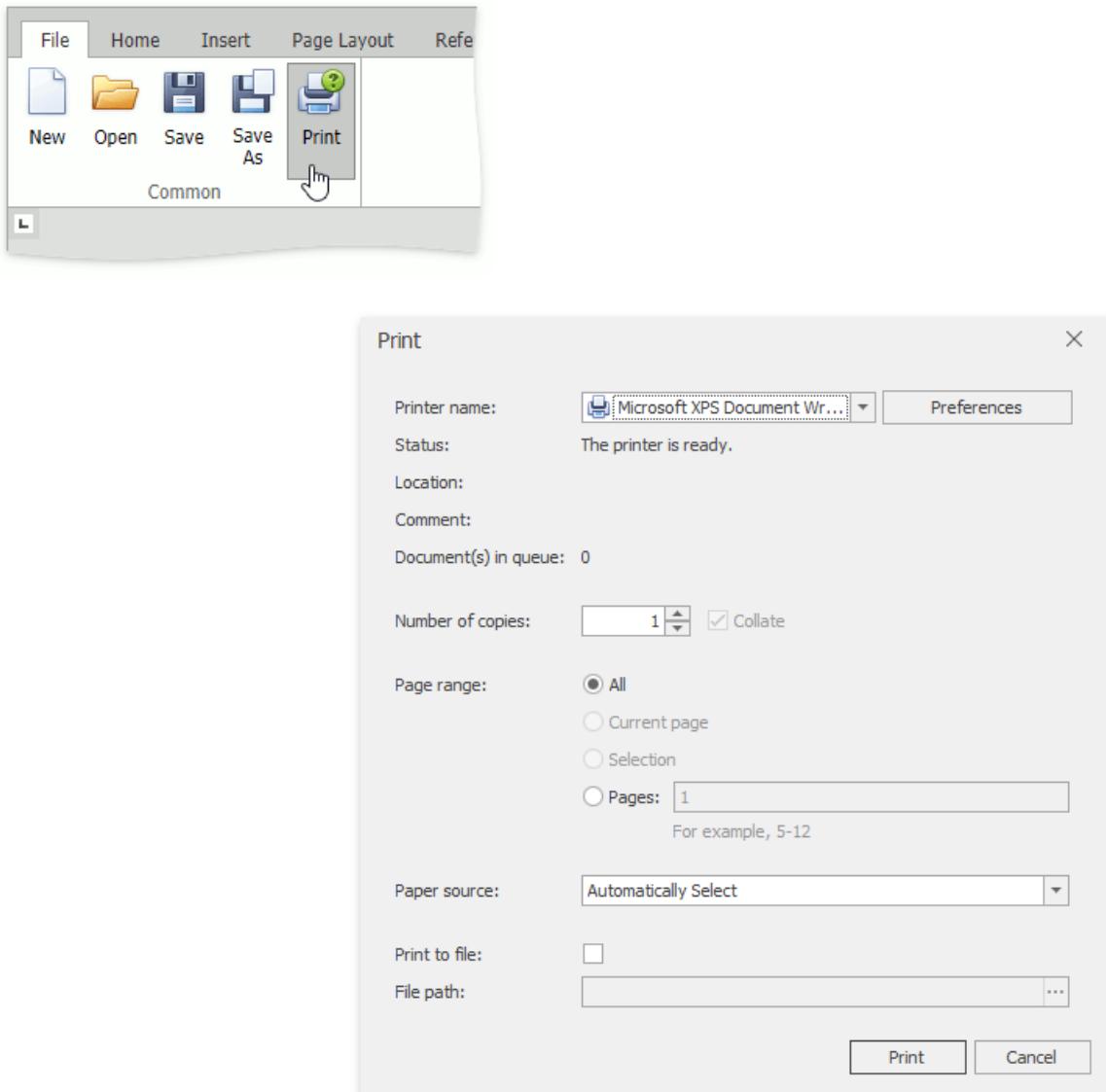
To save the active document with its current file format and location, go to the **File** tab, and then click the **Save** button in the **Common** group. If you click the **Save** button to save a newly created document, the **Save as** dialog is invoked.

## **Note**

When saving a document in HTML format, in-line pictures are saved in the %FileName%\_files folder, where %FileName% is the name of the document file. Image files are named "imageN.png", where N is the picture index starting from the beginning of the document.

# Print a Document

1. Select the **File** tab and click the **Print** button in the **Common** group; or press CTRL+P.



The **Print** dialog will be invoked.

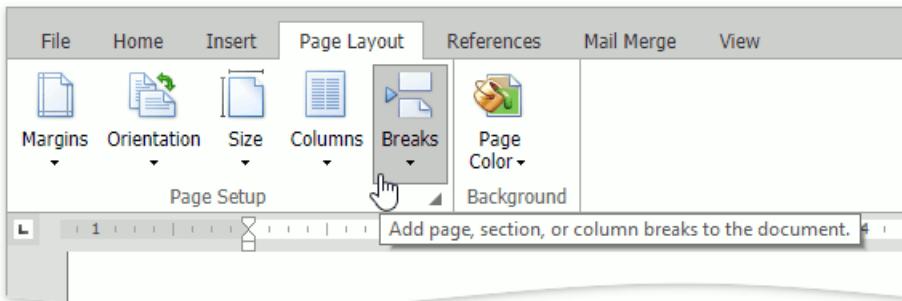
2. In the **Print** dialog, specify all required settings and click **Print**.

# Insert a Page Break

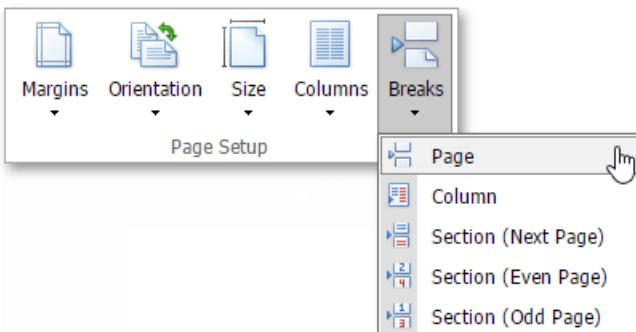
## Insert Page Break

You can insert a page break in your document anywhere you want. To do this, follow the steps below.

1. Point to the position within a document where you want to insert a page break.
2. Click the **Breaks** button in the **Page Setup** group in the **Page Layout** tab.

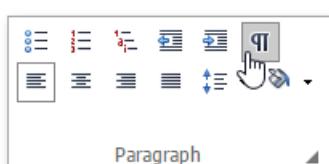


Select the **Page** item in the opened drop-down list.

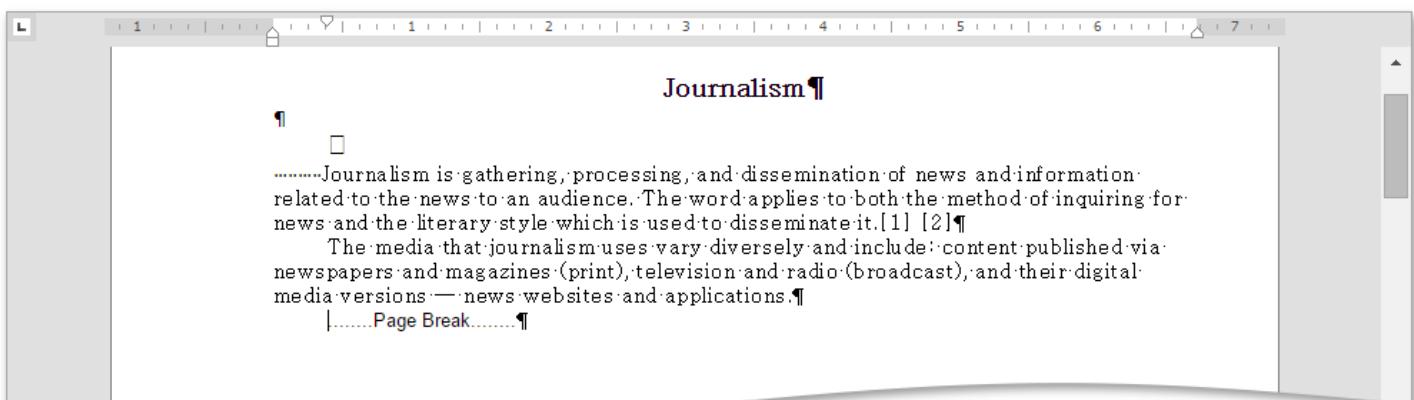


Or press **CTRL+ENTER**.

To show the page break mark, press **CTRL+SHIFT+8** or click the button in the **Paragraph** group in the **Home** tab.



In a document, page breaks are marked as illustrated below.



## Keyboard Shortcuts to Insert Breaks

You can use the following keyboard shortcuts to insert breaks of different types.

CTRL+SHIFT+ENTER	Inserts a <a href="#">column break</a> in a document.
CTRL+ENTER	Inserts a page break.
ENTER	Inserts a paragraph break.
SHIFT+ENTER	Inserts a line break.
TAB	Inserts a tab

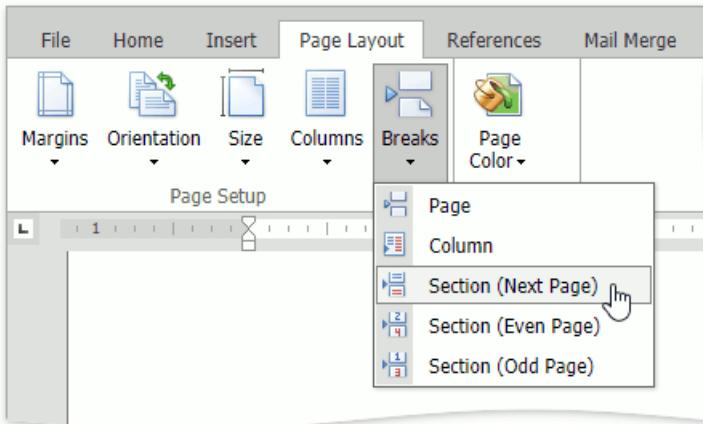
# Divide a Document into Sections

You can divide your document into sections to specify parts of a document that have different [page settings](#) (page margins, page orientation, paper size) and [column layouts](#).

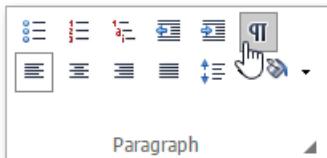
## Insert Section Breaks

To divide a document into sections, insert section breaks.

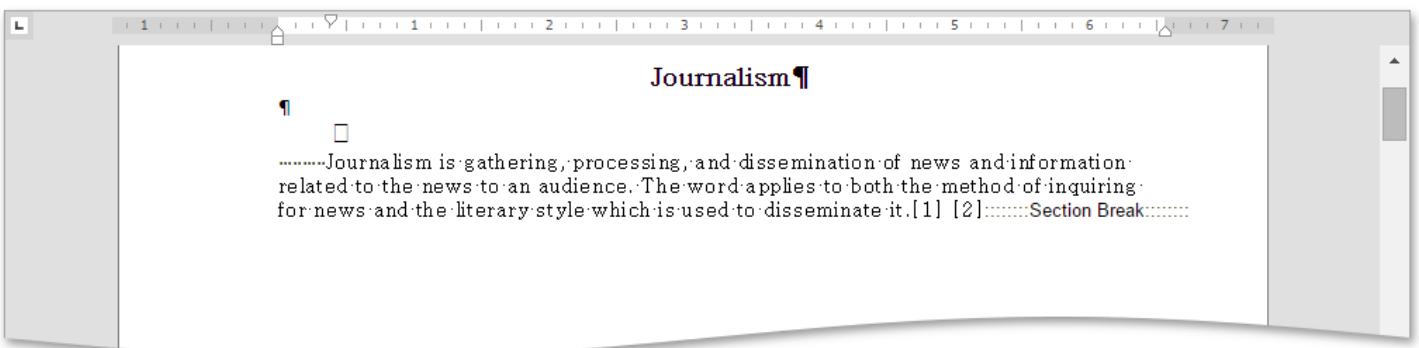
1. Click where you want to insert a section break within a document.
2. Select the **Page Layout** tab, click the **Breaks** button in the **Page Setup** group and select the required [type of the section break](#).



To show the section break mark, press **CTRL+SHIFT+8** or select the **Home** tab and click the  button in the **Paragraph** group.



In a document, section breaks are marked as illustrated below.



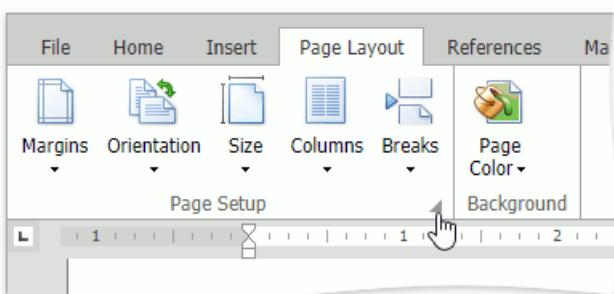
## Types of Section Breaks

- **Next Page** inserts a section break and starts a new section on the next page.
- **Even Page** inserts a section break and starts a new section on the next even-numbered page.
- **Odd Page** inserts a section break and starts a new section on the next odd-numbered page.

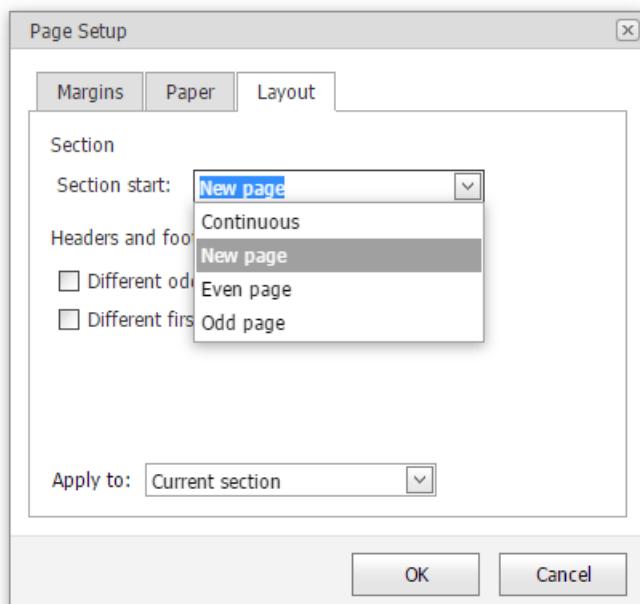
## Change Section Break Type

You can change the type of the section break that has been inserted to start a section. To do this, follow the instructions below.

1. Click the section following the section break that you wish to change.
2. Within the **Page Layout** tab, click in the right bottom corner of the **Page Setup** group to invoke the **Page Setup** dialog.



3. Change the **Section start** property on the **Layout** tab as required.

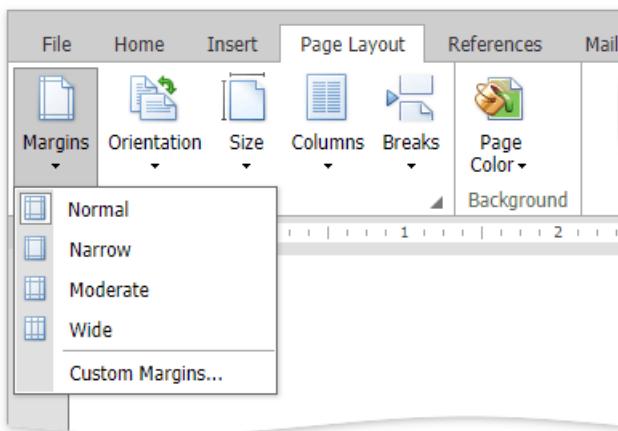


# Adjust Page Settings

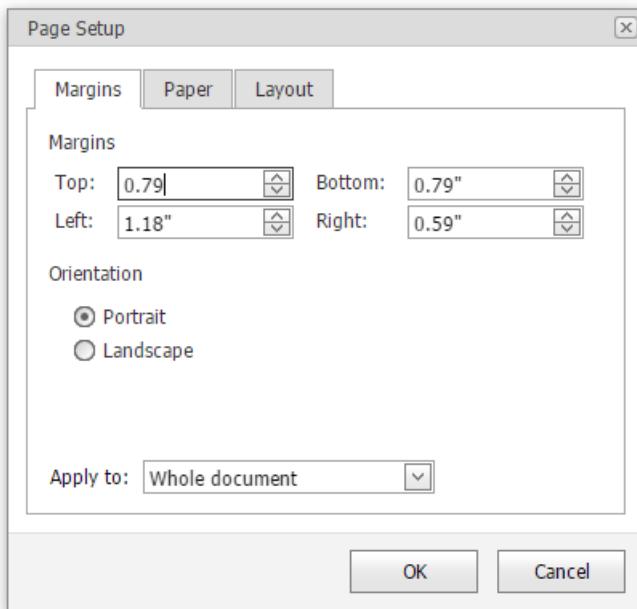
When changing page layout settings (such as [page margins](#), [page orientation](#), [paper size](#)), you can apply them to the whole document or set specific page layout settings for each individual section if your [document is divided into sections](#).

## Change Page Margins

1. Click within a [section](#) whose page margins you wish to set.
2. Select the **Page Layout** tab, click the **Margins** button in the **Page Setup** group and select the margin sizes to be set for the current section from the invoked list.

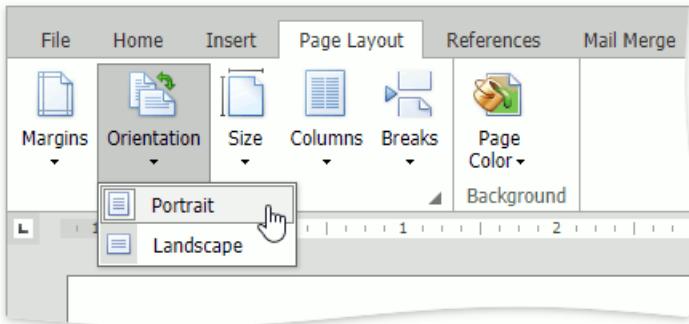


Or specify page margins for the current section or the whole document via the **Page Setup** dialog.



## Change Page Orientation

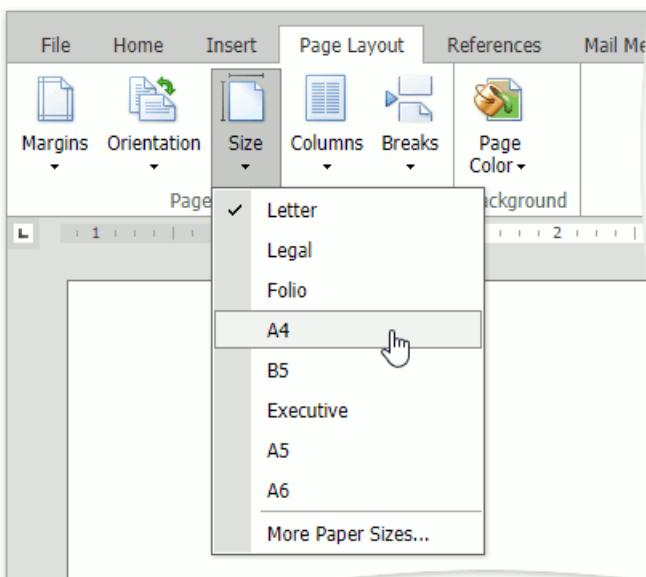
1. Click within a [section](#) for which you wish to specify page orientation.
2. Select the **Page Layout** tab, click the **Orientation** button in the **Page Setup** group and select **Portrait** or **Landscape** from the invoked list.



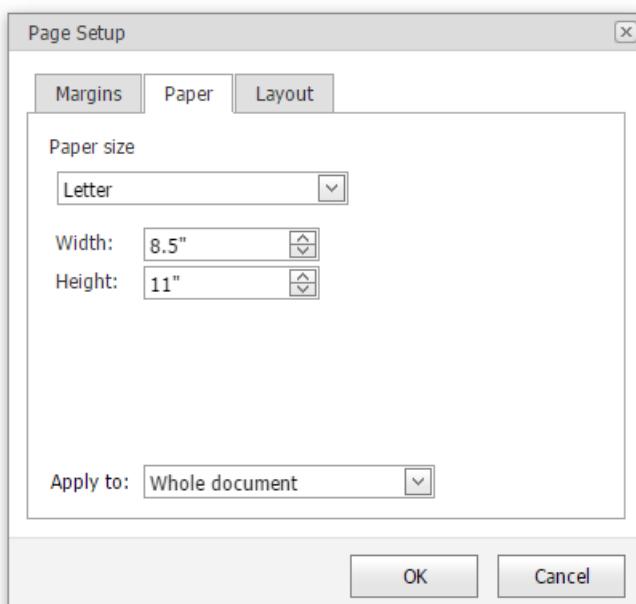
Or set the page orientation for the current section or the whole document on the **Margins** tab of the **Page Setup** dialog.

## Change Paper Size

1. Click within a [section](#) for which you wish to set the paper size.
2. Select the **Page Layout** tab, click the **Size** button in the **Page Setup** group and select one of the standard paper sizes from the invoked list.



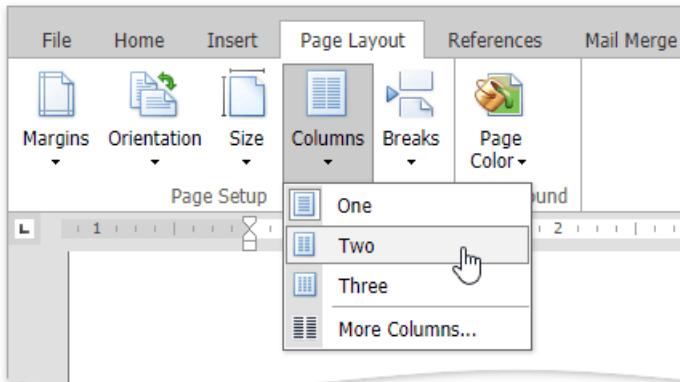
Or specify the paper size for the current section or the entire document on the **Paper** tab of the **Page Setup** dialog.



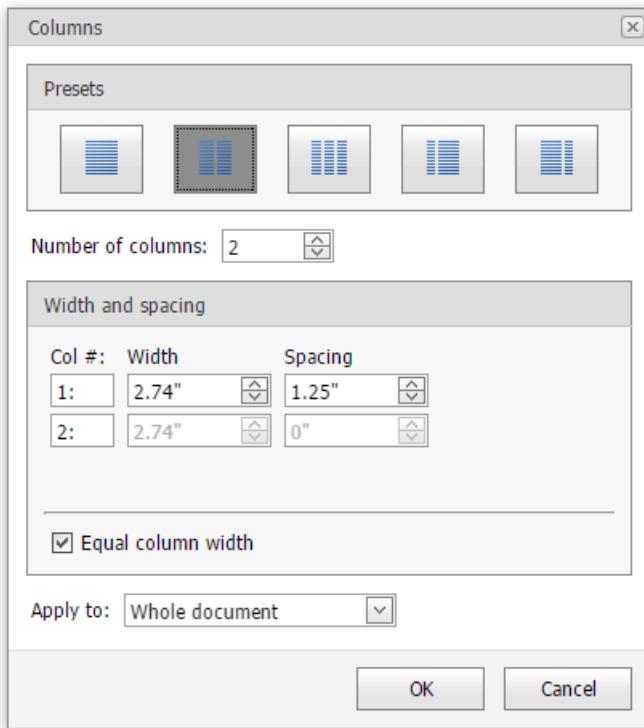
# Lay Out Text in Columns

To split a text into columns, follow the steps below.

1. Click within a **section** which you wish to lay out in several columns.
2. Select the **Page Layout** tab, click the **Columns** button in the **Page Setup** group and select the number of columns into which the text should be split.

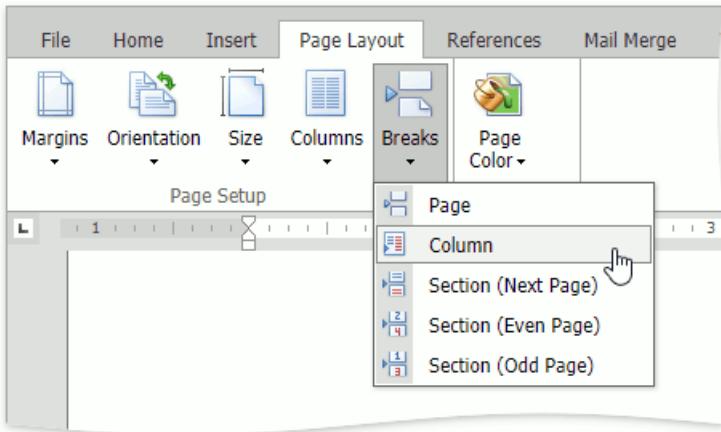


Or click **More Columns** to invoke the **Columns** dialog where you can adjust the columns layout of the text in a more flexible way for the current section or the whole document.



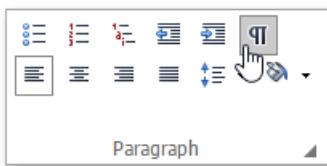
To move the text to the next column (if the text in the current section is laid out into multiple columns), insert a column break.

1. Click within a document where you wish to insert a column break.
2. Select the **Page Layout** tab, click the **Breaks** button on the **Page Setup** group and select **Column** from the invoked list.

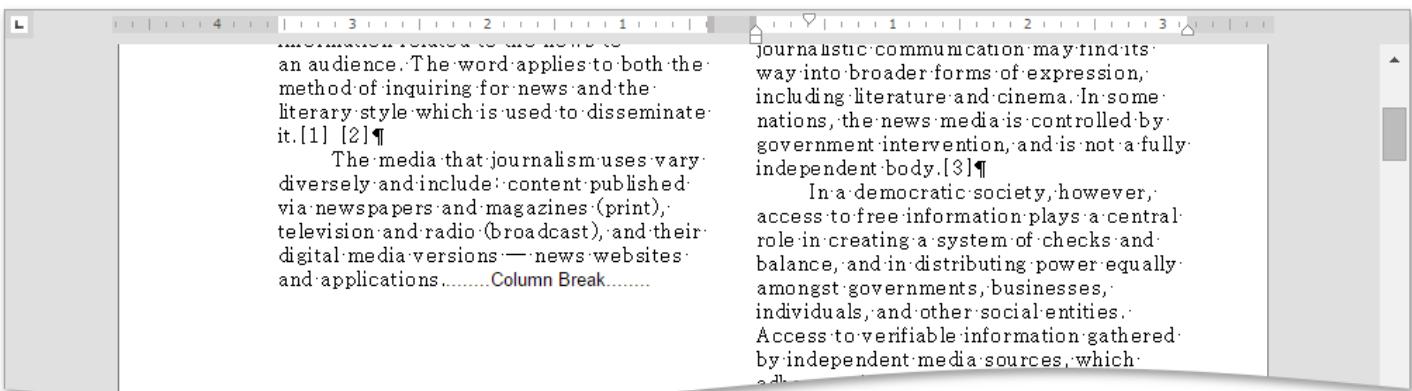


Or press CTRL+SHIFT+ENTER.

To show the column break mark, press CTRL+SHIFT+8 or select the **Home** tab, click the  button in the **Paragraph** group.

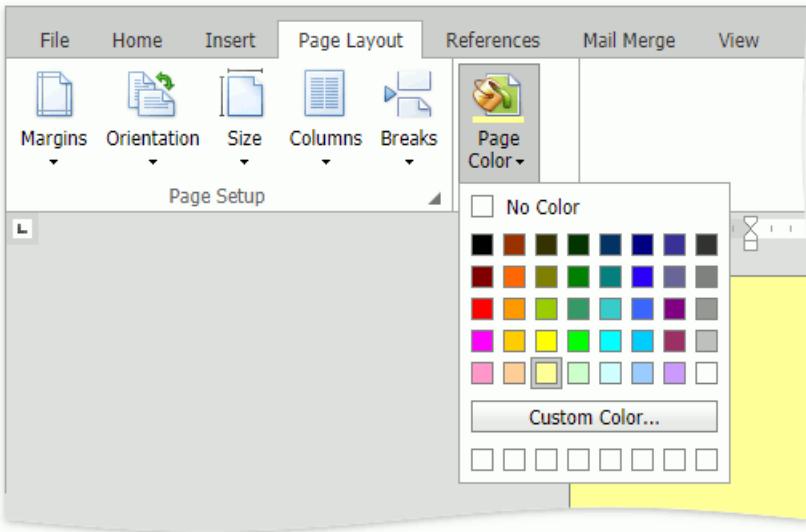


In a document, column breaks are marked as illustrated below.



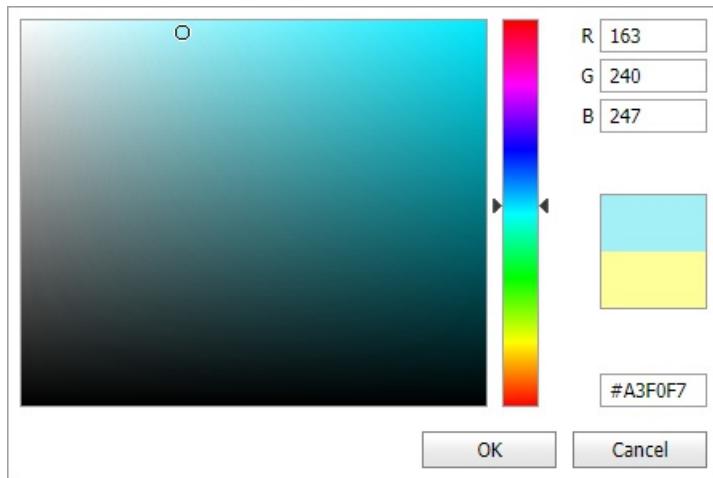
# Page Color

Click the **Page Color** button in **Page Layout** tab's **Background** group and select the color from the drop-down color palette to specify the document's page color.



## Custom Color

Click the **Custom Color...** button, and in the invoked drop-down box, select a custom color and click **OK**. The color is added to the custom color palette under the **Custom Color...** button.



You can specify a color in the following text formats:

### RGB Format

Use the **R**, **G**, and **B** editors to specify a color in RGB (red, green, blue) format. Each parameter (red, green, and blue) defines the color intensity and must be an integer between 0 and 255.

### Longhand and Shorthand hexadecimal notation

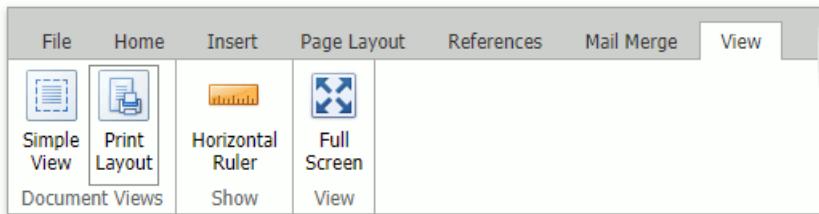
Use a text editor at the bottom of the color editor to specify a color in longhand or shorthand hexadecimal notation.

Longhand hexadecimal notation is in #RRGGBB format (for example, #00FFFF, 2fa135, #abcdef), where RR is red, GG is green, and BB is blue. These hexadecimal integers specify the color components. All values must be between 0 and FF. The hash (#) sign can be skipped.

Shorthand hexadecimal notation is in #RGB format (for example, #OFF, 21f, #afa), where R is red, G is green, and B is blue. These hexadecimal integers specify the color components. All values must be between 0 and F. The hash (#) sign can be skipped.

# Document Views

Use ribbon buttons in **View** tab's **Document Views** group to switch document views.



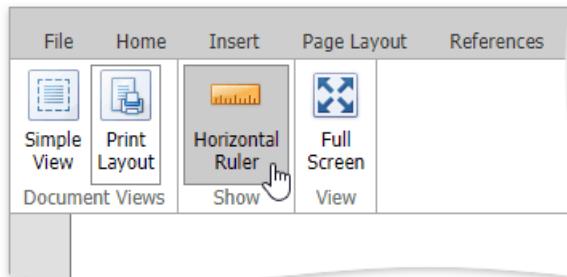
The **Simple View** displays a document in the entire editing area and ignores the page layout. In this mode, the editor does not split a document into pages and ignores headers, footers, and page layout settings: margins, orientation, size, columns, and breaks.

The **Print Layout** displays a document split into pages, with headers, footers, and with applied page layout settings: margins, orientation, size, columns, and breaks.

# Show Horizontal Ruler

The horizontal ruler is used to align text, graphics and other elements in a document. It also controls the width of table columns and the horizontal spacing of paragraph margins, columns and tabs.

The horizontal ruler is shown on the **Text Editing Surface**. To hide the ruler, select the **View** tab and click the **Horizontal Ruler** button in the **Show** group.

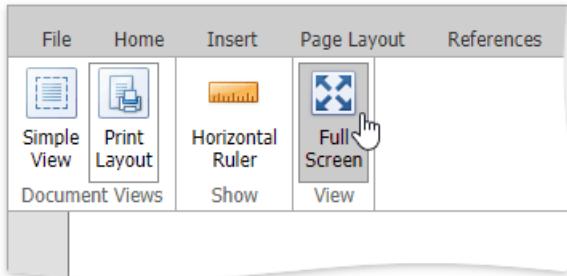


To show the ruler again, click the same button.

# Full Screen Mode

The **Rich Editor** provides functionality to display a document in full screen mode.

To turn on full screen mode, go to the **View** tab and click the **Full Screen** button in the **View** group.



To disable the full screen mode, click the same button.

# Navigate through a Document

You can navigate through a document in the following ways:

- Use the mouse device to click anywhere in the document;
- Use the mouse device to drag the scroll box to move through the document;
- Rotate the wheel button to scroll up and down the document;
- Use keyboard shortcuts.

The following table lists the default keyboard shortcuts used to navigate through a document.

KEYBOARD SHORTCUT	EFFECT
LEFT ARROW	Moves the cursor to the previous character.
RIGHT ARROW	Moves the cursor to the next character.
UP ARROW	Moves the cursor to the previous line.
DOWN ARROW	Moves the cursor to the next line.
HOME	Moves the cursor to the start of the current line.
END	Moves the cursor to the end of line.
PAGE UP	Moves the cursor backward by the number of lines in the current control's window, minus one.
PAGE DOWN	Moves the cursor forward by the number of lines in the current control's window, minus one.
CTRL+LEFT ARROW	Moves the cursor to the previous word.
CTRL+RIGHT ARROW	Moves the cursor to the next word.
CTRL+UP ARROW	Moves the cursor to the beginning of the previous paragraph.
CTRL+DOWN ARROW	Moves the cursor to the beginning of the next paragraph.
CTRL+HOME	Moves the cursor to the start of the document, and scrolls the document to show the cursor position.
CTRL+END	Moves the cursor to the end of the document, and scrolls the document to show the cursor position.

# Select Text

To select text in the **Rich Editor**, use the following mouse actions and keyboard shortcuts.

- Selecting **one character**

To select only one character, click before the character, hold down the SHIFT key and click the RIGHT ARROW once.

- Selecting **one word**

To select one word in a document, place the cursor anywhere in the word (or just before it) and **double-click** with the left mouse button. Another method is to place your cursor at the beginning of the word, hold down the SHIFT+CTRL keys, and click the RIGHT ARROW.

- Selecting **one line**

The cursor in the margin will highlight one line with one click. Another method is to place the cursor at the beginning of the line, and use the SHIFT+END keyboard shortcut to extend selection to the end of the line. Similarly, at the end of the line the SHIFT+HOME keyboard shortcut can be used.

- Selecting **one paragraph**

Place the cursor in the left margin and **click twice** to highlight the whole paragraph.

- Selecting **the entire document**

To select the entire document, press CTRL+A; or right-click on the text editing surface and click the **Select All** command in the invoked context menu.

The following table lists the default keyboard shortcuts used for selecting text in the **Rich Editor**.

SHIFT+LEFT ARROW	Extends the selection to the previous character.
SHIFT+RIGHT ARROW	Extends the selection to the next character.
SHIFT+UP ARROW	Extends the selection to the previous line.
SHIFT+DOWN ARROW	Extends the selection one line down.
SHIFT+HOME	Extends the selection to the beginning of the line.
SHIFT+END	Extends the selection to the end of the current line.
CTRL+SHIFT+LEFT ARROW	Extends the selection to the previous word.
CTRL+SHIFT+RIGHT ARROW	Extends the selection to the next word.
CTRL+SHIFT+UP ARROW	Extends the selection to the previous paragraph.
CTRL+SHIFT+DOWN ARROW	Extends the selection to the next paragraph.
CTRL+SHIFT+HOME	Extends the selection to the beginning of the document.
CTRL+SHIFT+END	Extends the selection to the end of the document.

CTRL+A	Selects the entire document.

# Delete Text

The BACKSPACE key deletes one character to the left of the caret. The DELETE key deletes one character to the right of the caret.

To delete more than just a few characters, [select text](#) and press the DELETE key.

# Cut, Copy and Paste Editor's Content

The **Rich Text Editor** allows you to move and copy text and images using the clipboard.

## Note

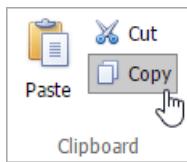
Note that you can use clipboard only in IE. For other browsers, use the keyboard shortcuts Ctrl+C, Ctrl+X and Ctrl+V to copy, cut and paste respectively.

To move or copy a text or image, follow the steps below.

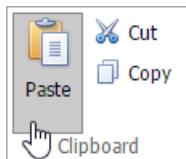
1. [Select the text or image](#) you wish to move or copy.
2. Do one of the following.
  - o To move the selection, click the **Cut** button in the **Clipboard** group within the **Home** tab, or press CTRL+X. This cuts the selection from the document and places it on the clipboard.



- o To copy the selection, click the **Copy** button in the **Clipboard** group within the **Home** tab, or press CTRL+C. This copies the selection and places it on the clipboard.



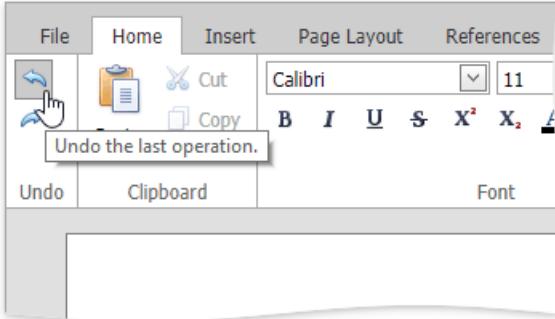
3. Point to the position where you want to insert the contents from the Clipboard.
4. Click the **Paste** button in the **Clipboard** group within the **Home** tab, or press CTRL+V, or press SHIFT+INSERT. This pastes the contents of the clipboard into the document.



# Undo and Redo Last Operations

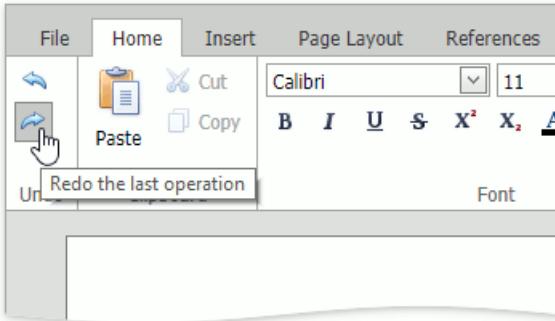
The **Rich Editor** allows you to undo and redo the last operation using special buttons (**Undo** and **Redo**) in the **Common** group in the **Home** tab.

The **Undo** command reverses the most recent action you have performed. To undo an action, click the **Undo** button in the **Common** group, or press **CTRL+Z**.



You can execute multiple Undo operations. To return the document to its previous state, just keep performing Undo.

The **Redo** command enables you to take back the last action you've undone. To redo an action, click the **Redo** button in the **Common** group, or press **CTRL+Y**.

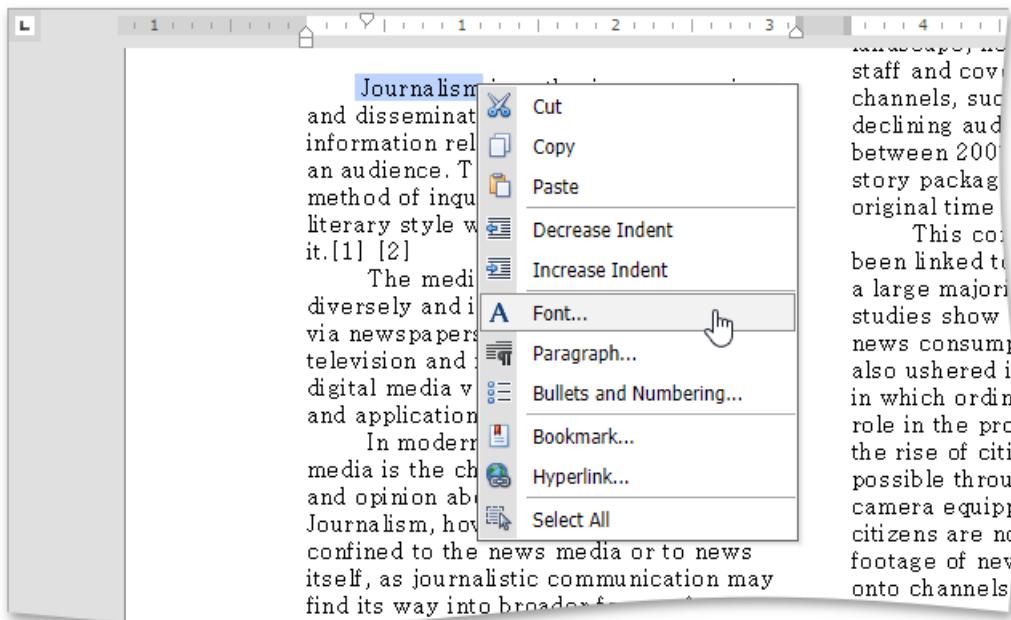


# Format Text

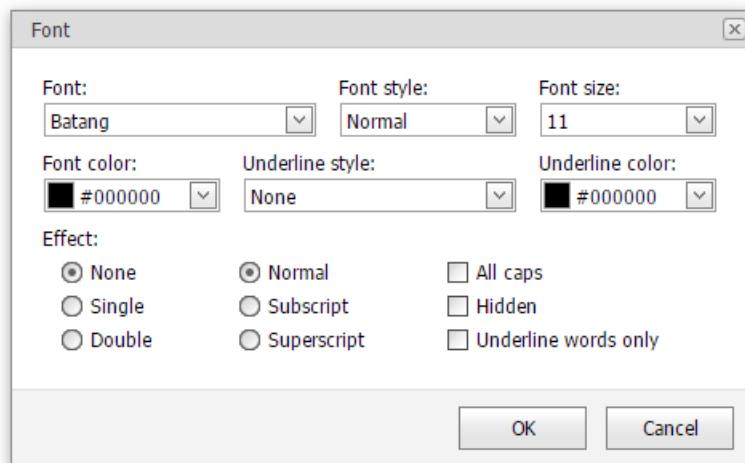
To format text, first **select it** and then use the **Font** group in the **Home** tab to change the font family, size, color, clear formatting etc.



Also, you can modify the font using the **Font** dialog. Select the text that you want to format, right-click it and choose the **Font** item from the context menu or click the arrow in the right bottom corner of the **Font** group within the **Home** tab.



The **Font** dialog appears as illustrated below.



In this dialog, you can specify all required font parameters, and apply them to the selected text.

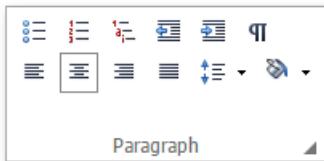
In addition, the **Rich Editor** provides a list of default keyboard shortcuts for text formatting:

CTRL+B	Toggles the bold style on the selection.

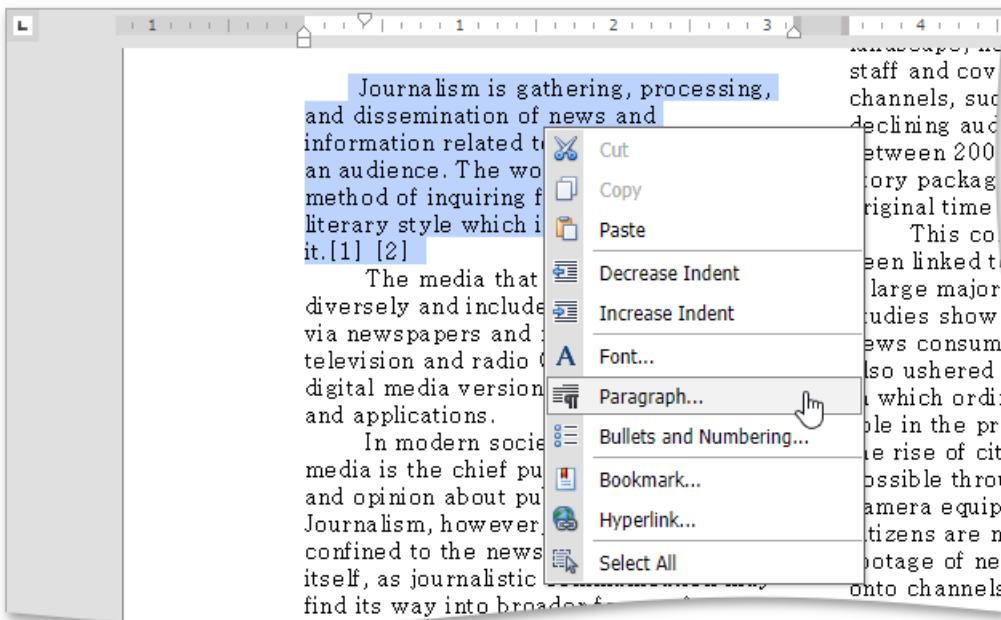
CTRL+I	Toggles the italic style on the selection.
CTRL+U	Toggles the underline style on the selection.

# Format Paragraphs

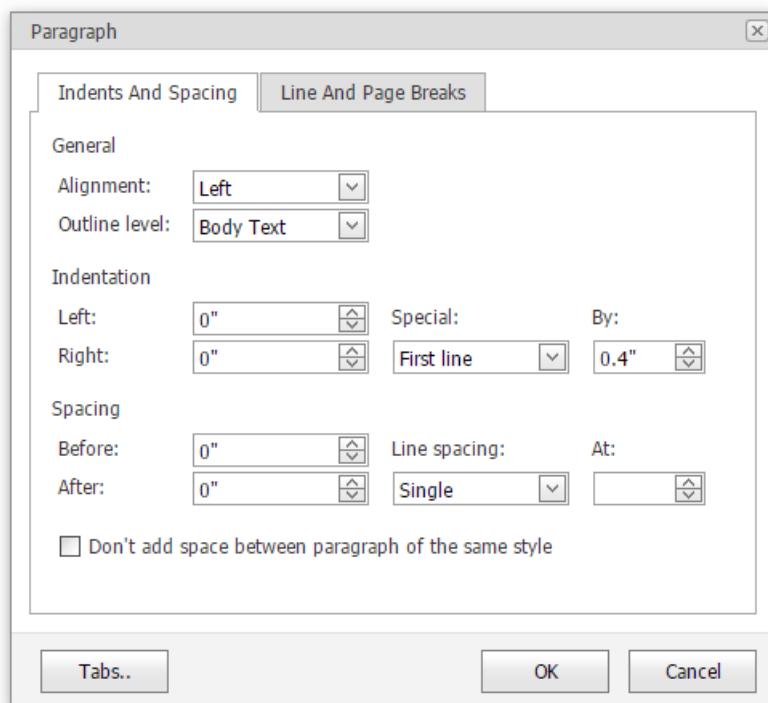
To format a paragraph, first click anywhere in it or **select** the paragraph, and then use the **Paragraph** group on the **Home** tab to create a **bulleted**, **numbered** and **multilevel** list, change line spacing, indentation, alignment and styles.



Also, you can use the **Paragraph** dialog to format the paragraph. To invoke this dialog, right-click the paragraph and click the arrow in the right bottom corner of the **Paragraph** group or select the **Paragraph** item from the context menu.



The **Paragraph** dialog appears, as illustrated below.

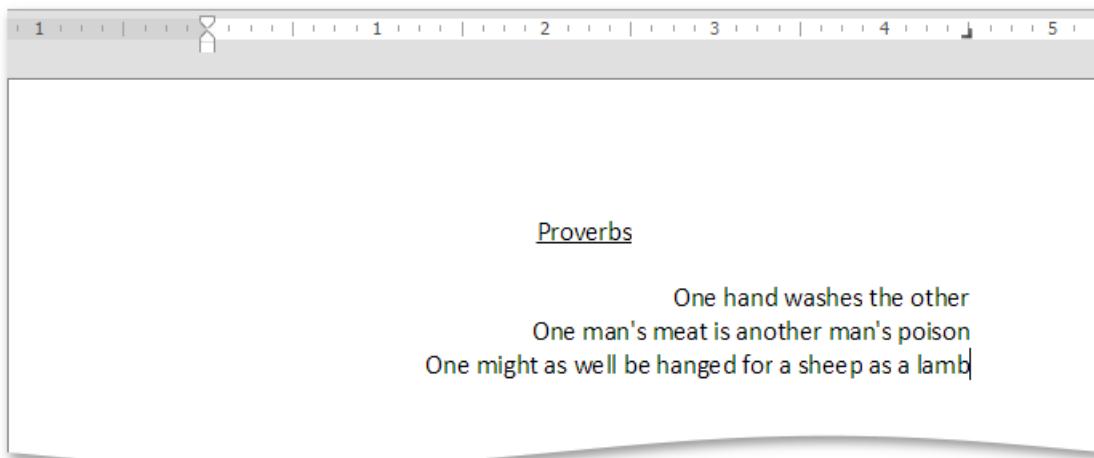


In this dialog, you can change different parameters for the paragraph (**Indents and Spacing** tab) and pagination (**Line and Page Breaks** tab).

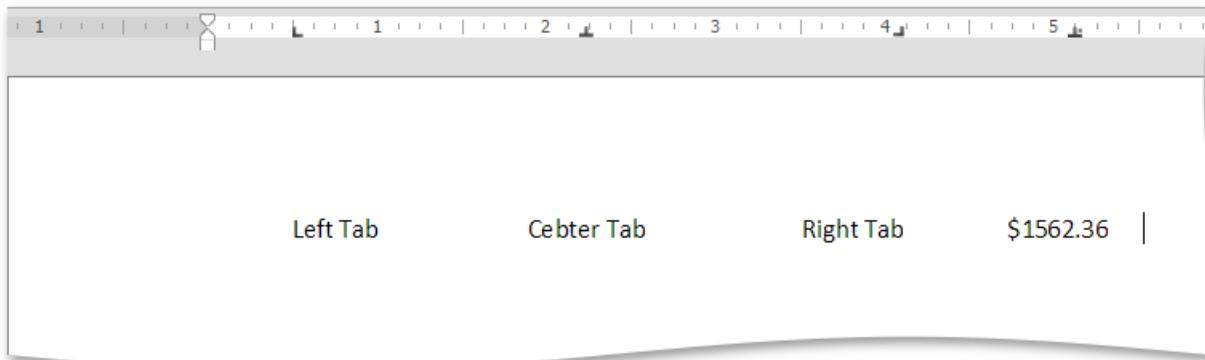
**Breaks** tab).

# Using Tabs

Tab stops specify the exact positions the cursor moves after repeatedly pressing the TAB key. Tab stops are located on the [horizontal ruler](#) and allows you to align text.



Depending upon [types of tab stops](#), typed text can be extended to the right, left or center position of the tab.



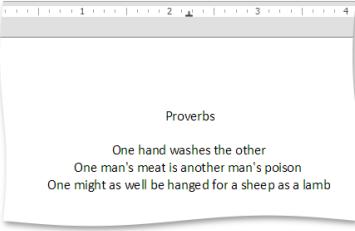
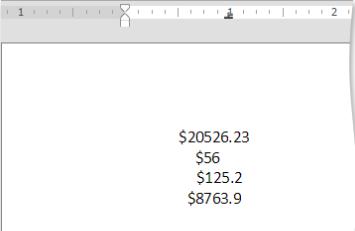
You can set any type of tab stops either [by using the ruler](#) or [by using the dialog box](#).

## ■ Note

There are no tab stops on the ruler when you create a new document.

## Types of Tab Stops

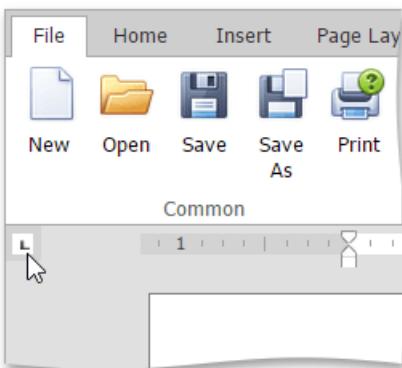
TYPE OF A TAB STOP	EXAMPLE
 - <b>Left Tab.</b> The start position of text is located to the right of the tab. Text will move to the right.	

TYPE OF A TAB STOP	EXAMPLE								
 - <b>Center Tab.</b> The cursor is located in the middle of the tab. Text will be centered based on the tab position.	 <p>Proverbs</p> <p>One hand washes the other One man's meat is another man's poison One might as well be hanged for a sheep as a lamb</p>								
 - <b>Right Tab.</b> The start position of text is located to the left of the tab. Text will move to the left.	 <table> <tbody> <tr> <td>Apple</td> <td>\$1.5</td> </tr> <tr> <td>Pear</td> <td>\$1.7</td> </tr> <tr> <td>Pineapple</td> <td>\$2.2</td> </tr> <tr> <td>Apricot</td> <td>\$3.1</td> </tr> </tbody> </table>	Apple	\$1.5	Pear	\$1.7	Pineapple	\$2.2	Apricot	\$3.1
Apple	\$1.5								
Pear	\$1.7								
Pineapple	\$2.2								
Apricot	\$3.1								
 - <b>Decimal Tab.</b> The tab position specifies the location of the decimal point. Text before the decimal point extends to the left and text after the decimal point, extends to the right.	 <table> <tbody> <tr> <td>\$20526.23</td> </tr> <tr> <td>\$56</td> </tr> <tr> <td>\$125.2</td> </tr> <tr> <td>\$8763.9</td> </tr> </tbody> </table>	\$20526.23	\$56	\$125.2	\$8763.9				
\$20526.23									
\$56									
\$125.2									
\$8763.9									

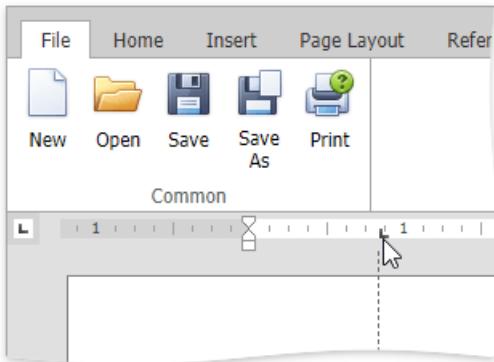
## Set Tab Stops by Using the Ruler

To set a tab stop by using the ruler, do the following:

- Click the tab selector at the left end of the horizontal ruler until it displays the [type of tab](#) that you want.



- Click on the ruler to set a tab stop at a specific position.



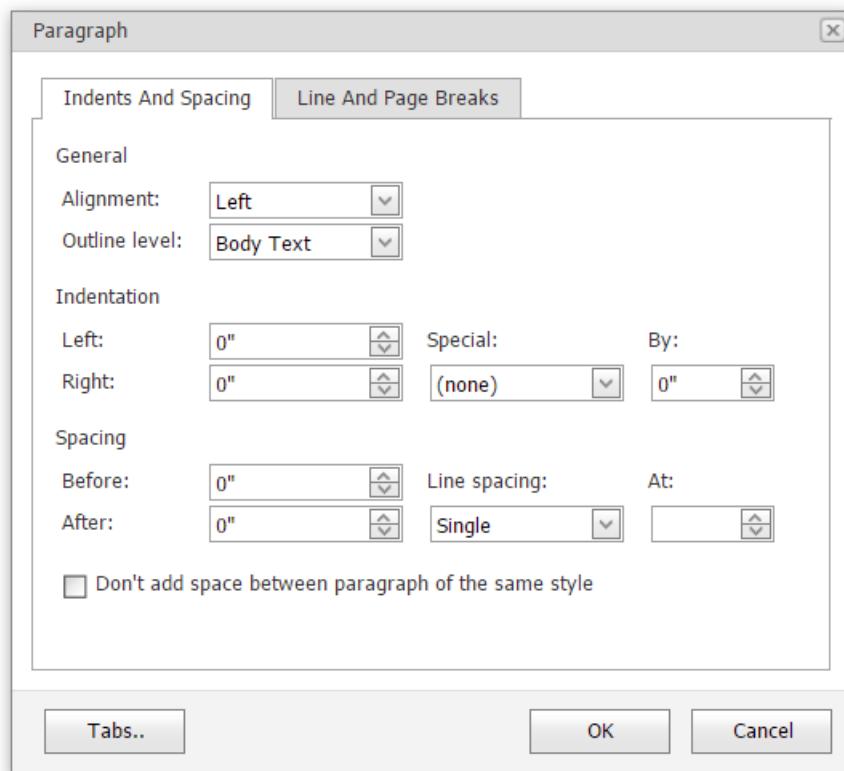
## Set Tab Stops by Using the Tab Dialog Box

To set a tab stop by using the dialog box, do the following:

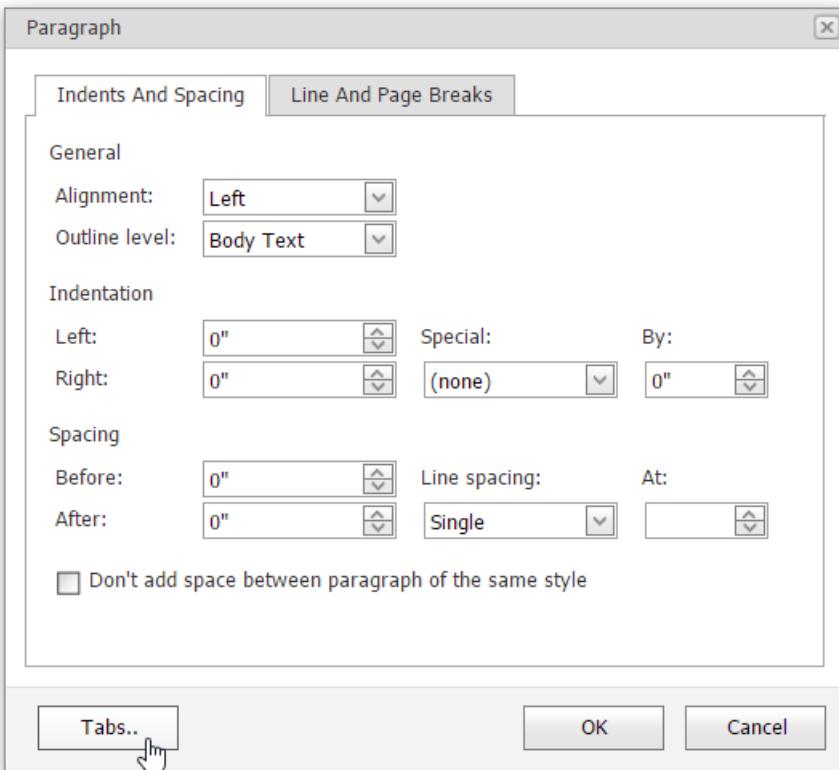
- Select the **Page Layout** tab, and click in the right bottom corner of the **Paragraph** group.



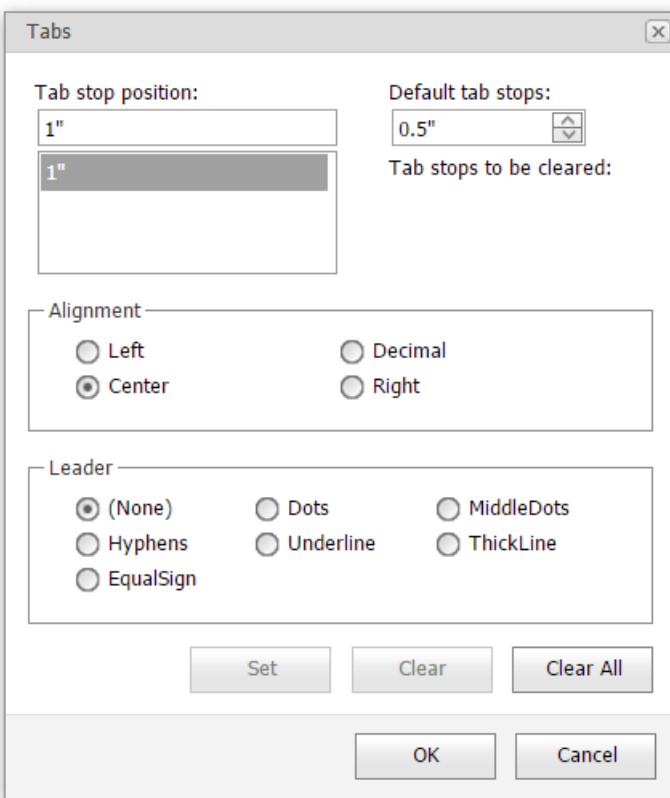
The **Paragraph** dialog box is invoked.



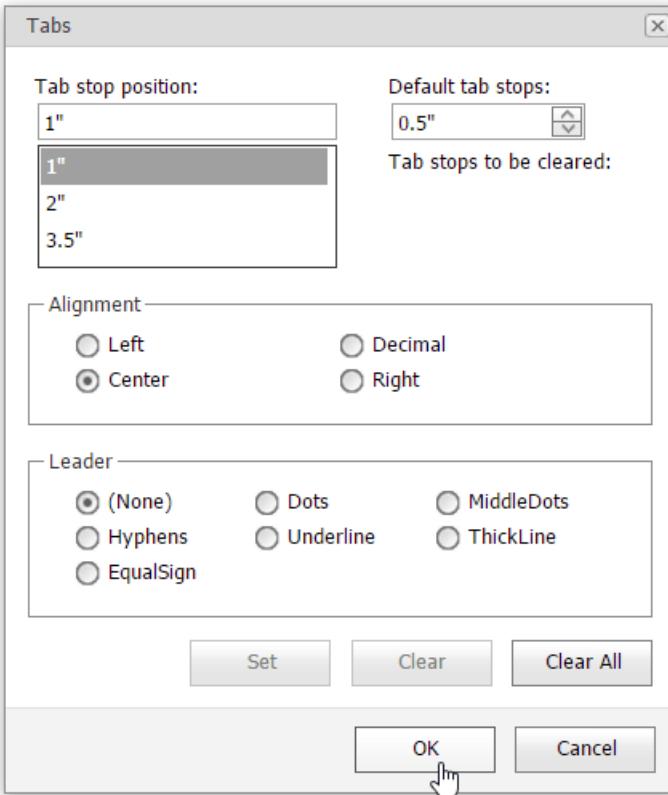
- In the invoked **Paragraph** dialog box, click the **Tabs..** button. The **Tabs** dialog box is invoked.



- In the opened **Tabs** dialog box, specify a tab stop's settings and click the **Set** button.



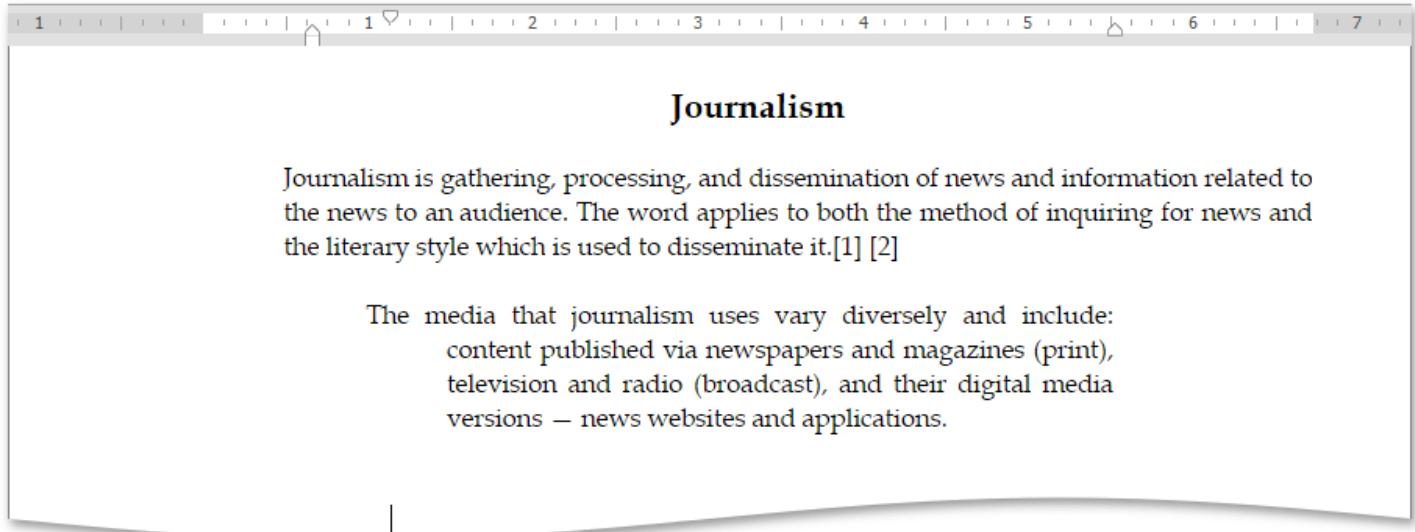
- Repeat the previous steps for each tab stop and click **OK**.



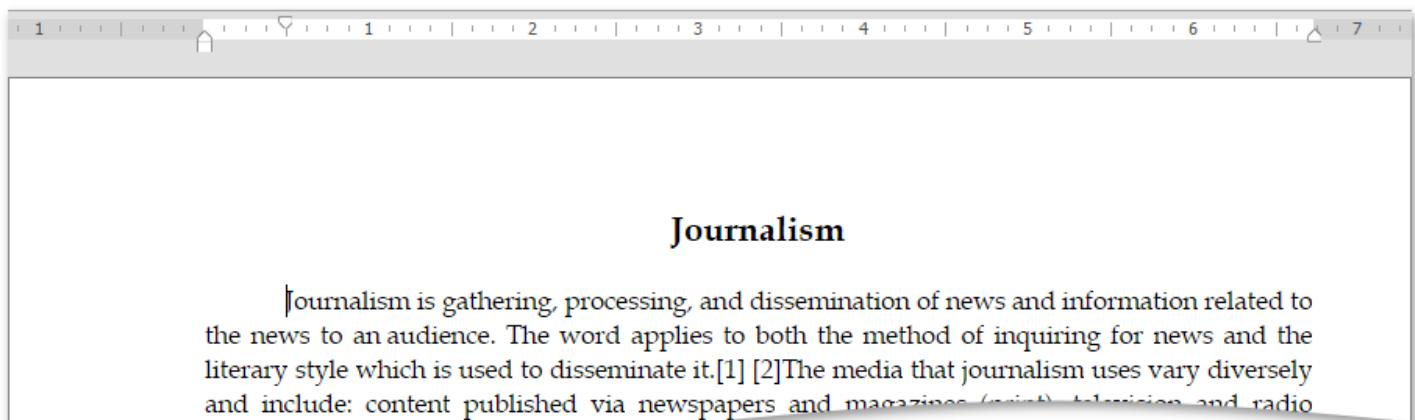
You can drag any existing tab stop along the horizontal ruler to a different position.

# Using Indents

You can set or modify a first line indent, right indent, left indent and hanging indent of a paragraph by using the [horizontal ruler](#), [dialog box](#), [Increase/Decrease Indent buttons](#) or [context menu](#).

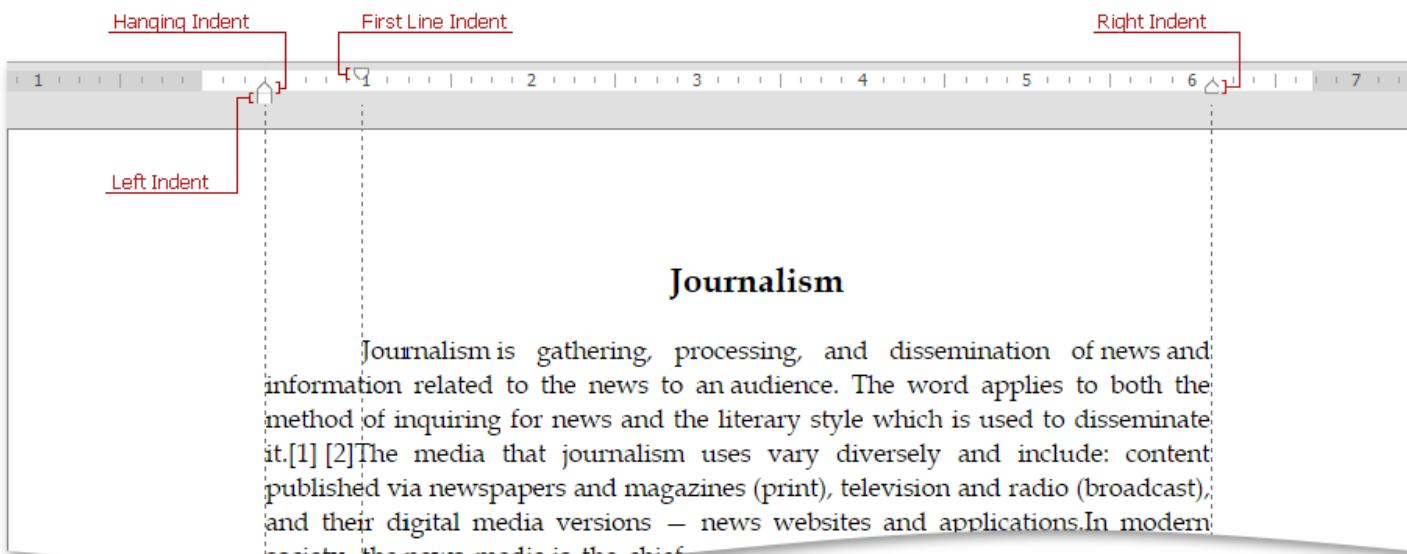


Press TAB to create the first line indent on the keyboard. Each pressing the TAB key moves the first line indent to 0,5 inch.



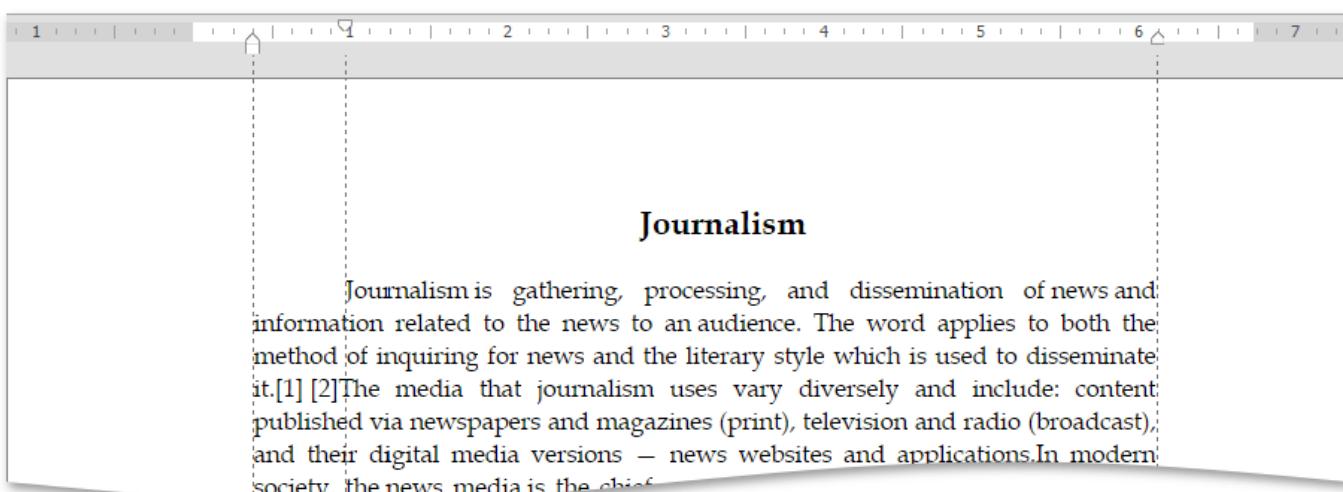
## Changing Indents by Using the Ruler

**Rich Text Editor** provides indent markers of the following types.



To set or modify indents by using the ruler, do the following:

- Click anywhere in a paragraph that will be formatted or select one or more paragraphs.
- Move an indent marker to a specific position on the ruler.



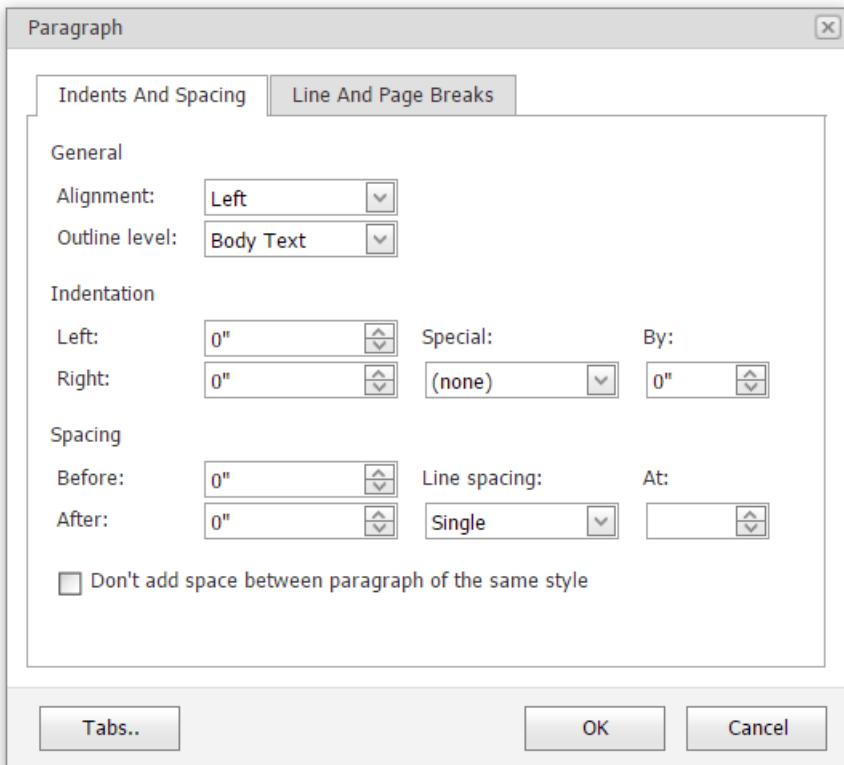
## Changing Indents by Using the Dialog Box

To set or modify indents by using the dialog box, do the following:

- Click anywhere within a paragraph that will be formatted or select one or more paragraphs.
- Select the **Page Layout** tab, and click in the right bottom corner of the **Paragraph** group.



Specify indents settings within the invoked **Paragraph** dialog box and click **OK**.



## Changing Indents by Using Increase/Decrease Indent Buttons

To set or modify indents by using the **Increase/Decrease Indent** buttons, do the following:

- Click anywhere within a paragraph that will be formatted or select one or more paragraphs.
- Select the **Home** tab, and click the **Increase Indent** or **Decrease Indent** button in the **Paragraph** group. **Increase Indent** and **Decrease indent** buttons increases and decreases the indent by increments of 0.5 inch respectively.

Journalism

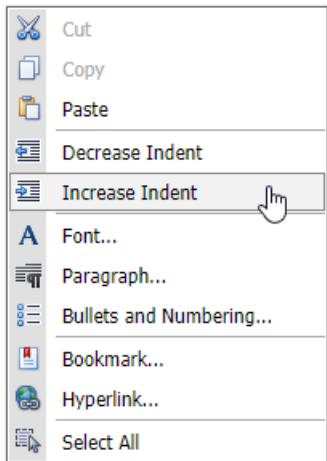
Journalism is gathering, processing, and dissemination of news and information to the news to an audience. The word applies to both the method of inquiring f and the literary style which is used to disseminate it.[1] [2]The media that journal vary diversely and include: print media, electronic media, and new media.

## Changing Indents by Using Context Menu

To set or modify indents by using the context menu, do the following:

- Right-click anywhere within a paragraph that will be formatted or select one or more paragraphs.

- In the invoked menu click the **Increase Indent**  or **Decrease Indent**  command. **Increase Indent** and **Decrease Indent** commands increase and decrease the indent by increments of 0.5 inch respectively.



# Apply Predefined Styles

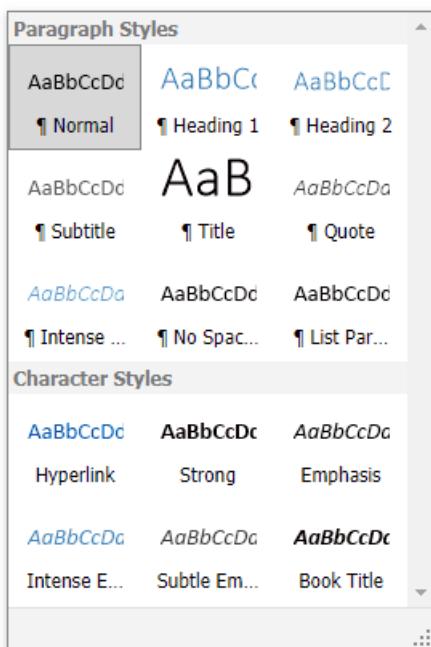
To format a text or a paragraph you can apply styles. A style is a group of formatting characteristics. All these characteristics are applied to a text or a paragraph at once when you apply a style. Thus, styles allow you to change text and paragraph appearance more quickly than setting all formatting characteristics separately ([Format Text](#), [Format Paragraphs](#)).

A **character based style** includes characteristics to format text within a paragraph (e.g., font type and size, bold and italic formats, etc.)

A **paragraph based style** affects paragraph formatting characteristics such as text alignment, line spacing, etc. It can also include character formatting characteristics.

To apply a style, do the following.

1. [Select text](#) or a paragraph that you want to format.
2. Click the required style name in the **Styles** box in the **Styles** group within the **Home** tab.

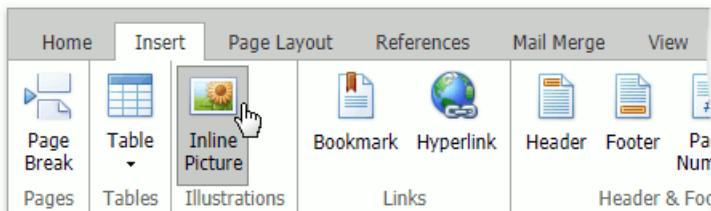


# Insert, Select, Copy or Delete a Picture or Text Box

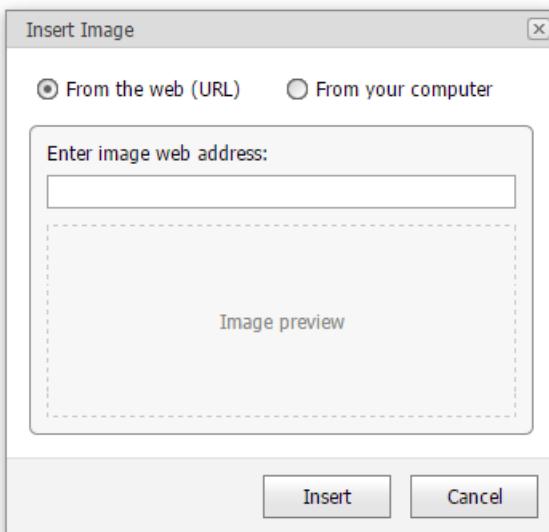
You can insert floating [images](#) or [text boxes](#) and [select](#) them for [copying](#) or [deleting](#).

## Insert a Picture

Position the caret to the desired location and click the **Inline Picture** button in the **Insert** tab's **Illustrations** group to insert an inline picture into the document.



In the invoked **Insert Image** dialog box, enter an image's web address (to load a picture from the web) or locate the required folder and select a file with graphics (to load pictures from your computer). Click **Insert** to insert the picture into the document.

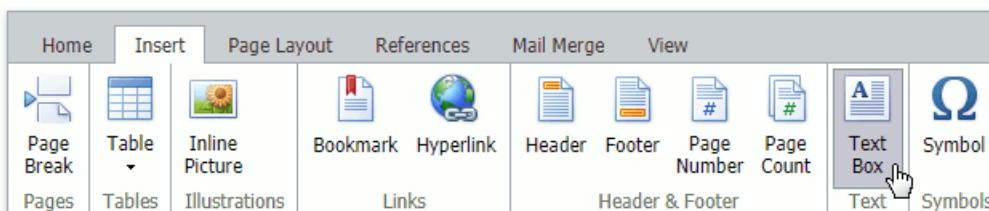


The **Rich Text Editor** enables you to insert graphics of the following types:

- JPEG File Interchange Format (\*.jpe, \*.jpg, \*.jpeg)
- Portable Network Graphics (\*.png)
- Graphics Interchange Format (\*.gif)

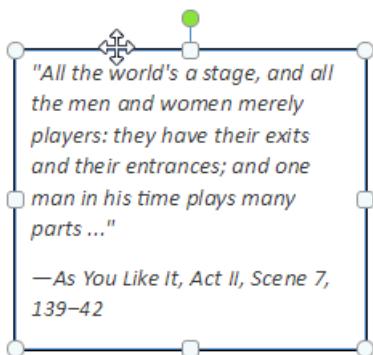
## Insert a Text Box

Position the caret at the desired location and click the **Text Box** button in the **Insert** tab's **Text** group to insert a text box into your document.



## Select a Picture or Text Box

Click a picture/text box's border to select it.



#### ■ Note

Place the caret inside the text box to modify its content. Note that it is impossible to move, copy or delete the text box.

## Copy/Paste a Picture or Text Box

To copy floating images and text boxes within a document, do the following:

1. **Select** a picture/text box to be copied.
2. On the **Home** tab, in the **Clipboard** group, click **Copy**, or select it from the context menu, or press CTRL+C.
3. Position the caret at the location for inserting the copied picture/text box.
4. On the **Home** tab, in the **Clipboard** group, click **Paste**, or select it from the context menu, or press CTRL+V.

To delete an image or text box follow the instructions below.

## Delete a Picture or Text Box

1. **Select** a picture/text box.
2. Press DELETE or BACKSPACE.

# Move a Picture or Text Box

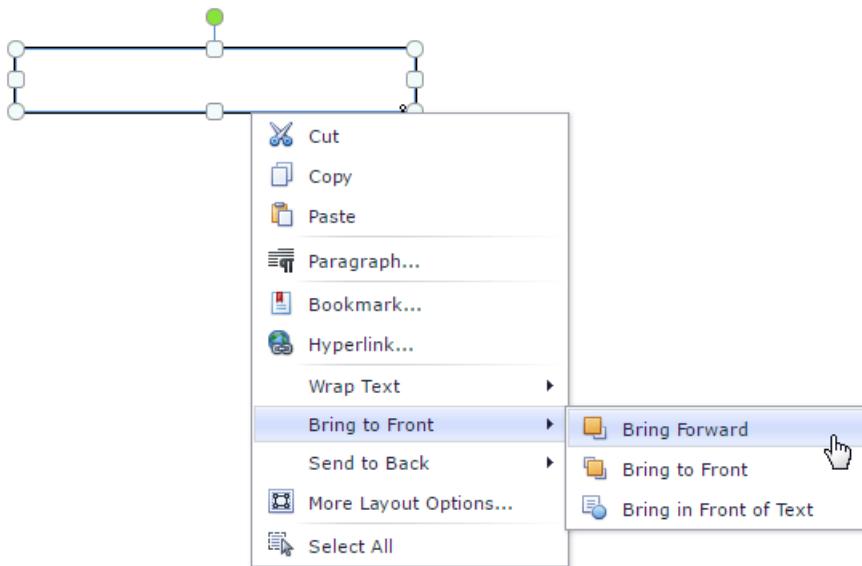
## Move a Picture or Text Box

1. Select a floating picture or text box that you wish to move.
2. Drag the object to the new location.

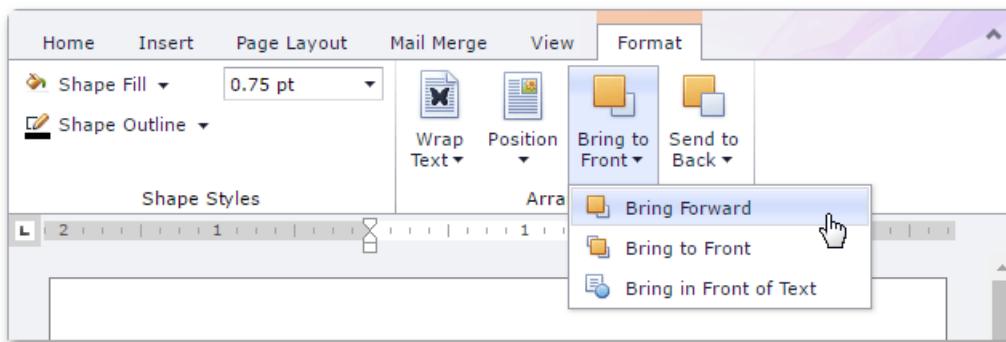
## Move a Picture or Text Box Forward or Backward

When you add floating objects into a document, they are automatically inserted in particular layers. Objects can overlap. In this case, the top object covers lower objects (in full or in part). You can move particular objects up and down in a stack one layer at a time, or move them to the top or bottom of a stack in one click.

1. Select a floating picture or text box that you wish to move up or down in the stack.
2. Select the required item from the floating object's context menu...



... or Format tab.

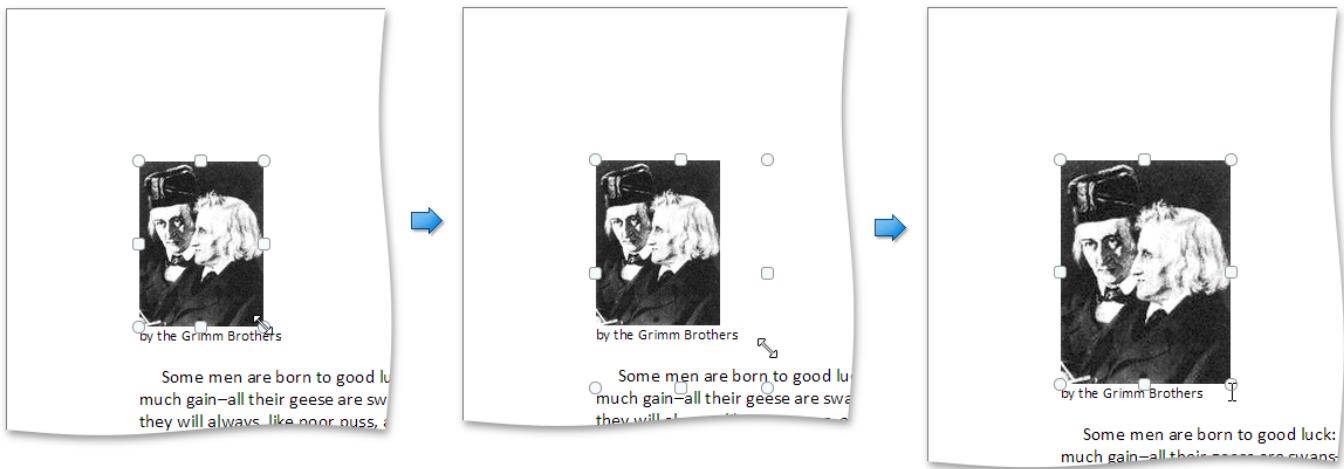


3. To move the selected floating object one layer forward to the front, click **Bring to Front -> Bring Forward**.
4. To move the selected floating object in front of the text layer and any other floating objects, **Bring to Front -> Bring to Front**.
5. To move the selected floating object in front of the text layer, click **Bring to Front -> Bring in Front of Text**.
6. To move the selected floating object one layer forward to the back, click **Send to Back -> Send Backward**.
7. To move the selected floating object behind the text or any other floating object, click **Send to Back -> Send to Back**.
8. To move the selected floating object behind the text layer, click **Send to Back -> Send Behind Text**.

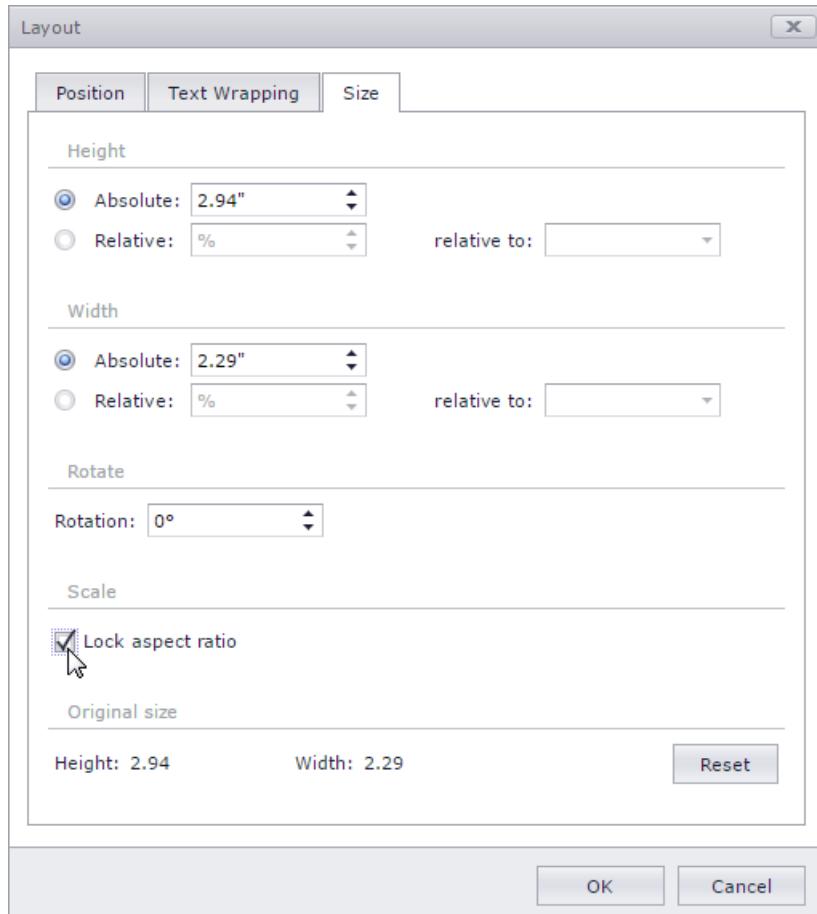
# Resize a Picture or Text Box

To resize a picture or text box, shrink or stretch an object in the following way.

1. [Select](#) a floating picture or text box to be resized.
2. Drag a *sizing handle* towards or away from the object center until the required size is reached. Note that an object keeps its proportions during resizing.



To keep object proportions when resizing it, check the **Lock aspect ratio** option (to access it, open the context menu of the floating object, select **More Layout Options...**, then open the **Size** tab in the invoked **Layout** dialog. In this case, when you change a width of the object by dragging a *corner sizing handle*, the object's height will be automatically changed to maintain exact proportions of the object and vice-versa.



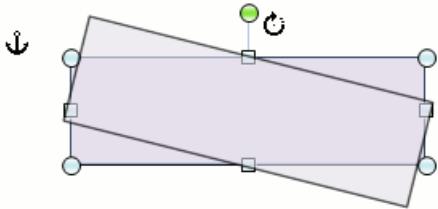
To specify an exact height and width of the object, clear the **Lock aspect ratio** check box.

# Rotate a Picture or Text Box

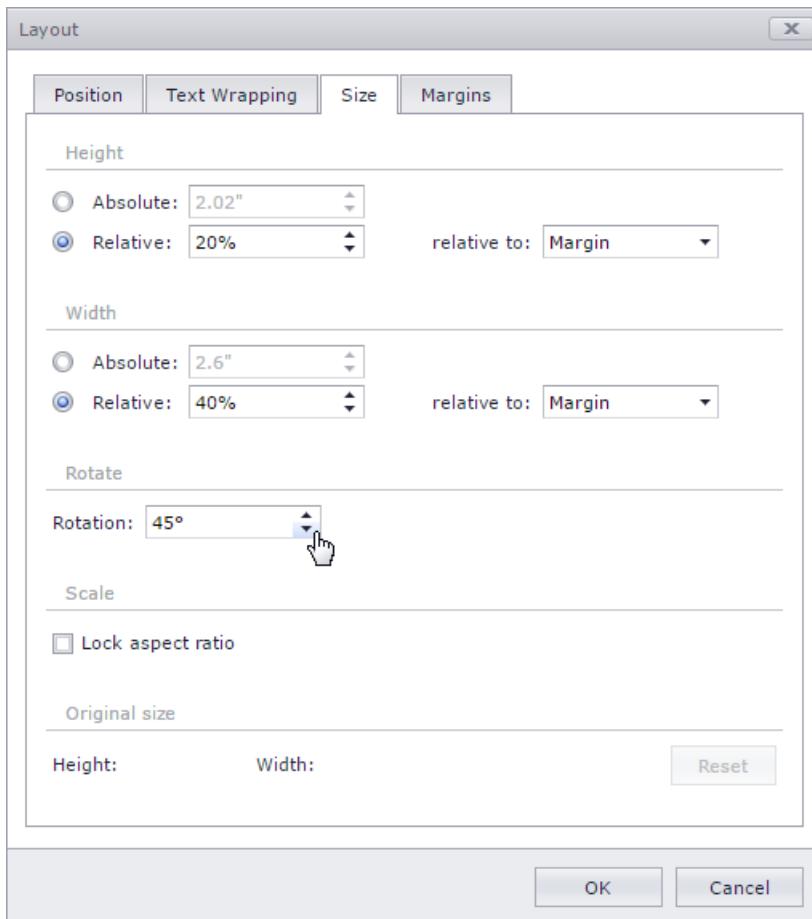
1. Select the floating picture or text box that you wish to rotate.

2. Do one of the following.

- Click the round arrow that appears over the selected floating picture or text box and drag it in the direction to which you wish to rotate the object.



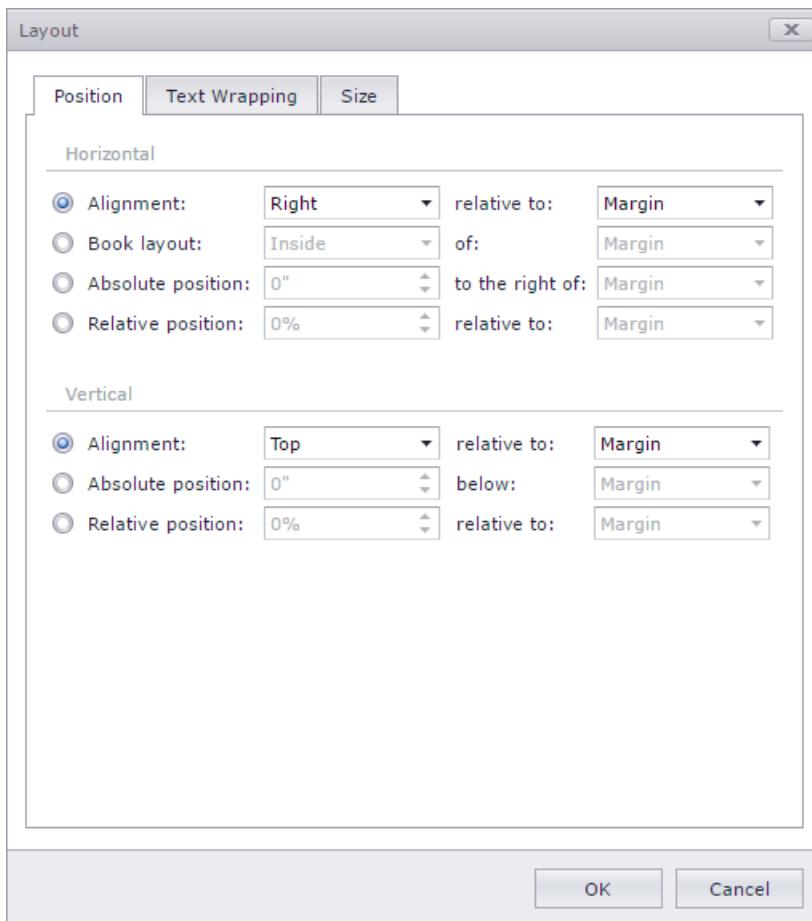
- Right-click a picture or text box to be rotated and select the **More Layout Options...** item from the context menu. Switch to the **Size** tab in the invoked **Layout** dialog and set the required value of the angle to rotate the object in the **Rotation** box.



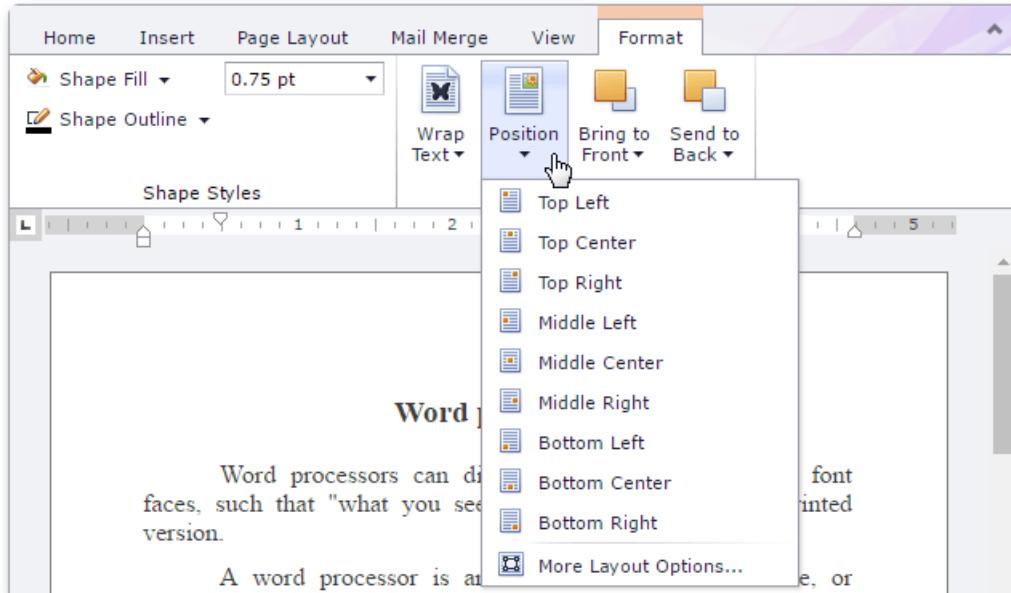
# Wrap Text Around a Picture or Text Box

## Position a Picture or Text Box within a Document

1. [Select](#) a floating picture or text box whose location you want to specify.
2. Specify an object location in one of the following ways.
  - o On the **Format** tab, in the **Arrange** group, click the **Position** button and select the required position of the object from the invoked list.

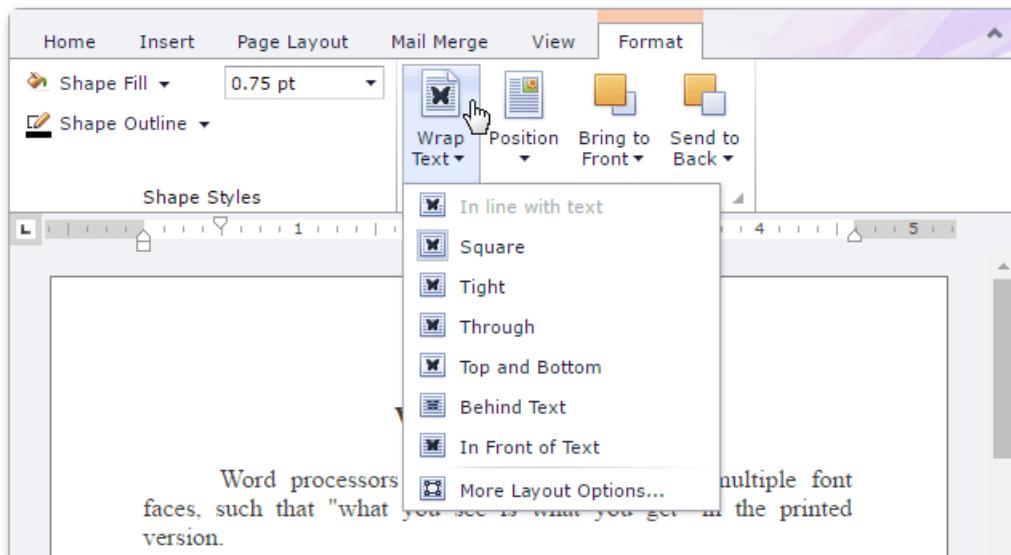


- o Right-click the object to be positioned and select the **More Layout Options...** item from the context menu. On the **Position** tab of the invoked **Layout** dialog, specify the required position for the floating object.

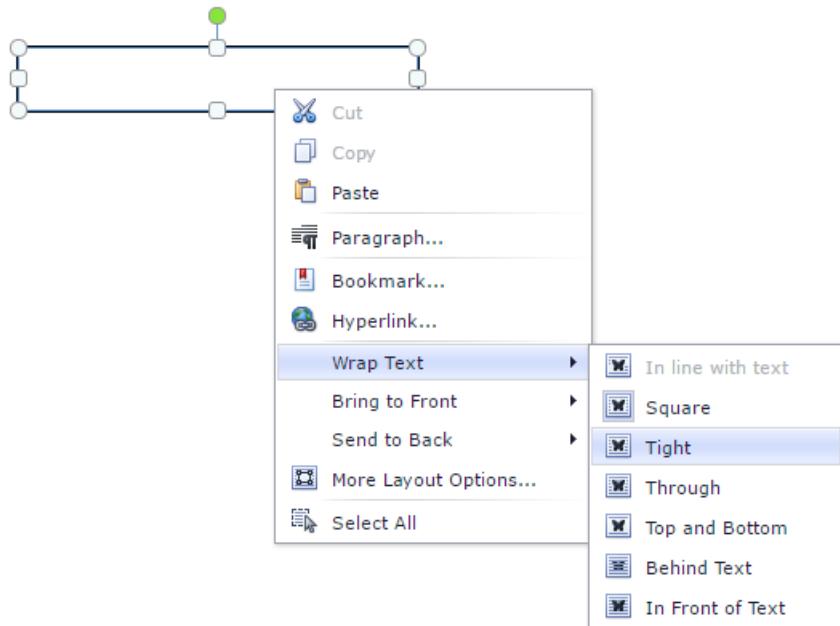


## Wrap Text around Picture or Text Box

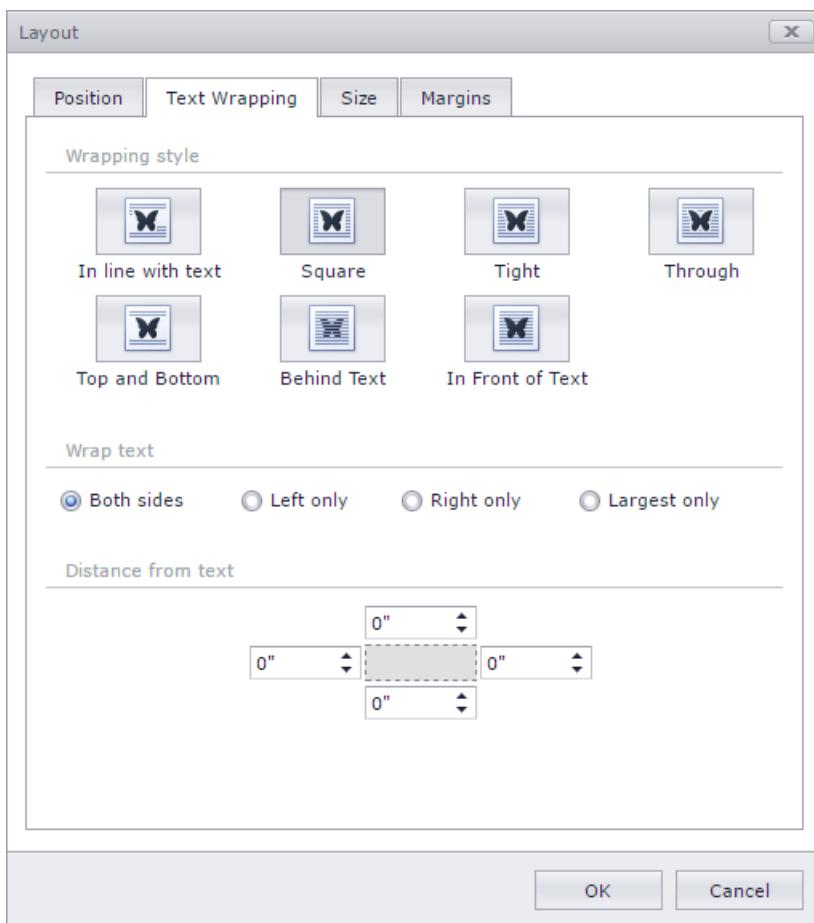
1. Select a floating picture or a text box.
2. To specify a way text wraps around the selected object, do one of the following.
  - o On the **Format** tab, in the **Arrange** group, click **Wrap Text** and select the required type of text wrapping around the selected object from the invoked list.



- o Right-click the selected floating object, and select the required type of the text wrapping from the **Wrap Text** submenu of the invoked context menu.



- Right-click the selected floating object, and select the **More Layout Options...** item from the context menu. Switch to the **Text Wrapping** tab of the invoked **Layout** dialog and specify the required text wrapping settings for the floating object.

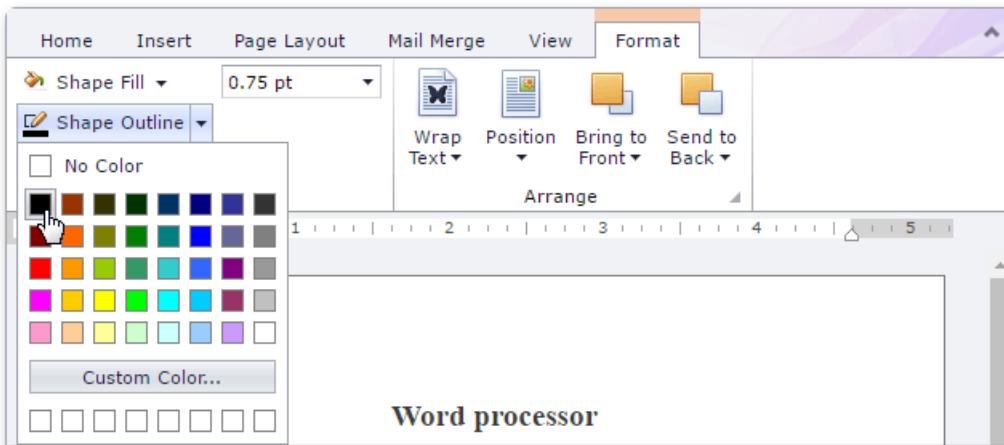


# Add, Change or Delete a Border for a Picture or Text Box

You can specify the color and weight of the outside border of a floating picture or text box, or fully delete the border.

## Set the Color of a Picture or Text Box Border

1. Select the floating picture or text box whose outline border color you wish to specify.
2. On the **Format** tab, in the **Shape Styles** group, click **Shape Outline** and select the required color.

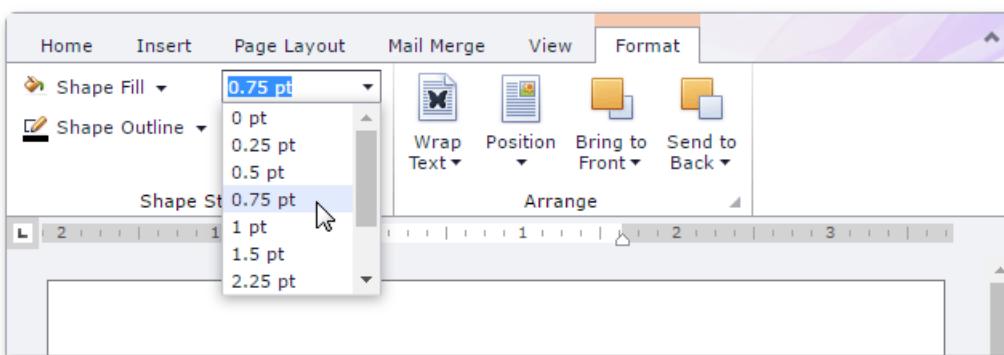


### ■ Note

By default, a floating picture is inserted with no border. To specify a colored outline border for a picture, a border weight must be set.

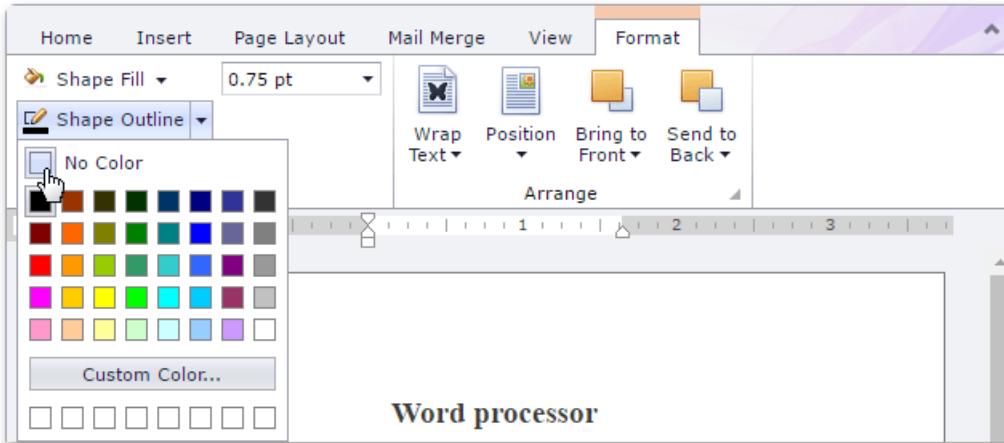
## Set the Weight of a Picture or Text Box Border

1. Select a floating picture or text box whose outline border weight you wish to specify.
2. Select the required border weight from the **Shape Outline Weight** list accessed on the **Format tab**, in the **Shape Styles** group.



## Remove a Picture or Text Box Border

1. Select a floating picture or text box whose outline border you wish to remove.
2. On the **Format** tab, in the **Shape Styles** group, click **Shape Outline** button and select **No Color**.

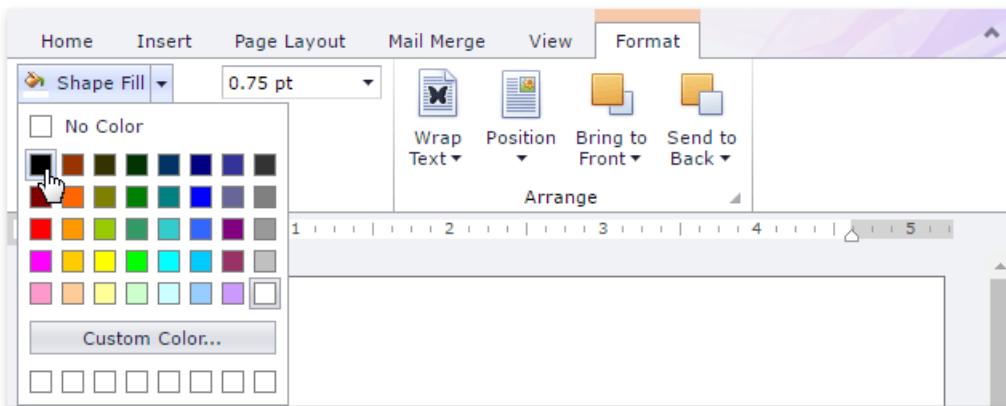


# Add, Change or Delete a Text Box Fill

You can fill the floating text box with a specified color or delete the filling

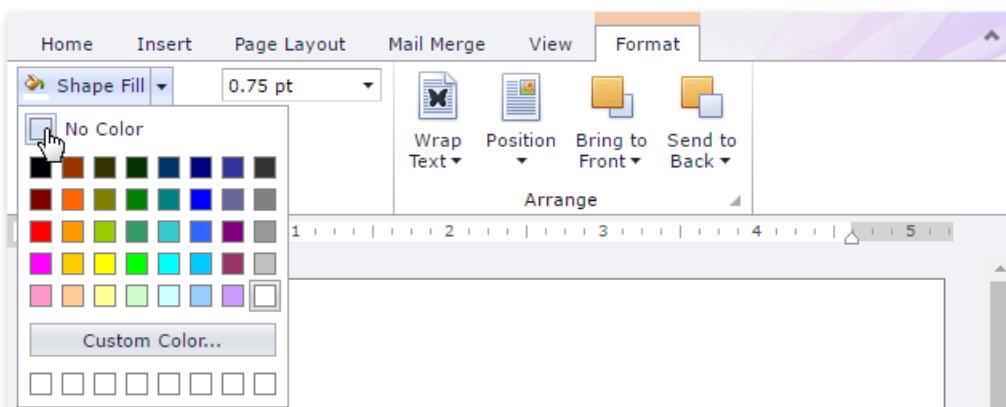
## Specify a Text Box Fill

1. [Select](#) a text box whose background you wish to color.
2. On the **Format** tab, in the **Shape Styles** group, click the **Shape Fill** button and select the required color.



## Delete a Text Box Fill

1. [Select](#) a text box whose fill you wish to remove.
2. On the **Format** tab, in the **Shape Styles** group, click **Shape Fill** button and select **No Color**.

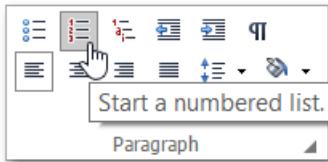


# Numbered Lists

## Create a Numbered List as You Type

1. Point to the position within a document from which you want to begin your list.

2. Click the **Numbering**  button in the **Paragraph** group in the **Home** tab.



3. Type the text.

4. Press ENTER to create the next item of the list.

5. To finish the list, press ENTER twice.

## Make a Numbered List from the Selected Text

You can add numbers to existing lines of text in two ways. The first one is to use the **Paragraph** group in the **Home** tab:

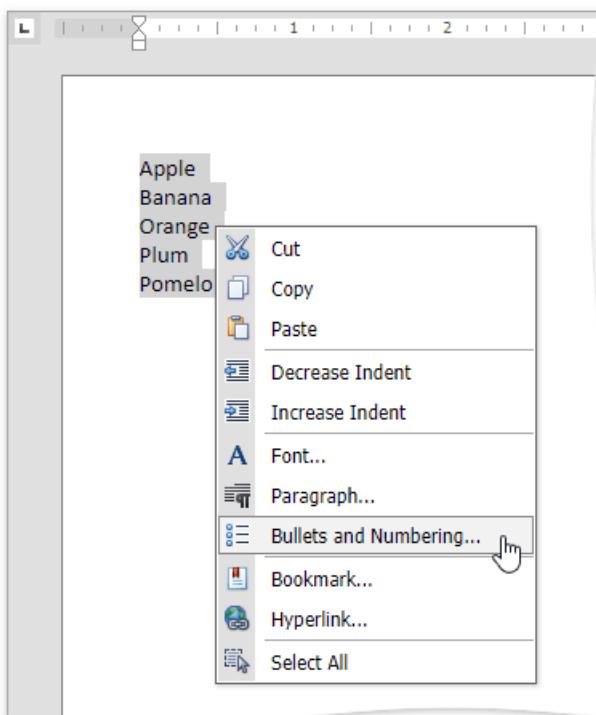
1. Select the text lines that you want to transform into a list.

2. Click the **Numbering**  button in the **Paragraph** group within the **Home** tab.

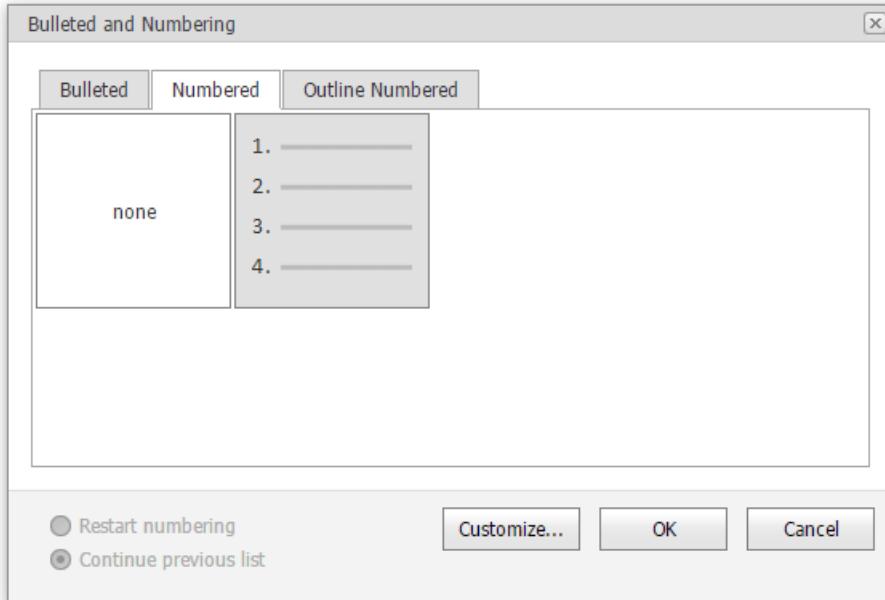
Another way to do the same thing is to use the [context menu](#):

1. Select the text to be transformed into a list.

2. Right-click in the document and select the **Bullets and Numbering** item from the appeared context menu.



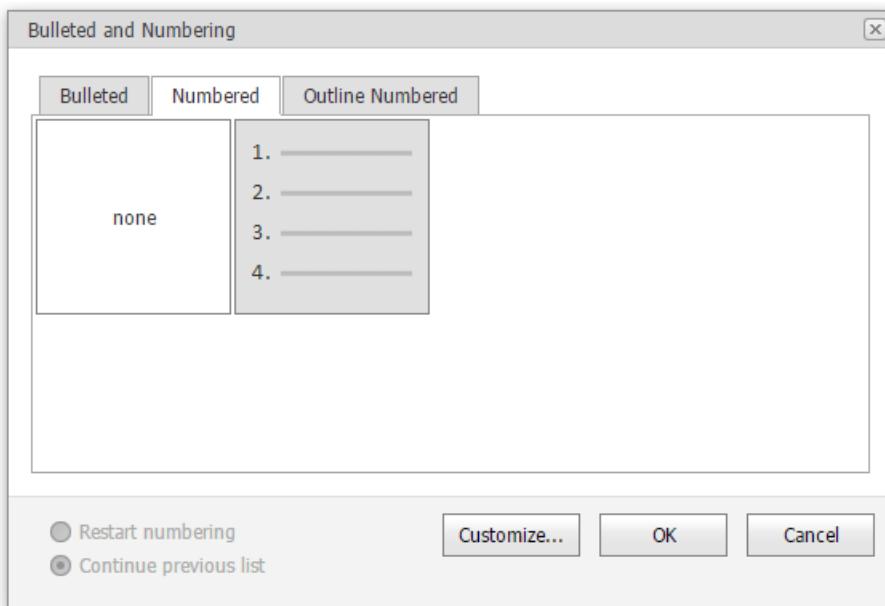
3. In the invoked **Bulleted and Numbering** dialog, click the **Numbered** tab and choose the list style that you want to apply.



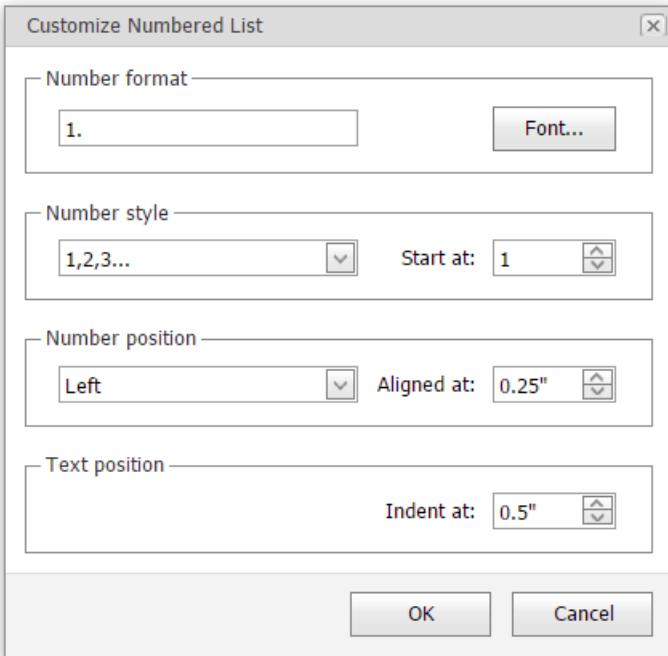
## Create Your Own List Style

You can create your own style for a numbered list on the basis of one of the existing list styles, by changing different list parameters.

1. Select the numbered list (or text to be transformed into the numbered list) to which you want to apply your own style.
2. Right-click in the document and select the **Bullets and Numbering** item from the invoked [context menu](#). The **Bullets and Numbering** dialog will be displayed.



3. Click the **Numbered** tab, choose one of the existing styles and click **Customize...**. The **Customize Numbered List** dialog will be invoked.

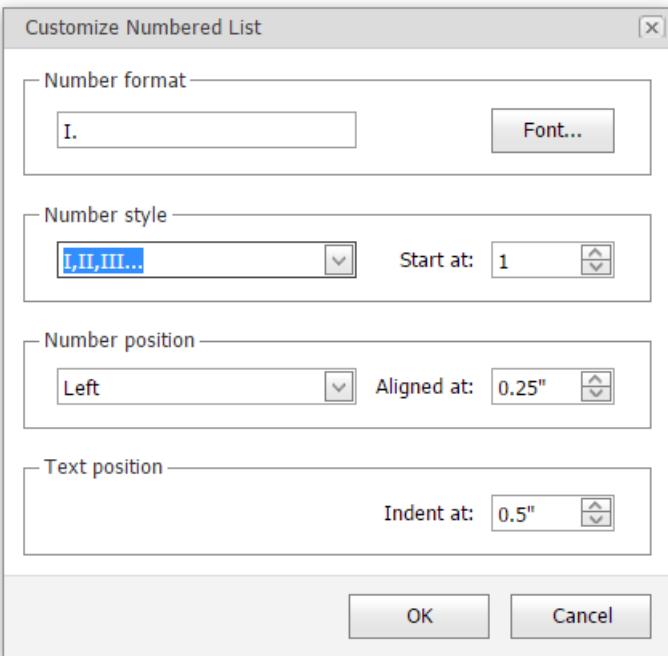


#### ■ Note

The **Customize...** button is disabled if the **None** item of the **Bullets and Numbering** dialog is selected.

4. In this dialog, change different list parameters to create your own list style.

For instance, if you specify list parameters in the following way,...



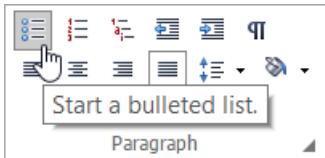
...you will get the list style as illustrated below.

- I. Apple
- II. Banana
- III. Orange
- IV. Plum
- V. Pomelo

# Bulleted Lists

## Create a Bulleted List as You Type

1. Point to the position in a document from where you want to begin your list.
2. Click the **Bullets**  button in the **Paragraph** group within the **Home** tab.



3. Type the text.
4. Press ENTER to create the next item in the list.
5. To finish the list, press ENTER twice.

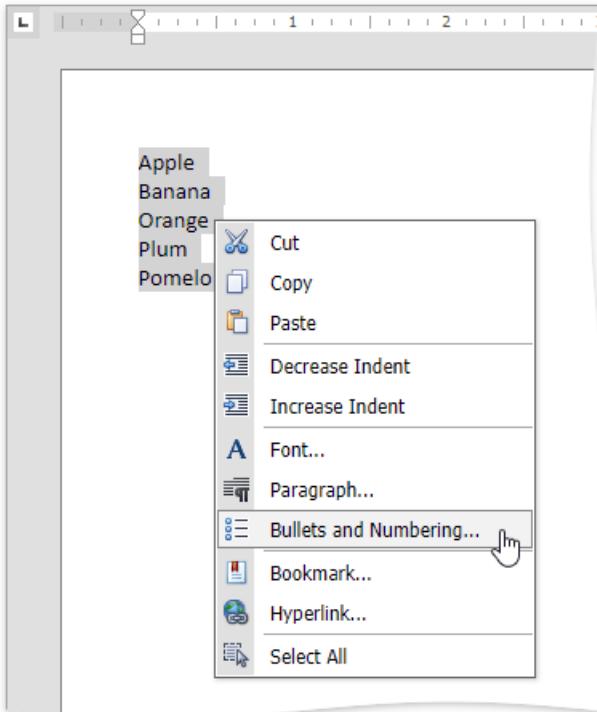
## Make a Bulleted List from the Selected Text

You can add bullets to existing lines of text in two ways. The first method is to use the **Paragraph** group within the **Home** tab:

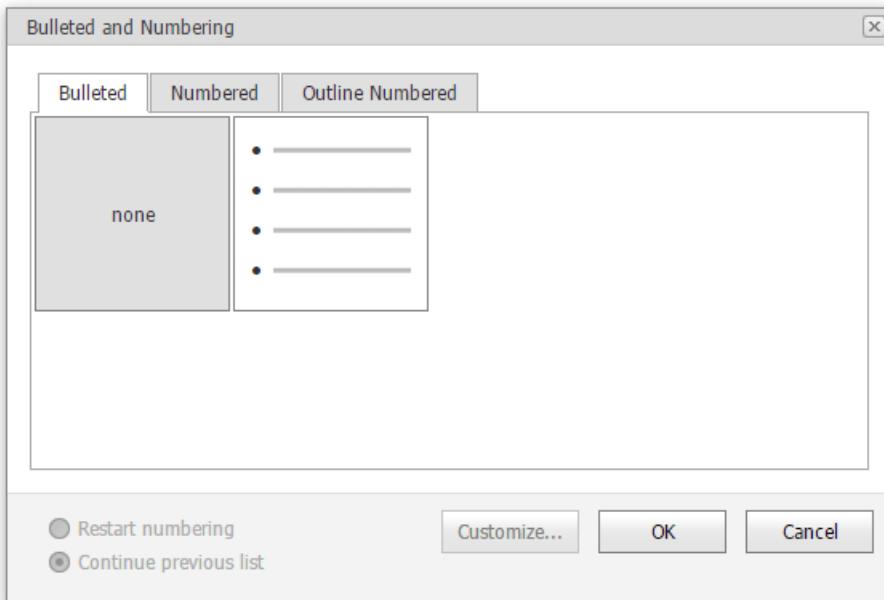
1. Select the text lines that you want to transform into a list.
2. Select the **Home** tab, and click the **Bullets**  button in the **Paragraph** group.

Another way to do the same thing is to use the [context menu](#):

1. Select the text to be transformed into a list.
2. Right-click within the document and select the **Bullets and Numbering** item from the invoked context menu.



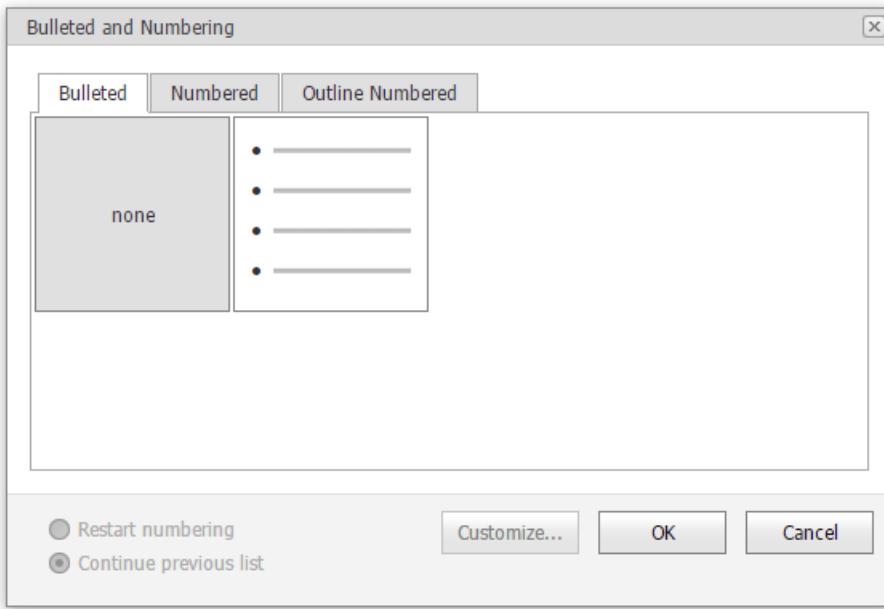
3. In the invoked **Bullets and Numbering** dialog, click the **Bulleted** tab and choose the list style that you want to apply.



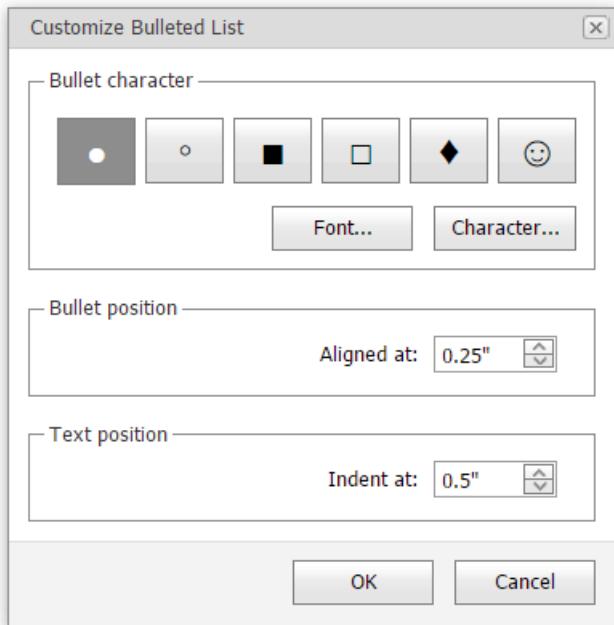
## Create Your Own List Style

You can create your own style for a bulleted list on the basis of one of the existing list styles, by changing various list parameters.

1. Select the bulleted list (or text to be transformed into the bulleted list) to which you want to apply your own style.
2. Right-click within the document and select the **Bullets and Numbering** item from the resulting [context menu](#). The **Bullets and Numbering** dialog will be displayed.



3. Click the **Bulleted** tab, choose one of the existing styles and click **Customize...**. The **Customize Bulleted List** dialog will be invoked.

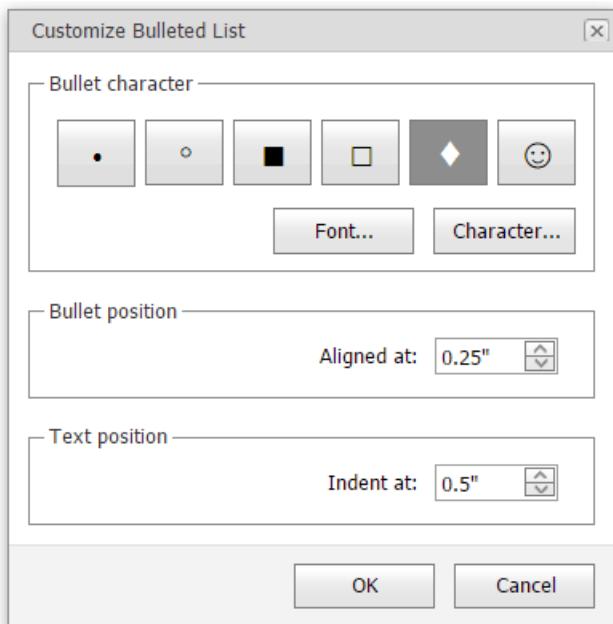


■ Note

The **Customize...** button is disabled if the **None** item of the **Bullets and Numbering** dialog is selected.

4. In this dialog, change different list parameters to create your own list style.

For instance, if you specify list parameters in the following way,...

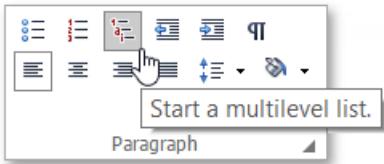


...you will get the list style as illustrated below.

- ◆ Apple
- ◆ Banana
- ◆ Orange
- ◆ Plum
- ◆ Pomelo

# Multilevel Lists

## Create a Multilevel List as You Type

1. In the document, point to the position at which you want to begin your list.
2. Select the **Home** tab, and click the **Multilevel list**  button in the **Paragraph** group.  


The screenshot shows the Microsoft Word ribbon with the "Home" tab selected. In the "Paragraph" group, the "Multilevel list" button is highlighted with a blue border. A tooltip below it says "Start a multilevel list."
3. Type the text.
4. To change list levels, press TAB and SHIFT+TAB, or click the **Increase Indent**  and **Decrease Indent**  buttons in the **Paragraph** toolbar in the **Home** tab. Press ENTER to create the next item on the current level.
5. To finish the list, press ENTER twice.

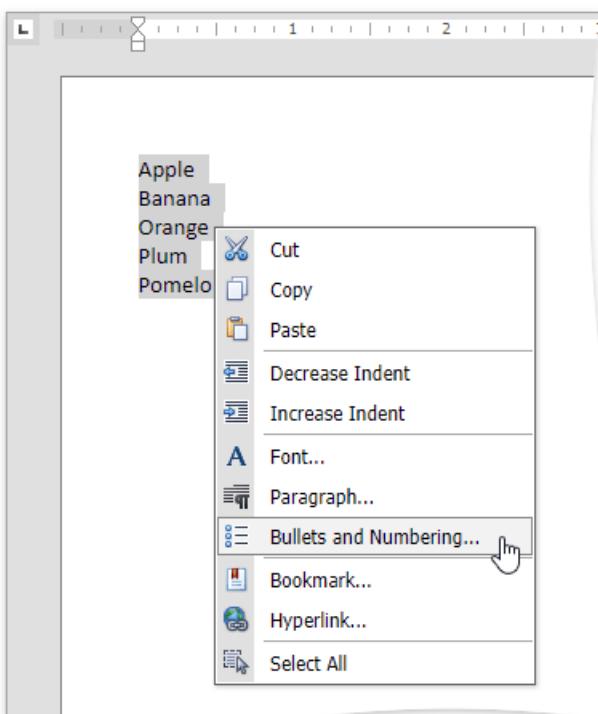
## Make a Multilevel List from the Selected Text

You can make a multilevel list from existing lines of text in two ways. The first one is to use the **Paragraph** group in the **Home** tab.

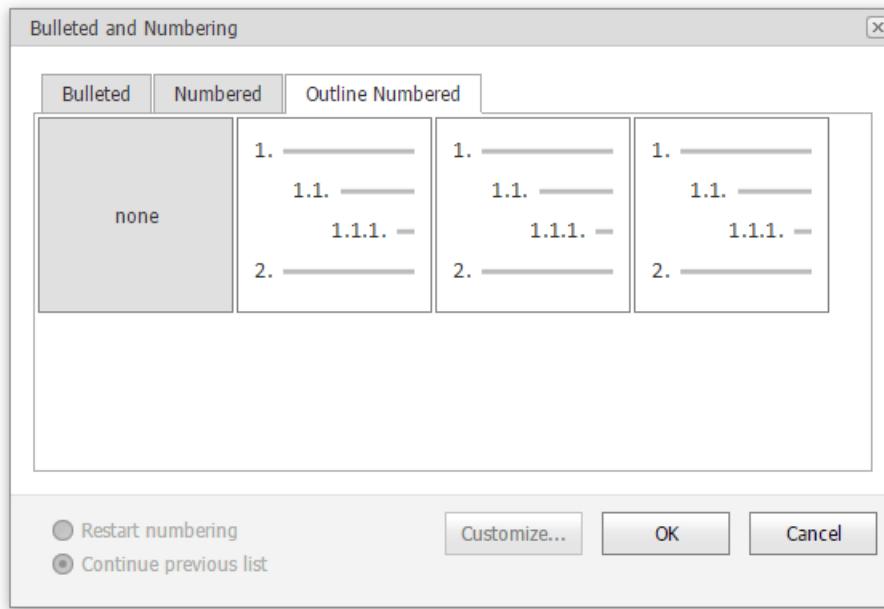
1. Select the text lines that you want to transform into a list.
2. Select the **Home** tab, and click the **Multilevel list**  button in the **Paragraph** group.
3. Use TAB and SHIFT+TAB, or the **Increase Indent**  and **Decrease Indent**  buttons of the **Paragraph** group in the **Home** tab to change levels.

Another way to do the same thing is to use the [context menu](#):

1. Select the text to be transformed into a list.
2. Right-click in the document and select the **Bullets and Numbering** item from the invoked context menu.



3. In the invoked **Bullets and Numbering** dialog, click the **Outline Numbered** tab and choose the list style that you want to apply.

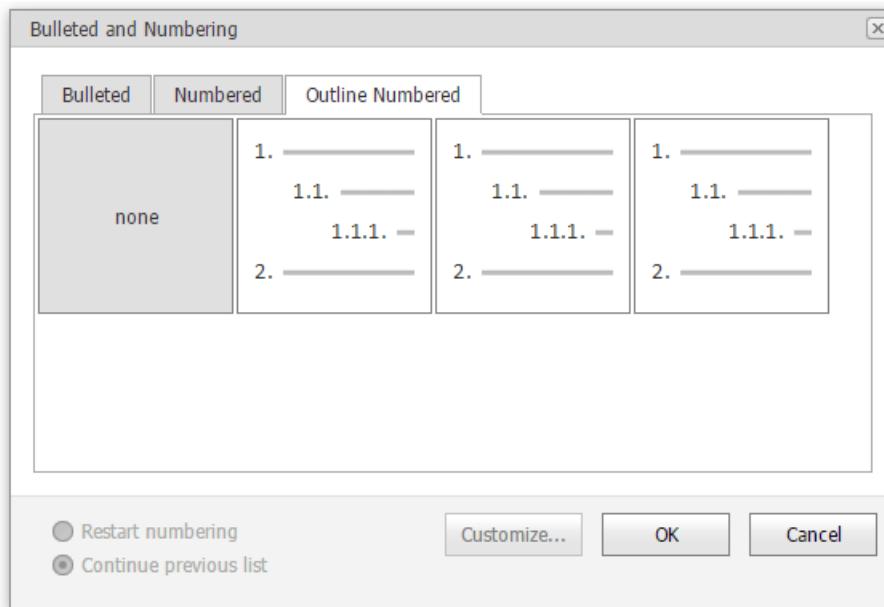


4. Use TAB and SHIFT+TAB, or the **Increase Indent** and **Decrease Indent** buttons of the **Paragraph** group in the **Home** tab to change levels.

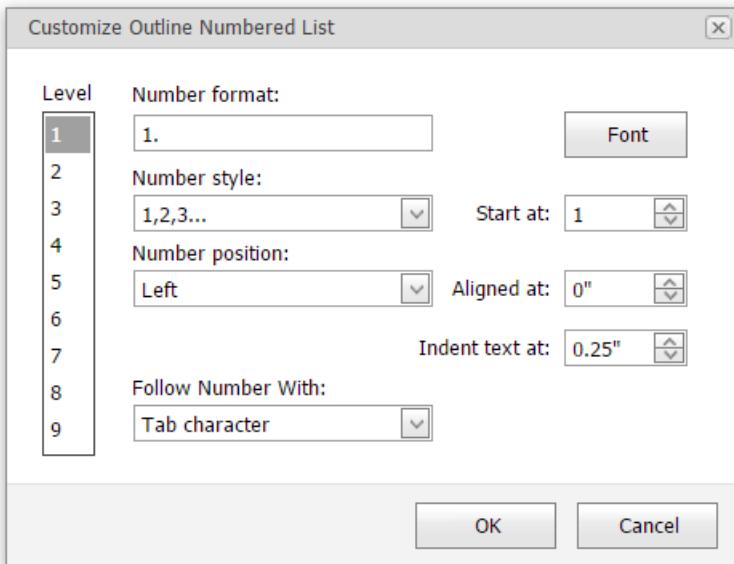
## Create Your Own List Style

You can create your own style for a multilevel list on the basis of one of the existing list styles, by changing different list parameters.

1. Select the multilevel list (or text to be transformed into the multilevel list) to which you want to apply your own style.
2. Right-click in the document and select the **Bullets and Numbering** item from the resulting [context menu](#). The **Bullets and Numbering** dialog will be displayed.



3. Click the **Outline Numbered** tab, choose one of the existing styles and click **Customize...**. The **Customize Outline Numbered List** dialog will be invoked.

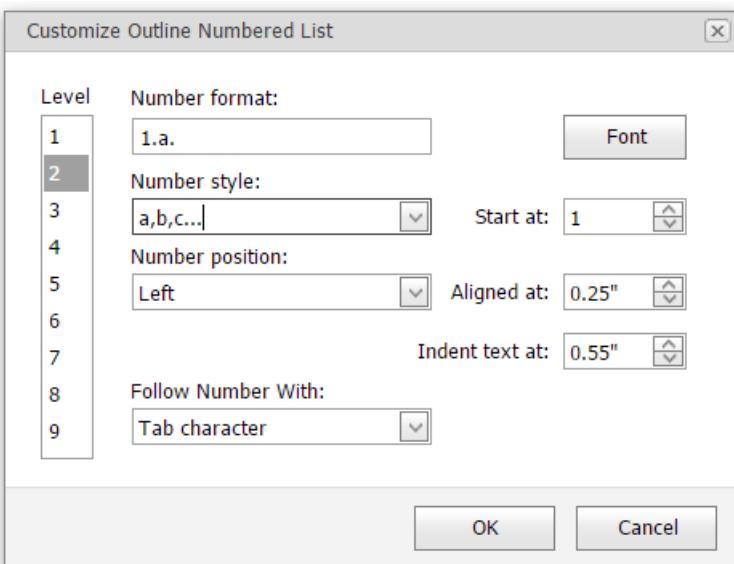


#### ■ Note

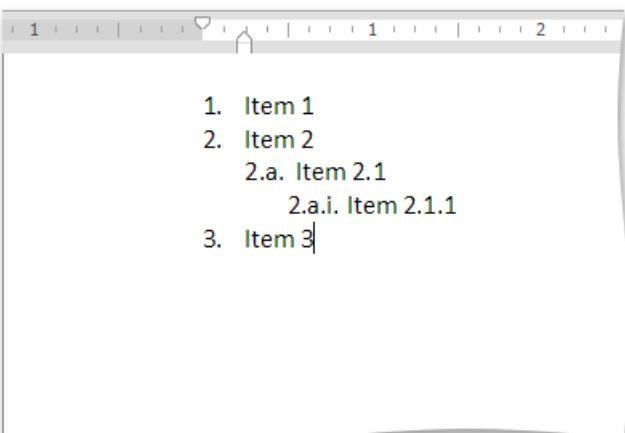
The **Customize...** button is disabled if the **None** item of the **Bullets and Numbering** dialog is selected.

4. In this dialog, change different list parameters to create your own list style.

For instance, if you specify list parameters in the following way,...



...you will get the list style as illustrated below.

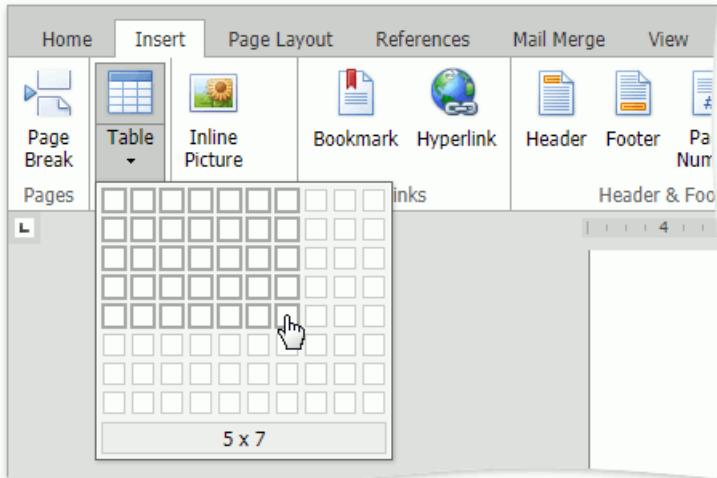


5. Use TAB and SHIFT+TAB, or the **Increase Indent**  and **Decrease Indent**  buttons of the **Paragraph** toolbar to change levels.

# Tables

You can create and edit tables in documents.

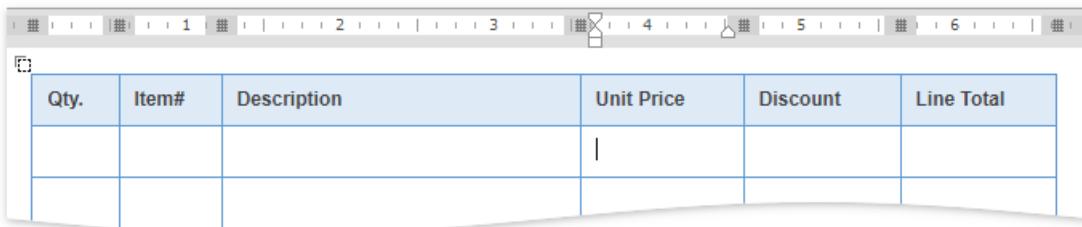
Click the **Table** button in the **Insert** tab and select the table size in the drop-down box.



## Resize Table Element

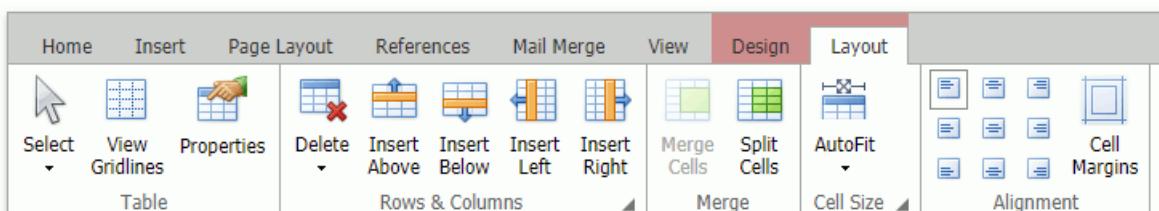
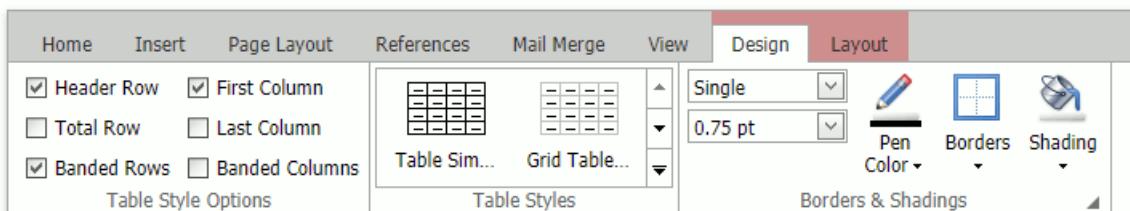
Drag cell borders to change column widths or row heights.

You can use [ruler](#) markers to resize columns.



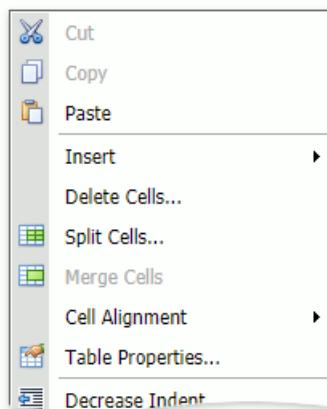
## Context Tabs

Use buttons in the **Design** and **Layout** context tabs to customize a table's design and layout settings. These tabs appear when a pointer is in a table element.



## Context Menu

Right-click a table element to display a context menu. You can use the menu's commands to modify the table's properties and layout.



## Keyboard Navigation

You can use arrow keys or press TAB and TAB+SHIFT to navigate through cells. Press SHIFT with the arrow keys to select cells.

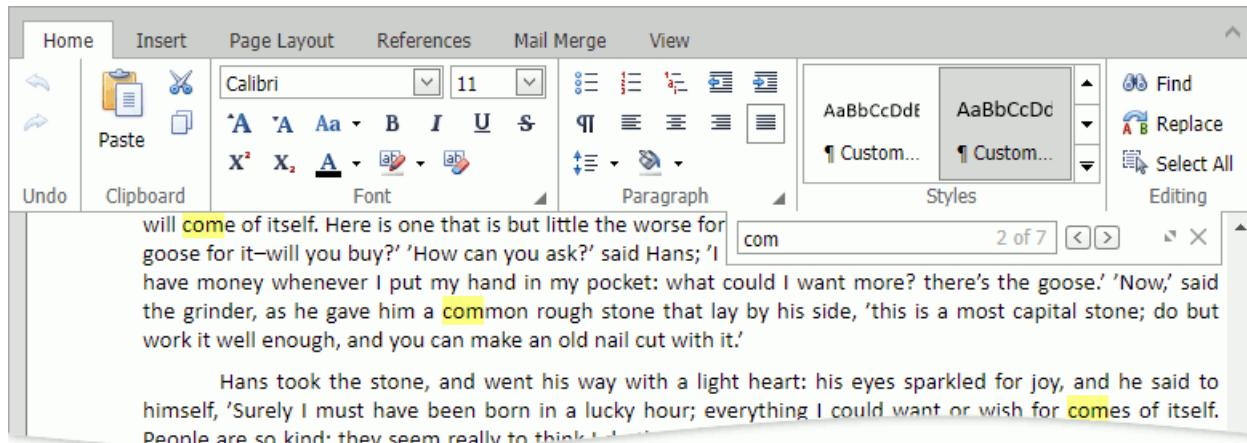
# Find and Replace

You can use the **Search Panel** and the **Find and Replace** dialog to locate and replace text within a document.

## Search Panel

The **Search Panel** allows you to search text and navigate through search results. To invoke the search panel, use the **Find** ribbon command or press CTRL+F.

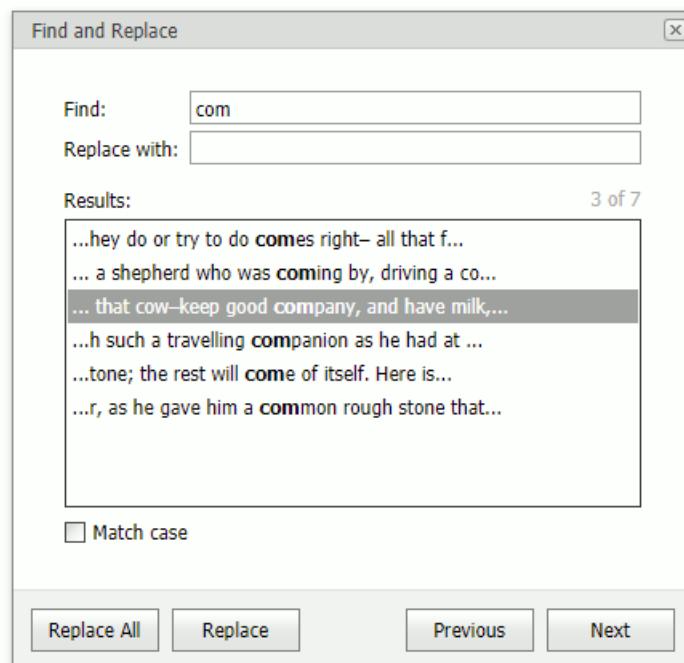
Type the search text in the panel edit box. Use the **Previous** and **Next** buttons to navigate through the results.



## Find and Replace Dialog

The **Find and Replace** dialog allows you to search text, navigate through search results, and replace this text in the results (one by one or all at once). To invoke the dialog, click the corresponding button in the **Search Panel**, click the **Replace** ribbon command, or press CTRL+H.

Type the search text in the **Find** edit box. Select the **Match case** checkbox for case-sensitive search. You can navigate through the results using the **Previous** and **Next** buttons or by selecting a result in the **Results** section.



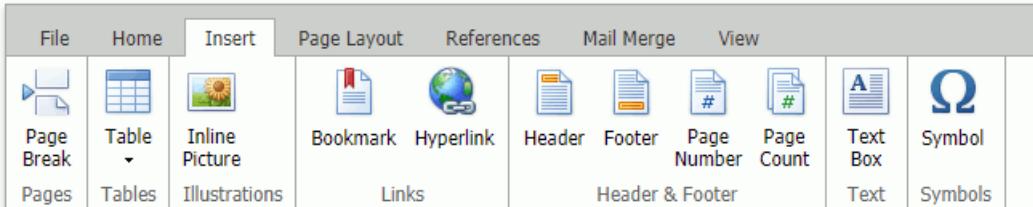
To replace a search result, specify the replacement text in the **Replace with** edit box, select a search result, and click **Replace**. To replace all the search results, click **Replace All**.

# Headers and Footers

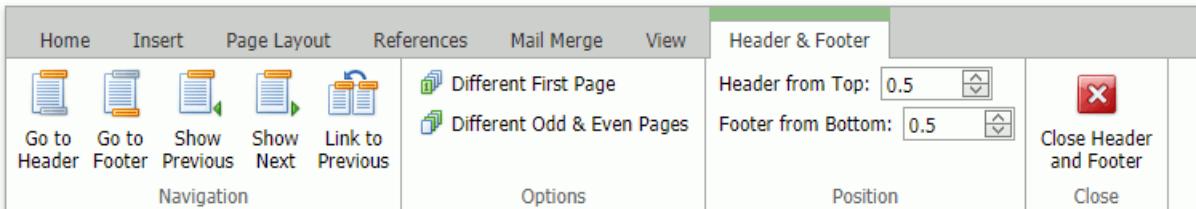
Headers and footers are areas at the top and bottom of a page. They can display text and graphics, for example, a company logo, the document title or the author's name.

## Insert a header or footer

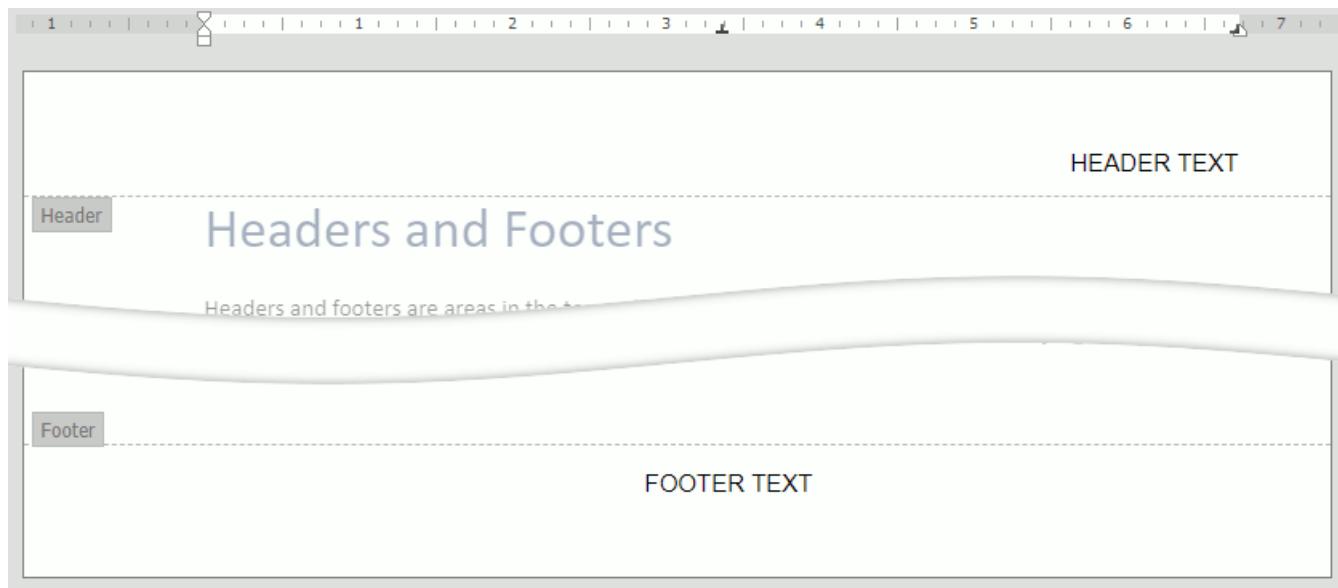
Click **Header** or **Footer** button in **Insert** tab's **Header & Footer** group to insert a header or footer.



The **Header & Footer** context tab appears.



Type text or insert graphics in **Header** and **Footer** document areas.



## Make the first page header or footer different from the rest of the pages

- Double click a header or footer area on the first document page.
- Select the **Different First Page** option in **Header & Footer** tab's **Options** group.
- Create a header or footer or make changes to the existing header or footer on the first page.

## Make the header or footer different in each section or chapter

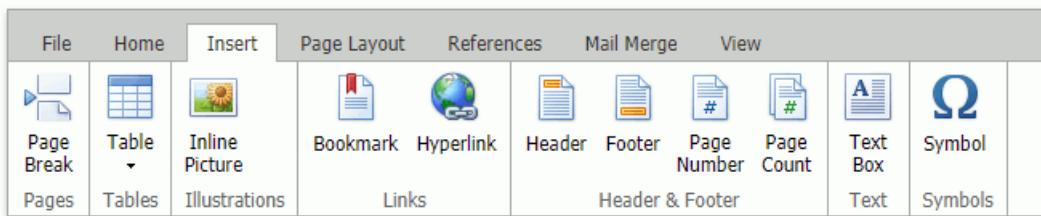
If a document contains several sections, you can modify header and footer content for each section.

- Click a section where you want to vary the header or footer.
- Click **Header** or **Footer** in **Insert** tab's **Header & Footer** group.
- The **Header & Footer** tab appears. Make sure that **Link to Previous** option is not selected to prevent the connection between the header or footer in this section and the previous section.
- Create a new header or footer or change the existing header or footer for this section. Click **Show Next** in the **Navigation** group to navigate to the header or footer in the next section.

Repeat the previous four steps for all of the sections in the document.

# Page Number and Count

Click the **Page Number** and **Page Count** buttons in **Insert** tab's **Header & Footer** group to add the page number and count.



The buttons add special placeholders (fields) that are replaced with actual data, when the document is rendered for display or printing.

To add page number and count to header or footer, do the following:

- Double click a header or a footer or [insert a new header or footer](#).
- Click the **Page Number** or **Page Count** button.
- Double-click outside the header and footer area or click the **Close Header and Footer** button in the **Header & Footer** context tab.

# Table of Contents

The Table of Contents allows you to navigate through a document's marked content (paragraphs, images, tables, and equations). Click a table's row while pressing CTRL to move to the heading or figure.

A screenshot of the Microsoft Word ribbon showing the 'References' tab selected. Below the ribbon, there are two sections: 'Table of Contents' and 'Table of Figures'. The 'Table of Contents' section displays a hierarchical table of contents with various headings and their page numbers. The 'Table of Figures' section displays a list of figures with their corresponding page numbers.

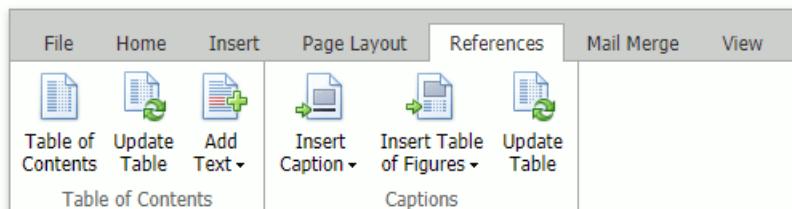
Table of Contents	
1	Introduction.....
2	Principles.....
3	Implementation.....
4	Evaluation.....
4.1	Hardware and Software Configuration.....
4.2	Experimental Results.....
5	Related Work.....
6	Conclusion.....

Table of Figures	
Figure 1:	The flowchart used by Ounce.....
Figure 2:	The relationship between Ounce and reliable methodologies.....
Figure 3:	These results were obtained by Sun and Kobayashi.....
Figure 4:	The 10th-percentile new.....

The **Table of Contents** lists a document's headings.

The **Table of Figures/Tables/Equations** lists document objects: figures, tables, or equations.

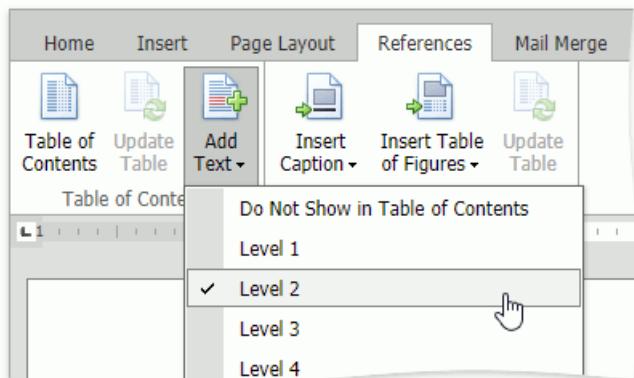
Use the **References** tab's buttons to manage the navigation tables, mark paragraphs as headings, add captions to objects, and update the tables.



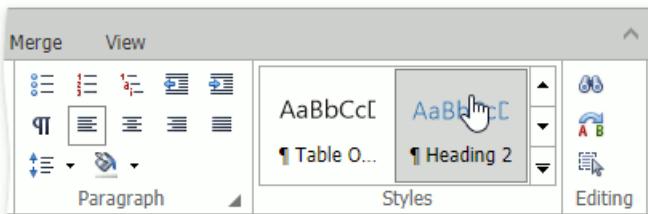
## Add a Heading to a Table of Contents

Select a heading text or place the pointer in a heading text and do one of the following:

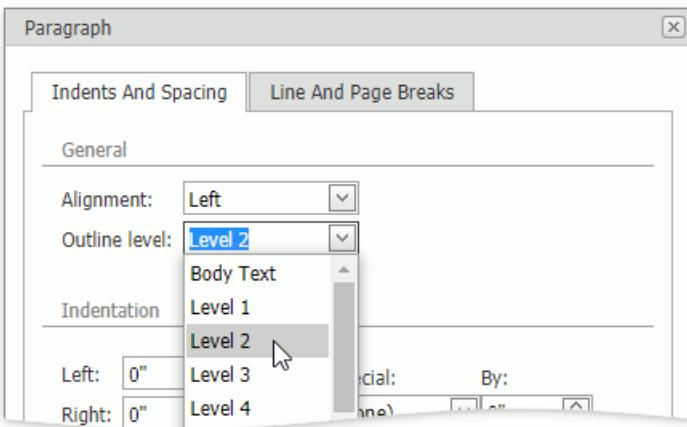
- Click the **Add Text** button in the **References** tab and select a heading level.



- Select a heading style in the **Styles** box in the **Home** tab.



- Right-click the heading text, select the **Paragraph** command in the context menu, and select a heading level in the **Outline level** drop-down menu.



Update the table of contents.

## Remove a Heading from a Table of Contents

Delete a heading text to remove it from a table of contents.

To remove a heading from a table of contents but leave it in the document, select the heading text or place the pointer in the heading text, and do one of the following:

- Click the **Add Text** button in the **References** tab and select **Do Not Show in Table of Contents**.
- Select non-heading style in the **Styles** box in the **Home** tab.
- Right-click the heading text, select the **Paragraph** in the context menu, and select **Body Text** in the **Outline level** drop-down menu.

Update the table of contents.

## Add an Image, Table, or Equation to a Table of Figures

- Place the pointer after a figure.
- Click the **Insert Caption** button in the **References** tab and select the figure command. The figure name and number appear.
- Type the figure caption after its number.
- Update the table of figures.

## Remove an Image, Table, or Equation from a Table of Figures

Clear a figure name and update the table to remove the figure from a table.

## Insert a Table of Contents or Figures

Click the **Table of Contents** button in the **References** tab to insert a table of contexts.

Click the **Insert Table of Figures** button in the **References** tab and select a command to insert a table of figures.

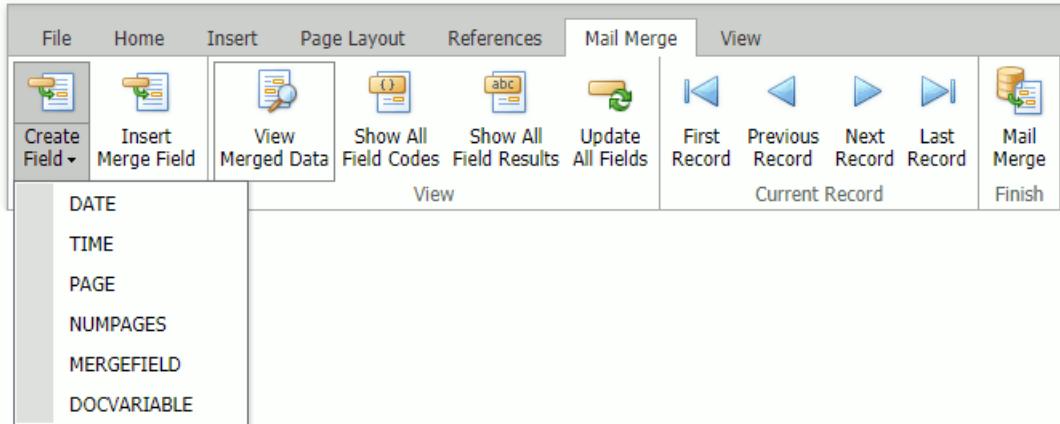
## Update a Table

If a navigation table displays outdated information (outdated headings/captions or outdated page numbers) after changing the document, place the pointer in the table and click the **Update Table** button in the **References** ribbon tab to update the table and display the correct information.

# Mail Merge

Document fields are placeholders for non-static data that can change (updated on a field update). These placeholders are replaced with actual data when the document is rendered. Use buttons in the **Mail Merge** tab to manage these fields.

To insert a field, place the mouse cursor in a document and click the **Create Field** button in the **Mail Merge** tab (or press **CTRL+F9**).



You can use the following field codes:

- **DATE** - Inserts the current date and time.
- **TIME** - Inserts the current time.
- **PAGE** - Inserts the number of the page containing the field.
- **NUMPAGES** - Inserts the total number of pages.
- **MERGEFIELD** - Inserts a field merged with a data source.
- **DOCVARIABLE** - Enables you to programmatically insert complex content when this field is updated.

The **Show All Field Codes** button displays field codes for all the fields in the document.

The **Show All Field Results** button displays field results for all the fields in the document.

Fields should be updated to calculate a field result. Fields are updated automatically when the document is saved or printed.

Click the **Update All Fields** button to update fields, or select a field(s) and press F9.

# Keyboard Shortcuts

The **Rich Text Editor** provides the capability to perform common commands quickly using keyboard shortcuts.

All supported shortcuts are divided into the following groups.

- [File Operations](#)
- [Navigation inside Documents](#)
- [Work with Selections](#)
- [Copy, Paste and Edit the Content](#)
- [Text Formatting](#)

# File Operations

The key combinations used to perform file operations are listed in the table below.

Shortcut	Description
CTRL+N	Creates a new document.
CTRL+O	Invokes the <b>Open</b> dialog box to open a document.
CTRL+S	Invokes the <b>Save As</b> dialog box to save the document.
CTRL+P	Invokes the <b>Print</b> dialog box to print the document.

# Navigation inside Documents

The key combinations that allow you to navigate through a document are listed in the table below.

Shortcut	Description
LEFT ARROW KEY	Moves one character to the left in a document.
RIGHT ARROW KEY	Moves one character to the right in a document.
UP ARROW KEY	Moves one line up.
DOWN ARROW KEY	Moves one line down.
ENTER	Creates a new paragraph in a document.
SHIFT+ENTER	Creates a new line in a document.
TAB	Moves the cursor to the next tab stop or inserts an indent.
HOME	Moves to the beginning of the line.
END	Moves to the end of the line.
PAGE DOWN	Moves to the beginning of the next page.
PAGE UP	Moves to the beginning of the current page.
CTRL+HOME	Moves to the beginning of the document.
CTRL+END	Moves to the end of the document.
CTRL+RIGHT ARROW KEY	Moves one word right.
CTRL+LEFT ARROW KEY	Moves one word left.
F11	Switches to full screen.

# Work with Selections

The key combinations that allow you to work with selections are listed in the table below.

SHORTCUT	DESCRIPTION
ENTER	Deletes the selected character/text and starts a new paragraph.
SHIFT+ENTER	Delete the selected character/text and starts a new line.
CTRL+A	Selects the entire document.
SHIFT+ LEFT/RIGHT ARROW KEYS	Expands the selection by one character to the left/right.
SHIFT+ UP/DOWN ARROW KEYS	Expands the selection by one line up/down.
SHIFT+HOME	Expands the selection to the beginning of the line.
SHIFT+END	Expands the selection to the end of the line.
SHIFT+PAGE UP	Expands the selection one screen up.
SHIFT+PAGE DOWN	Expands the selection one screen down.
CTRL+SHIFT+HOME	Expands the selection to the beginning of the document.
CTRL+SHIFT+END	Expands the selection to the end of the document.
CTRL+SHIFT+LEFT ARROW KEY	Expands the selection one word left.
CTRL+SHIFT+RIGHT ARROW KEY	Expands the selection one word right.
CTRL+SHIFT+UP ARROW KEY	Expands the selection to the beginning of the paragraph.
CTRL+SHIFT+DOWN ARROW KEY	Expands the selection to the end of the paragraph.

# Copy, Paste and Edit the Content

The key combinations used to work with a document content are listed below.

SHORTCUT	DESCRIPTION
BACKSPACE	Deletes one character to the left.
DELETE	Deletes one character to the right.
CTRL+C	Copies the selected content in the clipboard.
CTRL+V or SHIFT+INSERT	Inserts the contents of the clipboard in the specified position and replaces any selection.
CTRL+X	Cuts the selected content.
CTRL+A	Selects the entire document.
CTRL+Z	Performs the <b>Undo</b> command to reverse the last action or to delete the last entry you typed.
CTRL+Y	Repeats the last action.

# Text Formatting

The key combinations that allow you to apply formatting options quickly are listed in the following table.

Shortcut	Description
ENTER	Starts a new paragraph.
SHIFT+ENTER	Starts a new line.
CTRL+B	Applies or removes bold formatting.
CTRL+I	Applies or removes italic formatting.
CTRL+U	Applies or removes underlining.
CTRL+SHIFT+8	Shows paragraph marks and other hidden formatting symbols.
CTRL+ENTER	Inserts a page break.
CTRL+SHIFT+ENTER	Inserts a column break.

# Bookmark and Hyperlink

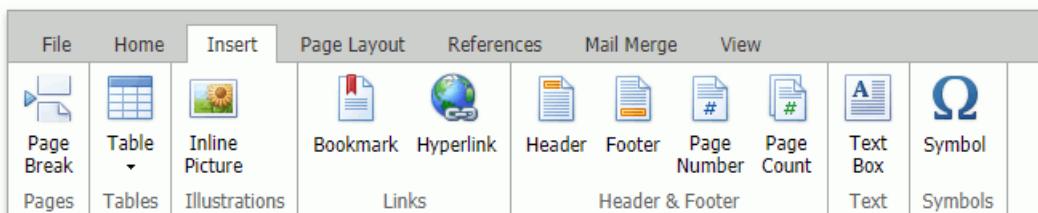
You can add hyperlinks to external locations or associated with bookmarks in the same document.

## Bookmarks

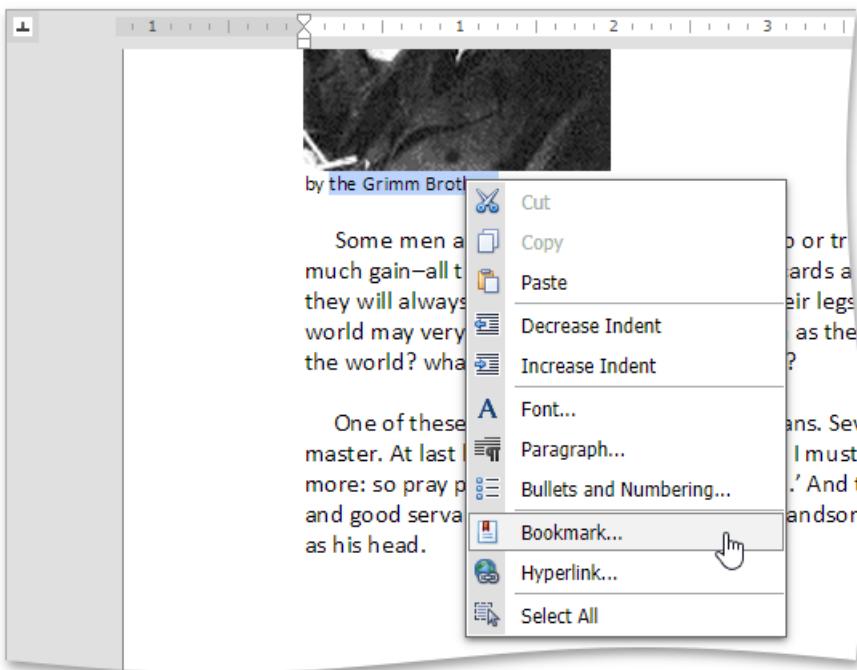
A bookmark can refer to a position in a document or to a document range (for example, portion of text, image).

### Add a bookmark

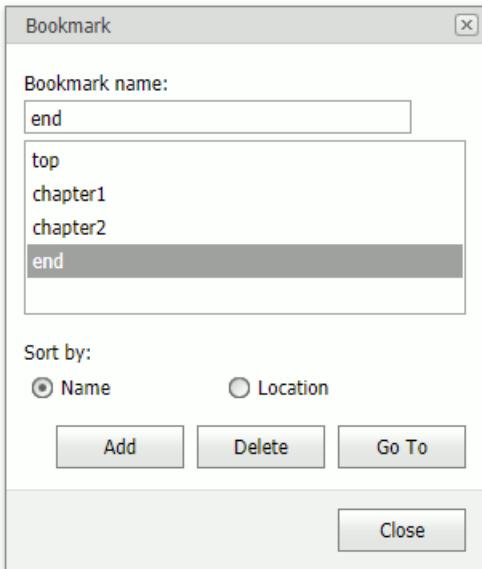
- Select a document range or position the pointer.
- Click the **Bookmark** button in **Insert** tab's **Links** group...



...or right-click the selected document range and select the **Bookmark...** command in the context menu.



This invokes the **Bookmark** dialog box.



- Specify a bookmark name and click **Add**.

#### **Note**

A bookmark name can contain numbers, letters, and the underscore symbol ("\_"), and must begin with a letter.

#### Delete a bookmark

Invoke the **Bookmark** dialog, select a bookmark, and click **Delete**.

#### Bookmark navigation

Invoke the **Bookmark** dialog, select a bookmark, and click **Go To** to navigate to the bookmark.

## Hyperlinks

A hyperlink is a document range (for example, portion of text, image) that you can use to go to a webpage, to another place within the same document, or to create a new email message.

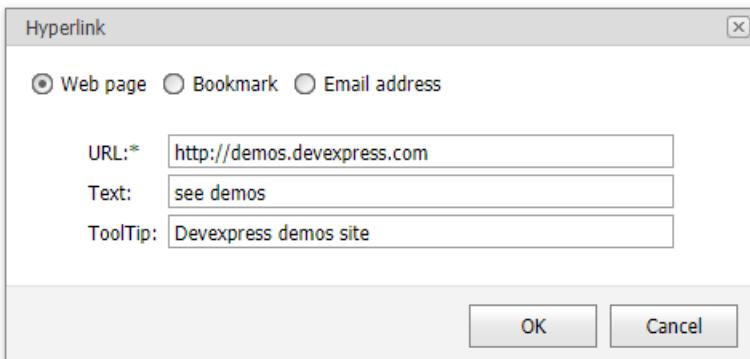
Click a hyperlink while pressing CTRL to navigate to the link.

#### Add a hyperlink

- Select a document range and click **Hyperlink** in **Insert** tab's **Links** group, or right-click the selected document range and click **Hyperlink...** in the context menu to invoke the **Hyperlink** dialog box.

\*Use the option buttons at the top of the dialog to change the hyperlink's destination.

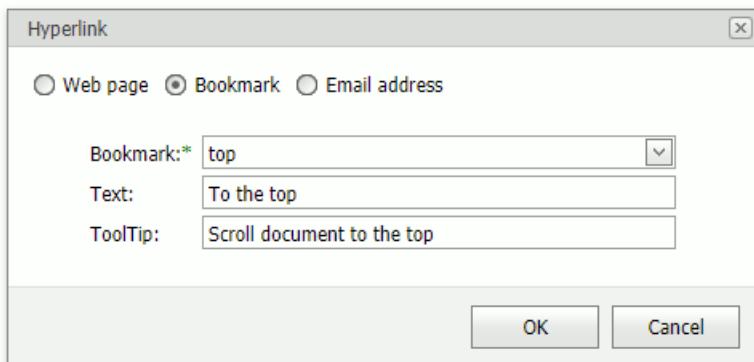
#### Web page



Inserts a hyperlink to a web page.

Specify the hyperlink's navigation URL (required), text, and tooltip, and click **OK**.

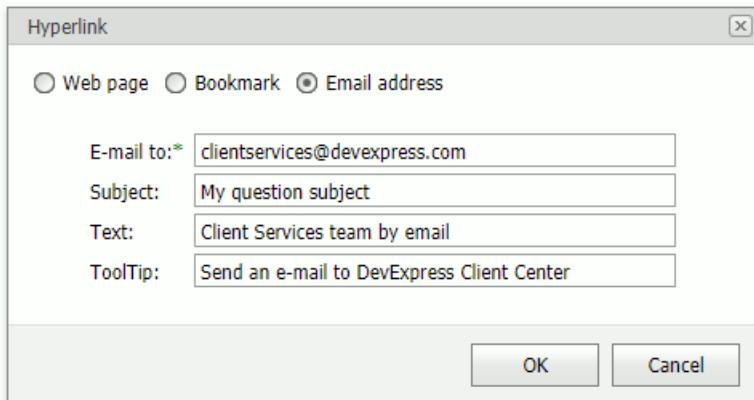
## Bookmark



Inserts a hyperlink to a bookmark in the same document.

Select a bookmark's name from the drop-down list (required), and specify the hyperlink's navigation text and tooltip, and click **OK**.

## Email address



Inserts a hyperlink that creates a new email message.

Specify an email address (required), message subject, link text and tooltip, and click **OK**.

### **Note**

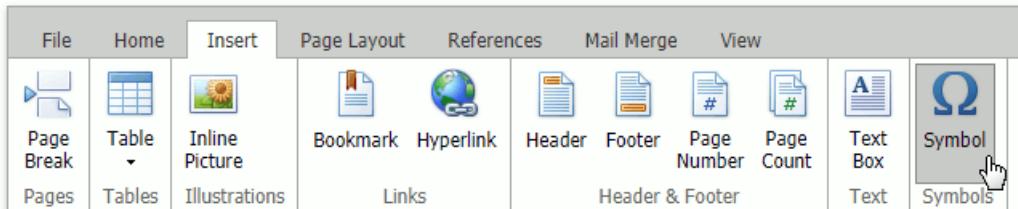
Hyperlink's text automatically appears in the **Text** editor when it is specified for a portion of text. You cannot specify hyperlink text for some elements, for example, images.

# Insert a Symbol

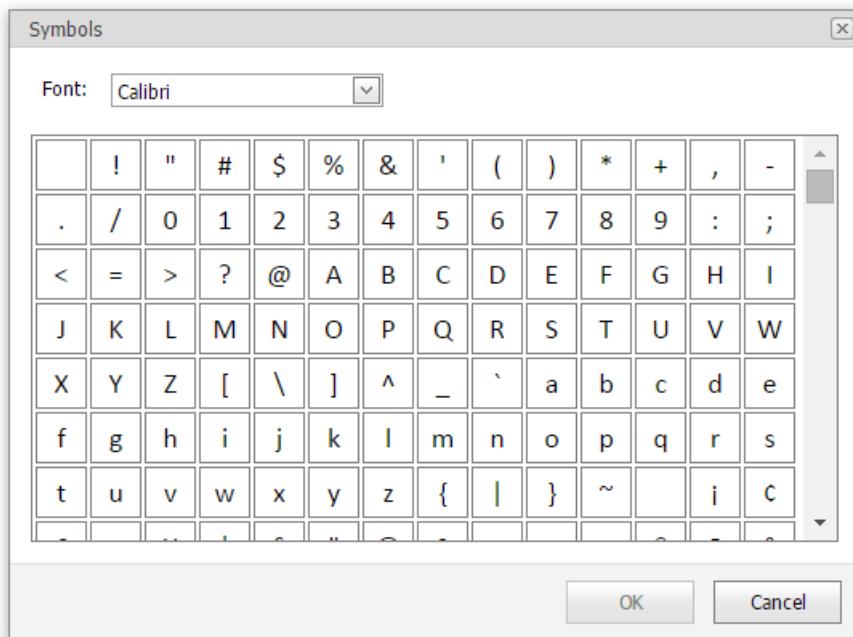
The **Rich Text Editor** allows you to insert symbols that are not on your keyboard, such as copyright symbols, trademark symbols, paragraph marks.

To insert a symbol, do the following.

1. Point to the position in the document where you want to insert a symbol.
2. Select the **Insert** tab, and click the **Symbol** button in the **Symbols** group.



The **Symbol** dialog will be invoked.



3. Select the symbol to be inserted and click **OK** or double-click the symbol.

# Round Panel

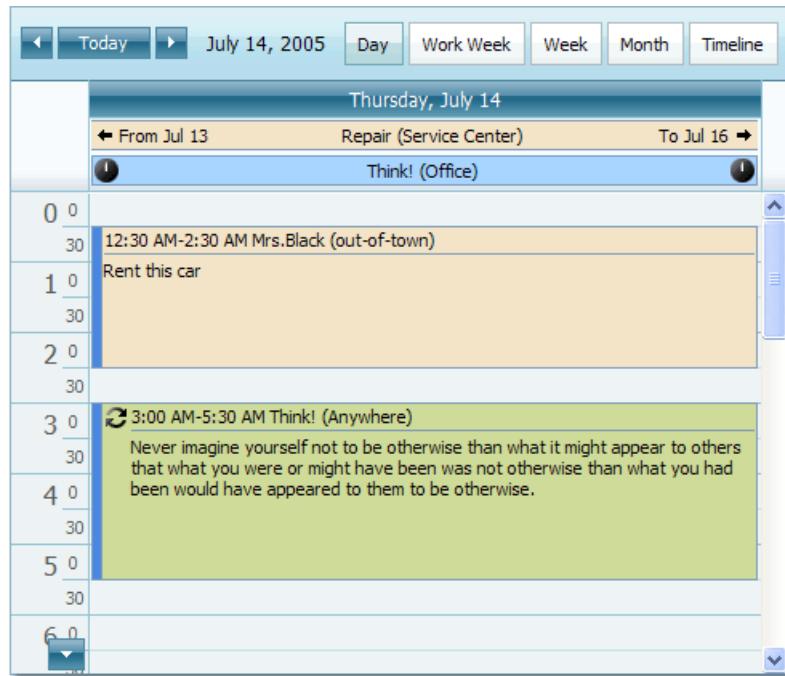
The Round Panel is a container area with rounded corners.

You can collapse and expand a panel by clicking the collapse button or the header.



# Scheduler

This section describes the capabilities provided by the Scheduler, which is used for scheduling/calendar activities.



## Appointment Editing

- [Create an Appointment](#)
- [Edit an Appointment](#)
- [Manage Reminders](#)
- [Make a Series of Recurring Appointments](#)
- [Delete an Appointment](#)
- [Restrictions for Operations with Appointments](#)

## Layout Customization

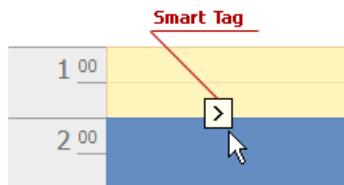
- [Switch Scheduler Views](#)
- [Scheduler Grouping](#)

## Selection and Navigation

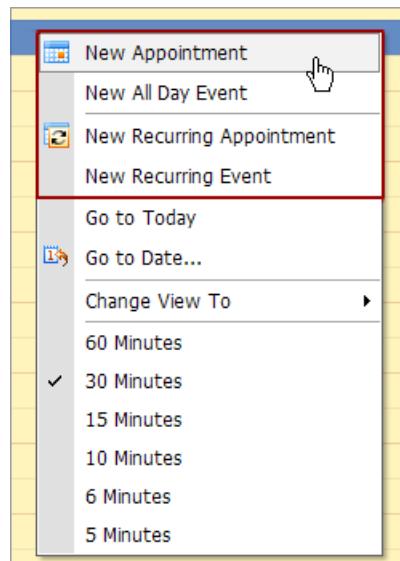
- [Navigate Time Cells and Dates in the Scheduler](#)
- [Navigate Scheduler Resources](#)
- [Scheduler Navigation Buttons](#)
- [Scheduler 'More' Buttons](#)

# Create an Appointment

To create a new appointment, click within the Scheduler's time cell area to select the cell(s). This makes a smart tag appear:



Click it to invoke the default popup menu:



The default menu items highlighted in the illustration are intended for creating new appointments.

## 1. New Appointment

Invokes the **Edit Appointment** dialog shown below.

The **Start time** and **End time** values are initially set to the current date and time selection's start and end boundaries. The **Show time as** field is set to **Busy**. The **Resource** field value is set to the selected cell's resource. It can also be **Any** when appointments are not grouped by resources.

**Appointment with Reminder - Appointment**

Subject:				
All day event:	<input type="checkbox"/>	Location:		
Start time:	12/19/2017	6:20 AM	Label:	Important
End time:	12/19/2017	8:20 AM	Show time as:	Busy
Resource:	(Any)			
Reminder:	5 minutes			
Recurrence:	<input type="checkbox"/>			
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>	<input type="button" value="Delete"/>	

Complete the **Subject** and **Location** fields. If necessary, drop lines of text into the text box at the bottom of the dialog to display it within an appointment in **Day View** or **Work Week View**.

You can switch the appointment's **Reminder** on to enable notifications.

## 2. New All Day Event

Invokes the **Edit Event** window, which is used to create a new all-day appointment (also called an 'all-day event'). The window is the same as the **Edit Appointment**, except that, in this case, the **All day event** option is checked, its time range is measured in days (not hours) and it is marked as **Free**. The appointment can be transformed into the all-day event and vice-versa by selecting this check box.

## 3. New Recurring Appointment

All appointments the Scheduler maintains can either be simple (non-recurring) or **recurring** (occur multiple times with a predefined time interval).

Selecting this menu item invokes the **Edit Appointment** dialog used to create a new appointment, extended with the **Recurrence** feature which allows specifying the recurrence pattern for the new appointment.

The screenshot displays the 'My Appointment with Reminder - Appointment' dialog box. At the top, the subject is set to 'My Appointment with Reminder'. The 'All day event' checkbox is checked. The start time is set to 12/19/2017 at 6:03 AM, and the end time is set to 12/19/2017 at 8:03 AM. The location is 'USA', and the label is 'Important'. The resource is listed as 'SL500 Roadster'. A reminder is set for '30 minutes'. Below the main fields is a large text area containing the placeholder text 'some text'. In the 'Recurrence' section, the 'Recurrence' dropdown is set to 'Yearly'. Under 'Every', the month is set to 'January' and the day is '1'. Under 'The', the day is set to 'First' and the week day is 'Tuesday'. The 'of:' dropdown is set to 'January'. The 'Recurrence' section also includes options for 'No end date' (set to '10 occurrences' ending on '12/20/2017') and 'End after' (set to '10 occurrences'). At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Delete'.

## 4. New Recurring Event

Selecting this menu item invokes the **Edit Event** window used to create a new all-day appointment, extended with the **Recurrence** feature which allows specifying the recurrence pattern for the new event.

See [Make a Series of Recurring Appointments](#) for more information.

# Edit an Appointment

## Context Menu

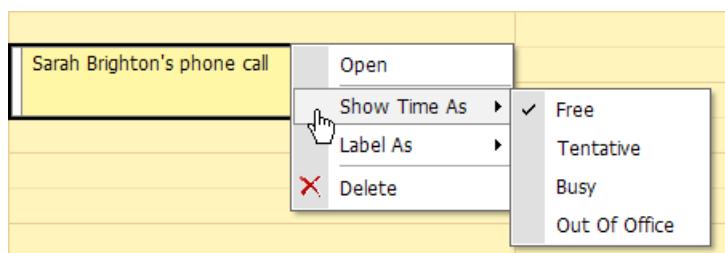
There are two ways to invoke an appointment's context menu:

- **Right-click an appointment.**
- **Use a smart tag.** To invoke a smart tag, click on an appointment and wait for the smart tag to appear. Then, click on the smart tag to invoke the context menu.

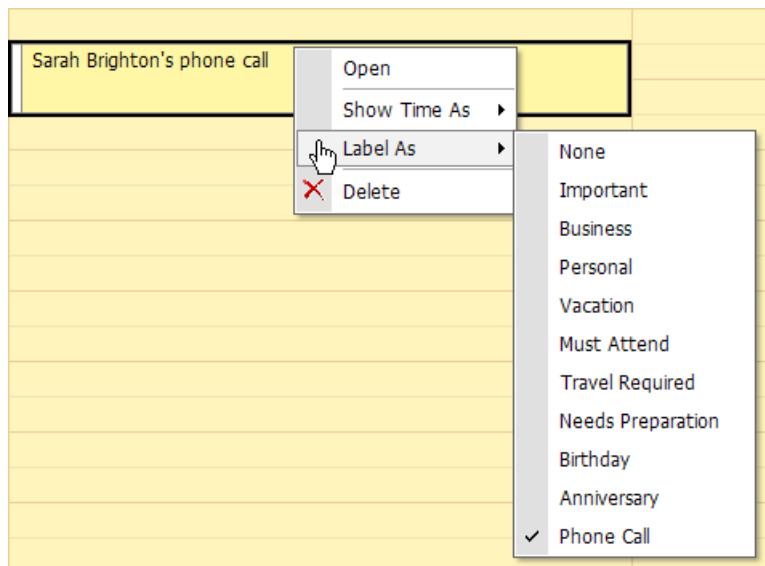
### Note

This approach may be useful if you use a web browser (for example, **Opera**) and right-clicking on an appointment does not invoke a **Scheduler** control's context menu.

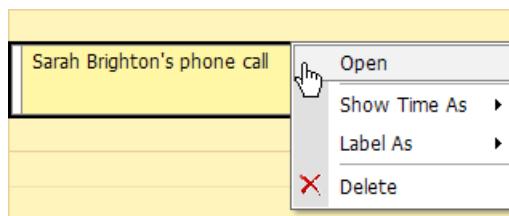
This context menu contains items that allow you to modify certain appointment properties. For example, you can use the **Show Time As** submenu to change an appointment's status.



If you select the **Label As** menu item, you can choose another label for the current appointment from the list of available label types.



This menu also contains the **Open** item which allows you to invoke the appointment's [Edit Appointment dialog](#).



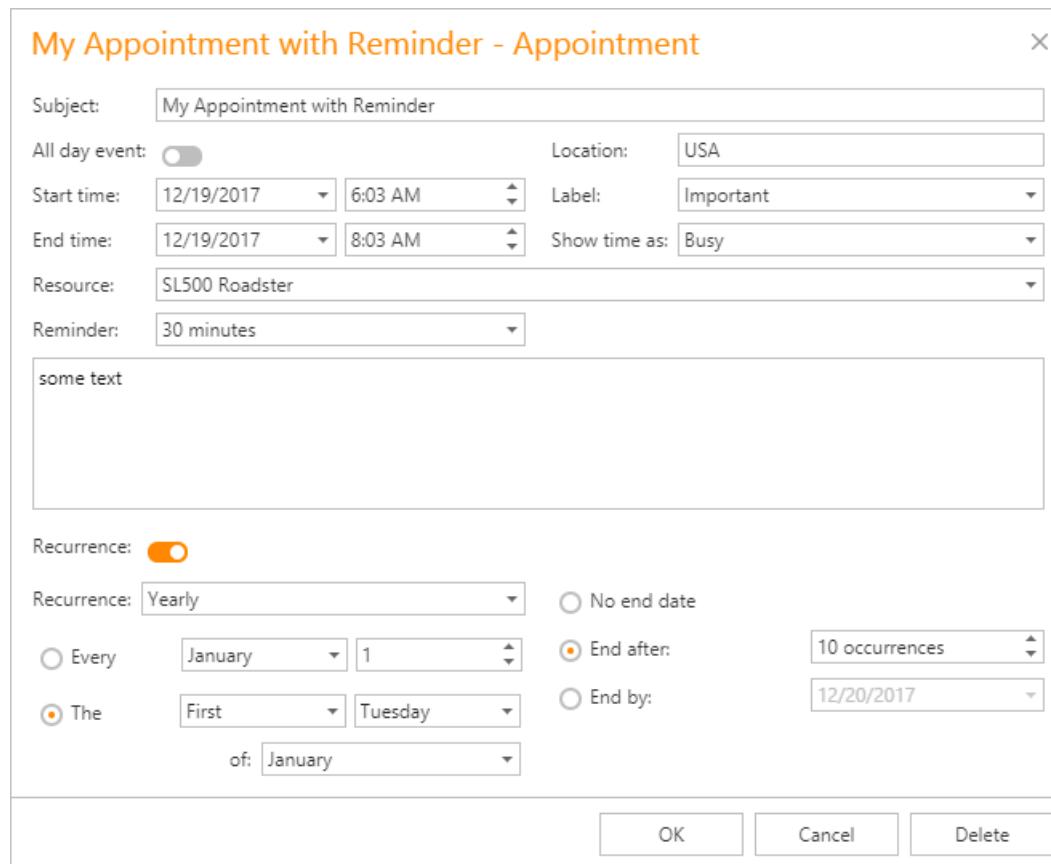
### Note

The appointment's context menu can also contain the **Edit Series** and **Restore Default State** menu items. This means that an

appointment is a part of a recurring appointment series. See [Make a Series of Recurring Appointments](#) for more information.

## Edit Appointment Dialog

To invoke the **Edit Appointment** dialog, select **Open** in an appointment's [context menu](#). This dialog's usual appearance is illustrated below.



The **Edit Appointment** dialog allows you to edit the following appointment properties:

- **Subject**

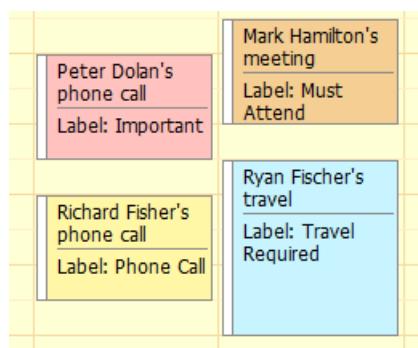
An appointment's subject. This text is displayed within an appointment to identify it.

- **Location**

Information about where an appointment takes place. This text is displayed within the appointment in parentheses after the subject text.

- **Label**

Used for at-a-glance appointment identification. It is displayed in the **Scheduler** as a background color of the rectangle that represents the appointment.

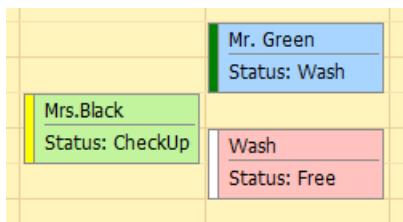


- **Start time** and **End time**

An appointment's start/end date and time.

- **Show time as**

Indicates an appointment's availability status. It is displayed as a strip on the appointment rectangle's left side. The strip is colored according to the status type.



- **All day event**

Transforms an appointment into an all-day event which always lasts an entire day (or several days). Note that if this property is **true**, the **Start** and **End** properties' real-time values are ignored, and instead, the appointment starts at **0:00** on the **Start** date and ends at **24:00** on the **End** date.

- **Resource**

A resource that is assigned to an appointment. This resource can be used to [group appointments by resources](#).

- **Reminder**

Allows you to set a reminder that is responsible for sending notifications at a specified period before an appointment's start time. Refer to [Manage Reminders](#) for more details.

- **Description**

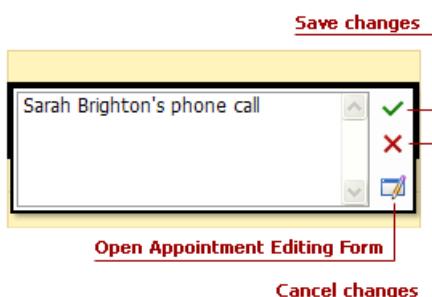
The text box located below the **Resource** and **Reminder** options. This text box allows you to enter a description that is shown within an appointment in **Day View** or **Work Week View**.

- **Recurrence**

Expands the **Recurrence** section that specifies the appointment's recurrence pattern. See [Make a Series of Recurring Appointments](#) for more information.

## In-place Editor

Double-click an appointment to invoke its **In-place Editor** which allows you to edit an appointment's **Subject**.

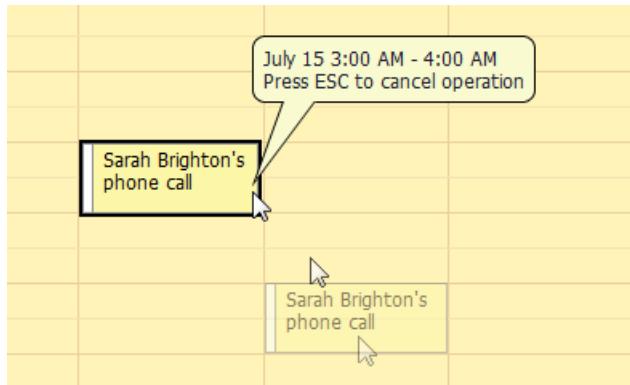


Note that if you need to edit other appointment properties, you can invoke the [Edit Appointment dialog](#) via the **Open Appointment Editing Form** button.

## Mouse Operations

To select an appointment, click it with the left mouse button. To select several appointments, press and hold the Ctrl key and then click appointments with the left mouse button.

Drag-and-drop operations enable you to change an appointment's time interval if an appointment is moved along a time cell area.



If you press Esc before dropping an appointment, all changes are canceled, and the appointment returns to its original location.

If you press and hold the Ctrl key and click and drag an appointment (or several appointments), you create appointment copy(s) when the mouse button is released.

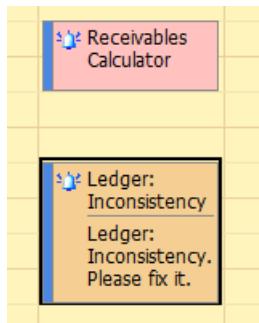
You can also change an appointment's type to **all-day** and vice-versa by dragging the appointment between the all-day area and time cells.

In **grouped** views, when different columns represent different resources, dragging the appointment to another column automatically changes the associated resource.

# Manage Reminders

## What is a Reminder?

Any appointment can have one or more reminders. They are responsible for sending alerts at a specified time period before an appointment's start time. If an appointment has a reminder, the bell  image is displayed.



## Specifying Reminders

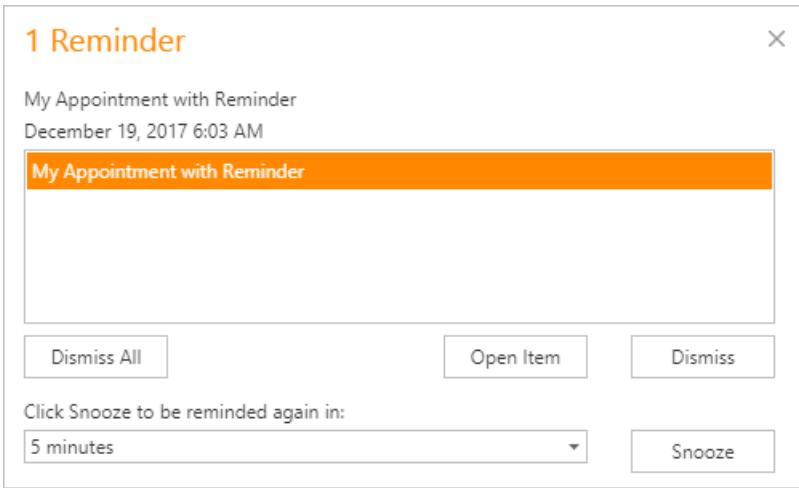
A reminder can be created for a particular appointment with the help of the appointment's editing form, demonstrated below. Select the **Reminder** check box and enter the amount of time before the appointment when you want the reminder to occur. You can select a predefined value in a drop-down list, or just type it in. The duration editor recognizes digits as the number of minutes, if an "h" postfix is added - as hours, "d" - days.

Appointment with Reminder - Appointment

Subject:	Appointment with Reminder		
All day event:	<input checked="" type="checkbox"/>	Location:	
Start time:	12/19/2017	6:03 AM	Label: Important
End time:	12/19/2017	8:03 AM	Show time as: Busy
Resource:	(Any)		
Reminder:	<b>5 minutes</b>		
	<ul style="list-style-type: none"><li>None</li><li>0 minutes</li><li><b>5 minutes</b></li><li>10 minutes</li><li>15 minutes</li><li>30 minutes</li><li>1 hour</li></ul>		
Recurrence:	<input type="checkbox"/>		
	<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Delete"/>		

## How Does It Work?

When the time has come for the reminder alert, it invokes the notification dialog, as illustrated below:



You can switch the reminders off by clicking the **Dismiss** or **Dismiss All** buttons.

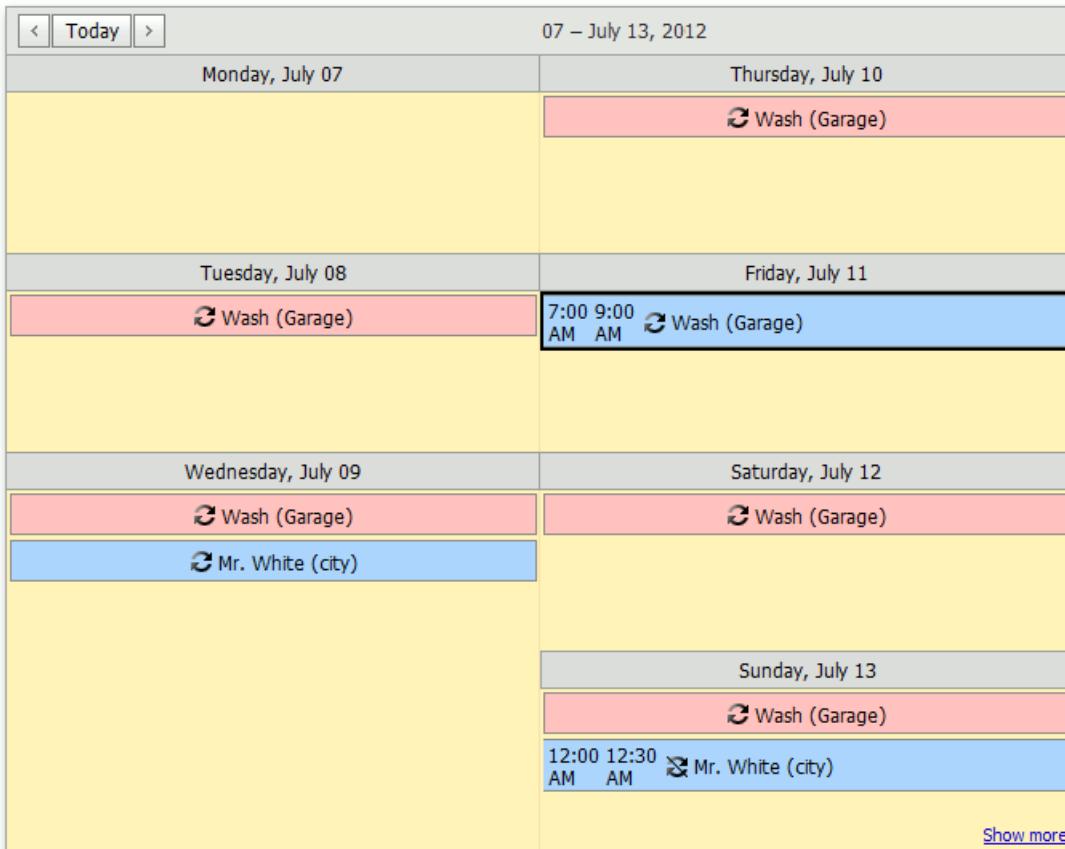
Another option is to shift the alert time by selecting the time interval in the combo box and clicking the **Snooze** button. Then, the notification will be postponed for a specified time frame.

# Make a Series of Recurring Appointments

## What is a Recurring Appointment?

The **Scheduler** control supports simple (non-recurring) or recurring appointments. Non-recurring appointments occur only once at a specified time interval. Recurring appointments occur many times at the same time interval on different dates.

Recurring appointments are created as a series of appointments using the [recurrence pattern](#) and identified by the  recurrence sign.



## Recurrence Pattern

The recurrence pattern contains information on appointment recurrence (the recurrence series's start date and time and a rule according to which a series is repeated).

You can create and edit an appointment's recurrence pattern in the standard [Edit Appointment](#) dialog by selecting the **Recurrence** check box. The image below illustrates the usual appearance of the **Edit Appointment** dialog's recurrence section.

**My Appointment with Reminder - Appointment**

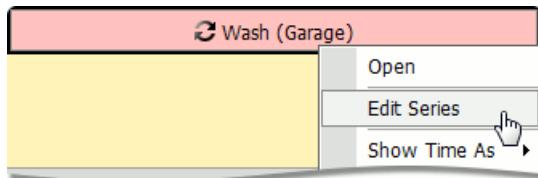
Subject:	My Appointment with Reminder			
All day event:	<input checked="" type="checkbox"/>	Location:	USA	
Start time:	12/19/2017	6:03 AM	Label:	Important
End time:	12/19/2017	8:03 AM	Show time as:	Busy
Resource:	SL500 Roadster			
Reminder:	30 minutes			
some text				
Recurrence:	<input checked="" type="checkbox"/>			
Recurrence:	Yearly		<input type="radio"/> No end date	
<input type="radio"/> Every	January	1	<input type="radio"/> End after:	10 occurrences
<input checked="" type="radio"/> The	First	Tuesday	<input type="radio"/> End by:	12/20/2017
	of:		January	
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Delete"/>				

In this dialog, you can specify different elements' values to define the recurrence behavior. Frequency is the recurrence pattern's base element. It specifies how often the corresponding appointments occur: **Daily**, **Weekly**, **Monthly** or **Yearly**.

You can define periodicity for each frequency type - the time interval in which the recurrence's frequency is applied. For instance, if you have specified that appointments occur **Daily**, you can also specify whether appointments repeat every couple of days or every weekday. For the **Monthly** appointment frequency, you can specify for how many weeks and on which weekdays an appointment recurs.

You can also specify when an appointment's recurrence must end.

If an appointment is recurring, its context menu contains the **Edit Series** item. Clicking this item invokes the **Edit Appointment** dialog for editing the recurrence pattern.



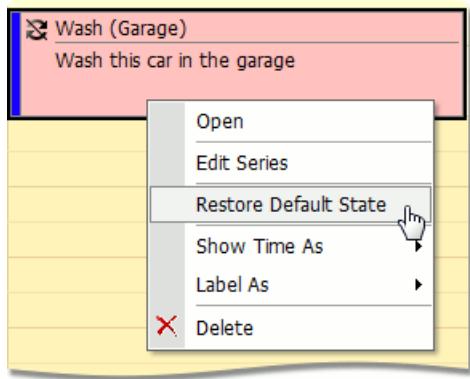
If you use the context menu's **Open** item to invoke the **Edit Appointment** dialog, you can edit only the current appointment to avoid raising [exceptions](#).

## Exceptions

When you modify an occurrence's (an appointment that belongs to a recurring appointment series) properties, it is called an **Exception**. Such appointments are marked with the crossed recurrence sign.

You can delete one or several occurrences in the recurrence chain. A deleted occurrence is a type of recurrence pattern Exception, and the SchedulerControl does not visualize it.

To replace an exception with a regular occurrence and discard all modifications, right-click the exception and click on the **Restore Default State** item in the invoked context menu.

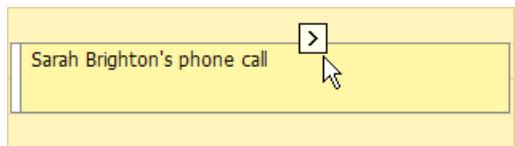


Editing an appointment series's recurrence pattern (**Edit Series** context menu item) resets the recurrence chain, and restores all the exceptions to their default state. A warning is displayed before this happens.

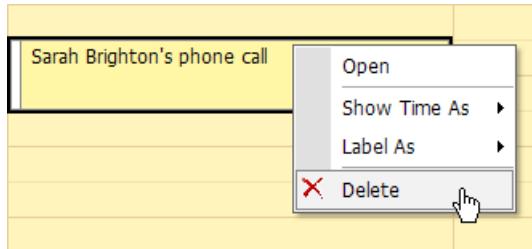
# Delete an Appointment

Use the popup (context) menu to delete an appointment.

First, click within the appointment to select it. Wait a moment. A smart tag will appear shortly:



Click it to invoke the default popup menu.



## Note

You can right-click within the appointment to invoke the editing menu, but this action may result in different menus if the browser (or the page) provides another context menu, overriding the scheduler action.

Click **Delete**.

If an appointment belongs to a recurrence chain, then a confirmation dialog appears.



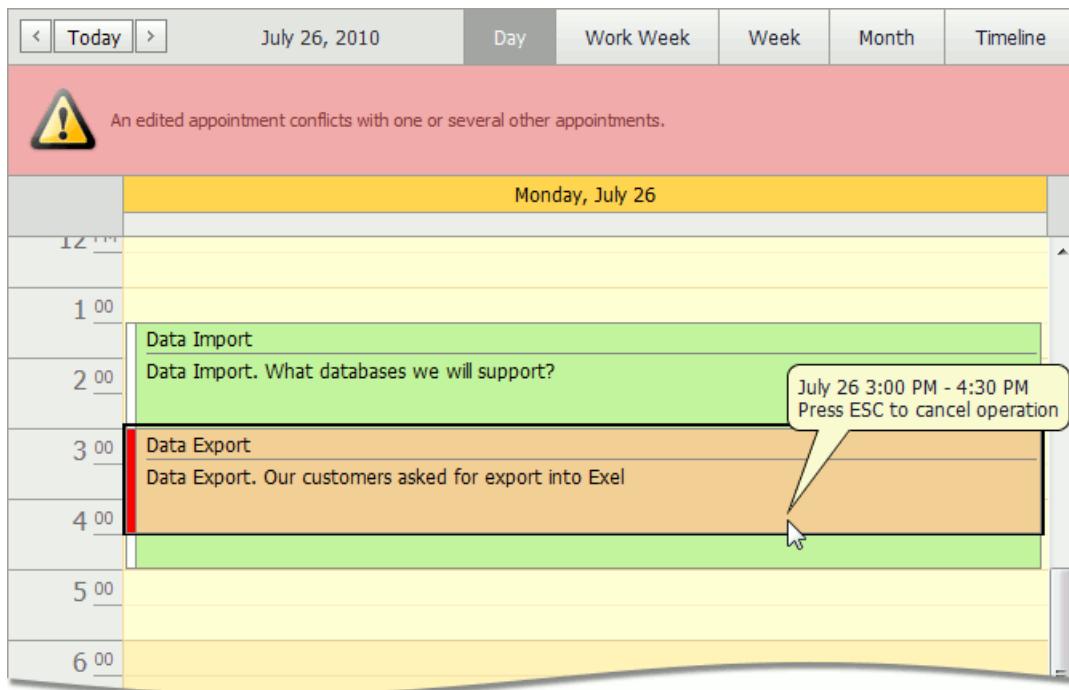
You can choose whether all appointments in a series should be deleted, or only this particular appointment.

# Restrictions for Operations with Appointments

Access to several operations may be restricted. You may find that you're not able to perform the following operations due to restrictions applied by the application vendor or administrator.

- Create new appointments.
- Edit appointments.
- Invoke the appointment editing form.
- Activate an in-place editor for an appointment.
- Change the time boundaries of appointments.
- Drag and drop appointments to another time slot or date.
- Drag and drop appointments between resources.
- Copy appointments.
- Delete appointments.
- Select more than one appointment simultaneously.
- Share the scheduled time between two or more appointments.

When you drag an appointment to relocate it, it may come into conflict with another by sharing the same time interval or resource. If conflicts are forbidden, then an attempt to move the appointment fails, and it is restored to its previous position. This situation is visually indicated as illustrated below:



# Switch Scheduler Views

The Scheduler is intended to display appointment data using one of the standard **Views**.

The following views are currently available:

- **Day view**

This view gives the most detailed view of appointments for a certain day(s).

- **Work-Week view**

This view displays appointments for the working days in a particular week.

- **Full Week view**

This view displays appointments for the entire week.

- **Month (also called Multi-Week) view**

The month view is the least detailed of the views, and is designed for browsing and long-term plan analysis. This view positions the days one after another horizontally, so that they form weeks, while weeks are placed one under another.

- **Timeline view**

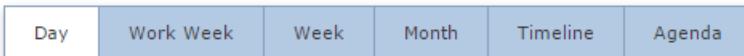
This view plots appointments as horizontal bars along the timescales, and provides a clearer overview for scheduling purposes.

- **Agenda view**

This view displays a chronological list of appointments grouped by day.

To switch views, you may use either a special **View Selector** element, or the context menu.

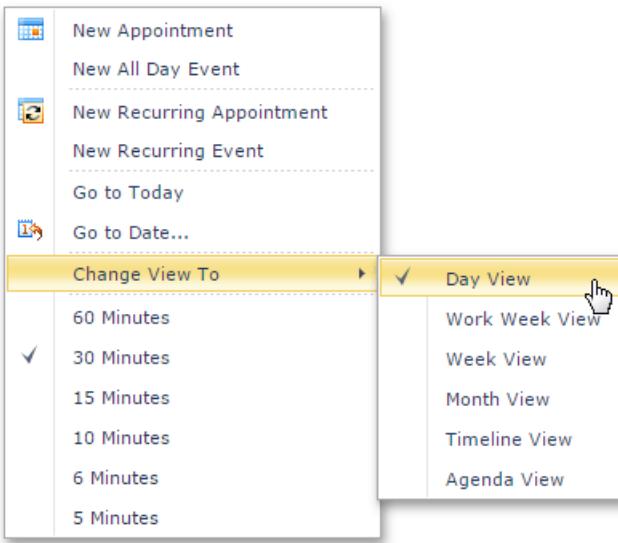
- The **View Selector** element may look like this:



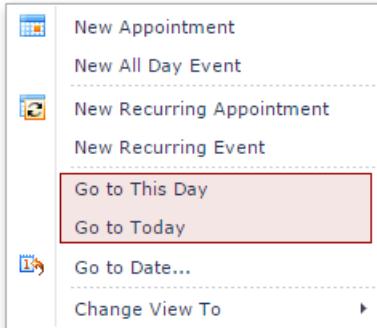
When a particular view is disabled, the corresponding item is not shown.

- The context menu is invoked when you right-click any region of the **Scheduler** control not occupied with an appointment. You can also click on a free area, wait until the smart tag appears, and then click it.

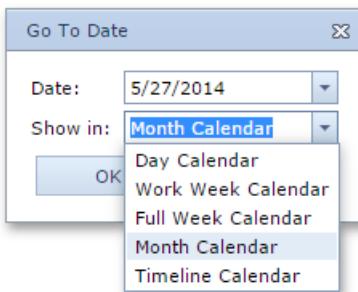
The invoked menu contains items for switching views, as illustrated in the following picture (the menu in the picture is specific for the **Day View**):



The context menu also includes such date navigation commands as **Go to Today** and **Go to This Day**. The latter is available only in the **Week View** and **Month View** views. These commands switch the Scheduler to the **Day View**.



- While navigating dates via the **Go to Date** dialog, you can specify a view type to display a new time interval. The following picture illustrates selecting the View type:

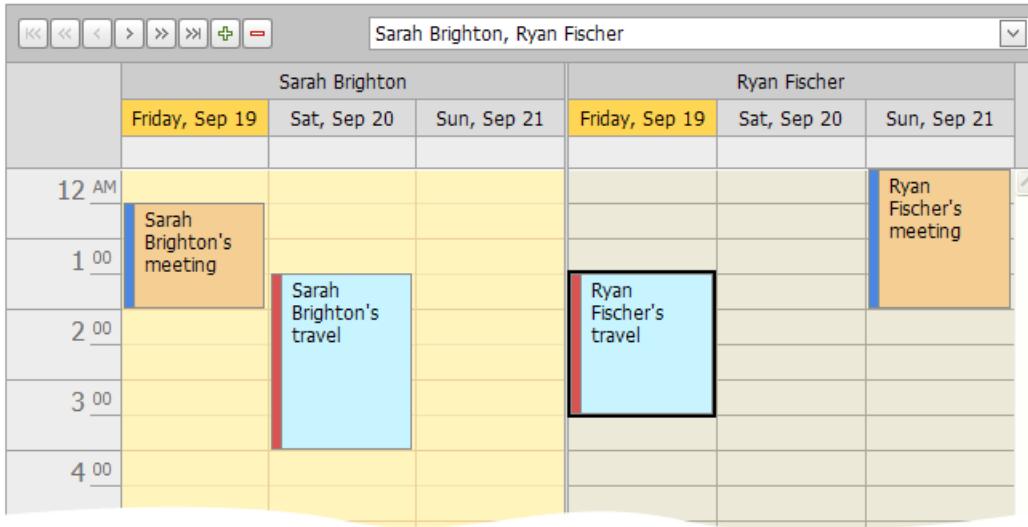


- The Scheduler selects a view mode **automatically** based on the date range selected in the **Calendar**. To learn more about this capability, refer to the [Navigate Time Cells and Dates in the Scheduler](#) topic.

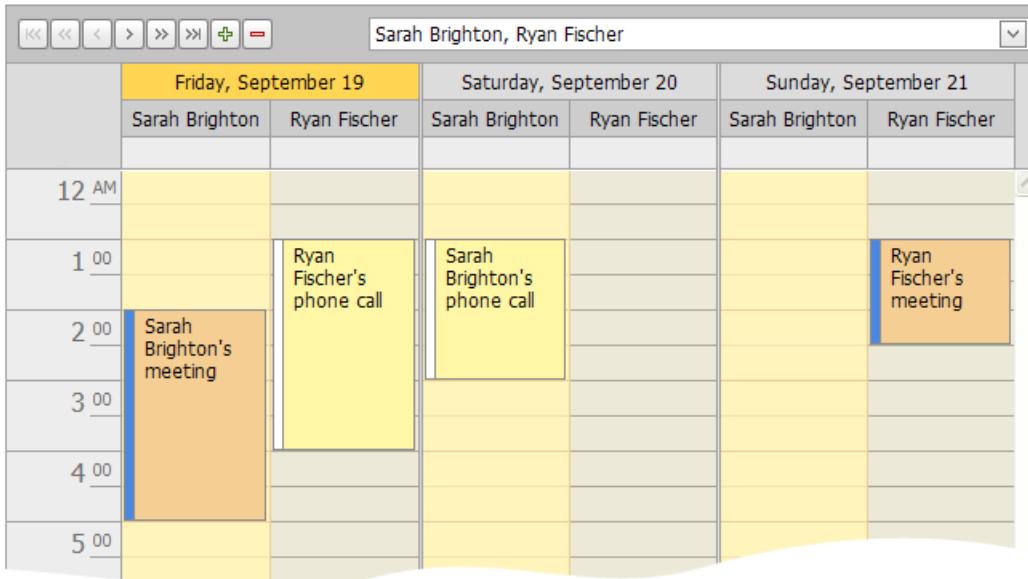
# Scheduler Grouping

The data can be grouped either by resources or by dates, to enhance the visual representation. The following pictures illustrate the appearance of the control in grouping mode.

## Appointments Grouped by Resources



## Appointments Grouped by Date



# Navigate Time Cells and Dates in the Scheduler

## View Navigator

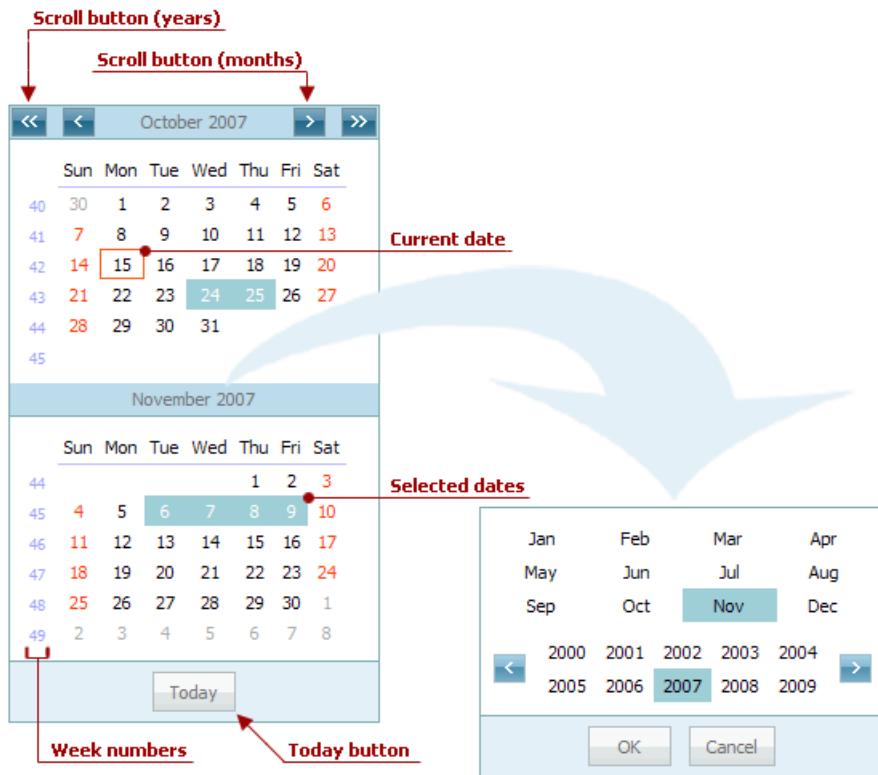
To navigate dates, you can use the **View Navigator** shown below.



Use the left and right arrow buttons to go to the previous or next time interval (next day, week, month, depending on the currently visible date interval). The **Today** scrolls the view to locate the current date.

## Calendar

The **Calendar** control is designed specifically for the date navigation and selection task. It is shown in the following picture.



### Note

The availability of the Calendar depends on the application vendor.

You are able to select either a particular date, or a range of dates by means of the Calendar, or directly in the Scheduler's time cell grid. Selecting dates using the Calendar results in displaying them by the Scheduler, to which it is linked.

The methods of selecting dates are listed below:

- **Using the Calendar control**

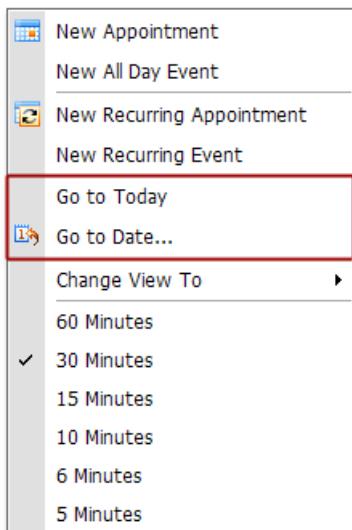
ACTION	EFFECT
Click any date in the Calendar.	One day becomes selected, and the Scheduler displays it using the <b>Day View</b> . If the currently active view is of another type, it is automatically changed to <b>Day View</b> . The only exception is the <b>Work Week View</b> . In this instance, the entire work week is selected.
Click and drag across the Calendar	The continuous range of dates is selected. The Scheduler adjusts the currently active view to display the selected range of dates. If the selection is smaller than a week, the view type is switched to <b>Day View</b> . A week-long range is displayed using the <b>Week View</b> . If the range is more than a week, then the <b>Month View</b> is used.
Hold down the CTRL key and click several dates.	A set of dates is selected. The Scheduler displays it using the <b>Day View</b> , irrespective of the size of the selected range.
Click a week number in the Calendar	A corresponding week-long range is selected. The Scheduler displays it using the <b>Week View</b> .

- Using the Scheduler control

ACTION	EFFECT
Click any date in the Scheduler (if the currently active view is set to either the Week View or the Month View).	One day is selected.
Click and drag across the time cells (in the Week View or Month View only).	A continuous range of dates is selected. The selected range in the Calendar control is not affected, although it goes along with the range displayed within the Scheduler.

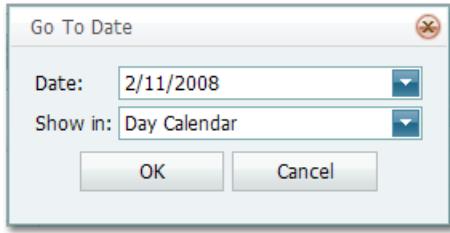
## Context Menu

The popup (context) menu provides the capability to navigate to a particular date.



## "Go to Date" Dialog

If the **Go to Date...** menu item is selected, the **Go to Date** form is invoked.



It enables you to select the date and the view to which the scheduler switches to display the date.

# Navigate Scheduler Resources

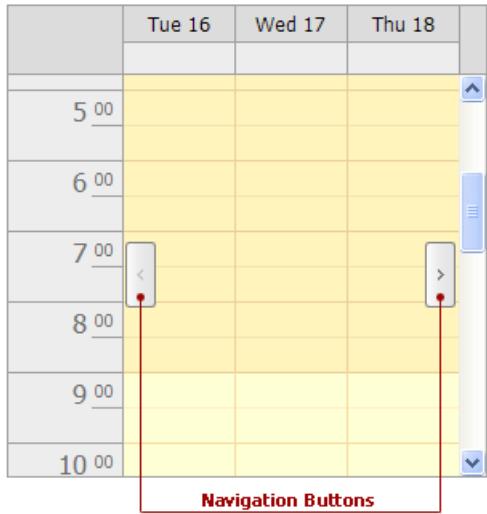
When appointment data is **grouped** (either by resources or by dates), the number of resources shown on the screen within the scheduler simultaneously can make it difficult to see all the scheduled data. To make the layout more readable, it is possible to limit the number of visible resources, and then scroll between them. In these cases, use the **Resource Navigator** embedded into the Scheduler.

The Resource Navigator displays a set of buttons used to navigate to the first or last element, previous or next resource, or page. Plus and minus buttons are used to increase or decrease the number of resources displayed at once. The combo box allows you to select the resource to display (or the first resource to display if the page shows several resources at one time).



# Scheduler Navigation Buttons

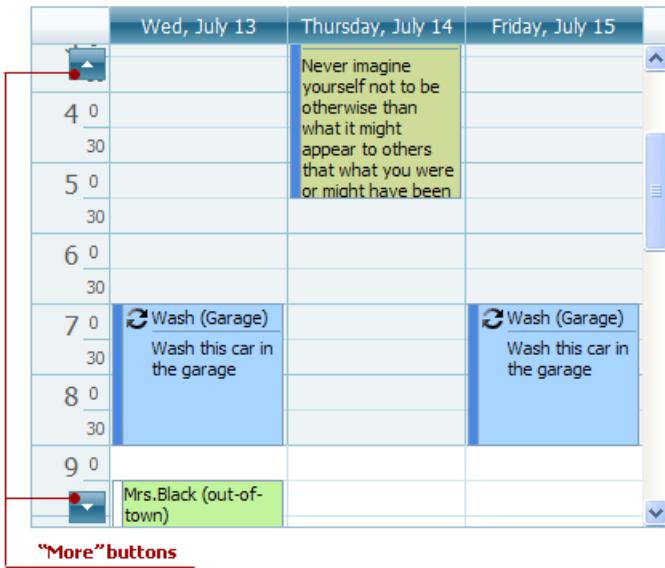
The **Navigation Buttons** are used to scroll to the previous or next appointment. This feature is helpful when there is a significant time interval between scheduled appointments.



A disabled button indicates that there is no appointment in that direction, i.e. before or after that date. The buttons can be smart enough to be displayed only when there are no appointments in the currently visible interval.

# Scheduler 'More' Buttons

The "More" buttons are used to show more appointments for a particular day by scrolling to the next appointment. They may appear in the **Day View** and **Work-Week View**.



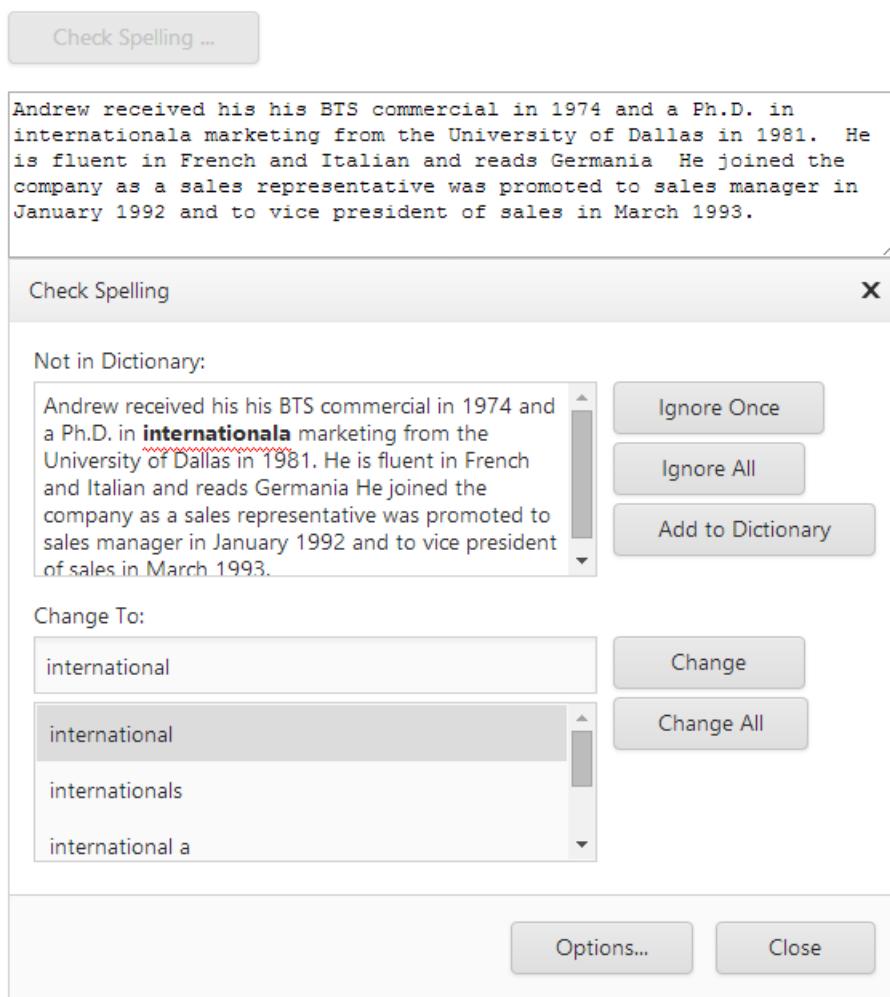
**Week View** and **Month (Multi-Week) View** present another visual representation of these elements. They indicate that particular dates have more appointments than the view can display (due to insufficient space laid out for day cells). The "Show more" hyperlink appears in these instances. Clicking this hyperlink shows the selected date using the **Day View**, enabling you to scroll the cells and review hidden appointments.

The "Show more" buttons are shown in the following image.

Thursday	Friday	Saturday
14	15	16
Repair (Service Center)	7:00 9:00 Wash AM AM (Gara)	
<b>«Show more» button → Show more</b>	Show more	Show more
21	22	23
4:30 6:00 Wash PM PM (Gara)	7:00 9:00 Wash AM AM (Gara)	
	4:30 5:00 Wash PM PM (Gara)	

# Spell Checker

The Spell Checker provides the capability to check spelling and correct mistakes in a text.



To start the check, click **Check Spelling...**

## **Note**

An action required to start checking depends on your application vendor.

The spell checker compares words in the text with words in the dictionaries. If the spell checker cannot find a word in the dictionaries, a **Check Spelling** window appears. The spell checker highlights words which are not in the dictionaries and suggests a list of alternates. To correct the current word, choose the right version from a list and click **Change**. Click **Change All** to correct this word in the entire text. To ignore the current word, click **Ignore Once**. To ignore this word in the entire document, click **Ignore All**.

To add a new word to a custom dictionary, click **Add To Dictionary**. A capability to add words to a custom dictionary depends on your application vendor.

## Options

### General Options

Spell checker options allow you to ignore emails, URLs, mixed case/upper-case words, markup tags and words with numbers. Select required options from a list.

### Dictionaries

Choose the required language in the drop-down list.

## Spelling Options

General options	
<input checked="" type="checkbox"/>	Ignore words in UPPERCASE
<input checked="" type="checkbox"/>	Ignore words in MiXeDcAsE
<input checked="" type="checkbox"/>	Ignore words with numbers
<input checked="" type="checkbox"/>	Ignore e-mails
<input checked="" type="checkbox"/>	Ignore URLs
<input type="checkbox"/>	Ignore markup tags
International dictionaries	
Choose which dictionary to use when checking your spelling.	
Language:	<input type="button" value="English (United States)"/> ▼
<input type="button" value="English (United States)"/>	
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

# Splitter

The Splitter is used to separate the content of a web page into several resizable panes.

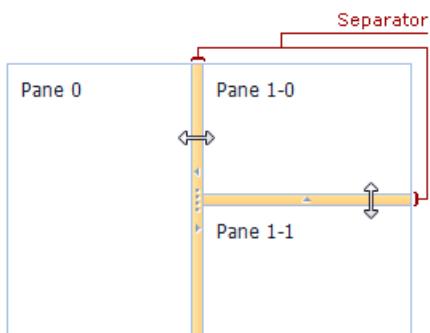
The screenshot shows a web application interface utilizing a Splitter control. On the left side, there is a vertical list of names: Davolio Nancy, Fuller Andrew, Leverling Janet, Peacock Margaret, Buchanan Steven, Suyama Michael, King Robert, Callahan Laura, and Dodsworth Anne. To the right of this list is a large pane containing a grid of order details. The grid has columns for Order, Ship Name, Quant, and Unit P. Several rows are visible, showing orders like 10255 to 10263 being shipped by Richter Supermarkt. Below the grid, there is a navigation bar with links for Page 1 of 3 (107 items) and numbered buttons [1], 2, 3, and >. Further down, there are three input fields: Customer name (Michael Holz), Company name (Richter Supermarkt), and Contacts, which contains address information (City: Genève, Address: Grenzacherweg 237, Phone: 0897-034214). The entire interface is contained within a single window frame.

This section contains topics that describe how to work with the Splitter:

- [Expand or Collapse a Pane](#)
- [Resizing a Pane](#)

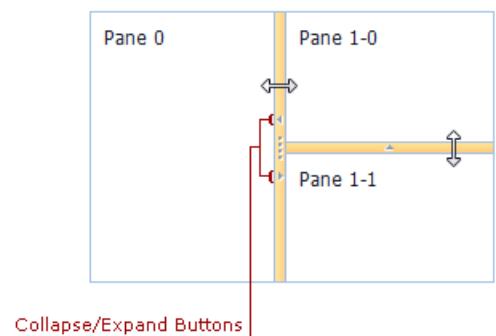
# Resizing a Pane

To resize a pane, place the mouse pointer over the separator (vertical or horizontal) until a double-sided arrow appears. When the arrow appears, drag the separator to the required side.



# Expand or Collapse a Pane

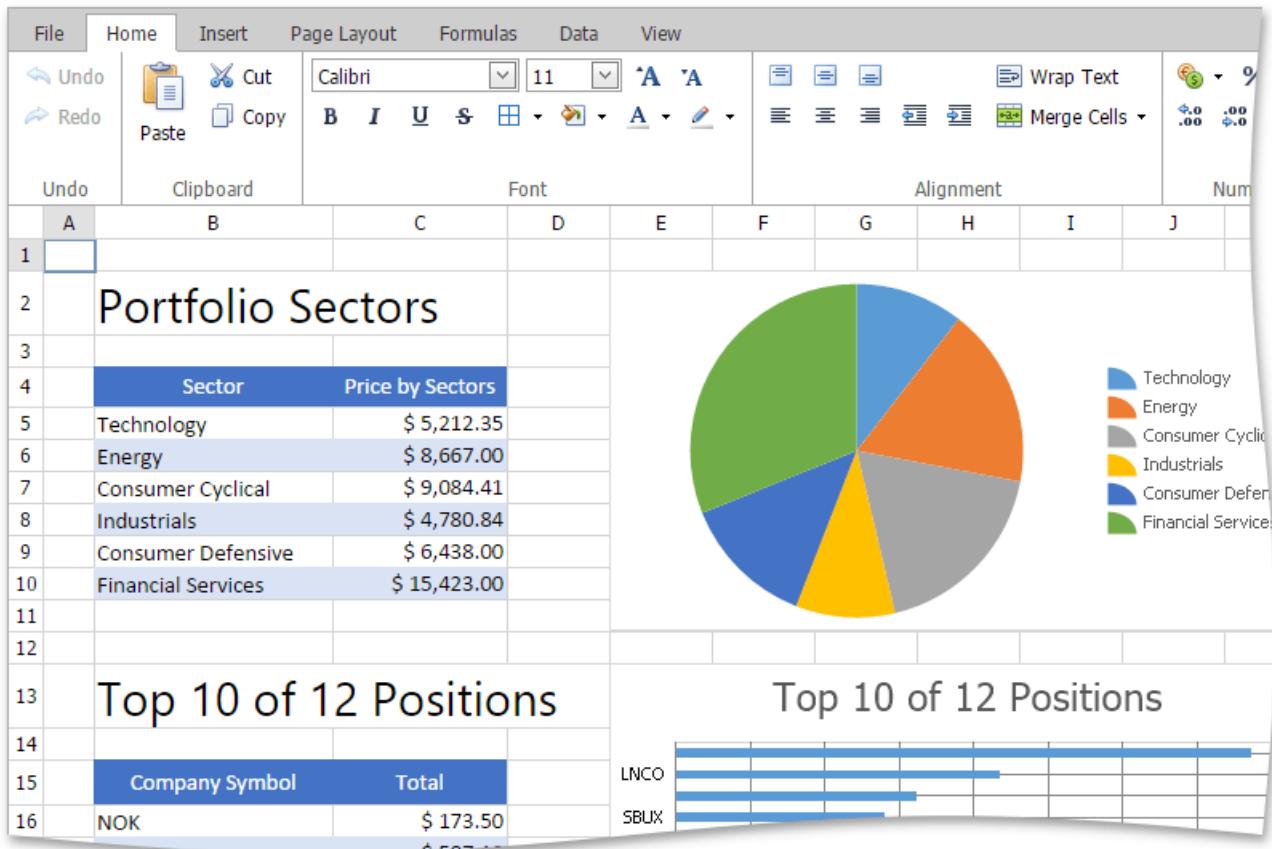
Use the **Collapse** or **Expand** buttons to collapse or expand a pane.



[Collapse/Expand Buttons](#)

# Spreadsheet

This section describes the capabilities provided by the **Spreadsheet**.



## Spreadsheet UI

- Ribbon Interface
- Spreadsheet Elements

## File Operations

- Create a Workbook
- Load a Workbook
- Create a Worksheet
- Rename a Worksheet
- Delete a Worksheet
- Save a Workbook
- Import Text Files
- Print a Workbook
- Adjust Page Settings
- Undo and Redo Last Actions

## Viewing and Navigating

- Hide and Display Worksheets
- Hide and Display Gridlines
- Hide and Display Headings
- Document Views
- Full Screen Mode

## Editing Cells

- Select Cells or Cell Content
- Copy and Paste Cell Content
- Fill Data Automatically
- Find and Replace
- Comments
- Data Validation

## Cell Formatting

- Format Cells
- Format Cell Content
- Wrap Text and Merge Cells
- Number Formatting
- Clear Cell Formatting
- Format as Table

## Columns and Rows

- Insert and Delete Columns and Rows
- Show and Hide Columns and Rows
- Specify Column Width and Row Height

## Data Presentation

- Sort Data
- Filtering
- Freeze Panes

## Formulas

- Create a Simple Formula
- Cell References
- Using Functions in Formulas
- Supported Functions
- Error Types in Formulas

## Charting

- Charting Overview
- Creating a Chart
- Changing a Chart Type
- Applying a Predefined Chart Layout and Style
- Modifying a Chart Manually

## Pictures and Hyperlinks

- Insert a Picture
- Move and Resize a Picture
- Insert and Delete Hyperlinks

## Keyboard Shortcuts

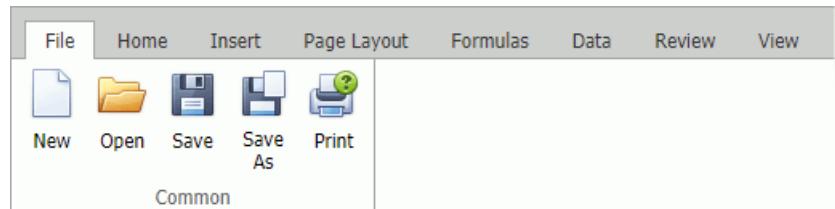
- File Operations
- Navigation inside Worksheets
- Work with Selections
- Copy, Paste and Edit the Cell Content
- Cell Formatting

- Work with Columns and Rows

# Ribbon Interface

The comprehensive functionality of the **Spreadsheet** is provided by a set of **Ribbon** pages. Ribbon pages are divided into logical groups that include commands with common features. Use the **Ribbon** interface to perform basic operations in the **Spreadsheet** (to [create](#) a workbook, [create](#) or [delete](#) worksheets, [select](#) data in a worksheet, navigate through a worksheet, etc.).

## File



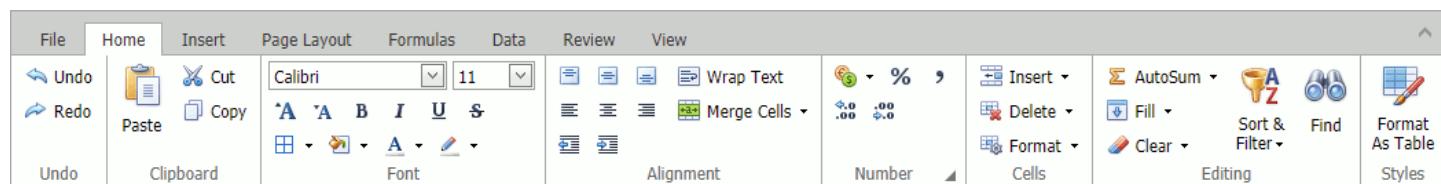
[Create a Workbook](#)

[Load a Workbook](#)

[Save a Workbook](#)

[Print a Workbook](#)

## Home



[Undo and Redo Last Actions](#)

[Copy and Paste Cell Content](#)

[Format Cells](#)

[Format Cell Content](#)

[Wrap Text and Merge Cells](#)

[Number Formatting](#)

[Clear Cell Formatting](#)

[Insert and Delete Columns and Rows](#)

[Show and Hide Columns and Rows](#)

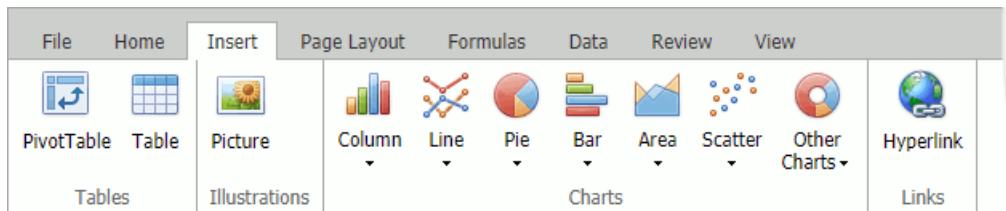
[Specify Column Width and Row Height](#)

[Fill Data Automatically](#)

[Find and Replace](#)

[Format As Table](#)

## Insert



[Insert a Picture](#)

[Move and Resize a Picture](#)

[Charting Overview](#)

[Creating a Chart](#)

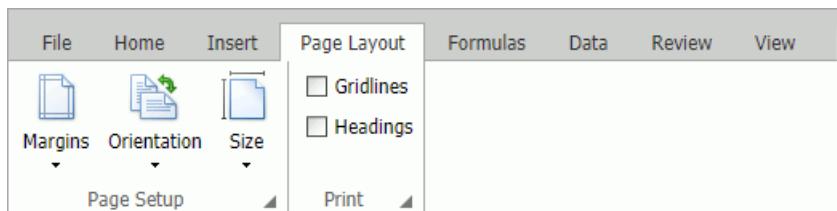
[Changing a Chart Type](#)

[Applying a Predefined Chart Layout and Style](#)

[Modifying a Chart Manually](#)

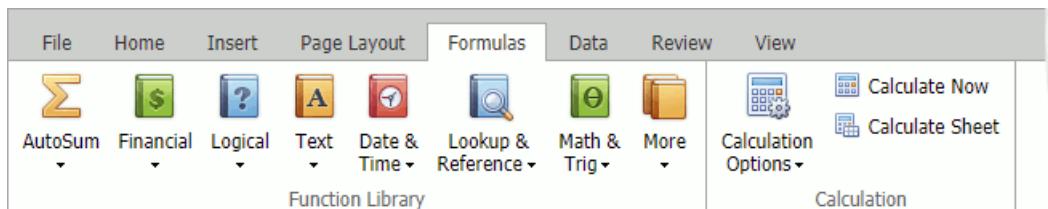
[Insert and Delete Hyperlinks](#)

## Page Layout



[Adjust Page Settings](#)

## Formulas



[Create a Simple Formula](#)

[Cell References](#)

[Using Functions in Formulas](#)

[Supported Functions](#)

[Error Types in Formulas](#)

## Data

The screenshot shows the Excel ribbon with the "Data" tab selected. Under the "Data" tab, there are several icons: "Sort A to Z" (down arrow with A), "Sort Z to A" (up arrow with Z), "Filter" (golden funnel), "Clear" (trash can), "Reapply" (refresh), and "Data Tools" (gear icon). Below these are the "Data Validation" and "Sort & Filter" buttons.

[Sort Data](#)

[Filtering](#)

[Data Validation](#)

## Review

The screenshot shows the Excel ribbon with the "Review" tab selected. Under the "Review" tab, there are icons for "New Comment" (comment bubble with star), "Edit Comment" (pencil icon), "Delete" (trash can), and "Show/Hide Comment" (comment bubble with eye icon). Below these are the "Comments" and "Comments" buttons.

[Comments](#)

## View

The screenshot shows the Excel ribbon with the "View" tab selected. Under the "View" tab, there are icons for "Editing View" (document with pencil), "Reading View" (book icon), "Gridlines" (checkbox checked), "Headings" (checkbox checked), "Full Screen" (monitor icon), "Freeze Panes" (grid icon), and "Window" (grid icon).

[Document Views](#)

[Hide and Display Gridlines](#)

[Hide and Display Headings](#)

[Full Screen Mode](#)

[Freeze Panes](#)

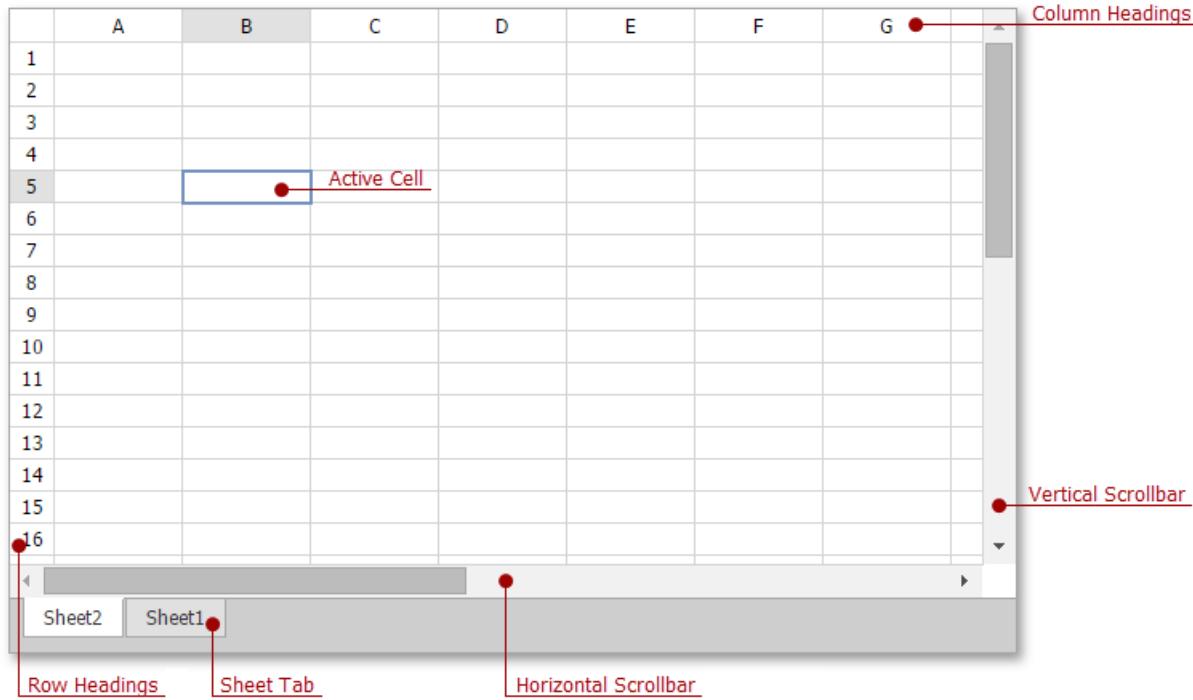
# Spreadsheet Elements

The **Spreadsheet** consists of visual elements that provide the capability to [create](#), edit and view spreadsheet documents, which are called **workbooks**. A workbook includes one or more **worksheets** used to store data. You can [add](#), [delete](#) and [rename](#) worksheets in a workbook. All existing worksheets are displayed on the **Sheet tab** bar at the bottom of the control. Click one of the sheet tabs to switch between existing worksheets. To navigate through the current worksheet, use the horizontal and vertical **scrollbars**.

A worksheet consists of **cells** that are organized into 1,048,576 **rows** and 16,384 **columns**. Each row is numbered (1, 2, 3, ...) and each column is lettered (A, B, C, ...) according to the [A1 reference style](#). **Row** and **column headings** are displayed at the left and at the top of a worksheet, respectively.

An individual cell is a box at the intersection of a column and a row. Each cell is indicated by a **cell reference** (the column letter and row number where the column and row intersect). For example, **B2** refers to a cell at the intersection of column **B** and row **2**. The current cell that is selected and used to enter data is called the **active cell**. The active cell is identified by a blue border around the cell.

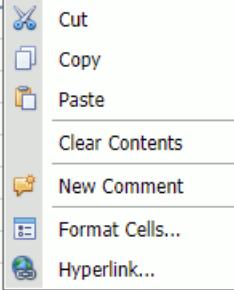
Each cell contains a single piece of data, the **cell value**. You can enter different types of values such as text, numbers or dates. The **Spreadsheet** also provides the capability to create and edit [formulas](#) that perform calculations on the data on a worksheet.



## Context Menu

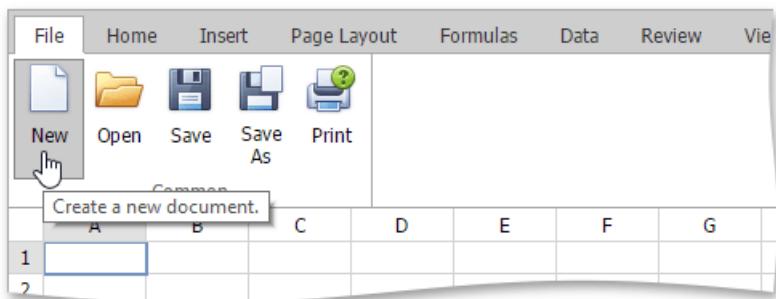
The **Spreadsheet** supports a **Context Menu**, which appears when you right-click a worksheet. The context menu provides common commands for working with cell content.

	A	B	C	D	E	F
1						
2		\$250.78				
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						



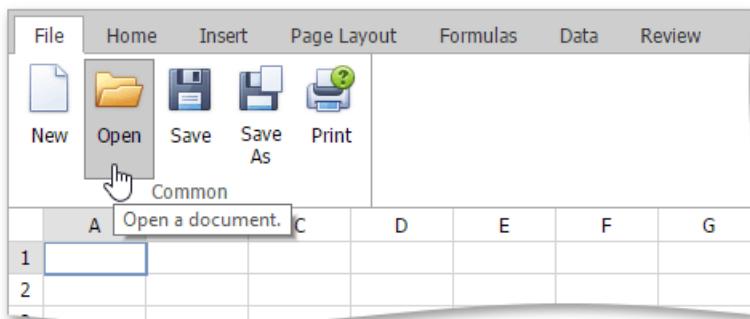
# Create a Workbook

To create a blank workbook, select the **File** tab, and click the **New** button in the **Common** group.

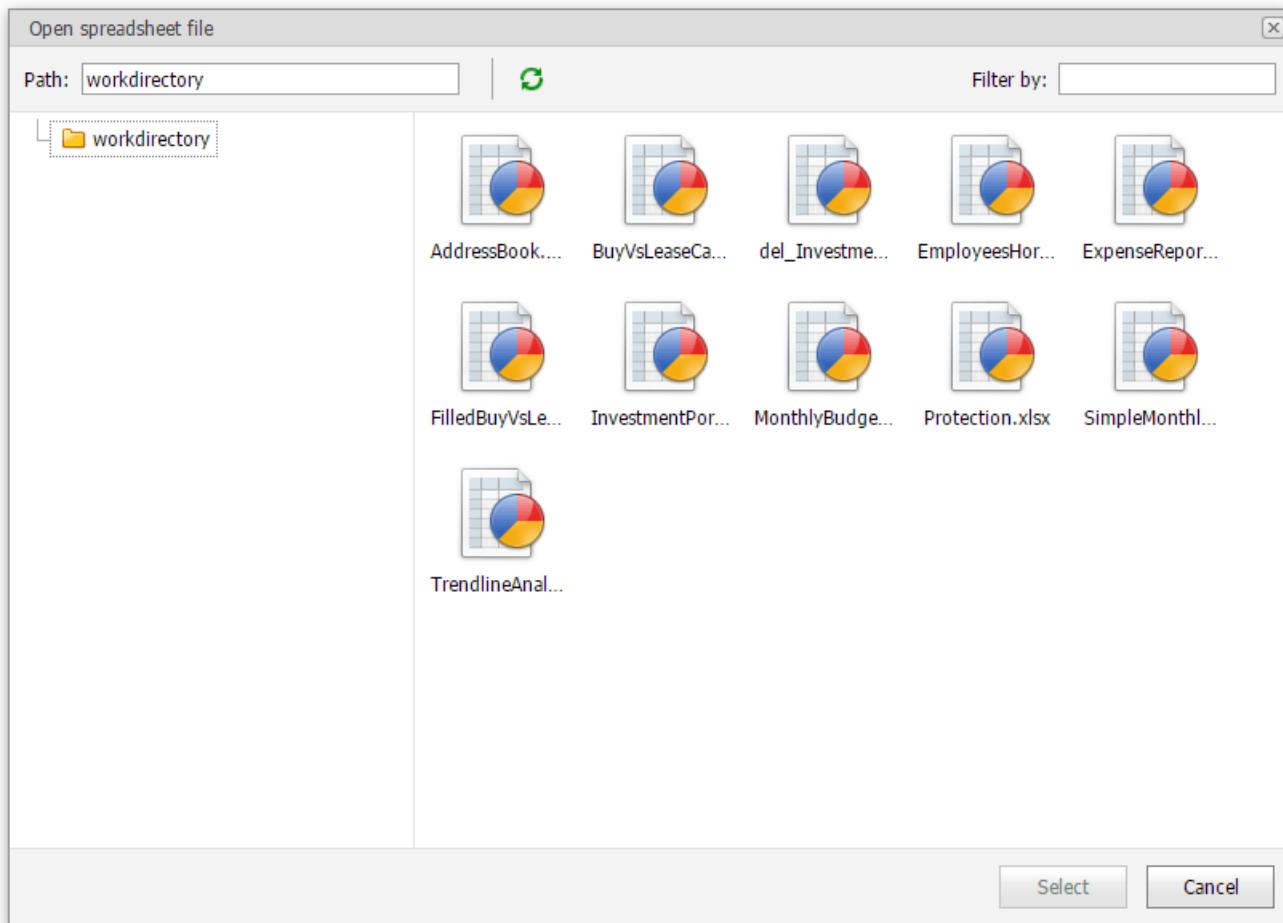


# Load a Workbook

To load a workbook, select the **File** tab, and click the **Open** button in the **Common** group or press CTRL+O.



In the invoked **Open spreadsheet file** dialog box, select the file you wish to open from your working directory.



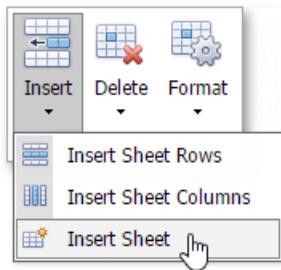
The **Spreadsheet** supports the following file formats.

- Excel Workbook (\*.xlsx)
- Excel Macro-Enabled Workbook (\*.xlsm)
- Excel 97-2003 Workbook (\*.xls)
- Tab-delimited Text File format (\*.txt)
- Comma-separated Values File format (\*.csv)

# Create a Worksheet

To create a new worksheet within the current workbook, do one of the following:

- Click the **Insert** button in the **Cells** group on the **Home** tab and select the **Insert Sheet** command from the drop-down list.

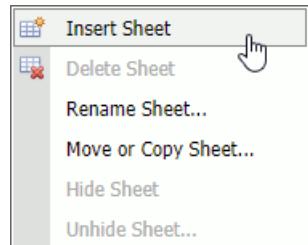


- Click a **New Sheet** button displayed next to the last sheet tab.

19	UNIT CONTRIBUTION MARGIN	49.40
20	GROSS MARGIN	\$49,400.00
21		
22	<b>FIXED COSTS PER PERIOD</b>	
23	ADMINISTRATIVE COSTS	\$15,000.00

A screenshot of an Excel spreadsheet showing a table of financial data. The table includes rows for Unit Contribution Margin, Gross Margin, Fixed Costs per Period, and Administrative Costs. Below the table, a sheet tab labeled 'BREAKEVEN ANALYSIS' is selected. To the right of the tab, there is a 'New Sheet' button, which is a small rectangular button with a plus sign and the text 'New Sheet' below it.

- Right-click a sheet tab and select the **Insert Sheet** command in the displayed context menu.



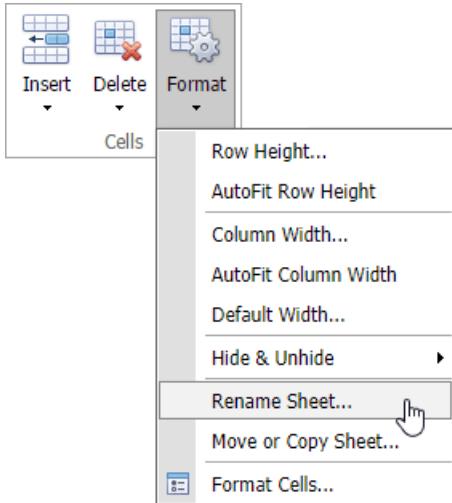
- Press SHIFT+F11.

# Rename a Worksheet

When a new worksheet is created, the **Spreadsheet** assigns it a generic name, such as *Sheet1*, *Sheet2*, etc.

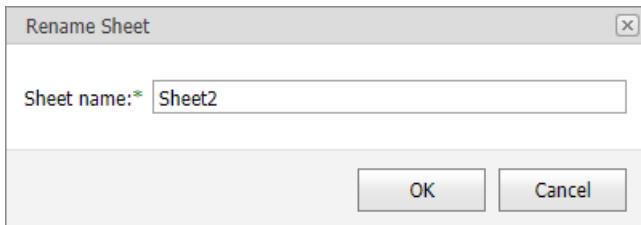
To rename a worksheet, do one of the following:

- Click the **Format** button in the **Cells** group on the **Home** tab and select the **Rename Sheet...** item from the drop-down list.



- Right-click the sheet tab and select the **Rename Sheet...** command in the displayed context menu.
- Double-click the sheet tab.

A **Rename Sheet** dialog box appears. Rename the worksheet and click **OK**.



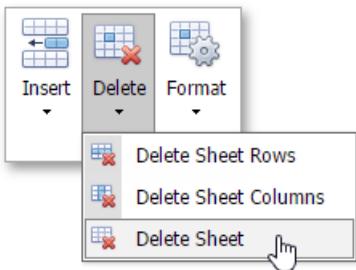
The **Spreadsheet** sets the following rules for a valid worksheet name.

- The maximum length of a worksheet name is 31 characters.
- A worksheet name must not be an empty string.
- A worksheet name must not include the following characters: \, /, ?, :, \*\*, \*[, ].
- A worksheet name must not start or end with a single quote.
- A worksheet name must not be equal to a name of another existing worksheet.

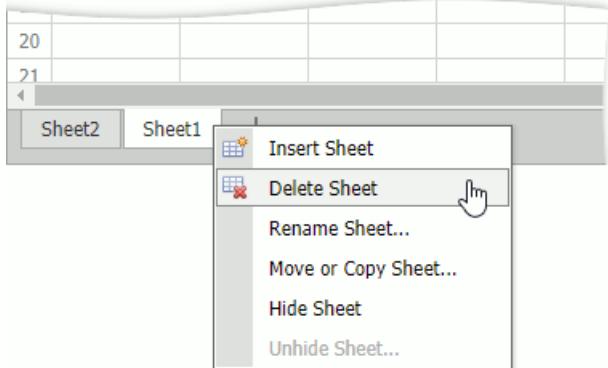
# Delete a Worksheet

To delete a worksheet, do one of the following.

- Switch to the worksheet you want to delete. On the **Home** tab, in the **Cells** group, click the **Delete** button and select the **Delete Sheet** item from the drop-down list.

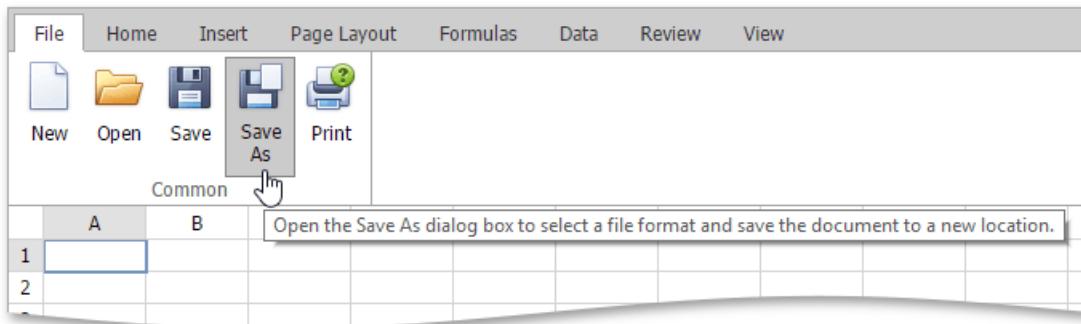


- Right-click the sheet tab and select **Delete Sheet** command in the displayed context menu.



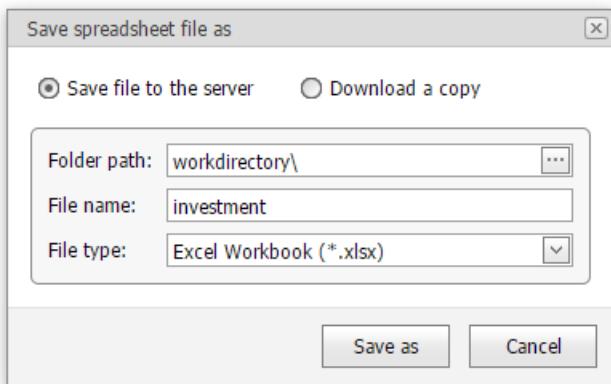
# Save a Workbook

To save a workbook, go to the **File** tab, and then click the **Save as** button in the **Common** group.



After that, the **Save spreadsheet file as** dialog box is invoked.

Specify whether the file should be saved to the server or downloaded as a copy. Then specify the folder path, file name and the file format in which to save the workbook.



The available file formats in the **Save as** dialog box are the following.

- Excel Workbook (\*.xlsx)
- Excel Macro-Enabled Workbook (\*.xlsm)
- Excel 97-2003 Workbook (\*.xls)
- Tab-delimited Text File format (\*.txt)
- Comma-separated Values File format (\*.csv)

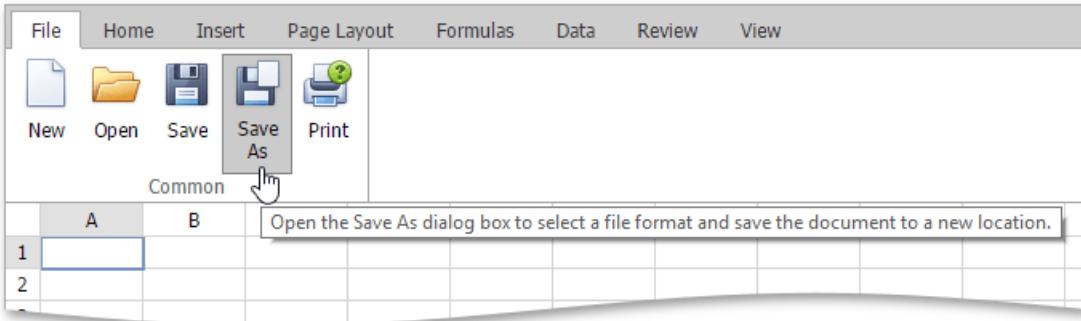
To save the active workbook with its current file format and location, go to the **File** tab, and then click the **Save** button in the **Common** group or press CTRL+S. If you click the **Save** button to save a newly created workbook, the **Save spreadsheet file as** dialog is invoked.

# Import Text Files

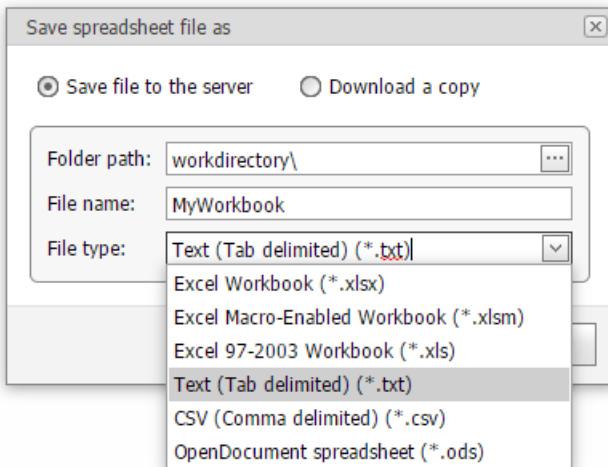
The **Spreadsheet** provides the capability to save a workbook as a text file (.txt or .csv).

## Save a Workbook as a Text File

1. To save a workbook as a text file, go to the **File** tab, and in the **Common** group, click the **Save As** button.



2. In the **Save Spreadsheet File As** dialog box that is invoked, select the **Text (Tab-delimited)** or **CSV (Comma-delimited)** item from the **File type** drop-down list.



The main features of the tab-delimited and comma-delimited file formats are described below.

- **Tab-delimited text files**

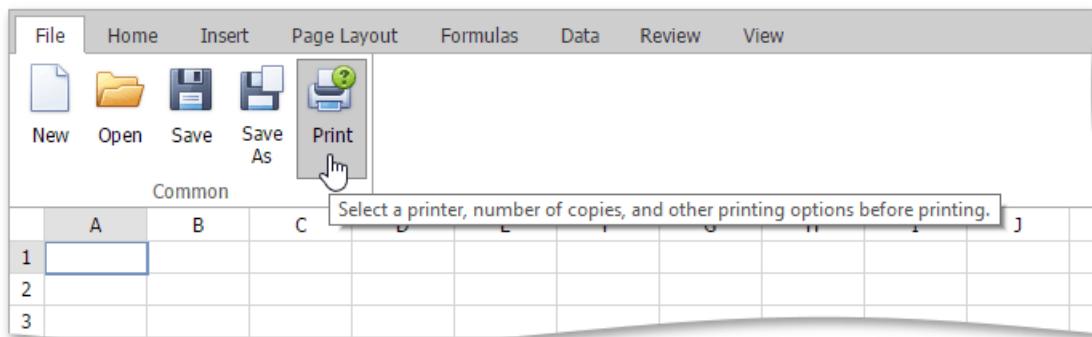
This file format uses the *TAB* character to separate each field of text. Note that the **Spreadsheet** only saves the active worksheet as a text (.txt) file. The columns are separated by the tab characters and each row ends with a carriage return character. The values and text in cells are saved as they are displayed in a worksheet. If a cell contains a comma, the cell contents are enclosed in double quotation marks. All formatting options applied to the cell, pictures and objects (such as hyperlinks) are lost.

- **Comma-delimited text files**

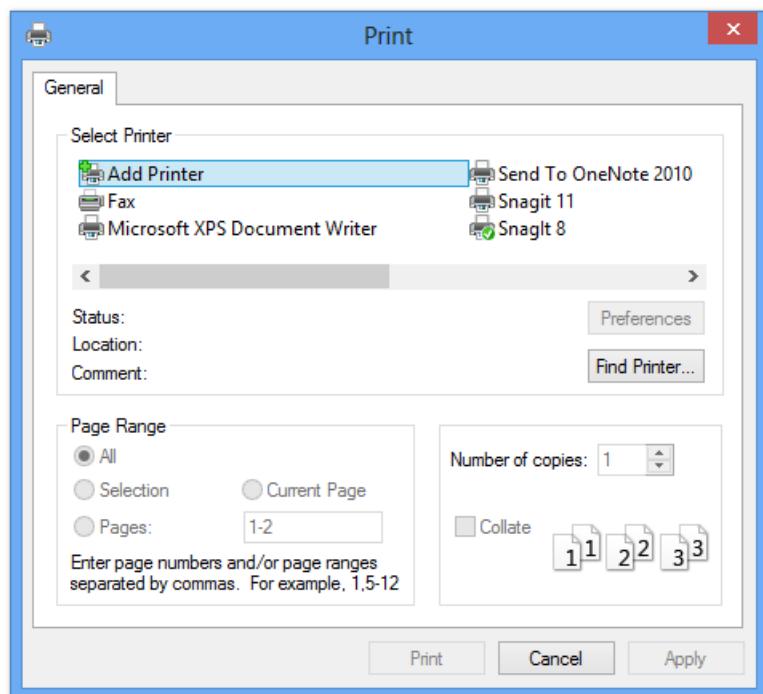
This file format uses the *comma* character to separate each field of text. Note that the **Spreadsheet** only saves the active worksheet as a CSV (.csv) file. Columns are separated by commas, and each row ends with a carriage return character. Cell text and values are saved as they are displayed in a worksheet. If a cell contains a comma, cell contents are enclosed in double quotation marks. All formatting options applied to the cell, pictures and objects (such as hyperlinks) are lost.

# Print a Workbook

To print a document, click the **Print** button in the **Common** group or press CTRL+P.



In the invoked **Print** dialog box, specify the required settings and click **Print**.

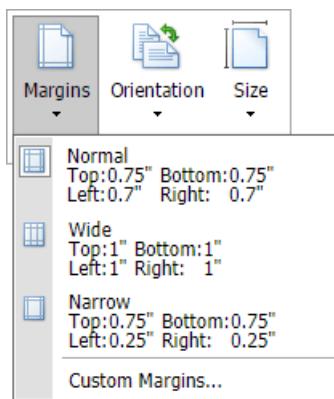


# Adjust Page Settings

Before you print a worksheet, you can change page layout settings such as [page margins](#), [page orientation](#), [paper size](#) and specify whether [gridlines and headings](#) should be printed in a worksheet.

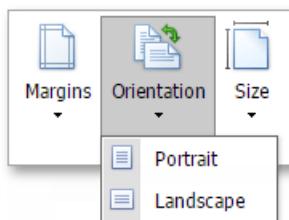
## Set Page Margins

1. Click a worksheet for which you wish to set the page margins.
2. In the **Page Setup** group within the **Page Layout** tab, click the **Margins** button and select the margin sizes to be set for the current worksheet.



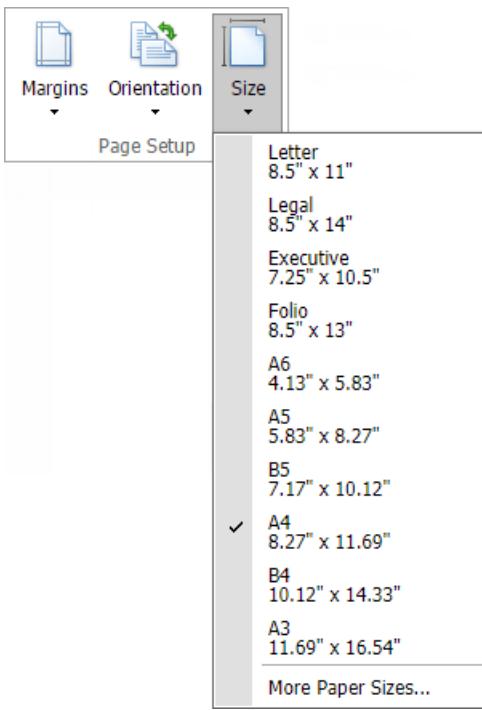
## Set Page Orientation

1. Click a worksheet for which you wish to specify page orientation.
2. In the **Page Setup** group within the **Page Layout** tab, click the **Orientation** button and select **Portrait** or **Landscape** from the invoked drop-down list.



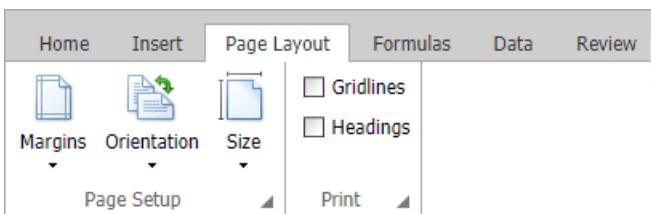
## Change Paper Size

1. Click a worksheet for which you wish to set the paper size.
2. In the **Page Setup** group within the **Page Layout** tab, click the **Size** button and select one of the predefined paper sizes from the invoked drop-down list.



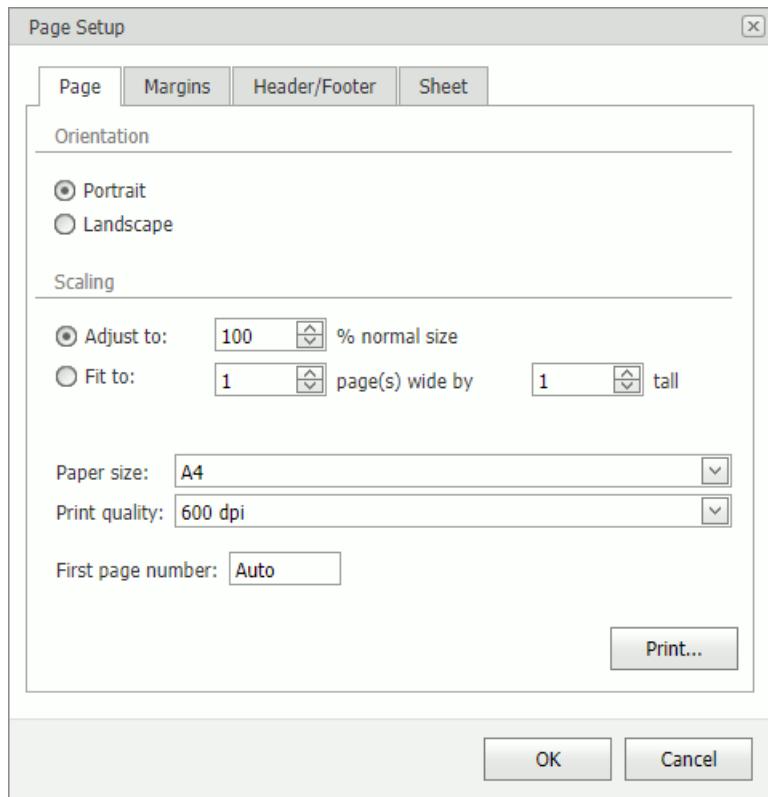
## Print Gridlines and Headings

1. Click a worksheet for which you wish to print gridlines and/or headings.
2. In the **Print** group within the **Page Layout** tab, select the **Gridlines** and/or **Headings** check boxes.



## Page Setup Dialog

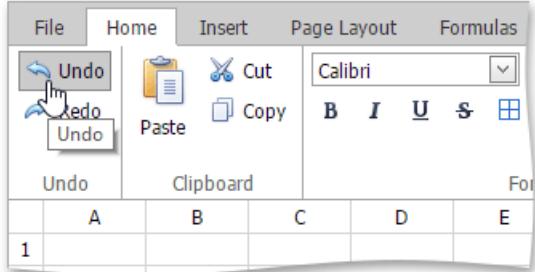
You can specify every page setting in a **Page Setup** dialog. To invoke the dialog, click a dialog box launcher in the bottom right corner of the **Page Setup** or **Print** group.



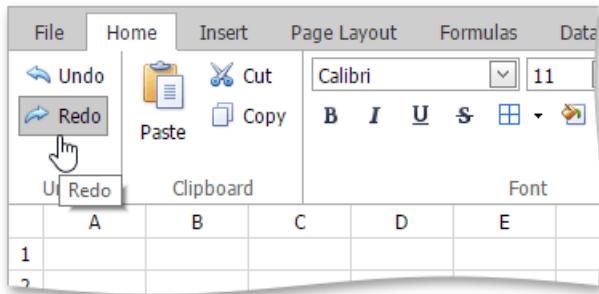
# Undo and Redo Last Actions

The **Spreadsheet** allows you to undo or redo your last performed action.

To undo an action, select the **Home** tab, and click the **Undo** button in the **Undo** group (or press CTRL+Z or ALT+BACKSPACE).



To redo an action that you undid, click the **Redo** button in the **Undo** group (or press CTRL+Y or ALT+SHIFT+BACKSPACE).



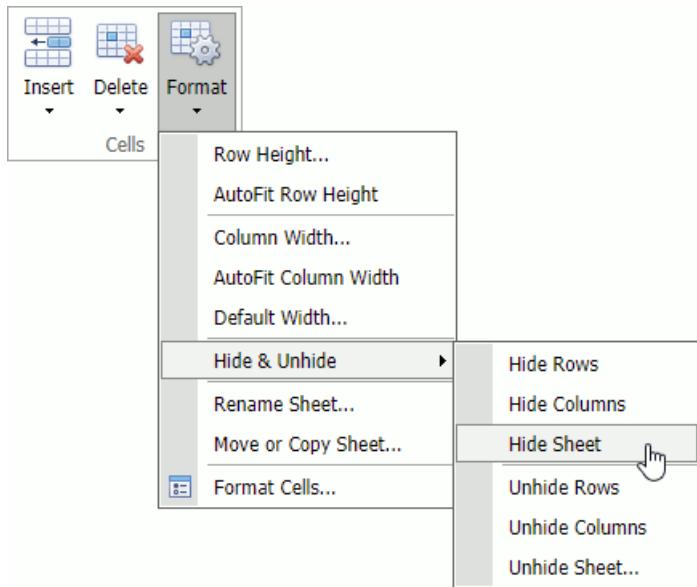
# Hide and Display Worksheets

The **Spreadsheet** provides the capability to hide worksheets in a workbook. It can be useful if you want to remove a worksheet from the **Sheet tab** bar without deleting it. By default, all worksheets are displayed on the **Sheet tab** bar.

## Hide Worksheets

To hide a worksheet do one of the following:

- On the **Home** tab, in the **Cells** group, click the **Format** button and select **Hide & Unhide | Hide Sheet**.



- Right-click a sheet tab and select the **Hide Sheet** command in the displayed context menu.

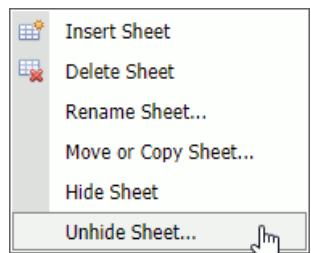
Note that this command is disabled when a workbook includes only one visible worksheet.

## Display Hidden Worksheets

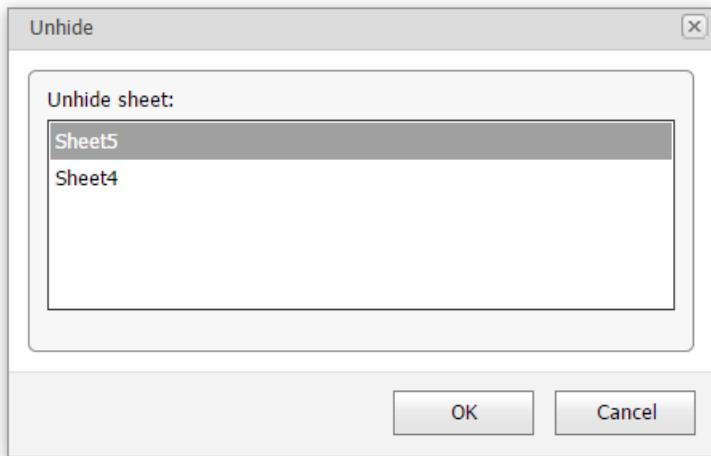
To display a hidden worksheet do one of the following:

- On the **Home** tab, in the **Cells** group, click the **Format** button and select **Hide & Unhide | Unhide Sheet....**

- Right-click a sheet tab and select the **Unhide Sheet...** command in the displayed context menu.



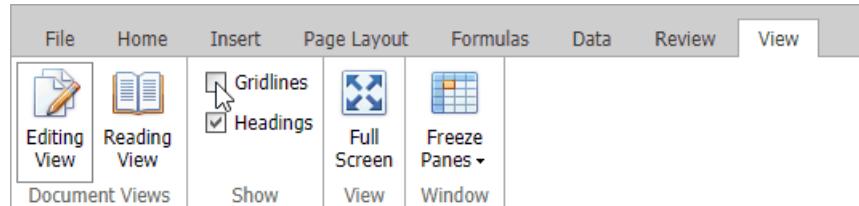
The **Unhide** dialog box appears. Select the name of the worksheet you want to display and click **OK**.



# Hide and Display Gridlines

The **Spreadsheet** allows you to hide gridlines that are displayed on a worksheet by default.

In the **Show** group within the **View** tab, uncheck the **Gridlines** check box to hide gridlines on a worksheet.

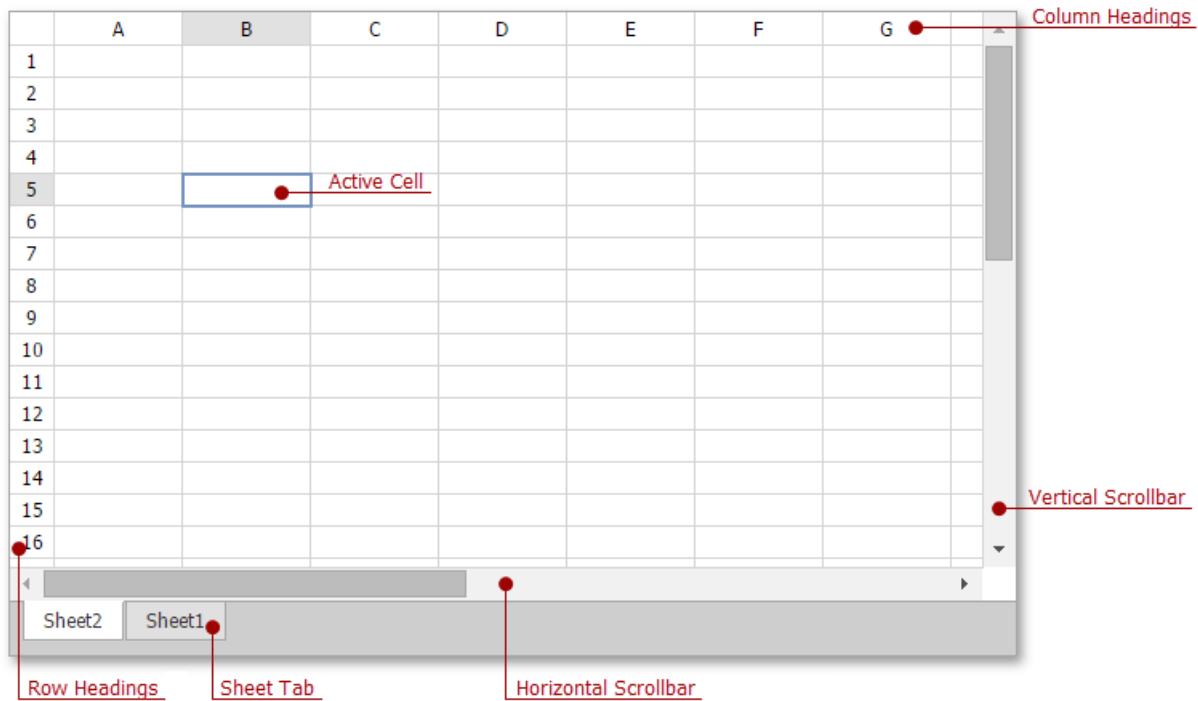


To display gridlines, select the **Gridlines** check box.

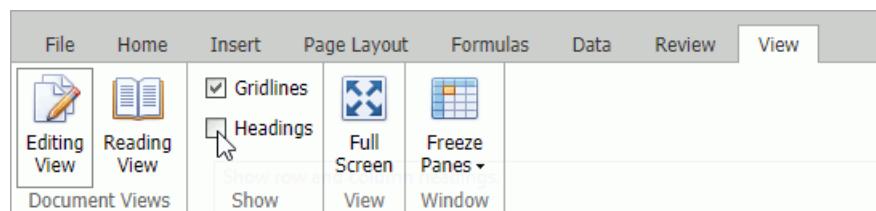
# Hide and Display Headings

**Row headings** are numbers that are displayed to the left side of the sheet.

**Column headings** are letters that are displayed above columns.

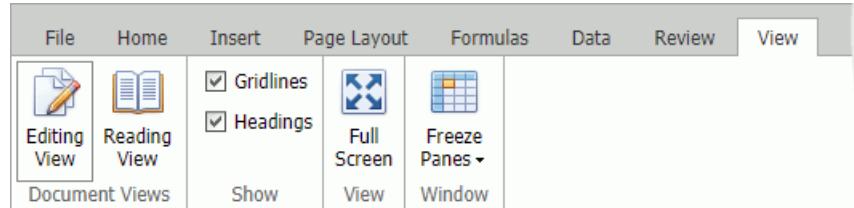


Clear the **Headings** check box in **View** tab's **Show** group to hide headings.



# Document Views

Use buttons in **View** tab's **Document Views** group to switch document view.



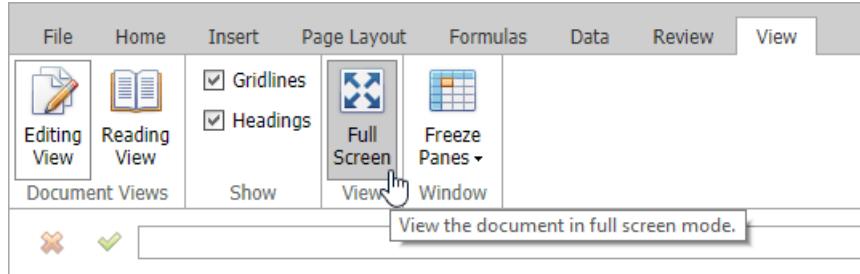
The **Editing View** mode allows you to modify a document.

The **Reading View** mode disables the editing functionality and replaces the [ribbon](#) with a compact toolbar.

# Full Screen Mode

The **Spreadsheet** provides functionality to display worksheets in full screen mode.

To turn on full screen mode, go to the **View** tab, and then click the **Full Screen** button in the **View** group (or press F11 button).



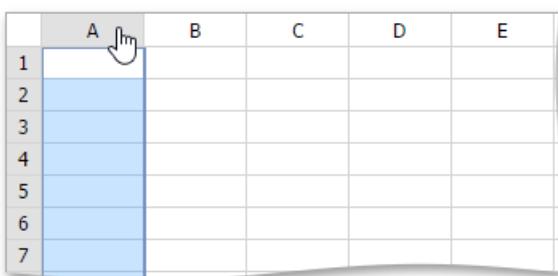
To disable the full screen mode, click the same button.

# Select Cells or Cell Content

## Selecting Cells

To select cells in the **Spreadsheet**, use the following mouse actions and keyboard shortcuts.

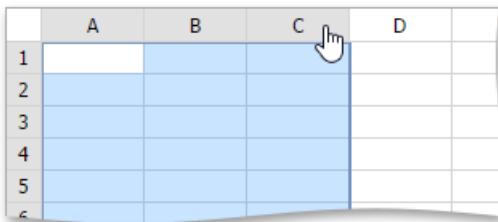
1. To select a **single cell**, click the cell or press the arrow keys to move to the required cell.
2. To select a **range of cells**, do one of the following.
  - o Click the first cell in the range and drag it to the last cell.
  - o Hold down the SHIFT key, and then press the arrow keys to extend the selection.
  - o Click the first cell in the range, hold down the SHIFT key, and then click the last cell in the range.
3. To select the **entire worksheet**, press CTRL+A.
4. To select **nonadjacent cells**, hold down the CTRL key, and then select other cells.
5. To select an **entire row or column**, click the row or column heading.



A screenshot of a spreadsheet application showing a 7x5 grid of cells. Row 1 is highlighted with a blue background, indicating it is selected. Column A is also highlighted with a blue background. The columns are labeled A through E, and the rows are labeled 1 through 7. A cursor arrow points to the top-left corner of the selected row.

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					

6. To select **multiple columns or rows**, drag across the row or column headings.



A screenshot of a spreadsheet application showing a 6x4 grid of cells. Columns A and C are highlighted with a blue background, indicating they are selected. The columns are labeled A through D, and the rows are labeled 1 through 6. A cursor arrow points to the top of column C.

	A	B	C	D
1				
2				
3				
4				
5				
6				

7. To select **several nonadjacent rows or columns**, click the heading of the first row or column in the selection, hold down CTRL, and then click the headings of other rows or columns you wish to select.

## Selecting Cell Content

To select the cell content, double-click the cell, and then drag it across the cell content you wish to select.



A screenshot of a spreadsheet application showing a 11x4 grid of cells. The cell at row 5, column 2, containing "Technology" is highlighted with a blue background, indicating it is selected. The columns are labeled 4 through 7, and the rows are labeled 4 through 11. A cursor arrow points to the cell content.

4			
5	Technology	\$ 5,212.35	
6	Energy	\$ 8,667.00	
7	Consumer Cyclical	\$ 9,084.41	
8	Industrials	\$ 4,780.84	
9	Consumer Defensive	\$ 6,438.00	
10	Financial Services	\$ 15,423.00	
11			

# Copy and Paste Cell Content

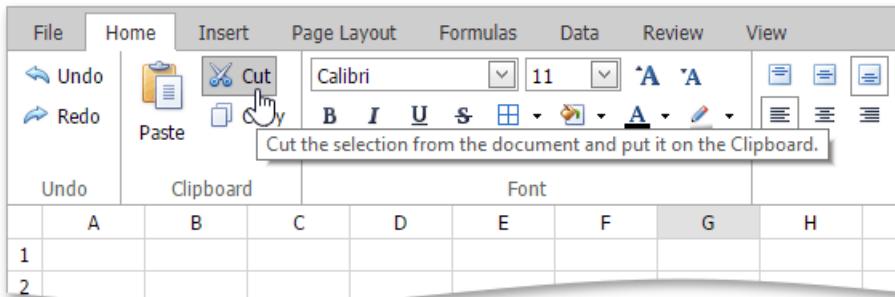
The **Spreadsheet** allows you to copy and paste entire cells, or only their contents, using the Clipboard.

## Note

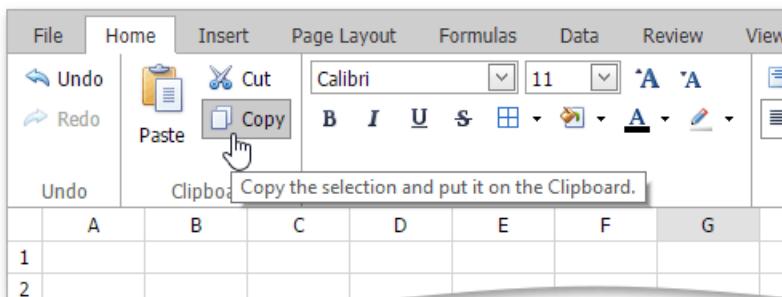
Note that you can use Clipboard only in IE. For other browsers, use the keyboard shortcuts Ctrl+C, Ctrl+X and Ctrl+V to copy, cut and paste respectively.

To move or copy cell content, follow the steps below.

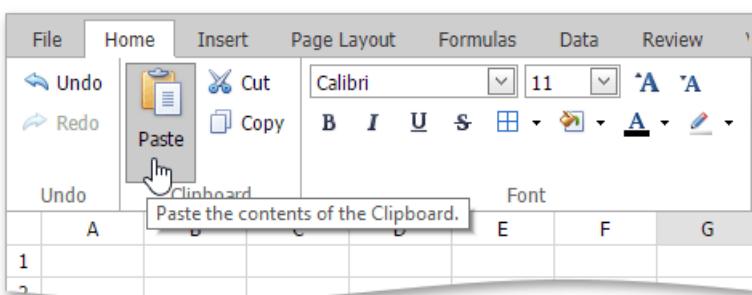
1. Select the cells that you wish to move or copy.
2. In the **Clipboard** group within the **Home** tab, do one of the following.
  - o To move the selected cells, click the **Cut** button (or press CTRL+X or SHIFT+DELETE).
  - o To copy the selected cells, click the **Copy** button (or press CTRL+C or CTRL+INSERT).



- o To copy the selected cells, click the **Copy** button (or press CTRL+C or CTRL+INSERT).



3. Click the upper-left cell in the area where you wish to paste the copied cells.
4. In the **Clipboard** group within the **Home** tab , click the **Paste** button (or press CTRL+V or SHIFT+INSERT).



# Fill Data Automatically

The **Spreadsheet** provides the capability to fill adjacent cells with data automatically.

To fill a selected cell or a range of cells with the data contained in adjacent cells, do the following.

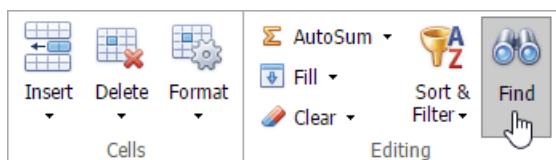
1. **Select** the cell (or range of cells) adjacent to the cell (or range of cells) of the data you wish to repeat.
2. In the **Editing** group within the **Home** tab, click the **Fill** button and select one of the following items from the drop-down list.



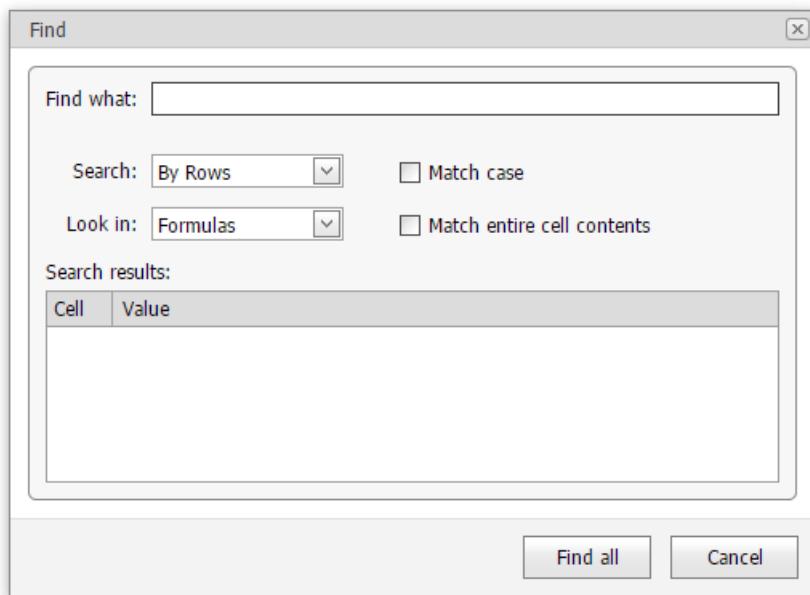
- **Fill Down** (or press CTRL+D) - pastes the contents of the cell that is above the selected cell, or pastes the contents of the topmost cell in the selected range to the cells below.
- **Fill Up** - pastes the contents of the cell below the selected cell, or pastes the contents of the lowermost cell in the selected range to the cells above.
- **Fill Right** (or press CTRL+R) - pastes the contents of the cell or cell range to the left of the selected cell(s).
- **Fill Left** - pastes the contents of the cell or cell range to the right of the selected cell(s).

# Find and Replace

The **Spreadsheet** allows you to search for specific data in the current worksheet. To perform a search, on the **Home** tab, in the **Editing** group, click the **Find** button or press CTRL+F.



The **Find** dialog will be invoked.



In the **Find what** field, enter the text or number you wish to find, and click the **Find Next** button to start the search. To define the direction of the search, in the **Search** field, select the **By Rows** or **By Columns** drop-down item. In the **Look in** field, select **Values** (to search cell values only) or **Formulas** (to search cell values and formula expressions, excluding the calculated results). To perform a case-sensitive search, select the **Match Case** check box. To restrict the search to the entire cell content, select the **Match entire cell contents** check box.

# Comments

The **Spreadsheet** allows you to attach notes to individual cells by using **comments**. Comments are extremely useful when you need to provide additional information, such as reminders, notifications, or feedback in a document without modifying cell content.

Comments are stored separately from a cell and displayed in a floating text box. A cell containing a comment has a red triangular indicator in the corner.

	G	H	I	J	K
4	Estimated Cost	Actual Cost			
5	\$1,500.00	\$1,250.00			
6	\$2,000.00	\$1,840.00			
7	\$1,450.00	\$1,450.00			

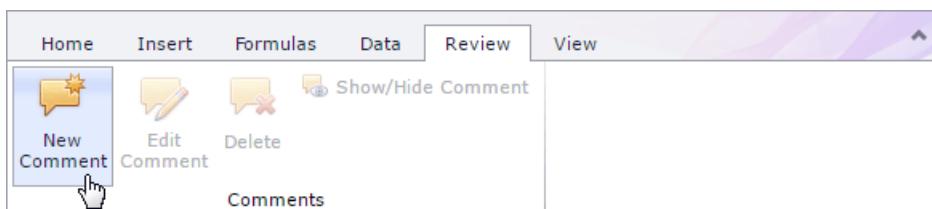
Mark M.:  
The cost is estimated  
to be increased by  
\$500

You can [add](#) new comments, [edit](#) existing comments, [move](#) and [resize](#) the comment box, [hide](#) or [delete](#) comments if they are no longer needed.

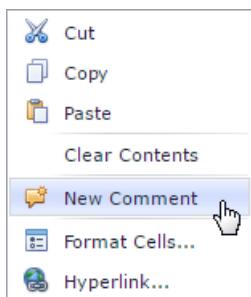
## Add a Comment

To insert a new comment, select the cell where you wish to place the comment, and do one of the following.

- On the **Review** tab, in the **Comments** group, click the **New Comment** button.



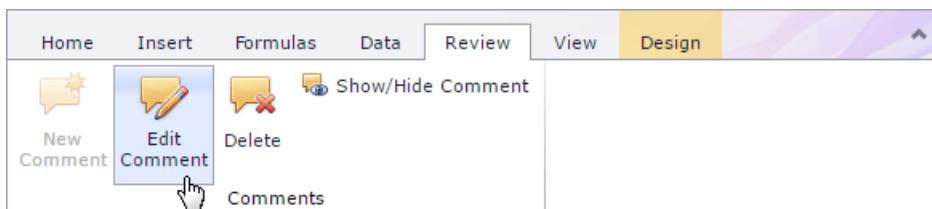
- Right-click the cell and select the **New Comment** item in the context menu.



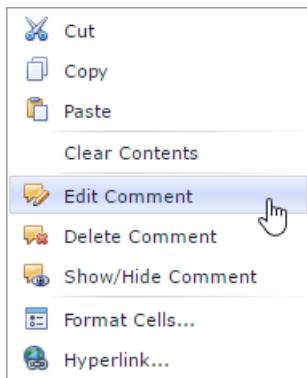
## Edit a Comment

To edit an existing comment, select the cell where you wish to modify the comment, and do one of the following.

- On the **Review** tab, in the **Comments** group, click the **Edit Comment** button.



- Right-click the cell and select the **Edit Comment** item in the context menu.



## Move and Resize a Comment

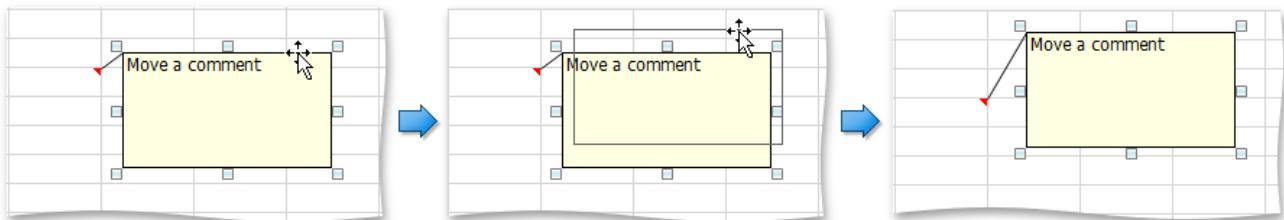
You can move and resize comment text boxes performing the following instructions.

- Select the cell that contains the comment you wish to move or resize.

### Tip

If the comment is hidden, click the **Show/Hide Comment** button to display the comment.

- Click the comment box border to display the **sizing handles** (small rectangles at the corners and sides of the comment box).
- Do one of the following.
  - To move a comment, hover the mouse over the comment border so that the four-way resize arrow appears, and drag the comment to a new location.



- To resize a comment, click one of the sizing handles and drag the edge of the comment box.



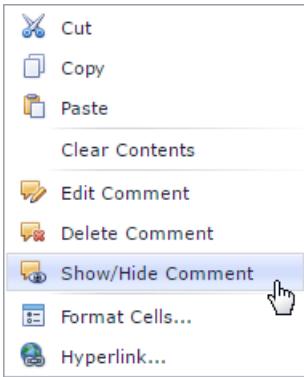
## Display or Hide a Comment

To show/hide a comment text box, select the cell that contains the comment you wish to display or hide and do one of the following.

- On the **Review** tab, in the **Comments** group, click the **Show/Hide Comment** button.



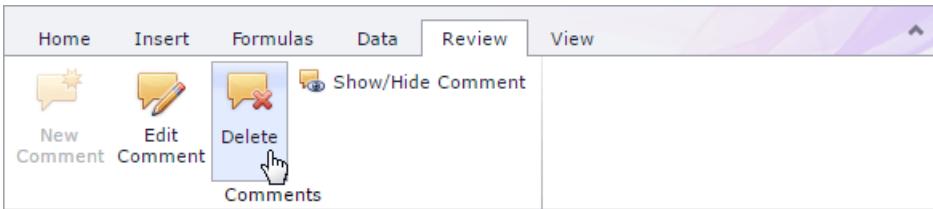
- Right-click the cell and select the **Show/Hide Comment** item in the context menu.



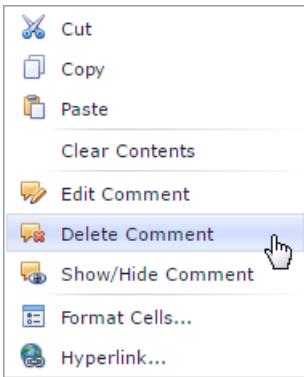
## Remove a Comment

To delete an existing comment, select the cell that contains the comment you wish to delete and do one of the following.

- On the **Review** tab, in the **Comments** group, click the **Delete** button.



- Right-click the cell and select the **Delete Comment** item in the context menu.

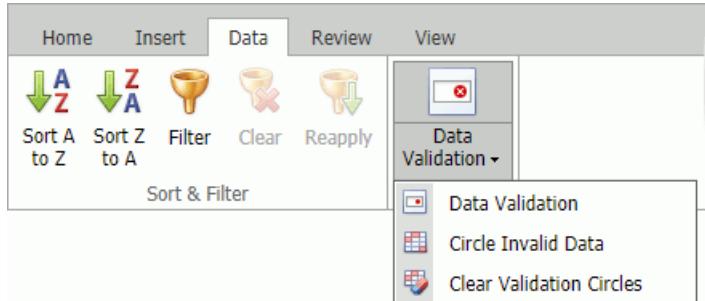


# Data Validation

## Data Validation Overview

Data validation allows you to restrict the data that can be entered into a cell. It prevents users from entering incorrect values. You can display an error messages with information on the restriction or with details on how to correct errors.

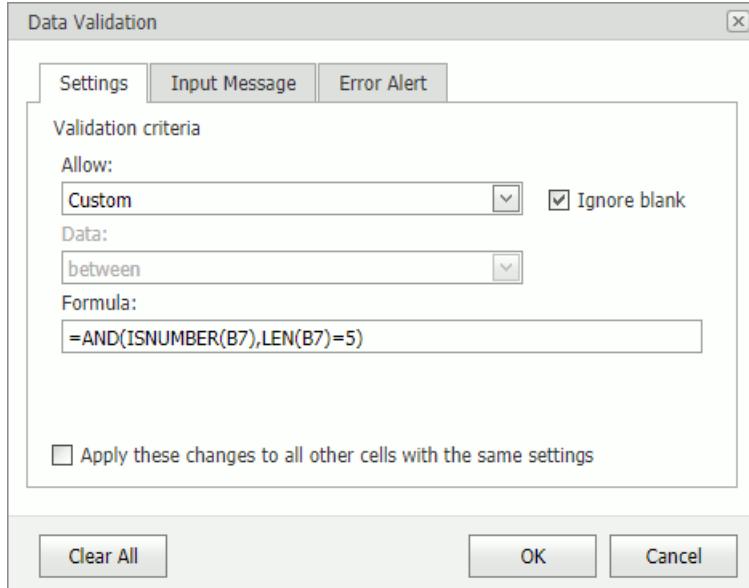
You can access validation settings in **Data** tab's **Data Tools** group.



## Data Validation Settings

You can define data validation rules as follows:

- Select cells for which you specify rules.
- Click **Data Validation** and select the **Data Validation** command in drop-down list to invoke the **Data Validation** dialog box.

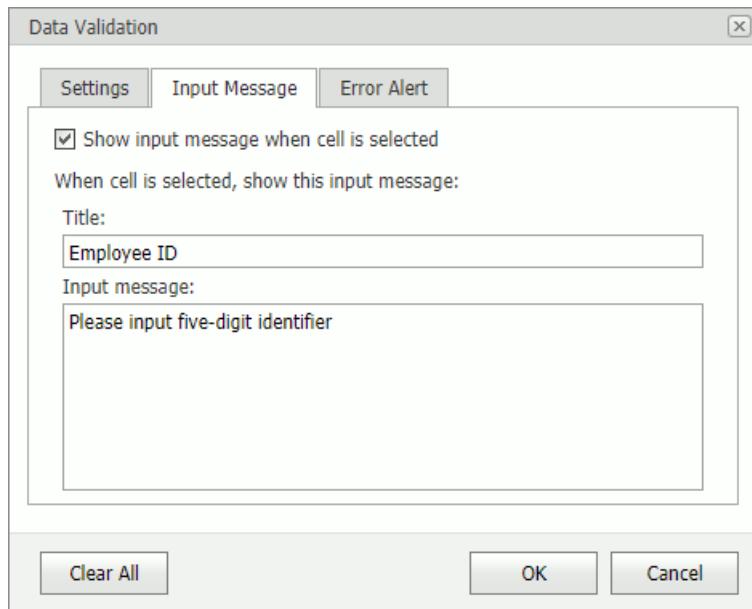


- Specify validation criteria on the **Settings** tab.
- Click **OK**.

## Data Validation Message

A data validation message is displayed when a cell is focused.

- Select cells for which a message should be displayed.
- Click **Data Validation** and select the **Data Validation** command in drop-down list to invoke the **Data Validation** dialog box.

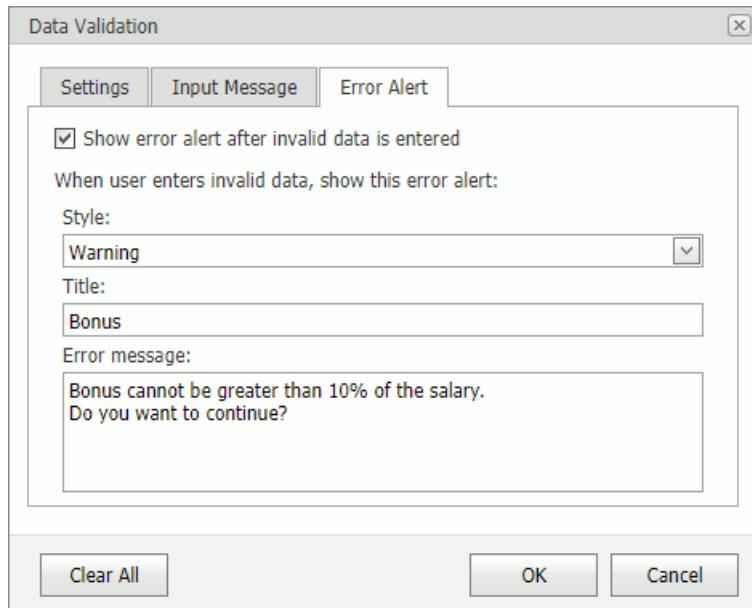


- Select the **Show input message when cell is selected** checkbox on the **Input Message** tab.
- Specify a message's title and text.
- Click **OK**.

## Data Validation Error Alert

A data validation error alert is displayed when a user enters invalid data.

- Select cells for which the alert should be displayed.
- Click **Data Validation** and select the **Data Validation** command in drop-down list to invoke the **Data Validation** dialog box.



- Select the **Show error alert after invalid data is entered** checkbox on the **Error Alert** tab.
- Select an alert style and specify its title and text.
- Click **OK**.

## Circle Invalid Data

Click **Data Validation** and select the **Circle Invalid Data** command in drop-down list to circle invalid data.

Employee ID	Employee name	Salary	Bonus	Department
10115	Augusta Delono	\$ 1,100.00	\$ 50.00	Accounting
10501	Berry Dafoe	\$ 1,650.00	\$ 150.00	IT
10709	Chris Cadwell	\$ 2,000.00	\$ 500.00	Management
10356	Esta Mangold	\$ 1,400.00	\$ 75.00	Logistics
10401	Frank Diamond	\$ 1,750.00	\$ 100.00	Marketing
10202	Liam Bell	\$ 1,200.00	\$ 130.00	Manufacturing
10205	Simon Newman	\$ 1,250.00	\$ 80.00	Manufacturing
10403	Wendy Underwood	\$ 1,100.00	\$ 50.00	Marketing

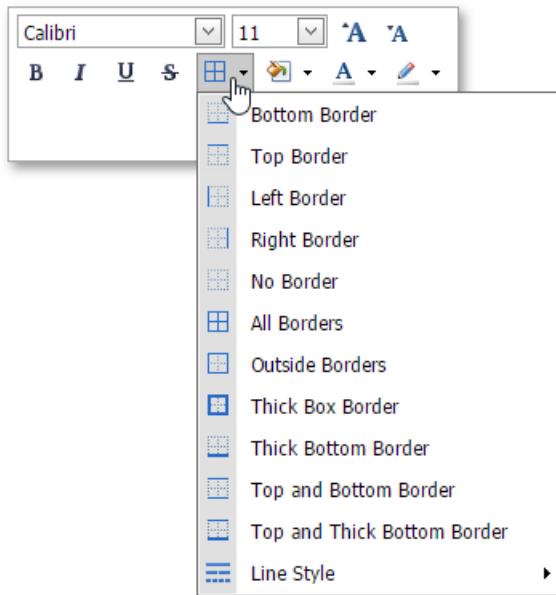
Click **Data Validation** and select the **Clear Invalid Data** command to hide circles.

# Format Cells

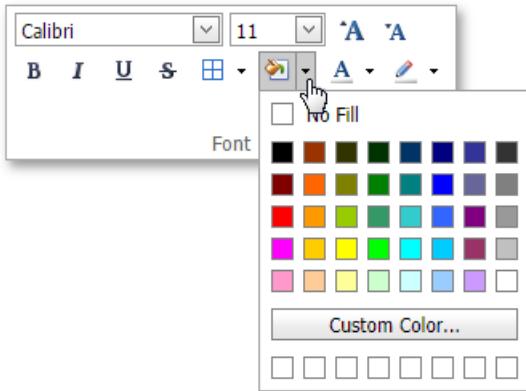
The **Spreadsheet** provides the capability to format cells and the data they contain.

To format a cell or a range of cells, follow the instructions below.

1. Select the cells you wish to format.
2. To add borders to the selected cells, in the **Font** group within the **Home** tab, click the **Borders** button's drop-down menu and select the border type. This menu also allows you to select the line style and the line color of borders.



3. To set the background color of the selected cells, in the **Font** group within the **Home** tab, click the **Fill Color** button's drop-down menu and select the desired color.



# Format Cell Content

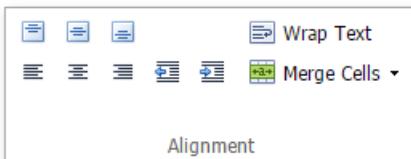
The **Spreadsheet** provides the capability to set the font style, size, color and text alignment in a cell.

To format cell content, follow the steps below.

1. Select a cell or a cell range that you wish to format.
2. To change the font, use the **Font** group within the **Home** tab to specify the font family, size, style, color, etc.



3. To position text within a cell so that it is centered, aligned to the left or aligned to the right, select the appropriate alignment options in the **Alignment** group within the **Home** tab.



4. To undo the formatting options you applied before, select the text. In the **Editing** group within the **Home** tab, click the **Clear** drop-down and select the **Clear Formats** item.



# Wrap Text and Merge Cells

If text is too long to be displayed in a single cell, the **Spreadsheet** allows you to wrap the text to make it display on multiple lines in the cell, or merge cells to combine two or more adjacent cells into a single larger/longer cell.

## Merging Cells

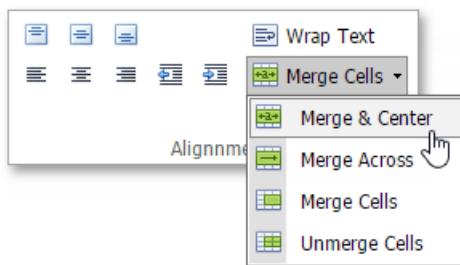
To merge cells, follow the instructions below.

1. Select the cells that you wish to merge.

### ■ Note

Make sure that the data you wish to display in the merged cell is contained in the upper-left cell of the selected range, because only the contents of this cell will remain in the merged cell. The data in the other cells will be deleted.

2. In the **Alignment** group within the **Home** tab, click the **Merge Cells** button's drop-down arrow and select one of the following items.
  - o **Merge & Center** - merge the selected cells and center the text in a merged cell.
  - o **Merge Across** - merge each row of the selected cell range into larger cells.
  - o **Merge Cells** - merge the selected cells into a single cell.

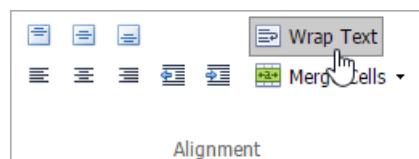


3. If you change your mind and wish to split a merged cell, select this cell and click the **Unmerge Cells** item in the **Merge Cells** button's drop-down menu. The data of the merged cell appears in the upper-left cell of the range of split cells.

## Wrapping Text in a Cell

To wrap text in a cell, do the following.

1. Select a cell or a range of cells containing the text you wish to wrap.
2. In the **Alignment** group within the **Home** tab, click the **Wrap Text** button. The text is displayed on multiple lines within the cell.



3. To unwrap the text, click the **Wrap Text** button again. The text is displayed in the same way as it was before the wrap option was applied.

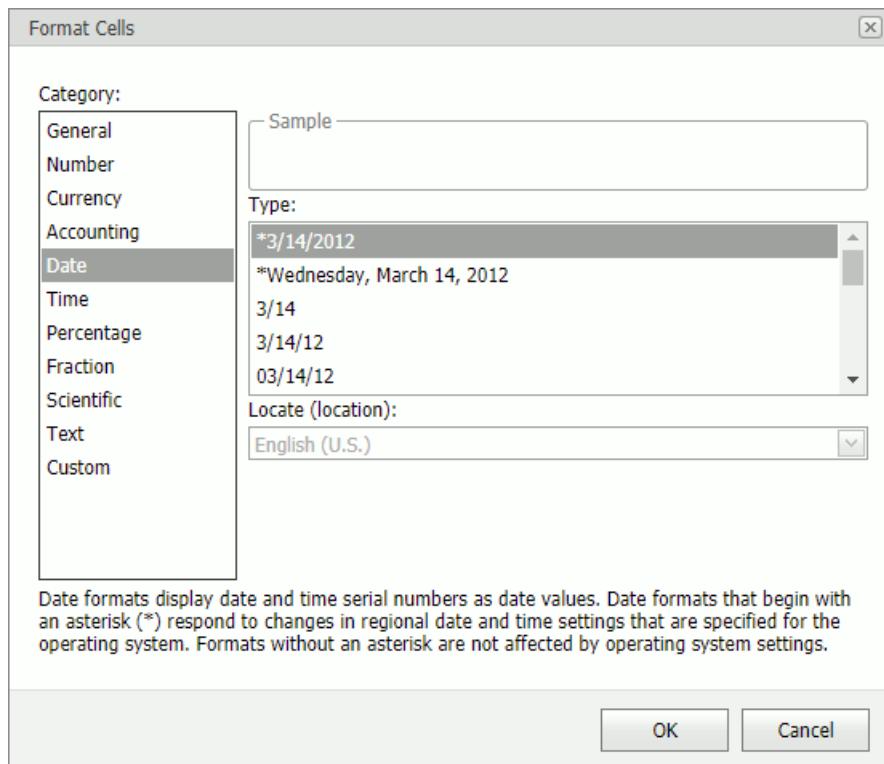
# Number Formatting

The **Spreadsheet** allows you to format numbers in cells, for example, display numbers as monetary values or dates. The default format for cell content is *General*. The format does not change the value, it only changes the way the number is displayed. Number format options are available in the **Home** tab's **Number** group.

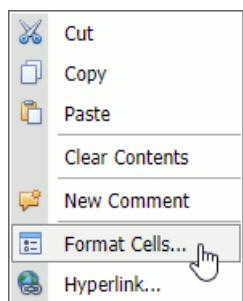


You can click one of the buttons in the **Number** group to apply a format, such as **Accounting Number Format**, **Percent Style** or **Comma Style**.

You can also use the **Format Cells** dialog to format numbers.



To invoke this dialog, click the dialog box launcher at the bottom right corner of the **Number** group or right-click the cell and select **Format Cells...**



## Shortcuts

You can use the following shortcuts to apply a number format:

CTRL+SHIFT+1	Applies the Number format with two decimal places.
CTRL+SHIFT+2	Applies the Time number format.
CTRL+SHIFT+3	Applies the Date format.
CTRL+SHIFT+4	Applies the Currency format.
CTRL+SHIFT+5	Applies the Percentage format.
CTRL+SHIFT+6	Applies the Scientific number format.

# Clear Cell Formatting

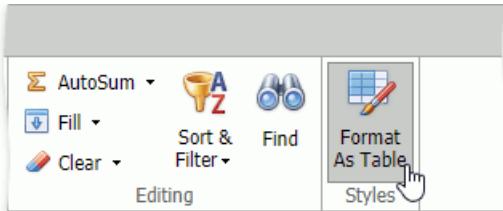
To remove all formatting from cells, in the **Editing** group within the **Home** tab, click the **Clear** button, and select **Clear Formats** from the drop-down menu.



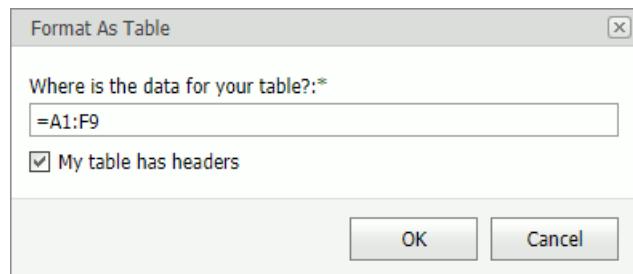
# Format As Table

Do the following to convert a range of cells to a table with its own style:

- Select the cell range.
- In the **Home** tab's **Styles** group, click the **Format As Table** drop-down button and select the style.



A **Format As Table** dialog box appears.



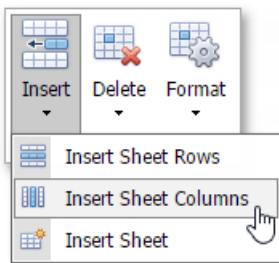
- Select the **My table has headers** checkbox if your table has headers and click **OK**.

# Insert and Delete Columns and Rows

The **Spreadsheet** provides the capability to insert and delete columns and rows in a worksheet.

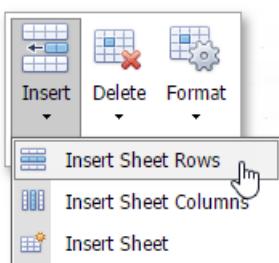
## Insert Columns

1. To insert a single column, [select](#) the entire column by clicking the column heading, or by clicking a cell in the column to the left of where the new column will be inserted. To insert multiple columns, [select](#) the number of columns you wish to insert. For example, to insert three columns, select three columns by clicking column headings.
2. In the **Cells** group within the **Home** tab, click the **Insert** button and select the **Insert Sheet Columns** item from the drop-down list.



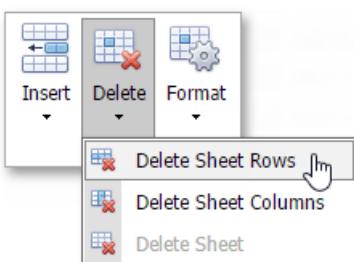
## Insert Rows

1. To insert a single row, [select](#) the entire row by clicking the row heading, or click a cell in the row above the position in which you wish to insert a new row. To insert multiple rows, [select](#) the number of rows you wish to insert. For example, if you wish to insert three rows, select three rows by clicking the row headings.
2. In the **Cells** group within the **Home** tab, click the **Insert** button and select the **Insert Sheet Rows** item from the drop-down list.



## Delete Rows and Columns

1. [Select](#) the column(s) or row(s) you wish to delete by clicking its heading.
2. In the **Cells** group within the **Home** tab, click the **Delete** button and select the **Delete Sheet Rows** or **Delete Sheet Columns** item from the drop-down list.



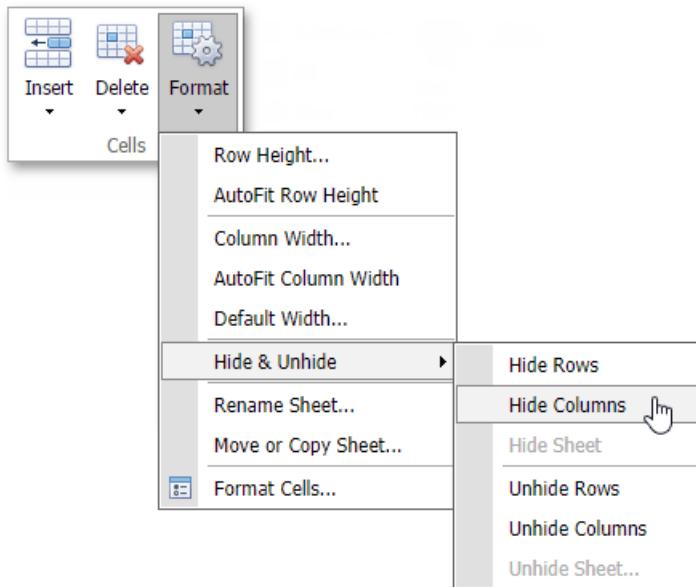
# Show and Hide Columns and Rows

The **Spreadsheet** provides the capability to display and hide columns and rows in a worksheet.

## Hide and Unhide Columns

To hide a column, [select](#) the column to be hidden and do one of the following.

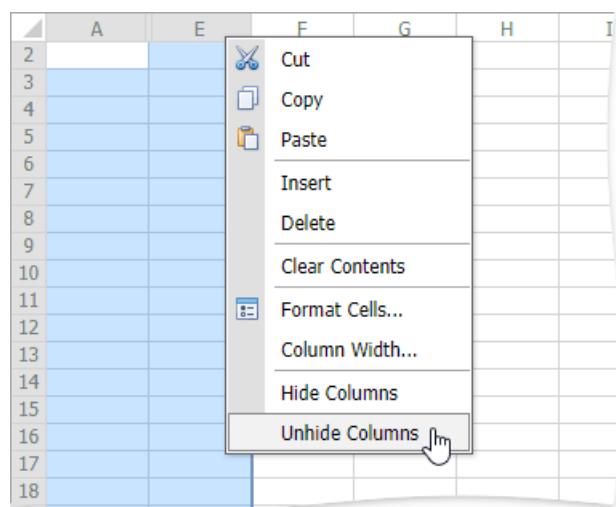
- Set the column width to zero. To do this, drag the boundary of the column heading until the column is hidden.
- On the **Home** tab, in the **Cells** group, click the **Format** button and select **Hide & Unhide | Hide Columns**.



- Right-click the selected column and select the **Hide Columns** item from the context menu.

To show a hidden column, select the columns adjoining either side of the hidden column, and then do one of the following.

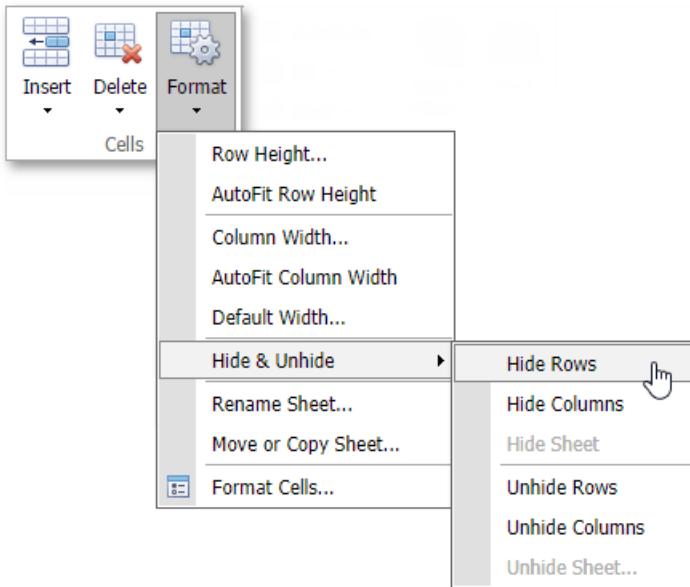
- On the **Home** tab, in the **Cells** group, click the **Format** button, and then select **Hide & Unhide | Unhide Columns**.
- Right-click the selected columns and select the **Unhide Columns** item from the context menu.



## Hide and Unhide Rows

To hide a row, select the row to be hidden and do one of the following.

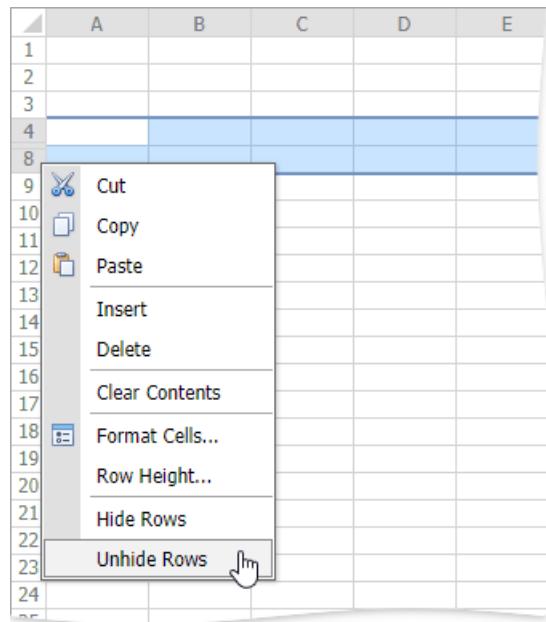
- Set the row height to zero. To do this, drag the boundary of the row heading until the row is hidden.
- On the **Home** tab, in the **Cells** group, click the **Format** button and select **Hide & Unhide | Hide Rows**.



- Right-click the selected row and select the **Hide Rows** item from the context menu.

To display a hidden row, select the rows that are above and below the hidden row, and then do one of the following.

- On the **Home** tab, in the **Cells** group, click the **Format** button, and then select **Hide & Unhide | Unhide Rows**.
- Right-click the selected rows and select the **Unhide Rows** item from the context menu.



## Display all hidden columns and rows

- Press **CTRL+A** to select all rows and columns.
- On the **Home** tab, in the **Cells** group, click the **Format** button, and then select **Hide & Unhide | Unhide Rows or Unhide Columns**.

# Specify Column Width and Row Height

## Set the column width

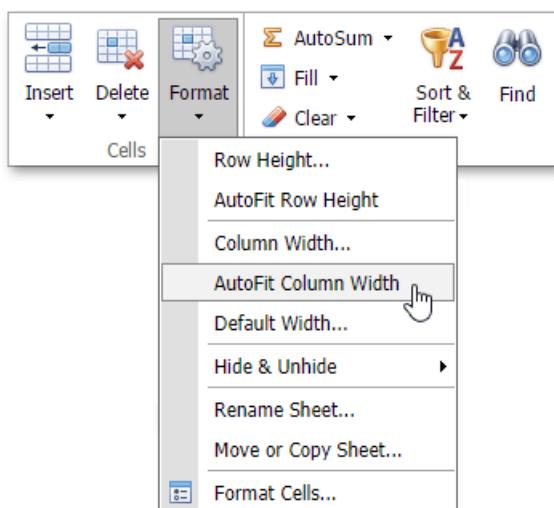
The column width should be between 0 and 1785 points. Set a column's width to 0 to hide this column.

You can change the column width in the following ways:

- Drag the right boundary of a column heading to resize the column's width. To set multiple columns' width, select the columns and drag the right boundary of any selected column.
- Select a column and click the **Format** button in the **Home** tab's **Cells** group. Select the **Column Width...** command. Specify the column's width in the dialog box.
- Right-click a column heading and select **Column Width...** in the context menu. Specify the column's width in the dialog box.

To make the column width to automatically fit the contents, do one of the following:

- Select a column and click the **Format** button in the **Home** tab's **Cells** group. Select the **AutoFit Column Width** command in the drop-down list.
- Double-click a column heading's right border.



## Set the row height

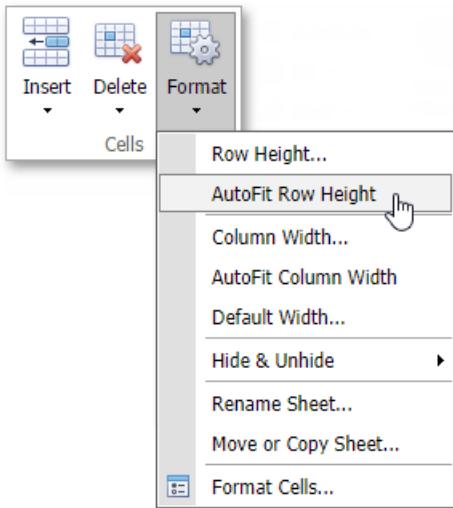
The row height should be between 0 and 546 points. Set a row's height to 0 to hide this row.

You can change the row height as follows:

- Drag the lower boundary of a row heading to resize the row's height. To set multiple rows' height, select the rows and drag the lower boundary of any selected row.
- Select a row and click the **Format** button in the **Home** tab's **Cells** group. Select the **Row Height...** command. Specify the row's height in the dialog box.
- Right-click a row heading and select the **Row Height...** in the context menu. Specify the row's height in the dialog box.

Do one of the following to make the row height automatically fit its contents:

- Select a row and click the **Format** button in the **Home** tab's **Cells** group. Select the **AutoFit Row Height** command in the drop-down list.
- Double-click a row heading's bottom border.



# Sort Data

The **Spreadsheet** provides the capability to sort data by text (**A to Z** or **Z to A**), numbers (**smallest to largest** or **largest to smallest**), dates and times (**oldest to newest** or **newest to oldest**) in one column.

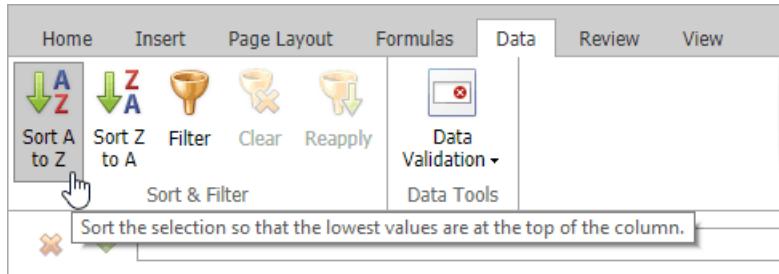
To perform sorting, do the following.

1. Select a range in the column you wish to sort.

**Note**

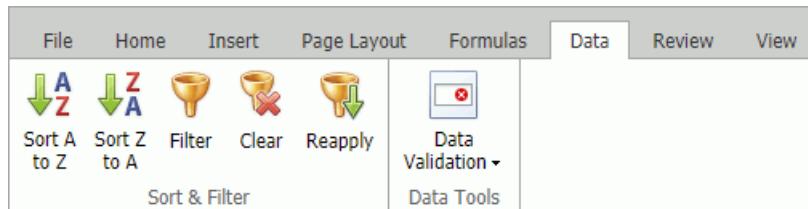
If multiple columns are selected, the range will be sorted by the **first** column.

2. On the **Data** tab, in the **Common** group, click **Sort A to Z** to select ascending order, or click **Sort Z to A** for descending order.



# Filtering

Use commands in the **Data** tab's **Sort & Filter** group to activate filtering, reapply a filter, or remove all the filters in a worksheet.

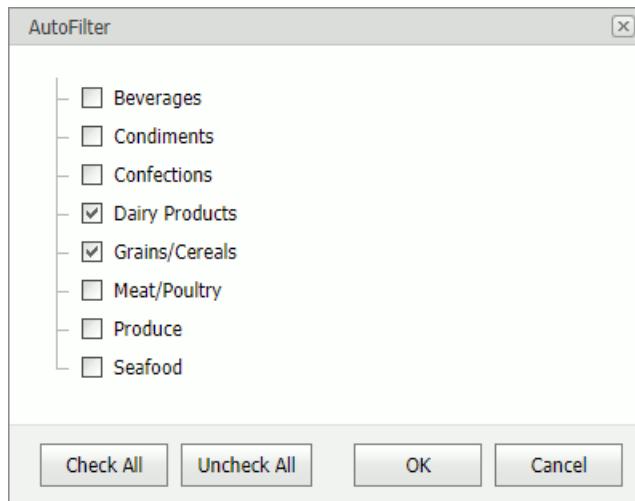


Select a table and click the **Filter** button to enable filtering. Click the arrow in a column's header to apply a filter to the column.

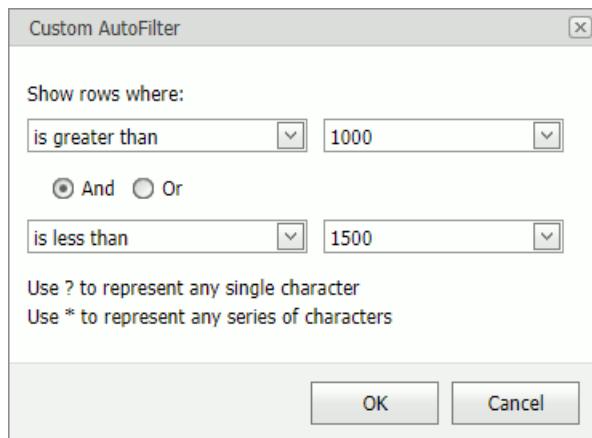
## Apply a Filter

To filter a column by particular values, click the arrow in the column header and select **Filter by Values....** This invokes a dialog box with a list of column values.

Select/unselect check boxes to display/hide values.



To apply a custom filter, click the arrow in a column header, select **Text Filters** command, and select one of predefined filters. This invokes the **Custom AutoFilter** dialog box. Specify a criteria operator and an operand value and click **OK**.

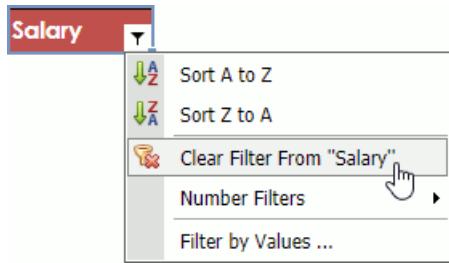


### Note

The **Text Filter** menu's name and content depends on the type of data in the filtered column (text, numeric values or dates).

## Clear Filter

Click the arrow in a column's header and select **Clear Filter From "ColumnName"** to clear the column's filter.



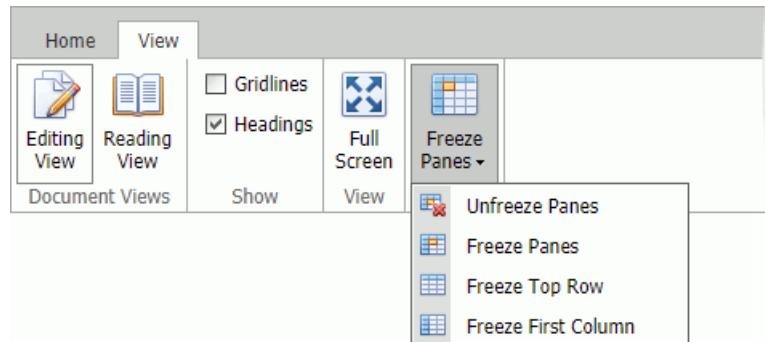
Click the **Clear** button in the **Data** tab's **Sort & Filter** group to clear all the filters.

## Reapply Filter

New or modified data in a column is not filtered automatically. Click the **Reapply** button to reapply the filter.

# Freeze Panes

You can lock specific rows or columns to display this area while scrolling the worksheet.



The **Unfreeze Panes** command cancels the applied freezing.

The **Freeze Panes** command freezes columns to the left of the selected cell(s) and rows above the selected cell(s).

The **Freeze Top Row** command freezes the top row.

The **Freeze First Column** command freezes the first column.

# Create a Simple Formula

The **Spreadsheet** allows you to perform calculations on data in cells using formulas. A formula is a string expression that starts with the equals sign ("="). Formulas can contain constants, math operators, functions, cell references, etc.

You can create and edit formulas directly within cells or in a formula bar.

For example, if you wish to add 1 to the product of 2 and 5, type the following formula in the cell in which you wish to insert the formula.

=2\*5+1

Press ENTER. The result appears in the cell in which you inserted the formula.

	A	B	C	D
1				
2		11		
3				
4				
5				

# Cell References

If you want to change data in a worksheet without changing formulas that use this data for evaluation, you can use **cell references**. A cell reference defines cell location in a worksheet. It is a combination of column letters (**A, B, C**, etc.) and row numbers (**1, 2, 3**, etc.). For example, **A1** refers to a cell at the intersection of column A and row 1.

To add values in cells A1 and A2, and divide the result by the value in cell A3, type the following formula (use parentheses to determine the order of operations):

**= $(A1+A2)/A3$**

You can also use a reference to a cell located in another worksheet. For example, to multiply a value in cell B1 by the value in cell B1 in *Sheet 2*, enter the following formula.

**= $B1*Sheet2!B1$**

To prevent data from changing when the formula is copied, use the **absolute reference**. Absolute references have a dollar sign (\$) before column and/or row references.

The following example demonstrates how to use a constant value in cell B1 in calculations:

**= $A1*$B$1$**

# Using Functions in Formulas

The **Spreadsheet** provides the capability to use a set of predefined **functions** in formulas to perform simple or complex calculations.

To create a formula containing functions, follow the instructions below.

1. Click the cell in which you want to insert the formula.
2. Type the equal sign "`=`". This is required to interpret the cell content as a formula. Skip this action if you insert the function in a cell which already contains a formula.
3. Type the function's name, or [insert the required function](#) from the **Function Library**.
4. Enter the arguments between the function's parentheses.
5. Press **ENTER**. The result appears in the cell in which you inserted the formula.

## Insert a Function

If you do not remember the name of the function you want to use, you can insert the desired function quickly using the **Function Library** group within the **Formulas** tab.

On the **Formulas** tab, in the **Function Library** group, click the button corresponding to the category to which your function belongs, and select this function from the button's drop-down list.

### Tip

Frequently used functions such as **Sum**, **Average**, **Count Numbers**, **Max** and **Min** are also listed under the **AutoSum** button on the **Home** tab in the **Editing** group.

For example, if you wish to add all numbers in the range **E4:E8**, in the **Function Library** group, select the **SUM** function from the **AutoSum** (or **Math & Trig**) button's drop-down list. Type "**E4:E8**" in the function's parentheses or select the cell range directly in the worksheet, and press **ENTER**.

The screenshot shows the Microsoft Excel ribbon with the 'Formulas' tab selected. In the 'Function Library' group, the 'AutoSum' button is highlighted, and its dropdown menu is open, showing options like Sum, Average, Count Numbers, Max, and Min. Below the ribbon, a table of purchases is displayed. The formula `=SUM(E3:E8)` is entered in cell E10, which is the subtotal cell for the quantity column (column E). The table has columns for Description, Quantity, Unit Price, and Amount.

	A	B	C	D	E	F	G
1							
2		DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT		
3		Chairs	5	\$ 400.00	\$ 2,000.00		
4		Computers	5	\$ 5,000.00	\$ 25,000.00		
5		Desks	5	\$ 900.00	\$ 4,500.00		
6		Internet Access	5	\$ 500.00	\$ 2,500.00		
7		Printer	1	\$ 1,500.00	\$ 1,500.00		
8		Software	5	\$ 1,900.00	\$ 9,500.00		
9							
10				Subtotal:	=SUM(E3:E8)		
11							
12							
13							

### Note

If you start the formula with a function, the **Spreadsheet** automatically adds the equal sign to your formula.

## Nested functions

You can create a formula with a function that uses another function as one of the arguments. A function that is used as an argument is called a **nested function**. A formula can contain up to 64 levels of nesting.

Examples of formulas with nested functions are detailed in the table below.

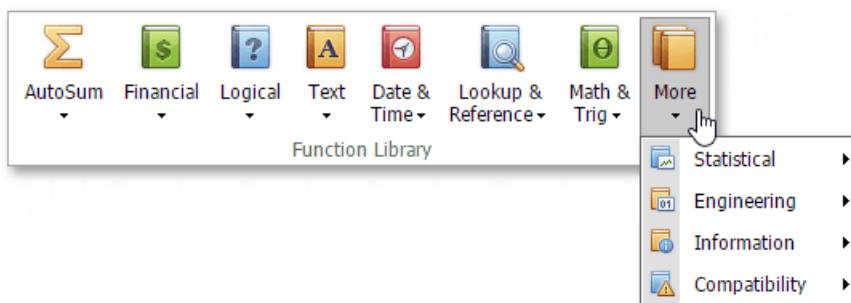
FORMULA	DESCRIPTION
=ROUND(SUM(A1:A5),2)	Round the sum of the values contained in the cell range <b>A1:A5</b> to two decimal places.
=SQRT(AVERAGE(A1:A5))	Returns the square root of the average value of the numbers in the cell range <b>A1:A5</b> .
=IF(A5<1000, POWER(A5,2))	Square the value in cell <b>A5</b> if it is less than 1000.

# Supported Functions

The **Spreadsheet** supports the following functions that are used in formulas.

- **Mathematical Functions** - used to perform common mathematical operations: addition (SUM), multiplication (PRODUCT), exponentiation (POWER), extraction of the square root (SQRT), evaluation of trigonometric functions (e.g., SIN, COS or TAN), etc.
- **Financial Functions** - used to perform various types of financial operations: calculation of interest rates (RATE), calculation of interest payments (IPMT), etc.
- **Logical Functions** - used to perform logical operations such as AND, OR, NOT, etc.
- **Text Functions** - used to provide operations with text data in cells, such as string concatenation (CONCATENATE), replacement of one part of a string with another string (REPLACE), etc.
- **Date and Time Functions** - used to work with dates: to calculate the number of days, months, or years between two dates (e.g., DATEIF or DAYS360), or to add various components of a specified time to a worksheet (e.g., SECOND, MINUTE or HOUR).
- **Lookup and Reference Functions** - used for searching specific data in a worksheet: to look up values in vectors, arrays or references (e.g., LOOKUP or MATCH).
- **Statistical Functions** - used for data analysis: to find the average of a list of values (AVERAGE), to evaluate the covariance between two data sets (COVAR), to find the smallest or the largest value in a list of arguments (MAX, MIN), etc.
- **Engineering Functions** - used to work with special functions (e.g., BESSELI or BESSELJ), complex numbers (e.g., COMPLEX or IMAGINARY) and various numeral systems (e.g., DEC2BIN or BIN2DEC).
- **Information Functions** - used to provide information about the formatting, location or content of cells (e.g., CELL, INFO or ISTEXT).
- **Compatibility Functions** - replaced by new functions in Microsoft® Excel® versions 2010 and higher. These functions can be used to provide compatibility with earlier versions of Microsoft® Excel®.

All of the functions described above are available in the **Function Library** group within the **Formulas** tab.



# Error Types in Formulas

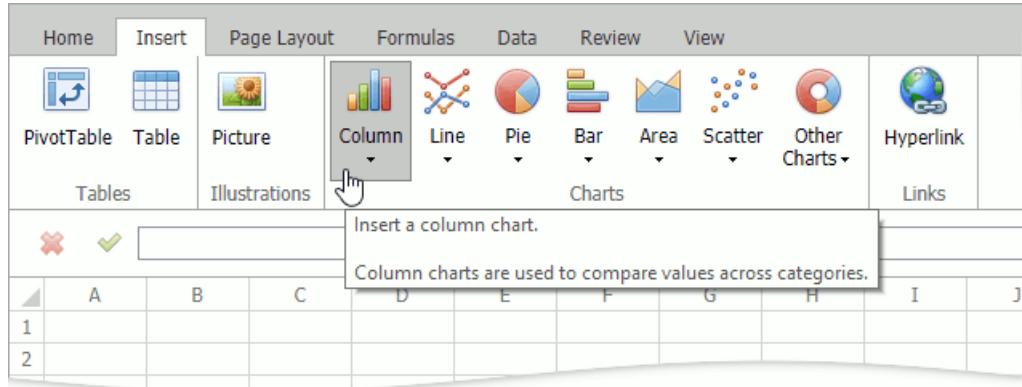
If a formula in a cell cannot be calculated correctly, it means that the cell contains an **error**. The error appears because the formula's syntax is incorrect, or the formula uses unexpected arguments or data types.

Errors that occur in formulas are detailed in the following table:

ERROR	DESCRIPTION	EXAMPLE
#DIV/0!	Division by zero.	=A1/B1 (where the value in cell B1 is equal to zero, or cell B1 is blank)
#NAME?	The formula refers to a name that doesn't exist or is spelled incorrectly.	=SUM(Values) (the cell range named "Values" does not exist)
#N/A	The referenced value is not available to the formula.	=SUM(A1:A5*B1:B3) (the array formula has arguments consisting of different numbers of elements)
#NULL!	An incorrect range operator is used in the formula, or the specified intersection includes two ranges that do not intersect.	=SUM(A1 A3) (a colon is missing in the cell range reference)
#NUM!	There are invalid numeric values in the formula.	=SQRT(-4) (the square root of a negative number cannot be calculated)
#REF!	The cell reference is not valid.	=SUM(A1, B1) (column B has been deleted)
#VALUE!	The formula uses values of the incorrect data type.	=SUM(5, "Text") (the SUM function requires numeric arguments)

# Charting Overview

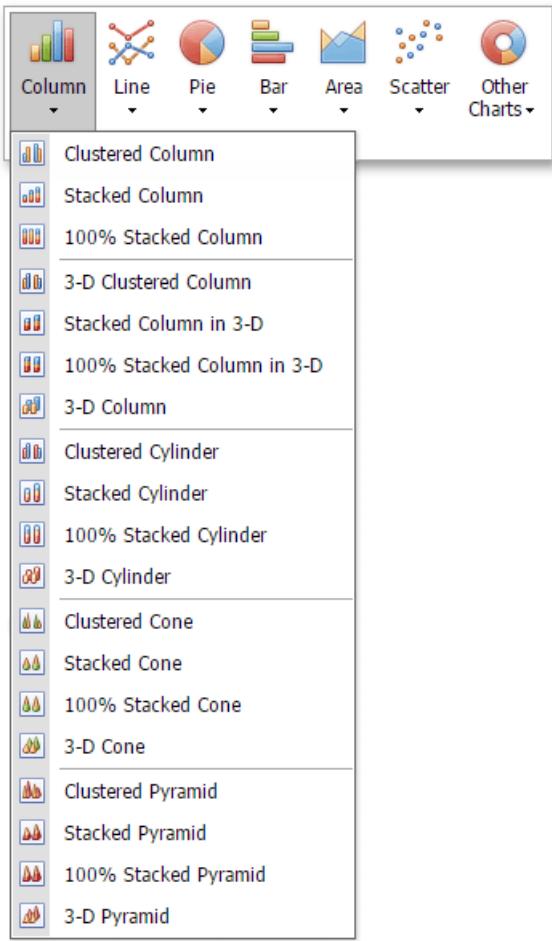
The **Spreadsheet** provides the capability to summarize worksheet data visually using a variety of **charts**. Charts display data series visually to make data interpretation easier, and show the relationship between different data series. To create a chart, click the chart type you wish to insert in the **Charts** group within the **Insert** tab.



Below is a list of all charts currently available in the **Spreadsheet**.

- [Column Charts](#)
- [Line Charts](#)
- [Pie Charts](#)
- [Bar Charts](#)
- [Area Charts](#)
- [Scatter Charts](#)
- [Stock Charts](#)
- [Radar Charts](#)

## Column Charts



### Chart Subtypes:

#### 2-D Column Charts:

- Clustered Column
- Stacked Column
- 100% Stacked Column

#### 3-D Column Charts:

- 3-D Clustered Column
- Stacked Column in 3-D
- 100% Stacked Column in 3-D
- 3-D Column

#### Cylinder Charts:

- Clustered Cylinder
- Stacked Cylinder
- 100% Stacked Cylinder
- 3-D Cylinder

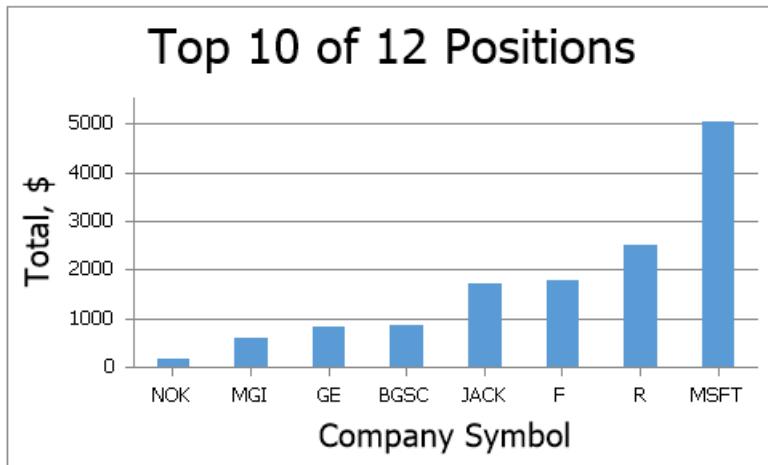
#### Cone Charts:

- Clustered Cone
- Stacked Cone
- 100% Stacked Cone
- 3-D Cone

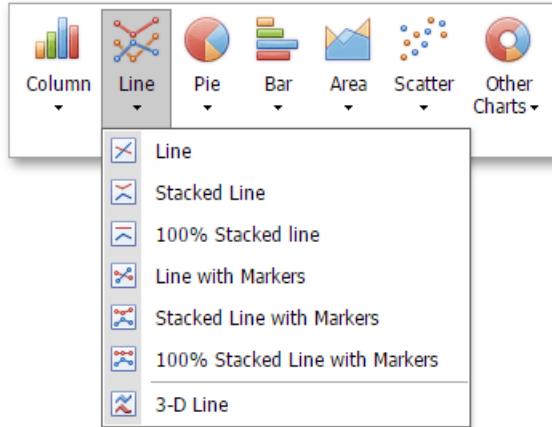
#### Pyramid Charts:

- Clustered Pyramid
- Stacked Pyramid
- 100% Stacked Pyramid
- 3-D Pyramid

Column charts are used to display series as sets of vertical bars (or columns) that are grouped by category. The bar lengths are proportional to the values that they represent. Column charts are typically used to compare values in different categories. Some column graphs display series as individual columns, grouped by category, and others show columns divided into subparts to show a cumulative effect (stacked column graphs). You can select column charts of different shapes, such as cylinder, cone or pyramid.



## Line Charts



### Chart Subtypes:

#### 2-D Line Charts:

- Line
- Stacked Line
- 100% Stacked Line
- Line with Markers
- Stacked Line with Markers
- 100% Stacked Line with Markers

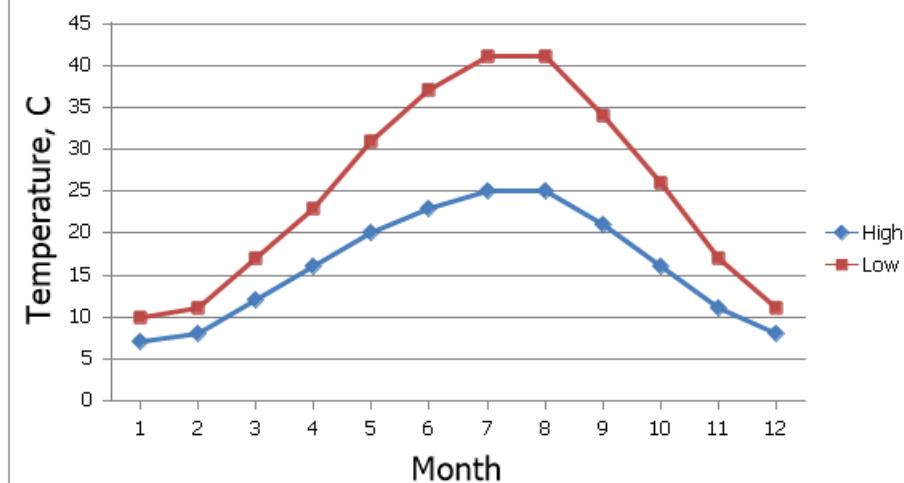
#### 3-D Line Charts:

- 3-D Line

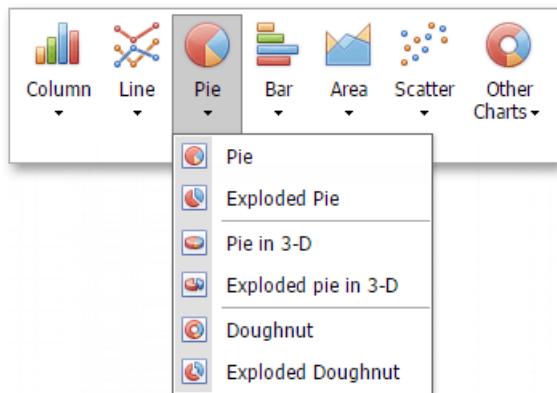
Line charts display information as a series of data points connected by line segments. This chart type is useful when you need to

show trends for several series on the same diagram, and to compare values of several series for the same point argument.

## Average High/Low Temperature in Paris



## Pie Charts



### Chart Subtypes:

#### 2-D Pie Charts:

- Pie
- Exploded Pie

#### 3-D Pie Charts:

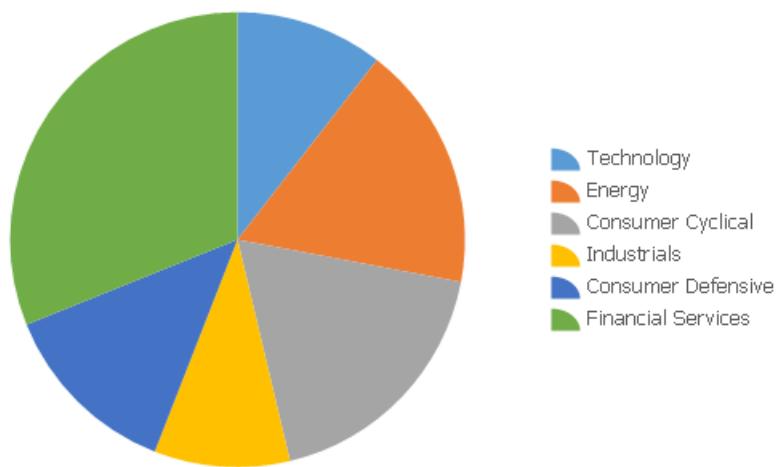
- Pie in 3-D
- Exploded Pie in 3-D

#### Doughnut Charts:

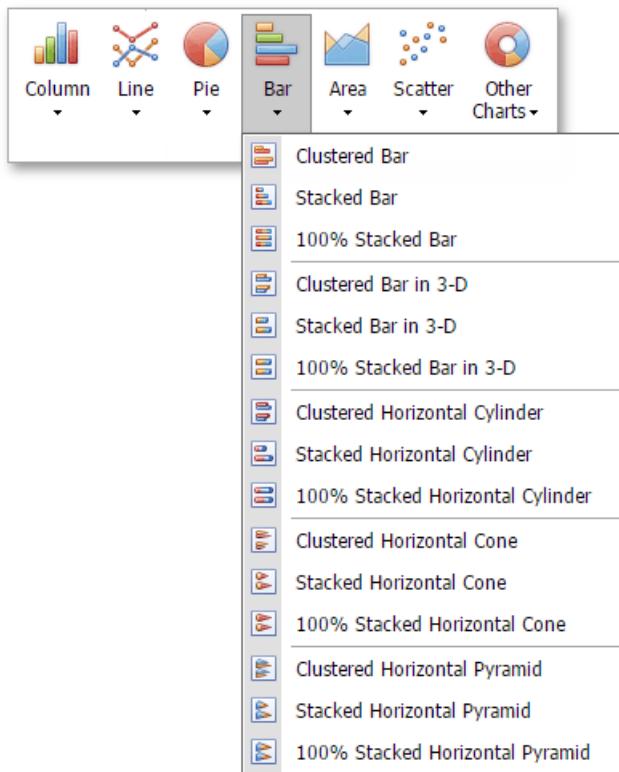
- Doughnut
- Exploded Doughnut

Pie and doughnut charts are used to compare the percentage values of different point arguments in the same series. These charts may be useful to determine which point value is the most significant, or which values in the point series are the most significant. A doughnut chart is functionally identical to a pie chart. The main difference is the shape of the doughnut chart, and that it can contain more than one data series.

## Portfolio Sectors



## Bar Charts



### Chart Subtypes:

#### 2-D Bar Charts:

- Clustered Bar
- Stacked Bar
- 100% Stacked Bar

#### 3-D Bar Charts:

- Clustered Bar in 3-D
- Stacked Bar in 3-D
- 100% Stacked Bar in 3-D

#### Cylinder Charts:

- Clustered Horizontal Cylinder
- Stacked Horizontal Cylinder
- 100% Stacked Horizontal Cylinder

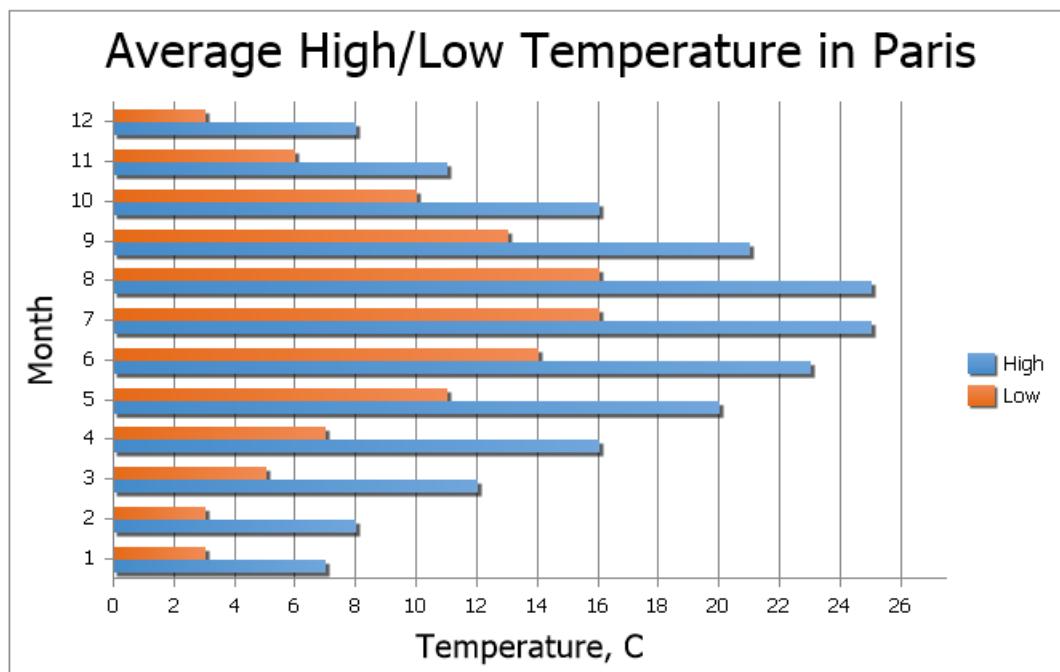
#### Cone Charts:

- Clustered Horizontal Cone
- Stacked Horizontal Cone
- 100% Stacked Horizontal Cone

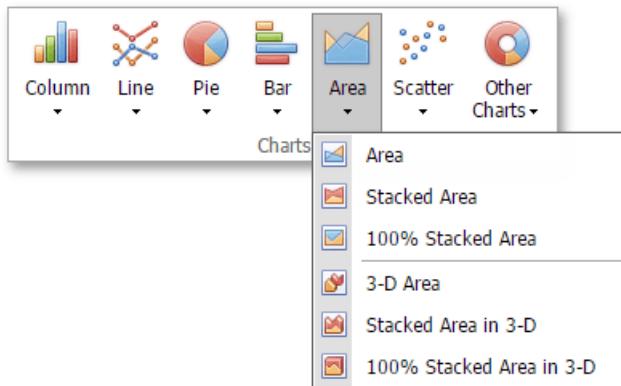
#### Pyramid Charts:

- Clustered Horizontal Pyramid
- Stacked Horizontal Pyramid
- 100% Stacked Horizontal Pyramid

Bar charts are identical to column charts with one exception: bar charts use horizontal bars instead of vertical bars to compare values across categories. Some bar graphs display series as individual bars grouped by category, and others show bars divided into subparts to show a cumulative effect (stacked bar graphs). You can select bar charts of different shapes, such as cylinder, cone or pyramid.



## Area Charts



#### Chart Subtypes:

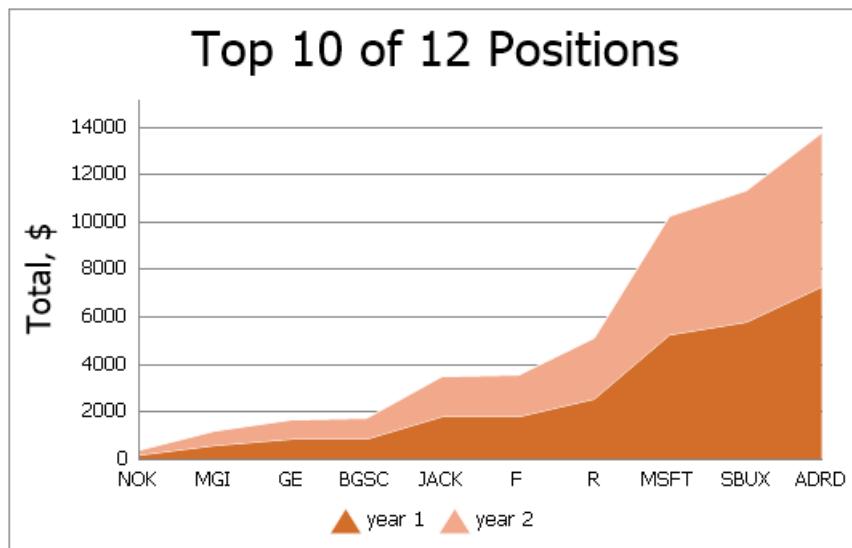
## 2-D Area Charts:

- Area
- Stacked Area
- 100% Stacked Area

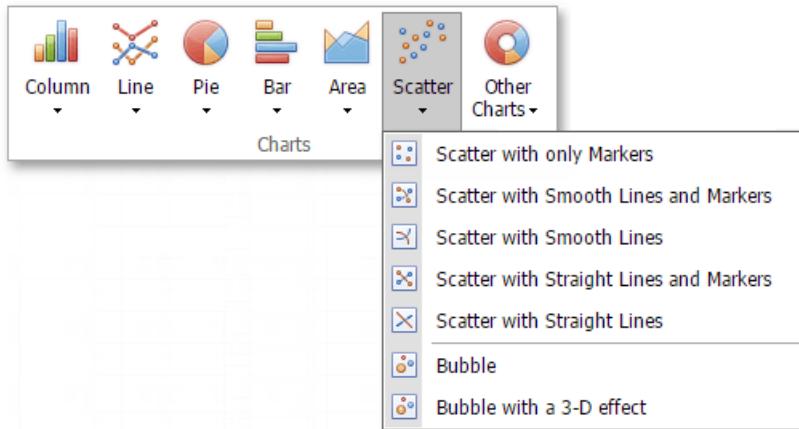
## 3-D Area Charts:

- 3-D Area
- Stacked Area in 3-D
- 100% Stacked Area in 3-D

Area charts display series as filled areas in a diagram, with each data point displayed as a peak or valley in the area. This chart type is useful when you need to show trends for several series on the same diagram, and also show the relationship of the parts to the whole. The area chart is based on the line chart, with the area below the plotted line filled with color.



## Scatter Charts



## Chart Subtypes:

### Scatter Charts:

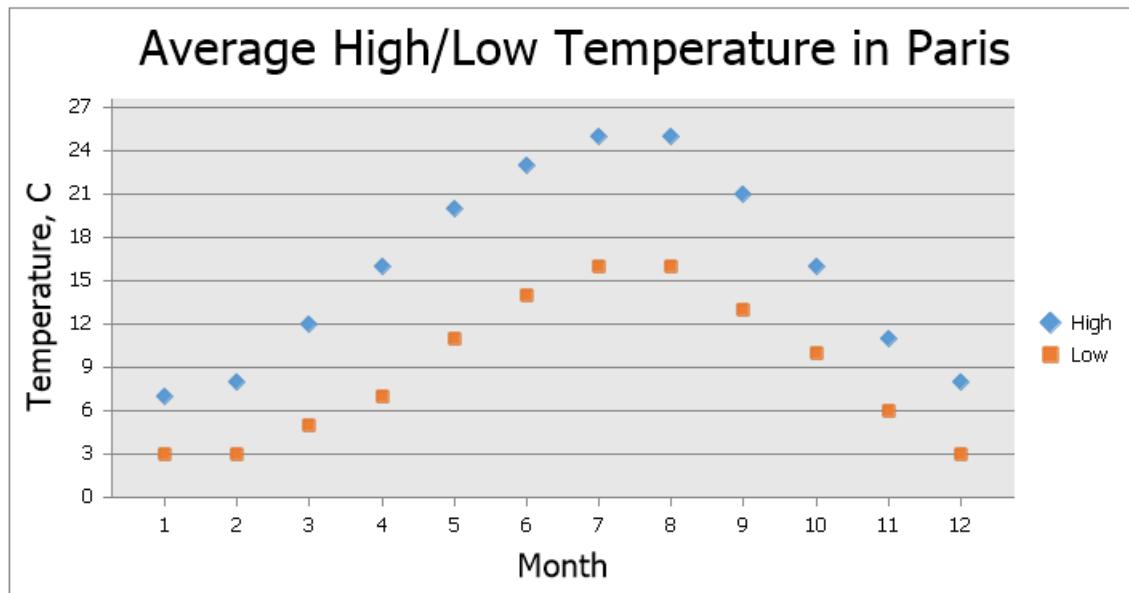
- Scatter with only Markers
- Scatter with Smooth Lines and Markers
- Scatter with Smooth Lines
- Scatter with Straight Lines and Markers
- Scatter with Straight Lines

## Bubble Charts:

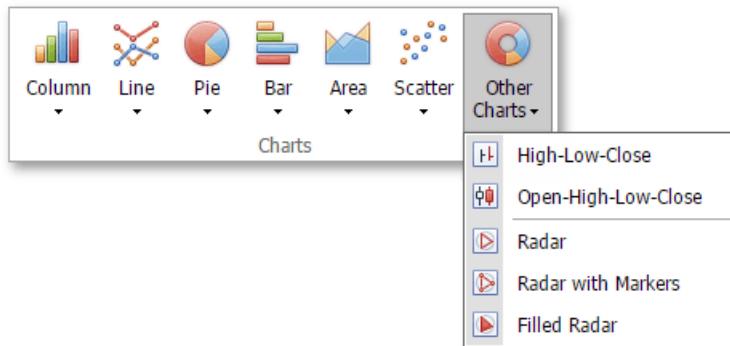
- Bubble
- Bubble with a 3-D Effect

Scatter charts are used to plot data points on the horizontal and vertical axis to show the relationship between two sets of data. This chart type combines data values into single data points and displays them in uneven intervals (or clusters).

Bubble charts allow you to visually represent data that has a third dimension, expressed in the bubble's size. You map two dimensions along the horizontal and vertical axes, and then the third dimension is displayed as a filled circle at the data point.



## Stock Charts

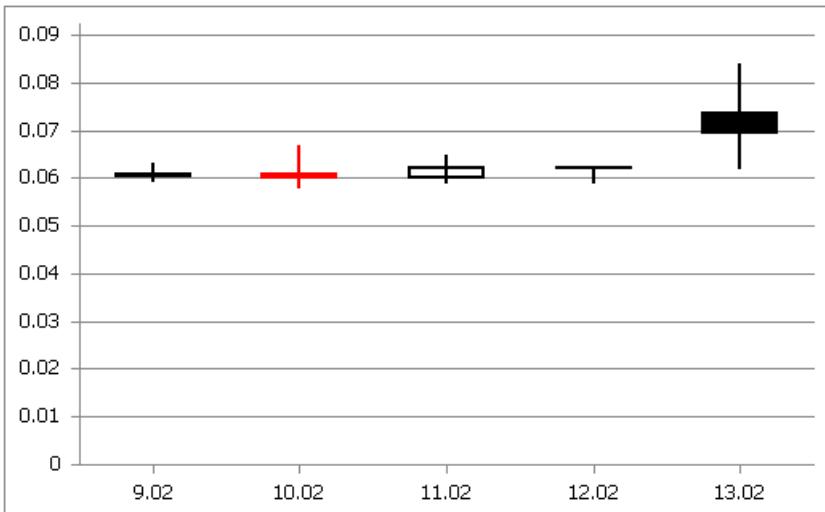


## Chart Subtypes:

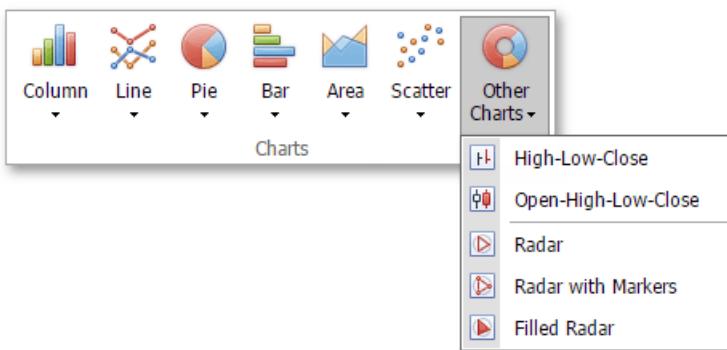
### Stock Charts:

- High-Low-Close
- Open-High-Low-Close

Stock charts are used to show variation in stock prices over the course of a day. In the **High-Low-Close** chart type, the **High** and **Low** prices are represented by the top and bottom values of the vertical line that is shown at each point, and the **Close** prices are represented by the right tick marks. In the **Open-High-Low-Close** chart type, the **High** and **Low** prices are shown in the same way as in the **High-Low-Close** charts, but the **Open** and **Close** prices are represented by the bottom and top borders of a rectangle. If the stock closes higher than its opening price, the rectangle is hollow. And if the stock closes lower than its opening price, the rectangle is filled.



## Radar Charts



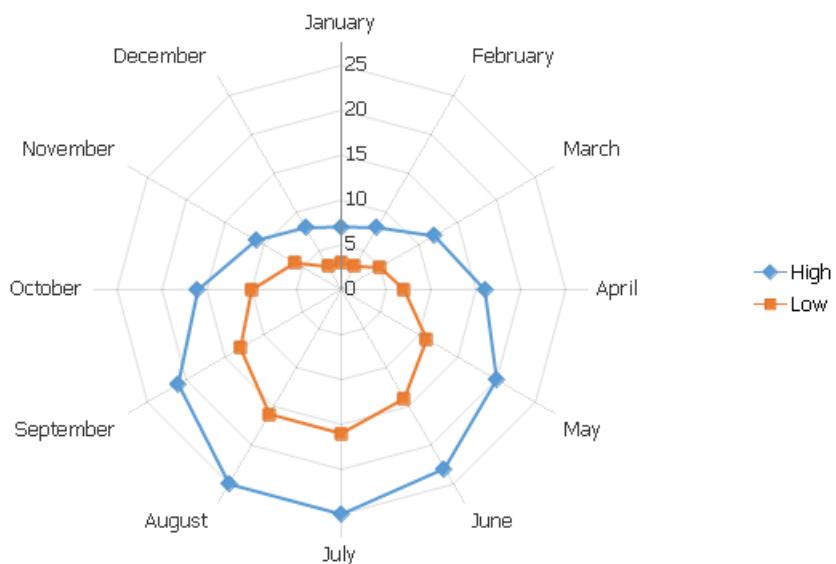
### Chart Subtypes:

*Radar Charts:*

- Radar
- Radar with Markers
- Filled Radar

Radar charts are used when it is necessary to display series as an area on a circular grid that has multiple axes along which data can be plotted, so values are shown relative to a center point.

# Average High/Low Temperature in Paris



# Creating a Chart

The **Spreadsheet** allows you to create charts quickly using the **Charts** group of the **Insert** tab.

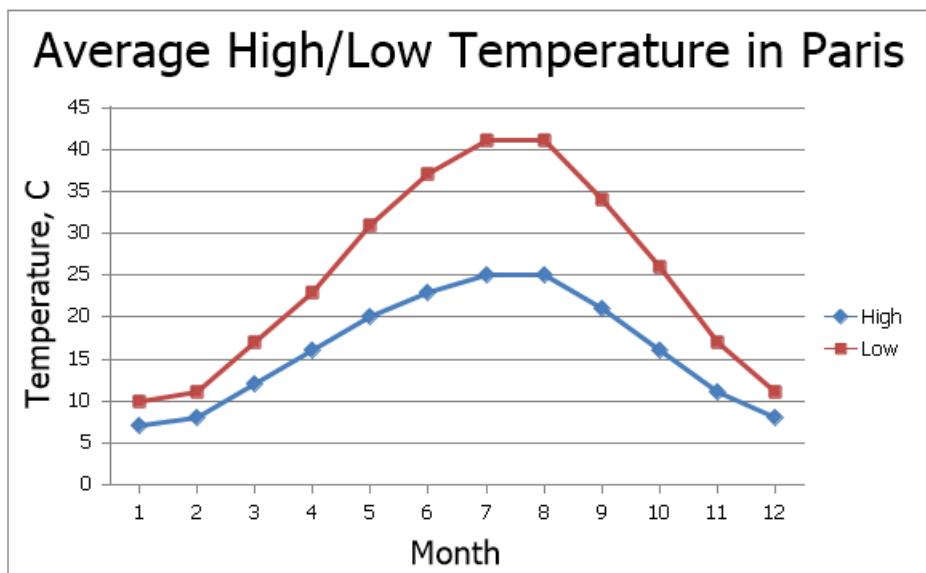
To create a chart, select the table that contains the data you wish to use for the chart. Note that the **Spreadsheet** only allows you to create charts for data series representing a contiguous cell range.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2	High and Low Average Temperatures in Paris														
4	Temperature, C	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
5	High	7	8	12	16	20	23	25	25	21	16	11	8		
6	Low	3	3	5	7	11	14	16	16	13	10	6	3		
7															
8															

In the **Charts** group, within the **Insert** tab, select the required chart type. In the example below, a line chart is created. To insert a line chart, click the **Line** button, and then select the **Line with Markers** chart subtype.

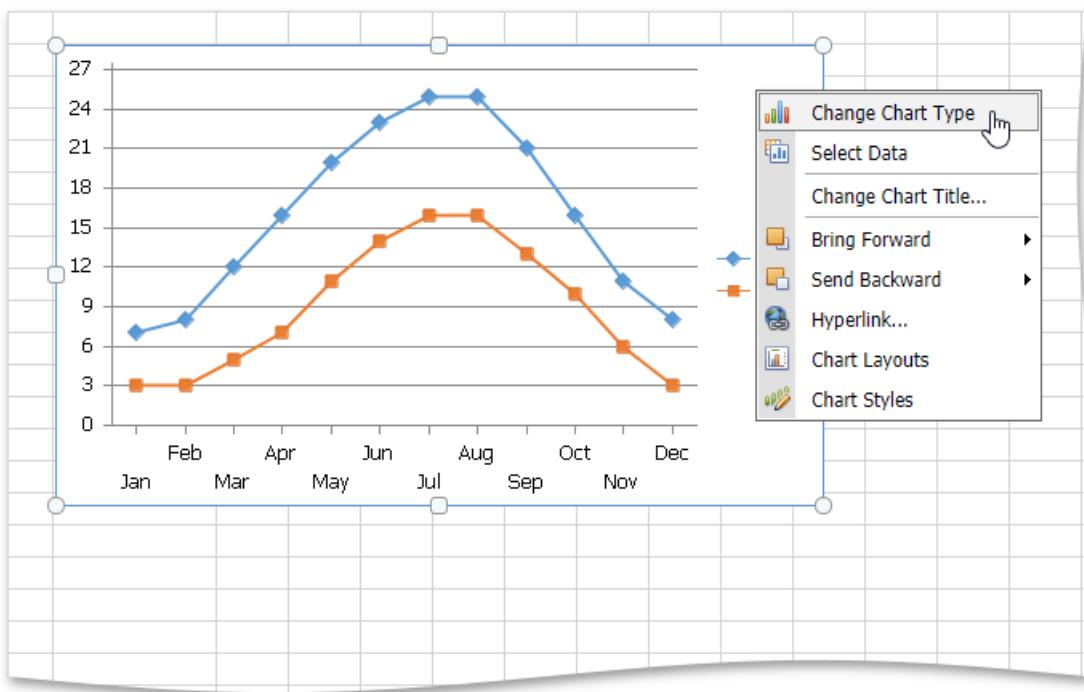
The screenshot shows the Microsoft Excel ribbon with the **Insert** tab selected. In the **Charts** group, the **Line** button is active, and its dropdown menu is open, showing the **Line with Markers** option being selected. Below the ribbon, a portion of a worksheet titled "High and Low Average Temperatures in Paris" is visible, containing data for monthly average temperatures in Paris.

The chart is added to the worksheet. You can move the chart to the desired location and resize it for a better fit.

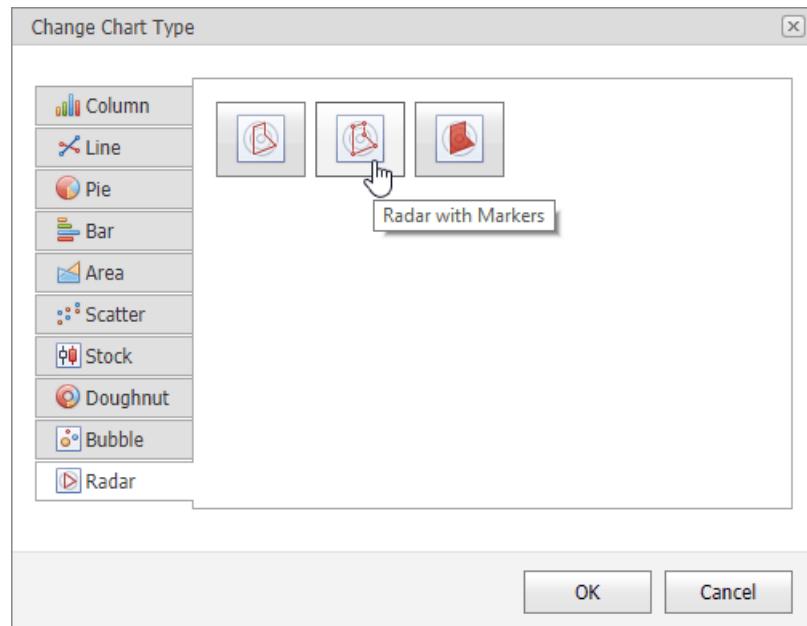


# Changing a Chart Type

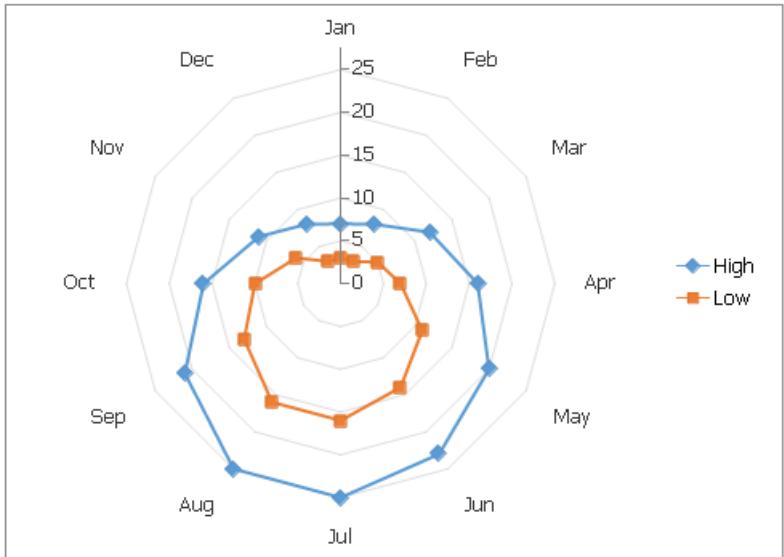
The **Spreadsheet** allows you to change the type of the existing chart. To do this, right-click the chart and select the **Change Chart Type** item in the context menu.



In the invoked **Change Chart Type** dialog, select a new chart type and click **OK**.



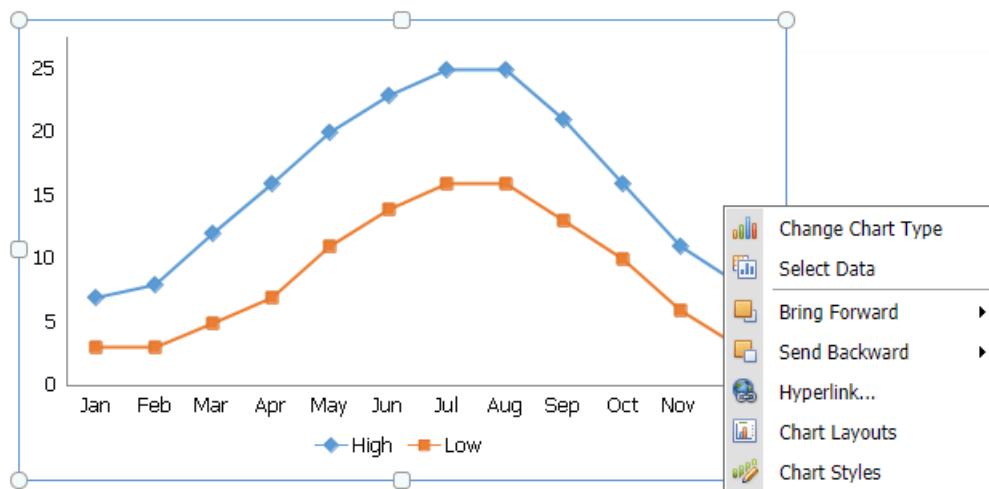
The following image illustrates the chart with the **Radar with Markers** chart type applied.



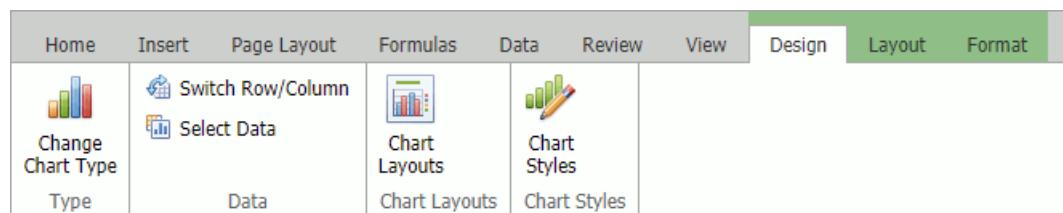
# Applying a Predefined Chart Layout and Style

The **Spreadsheet** allows you to change the appearance of the existing chart by applying one of the predefined layouts and styles.

To change a chart style or layout, right-click the chart you wish to format, then select the appropriate item from the opened context menu to invoke dialog boxes.

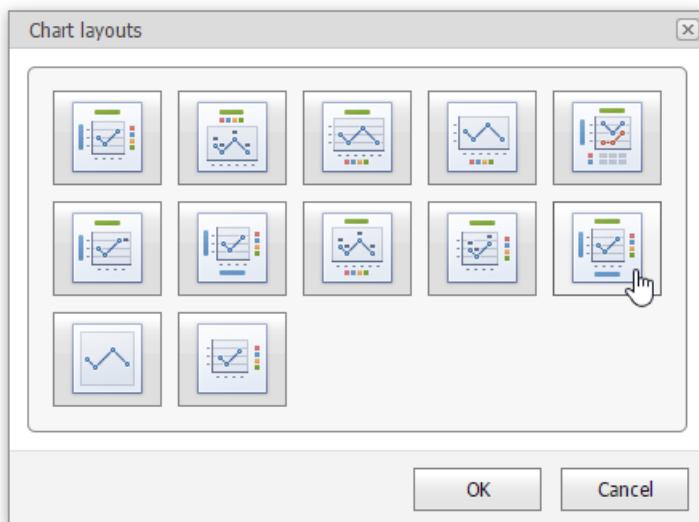


When a chart is selected, the Spreadsheet displays context tabs (**Design**, **Layout**, and **Format**) that allows you to customize a chart style or layout.

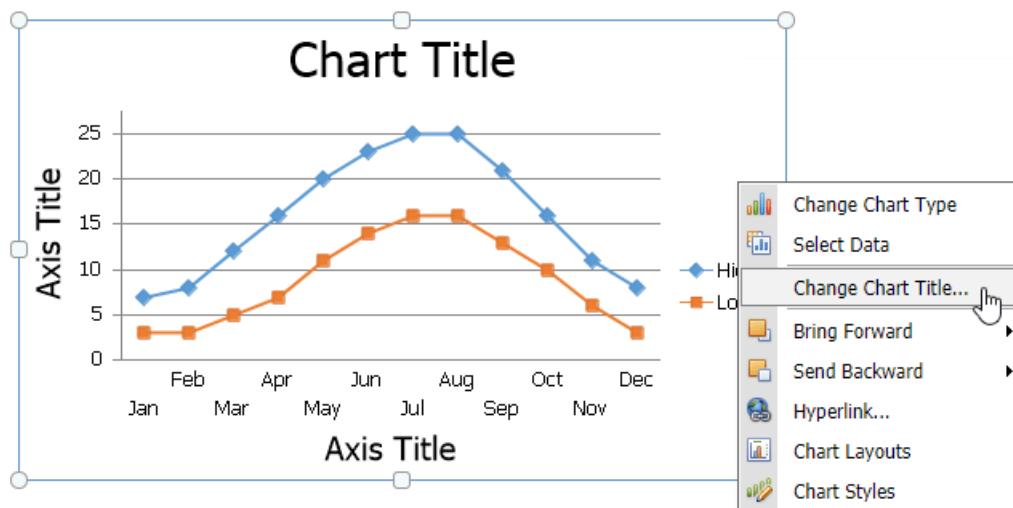


## Apply a Predefined Chart Layout

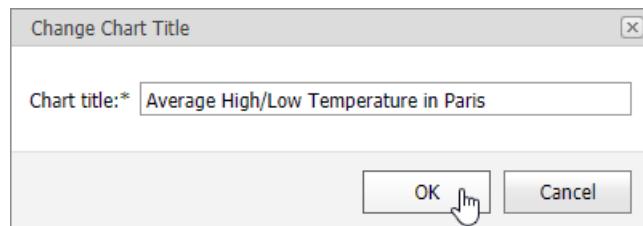
In the **Chart Layouts** dialog box, select the required chart layout. For example, select **Layout 10**, which positions the chart legend to the right of the chart area, and adds the chart and axis titles.



To enter the chart title, right-click the chart and select the **Change Chart Title...** item in the context menu.

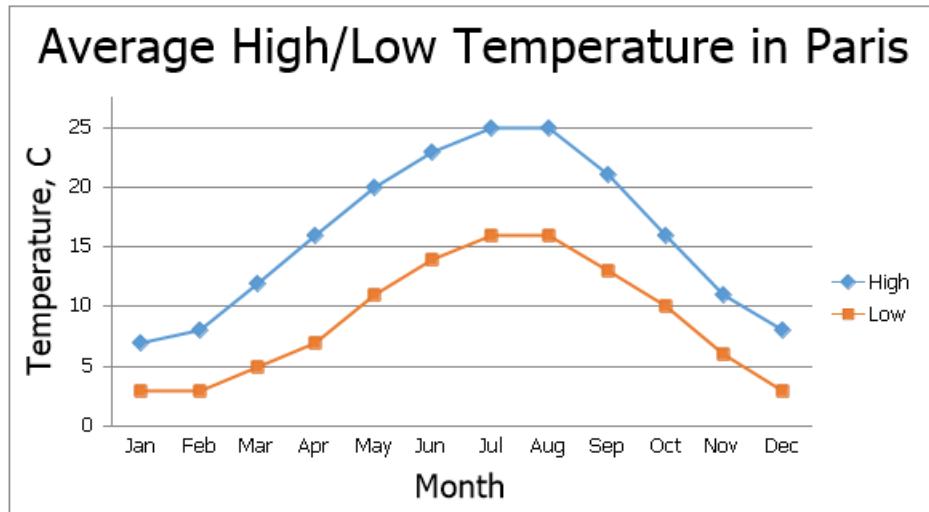


In the invoked **Change Chart Title** dialog box, enter a title and click **OK**.



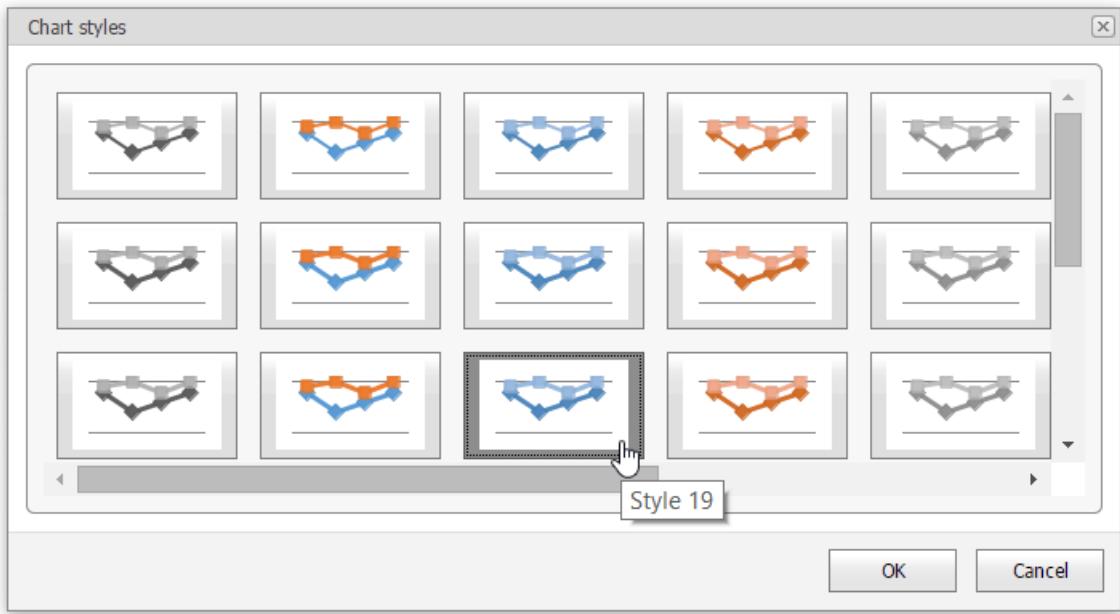
To provide horizontal or vertical axis titles, right-click the chart and select the **Change Horizontal Axis Title...** or **Change Vertical Axis Title...** item in the context menu. Type a new title in the invoked dialog box.

The image below shows the result.

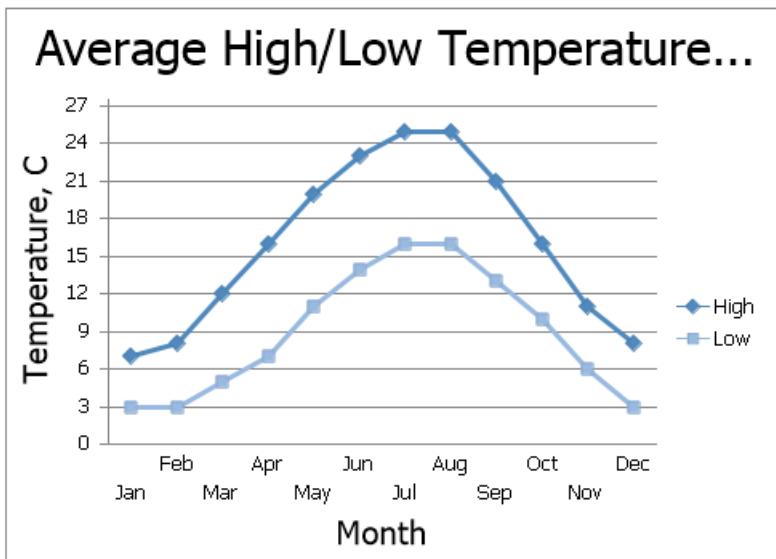


## Apply a Predefined Style

Right-click the chart you wish to format and select the **Chart Styles** item within the context menu to invoke a dialog box. In the opened **Chart Styles** dialog box, select the required chart style.



The image below shows a chart with **Style 19** applied.



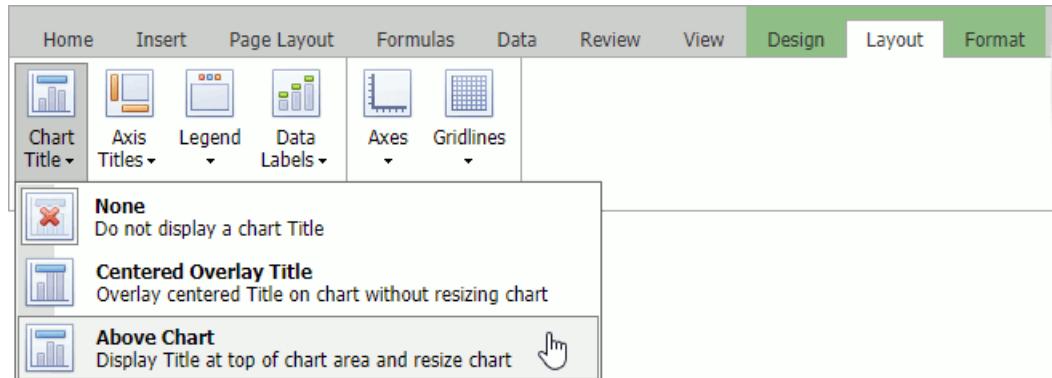
# Modifying a Chart Manually

After you create a chart, you can choose whether to apply one of the [predefined chart layouts](#) or specify your own layout. The **Spreadsheet** provides the capability to [add axis titles](#) and [chart titles](#), [show the chart legend](#), [display gridlines](#) and [data labels](#), etc.

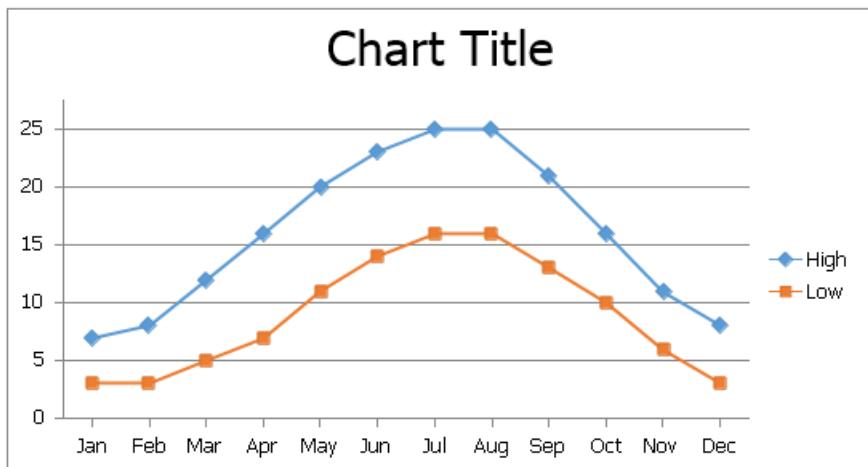
To modify a chart, right-click it to display the context menu and select the required item or use commands provided by the **Design**, **Layout**, and **Format** context tabs that are displayed in the ribbon when a chart is selected.

## Add a Chart Title

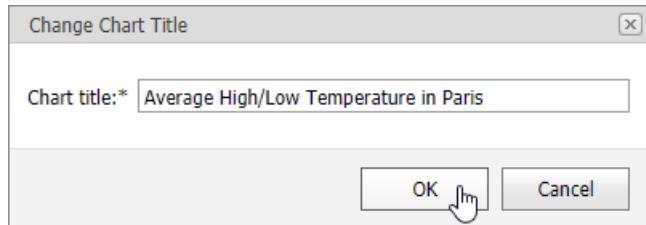
To add a title, select the chart and click the **Chart Title** command in the **Labels** group on the **Layout** context tab. Then, select where to position the chart title. For example, select the **Above Chart** item to display the title at the top of the chart.



The image below illustrates the result.



To change the default text in the title, right-click the chart and select the **Change Chart Title...** item in the context menu. Specify a new chart title in the invoked **Change Chart Title** dialog box.

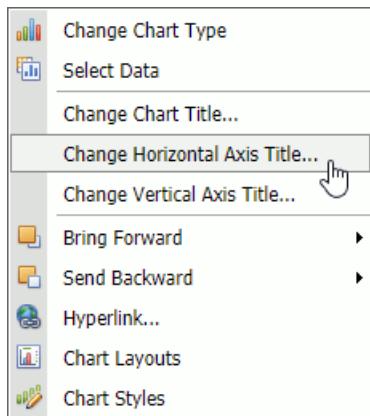


## Add Axis Titles

To display horizontal and vertical axis titles, click the **Axes Titles** button in the **Labels** group on the **Layout** context tab and do the following:

- To add a horizontal axis title, select the **Primary Horizontal Axis Title** item, and then click the **Title Below Axis** item.
- To add a vertical axis title, select the **Primary Vertical Axis Title** item, and then select the type of axis title (rotated, vertical or horizontal) you wish to display.

To change the default text in the axis title, right-click the chart and select the **Change Horizontal Axis Title...** or **Change Vertical Axis Title...** item in the context menu.

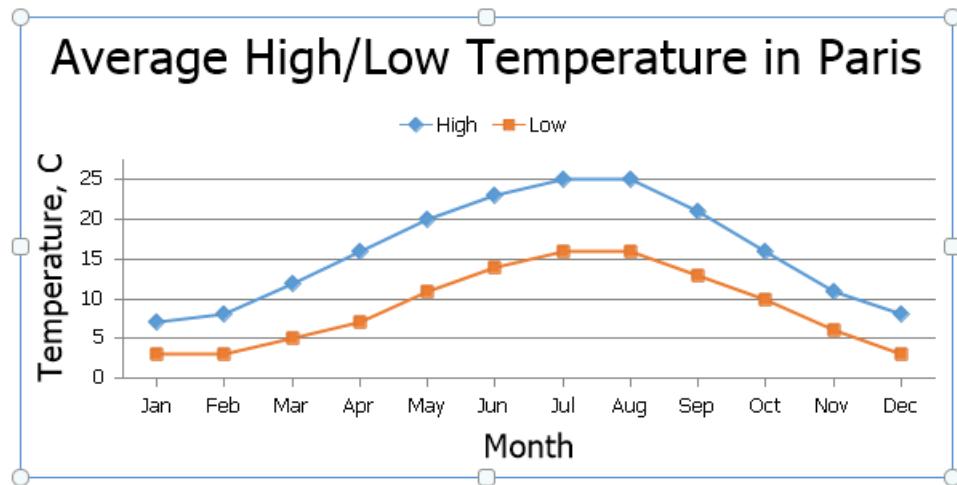


Type a new title in the invoked dialog box.

## Add a Chart Legend

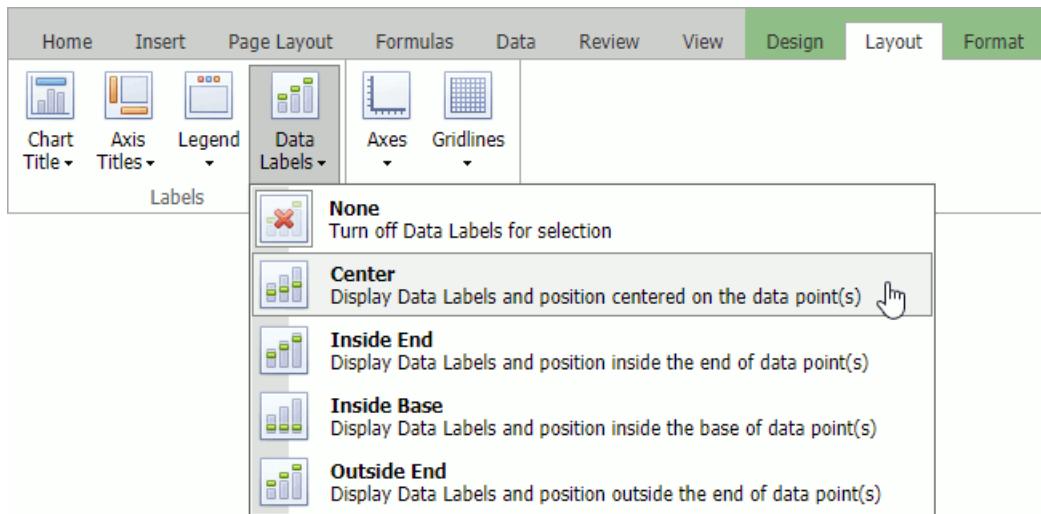
To add a legend to the chart, click the **Legend** button in the **Labels** group on the **Layout** context tab and select where to position the legend.

For example, select the **Show Legend at Top** item to display the legend above the plot area.



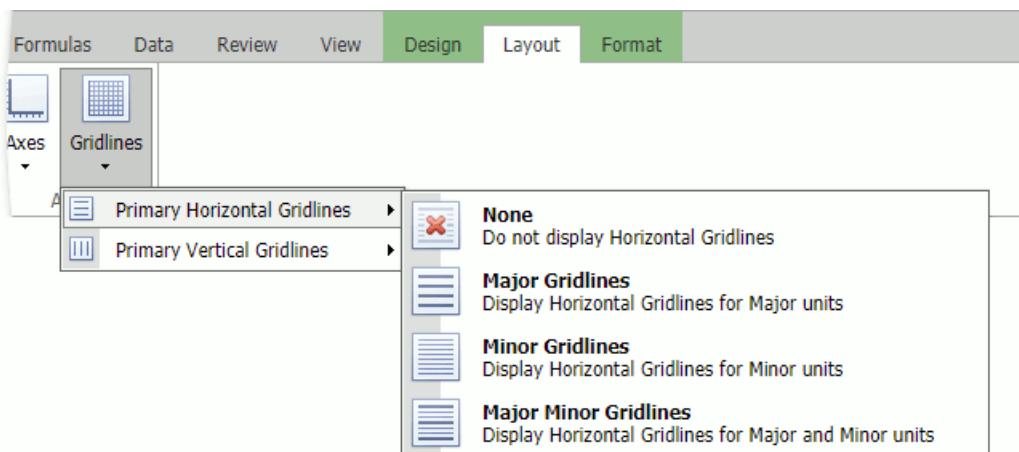
## Display Data Labels

To display data values on the chart, click the **Data Labels** button in the **Labels** group on the **Layout** context tab and select where to position the data labels.

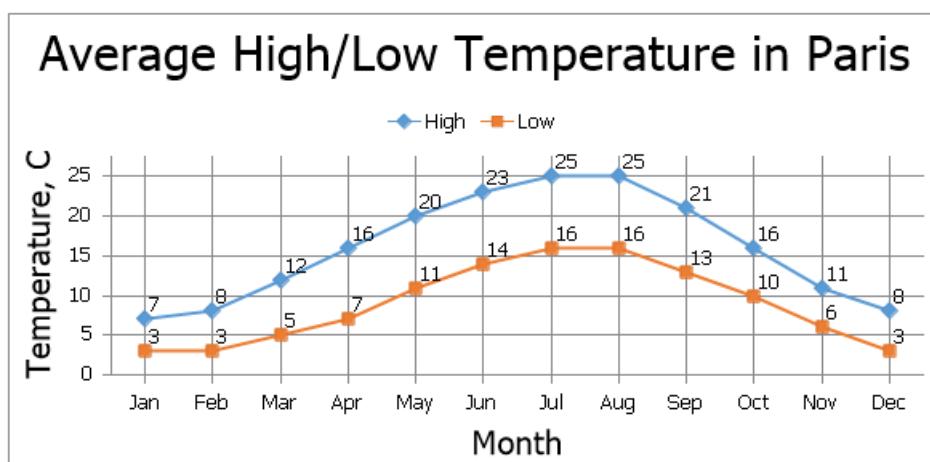


## Add Gridlines

To display chart gridlines, click the **Gridlines** button in the **Axes** group on the **Layout** context tab and select the required gridlines options from the drop-down list.



A chart with horizontal and vertical gridlines is shown below.



# Insert a Picture

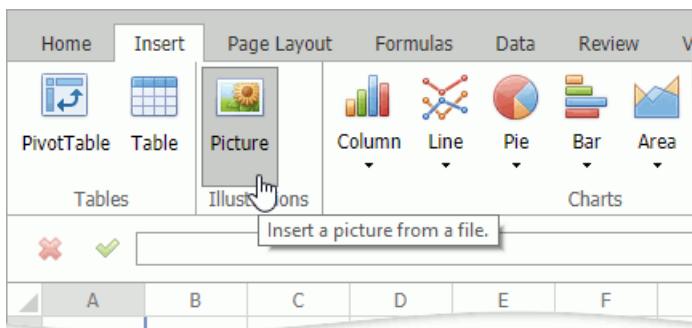
The **Spreadsheet** allows you to insert pictures in a worksheet.

You can insert graphics of the following type.

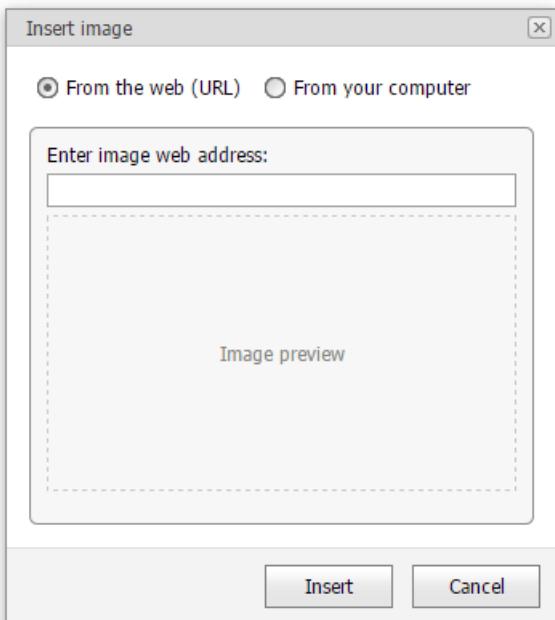
- Bitmap (\*.bmp, \*.dib)
- JPEG File Interchange Format (\*.jpg, \*.jpeg)
- Portable Network Graphics (\*.png)
- Graphics Interchange Format (\*.gif)

To insert a picture, follow the instructions below.

1. On the **Insert** tab, in the **Illustrations** group, click the **Picture** button.



2. In the **Insert Image** dialog box that is invoked, enter an image's web address (if you are going to load a picture from the web) or locate the required folder and select a file (if you are going to load pictures from your computer). Click **Insert**. The picture will be inserted into the worksheet.



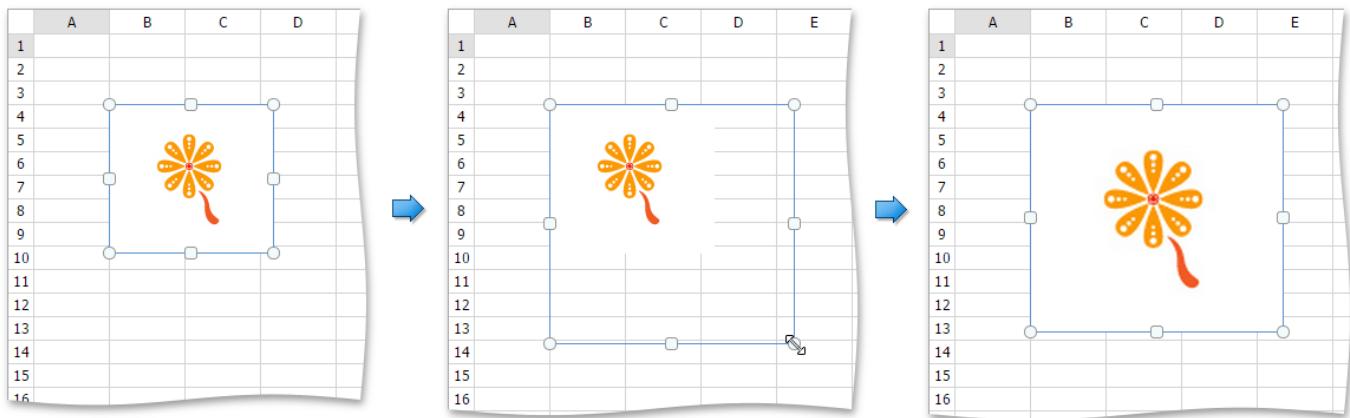
# Move and Resize a Picture

## Move a Picture

1. Click the picture you wish to move.
2. Drag the picture to a new location.

## Resize a Picture

1. Click the picture to be resized.
2. Drag the *sizing handle* away from the center (or towards the center) of the picture, and release it once the desired size is reached.



When you change the width of the object by dragging a *corner sizing handle*, the object's height will automatically be changed to maintain the aspect ratio of the object and vice-versa.

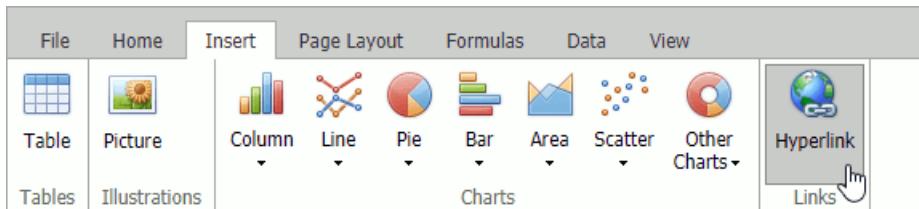
# Insert and Delete Hyperlinks

The **Spreadsheet** allows you to [insert](#), edit and [delete](#) hyperlinks. A hyperlink is a link from a worksheet to another file or Web page that can be opened when you click the hyperlink text or image.

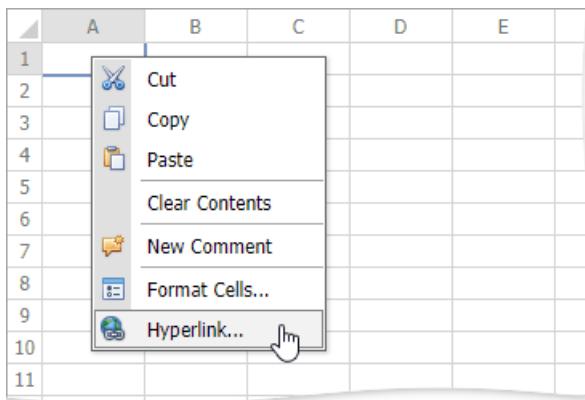
	A	B	C	D
1				
2		<a href="#">More information about hyperlinks</a>		
3				
4				
5				
6				

## Insert a Hyperlink

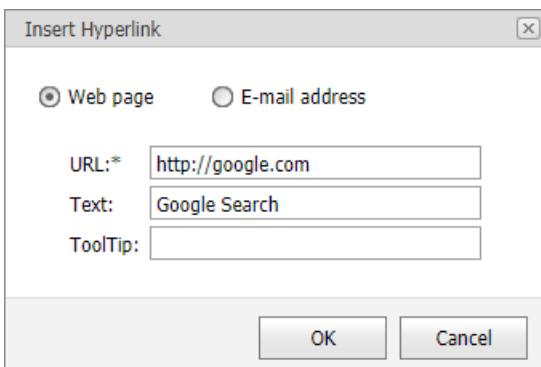
1. Click the cell in which you wish to insert a hyperlink.
2. Do one of the following.
  - o In the **Links** group within the **Insert** tab, click the **Hyperlink** button.



- o Right-click the cell and select **Hyperlink...** from the context menu.

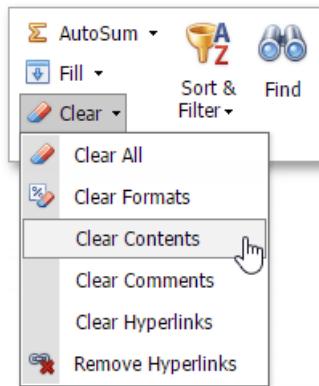


3. In the invoked **Insert Hyperlink** dialog box, select whether you wish to insert a hyperlink to a Web page or an email address. Depending on your choice, provide all the required options in the dialog box.

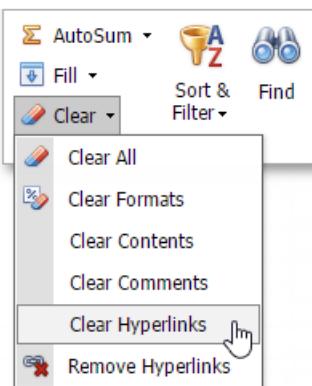


# Delete a Hyperlink

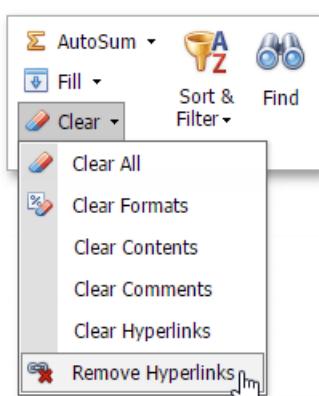
- To delete a hyperlink along with its text, do one of the following.
  - In the **Editing** group within the **Home** tab, click the **Clear** button, and select **Clear Contents** from the drop-down list.



- Right-click the cell that contains the hyperlink and select **Clear Contents** from the invoked context menu.
  - Focus the cell that contains the hyperlink and press **DELETE**.
- To delete a hyperlink while maintaining its text with hyperlink formatting, in the **Editing** group within the **Home** tab, click **Clear**, and select **Clear Hyperlinks** from the drop-down list.



- To delete a hyperlink while maintaining its text with default formatting, do one of the following.
  - In the **Editing** group within the **Home** tab, click the **Clear** button, and select **Remove Hyperlinks** from the drop-down list.



- Right-click the cell that contains the hyperlink and select **Remove Hyperlinks** from the invoked context menu.

# Keyboard Shortcuts

The **Spreadsheet** provides the capability to perform common commands quickly using keyboard shortcuts.

All supported shortcuts are divided into the following groups.

- [File Operations](#)
- [Navigation inside Worksheets](#)
- [Work with Selections](#)
- [Copy, Paste and Edit the Cell Content](#)
- [Cell Formatting](#)
- [Work with Columns and Rows](#)

# File Operations

The key combinations used to perform file operations are listed in the table below.

SHORTCUT	DESCRIPTION
SHIFT+F11	Inserts a new worksheet in front of the existing worksheet within the current workbook.
CTRL+P	Invokes the <b>Print</b> dialog box.

# Navigation inside Worksheets

The key combinations that allow you to navigate through a worksheet are listed in the table below.

Shortcut	Description
LEFT ARROW KEY	Moves the active cell one cell to the left in a worksheet.
RIGHT ARROW KEY	Moves the active cell one cell to the right in a worksheet.
UP ARROW KEY	Moves the active cell one cell up in a worksheet.
DOWN ARROW KEY	Moves the active cell one cell down in a worksheet.
ENTER	Moves the active cell one cell down in a worksheet.
SHIFT+ENTER	Moves the active cell one cell up in a worksheet.
TAB	Moves the active cell one cell to the right in a worksheet.
SHIFT+TAB	Moves the active cell one cell to the left in a worksheet.
CTRL+F	Invokes the <b>Find</b> dialog (with the <b>Find</b> tab activated).

# Work with Selections

The key combinations that allow you to work with selections are listed in the table below.

SHORTCUT	DESCRIPTION
ENTER	Moves the active cell one cell down in the selection.
SHIFT+ENTER	Moves the active cell one cell up in the selection.
TAB	Moves the active cell one cell to the right in the selection.
SHIFT+TAB	Moves the active cell one cell to the left in the selection.
CTRL+A	Selects the entire worksheet or the data region to which the active cell belongs.
SHIFT+ARROW KEYS	Extend the selection by one cell.

# Copy, Paste and Edit the Cell Content

The key combinations used to work with cell content are listed below.

SHORTCUT	DESCRIPTION
F2	Turns on the edit mode for the active cell and positions the cursor at the end of the cell content.
SHIFT+LEFT ARROW KEY	In the cell edit mode, selects or deselects one character to the left.
SHIFT+RIGHT ARROW KEY	In the cell edit mode, selects or deselects one character to the right.
CTRL+SHIFT+LEFT ARROW KEY	In the cell edit mode, selects or deselects one word to the left.
CTRL+SHIFT+RIGHT ARROW KEY	In the cell edit mode, selects or deselects one word to the right.
SHIFT+HOME	In the cell edit mode, selects from the cursor current position to the beginning of the cell.
SHIFT+END	In the cell edit mode, selects from the cursor current position to the end of the cell.
ALT+ENTER	Starts a new line in the same cell.
ENTER	Completes a cell entry and selects the cell below.
SHIFT+ENTER	Completes a cell entry and selects the cell above.
TAB	Completes a cell entry and selects the cell to the right.
SHIFT+TAB	Completes a cell entry and selects the cell to the left.
ESC	Cancels an entry in a cell.
BACKSPACE	In the cell edit mode, deletes a character to the left of the cursor.
DELETE	Removes the cell content without affecting the cell formatting.
CTRL+DELETE	In the cell edit mode, deletes all characters from the cursor current position to the end of the word.
CTRL+Z or ALT+BACKSPACE	Performs the <b>Undo</b> command to reverse the last action or to delete the last entry you typed.
CTRL+Y or ALT+SHIFT+BACKSPACE	Repeats the last action.
CTRL+C or CTRL+INSERT	Copies the selected cell in the clipboard.
CTRL+V or SHIFT+INSERT	Inserts the contents of the clipboard in the specified cell and replaces any selection.
CTRL+X or SHIFT+DELETE	Cuts the selected cells.
CTRL+D	Performs the <b>Fill Down</b> command to copy the contents of the topmost cell to the cells below.
CTRL+R	Performs the <b>Fill Right</b> command to copy the contents of the leftmost cell to the cell to the right.

# Cell Formatting

The key combinations that allow you to apply formatting options quickly are listed in the following table.

Shortcut	Description
CTRL+B or CTRL+2	Applies or removes bold formatting.
CTRL+I or CTRL+3	Applies or removes italic formatting.
CTRL+U or CTRL+4	Applies or removes underlining.
CTRL+5	Applies or removes strikethrough.
CTRL+SHIFT+7	Applies the outline border to the selected cell or cell range.
CTRL+SHIFT+1	Applies the <b>Number</b> format with two decimal places.
CTRL+SHIFT+2	Applies the <b>Time</b> format.
CTRL+SHIFT+3	Applies the <b>Date</b> format.
CTRL+SHIFT+4	Applies the <b>Currency</b> format.
CTRL+SHIFT+5	Applies the <b>Percentage</b> format.
CTRL+SHIFT+6	Applies the <b>Scientific</b> number format.

# Work with Columns and Rows

The key combinations that allow you to display, hide or group columns and rows in a worksheet are listed in the following table.

Shortcut	Description
CTRL+9	Hides the selected rows.
CTRL+SHIFT+9	Displays the hidden rows.
CTRL+0	Hides the selected columns.
CTRL+SHIFT+0	Displays the hidden columns.

# Tab Control

This section describes the capabilities provided by the Tab Control, which is used for a presentation of tabbed interfaces.

Click tabs to switch them. An active tab is highlighted.

**Ganymede**

(Jupiter III) is the largest [moon of Jupiter](#) and [in the Solar System](#), and the only [moon](#) known to have a [magnetosphere](#). It is the seventh satellite outward from [Jupiter Galilean moons](#), the first group of objects discovered orbiting another planet. Completing an [orbit](#) in roughly seven days, Ganymede participates in a 1:2:4 [orbital resonance](#) with the moons [Europa](#) and [Io](#), respectively. With a diameter of 5,268 km (3,273 mi), it is 8% larger than the planet [Mercury](#), but has only 45% as much mass. Its diameter is 2% larger than that of Saturn's [Titan](#), the Solar System's second-largest moon. At 2.02 times the mass of the [Moon](#), it is the most massive planetary satellite. It is the 9th largest object in the Solar System, and the largest without a substantial atmosphere.

From [Wikipedia](#), the free encyclopedia

## Tab Scrolling

- [Tab Scrolling](#)

# Tab Scrolling

If tab scrolling is enabled, click the ⏪ and ⏩ buttons to scroll tabs.

The screenshot shows a software interface for managing controls. At the top, there's a navigation bar with tabs: 'Navigation & Layout' (which is selected and highlighted in blue), 'Data', 'Components', and 'Common Controls'. Below the navigation bar, there are two columns of control items. The first column contains: ASPxCallbackPanel, ASPxLoadingPanel, ASPxPageControl, ASPxPopupControl, ASPxSiteMapControl, and ASPxTitleIndex. The second column contains: ASPxCloudControl, ASPxMenu, ASPxPager, ASPxPopupMenu, ASPxSplitter, and ASPxHeadline, ASPxNavBar, ASPxPanel, ASPxRoundPanel, and ASPxTabControl. Each item is represented by a small icon followed by its name and a detailed description link (e.g., 'a...> ASPxHeadline').

Category	Control Name	Description
Navigation & Layout	ASPxCallbackPanel	a...> ASPxHeadline
	ASPxLoadingPanel	ASPxNavBar
	ASPxPageControl	ASPxPanel
	ASPxPopupControl	ASPxRoundPanel
	ASPxSiteMapControl	ASPxTabControl
	ASxTitleIndex	
Common Controls	ASPxCloudControl	
	ASPxMenu	
	ASPxPager	
	ASPxPopupMenu	
	ASPxSplitter	
	ASPxHeadline	

# Tree List

This section describes the capabilities the **Tree List** (multi-column tree view) provides.

	File name	Creation Date
📁	Appearance	2/21/2008 3:41 PM
📁	CSS	2/21/2008 3:41 PM
📁	Data	2/21/2008 3:41 PM
📁	Images	2/21/2008 3:41 PM
📁	Demo	2/21/2008 3:41 PM
📁	IconImages	2/21/2008 3:41 PM
📁	TitleImages	2/21/2008 3:41 PM
	CollapsedButton.gif	2/21/2008 3:41 PM

## Data Editing

- [Edit Cell Values](#)
- [Batch Editing](#)

## Data Presentation

- [Expand and Collapse Nodes](#)
- [Sort Nodes](#)

## Filtering

- [Header Filter](#)
- [Date Range Header Filter](#)
- [Filter Row](#)
- [Search Panel](#)
- [Creating Complex Filter Criteria With The Filter Builder](#)

## Navigation and Layout

- [Selection and Navigation](#)
- [Keyboard Navigation](#)
- [Reorder Nodes](#)
- [Reorder Columns](#)
- [Resize Columns](#)
- [Column Chooser](#)

## Data Summaries

- [Data Summaries](#)

## Data Validation

- [Data Validation](#)

## Data Export

- [Data Export](#)

# Edit Cell Values

## Switch to Edit Mode

Click **Edit** to switch the Tree List to the edit mode.

	From	Subject	Date	HasAttachment	New
Developer Express - Ray	New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	
Matthew Roberts	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	
Trevor Westerdahl	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	
NC Software	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	
Andy Wall	Re: New Holiday Skin	12/11/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	

## Save and Discard Changes

You can modify cell values and click **Update** or click **Cancel** to discard the changes.

	From	Subject	Date	HasAttachment	New
Developer Express - Ray	New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	
From:	Developer Express - Ray	Date: 12/10/2007			
Subject:	New Holiday Skin				
Text:	Hi Everyone  We are getting ready to release a new WinForms skin just in time for the holiday season.  <a href="#">I've posted a screenshot here</a>				
HasAttachment:	<input type="checkbox"/>				
<a href="#">Update</a> <a href="#">Cancel</a>					
Matthew Roberts	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">New</a>	

Click **Close** to cancel the changes made in the Edit Form.

Edit Form

	From	Subject	Date	Has Attachment	Action
From:	Andy Wall	Date: 12/11/2007			
Subject:	Re: New Holiday Skin				
Text:	It is very nice. Will you post here once it's finished, or will there be some other notification of download availability?  Thanks.  AW				
Has Attachment:	<input type="checkbox"/>				
<a href="#">Update</a> <a href="#">Cancel</a>					

# Batch Editing

You can create new nodes, delete existing nodes, and edit individual cell values on a single page and save these changes with one click.

- To create a new node, click the **New** button and specify field values.
- To delete a node, click the **Delete** button in the node to be deleted.
- To edit a cell value, click (or double-click) the cell and edit the value.

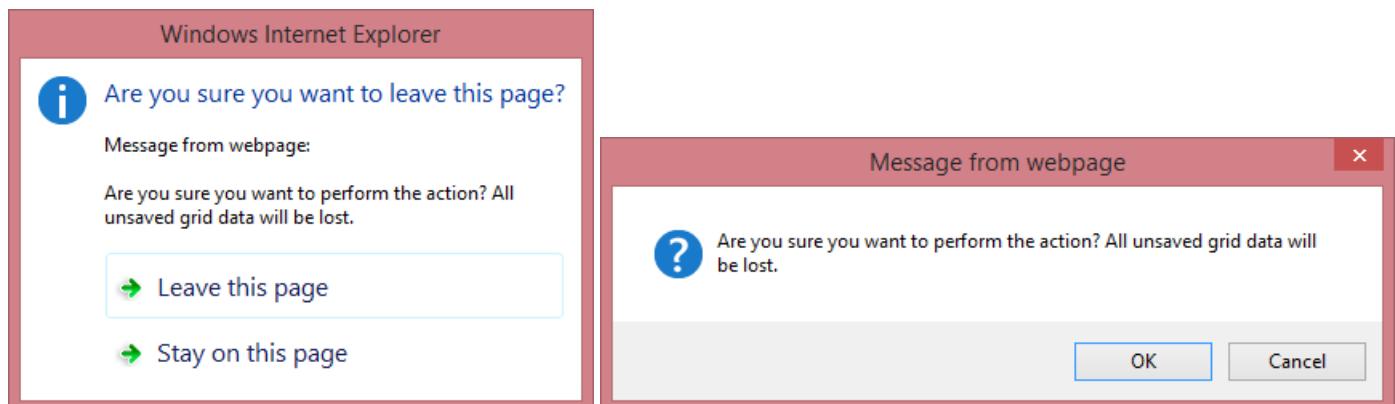
The modified cells are highlighted in a different color.

To save all changes, click **Update** or click **Cancel** to discard all the changes.

	From	Subject	Date Created	Has Attachment	New
(1)	Developer Express - Ray	New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">New</a> <a href="#">Delete</a>
	Alex Fuller	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">New</a> <a href="#">Delete</a>
(2)	Steven Buchanan	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Recover</a>
	Nancy Davolio	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	
(3)	Janet Leverling	Re: New Holiday Skin	12/11/2007	<input checked="" type="checkbox"/>	<a href="#">New</a> <a href="#">Delete</a>
(4)	Anne Dodsworth	Re: New Holiday Skin	12/14/2007	<input type="checkbox"/>	<a href="#">New</a> <a href="#">Delete</a>
	Margaret Peacock	Re: New Holiday Skin	12/15/2007	<input type="checkbox"/>	<a href="#">New</a> <a href="#">Delete</a>

[Update](#) [Cancel](#)

If a Tree List contains unsaved data, a confirmation message is displayed before the data is lost (e.g., when sorting the data, changing the page or closing the web page). You can choose whether to proceed and lose changes or cancel the action.



# Expand and Collapse Nodes

Click a node's expand button to expand or collapse the node.

Department	Location	Budget
Corporate Headquarters	Monterey	\$1,000,000.00
Engineering	Monterey	\$1,100,000.00
Finance	Monterey	\$40,000.00
Sales and Marketing	San Francisco	\$22,000.00

# Sort Nodes

Click a column header to sort data in ascending order. If sorting has already been applied, subsequent clicks reverse the current sort order.

Department	Location	Budget
Corporate Headquarters	Monterey	\$1,000,000.00
Engineering	Monterey	\$1,100,000.00
Finance	Monterey	\$40,000.00
Sales and Marketing	San Francisco	\$22,000.00
Field Office: Canada	Toronto	\$500,000.00
Field Office: East Coast	Boston	\$500,000.00
Marketing	San Francisco	\$1,500,000.00
Pacific Rim Headquarters	Kauai	\$600,000.00

A click on a column header clears the sort settings on any other columns. Hold the SHIFT key down while clicking to sort against multiple columns.

Click a column's header while pressing the CTRL key to clear the column's sorting.

# Header Filter

You can use the **Header Filter** to filter data or change the filter conditions in the Tree List.

Click a filter button to invoke a filter drop-down list that contains unique values in a column.

You can use the check boxes in the drop-down list to select values and click **OK** to apply the filter criteria.

A screenshot of a Tree List interface. The columns are 'Department' and 'Location'. The 'Location' column has a filter icon. A dropdown filter dialog is open over the list. The dialog has a search bar with placeholder 'Enter text to filter...', a '(Select All)' checkbox, and a list of location names: Boston, Burlington, VT, Kuau, Monterey, and San Francisco. The 'Monterey' and 'San Francisco' checkboxes are checked. At the bottom are 'OK' and 'Cancel' buttons.

Department	Location
Corporate Headquarters	Monterey
Engineering	Monterey
Consumer Electronics Div.	Burlington, V
Software Development	Monterey
Software Products Div.	Monterey
Finance	Monterey
Sales and Marketing	San Francisco

If the drop-down list does not display check boxes, click the required value to apply the filter criteria.

A screenshot of a Tree List interface. The columns are 'Department' and 'Location'. The 'Location' column has a filter icon. A dropdown filter dialog is open over the list. The dialog has a search bar with placeholder 'Enter text to filter...', a list of location names: Kuau, Monterey, San Francisco, Singapore, and Tokyo. The 'Monterey' item is highlighted with a cursor. At the bottom are 'OK' and 'Cancel' buttons.

Department	Location
Corporate Headquarters	Monterey
Engineering	Monterey
Consumer Electronics Div.	Burlington, V
Software Development	Monterey
Software Products Div.	Monterey
Finance	Monterey
Sales and Marketing	San Francisco

The drop-down list displays values that match the applied filter criteria. To remove the filter, click **(All)**.

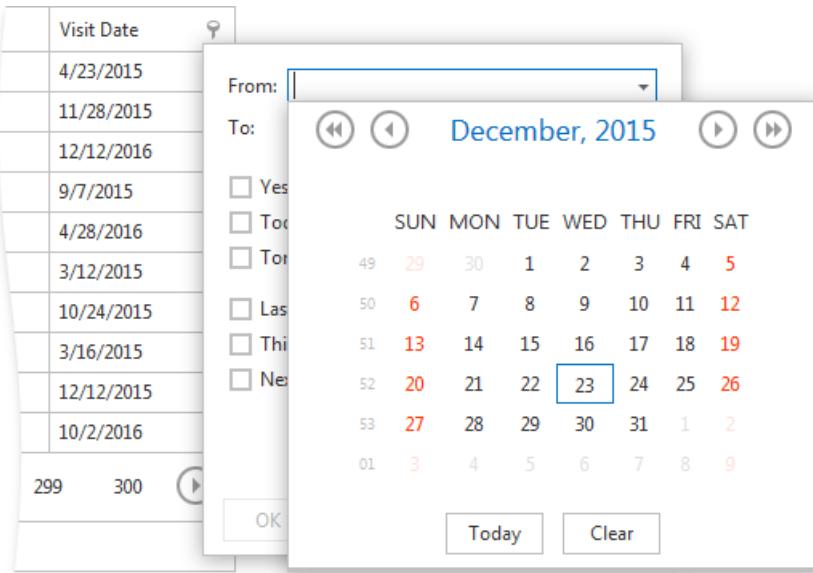
# Date Range Header Filter

The header filter's drop-down box displays a date range editor for columns containing date and time data.

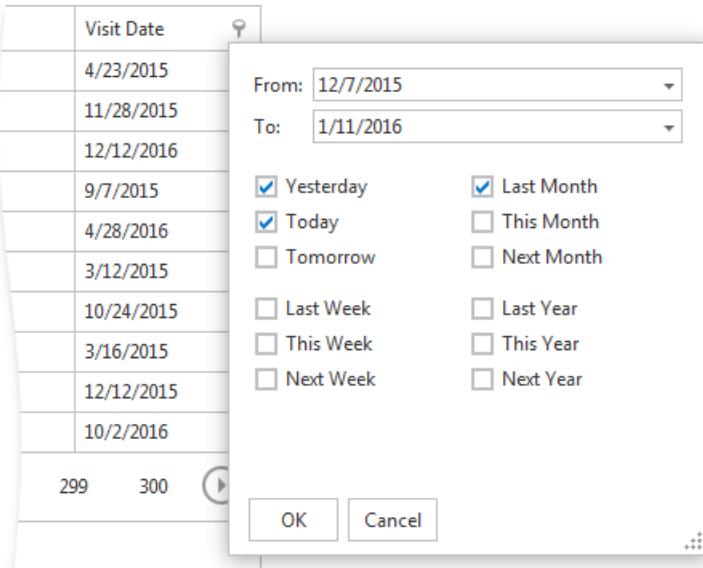
## Date Range Picker

Click a filter button to invoke a filter drop-down box that contains a date picker and a set of date range periods.

Click the drop-down button in the **From** text box to display a calendar. You can select the first date in a date range or type the date in the text box.



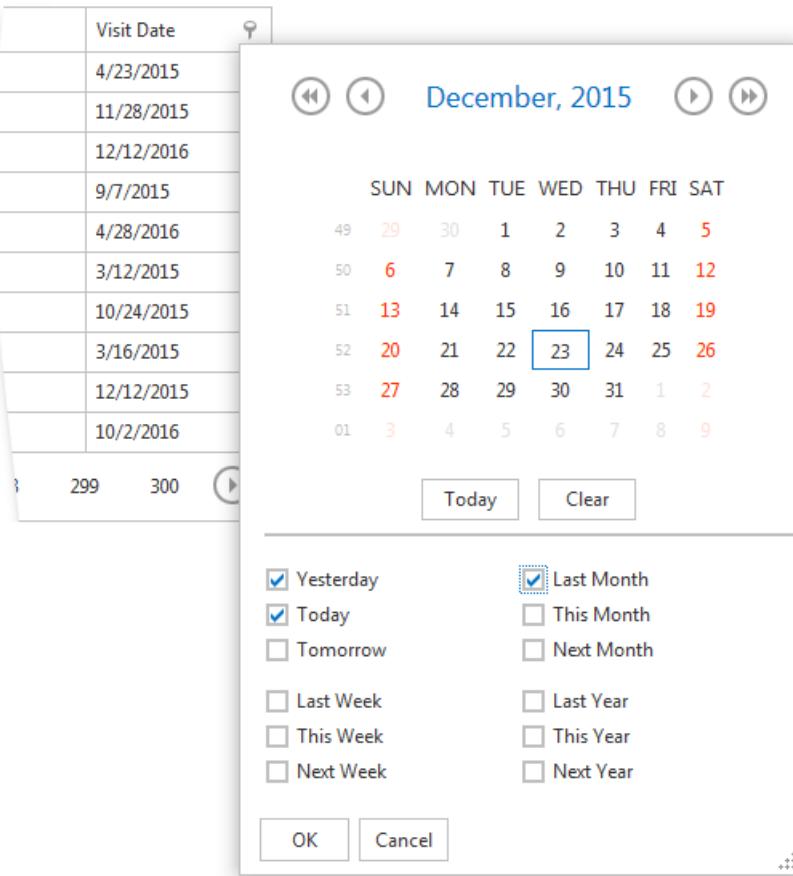
Click the drop-down button in the **To** text box to display a calendar. You can select the last date in a date range or type the date in the text box.



Select the required date periods and click **OK** to apply the filter criteria.

## Date Range Calendar

Click a filter button to invoke a filter drop-down box that contains a calendar and a set of predefined periods.



Select the required date(s) in the calendar and date periods. Then, click **OK** to apply the filter criteria.

# Filter Row

Type text within the **Filter Row**'s cells to filter the corresponding columns.

To remove a column's filter, clear the text in the column's filter row.

	Department	Location	Budget	Phone	#
	mar				<a href="#">Clear</a>
(S)	Corporate Headquarters	Monterey	\$1,000,000.00	(408) 555-1234	
(S)	Sales and Marketing	San Francisco	\$22,000.00	(415) 555-1234	
	Marketing	San Francisco	\$1,500,000.00	(415) 555-1234	

You can modify a filter row's cell values and click **Apply** or click **Clear** to remove all the applied filters.

	Department	Location	Budget	Phone	#
	mar				<a href="#">Apply</a> <a href="#">Clear</a>
(S)	Corporate Headquarters	Monterey	\$1,000,000.00	(408) 555-1234	
(S)	Sales and Marketing	San Francisco	\$22,000.00	(415) 555-1234	
	Marketing	San Francisco	\$1,500,000.00	(415) 555-1234	

# Search Panel

Use the Search Panel to locate data and highlight search result by typing the filter criterion in the search box.

Company Name		Address	City	Country
Ana Trujillo Emparedados y helados		Avda. de la Constitución 2222	México D.F.	Mexico
Antonio Moreno Taquería		Mataderos 2312	México D.F.	Mexico
Centro comercial Moctezuma		Sierras de Granada 9993	México D.F.	Mexico
Océano Atlántico Ltda.		Ing. Gustavo Moncada 8585 Piso 20-A	Buenos Aires	Argentina
Pericles Comidas clásicas		Calle Dr. Jorge Cash 321	México D.F.	Mexico
Tortuga Restaurante		Avda. Azteca 123	México D.F.	Mexico

## Apply the Search Panel Filter Criterion

Press Enter or click the **Search** button to apply a filter criterion typed in the search panel. Otherwise, a filter is automatically applied in 1.2 seconds.

## Clear the Search Panel Filter Criterion

To clear the search panel filter criterion, do one of the following:

- Press Delete or Backspace.
- Click the **Clear** button.
- Click the clear button in the search box when it is focused and not empty.



## Search syntax

A search criterion consists of a single word in its simplest form. However, the search panel allows creating composite criteria.

- **Mask:** criterion

maria

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Hanna Anders	Santa Maria	USA
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

**Example description:** selects records that contain the "maria" string in any search column.

- **Mask:** column:criterion

contact:maria

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden

You can search against a specific column by preceding a search string with the column's caption plus a colon character. Instead of the complete caption, it is possible to use the caption's initial characters to perform a search against the first column whose name starts with the specified substring. To search against a column whose caption contains space characters, specify the column's display caption in quotation marks.

If the search string contains multiple conditions separated by space characters, and at least one condition defines a search against a specific column, the tree list displays only records that match all of these conditions (the AND logical operator combines conditions).

**Example description:** selects records that contain "maria" in the column that starts with "contact".

- **Mask:** criterion1 ciretation2

maria anders

#### Option AND

Contact Name	City	Country
Maria Anders	Berlin	Germany
Hanna Anders	Santa Maria	USA

#### Option OR

Contact Name	City	Country
Maria Anders	Berlin	Germany
Maria Berglund	Luleå	Sweden
Hanna Anders	Santa Maria	Germany
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

Based on conditions provided by your application vendor, the search panel can search words separated by space characters in one of the following ways.

#### Option AND

Only records that match all of the conditions are shown (that is, the conditions are combined by the AND logical operator).

**Example description:** selects records that contain both "maria" AND "anders" strings in any search column.

## Option OR

If there is no column specification, the tree list displays records that match at least one of these conditions (the OR logical operator combines the conditions). If at least one condition defines a search against a specific column, the tree list displays only records that match all of these conditions (the AND logical operator combines the conditions).

**Example description:** selects records that contain either "maria" OR "anders" strings in any search column.

- **Mask:** "criterion with spaces"

"maria anders"

<input type="text" value="maria anders"/> <span style="border: 1px solid red; padding: 0 5px;">×</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Anders	Berlin	Germany

Specify this string in quotation marks to search for a string containing a space character.

**Example description:** selects records that contain "maria anders" in any search column.

- **Mask:** criterion1 -criterion2

maria -anders

<input type="text" value="maria -anders"/> <span style="border: 1px solid red; padding: 0 5px;">×</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden
Paula Wilson	Santa Maria	USA

Precede a condition with "-" to exclude records that match this condition from the resulting set. There should be no space between the "-" sign and the condition.

**Example description:** selects records that contain "maria", excluding records that contain "anders".

- **Mask:**

criterion1 +criterion2

maria +sweden

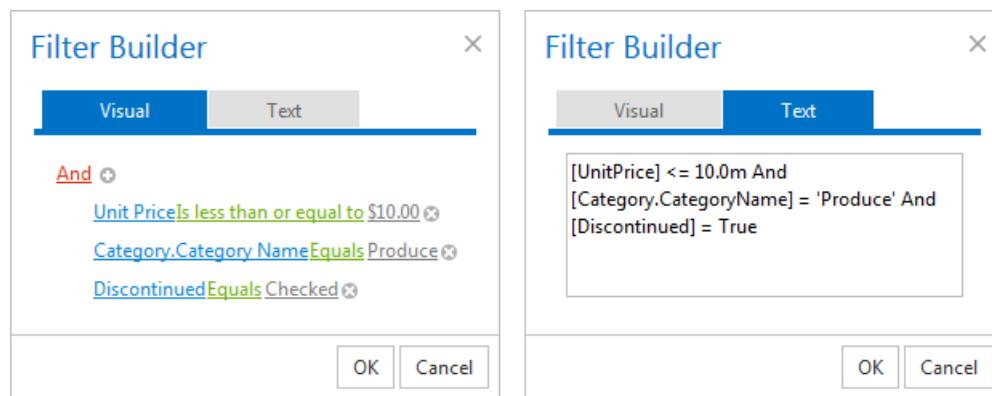
<input type="text" value="maria +sweden"/> <span style="border: 1px solid red; padding: 0 5px;">×</span>	<input type="button" value="Search"/>	<input type="button" value="Clear"/>
Contact Name	City	Country
Maria Berglund	Luleå	Sweden
Maria Larsson	Bräcke	Sweden

Precede a condition with "+" to display only records that match this condition. The "+" specifier allows implementing the logical AND operator. There should be no space character between the "+" sign and the condition.

**Example description:** selects records that contain both "maria" AND "sweden" in search columns.

# Creating Complex Filter Criteria with the Filter Builder

To build complex filter criteria with an unlimited number of filter conditions, combined by logical operators, use the built-in Filter Builder.

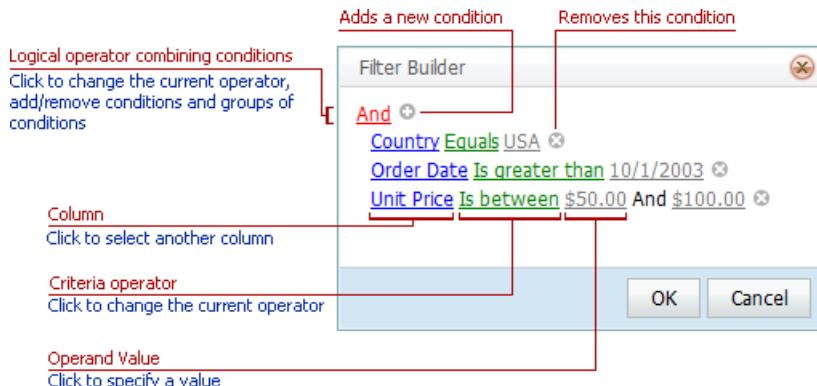


To open the Filter Builder, click the filter image displayed within the filter bar or the filter expression link.

	Department	Location	Budget
	Corporate Headquarters	Monterey	\$1,000,000.00
	Engineering	Monterey	\$1,100,000.00
(S)	Software Products Div.	Monterey	\$1,200,000.00
	Research and Development	Burlington, VT	\$460,000.00
(S)	Sales and Marketing	San Francisco	\$22,000.00
	Field Office: East Coast	Boston	\$500,000.00
	Pacific Rim Headquarters	Kuau	\$600,000.00

[Contains\(\[Department\], 'ea'\)](#) [Clear](#)

To create and customize filter criteria, use the **⊕** and **⊖** buttons.



To learn more, see the [Filter Editor](#) topic.

# Selection and Navigation

## Navigation

Use the Tree List's pager to switch between pages.

A screenshot of a Tree List component. The tree structure includes 'General Information' (News, About Us), 'Client Services' (Buy and Download, Online Client Center, Order, Download Center, 60 Day Money Back Guarantee, FAQ - How to Order Our Products). Below the tree is a pager with 'Page 1 of 10 (91 items)' and page numbers 1, 2, 3, ..., 10, ..., 10. To the right is a 'Page size:' dropdown menu with options 10, 20, and 50, where 10 is selected. A mouse cursor is hovering over the '20' option.

To change the number of nodes in a Tree List, click the **Page Size** menu and select the number of nodes per page.

## Selection

Select and clear a check box to select and unselect the node.

	Department	Budget	Location
<input type="checkbox"/>	Corporate Headquarters	\$1,000,000.00	Monterey
<input checked="" type="checkbox"/>	Sales and Marketing	\$22,000.00	San Francisco
<input checked="" type="checkbox"/>	Field Office: Canada	\$500,000.00	Toronto
<input type="checkbox"/>	Field Office: East Coast	\$500,000.00	Boston
<input checked="" type="checkbox"/>	Pacific Rim Headquarters	\$600,000.00	Kuaui
<input checked="" type="checkbox"/>	Marketing	\$1,500,000.00	San Francisco
<input type="checkbox"/>	Finance	\$40,000.00	Monterey
<input type="checkbox"/>	Engineering	\$1,100,000.00	Monterey

Select and clear the **Select All** checkbox to select and unselect all nodes.

	Department	Budget	Location
<input checked="" type="checkbox"/>	Corporate Headquarters	\$1,000,000.00	Monterey
<input checked="" type="checkbox"/>	Sales and Marketing	\$22,000.00	San Francisco
<input checked="" type="checkbox"/>	Field Office: Canada	\$500,000.00	Toronto
<input checked="" type="checkbox"/>	Field Office: East Coast	\$500,000.00	Boston
<input checked="" type="checkbox"/>	Pacific Rim Headquarters	\$600,000.00	Kuaui
<input checked="" type="checkbox"/>	Marketing	\$1,500,000.00	San Francisco
<input type="checkbox"/>	Finance	\$40,000.00	Monterey
<input type="checkbox"/>	Engineering	\$1,100,000.00	Monterey

## Recursive Selection

When you check a node in recursive selection mode, it automatically checks all its immediate child nodes, and vice versa.

	Department	Budget	Location
	Corporate Headquarters	\$1,000,000.00	Monterey
	Sales and Marketing	\$22,000.00	San Francisco
	<input checked="" type="checkbox"/> Field Office: Canada	\$500,000.00	Toronto
	<input type="checkbox"/> Field Office: East Coast	\$500,000.00	Boston
	<input checked="" type="checkbox"/> Pacific Rim Headquarters	\$600,000.00	Kuaui
	<input type="checkbox"/> Marketing	\$1,500,000.00	San Francisco
	<input type="checkbox"/> Finance	\$40,000.00	Monterey
	Engineering	\$1,100,000.00	Monterey
	<input checked="" type="checkbox"/> Consumer Electronics Div.	\$1,150,000.00	Burlington, VT
	<input checked="" type="checkbox"/> Software Products Div.	\$1,200,000.00	Monterey

# Keyboard Navigation

You can use a keyboard to perform Tree List primary navigation operations.

## Access Key

Press CTRL+SHIFT+[AccessKey] keys to navigate to the Tree List.

## Focused Node

Press the UP ARROW and DOWN ARROW keys to move focus between nodes. Moving focus from the ultimate (first or last) node within a page changes the page within the Tree List, if possible.

## Node Selection

Press the SPACE key to select and cancel the selection of the focused node. To select multiple nodes, move node focus by arrow keys while holding down the SHIFT key.

## Expanding/Collapsing Nodes

Press the PLUS/RIGHT ARROW and MINUS/LEFT ARROW keys to expand and collapse nodes.

## Paging

Press the SHIFT+PAGE UP and SHIFT+PAGE DOWN key combinations to go to the next and previous Tree List page.

# Reorder Nodes

You can drag a node by mouse and drop it at the required position.

Department	Location	Budget
Corporate Headquarters	Monterey	\$1,000,000.00
Engineering	Monterey	\$1,100,000.00
Consumer Electronics Div.	Burlington, VT	\$1,150,000.00
Software Development	Monterey	\$40,000.00
Software Products Div.	Monterey	\$1,200,000.00
Finance	Monterey	\$40,000.00
Sales and Marketing	San Francisco	\$22,000.00

## Note

This functionality may be disabled in your application. This is the choice of the application vendor.

## Reorder Columns

You can drag and drop a column header to change its position in the column header panel.

Department	Location	Budget
Corporate Headquarters	Monterey	\$1,000,000.00
Engineering	Montere <sup>y</sup>	\$1,100,000.00
Finance	Monterey	\$40,000.00
Sales and Marketing	San Francisco	\$22,000.00

# Resize Columns

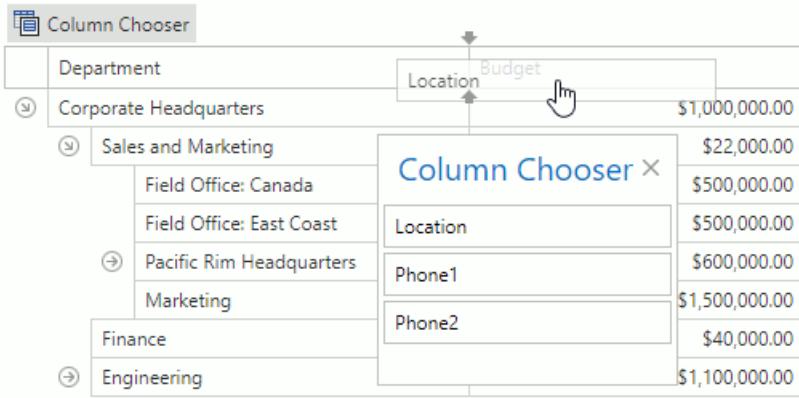
Hover a column header's right border (so that it displays a double-sided arrow) and drag the column border to change column width.

	Departments	Budget	Location	Phone
④	Corporate Headquarters	\$1,000,000.00	Monterey	(408) 555-1234
④	Sales and Marketing	\$22,000.00	San Francisco	(415) 555-1234
	Field Office: Canada	\$500,000.00	Toronto	(416) 677-1000
	Field Office: East Coast	\$500,000.00	Boston	(617) 555-4234
④	Pacific Rim Headquarters	\$600,000.00	Kuaui	(808) 555-1234
	Marketing	\$1,500,000.00	San Francisco	(415) 555-1234
	Finance	\$40,000.00	Monterey	(408) 555-1234
④	Engineering	\$1,100,000.00	Monterey	(408) 555-1234

# Column Chooser

Click the **Column Chooser** toolbar button to invoke the Column Chooser panel.

- Drag a column's header onto Column Chooser panel to hide the column.
- Drag a column's header from the Column Chooser panel and drop it onto the column header panel to make the column visible.



## Note

This functionality may be disabled depending on the application vendor's policies.

# Data Summaries

A summary calculates the value of an aggregate function over all the values in a group of nodes and displays the results in the footer.

The following aggregate functions are available:

- Average
- Count
- Max
- Min
- Sum

	Department	Location	Budget
(S)	Corporate Headquarters	Monterey	\$1,000,000.00
(S)	Sales and Marketing	San Francisco	\$22,000.00
	Finance	Monterey	\$40,000.00
(S)	Engineering	Monterey	\$1,100,000.00
(S)	Consumer Electronics Div.	Burlington, VT	\$1,150,000.00
	Software Products Div.	Monterey	\$1,200,000.00
Count=7		Max=\$1,200,000.00 Sum=\$3,786,000.00	
Count=16		Max=\$1,500,000.00 Sum=\$8,848,000.00	
Count=17		Max=\$1,500,000.00 Sum=\$9,848,000.00	

# Data Validation

The Tree List validates entered values and displays errors if a value does not pass validation.

An error icon indicating the invalid value. Hover the mouse over the icon to display a hint with the error's description.

Correct every invalid value to save data.

	From	Subject	Date Created	Has Attachment	#
(1)	Developer Express - Ray	New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a>
	Andrew Fuller	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a>
(2)		Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	
<p>From: <input type="text"/>  Subject: <input type="text"/> Re: New Holiday Skin</p> <p>Date Created: <input type="text" value="12/10/2007"/> <span>The value cannot be empty.</span></p> <p><a href="#">Update</a> <a href="#">Cancel</a></p> <p>Please, correct all errors.</p>					
	Nancy Davolio	Re: New Holiday Skin	12/10/2007	<input type="checkbox"/>	<a href="#">Edit</a>
	Janet Leverling				

# Data Export

The Tree List allows you to export data in the following formats.

- DOCX
- PDF
- RTF
- XLS
- XLSX

Click a toolbar button to export the data in the corresponding format.

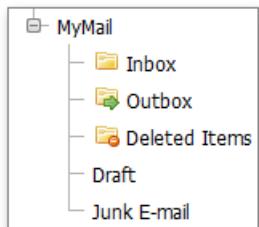
The screenshot shows a Microsoft Excel spreadsheet titled "treeList (1) - Excel". The spreadsheet contains a tree list structure with the following data:

	Department	Budget	Location	Phone1
1	Corporate Headquarters	\$1,000,000.00	Monterey	(408) 555-1234
2	Sales and Marketing	\$22,000.00	San Francisco	(415) 555-1234
3	Finance	\$40,000.00	Monterey	(408) 555-1234
4	Engineering	\$1,100,000.00	Monterey	(408) 555-1234
5	Consumer Electronics Div.	\$1,150,000.00	Burlington, VT	(802) 555-1234
6	Software Products Div.	\$1,200,000.00	Monterey	(408) 555-1234
7	Count=7	\$3,786,000.00		
8	Count=16	\$8,848,000.00		
9	Count=17	\$9,848,000.00		

The toolbar at the top of the Excel window includes buttons for "Export to PDF", "Export to XLS", "Export to XLSX" (which is highlighted in blue), "Export to DOCX", and "Export to RTF". The "FILE" tab is selected in the ribbon menu.

# Tree View

The Tree View displays hierarchical data as a tree.



Topics in this section:

- [Expand and Collapse Tree View Nodes](#)
- [Tree View Nodes Checking](#)

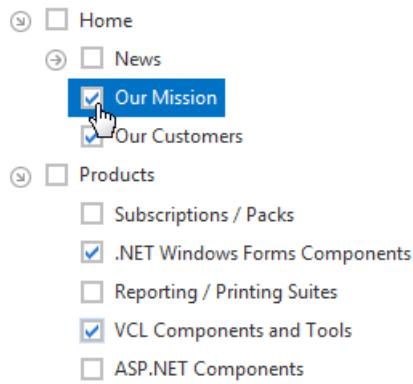
# Expand and Collapse Tree View Nodes

To expand or collapse a node, click its expand button.



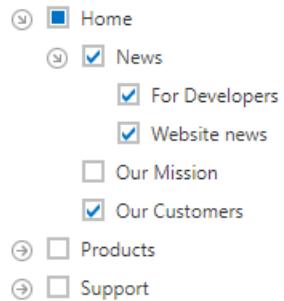
# Tree View Nodes Checking

Click a checkbox to toggle the node's checked state.



## Recursive Checking

When you check a node in recursive checking mode, it automatically checks all its immediate child nodes, and vice versa.



# Vertical Grid

The Vertical Grid displays data records as grid columns, and data fields as grid rows. Vertical grid features include data editing, sorting, and filtering support.

Photo		
▼ Name	Ms. Nancy Davolio	Dr. Andrew Fuller
First Name	Nancy	Andrew
Last Name	Davolio	Fuller
Birth Date	12/8/1948	2/19/1952
Hire Date	5/1/1992	8/14/1992
Address		
Phone		

## Data Editing

- [Add, Delete and Recover Columns](#)
- [Switch to Edit Mode](#)
- [Save or Discard Changes](#)

## Selection and Navigation

- [Page Navigation](#)
- [Select Records](#)

## Sorting

- [Sorting](#)

## Filtering

- [Header Filter](#)
- [Search Panel](#)
- [Creating Complex Filter Criteria with the Filter Builder](#)

## Expand and Collapse Category Rows

- [Expand and Collapse Category Rows](#)

## Data Summaries

- [Data Summaries](#)

## Data Validation

- Data Validation

## Data Export

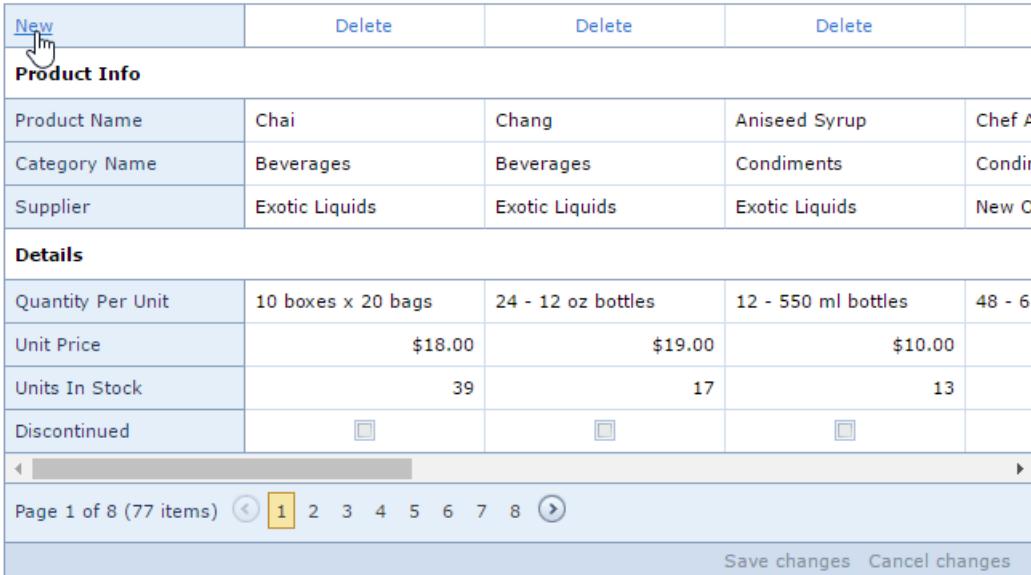
- Data Export

# Add, Delete and Recover Columns

## Add a Column

To create a new column:

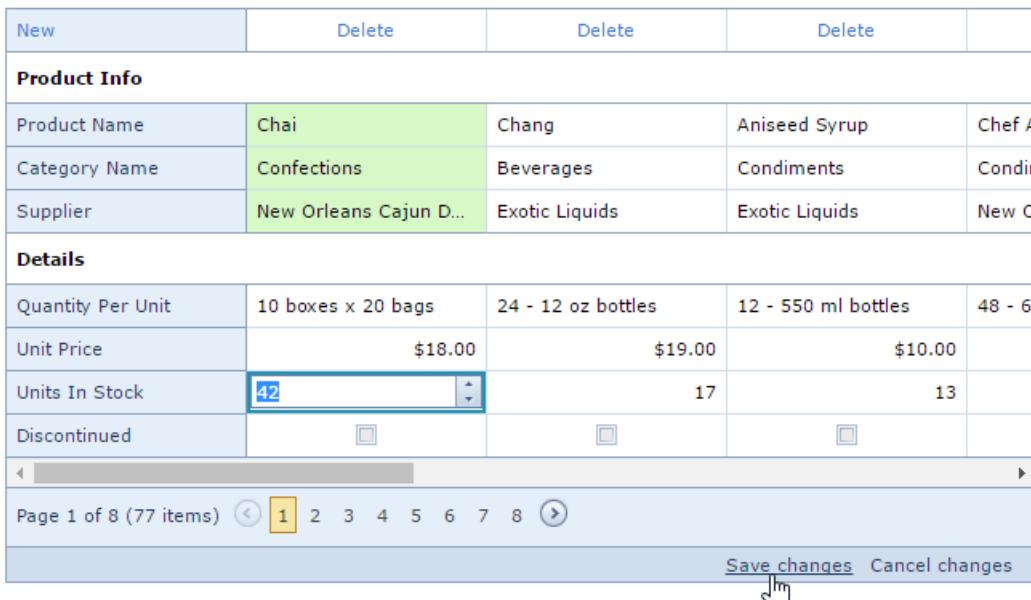
- Click **New**.



The screenshot shows a product details form with a header row containing 'New', 'Delete', and three empty 'Delete' buttons. Below this is a section titled 'Product Info' with four rows: Product Name (Chai), Category Name (Beverages), Supplier (Exotic Liquids), and a fourth row partially visible. Underneath is a 'Details' section with five rows: Quantity Per Unit (10 boxes x 20 bags), Unit Price (\$18.00), Units In Stock (39), Discontinued (checkbox), and another row partially visible. At the bottom are navigation links 'Page 1 of 8 (77 items)' with page numbers 1 through 8, and 'Save changes' and 'Cancel changes' buttons.

New	Delete	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New Orleans Cajun Deli
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
◀ ▶				
Page 1 of 8 (77 items) <span style="border: 1px solid #ccc; padding: 2px;">1</span> 2 3 4 5 6 7 8 <span style="border: 1px solid #ccc; padding: 2px;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

- Specify cell values.
- Click **Save changes**.



The screenshot shows the same product details form after adding a new column. The 'Units In Stock' cell now contains the value '42'. The rest of the form remains the same, including the 'Details' section and the bottom navigation and save/cancel buttons.

New	Delete	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Confections	Beverages	Condiments	Condiments
Supplier	New Orleans Cajun Deli	Exotic Liquids	Exotic Liquids	New Orleans Cajun Deli
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	42	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
◀ ▶				
Page 1 of 8 (77 items) <span style="border: 1px solid #ccc; padding: 2px;">1</span> 2 3 4 5 6 7 8 <span style="border: 1px solid #ccc; padding: 2px;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

## Delete a Column

- To delete a column, click **Delete** within the column to be deleted.

New	Recover	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New O
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<span style="float: left;">◀</span> <span style="float: right;">▶</span>				
Page 1 of 8 (77 items) <span style="float: left;">◀</span> <span style="border: 1px solid #ccc; padding: 2px 5px; float: left;">1</span> 2 3 4 5 6 7 8 <span style="float: right;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

- Click **Save changes**.

New	Recover	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New O
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<span style="float: left;">◀</span> <span style="float: right;">▶</span>				
Page 1 of 8 (77 items) <span style="float: left;">◀</span> <span style="border: 1px solid #ccc; padding: 2px 5px; float: left;">1</span> 2 3 4 5 6 7 8 <span style="float: right;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

## Recover Deleted Column

- To recover a deleted column before saving changes, click **Recover** within the column to be recovered.

New	Recover	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef Anton's
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New Orleans
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6L
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<span style="float: left;">◀</span> <span style="float: right;">▶</span>				
Page 1 of 8 (77 items) <span style="float: left;">◀</span> <span style="float: right;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

- Click **Save changes**.

# Switch to Edit Mode

To switch to edit mode do one of the following.

- Click a cell.

New	Delete	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai 	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New O
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
◀ ▶				
Page 1 of 8 (77 items)   2 3 4 5 6 7 8 				
Save changes Cancel changes				

- Double click a cell.

New	Delete	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai 	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New O
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
◀ ▶				
Page 1 of 8 (77 items)   2 3 4 5 6 7 8 				
Save changes Cancel changes				

- Click a focused cell.

New	Delete	Delete	Delete	
<b>Product Info</b> 				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Beverages	Beverages	Condiments	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids	New O
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6
Unit Price	\$18.00	\$19.00	\$10.00	
Units In Stock	39	17	13	
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<span style="float: left;">◀</span> <span style="float: right;">▶</span>				
Page 1 of 8 (77 items) <span style="border: 1px solid #ccc; padding: 2px;">1</span> 2 3 4 5 6 7 8 <span style="border: 1px solid #ccc; padding: 2px;">▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

#### Note

Editing mode may be unavailable in your application, as this is a decision made by the application vendor.

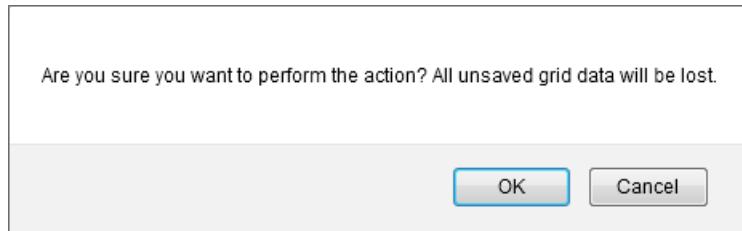
# Save or Discard Changes

The vertical grid allows you to edit a group of cells (on a single page) and save these changes with one click.

You can modify cell values and click **Save changes** or click **Cancel changes** to discard all the changes.

New	Delete	Delete	Delete	
<b>Product Info</b>				
Product Name	Chai	Chang	Aniseed Syrup	Chef A
Category Name	Confections	Beverages	Condiments	Condiments
Supplier	New Orleans Cajun Deli	Exotic Liquids	Exotic Liquids	New Orleans Cajun Deli
<b>Details</b>				
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles	48 - 6 oz jars
Unit Price	\$18.00	\$19.00	\$10.00	\$35.00
Units In Stock	42	17	13	65
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page 1 of 8 (77 items) <span>◀</span> <span>▶</span>				
<a href="#">Save changes</a> <a href="#">Cancel changes</a>				

If a vertical grid contains unsaved data, a confirmation message is displayed before the data is lost (e.g., when sorting the data, changing the page or closing the web page). You can choose whether to proceed and lose changes or cancel the action.



# Page Navigation

Use the vertical grid's pager to switch between pages.

A screenshot of a grid interface. At the top, there is a horizontal pager with buttons for navigating between pages. The first few buttons are highlighted with a yellow background and black border. The current page is indicated by a yellow box around the number '1'. The page size is set to 5, which is also displayed in a dropdown menu. Below the pager, there is a table with several rows of data. The first row contains columns for 'Product Name' (Alice Mutton), 'Outback Lager', and 'Rössle'. Under the heading 'Company info', there are four rows of data: Company Name (Blondesddsl père et fils), Address (24, place Kléber), Country (France), and City (Strasbourg). Under the heading 'Pricing', there are three rows of data: Unit Price (\$31.20), Quantity (30), and Total (\$936.00) for one group, and Unit Price (\$12.00), Quantity (20), and Total (\$240.00) for another. At the bottom, there is another horizontal pager with similar controls and a page size dropdown set to 5.

To change the number of columns displayed within a grid, click the **Page size** menu and select the needed number of columns per page.

A screenshot of the same grid interface as above, but with the 'Page size' dropdown menu open. The menu shows options: 5, 10, 20, 50, 100, and 200. The option '20' is currently selected and highlighted with a yellow background and black border. The rest of the grid structure remains the same, with the horizontal pager at the top and bottom, and the table of data in the center.

# Select Records

You can select columns as follows:

- Click **Select** to toggle the corresponding column's selected state.
- Select and clear a check box to select and cancel the selection of the corresponding column.

<input type="checkbox"/>	Select <input checked="" type="checkbox"/>	Select <input checked="" type="checkbox"/>	Select <input type="checkbox"/>
Photo			
Brand	Superheads	Sensitive Sound	Extra Bass
Model	SH1	SB1000	EB300
Rating	★★★★★	★★★★★☆	★★★★★☆☆
Price	\$250.00	\$900.00	\$210.00
Discount	30%	5%	20%
Total	\$175.00	\$855.00	\$168.00

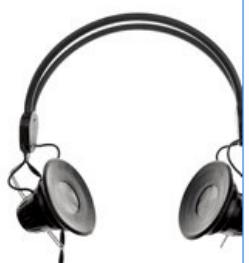
Page 1 of 3 (30 items) [!\[\]\(ee9f373910cdc27254e8f49c61064fe0\_img.jpg\)](#) [\*\*1\*\*](#) [!\[\]\(abe4489083018b7211a174b762f5a3d7\_img.jpg\)](#) [!\[\]\(f85556de7425fd540a58031a4909cf6e\_img.jpg\)](#)

Select and clear the **Select All** check box to select and cancel the selection of all columns on the page (or all columns in the grid).

<input checked="" type="checkbox"/>	Select <input checked="" type="checkbox"/>	Select <input checked="" type="checkbox"/>	Select <input checked="" type="checkbox"/>
Selection state of all columns on all pages			
Photo			
Brand	Superheads	Sensitive Sound	Extra Bass

# Sorting

Click a row header to sort data in ascending order. If sorting has already been applied, subsequent clicks reverse the current sort order.

Photo				
Brand	Audio Phones	Audio Phones	Superheads	Superheads
Model ▾	TRC20	TRC10	SHD5	SH90
<strong>Pricing</strong>				
Price	\$25.00	\$80.00	\$24.00	\$1,25
Discount	15%	45%	8%	
Total	<strong>\$21.25</strong>	<strong>\$44.00</strong>	<strong>\$22.08</strong>	<strong>\$1,18</strong>

Page 1 of 6 (30 items) < [1] 2 3 4 5 6 >

A click on a row header clears the sort settings on any other rows. Hold the SHIFT key down while clicking to sort against multiple rows.

Click a row's header while pressing the CTRL key to clear the row's sorting.

# Header Filter

You can use the **Header Filter** to filter data or change the filter conditions in the vertical grid.

Click a filter button to invoke a filter drop-down list that contains unique values in a row.

You can use the check boxes in the drop-down list to select values and click **OK** to apply the filter criteria.

The screenshot shows a real estate search interface with a vertical filter grid on the left. The columns are labeled: Photo, Price (\$780,000.00), and several other columns partially visible. A filter dialog is open over the grid, specifically for the 'Price' column. The dialog has a title bar '(Select All)' and contains the following options:

- from \$0 to \$499,999
- from \$500,000 to \$999,999
- from \$1,000,000 to \$1,499,999
- from \$1,500,000 to \$1,999,999
- > \$2,000,000.00

At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background of the grid shows two house photos and some address information: 82649 Topeka St, Riv 95360, New Construction.

If the drop-down list does not display check boxes, click the required value to apply the filter criteria.

This screenshot is similar to the previous one, showing the same real estate search interface and filter grid. The 'Price' column's filter dialog is open, but it displays a dropdown menu instead of checkboxes. The menu includes the following items:

- (All)
- from \$0 to \$499,999
- from \$500,000 to \$999,999
- from \$1,000,000 to \$1,499,999
- from \$1,500,000 to \$1,999,999
- > \$2,000,000.00

A cursor is hovering over the third item in the list. The rest of the interface is identical to the first screenshot, showing house photos and address details.

The drop-down list displays values that match the applied filter criteria. To remove the filter, click **(All)**.

# Search Panel

Type a filter criterion in the search panel to filter data and highlight search results.

Oli		Search	Clear
Company Name	Consolidated Holdings	Folies gourmandes	Tortuga Restaurante
Contact Name	Elizabeth Brown	Martine Rancé	Miguel Angel Paolino
Address	Berkeley Gardens 12 Brewery	184, chaussée de Tournai	Avda. Azteca 123
City	London	Lille	México D.F.
Country	UK	France	Mexico

## Apply the Search Panel Filter Criterion

To apply a filter criterion typed in the search panel, press the ENTER key or click **Search**. Otherwise, a filter is automatically applied in 1.2 seconds.

## Clear the Search Panel Filter Criterion

To clear the search panel filter criterion, do one of the following.

- Press the DELETE or BACKSPACE key.
- Click the **Clear** button.
- Click the clear button, which is displayed within the editor when the editor is focused and is not empty.



## Search syntax

In its simplest form, a search criterion consists of a single word. However, the search panel allows you to create composite criteria.

- **Mask:** criterion

**Example:** Maria

Maria		
Contact Name	Maria Anders	Maria Larsson
Company Name	Alfreds Futterkiste	Folk och fä HB
Phone	030-0074321	0695-34 67 21
Address Info	Obere Str. 57, Berlin	Åkergratan 24, Bräcke
Country	Germany	Sweden
City	Berlin	Bräcke
Address	Obere Str. 57	Åkergratan 24
Postal Code	12209	S-844 67

**Example description:** selects records that contain the "Maria" string in any search row.

- **Mask:** row:criterion

**Example:** city: ber

city: Ber		
Contact Name	Maria Anders	Yang Wang
Company Name	Alfreds Futterkiste	Chop-suey Chinese
Phone	030-0074321	0452-076545
▼ Address Info	Obere Str. 57, Berlin	Hauptstr. 29, Bern
Country	Germany	Switzerland
City	Berlin	Bern
Address	Obere Str. 57	Hauptstr. 29
Postal Code	12209	3012

You can search against a specific row by preceding a search string with the row's caption and a colon character. Instead of the complete caption, it is possible to use the initial characters of the caption. A search will be performed against the first row whose name starts with the specified substring. If you want to search against a row whose caption contains space characters, specify the row's display caption in quotation marks.

If the search string contains multiple conditions separated by space characters, and at least one condition defines a search against a specific row, only records that match all of these conditions are shown (i.e., the conditions are combined by the AND logical operator).

**Example description:** selects records that contain "ber" in the row that starts with "city".

- **Mask:** criterion1 criterion2

**Example:** France Ma

France Ma		
Contact Name	Laurence Lebihan	Martine Rancé
Company Name	Bon app'	Folies gourmandes
Phone	91.24.45.40	20.16.10.16
▼ Address Info	12, rue des Bouchers, Marseille	184, chaussée de Tournai, Lille
Country	France	France
City	Marseille	Lille
Address	12, rue des Bouchers	184, chaussée de Tournai
Postal Code	13008	59000

The search panel allows to search words separated by space characters using the AND logical operator (i.e., the conditions are combined by the AND logical operator). Only records that match all of the conditions are shown.

**Example description:** selects records that contain both "France" AND "Ma" strings in any search row.

- **Mask:** "criterion with spaces"

**Example:** "Maria Anders"

"Maria Anders"	
Contact Name	Maria Anders
Company Name	Alfreds Futterkiste
Phone	030-0074321
▼ Address Info	Obere Str. 57, Berlin
Country	Germany
City	Berlin
Address	Obere Str. 57
Postal Code	12209

If you want to search for a string containing a space character, specify this string in quotation marks.

**Example description:** selects records that contain "maria anders" in any search row.

- **Mask:** criterion1 -criterion2

**Example:** maria -anders

Maria -Anders	
Contact Name	Maria Larsson
Company Name	Folk och fä HB
Phone	0695-34 67 21
▼ Address Info	Åkergratan 24, Bräcke
Country	Sweden
City	Bräcke
Address	Åkergratan 24
Postal Code	S-844 67

Precede a condition with "-" to exclude records that match this condition from the resulting set. There should be no space between the "-" sign and the condition.

**Example description:** selects records that contain "maria", excluding records that contain "anders".

- **Mask:** criterion1 +criterion2

**Example:** Germany +berlin

Germany +Berlin		
Contact Name	Maria Anders	Peter Franken
Company Name	Alfreds Futterkiste	Frankenversand
Phone	030-0074321	089-0877310
▼ Address Info	Obere Str. 57, Berlin	Berliner Platz 43, München
Country	Germany	Germany
City	Berlin	München
Address	Obere Str. 57	Berliner Platz 43
Postal Code	12209	80805

Precede a condition with "+" to display only records that match this condition. The "+" specifier allows you to implement the logical AND operator. There should be no space character between the "+" sign and the condition.

**Example description:** selects records that contain "Germany", excluding records that contain "berlin".

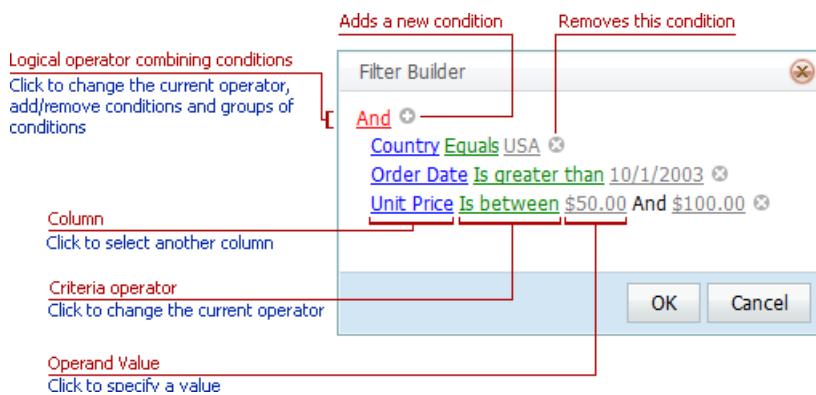
# Creating Complex Filter Criteria with the Filter Builder

To build complex filter criteria with an unlimited number of filter conditions, combined by logical operators, use the built-in Filter Builder.

To open the Filter Builder, click the filter image displayed within the filter bar or the filter expression link.



To create and customize filter criteria, use the **+** and **×** buttons.



To learn more, see the [Filter Editor](#) topic.

# Expand and Collapse Category Rows

Click a category row's expand button to expand or collapse the row.

Photo		
Brand	Extra Bass	Audio Phones
Model	EB300	AP70
<b>Reviews</b>		
Rating		
Reviews	531 reviews	984 reviews
<b>Pricing</b>		
Price	\$210.00	\$350.00
Discount	20%	15%
Total	<b>\$168.00</b>	<b>\$297.50</b>
<b>Specifications</b>		
<b>Appearance</b>		

# Data Summaries

A summary calculates the value of an aggregate function over all the columns and is displayed in the summary panel. The following aggregate functions are available:

- Average
- Count
- Max
- Min
- Sum

Product Name	Côte de Blaye	Côte de Blaye	Côte de Blaye
<b>Company info</b>			
Company Name	Hanari Carnes	QUICK-Stop	Simons bistro
Address	Rua do Paço, 67	Taucherstraße 10	Vinbæltet 34
Country	Brazil	Germany	Denmark
City	Rio de Janeiro	Cunewalde	København
<b>Pricing</b>			
Unit Price	\$263.50	\$263.50	\$210.80
Quantity	60	60	50
Total	<b>\$15,810.00</b>	<b>\$15,019.50</b>	<b>\$10,540.00</b>
◀ ⏴ ⏵ ⏹ ▶			
Sum of Total is <b>\$1,265,793.04</b>			
Page 1 of 216 (2155 items) ⏵ 1 ⏵ 2 ⏵ 3 ⏵ 4 ⏵ 5 ⏵ 6 ⏵ 7 ⏵ ... ⏵ 214 ⏵ 215 ⏵ 216 ⏵ ⏹			

# Data Validation

The vertical grid validates entered values and displays errors if a value does not pass validation.

An error icon indicating the invalid value. Hover the mouse over the icon to display a hint with the error's description.

Correct every invalid value to save data.

New	Delete	Delete	Delete
<b>Product Info</b>			
Product Name	Chang	Aniseed Syrup	
Category Name	Beverages	Product name is required	Condiments
Supplier	Exotic Liquids	Exotic Liquids	Exotic Liquids
<b>Details</b>			
Quantity Per Unit	10 boxes x 20 bags	24 - 12 oz bottles	12 - 550 ml bottles
Unit Price	\$18.00	\$19.00	\$10.00
Units In Stock	39	17	13
Discontinued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page 1 of 8 (77 items) <span style="border: 1px solid #ccc; padding: 2px;">1</span> 2 3 4 5 6 7 8 <span style="border: 1px solid #ccc; padding: 2px;">&gt;</span>			
<a href="#">Save changes</a> <a href="#">Cancel changes</a>			

# Data Export

The vertical grid allows you to export data in the following formats.

- DOCX
- CSV
- PDF
- RTF
- XLS
- XLSX

Click a toolbar button to export the data in the corresponding format.

The screenshot shows a Microsoft Excel ribbon interface with the following details:

- Top Bar:** Includes buttons for "Export to PDF", "Export to XLS", "Export to XLSX" (which is highlighted in yellow), "Export to DOCX", and "Export to RTF".
- Product Info Section:** Contains a table with rows for Product Name (Chai) and Category (Aniseed Syrup). It also features two decorative images: a row of glasses containing various liquids and a mortar and pestle with green herbs.
- Excel Ribbon:** Shows the "VerticalGrid - Excel" title and the standard ribbon tabs: FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, and TEAM.
- Worksheet View:** Displays a table with the following data:

	A	B	C
1	Product Info		
2	Product Name	Chai	Aniseed Syrup
3	Category		
4	Unit Price	\$18.00	\$10.00
5	Units In Stock	39	13
6	Total	\$702.00	\$130.00
7	Supplier Info		
8	Company Name	Exotic Liquids	Exotic Liquids
9	Contact Name	Charlotte Cooper	Charlotte Cooper
- Bottom Bar:** Includes buttons for navigating between sheets, inserting new sheets, and zoom controls (READY, 100%).