

Logi Ad Hoc Reporting  
Report Design Guide



Version 12  
July 2016

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## Introduction

The Logi Ad Hoc Report Design Guide provides information and instructions for building reports and is intended for the end-user.

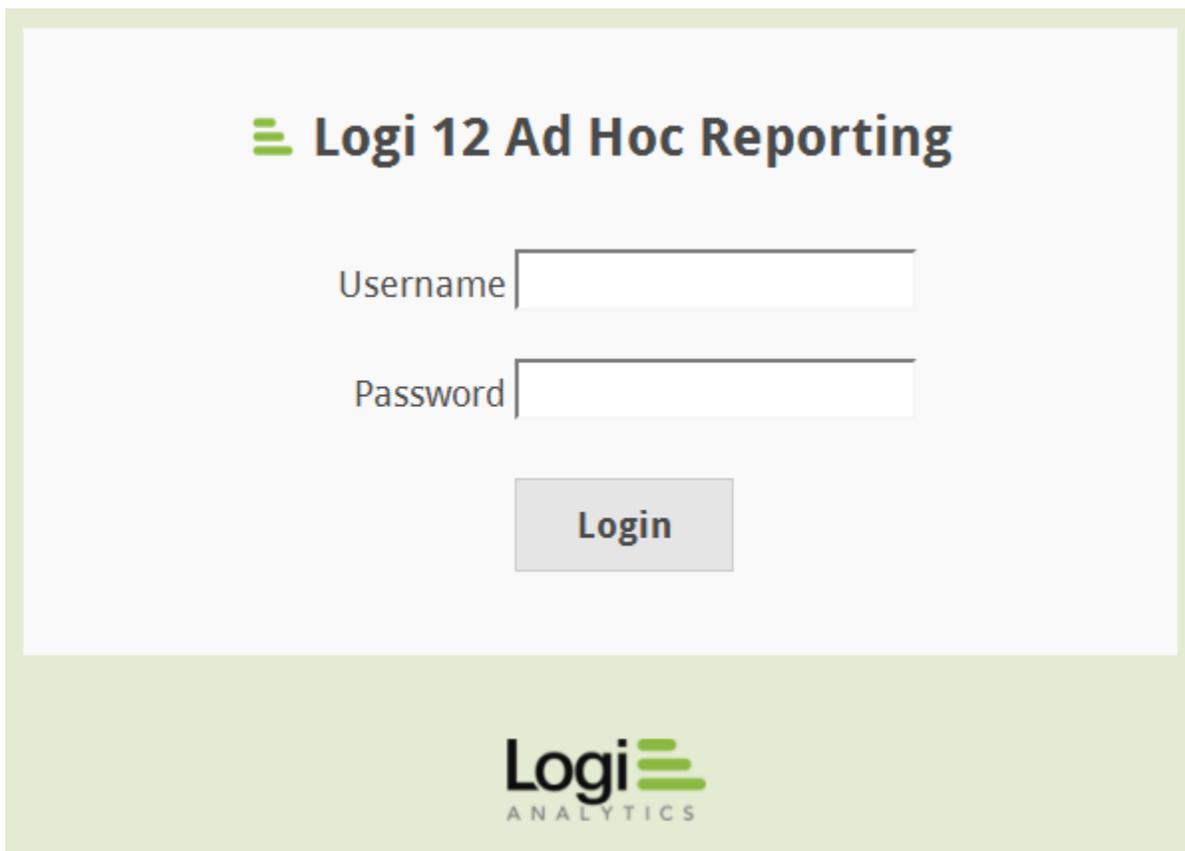
Logi Ad Hoc Reporting is a web-based reporting utility designed to make building, sharing, and analyzing business intelligence reports a quick and easy process, even for non-technical users. With Ad Hoc, there is no need for downloadable report viewers, and no time or assistance is required from technical developers to easily create professional, informative reports.

Ad Hoc delivers a user-friendly interface and full-featured reporting tools. Users can create interactive charts and graphs, as well as publish comprehensive reports to share with others. An easy-to-use Report Builder walks a user through all the steps required to create comprehensive and interactive reports. It is not necessary to understand SQL or databases in order to create robust, customized reports in minutes.

## Getting Started

Open a window using your browser and enter the URL for the Ad Hoc instance in its address bar. Bookmark the location for future reference.

The Ad Hoc login screen is displayed:



The screenshot shows the login interface for Logi 12 Ad Hoc Reporting. At the top, there is a hamburger menu icon followed by the text "Logi 12 Ad Hoc Reporting". Below this, there are two input fields: "Username" and "Password". A "Login" button is positioned below the password field. At the bottom of the screen, the "Logi ANALYTICS" logo is displayed.

Enter your username and password, and click **Login** to access the application.

### Notes:

Based on the configuration determined by the system administrator, the Login screen may be bypassed.

The system administrator can issue a username and password.

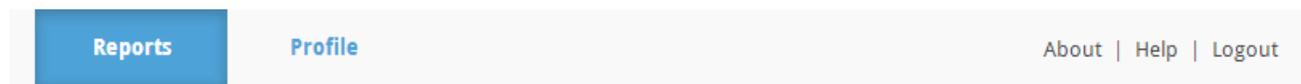
## Learning the Interface

### *Menu Bar*

There are five main links available in Ad Hoc in the menu bar at the top of the page:

- **Reports** - Modify, share and run reports.
- **Profile** - Update your user account information and preferences.
- **About** – Get summarized information about Ad Hoc.
- **Help** - Get help using Ad Hoc.
- **Logout** - Exit Ad Hoc.

Here's what they look like:



### **Note:**

Unless specifically stated otherwise, use of the word “report” or “reports” in descriptions of Ad Hoc functionality implies both reports and dashboards.

### *Reports Page*

The *Reports* page is the default main page in Ad Hoc. For end-users, reports are divided into *Personal Reports* and *Shared Reports*. The *Personal Reports* tab will display a list of reports, dashboards and folders specific to the logged in user. The *Shared Reports* tab will similarly display a list of the reports shared by all users in the organization.

Initially, the Reports page will not have any reports or folders to list or manage and the page will appear as:

Personal Reports
Shared Reports

**Personal Reports** ?

New Report

New Dashboard

New Folder

The **Report Management** page contains a list of all reports that are available to you. You can create new reports and dashboards, organize them in folders, and depending on the options schedule and subscribe to reports.

Use buttons on top left of the screen to create new items, copy or move them into any folder, or remove unneeded items.

? [Click here](#) to go to the on-line help for this page.

On the page are a **Personal Reports** link to this page, the **Shared Reports** link to the page listing the reports accessible to other members of the organization, and the **New Report, New Dashboard** and **New Folder** buttons to create reports, dashboards and folders respectively.

Once reports or folders are added to the application, the Reports page will look something like:

Personal Reports
Shared Reports

**Personal Reports** ?

Database: Northwind ▼

New Report

New Dashboard

New Folder

Delete

Copy

Move

⊗

Find Reports
🔍

	Name	Last Modified	Actions
<input type="checkbox"/>	<b>My Accounting Reports</b>	3/6/2014 10:59 AM	<div style="display: flex; gap: 5px;"> <div style="border: 1px solid #ccc; padding: 2px 5px;">Edit</div> <div style="border: 1px solid #ccc; padding: 2px 5px;">More <span style="font-size: 0.8em;">&gt;</span></div> </div>
<input type="checkbox"/>	<b>Company Status</b>	3/6/2014 11:16 AM	<div style="display: flex; gap: 5px;"> <div style="border: 1px solid #ccc; padding: 2px 5px;">Edit</div> <div style="border: 1px solid #ccc; padding: 2px 5px;">More <span style="font-size: 0.8em;">&gt;</span></div> </div>
<input type="checkbox"/>	<b>Product Categories</b>	3/6/2014 10:59 AM	<div style="display: flex; gap: 5px;"> <div style="border: 1px solid #ccc; padding: 2px 5px;">Edit</div> <div style="border: 1px solid #ccc; padding: 2px 5px;">More <span style="font-size: 0.8em;">&gt;</span></div> </div>

Click the  icon to show basic orientation help for the reports list page.

If more than one reporting database is available for the end-user, a Database drop-down list will be displayed. The Database drop-down list acts as a filter for the list of reports. Only reports based on the selected database will be shown in the list. The database list does not filter the folders.

The Report Builder uses the currently selected database as the source for all report data. Consequently, if the currently selected database is changed, any reports that contain data from another database are not visible.

In the above example is a folder named “Customer Reports” and a report named “Categories”.

**Notes:**

If the Database drop-down menu is not visible, then the user only has access to one database. Contact the system administrator if additional access is needed.

The “(All)” option will only be displayed if the System Administrator has enabled the “Multiple Connection” option. When the “(All)” option is selected, the report list is not filtered. In addition, the “Modify Data Source” dialog box will present all of the data objects for all of the reporting databases to which the user has access.

The following actions are available:

**New Report** – Click to begin the process of creating a report.

**New Folder** – Click to show the dialog box to create a folder.

**Delete** – Click to remove selected items from the list.

**Copy** – Click to replicate the selected items

**Move** – Click to move the selected items to another location.

**Find Reports** – Click to do a “contains” search of the *Name* column for the associated text.

Click the  icon in the textbox to clear the text and refresh the list. This option is configurable and may be hidden.

**Notes:**

The *Find Reports* criteria will be retained for all subsequent visits to the page until it has been cleared out.

Depending on a user's *Preference* settings, the Find Reports criteria may be retained after logging out or terminating a browser session.

**Select All** – Check the checkbox in the list header to select or deselect all items in the list.

**Sort** – Sort the list by clicking the *Name* or *Last Modified* header. Clicking a second time will reverse the sort order.

**Select Items** – Click the checkbox within a row to select or deselect the item in the list.

**Run Reports** – Click the report link in the list to execute the item.

**Folder** – click the folder link in the list to navigate to a folder.

**Edit** – Click to edit a report or to reset the name or description of a folder.

**More >** - This indicates that there are multiple actions that can be performed on the item. Hover the mouse over the icon to display a drop-down list of available actions. Their availability is dependent upon the configuration and the item type; however, the list may include *Modify*, *Rename*, *Copy*, *Move*, *Schedule*, *Archive*, or *View Dependencies*.

The following icons are used to signify a report's status or type:



Ad Hoc Report



Scheduled Ad Hoc Report



Ad Hoc Dashboard



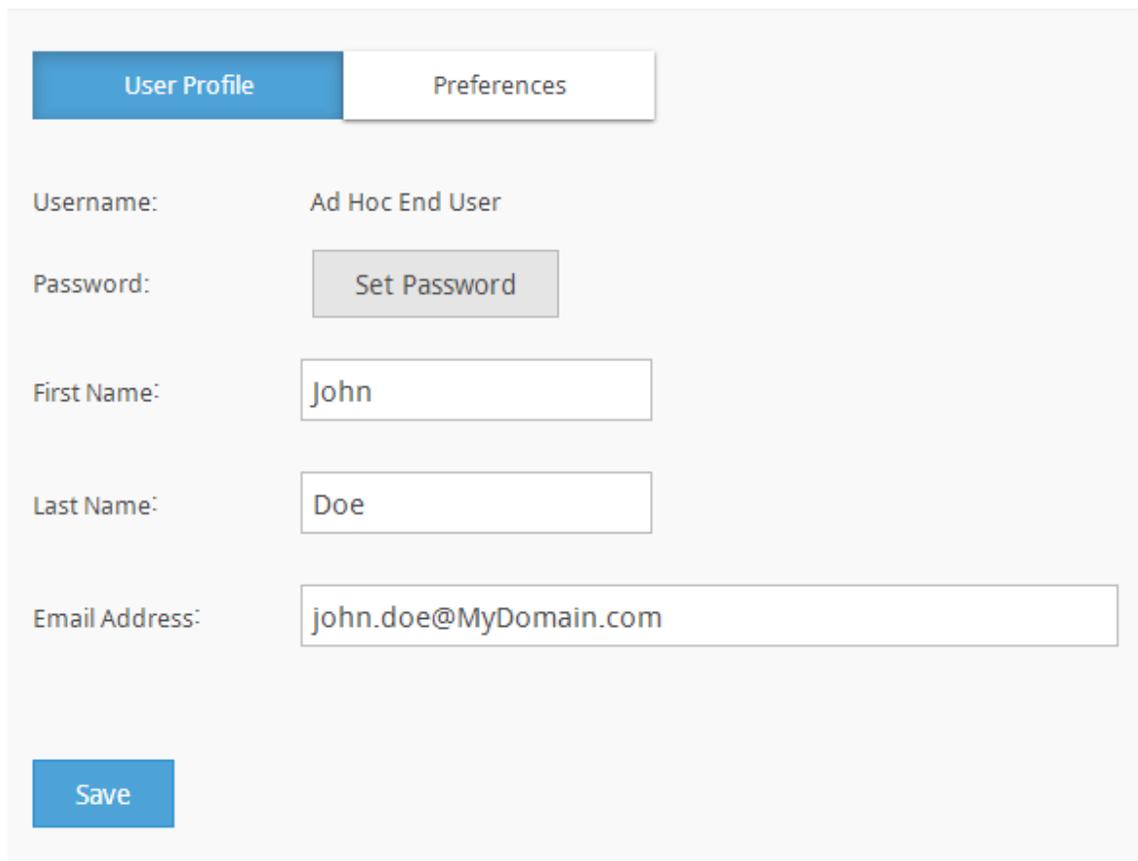
Ad Hoc Mobile Report

## Updating Your Profile

Click **Profile** to change your profile information. Profile information is divided into User Profile and Preferences and accessed by clicking on the respective tabs.

### *User Profile*

The *User Profile* covers the user specific information. From this screen, a user's *Username*, *Password*, *First Name*, *Last Name* and *Email Address* may be changed.



The screenshot shows a web interface for updating a user profile. At the top, there are two tabs: 'User Profile' (which is active and highlighted in blue) and 'Preferences'. Below the tabs, the form contains the following fields and controls:

- Username:** A text field containing the value 'Ad Hoc End User'.
- Password:** A text field with a 'Set Password' button next to it.
- First Name:** A text field containing the value 'John'.
- Last Name:** A text field containing the value 'Doe'.
- Email Address:** A text field containing the value 'john.doe@MyDomain.com'.

At the bottom left of the form, there is a blue 'Save' button.

To update your profile:

1. Enter the new information into the *User Profile* fields provided.
2. If the Security Authentication method is not NT, then
  - a. Click the **Set Password** button.
  - b. Enter your old password and new password in the fields provided.
  - c. From the *Password* panel, click **OK** to apply the changes.
3. Modify other fields as desired.
4. Click **Save** to commit the changes.

**Notes:**

Username cannot be changed.

The ability to modify a user password from the User Profile screen may be disabled by the administrator.

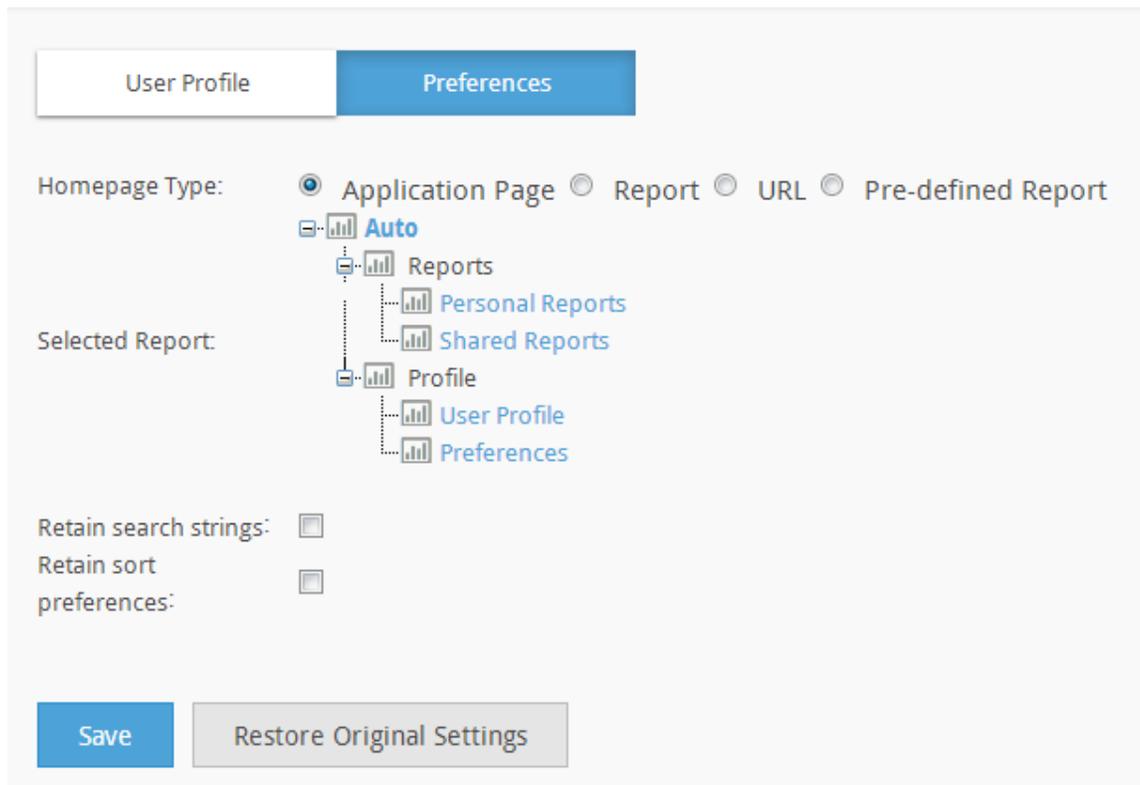
The content of the Email Address field cannot be deleted if the user has subscribed to a report.

**Hint:**

Enter an email address in order to be able to subscribe to scheduled reports.

### Setting Your Preferences

Click **Profile Management** and then select the *Preferences* tab to change your user preference settings.



The screenshot shows the 'Preferences' tab selected in a user profile management interface. At the top, there are two tabs: 'User Profile' and 'Preferences'. Below the tabs, the 'Homepage Type:' section has four radio button options: 'Application Page' (selected), 'Report', 'URL', and 'Pre-defined Report'. Under 'Application Page', there is a tree view for 'Selected Report:' with the following structure: 'Auto' (selected), 'Reports' (containing 'Personal Reports' and 'Shared Reports'), and 'Profile' (containing 'User Profile' and 'Preferences'). Below the tree view, there are three checkboxes: 'Retain search strings:' (unchecked), 'Retain sort preferences:' (unchecked), and 'Retain sort preferences:' (unchecked). At the bottom, there are two buttons: 'Save' and 'Restore Original Settings'.

To update your preferences:

1. Select a Homepage Type, then:

- a. If *Application Page*, select a web page from the application tree. If a report area is selected (e.g., Shared Reports), then further refine your selection by:
    - i. Click **Change Folder**.
    - ii. Select a folder from the folder tree and then click **OK**.
  - b. If *Report*, select a report by clicking **Find Report** to view a list of reports and then click **OK**.
  - c. If *URL*, then specify a URL address. Click **Test URL** to confirm that the URL can be viewed.
  - d. If *Pre-defined Report*, select a report using **Find Report** to view a list of reports and then click **OK**.
2. If desired, check *Retain search strings* to retain your last search criteria for any page even after a logout.
  3. If desired, check *Retain sort preferences* to retain your last choices for sorting of grids in the application.
  4. Click **Save** to commit the changes and return to the Profile page.
  5. *OPTIONAL*: Click **Restore Original Settings** to revert the preference settings back to the default settings.

**Note:**

If a Homepage is specified, the application will automatically display the designated Homepage immediately after logging into the application and when the Home link is selected.

## The Report Builder

The Report Builder is a comprehensive and flexible interface designed to build full-featured reports.

Click **New Report** to access the Report Builder.

### *Navigating the Report Builder*

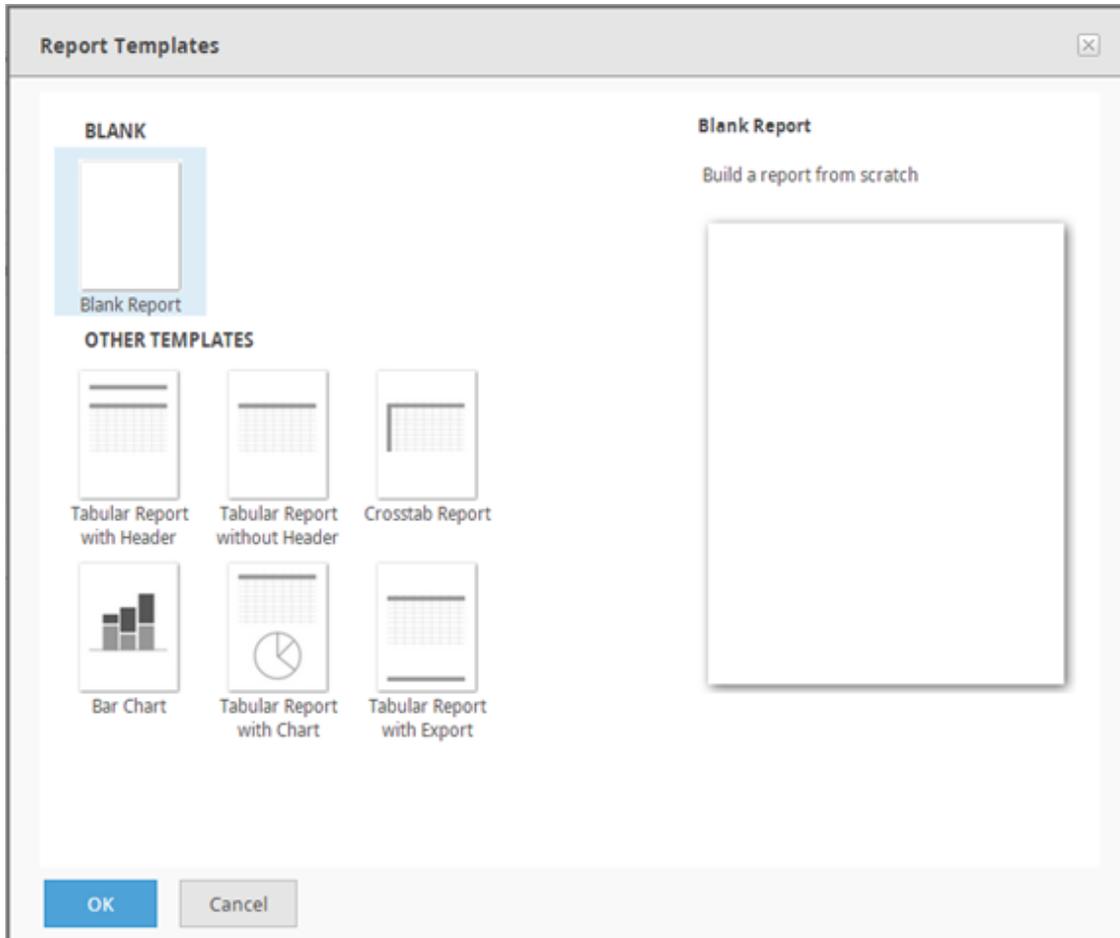
The following is a high level overview of the Report Builder and its components and options. The details of each component are covered elsewhere in this document.

When using the Report Builder, the core steps in building a report involve:

- Selecting a report template.
- Selecting a source of the data for the report.
- Selecting the display elements.
- Configuring the display elements.
- Reviewing the output.

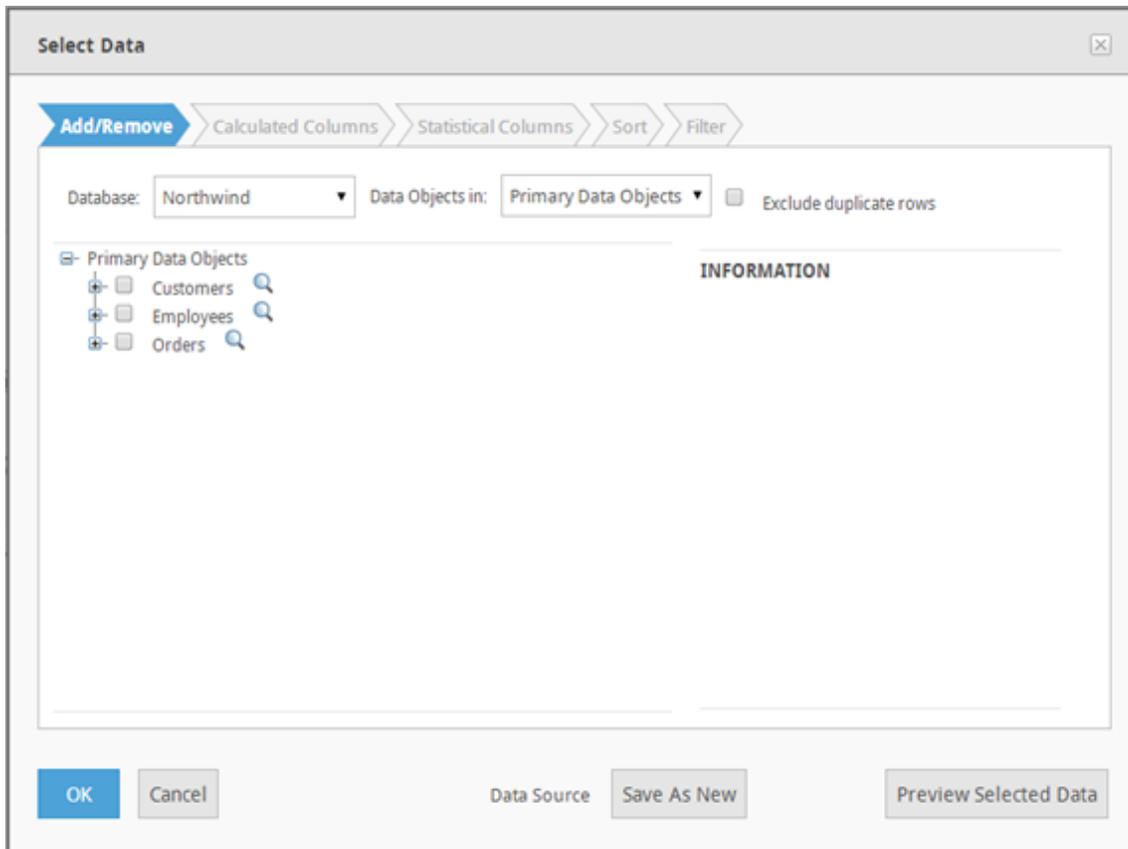
These steps will be presented in this section to show the navigation options.

After clicking the **New Report** button, a template selection dialog box will be displayed:



Six standard templates are included, in addition to the *Blank* template. The *Blank* template is initially selected. Select a template and then click **OK** to proceed.

The *Select Data* dialog box will be displayed to allow the user to select the data objects to be used in the report:



The *Add/Remove* tab allows you to select all of the data objects that form the basis of the report. Until data objects have been selected for the report the other tabs will be disabled.

The *Calculated Columns* tab allows you to create custom columns.

The *Sort* tab determines the initial sort sequence of the data returned from the reporting database.

The *Filter* tab allows you to specify filter criteria for the data.

**Notes:**

Access to the *Calculated Columns* tab is controlled by a right/permission. The tab may not be displayed to all users.

The *Database* drop-down may not be displayed if there is only one reporting database or if Multiple Connections has not been enabled.

The *Data Objects In* drop-down list may not be displayed if no object categories have been defined.

The *Save as New* option for the data source will not be displayed if the Multiple Data Sources option has not been enabled.

The list of data objects available to you may be filtered by the *Data Objects in* drop-down list. These are categories of data objects.

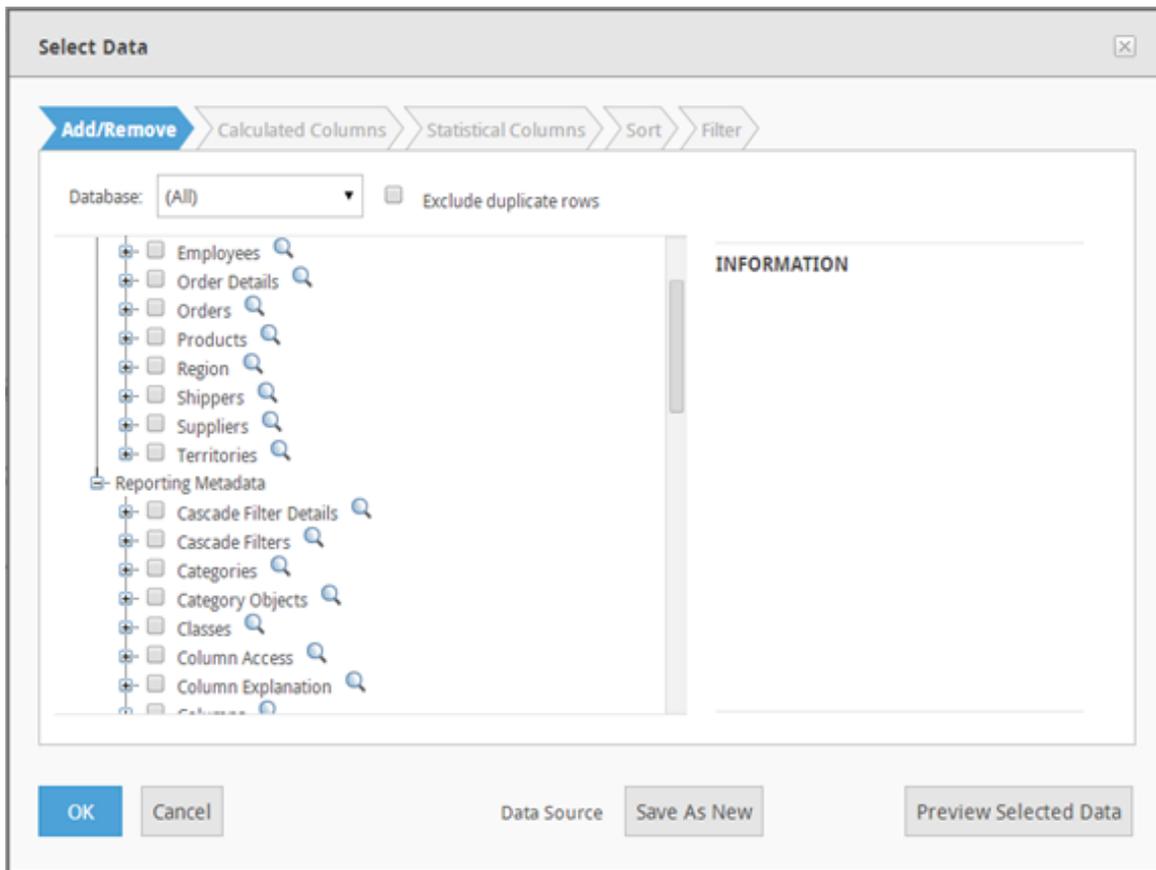
The data objects tree identifies the data objects available to you. As objects are selected the tree will be refreshed to show the related data objects. The columns of a data object can be viewed by expanding the data object. Sample data for the object can be displayed by clicking the  icon.

The *Information* panel will display any helpful descriptions of the data object or column that the mouse is on. Information will be displayed only if the System Administrator has specified the descriptions as part of the object/column configuration.

The **Preview Selected Data** button will display a report dialog box based on the data objects selected. From this dialog box the selections can be confirmed and all of the dialog boxes dismissed.

The **OK** button saves the currently selected data objects and dismisses the dialog box.

If you have access to multiple reporting databases and the “(All)” option was selected in the Database filter, the **Modify Data Source** dialog box will allow you to select data objects from any of the reporting databases.

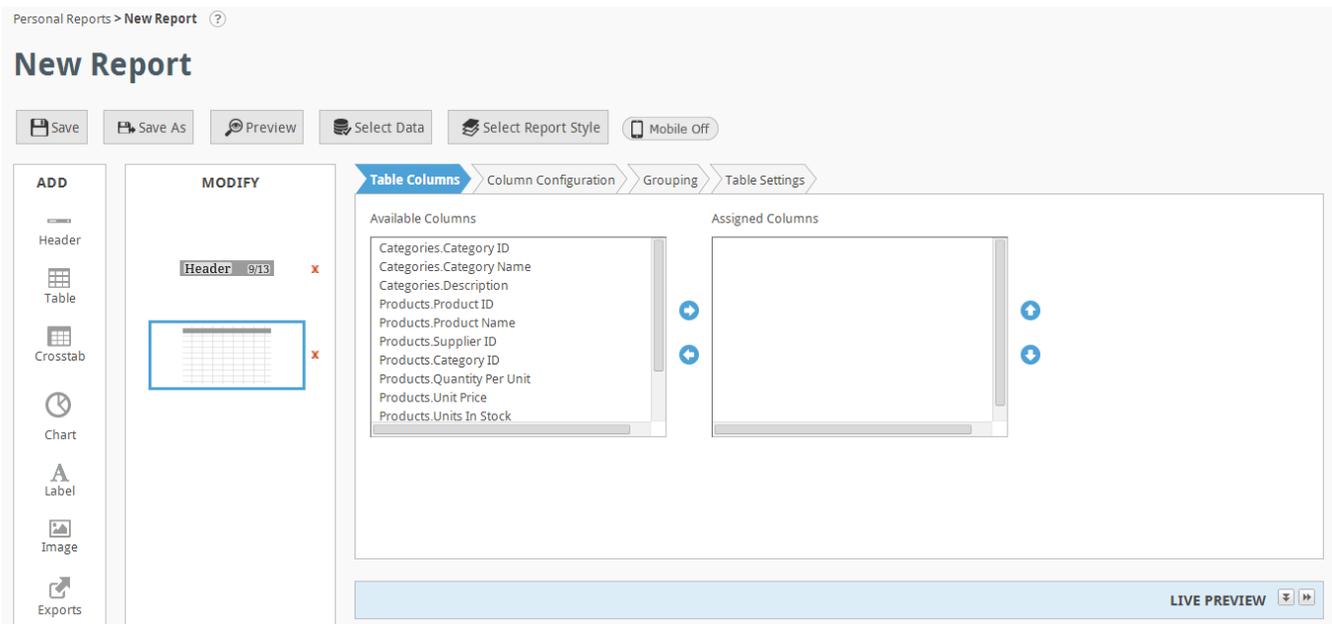


Notice in the image above that the Database filter is set to “(All)”. The tree of data objects includes two databases; “Northwind” and “Reporting Metadata”. The initial presentation of the tree in this scenario is normally for all databases to be fully expanded.

**Note:**

Presentation of all of the objects for all databases does not imply any relationships across databases. If the user selects a data object from the list, the tree will be refreshed with the related data objects.

Once the data objects for the report have been selected, the full Report Builder interface is available:



At the top of the page is a “breadcrumb trail” followed by a help icon. To return to the **Personal Reports** list, click its label in the breadcrumb trail. Click the  icon to receive a basic description of and help for the page.

Beneath the breadcrumb trail is the current name of the report being created/edited. In this example, the report name is “New Report”. This is the standard name for a report that has yet to be saved.

The **Save** button presents a dialog box that allows the user to specify the report name, description, expiration date and target folder for the report definition. Subsequent **Save** operations require no confirmation.

The **Save As** button presents the same dialog box and allows you to save the current report definition to a new name and target.

The **Preview** button launches the report in its current state for review.

The **Select Data** button displays the same **Select Data** dialog box that was displayed when the report was created, populated with the current settings.

The **Select Report Style** button displays a dialog box that allows you to select the style sheet used to render the report. The default style sheet is determined by the System Administrator.

On the left side of the display is an **ADD** frame that contains the choices of display elements available to the user. The content of the **ADD** frame may be different for each user depending on their Role/Permissions/Rights.

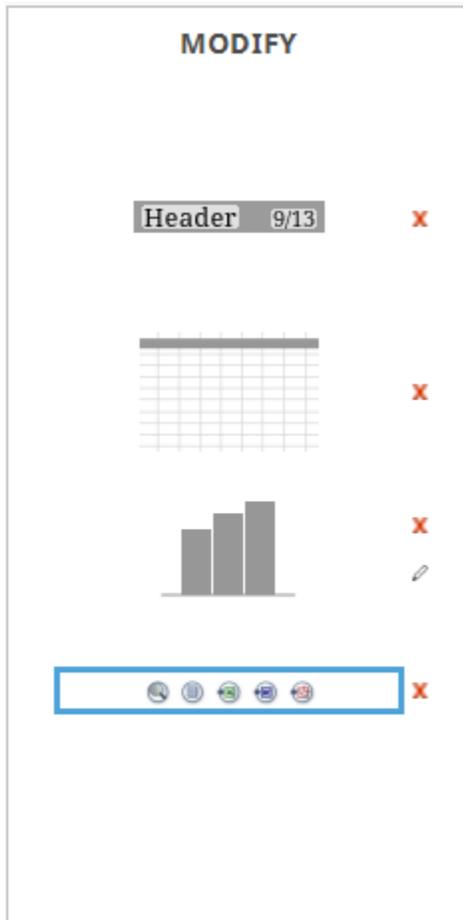
<b>ADD</b>	The display elements in the ADD frame can be added to the report by double-clicking them or dragging them to the proper location in the <b>MODIFY</b> frame.
 Header	Only one header element is permitted in a report.
 Table	The Table element initially presents data as a grid.
 Crosstab	The Crosstab element tabulates values and organizes them by header and label.
 Chart	The Chart option presents a list of charting options.
 Label	The Label option allows you to annotate the report.
 Image	The image option allows you to select an image to be displayed in the report.
 Exports	The Exports option allows you to present a list of export formats to the end-user running the report. Typical options include Word, Excel, PDF, CSV, and XML.



**Note:**

The Exports option is not displayed if the current “mobile state” is set to On. Typically the “mobile state” is set to Off. Exports are not supported for reports rendered on mobile devices.

Adjacent to the **ADD** frame is the **MODIFY** frame. The **MODIFY** frame determines the presentation order of the display elements.



In this example the report will display a header, a data table, a chart, and export options.

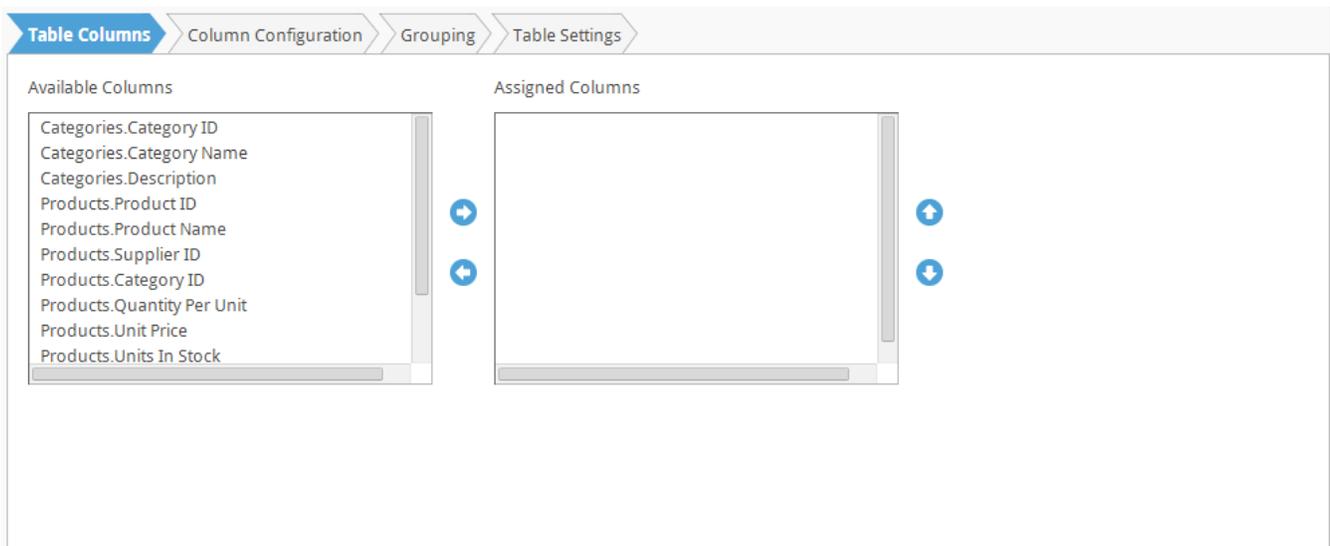
The red “X” allows you to remove a display element.

The  icon allows you to switch the chart type in the report. The same list of charting options will be displayed as when adding a Chart to the report.

Display elements can be rearranged by dragging and dropping them where needed.

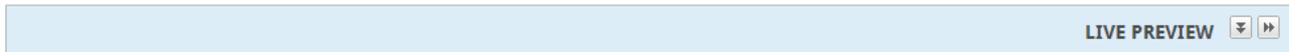
Highlighting a display element will refresh the configuration area to show the options related to the element.

Centered on the page is the tabbed *Configuration* panel. Each tab allows the end-user to configure some aspect of a display element. Every display element will have at least one configuration tab associated with it.



Each display element has a fixed set of configuration tabs. Highlight the display element in the MODIFY frame to refresh the configuration area with the tabs and content relevant to the highlighted element.

At the bottom of the page is the *Live Preview* panel which will show the report in real-time as it's being developed. As changes are made to the configuration, the impact on the report can be viewed "live".



The Live Preview panel is initially collapsed. Click the  or  buttons to collapse or expand the panel in the current browser window. Click the  button to display the report preview in a separate browser window.

Notes:

The live preview is refreshed with each change to the report configuration. The preview is a full rendering of the display element as it would appear in the report. Rendering the display element will impact the performance of the Report Builder, particularly for large volumes of data.

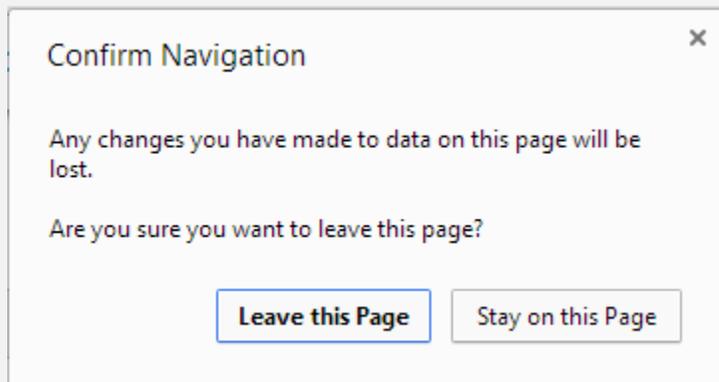
When creating a report, the Live Preview panel will not begin displaying anything until a Data Object has been selected.

When exiting the Report Builder, Ad Hoc will remember the state of the Live Preview panel, expanded or collapsed. When next launched, the Report Builder will display the Live Preview panel in the same state, regardless of the report being viewed.

If the Live Preview feature is not offered in the Report Builder, contact the System Administrator to enable it.

After an extended period of inactivity, the web server will end a browser session and work may be lost. It is a good idea to save report modifications often to avoid this scenario.

If changes to the report have not been saved, a confirmation dialog box will be displayed when attempting to leave the page:



Each browser will display some version of this confirmation

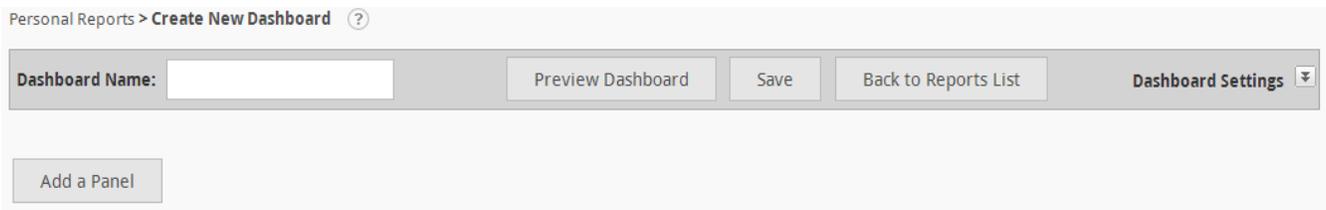
## The Dashboard Builder

The *Dashboard Builder* is an interface designed to build dashboards.

**Note:**

The Dashboard Builder is *not* designed to build or modify reports.

Click **New Dashboard** to access the Dashboard Builder.



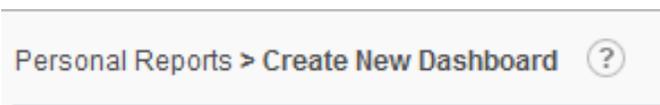
### *Navigating the Dashboard Builder*

The core steps in building a dashboard are:

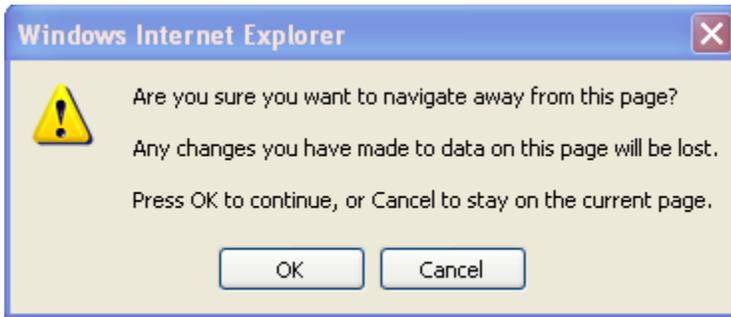
- Specifying a dashboard name.
- Configuring one or more dashboard panels.

These steps will be presented in this section to show the navigation options.

Across the top of the page is the “breadcrumb trail” - a series of links to the pages and folders recently visited:



For example, clicking the Personal Reports link in the breadcrumb trail will display the Reports page. If changes to the dashboard have not been saved, the following confirmation dialog box will be displayed:



Below the breadcrumb trail is dashboard management bar that allows you to specify a *Dashboard Name*, save the dashboard, review the dashboard using the **Preview Dashboard** button, and navigate back to the *Reports* page with the **Back to Reports List** button.

Clicking the  or  buttons will collapse or expand the Dashboard Settings panel.

Dashboard Name:  Preview Dashboard Save Back to Reports List Dashboard Settings 

### Description

### Dashboard Expiration Date

### Dashboard Header

Title:       Date:   
 Description:       Time:

### Dashboard Body

Free-form Layout:       Dashboard Adjustable:   
 Dashboard Tabs:       Dashboard Columns:

### Style

Pick a Style: Clarity

Date: Tuesday, February 4, 2014  
Time: 4:35:54 PM

Order ID	Customer ID	Order Date	Ship Via	Ship Name	Ship Region	Freight
10248	VNET	1/29/1996	3	noVista at Atlanta Chevrolet		\$33.00
10249	TDASIP	1/29/1996	1	Time Specialties		\$12.00
10250	HANAR	1/29/1996	2	Hanan Carves	RJ	\$56.00
10251	VICTE	1/29/1996	1	Vitcolas at stock		\$41.00
10252	SUPRO	1/29/1996	2	Supplies at stock		\$51.00
10253	HANAR	1/11/1996	2	Hanan Carves	RJ	\$56.00
10254	CHOPS	1/11/1996	2	Chipsway Chinese		\$23.00
10255	RCSU	1/13/1996	3	Richter Supermart		\$148.00
10256	WELU	1/16/1996	2	Wellington Importadora	SP	\$14.00
10257	HEKA	1/16/1996	3	HEKA/ST/Alaska	Tachra	\$82.00
10258	ENRSH	1/11/1996	1	Enrol Handel		\$141.00
10259	GENTC	1/18/1996	3	Genra comercial Michoacana		\$3.00
10260	OTTR	1/18/1996	1	Online Karstaden		\$61.00
10261	QUJDE	1/18/1996	2	Qua Delicia	RJ	\$3.50
10262	RATTC	1/23/1996	3	Rathbarra Canyon Grocery	NM	\$48.00
10263	ENRSH	1/23/1996	3	Enrol Handel		\$148.00
10264	FOLKD	04/20/2007	3	Folksoft Inc		\$4.00

Below the dashboard management bar is the list of dashboard panels. Initially only the **Add a Panel** button is displayed. When one or more panels have been configured, the dashboard list will appear as:

Add a Panel		Delete Panels			
<input type="checkbox"/>	Panel Caption	Initial Column	Initial Display	Content	Actions
<input type="checkbox"/>	Logi	0	Yes	<a href="http://www.logianalytics.com">http://www.logianalytics.com</a>	>

Click **Delete Panels** to remove any selected panels. Panels are selected by checking its checkbox. All panels can be selected or deselected by checking the checkbox in the list header.

Actions can be performed on each panel by hovering the mouse over the  icon to display the drop-down list of available actions and then selecting the action. The available actions are *Modify Dashboard Panel*, *Move Up*, and *Move Down*.

Clicking either the **Add Panel** button or the *Modify Dashboard Panel* action will display the *Panel Settings* dialog box.

**Panel Settings** [X]

Panel Caption:

Panel Description:

Initial Column:  Initial Display:  Yes  No

Height:  px

Min. Height:  px

Min. Width:  px

**Panel Content**

Pre-defined Reports  Favorite Reports  URL  Report

Report:  🔍

After entering the panel settings, click **Save Panel** to temporarily save the panel definition and return to the list of panels.

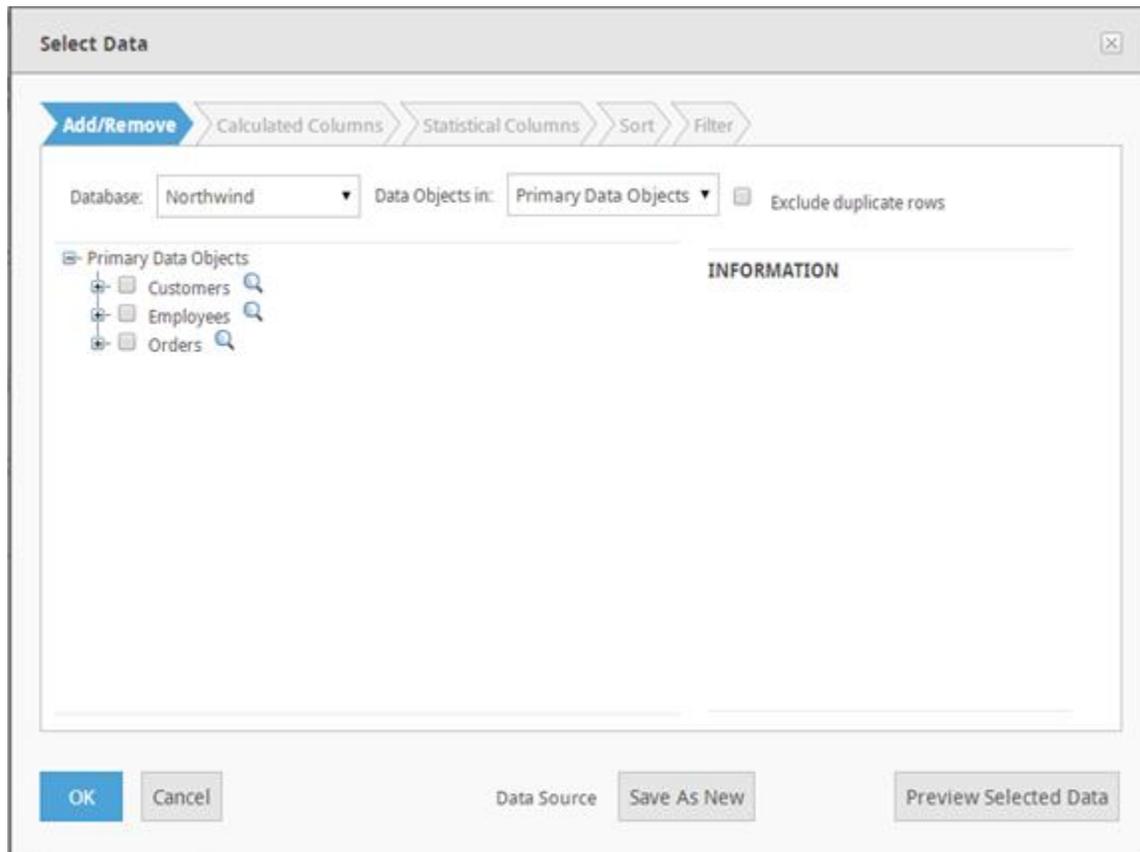
The dashboard definition is permanently saved by clicking **Save** or **Save As** in the *Dashboard Builder*.

## Data Sources

Every report is based on a “data source”, which refers to the data objects and columns related to a reporting database and any calculated columns and statistical columns defined for the report.

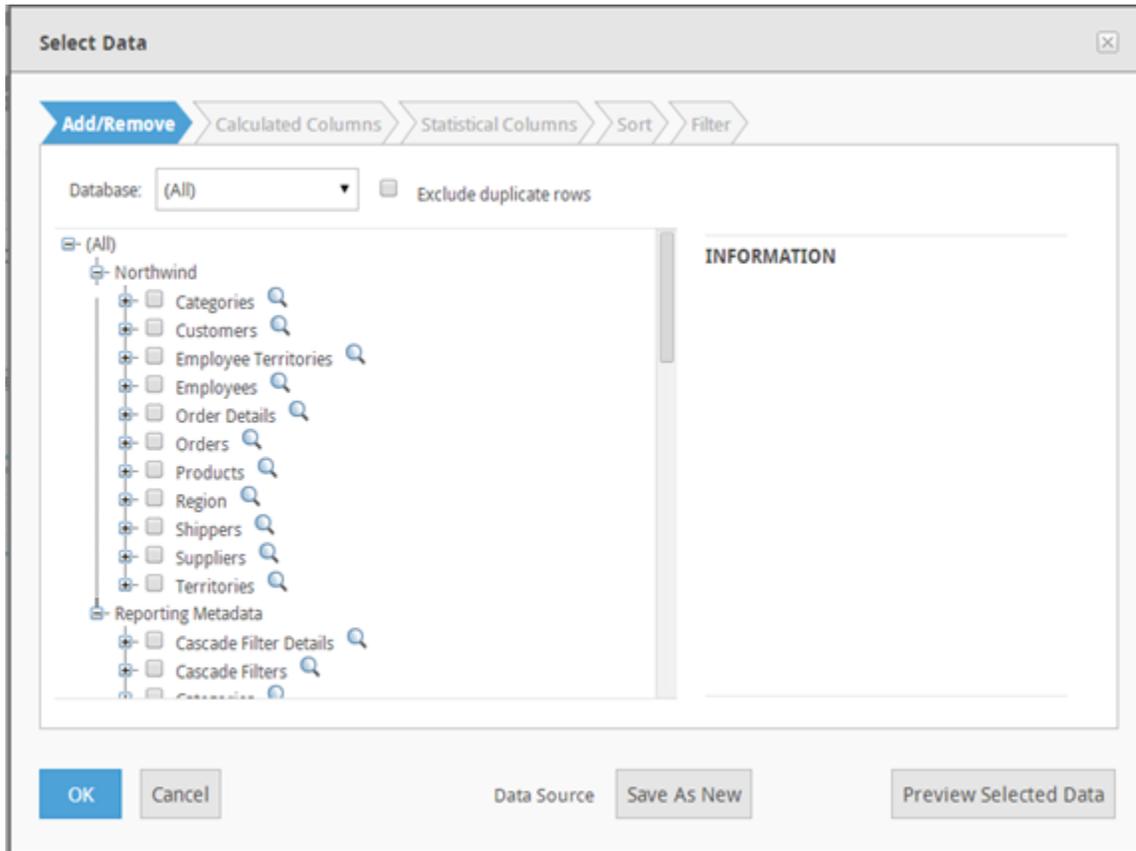
### Selecting a Data Source

Generally the first step in building a report is the selection of the data source. The *Report Builder* automatically takes you to the *Select Data* dialog box as part of creating a new report. The same dialog box is displayed when **Select Data** is clicked:



If the data objects have been categorized, a *Data Object in* drop-down list will be displayed and acts as a filter for the list of data objects. The list of data objects can be changed by selecting a different category from the list. All data objects can be displayed by selecting the “(All)” option in the list.

If you have access to multiple reporting databases and the “(All)” option was selected on the Database filter, the **Select Data** dialog box allows you to select data objects from any of the reporting databases.



Notice in the above image that the Database filter is set to “(All)”. As a result, the tree of data objects includes two databases; “Northwind” and “Reporting Metadata”.

**Note:**

Presentation of all of the objects for all databases does not imply any relationships across databases. If the user selects a data object from the list, the tree will be refreshed with the related data objects.

To select a data object to be used in the report, check the checkbox adjacent to the data object. Every time a data object is selected, the tree of data objects is refreshed to display all of the related data objects. Continue selecting data objects and click **OK** when ready to save the selected items as a data source for the report.

The **Exclude duplicate rows** checkbox indicates that only distinct rows should be returned from the database when the report is executed. Rows having identical values for all selected columns will be excluded.

If the data source for the report needs to be adjusted, click the **Select Data** button, make the required changes in the *Select Data* dialog box, and click the **OK** button to save the changes.

**Notes:**

Modifying a data source for the report may require reconfiguration of the attributes for a display element.

Most reports are based on a single data source. All of the display elements share the same data source. By default, Ad Hoc is configured to allow only a single data source per report; however, the administrator can configure Ad Hoc to allow the specification of multiple data sources for a report. See the chapter about using multiple data sources for details.

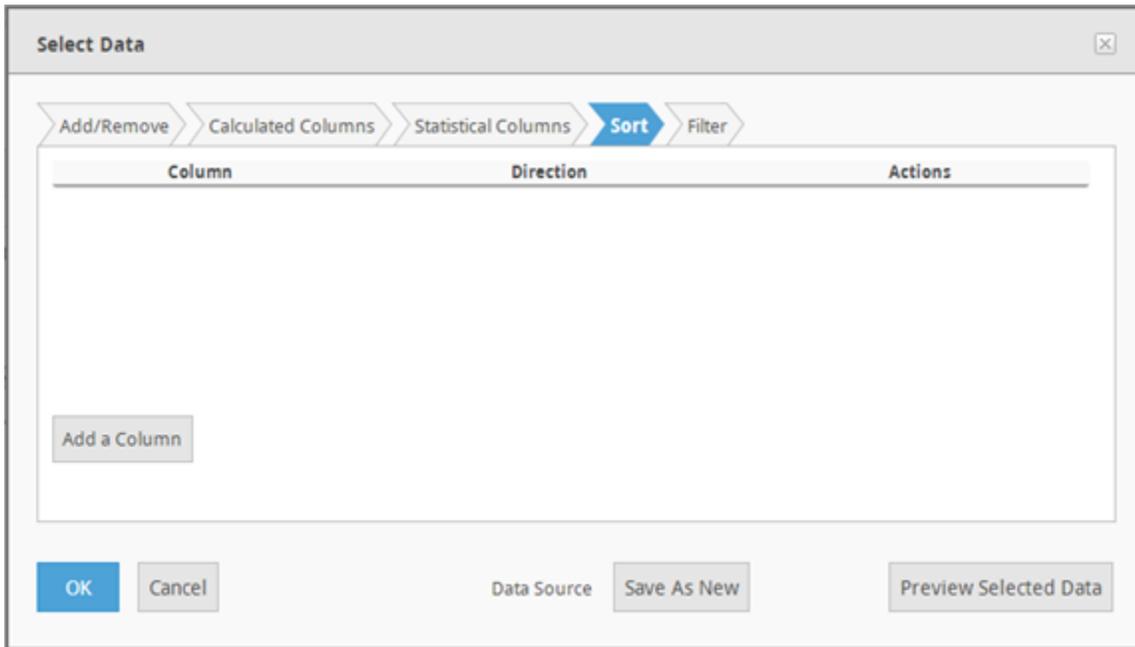
Calculated Columns and Statistical columns are also data sources for a report and are reflected in the Data Source panel. Refer to the next chapter for information about Calculated Columns and Statistical Columns.

If only one data object is selected, column references in the Report Builder will not identify the data object. If multiple data objects are selected, column references will be shown using “Data Object.Column Name” notation.

## Sorting Data

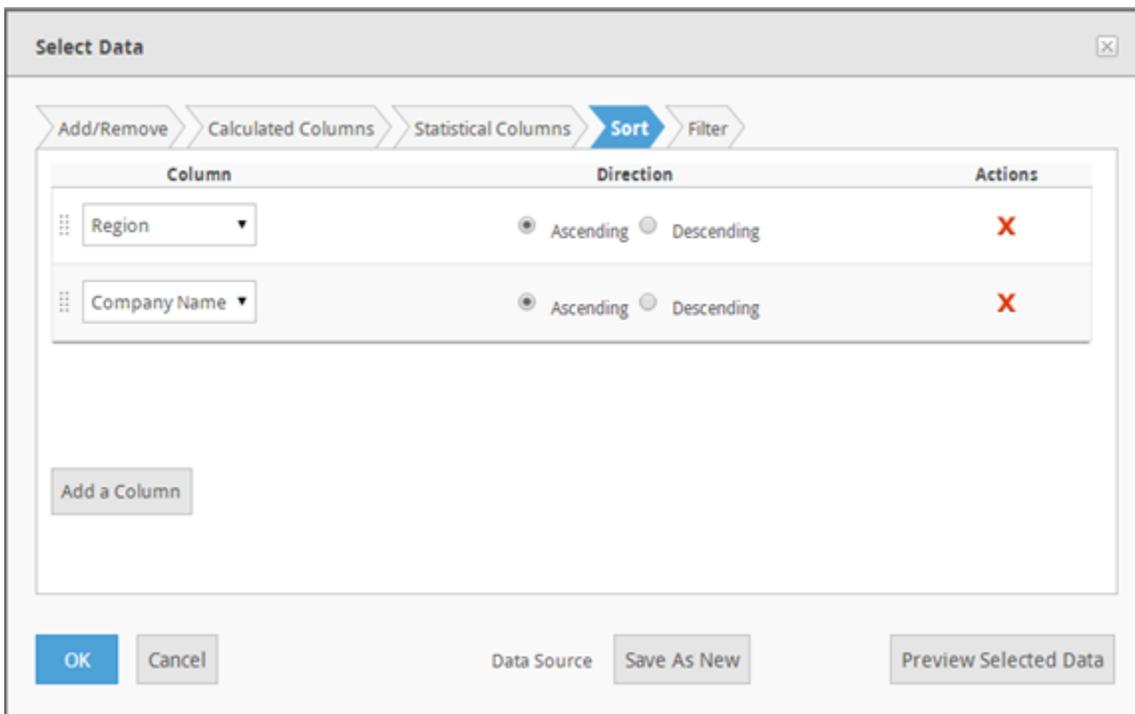
Data returned from the database may have a default sort order specified. This will determine the initial display order of the data for tabular reports and the initial population of crosstab reports. However, that sort order can be overridden when the report is executed if the column sort option is enabled.

To set the initial sort order of the data, click **Select Data** to display the *Select Data* dialog box. Click the *Sort* tab to display:



The sort order has to be set column-by-column.

Click **Add a Column** to create a sorting level:



Select a column from the *Column* drop-down list and select the *Direction* (Ascending or Descending). Repeat the process for each columns to be used to set the sort sequence of the data.

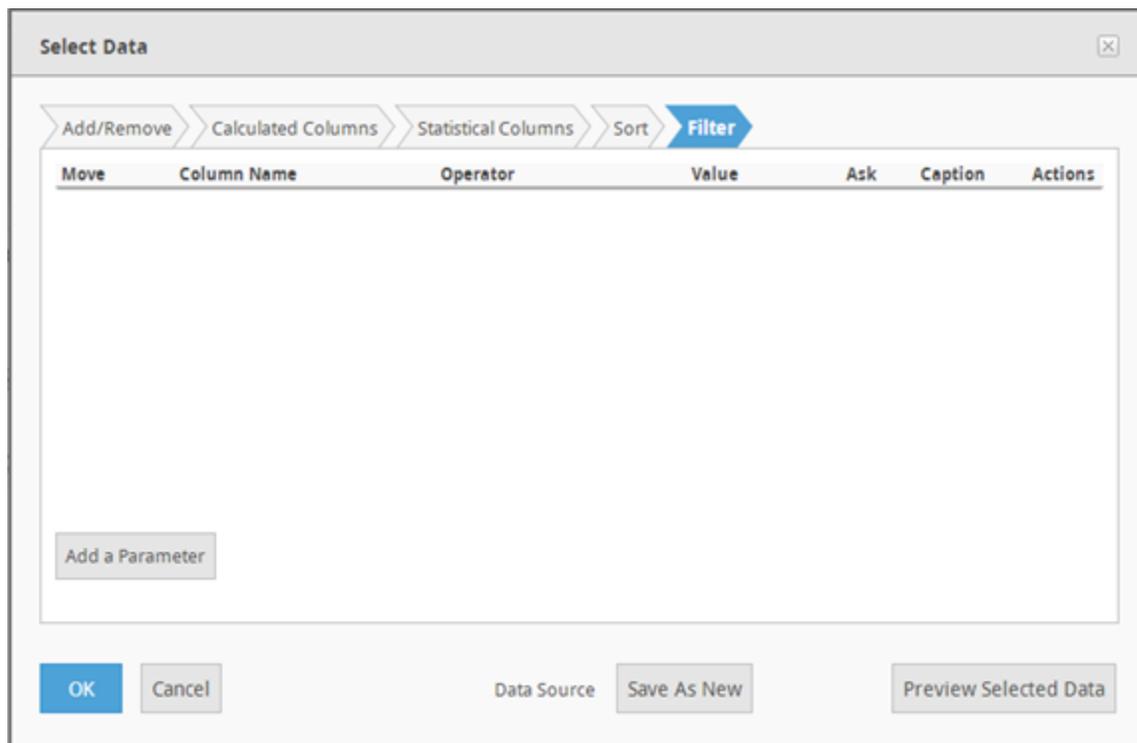
To remove a column from the sort sequence, click the **X** icon for that column.

If the *Column* order in the list needs to be adjusted, rearrange it by clicking the **☰** drag handle and dragging the column's row up or down.

## Setting Filters

Data used in the report can be filtered by various criteria. The criteria can be set for the report by the developer ("non-Ask" parameters) or may be supplied by the user when the report is executed ("Ask" parameters).

To set a filter for the report click **Select Data** to display the *Select Data* dialog box. Click the *Filter* tab to display:



To create a filter parameter, click **Add a Parameter** and display the Parameter Details dialog box:

A parameter takes the form of an equation, similar to:

$$\textit{Label is Compared to Value}$$

where *Label* represents a column name, *Compared* represents a comparison operator, and *Value* represents a threshold.

The available comparison operators are:

- Equal to
- Not equal to
- Less than
- Greater than
- Less than or equal to
- Greater than or equal to
- Starts with <sup>1</sup>
- Does not start with <sup>1</sup>
- Ends with <sup>1</sup>
- Does not end with <sup>1</sup>
- Contains <sup>1</sup>
- Does not contain <sup>1</sup>
- Is null
- Is not null
- Between
- Not between
- In list
- Not in list
- In cascading list

**Notes:**

Operator availability is dependent upon the column's data type:

1. These operators are only available for data of type String or Text.

To set a data parameter to a *Specific Value* or *Pre-defined Date*:

1. From the *Column* drop-down menu, select the desired column.
2. From the *Operator* drop-down menu, select the desired comparison operator.
3. From the *Value* type drop-down menu, select either *Specific Value* or *Pre-defined Date*.
4. Specify a threshold value(s) in the *Value* field. Click the  icon to view a list of valid values from the database and then populate the Value field from the value(s) selected.
5. Click **OK** to add the parameter to the report.
6. Click the  icon adjacent to any parameter to delete that parameter from the report. Click the  icon to modify a parameter.
7. Add more parameters by clicking the **Add a Parameter** button and repeating the steps above.

**Notes:**

If the *In list* or *Not in list* operator is selected, then more than one value may be specified. If manually typing in each value, then follow each entry by the [ENTER] key.

If the main data column is of Date type, an additional choice of values called Pre-defined Date. Pre-defined dates are dates in the form of a token, such as Today, This Year End, Last Fiscal Quarter Start, etc. Pre-defined dates get evaluated at the time the report runs. If the pre-defined date token is evaluated to a column containing time, then no records will be returned at runtime.

If the value is a number, the Value field must contain a valid number to build the report. If the *In cascading list* or *Not in cascading list* operator is selected, then a user must choose a cascading filter and as a result do not have the option to specify a value. See the “Advanced Concepts in Data Filtering” section for a detailed explanation of the options available for cascading filters. See the “Running Reports” chapter for more information about cascading filter presentation.

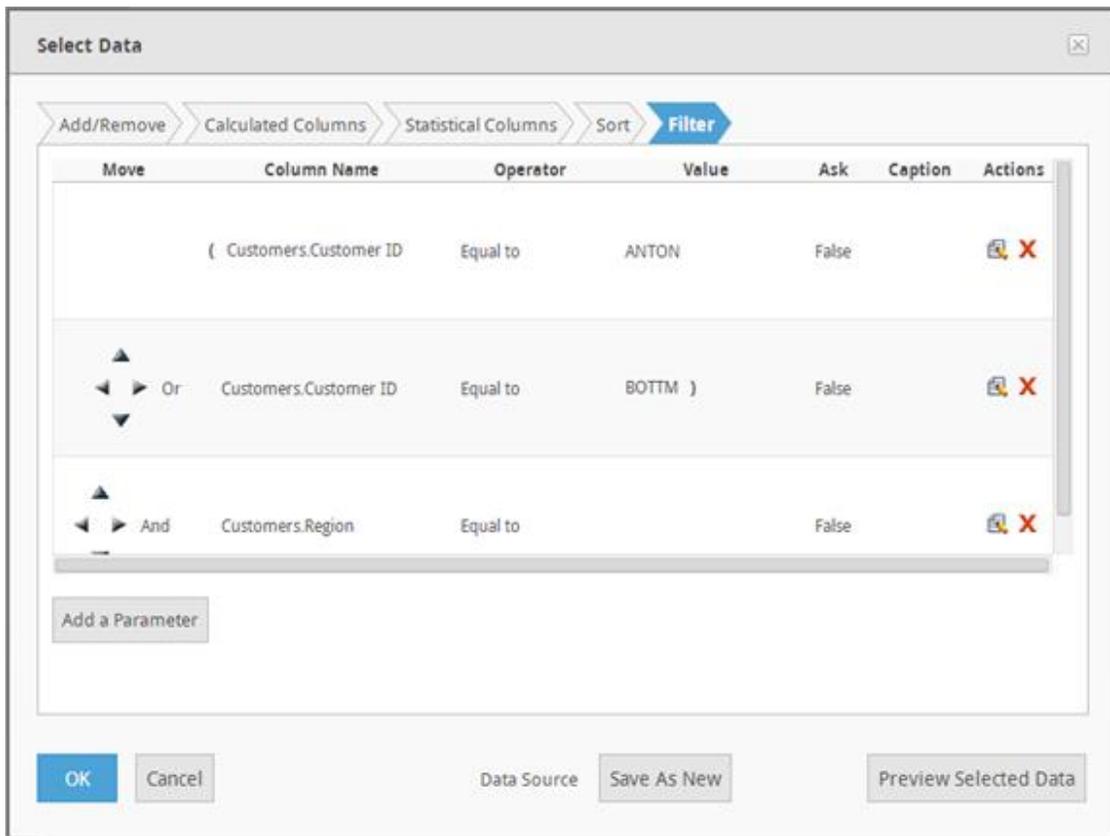
The Filter functionality does not support conditions against data types of type Time. Date/Time data types are supported but their time portion will be ignored.

Specifying a Session Parameter as a value in report parameters is permissible. There are implications related to scheduling and archiving. In addition, modification of the session parameter after the report is built may “break” the report which may “break” schedules. Subscribed users may be automatically notified when a schedule is “broken”.

**Hint:**

When adding multiple parameters, a logical operator (And or Or) becomes available for selection at the beginning of the next parameter. Use this operator to set the cumulative conditions for the parameters.

If the report contains two or more parameters, the  icon appears for each additional parameter. The directional pad gives users the ability to create *levels* for each parameter in order to control the order of evaluation:



In the example above, the logic is:

(CustomerID = ANTON OR BOTTM) And Region = CA

### Creating Ask Parameters

Instead of limiting the report to predefined parameters, the values can be modified while browsing the report. Check the *Ask in Report* checkbox to offer the end-user the option of changing the threshold value before the report is rendered.

Marking an operator as an "ask" parameter presents a few other options in the *Parameter Details* dialog box, as shown below:

The parameter caption will be automatically generated based on the column name, if left blank.

*Control Type* values depend on both the comparison operator and the selected column's data type. For example, a Text type column with the *Equal To* operator presents the following choices:

- Text
- Drop-down
- List (single select)

Selecting the *In list* operator produces the following choices:

- List (multi-select)
- Text (multi line)

A Date type column with the *Equal To* operator produces the following choices:

- Date
- Drop-down

- List (single select)

A Boolean type column with the *Equal To* operator produces the following choices:

- Checkbox
- Drop-down
- List (single select)

If more than one parameter is displayed to the user, the option to display each parameter adjacent the previous one or on a new line is available. Choose by marking the desired radio button for *Display this parameter*.

**Notes:**

With Control Type = List (multi-select) selected, the initial display of the report will appear with the Ask parameter's list populated with all possible values from the database and with the default values highlighted/pre-selected.

With Control Type = Text (multi-line) selected, the initial display of the report will appear with the Ask parameter's list populated with only the default values. The values will not be highlighted/pre-selected.

With Control Type = Drop-down selected, the *Offer All Option* checkbox is made available. Checking this checkbox will set the first row of the drop-down list to "All", allowing the report viewer to use that option as the report parameter.

Parameters based on comparing two columns cannot be "asked" of the user.

Advanced Concepts in Data Filtering

Advanced data filtering makes it possible to define groups of parameters that work together to filter undesirable data out of the report. Users can define multiple parameters and control the order of evaluation in order to filter report data to control what end-users see at runtime.

Data filtering gives users the ability to control the content of the report. Filtering extraneous data from the report is done by defining one or more parameters that are evaluated at runtime. The directional pad control (⬅➡) enables users to control the order of evaluation.

The individual arrows of the control perform the following functions:

- ▲ Shifts a parameter one position higher in the list (retains indentation)
- ▼ Shifts a parameter one position lower in the list (retains indentation)
- ◀ Indents a parameter one position left

- ▶ Indents a parameter one position right

As parameters are indented to the right, enclosing parentheses appear to indicate the order of evaluation.

Users can also perform a row-level comparison with fields in two different columns. In this case, the parameter takes the form of an equation similar to:

*Label1 is Compared to Label2*

where *Label1* represents the first column name, *Compared* represents a comparison operator, and *Label2* represents the second column name.

To compare values from two different columns:

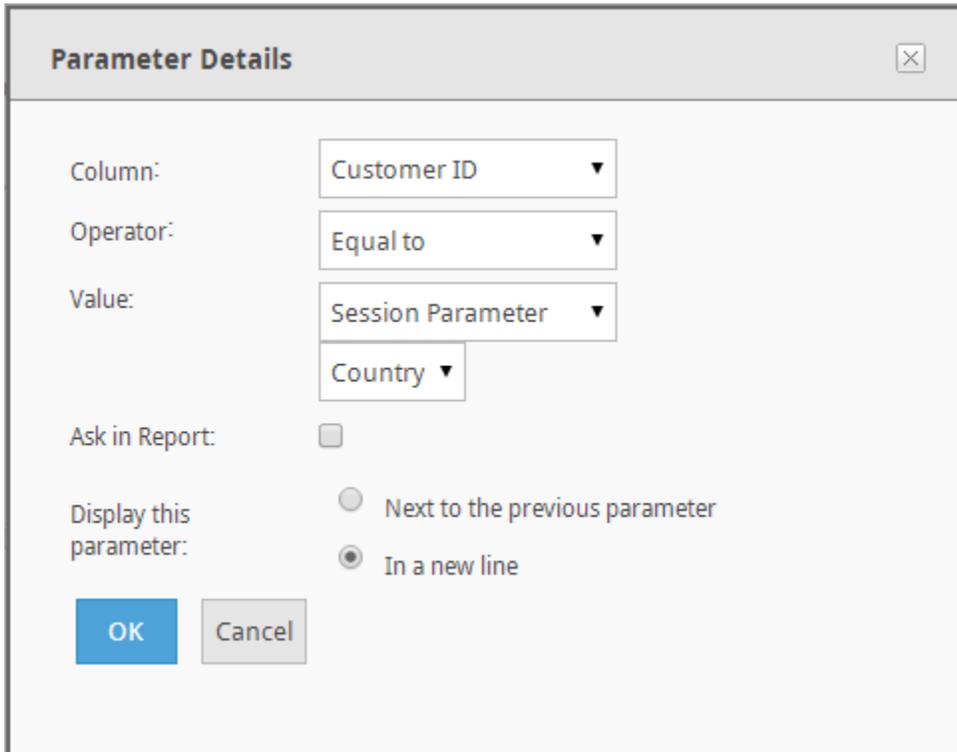
1. From the *Column* drop-down list, select the desired column.
2. From the *Operator* drop-down list, select the desired comparison operator.
3. From the *Value* type drop-down list, select *Other Data Column*.
4. From the *Value* field drop-down list, select the desired column the comparison will be performed against.
5. Click **OK** to add the parameter to the report.
6. Click the **X** icon adjacent to any parameter to delete it from the report. Click the  icon to modify a parameter.

**Note:**

When comparing two different columns, the *Ask in Report* checkbox is disabled.

## Using Session Parameters

If session parameters have been defined within the Ad Hoc instance, the layout of the Parameters Detail dialog box may be slightly different:



In the example above, there is a *Value* source control. The *Value* source is typically a “Specific Value”; however, if session parameters have been defined, “Session Parameter” may be selected as the *Value* source. When “Session Parameter” is selected, a drop-down list of relevant session parameters will be displayed.

There are five types of session parameters: date, number, numeric list, text, and textual list. The drop-down list of session parameters will contain the session parameters that match the data type of the *Column*. The list is also restricted by the *Operator* selected.

For Date columns, the date session parameters will be shown in the list of available session parameters.

For Numeric columns, either the number or numeric list session parameters will be shown in the list of available session parameters. If the *Operator* is set to “In List” or “Not In List”, the numeric list session parameters will be shown; otherwise the number session parameters will be shown.

For Text columns, either the text or textual list session parameters will be shown in the list of available session parameters. If the *Operator* is set to “In List” or “Not In List”, the textual list session parameters will be shown; otherwise the text session parameters will be shown.

**Notes:**

The ability to select session parameters from a list is dependent on whether the session parameter was defined within the Ad Hoc interface (see the System Administration Guide for setting session parameters within Ad Hoc) or defined outside of the Ad Hoc user interface. An example of the latter would be session parameters passed into Ad Hoc from a parent application.

If the session parameter is defined outside of Ad Hoc, Ad Hoc would have no knowledge of the data type of the parameter. You may still refer to the session parameter by using the @Session token. For example, @Session.Country~ would refer to the externally defined session parameter.

Usage of session parameters is discussed in the [Session Parameters Guide](#).

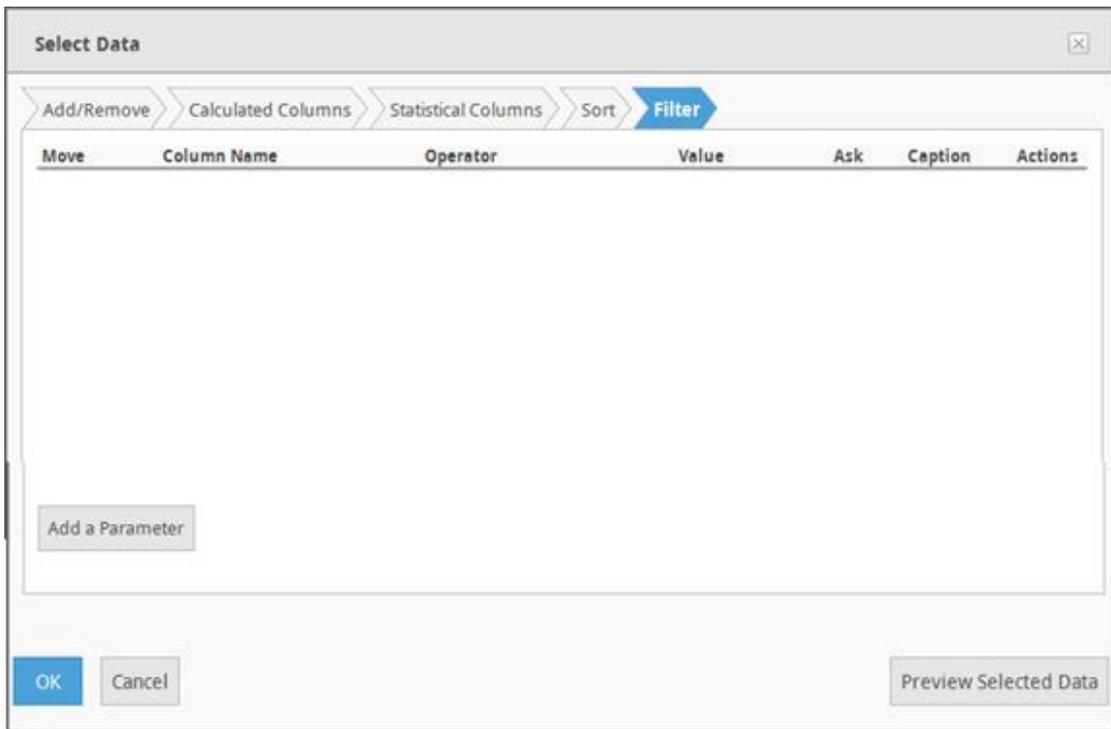
**Using Cascading Filters**

Cascading filters are a set of related drop-down lists, where the contents of one list is automatically filtered by the user’s selection in another list.

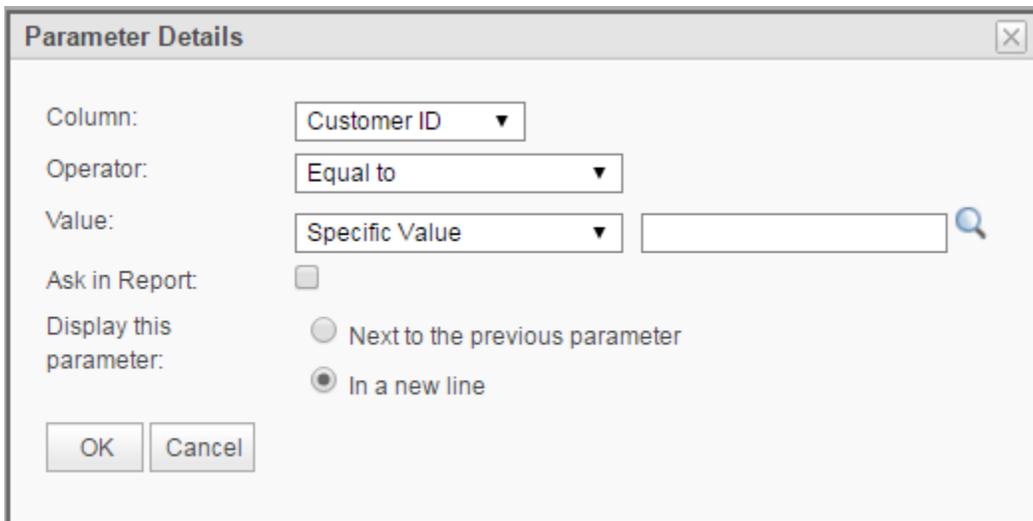
In our example, we’ll be using a Country – Region - City set of cascading filters. Once the user selects the initial Country, the Region drop-down list will only present options from the selected Country. Similarly, once the user has selected Country and Region, the City drop-down list will only present cities found in the Region.

A cascading filter must be pre-defined by the System Administrator before it may be incorporated into a report definition.

To incorporate a cascading filter into a report, navigate to the Filter tab of the **Select Data** dialog box:

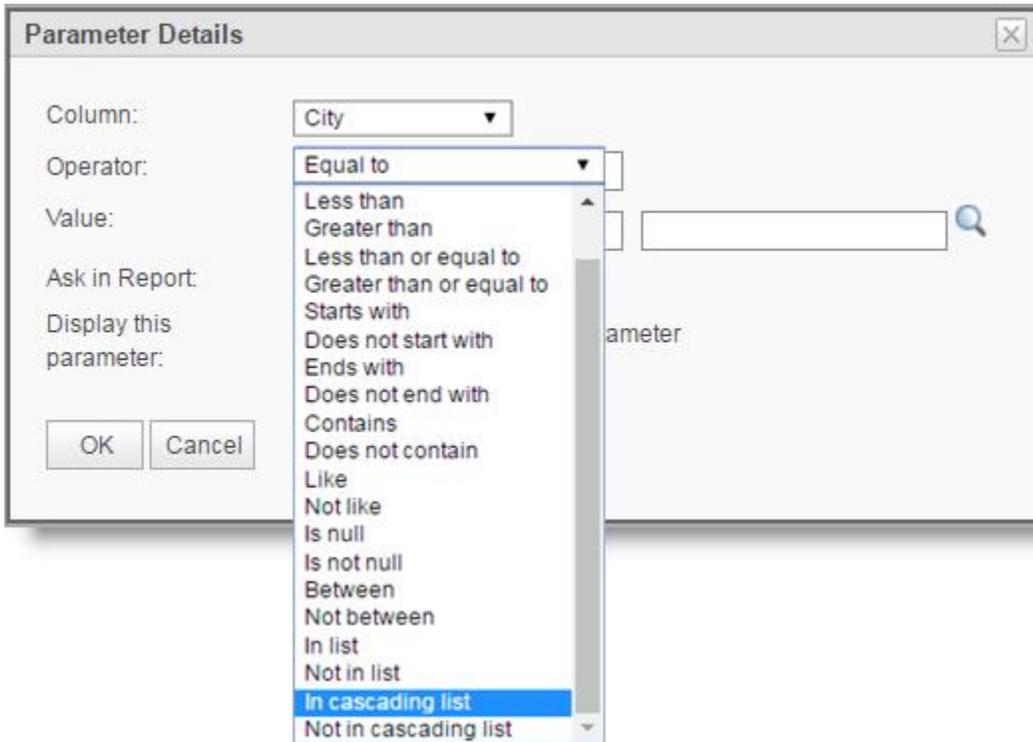


Click **Add Parameter** and the following dialog box will be displayed:



The starting point for incorporating a cascading filter into the report is to identify a column that matches the expected final result of a pre-defined cascading filter. In our example, the ultimate target column is City.

If we select the City column then the list of operators will be extended to include *In cascading list* and *Not in cascading list*.



If the *In cascading list* operator is selected, the dialog box will be changed to facilitate specification of which cascading filter to use and which other columns may be impacted when the filter is displayed in the report:

**Parameter Details** ✕

Column:

Operator:

Default Values:

Ask in Report:

Caption:

Control Type:

Display this parameter:   
 Next to the previous parameter  
 In a new line

Filtering for each level of Cascading Filter

Data Object	Value Column	Apply filter to column	Level caption
Orders	ShipCountry	<input type="text"/>	<input type="text"/>
Orders	ShipRegion	<input type="text"/>	<input type="text"/>

The *Default Values* attribute shows a list of pre-defined cascading filters that might be applied to the selected target column, in this case “City Cascade”.

The *Caption* attribute will be the prompt used for the City column when the report is rendered.

The bottom of the dialog box is used to specify whether the values selected by the customer should be applied to the final filter for the report. Associate the Data Object and Value Columns with a column in the recordset by selecting a column from the drop-down list of available columns. Optionally, provide a caption for the cascading filter level.



In prior versions of Ad Hoc, the only column that was used to filter the recordset was the last value of the cascading filter. In our example, had the City selected been “Vienna”, the resultant WHERE clause would have been `WHERE City = 'Vienna'` and the other elements of the cascading filter would have been ignored. They were only used in the filtering levels of

the cascading filter itself. With v12 of Ad Hoc, all levels of a cascading filter may be applied to the recordset.

Our completed filter dialog box to filter the report on all cascading filter level values would look like:

**Parameter Details** ✕

Column:

Operator:

Default Values:

Ask in Report:

Caption:

Control Type:

Display this parameter:  Next to the previous parameter  
 In a new line

Filtering for each level of Cascading Filter

Data Object	Value Column	Apply filter to column	Level caption
Customers	Country	<input type="text" value="Customers.Country"/>	<input type="text" value="Country"/>
Customers	Region	<input type="text" value="Customers.Region"/>	<input type="text" value="Region"/>

Click **OK** to save this filter parameter.

## Creating Data Columns

Ad Hoc gives users the ability to create custom data columns. Custom data columns can either be a calculation or a computed statistic from data in other columns. Both types of columns are considered data sources for the report and may be created through the *Select or Modify Data Sources* dialog box.

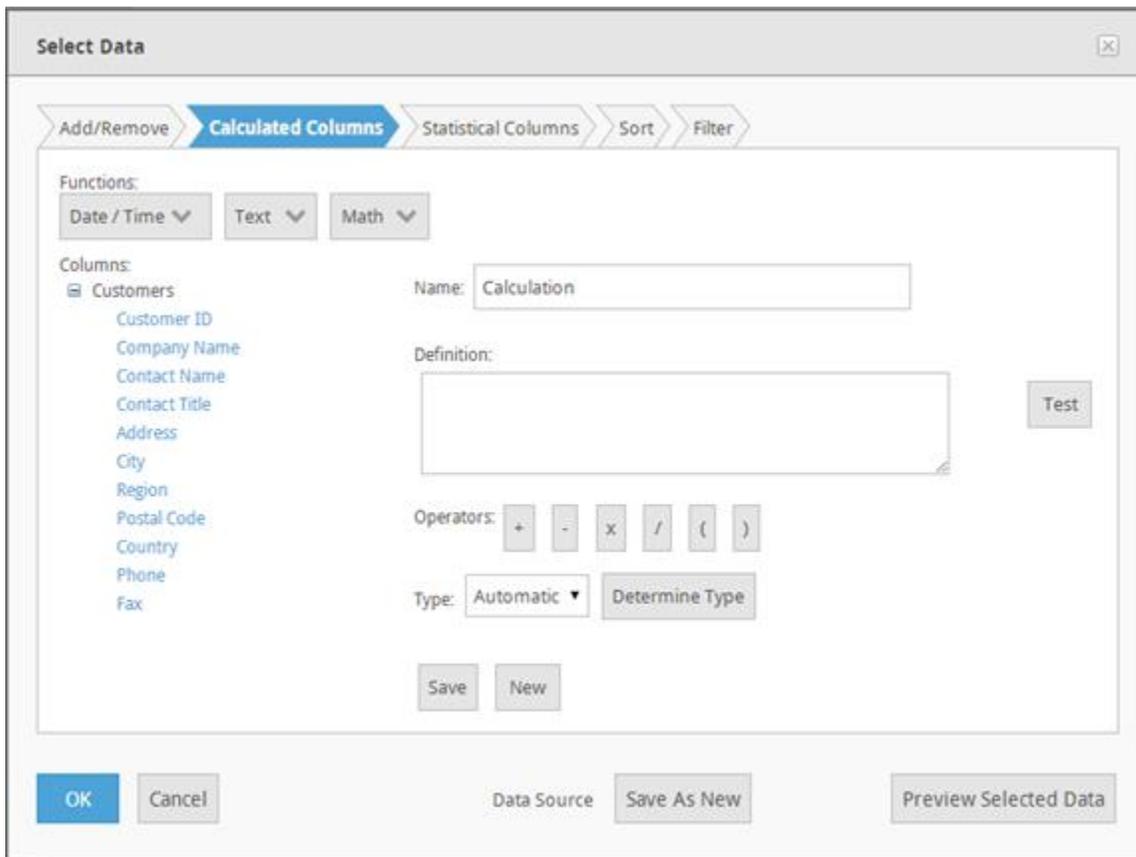
To create either a Calculated Column or Statistical Column, click the **Select Data** button to display the *Select Data* dialog box. Click either the Calculated Columns or Statistical Columns tabs.

### Calculated Columns

*Calculated Columns* offer the ability to create new columns for the report based on a specified formula applied to data from existing columns.

In addition to the availability of data source columns, customized columns can be created that consist of calculations performed on data from other columns in the report. Calculations are performed with date, numeric and non-numeric data types.

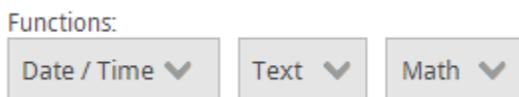
The operands of the formula are either constants or the names of existing data columns included in the report. Users can create formulas from the six provided operators, use the predefined functions or utilize any SQL function supported by the selected report database.



The goal of the calculated column process is to create and name a *Definition* that the reporting database can interpret and return data. Consequently, the *Definition* must conform to the reporting DBMS SQL syntax rules for a column.

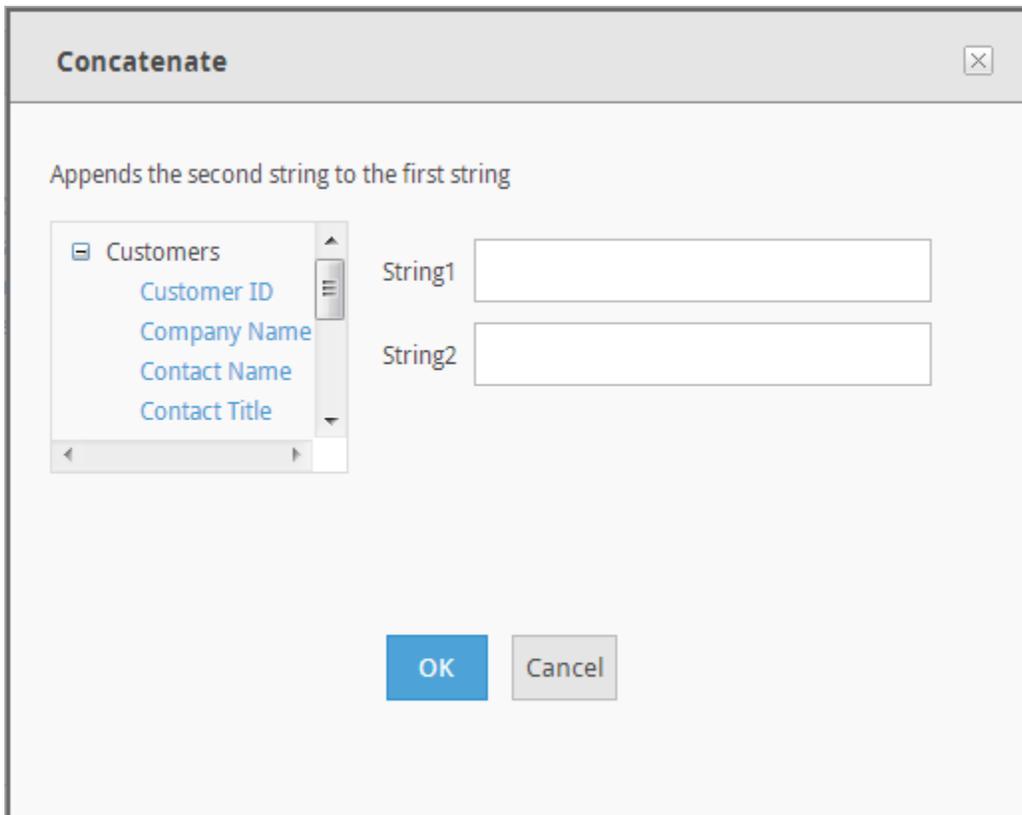
Though they make life easier, you aren't required to use the helpful controls to create the *Definition*. Knowledgeable users can simply enter the definition in the text box. We highly recommend, however, that columns be inserted into the *Definition* by clicking on the column from the data object/column tree. The column reference will be placed at the last cursor position in the *Definition* textbox.

In the upper left corner of the *Calculated Columns* tab are the most common functions that are used in the definition of a calculated column.



The functions are categorized according to the generic data types of columns; date, text, and numeric data. The drop-down lists may be viewed by hovering the mouse over the buttons. Click the function to insert the reference into the *Definition* textbox. For the functions requiring

additional arguments or information, a dialog box will be displayed to complete the function. For example, the *Text/Concatenate* function will display the following dialog box:



To complete this particular dialog box, click the *String1* text box and then click on a column. The column reference will be placed into the text box. Only the columns relevant to the function type will be displayed for selection. Repeat the process for *String2* and click on **OK** to post the function into the *Definition* text box. The other function dialog boxes behave similarly.

On the left side of the *Calculated Columns* tab of the *Select or Modify Data Source* dialog box is the data objects/columns tree. To place the column reference into the *Definition*, click the column.

After a calculated column has been defined, the data objects/columns tree will be refreshed and the calculated column will be added to the tree along with two management actions:

Click the  icon to edit the calculated column definition. Click the  icon to remove the calculated column.

Beneath the *Definition* area of the *Calculated Columns* tab are operators that may be added to the *Definition*:



Clicking on any of the operators will place the symbol in the *Definition* at the last cursor position.

The *Definition* text box is the actual work area. It can be populated from the functions, columns, and operators available or you can enter the calculated column definition directly by typing it into the textbox.

The **Test** button will verify that the calculated column definition meets the syntax rules for the reporting DBMS. If so, a mini-report displaying the calculated column and the underlying data from the reporting database will be shown.

Ad Hoc must know the data type of the resultant calculated column. In most cases the data type can be accurately determined from the data type of the underlying columns or calculation. The *Automatic* option allows Ad Hoc to use the implied data type. To provide the specific data type or override the implied data type, either select the data type from the *Type* drop-down list or click the **Determine Type** button.

Enter the *Name* of the calculated column in the text box provided.

The **Preview Selected Data** button will display a report of all of the columns, including the defined calculated column in the *Selected Data Preview* dialog box. From this report dialog box, clicking **Select and Continue** will save the current calculated column definition and dismiss all of the dialog boxes.

The **Save** button verifies the *Definition*, stores the *Name* and *Definition* temporarily, clears the *Definition* textbox and updates the data object/column tree.

The **Clear** button erases the contents of the *Definition* textbox.

The **New** button clears the contents of the *Definition* textbox and resets the Name. If the existing *Definition* has not been saved, a confirmation dialog box will be shown.

The **Cancel** button will discard any changes made in the *Select or Modify Data Source* dialog box and dismiss the dialog box.

Click **OK** to save all of the changes made in the *Select or Modify Data Source* dialog box. The newly defined calculated columns are then available for selection in the Report Builder.

**Note:**

A calculated column must be used in the report for the column to be saved in the report definition. Unused calculated columns are automatically removed from the report definition when the report is saved. This includes intermediate saves of the report definition.

## Statistical Columns

*Statistical Columns* give users the ability to create new columns for the report based on a particular statistic from data in other columns. The following statistical column types are supported with the application:

- Difference from Previous
- Percentile
- Rank
- Reverse Ran
- Running Total

The *Rank* function ranks data from the lowest value to the highest value. For example, a total of \$15.00 would receive a higher rank than a total of \$25.00. When one or more data rows have equal values, the rank value is the same for each row. In the following example, the first five orders listed all have a rank of 1. Since five orders share a rank of 1, the next available rank value is 6.

CompanyName	OrderID	UnitPrice	Quantity	Freight	Quantity - Rank
Königlich Essen	10323	\$14.40	4	\$4.88	1
Königlich Essen	10325	\$10.00	4	\$64.86	1
Königlich Essen	10323	\$11.20	4	\$4.88	1
Die Wandernde Kuh	10312	\$36.40	4	\$40.26	1
Lehmanns Marktstand	10343	\$10.00	4	\$110.37	1
Königlich Essen	10323	\$12.40	5	\$4.88	6
Königlich Essen	10325	\$20.00	6	\$64.86	7
QUICK-Stop	10345	\$11.20	9	\$249.06	8
Königlich Essen	10325	\$18.60	9	\$64.86	8

The *Quantity - Rank* column ranks the Quantity column's value from lowest to highest.

**Note:**

Rank values are never higher than the actual number of rows in the report.

The *Reverse Rank* function classifies data from the highest value to the lowest value; a larger value receives a higher rank. For example, a total of \$25.00 would receive a higher rank than a total of \$15.00. When one or more data rows have equal values, the rank value is the same for each row. In the following example, the eighth order and subsequent four orders listed all have a rank of 8. Since five orders share a rank of 8, the next available rank value is 13.

CompanyName	OrderID	UnitPrice	Quantity	Freight	Quantity - Reverse Rank
QUICK-Stop	10345	\$7.30	80	\$249.06	1
QUICK-Stop	10345	\$32.00	70	\$249.06	2
Frankenversand	10396	\$17.20	60	\$135.35	3
Frankenversand	10342	\$10.00	56	\$54.83	4
QUICK-Stop	10361	\$27.20	55	\$183.17	5
QUICK-Stop	10361	\$14.40	54	\$183.17	6
Lehmanns Marktstand	10343	\$26.60	50	\$110.37	7
Frankenversand	10342	\$15.20	40	\$54.83	8
Königlich Essen	10325	\$27.80	40	\$64.86	8
Frankenversand	10342	\$19.20	40	\$54.83	8
Frankenversand	10337	\$7.20	40	\$108.26	8
Frankenversand	10396	\$7.20	40	\$135.35	8
Die Wandernde Kuh	10356	\$10.00	30	\$36.71	13

The *Quantity - Reverse Rank* column ranks data in the *Quantity* column from highest to lowest.

The *Percentile* function classifies data based on a percentage of the value distribution. In the following example, a value equal to or greater than 70 but less than 100 is reported as the 98<sup>th</sup> percentile.

CustomerName	OrderID	UnitPrice	Quantity	Freight	Quantity Percentile
Save-a-lot Markets	10452	\$15.50	100	\$140.00	100.00%
Ernst Handel	10430	\$44.00	70	\$459.00	98.00%
QUICK-Stop	10418	\$15.20	60	\$18.00	96.00%
QUICK-Stop	10418	\$7.60	55	\$18.00	94.00%
Ernst Handel	10430	\$8.00	50	\$459.00	92.00%
Ernst Handel	10430	\$31.20	45	\$459.00	90.00%
Queen Cozinha	10406	\$36.40	42	\$108.00	88.00%
Toms Spezialitäten	10249	\$42.40	40	\$12.00	86.00%
Königlich Essen	10457	\$44.00	36	\$12.00	84.00%
Folies gourmandes	10408	\$39.40	35	\$11.00	82.00%
Queen Cozinha	10406	\$8.00	30	\$108.00	76.00%
Que Delícia	10421	\$24.90	30	\$99.00	76.00%
Ernst Handel	10430	\$30.40	30	\$459.00	76.00%
Folk och få HB	10460	\$10.00	21	\$16.00	74.00%
Victuailles en stock	10251	\$16.80	20	\$41.00	62.00%

The *Quantity Percentile* column ranks data in the *Quantity* column based on a percentage of the value distribution.

The *Running Total* function maintains a current total of values provided in the specified column as illustrated in the following example:

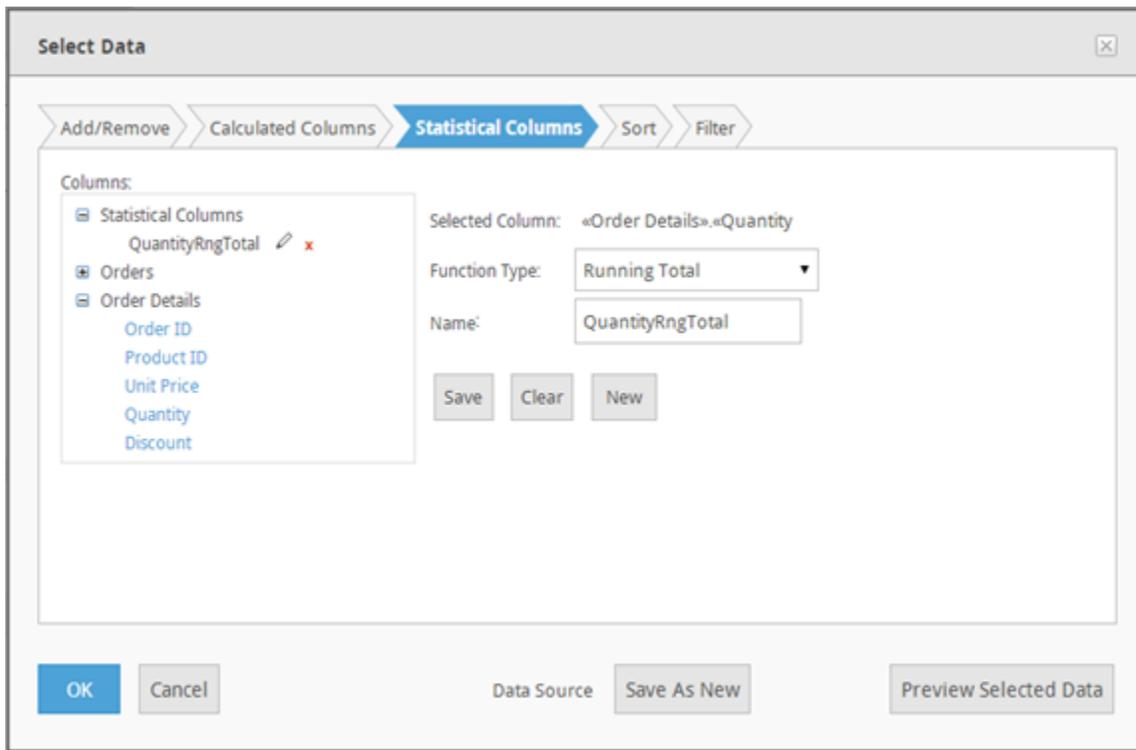
CompanyName	ProductName	OrderID	OrderDate	Total Cost	Freight	Freight - Running Total
Die Wandernde Kuh	Boston Crab Meat	10301	9/9/1996	\$147.00	\$45.08	\$45.08
QUICK-Stop	Camembert Pierrot	10361	11/22/1996	\$1,496.00	\$183.17	\$228.25
Die Wandernde Kuh	Chai	10348	11/7/1996	\$216.00	\$0.78	\$229.03
Frankenversand	Chang	10342	10/30/1996	\$364.80	\$54.83	\$283.86
Königlich Essen	Chartreuse verte	10323	10/7/1996	\$57.60	\$4.88	\$288.74
QUICK-Stop	Chartreuse verte	10361	11/22/1996	\$777.60	\$183.17	\$471.91
Frankenversand	Flotemysost	10396	12/27/1996	\$1,032.00	\$135.35	\$607.26
Königlich Essen	Genen Shouyu	10323	10/7/1996	\$62.00	\$4.88	\$612.14
Die Wandernde Kuh	Gnocchi di nonna Alice	10301	9/9/1996	\$608.00	\$45.08	\$657.22
Die Wandernde Kuh	Gorgonzola Telino	10356	11/18/1996	\$300.00	\$36.71	\$693.93

Example use of Running Total based on the Freight column

The *Difference from Previous* function displays the difference from the current value and the previous value of a specified column. In the following figure, a difference of 31 is reported from rows one to two indicating a gain. A difference of -34 is reported from rows two to three indicating a loss.

Customer Name	Order ID	Unit Price	Quantity	Freight	Quantity Difference
Toms Spezialitäten	10249	\$18.60	9	\$12.00	0
Toms Spezialitäten	10249	\$42.40	40	\$12.00	31
Victuailles en stock	10251	\$16.80	6	\$41.00	-34
Victuailles en stock	10251	\$15.60	15	\$41.00	9
Victuailles en stock	10251	\$16.80	20	\$41.00	5
Queen Cozinha	10406	\$14.40	10	\$108.00	-10
Queen Cozinha	10406	\$8.00	30	\$108.00	20
Queen Cozinha	10406	\$36.40	42	\$108.00	12
Queen Cozinha	10406	\$15.20	5	\$108.00	-37
Queen Cozinha	10406	\$14.70	2	\$108.00	-3
Folies gourmandes	10408	\$20.80	10	\$11.00	8
Folies gourmandes	10408	\$5.90	6	\$11.00	-4
Folies gourmandes	10408	\$39.40	35	\$11.00	29
Océano Atlántico Ltda.	10409	\$18.60	12	\$30.00	-23
Océano Atlántico Ltda.	10409	\$8.00	12	\$30.00	0

The *Quantity Difference* column maintains the difference from the current value and the previous value of the *Quantity* column.



To create a statistical column:

1. Choose a function from the **Function Type** drop-down menu.
2. Select a column from the *Columns* list - the function is applied to the column's value.
3. OPTIONAL: Modify the default **Name** in the field provided.
4. Click **OK** to make the newly created statistical column available for selection in the Report Builder.

**Notes:**

When the OK button is clicked the column's name is validated for SQL syntax accuracy. If the name is invalid, then a message will appear.

If a statistical column is not used in the report, then it shall be deleted when exiting the Report Builder. Basically, use it or lose it.

## Tables

A *table* (also referred to as a “display table”, to avoid confusion) presents data in a tabular style report. A column is created for every data column that is included in the report, and a row is created for every value in that data column. The Report Builder provides configuration pages to customize the table's select columns, appearance, group data and paging options.

Four configuration tabs are displayed in the Report Builder for each display table; *Table Columns*, *Column Configuration*, *Grouping*, and *Table Settings*.

The *Table Columns* tab allows you to determine which columns are included in the final report.

The *Column Configuration* tab allows you to determine the display characteristics for each column and define column aggregations.

The *Grouping* tab allows you to defined data grouping levels, the display style (flat or drill), and group level aggregations.

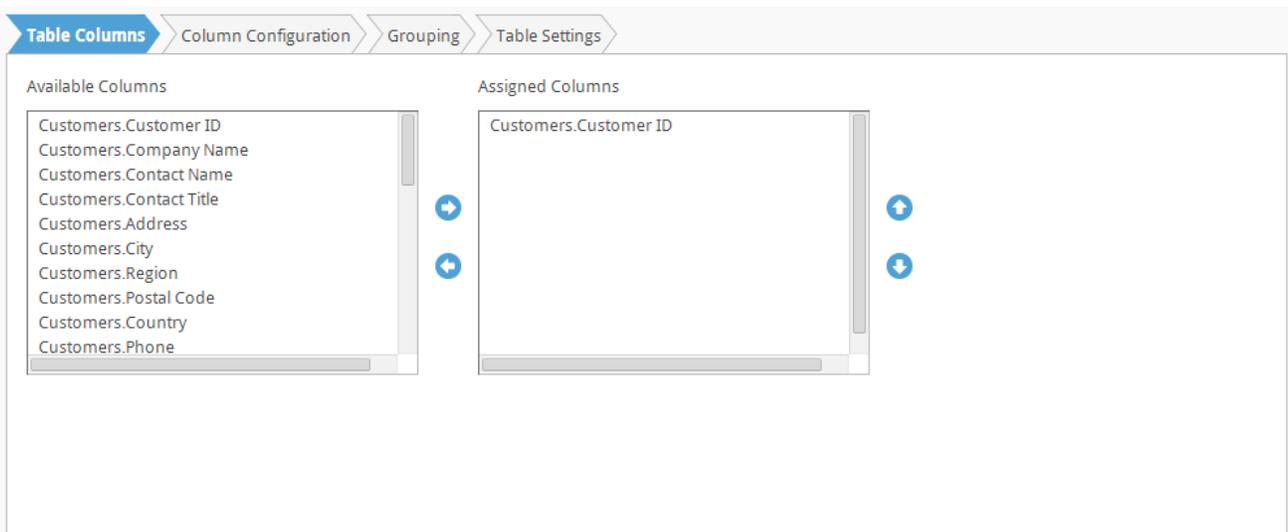
The *Table Settings* tab allows you to configure the display table presentation characteristics such as a title, rows per page and the location of summary information.

### Configuring Table Columns

The first step of table configuration is to select the columns to be used in the display table. If the report contains more than one display table, the configuration area will reflect the currently selected display table.

To select columns for the table:

1. Click the *Table Columns* tab.



2. Select one or more *Available Columns* and then click the  icon to add the column(s) to the *Assigned Columns* list. Hold the Ctrl key down to select multiple columns.
3. From the *Assigned Columns* list, change a column's initial display order by clicking either the  or  icon to move the row up or down. Hold the Ctrl key down to select multiple columns.
4. To remove a column from the *Assigned Columns* list, select it and then click the  icon. Hold the Ctrl key down to select multiple columns.

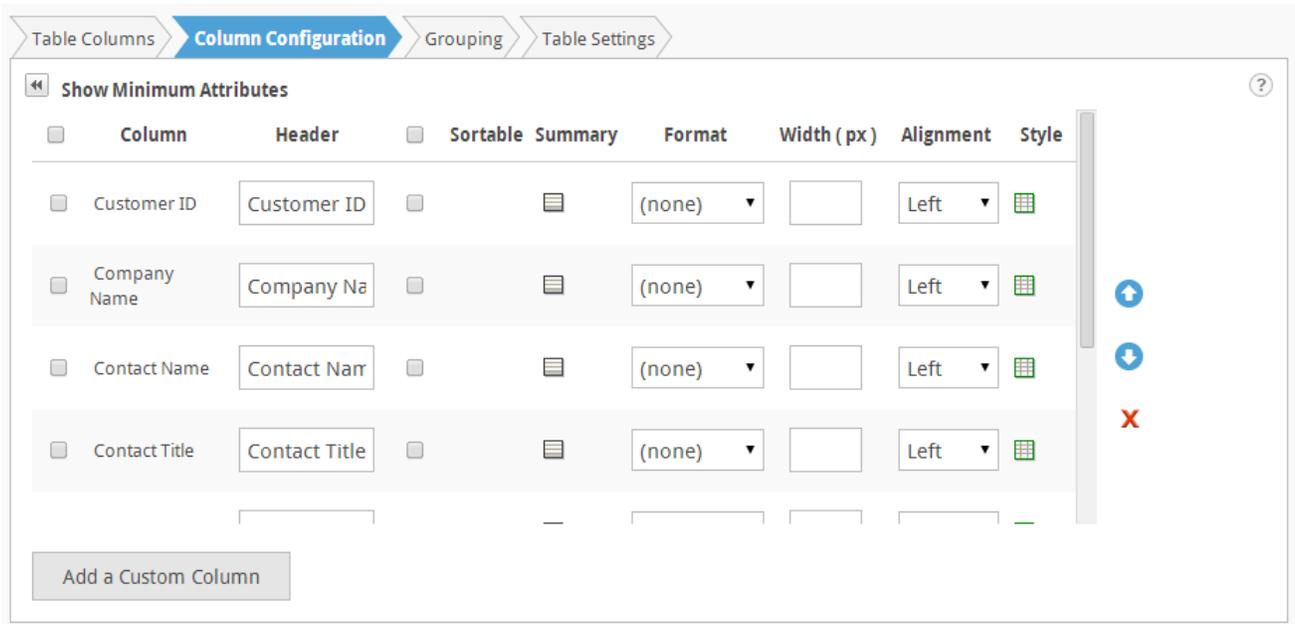
**Notes:**

At least one data column should be selected before continuing.

A column description will only be available if one has been specified by the System Administrator.

To configure and delete columns in the table:

After adding them, each column's order of appearance, display characteristics, and summary information may be defined on the *Column Configuration* tab:



When first displayed, only the Column, Header and Sortable columns are shown in the configuration grid. Click the *Show All Attributes* icon to expand the grid so that it looks like the example above. The grid can be collapsed again by clicking the *Show Minimum Attributes* icon.

Data columns can be selected (or deselected) by checking their checkbox. All data columns can be toggled at once by clicking the checkbox in the upper-left corner of the grid. Some of the following functions apply to selected columns.

Grid rows can be rearranged by selecting the row and then clicking the  or  icon to move the row up or down. To move a group of rows, select the desired columns by checking their respective checkboxes and then clicking either the  or  icon to move the set of rows up or down.

Data columns can be removed from the display table by selecting them and clicking the  icon.

There are nine configurable options available in Column Configuration:

- Header
- Linkable
- Sortable
- Summary
- Format
- Width
- Alignment
- Style

The *Header* determines the column header displayed when the report is rendered.

The *Linkable* option toggles pre-defined hyperlinks for records in the column. Each record in the *Linkable* column contains a hyperlink to an address specified by the System Administrator. Make column records linkable from the report by placing a check in the corresponding *Linkable* checkbox.

**Note:**

The Linkable column will only be shown if the System Administrator has configured at least one of the columns as “hyperlink capable”.

The *Sortable* option determines whether the column in the rendered report can be sorted by the end-user. Sorting can be enabled or disabled for all columns by checking the checkbox in the header of the *Sortable* column.

The *Summary* option offers the ability to create table footers containing aggregates of values for each column of data. An unlimited number of aggregates can be created for each table column. The following aggregate functions are supported:

- Average
- Calculation
- Count
- Count Distinct
- Maximum
- Minimum
- Standard Deviation
- Sum

To manage summary values:

1. Click  to display the *Aggregates* dialog box for a specific column.
2. Click **Add an Aggregate** and the following dialog box will be displayed:



Name	Label	Summary	Format	Actions
SumQTY	Total Qty	Sum	Integer	▼ X
AveQTY	Average QTY	Average	Integer	▲ X

Add a Summary

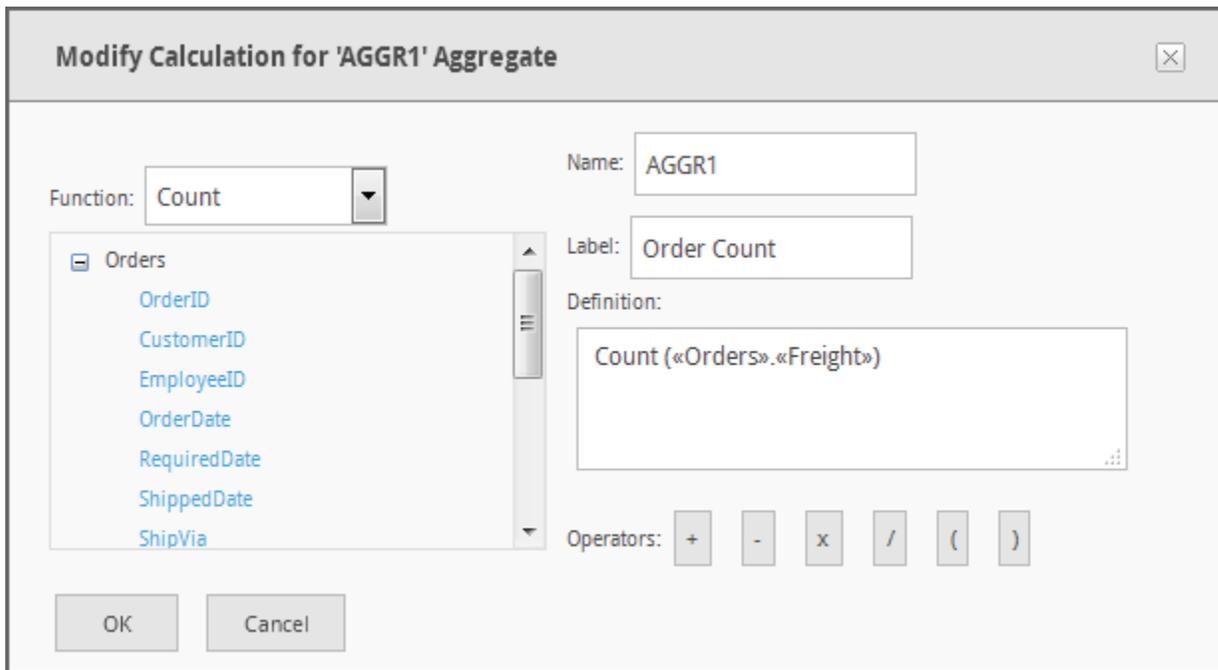
OK Cancel

3. Type a name used as the internal value for the aggregate in the *Name* field.
4. Type a displayed name for the new value in the *Label* field.
5. Choose an *Aggregate* function from the drop-down list.
6. Choose a *Format* from the drop-down list.
7. OPTIONAL: If more than one aggregate has been specified, click the ▲ or ▼ icon to arrange the order in which the aggregate will appear in the column.
8. Continue adding additional aggregates or click **OK** to add the summary value(s) and return to the *Column Configuration* interface.
9. Aggregates can be removed by clicking the **X** icon.

**Note:**

An  icon is displayed to indicate that a summary value exists for a particular column.

One of the aggregation options is “Calculation”. This option allows the user to create a new aggregation from previously defined summary information. When “Calculation” is selected, the following dialog box is displayed:



In the Modify Calculation dialog box, any of the previously defined summaries may be used in the calculation as well as aggregate functions on columns and direct constants in the definition. The default internal name for an aggregation is AGGR $n$ , where  $n$  is a unique number.

The *Format* option provides data formatting options for values in each column. The following formatting options are supported:

- (none)
- General Number
- Currency
- Integer
- Fixed
- Standard
- Percent
- Scientific
- 2- or 3-digit place holder
- General Date
- Long/Medium/Short Date
- Long/Medium/Short Time
- Yes/No
- True/False
- On/Off
- HTML<sup>1</sup>
- Preserve line feed<sup>2</sup>

**Notes:**

The application chooses the default format type for each column. Changing the format type may yield undesirable results.

If a format is needed that isn't offered, contact your System Administrator. Additional formats may be provided by the System Administrator

1. The Format "HTML" can only be specified by the System Administrator and may not be changed to something different from the Column Configuration panel.
2. The Format "Preserve line feed" allows text in a memo type field to display as it is stored with line feeds (carriage returns) observed.

The *Width* option offers the ability to customize the width of each column, improving the appearance of the report when it is rendered in the web page and when exported.

By default, a column's *Width* value is blank to allow the application to automatically determine the appropriate width based on:

- All columns in the report
- The context in each column
- The available webpage space
- The page size and orientation

When customizing a column's width, it's important to determine the width scale. The scale of measured can be either *pixels* or *percent*, where:

- *Pixel* is a single point of graphic data displayed on the monitor. Hundreds of pixels can be used to display a very small image.
- *Percentage* is a fraction of the screen space allocated for each column.

To modify a column's width:

1. OPTIONAL: Determine the scale Type to use for the entire tabular report. To toggle the scale of a column, click the label to the right on the width field and select *px* for pixels and *%* for percentage.
2. Enter or modify the column's Width value.

**Notes:**

When specifying a tabular report's column's widths in pixels, keep in mind the average monitor resolution settings of the end-users viewing the report.

When specifying a tabular report's column's widths in percentages, keep in mind that:

- a. The sum total of the percentage values must not exceed 100%.
- b. The application will use whatever percentage has not been allocated to columns for the columns without a value.

The *Alignment* option adjusts the position of values in columns. In the following example, the alignment of numerical values is changed from Left to Center in the *Quantity* column

Quantity
42
40
25
60
11
24

Quantity
42
40
25
60
11
24

The *Style* option offers the ability to apply conditional formatting to a column's cells based on a specific value or another column's value. Users must create the condition and specify the formatting style. When more than one condition is specified, the application will apply the style associated to the first condition that is satisfied. Conditions are evaluated when the report is run.

Users can optionally apply the specified conditional formatting to all data columns by checking the appropriate checkbox.

Order ID	Order Date	Product Name	Quantity	Unit Price	Total Cost
10248	7/4/1996 12:00:00 AM	Queso Cabrales	12	\$14.00	\$168.00
10248	7/4/1996 12:00:00 AM	Singaporean Hokkien Fried Mee	10	\$9.80	\$98.00
10248	7/4/1996 12:00:00 AM	Mozzarella di Giovanni	5	\$34.80	\$174.00
10249	7/4/1996 12:00:00 AM	Tofu	9	\$18.60	\$167.40
10249	7/4/1996 12:00:00 AM	Manjimup Dried Apples	40	\$42.40	\$1,696.00
10250	7/8/1996 12:00:00 AM	Jack's New England Clam Chowder	10	\$7.70	\$77.00
10250	7/8/1996 12:00:00 AM	Manjimup Dried Apples	35	\$42.40	\$1,484.00
10250	7/8/1996 12:00:00 AM	Louisiana Fiery Hot Pepper Sauce	15	\$16.80	\$252.00
10251	7/8/1996 12:00:00 AM	Gustaf's Knäckebröd	6	\$16.80	\$100.80
10251	7/8/1996 12:00:00 AM	Ravioli Angelo	15	\$15.60	\$234.00
10251	7/8/1996 12:00:00 AM	Louisiana Fiery Hot Pepper Sauce	20	\$16.80	\$336.00
10252	7/9/1996 12:00:00 AM	Sir Rodney's Marmalade	40	\$64.80	\$2,592.00
10252	7/9/1996 12:00:00 AM	Geitost	25	\$2.00	\$50.00
10252	7/9/1996 12:00:00 AM	Camembert Pierrot	40	\$27.20	\$1,088.00
10253	7/10/1996 12:00:00 AM	Gorgonzola Telino	20	\$10.00	\$200.00

A conditional style takes the form of an equation similar to:

*Label is Compared to Value*

Or

*Label is Compared to Column*

where *Label* represents a column name, *Compared* represents a comparison operator, *Value* represents a threshold, and *Column* represents another data column.

The available comparison operators are:

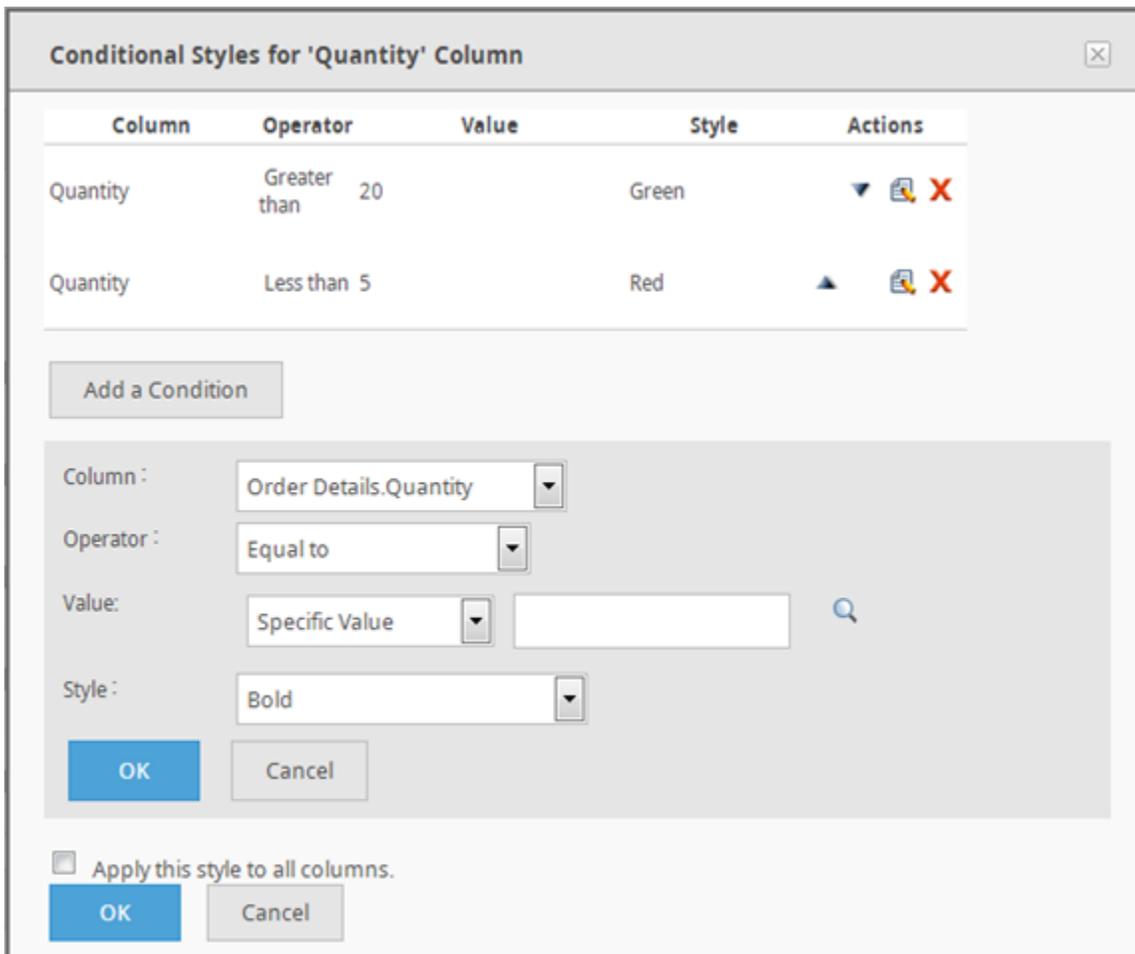
- Equal to
- Not equal to
- Less than
- Greater than
- Less than or equal to
- Greater than or equal to
- Starts with <sup>1</sup>
- Does not start with <sup>1</sup>
- Ends with <sup>1</sup>
- Does not end with <sup>1</sup>
- Contains <sup>1</sup>
- Does not end with <sup>1</sup>
- Contains <sup>1</sup>
- Not between

**Notes:**

1. These operators are only available for data type of type String or Text.
2. The operators available are dependent upon the column's data type.

To add a conditional Style:

1. Click  or  to access the Condition Styles dialog box. In the example below, two styles have been added and the Add a Condition panel opened to show the various options in the dialog box.



2. Click **Add a Condition**. In the panel are the *Column*, *Operator*, *Value* and *Style* attributes.
3. Choose a *Column* to base the conditional styling on from the drop-down list.
4. Choose a comparison *Operator* from the drop-down list.
5. From the *Value* type drop-down list, choose either *Specific Value*, *Pre-defined Date*, or *Other Data Column*.
6. Specify a threshold Value. If a Value type of:
  - a. *Specific Value* was selected, then type in a value or click the 🔍 icon to view and select a valid value from the database.
  - b. *Pre-defined Date* was selected, select a token (i.e., Today).
  - c. *Other Data Column* was selected, select a column from the drop-down list.

7. Choose a *Style* from the drop-down list.
8. Click **OK** to add the styling condition.
9. Add more parameters by clicking **Add a Condition** and repeating the steps above.
10. OPTIONAL: Because styles are applied based on the first condition that is satisfied, the order may be significant. You can move a condition up or down in the list by clicking the ▲ or ▼ icon.
11. OPTIONAL: Check **Add this style to all columns** to apply the Style to all columns of a row in the table.
12. Click **OK** to save the styling condition(s) and return to the Column Configuration interface.

**Notes:**

Pre-defined dates get evaluated at the time the report runs.

If the value is a number, the value field must contain a valid number to complete the comparison.

The  icon indicates that a least one conditional style exists for that particular columnn.

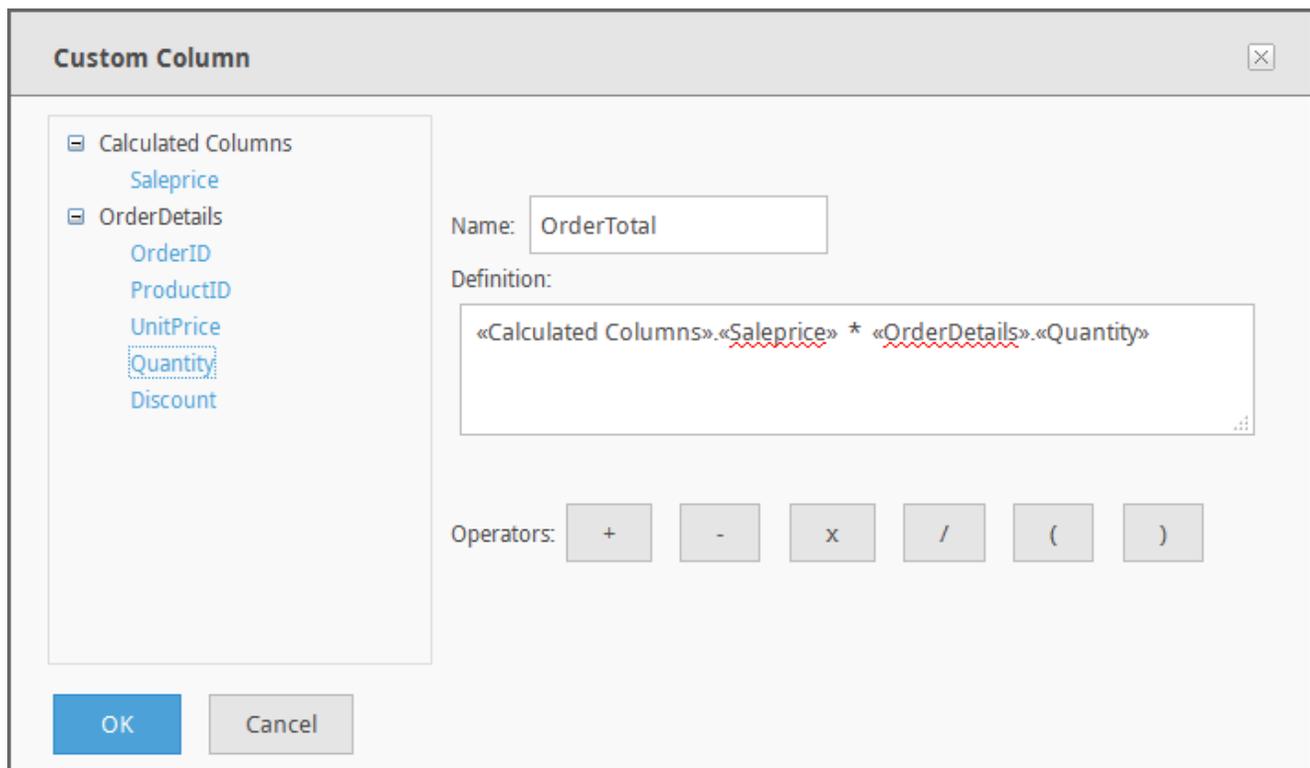
To modify or remove a conditional Style:

1. Click the  icon to access the Style Details panel for a specific column.
2. From the Style Details panel:
  - a. If modifying a Style, click the  icon associated to a specific Style's condition. Modify the conditions as desired and then click **OK** to save the condition.
  - b. If removing a Style, click the  icon associated to a specific Style's condition.
  - c. OPTIONAL: Check or uncheck **Add this style to all columns** to apply/remove the Style to/from all columns in the table.
3. Click **OK** to save the modifications and return to the Column Configuration interface.

## Adding a new custom column to the data table

From the Column Configuration page, a new column can be added to the data table by clicking **Add Custom Column**. Columns created in this manner can reference previously defined summary information.

In the example below, a total column (OrderTotal) has been created using the *Quantity* column and the *Saleprice* calculated column.



The screenshot shows a dialog box titled "Custom Column" with a close button in the top right corner. On the left, there is a tree view with two main categories: "Calculated Columns" and "OrderDetails". Under "Calculated Columns", the items are "Saleprice", "OrderID", "ProductID", "UnitPrice", "Quantity", and "Discount". Under "OrderDetails", the items are "OrderID", "ProductID", "UnitPrice", "Quantity", and "Discount". The "Quantity" item under "OrderDetails" is selected and highlighted with a dashed border. To the right of the tree view, there is a "Name:" field containing the text "OrderTotal". Below that is a "Definition:" text area containing the formula: «Calculated Columns».«Saleprice» \* «OrderDetails».«Quantity». Below the definition field is an "Operators:" section with buttons for "+", "-", "x", "/", "(", and ")". At the bottom of the dialog are two buttons: "OK" and "Cancel".

The sequence of events for this example was:

1. Click the **Add Calculated Column** button on the *Column Configuration* page.
2. Click the *Saleprice* column from the *Calculate Columns* data object.
3. Click the multiplication symbol from the list of operators.
4. Click the *Quantity* column from the *OrderDetails* object.
5. Click **OK** to save the result

**Note:**

This type of calculated column may use reporting summary information in the calculated column definition.

If a data table contains a calculated column, the configuration grid will display an **Actions** column. Clicking on the  icon allows the column to be edited.

## Grouping Data

Ad Hoc provides two styles of grouped reports: *Flat-Table* and *Drill-Down*.

The grouped Flat-Table style organizes records into groups and hides duplicate entries to make the grouped report more presentable. Use this style to give other users the ability to export the complete report to different formats such as PDF and Excel.

The grouped Drill-Down style organizes records into groups and any remaining columns are included in a sub-report. Use this style to give other users the ability to hide and show sub-reports.

The feasibility of grouping data is highly dependent on the data source chosen for the report. For example, a grouped report is not necessarily appropriate when the data is simply a list of customers. But, if the data source contains information about customers and orders, a grouped report will definitely improve the presentation of the report. The application provides two ways to group data: *multiple grouping columns* and *multiple layers*. Users can combine both methods when creating grouped reports.

### *Multiple Grouping Layers*

Creating grouped reports with multiple layers is useful in scenarios where the report requires more than one grouping to organize all the data.

For example, all the customers can be grouped together, and then group by the shipping company and then group by the order date. This scenario is illustrated as a grouped flat-table report and as a grouped drill-down report in the following examples:

### Customer Orders (Preview)

Date: Tuesday, November 19, 2013  
Time: 8:43:03 AM

◀ Page 1 of 144 ▶▶

Company Name	Company Name	Order Date	Product Name	Unit Price	Quantity
Alfreds Futterkiste					
Federal Shipping					
1/15/1998					
Raclette Courdavault					
				\$55.00	15
Original Frankfurter grüne Soße					
				\$13.00	2
Speedy Express					
8/25/1997					
Rössle Sauerkraut					
				\$45.60	15
Chartreuse verte					
				\$18.00	21
Spegesild					
				\$12.00	2
10/13/1997					
Aniseed Syrup					
				\$10.00	6
10/13/1997					
				\$12.00	15

A grouped flat-table report with three layers.

### Customer Orders (Preview)

Date: Tuesday, November 19, 2013  
Time: 8:47:39 AM

◀ Page 1 of 6 ▶▶

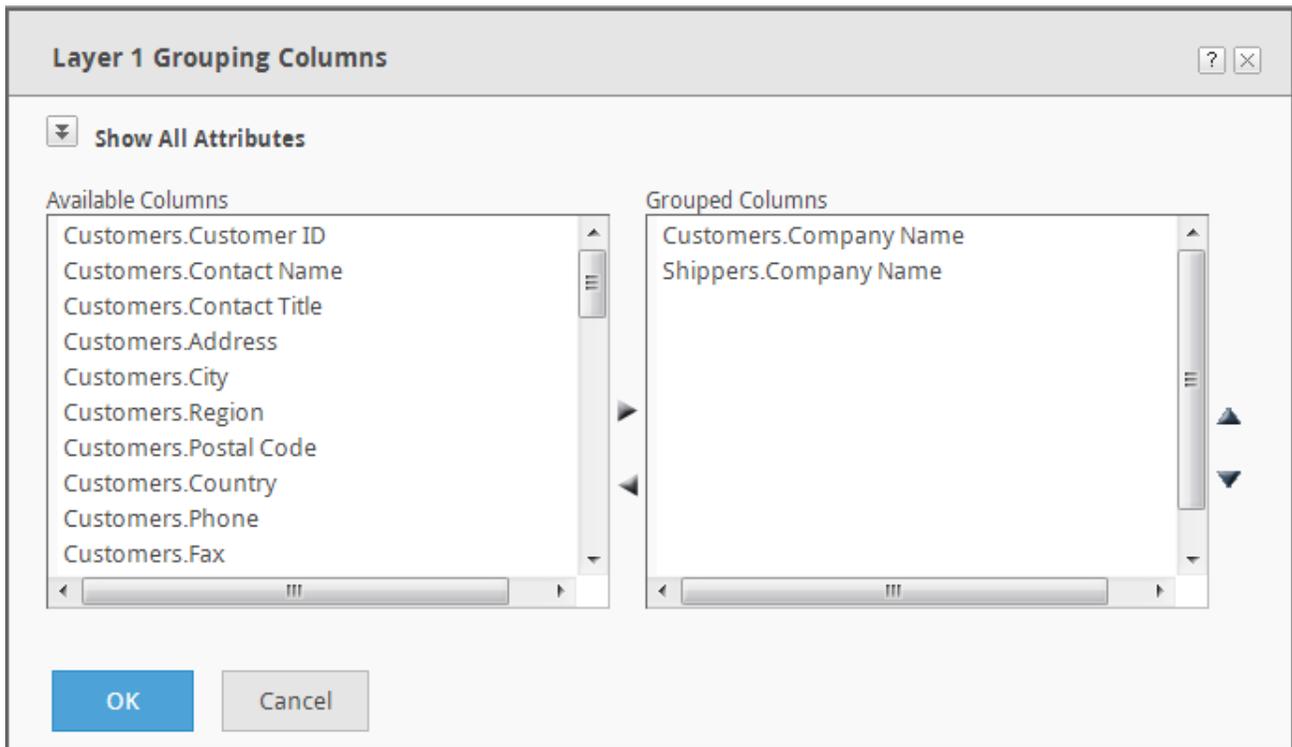
Company Name	Details																																		
Alfreds Futterkiste	12 Rows																																		
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United Package	1 Rows																																		
Ana Trujillo Emparedados y helados	10 Rows																																		
Antonio Moreno Taqueria	17 Rows																																		

A grouped drill-down report with three grouping layers.

### Multi-Column Grouping

Multi-column grouping is useful for displaying more information on a single grouping layer. For example, users can group by customer and then by shipping company, showing both the customer and shipping company on the same layer.

Multiple grouping columns work well with flat-table style reports, since duplicate entries are removed from the final report.



### Customer Orders (Preview)

Date: Tuesday, November 19, 2013  
Time: 8:51:46 AM

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Company Name	Company Name	Order Date	Product Name	Unit Price	Quantity
Alfreds Futterkiste	Federal Shipping	1/15/1998			
			Raclette Courdavault	\$55.00	15
			Original Frankfurter grüne Soße	\$13.00	2
Alfreds Futterkiste	Speedy Express	8/25/1997			
			Rössle Sauerkraut	\$45.60	15
			Chartreuse verte	\$18.00	21
			Spegesild	\$12.00	2
		10/13/1997			
			Aniseed Syrup	\$10.00	6
			Lakkalikööri	\$18.00	15

A grouped flat-table report with two columns in the initial grouping layer

## Grouped Flat-Table

The grouping flat-table report style is useful for displaying the entire report in an organized, presentable way.

In the following figure, the *Customer Name* column is the grouping column and any row that contains a group is highlighted. All associated rows for a specific group are displayed beneath the grouping row. Aggregated values for each group are computed and displayed in a separate row.

Company Name	Order ID	Order Date	Product Name	Quantity	Unit Price
<b>Alfreds Futterkiste</b>					
	10643	8/25/1997	Rössle Sauerkraut	15	\$45.60
	10643	8/25/1997	Chartreuse verte	21	\$18.00
	10643	8/25/1997	Spegesild	2	\$12.00
	10692	10/3/1997	Vegie-spread	20	\$43.90
	10702	10/13/1997	Aniseed Syrup	6	\$10.00
	10702	10/13/1997	Lakkalikööri	15	\$18.00
	10835	1/15/1998	Raclette Courdavault	15	\$55.00
	10835	1/15/1998	Original Frankfurter grüne Soße	2	\$13.00
	10952	3/16/1998	Grandma's Boysenberry Spread	16	\$25.00
	10952	3/16/1998	Rössle Sauerkraut	2	\$45.60
	11011	4/9/1998	Escargots de Bourgogne	40	\$13.25
	11011	4/9/1998	Flotemysost	20	\$21.50
				Total Quantity: 174	
<b>Ana Trujillo Emparedados y helados</b>					
	10926	3/4/1998	Queso Cabrales	2	\$21.00
	10926	3/4/1998	Konbu	10	\$6.00
	10926	3/4/1998	Teatime Chocolate Biscuits	7	\$9.20
				Total Quantity: 63	

A grouped flat-table report of customer invoices.

## Grouped Drill-Down

The grouped drill-down report offers viewers the ability to control the appearance of the report by hiding and showing sub-reports for each record in the *grouping column*.

In the following figure, the *Customer Name* column is the grouping column (always the first column of the main report) and all other columns appear in the sub-report. Users can show/hide sub-reports for each group of records by clicking the hyperlink provided in the

*Details* column. Any additional columns included in the main report are aggregations of a particular column from the sub-report.

Company Name			Details	
Alfreds Futterkiste			12 Rows	
Order ID	Order Date	Product Name	Quantity	Unit Price
10643	8/25/1997	Rössle Sauerkraut	15	\$45.60
10643	8/25/1997	Chartreuse verte	21	\$18.00
10643	8/25/1997	Spegesild	2	\$12.00
10692	10/3/1997	Vegie-spread	20	\$43.90
10702	10/13/1997	Aniseed Syrup	6	\$10.00
10702	10/13/1997	Lakkalikööri	15	\$18.00
10835	1/15/1998	Raclette Courdavault	15	\$55.00
10835	1/15/1998	Original Frankfurter grüne Soße	2	\$13.00
10952	3/16/1998	Grandma's Boysenberry Spread	16	\$25.00
10952	3/16/1998	Rössle Sauerkraut	2	\$45.60
11011	4/9/1998	Escargots de Bourgogne	40	\$13.25
11011	4/9/1998	Flotemysost	20	\$21.50
			Total Quantity: 174	
Ana Trujillo Emparedados y helados			10 Rows	

A drill-down style report of customer invoices.

**Note:**

Users can disable drill-down functionality for the Details column or hide the column completely.

## Grouping Layers

Creating and configuring a grouping layer:

1. **PRE-REQUISITE:** If grouping aggregates are to be defined, then the column(s) to be aggregated must first be added to the report in the *Table Columns* tab.
2. Click the *Grouping* tab.

Table Columns > Column Configuration > **Grouping** > Table Settings

Do you want this to be a grouped report? Please choose the grouping style: ?

**Grouping Options:**

Not Grouped  Grouped Flat-Table  Grouped Drill-Down

Add Grouping Layer

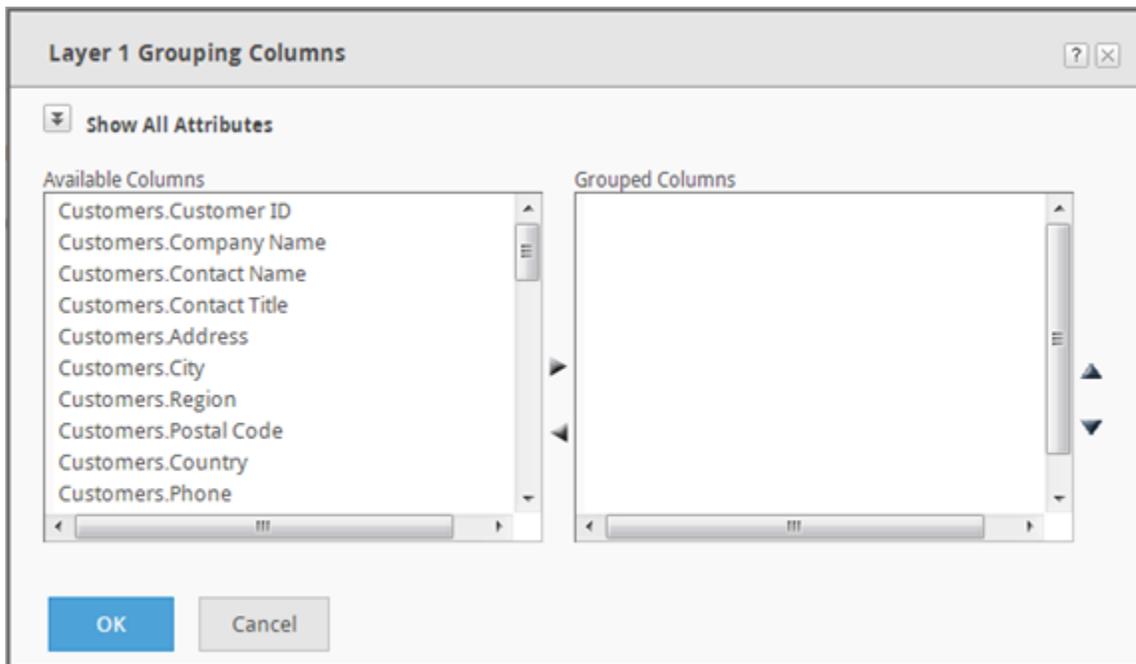
Roll up last layer:

The *Grouping* tab with the *Grouped Flat-Table* style selected.

**Note:**

The Roll up last layer option is displayed for the flat grouping. This allows the user to create “summary” flat grouped reports where the non-aggregated information is hidden from view. The data details that are normally shown in the last grouping layer are excluded from the report.

3. Choose a grouping style (e.g., Flat-Table, Drill-Down) and then click **Add Grouping Layer** to display the *Grouping Columns* dialog box.



4. Select one or more columns from the *Available Columns* list and then click ► to move them to the *Grouped Columns* list. Hold the Ctrl key down to select multiple columns.
5. OPTIONAL: If a column in the *Grouped Columns* list<sup>1</sup> is not desired, select it and click ◀ to move it back to *Available Columns* list. Hold the Ctrl key down to select multiple columns.
6. OPTIONAL: To move a column in the *Grouped Columns* list<sup>2</sup> up or down, select it and click the ▲ or ▼ icon.
7. OPTIONAL: If using the Flat-Table grouping style, check the 'Insert a page break between groups of PDF Export' option<sup>3</sup>.
8. OPTIONAL: Click **OK** to retain the modification and exit the panel or continue configuring the other features on the grouping layer.

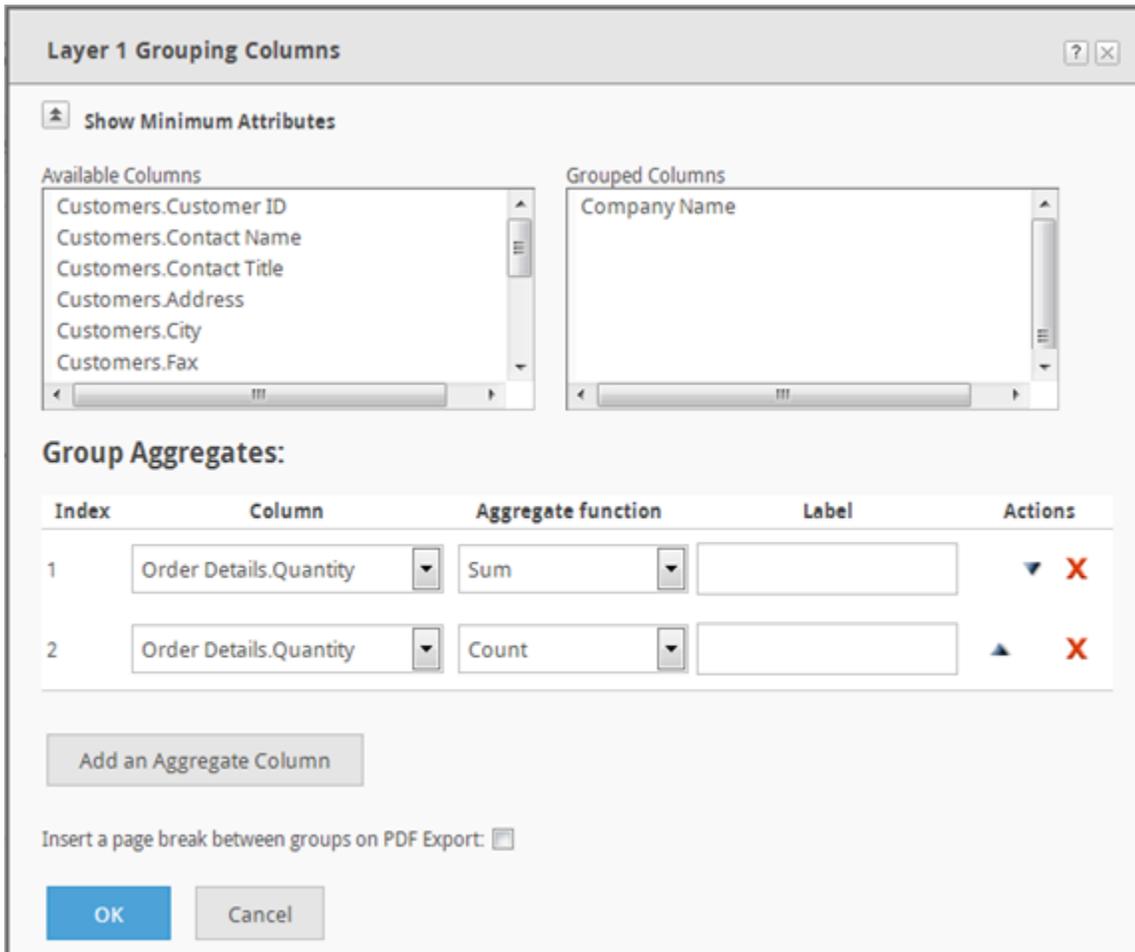
Notes:

1. The Grouping Layer dialog box keeps track of the grouped columns used.
2. The order in which the columns appear in the Grouped Columns list dictates the order in which the columns will appear in the report. This display order overrides that which is specified in the Column Configuration tab.
3. This feature is only offered on the first layer of a grouped flat-table when the *Show All Attributes* icon has been clicked. If the *Export to PDF* feature is not used in the report, then checking this feature will not have any effect on the report.

After adding columns to display in the tabular report and after selecting one or more columns on which to group the layer, group aggregates can be created:

To create a grouping layer aggregate:

1. From the Grouping Layer dialog box, click **Add an Aggregate Column**. If the button isn't visible, click the **Show All Attributes** icon at the top of the dialog box.



Grouping Columns dialog box for a flat-table group

2. Choose a **Column** from the drop-down menu.
3. Choose an **Aggregate function**<sup>1, 2, 3</sup> from the drop-down menu.
4. OPTIONAL: If using the grouped Flat-Table style, enter a descriptive name for the aggregate value in the **Label** field.
5. OPTIONAL: If using the grouped drill-down style:
  - a. Enter a descriptive name for the aggregate column in the **Header** field.
  - b. To include the column in the sub-report, check the **Include in sub-report** option.
6. OPTIONAL: If more than one aggregate has been specified in the grouping layer, click the ▲ or ▼ icon to set the order in which the aggregates will appear in the grouping column.
7. OPTIONAL: Click X to remove a grouping aggregate.

- OPTIONAL: Click **OK** to retain the modification and exit the panel or continue configuring the other features on the grouping layer.

**Notes:**

- For Numeric values, choose aggregations such as *Sum*, *Average*, *Standard Deviation*, *Count*, *Count Distinct*, *Minimum*, or *Maximum*.
- For Text values, *Sum* and *Average* are excluded from the list of aggregate functions. Choosing *Minimum* selects the first alphabetized entry and *Maximum* selects the last.
- For Date values, *Maximum* chooses the latest date and *Minimum* chooses the earliest.

When using the grouped Drill-Down style, the Grouping Layer dialog box expands to display different options:

**Add an Aggregate Column**

**Summary Column Options:**

No summary
  Auto-generated column (drill-down disabled)
  Auto-generated column (drill-down enabled)
  Grouping / Aggregate column (drill-down enabled)

**Auto-generated summary column settings:**

Column header (i.e., Records vs Details):

Suffix (i.e., Parts vs Rows):

Include summary row for Summary column    Caption:

Show an option to Expand/Collapse all drill-down rows:

Auto Expand all drill-down rows:

**OK**    **Cancel**

Grouping Columns dialog box for a drill-style group

The Summary Column Options are described in the following table:

Option	Behavior
No summary	The report is rendered without a <i>Details</i> column and no means to drill-down to the sub-report.
Auto-generated column (drill-down enabled)	The report is rendered with a <i>Details</i> column displaying a hyperlink with the count of the number of detail records contained in the sub-report. The hyperlink allows the user the ability to drill-down to the sub-report. This is the default option. <div data-bbox="1328 380 1468 470" style="float: right; border: 1px solid gray; padding: 2px;"> <b>Details</b>              12 Rows           </div>
Auto-generated column (drill-down disabled)	The report is rendered with a <i>Details</i> column displaying a count of the number of detail records contained in the sub-report. Drill-down is disabled. <div data-bbox="1328 499 1468 590" style="float: right; border: 1px solid gray; padding: 2px;"> <b>Details</b>              12 Rows           </div>
Grouping / Aggregate column (drill-down enabled)	The report is rendered without a <i>Details</i> column but displays one of the columns used in the grouping layer (i.e., grouped column or aggregate) as a hyperlink. The hyperlinked column allows the user the ability to drill-down to the sub-report. <div data-bbox="1230 632 1468 722" style="float: right; border: 1px solid gray; padding: 2px;"> <b>Customer Name</b>              Alfreds Futterkiste           </div>

When one of the auto-generated column display options is selected, the following options may be applied to the summary column:

- The column's header label can be changed from 'Details' to something more descriptive (i.e., Records, Accounts, Parts, or Entries).
- The suffix text following a summary count can be changed from 'Rows' to something more descriptive (i.e., Loans, Transactions, etc.). The suffix is used in the group-level and overall summary row counts.
- A summary row may be included in the report with a caption (i.e. Total Parts:).

To configure a grouped drill-down's *Details* column options:

1. OPTIONAL: Choose a summary column display option. Refer to the table above for the explanation of the options.
2. OPTIONAL: If the summary column display option of 'Grouping / Aggregate column' is selected, then choose a column from the drop-down list.
3. OPTIONAL: If either one of the 'Auto-generated column' summary column display options were selected, then:
  - a. Enter an alternate **Column header** name for the summary column in the field provided.
  - b. Enter an alternate **Suffix** name for the summary hyperlink in the field provided.
  - c. Check **Include summary row for Summary column** and enter a descriptive **Caption** in the field provided.

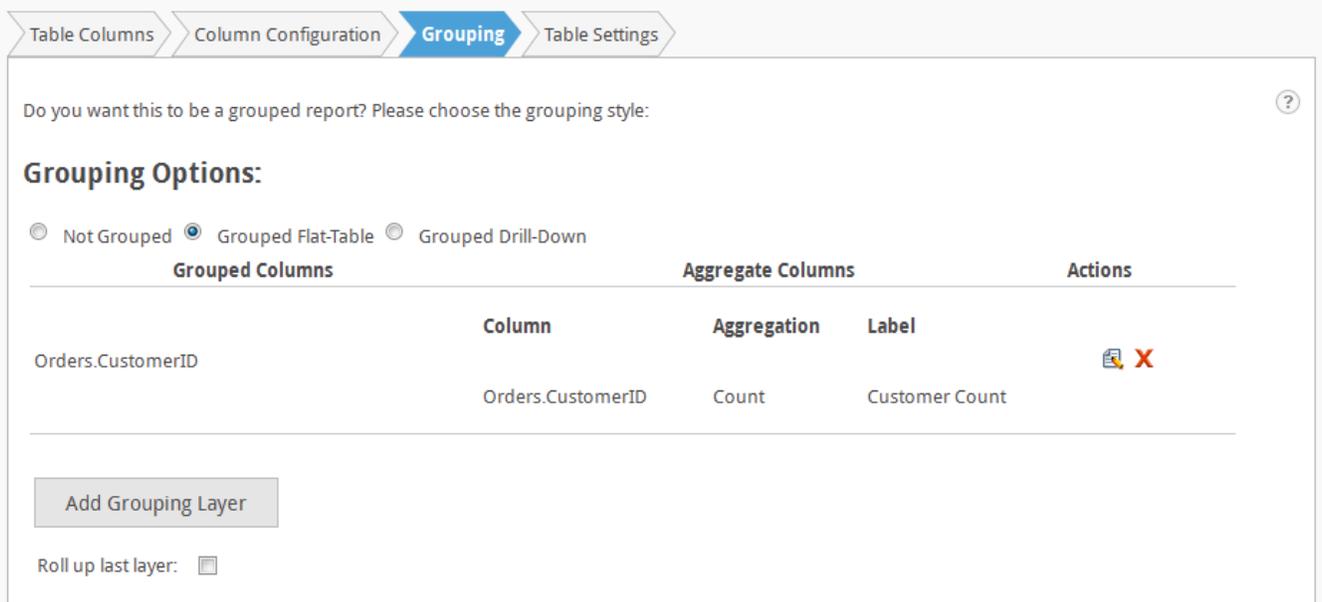
4. OPTIONAL: Click **OK** to retain the modification and exit the panel or continue configuring the other features of the grouping layer.

The application supports an unlimited number of grouping layers for any single report. Each layer can have multiple grouped columns, including any number of group aggregates.

On the first grouping layer, the option to display an “Expand All/Collapse All” link in the report is displayed. The link, as the name implies, will allow the user to expand or collapse all drill levels of the report. Also on the first grouping layer, the behavior of the initial display of the report can be set to “collapsed” (the default) or “expanded”. The “expanded” option will cause the report to take longer to render.

To modify a grouping layer (all options):

1. Click the *Grouping* tab.



Do you want this to be a grouped report? Please choose the grouping style: ?

**Grouping Options:**

Not Grouped
  Grouped Flat-Table
  Grouped Drill-Down

Grouped Columns	Aggregate Columns	Actions
Column	Aggregation	Label
Orders.CustomerID	Count	Customer Count

Roll up last layer:

2. Choose a different grouping style (e.g., Flat-Table, Drill-Down).
3. If more than one grouping layer has been defined, click the ▲ or ▼ icon to change grouping order in the report.
4. Click the 📄 icon associated to the grouping layer to be modified.
5. If modifying a grouped flat-table's first grouping layer, enable or disable the 'Insert a page break between groups of PDF Export' option.
6. If modifying the lowest level grouping layer:
  - a. Move columns between the *Available Columns* list and the *Grouped Columns* list by selecting the column(s) and clicking the ▶ or ◀ icons to move the column from one list to the other.
  - b. Move a column in the *Grouped Columns* list up or down by selecting the column(s) and click the ▲ or ▼ icon respectively.
7. If the grouping layer contain an aggregate:
  - a. Choose a different **Aggregate function** from the drop-down menu.
  - b. If using the grouped flat-table style, modify the **Label**.
  - c. If using the grouped drill-down style:
    - i. Modify the **Header**.

- ii. Check the **Include in sub-report** option to include the column in the sub-report.
- d. If more than one aggregate has been specified, click the ▲ or ▼ icon to arrange the order in which the aggregate will appear in the grouping column.
- e. Click **X** to remove the aggregate.

8. If using the grouped drill-down style:

- a. Choose a different summary column display option. Refer to the previous for an explanation of the options.
- b. If the summary column display option of 'Grouping / Aggregate column' was selected, then choose a column from the drop-down menu.
- c. If either one of the 'Auto-generated column' summary column display options were selected, then:
  - i. Type an alternate **Column header** name for the summary column in the field provided.
  - ii. Type an alternate **Suffix** name for the summary hyperlink in the field provided.
- d. Check **Include summary row for Summary column** and enter a descriptive **Caption** in the field provided.

9. Click **OK**.

To delete a grouping layer:

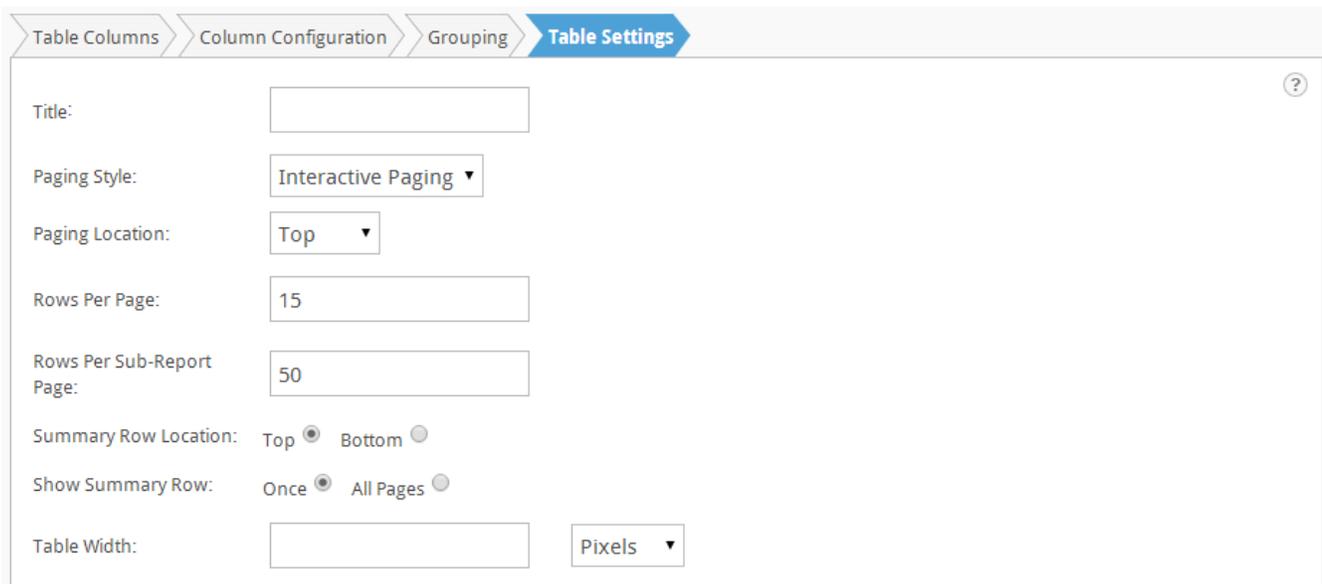
1. Navigate to the Table component's Grouping panel.
2. Click the **X** icon associated to the grouping layer to be deleted.

## Table Settings

The *Table Settings* tab offers the ability to control the general characteristics of the display table. It offers the ability to specify a table title and add paging controls for large result sets. Interactive paging controls can be added for the entire table as well as individual sub-reports in a drill-down style grouped table.

To modify a tabular report's table settings:

Click the *Table Settings* tab.



The screenshot shows the 'Table Settings' configuration panel. It contains the following fields and options:

- Title:** An empty text input field.
- Paging Style:** A dropdown menu set to 'Interactive Paging'.
- Paging Location:** A dropdown menu set to 'Top'.
- Rows Per Page:** A text input field containing the number '15'.
- Rows Per Sub-Report Page:** A text input field containing the number '50'.
- Summary Row Location:** Radio buttons for 'Top' (selected) and 'Bottom'.
- Show Summary Row:** Radio buttons for 'Once' (selected) and 'All Pages'.
- Table Width:** An empty text input field followed by a dropdown menu set to 'Pixels'.

The *Title* will be displayed above the display table in the generated report.

The *Paging Style* drop-down list will display the range of paging options. The default option is “Interactive Paging”. Select “None” to remove the paging controls from a report.

The *Paging Location* drop down list will display “Top”, “Bottom” and “Both”. This allows the user to set the location of the paging controls on the report.

The *Rows Per Page* and *Rows Per Sub-Report Page* attributes set the number of rows displayed on the display table and drill reports, respectively. Headers and summary rows are not considered in the number of rows per page. Only data rows are affected by these attributes.

The *Summary Row Location* is normally at the top of the display table. It may be set to the bottom of the display table just below the column headers.

Summary rows are typically displayed once at the bottom of the display table. The *Show Summary Row* option may be set to repeat the summary row on each page of the display table.

Drill Style grouped reports typically display the sub-reports within a minimum space. The *Table Width* attribute allows the sub-reports to display in a larger, fixed space. Set the *Table Width* to 100% to display drill-style reports across the full page.

## Crosstab Tables

Cross tabulation (“crosstab”) style reports give users the ability to display joint distributions of data from three separate columns. The results of the crosstab are displayed in table format. Every crosstab table consists of three columns:

Column Type	Use in Crosstab Table
Header	Populates the first row of the table. Each new value encountered in the crosstab column produces a new column in the crosstab table.
Label	Populates the first column of the table.
Values	Populates the aggregate data. The aggregate values are a <i>sum</i> , <i>count</i> , <i>standard deviation</i> , or <i>average</i> of the fields in the Value column.

Employee Name	1996	1997	1998
Buchanan, Steven	\$26,801.51	\$36,598.88	\$26,074.64
Callahan, Laura	\$26,474.84	\$67,787.59	\$62,343.02
Davolio, Nancy	\$44,367.78	\$114,023.71	\$71,870.47
Dodsworth, Anne	\$13,652.78	\$32,552.28	\$46,974.63
Fuller, Andrew	\$25,420.22	\$88,387.15	\$89,866.42
King, Robert	\$19,692.55	\$76,827.29	\$66,443.82
Leverling, Janet	\$21,715.38	\$135,896.70	\$91,222.84
Peacock, Margaret	\$60,082.86	\$161,049.32	\$66,316.82
Suyama, Michael	\$20,162.11	\$52,057.90	\$17,101.18

A crosstab report displaying sales totals per employee across years.

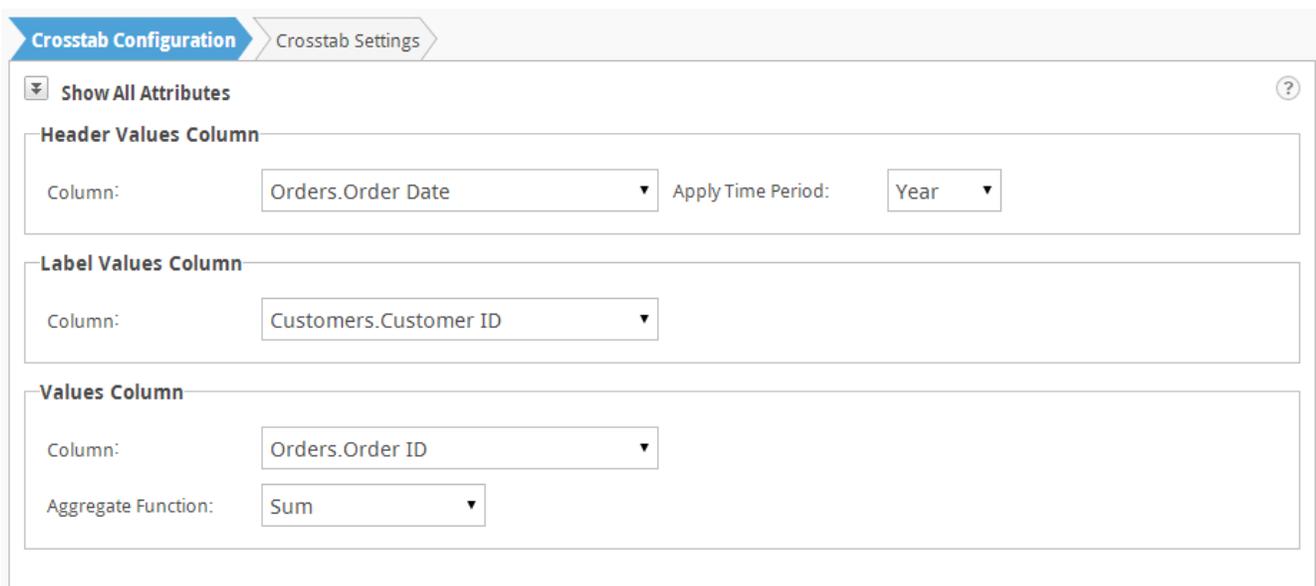
Users can also include crosstab summary data by adding an optional summary row or summary column.

In order to build a crosstab, you only need to pick three columns, *Header*, *Label* and *Value*, and decide how you want the value column be aggregated. These selections can be made in the *Crosstab Configuration* tab, with minimum attributes displayed.

You also have many other crosstab options at your fingertips. All of these options can be accessed either on *Crosstab Configuration* page, with all attributes displayed, or on the *Crosstab Settings* tab.

To add a simple Crosstab Table:

1. From the Report Builder interface, click the Crosstab icon in the ADD frame at the left of the interface to add the Crosstab component to the report. Use drag-and-drop methods to place the crosstab into the report in a specific location in the MODIFY panel.



The screenshot shows the 'Crosstab Configuration' panel with the following settings:

- Show All Attributes:** A dropdown menu with a question mark icon.
- Header Values Column:**
  - Column: Orders.Order Date
  - Apply Time Period: Year
- Label Values Column:**
  - Column: Customers.Customer ID
- Values Column:**
  - Column: Orders.Order ID
  - Aggregate Function: Sum

2. From the Crosstab Configuration panel's *Header Values Column* section, choose a header *Column* from the drop-down list.
3. From the *Label Values Column* section, choose a label *Column* from the drop-down list.
4. From the *Values Column* section:
  - a. Choose a value *Column* from the drop-down list.
  - b. Choose an *Aggregate Function*<sup>1</sup> from the drop-down list.

Your crosstab table is ready at this point.

**Note:**

The available aggregate functions are Sum, Average, Standard Deviation and Count.

### Exploring Crosstab Options

Click the **Show All Attributes** icon to view the extended options on the Crosstab Configuration tab.

If the Header column is a date column, a drop down list of time periods will be displayed:

**Header Values Column**

Column:  Apply Time Period:

The Time Period options include:

- None – Displays the date information in the header and aggregate the values by date.
- Year – Displays the year information and aggregate the values by year.
- Quarter – Displays the first day of the quarter and aggregate the values by quarter.
- Fiscal Quarter – Displays the first day of the fiscal quarter and aggregate the values by fiscal quarter.
- Month – Displays the first day of the month and aggregate the values by month.

When all attributes are displayed on the *Crosstab Configuration* tab, the following extra options are available for Label column:

**Label Values Column**

Column:

Header:

Sortable:

Format:

Alignment:

1. *Header* – This is the caption that is shown for the Label column on the title row of the crosstab. It changes every time you select a new Label column to reflect the name of the selected column. But you can change it to your desired text.
2. *Sortable*<sup>1</sup> – When checked, this option changes the header of the Label column into a link that toggles the sort order of the crosstab rows by the values in the Label column.
3. *Linked* – This option may or may not be available, depending on whether the selected Label column has a pre-defined link associated with it or not.
4. *Format* – Allows you to choose a display format for the label column value.
5. *Alignment* – Sets a cell alignment for the label column values.
6. The **Add a Layer** button allows you to specify hierarchical layers of labels in the Crosstab. Layering the Label column is an advanced function that automatically generates drill-down capability for the crosstab Label column. Read about it in the *Adding Drill-down Capability to Crosstabs* section.

The following extra options are available for Value column:

**Values Column**

Column:

Aggregate Function:

Sortable:

Format:

Alignment:

Style: 

1. *Sortable*<sup>1</sup> – When checked, this option changes the header of the Value column, if available (otherwise the link is put on Header column instead), into a link that toggles the sort order of the crosstab rows by the values in the Value column.
2. *Format* – Allows you to choose a display format for the Value column values.
3. *Alignment* – Sets a cell alignment for the Value columns.
4. *Style* – Adds conditional styling to values. This feature is explained fully in *Conditional Styling of Crosstabs* section, later.

5. **Add Extra Value Columns** - Displaying multiple Value columns in a single crosstab table is an advanced feature that is described fully in *Adding Multiple Value Columns* section.

The following options are available for adding a Summary Row:

**Summary Row**

Include:

Caption:

Aggregate Function: Sum ▼

Format: Integer ▼

1. *Include* – This checkbox adds or removes the Summary Row.
2. *Caption* – Enter a caption that describes the summary value.
3. *Aggregate Function*<sup>2</sup> – Sets a cell alignment for the Value columns.
4. *Format* – Choose a display Format for the summary value.

The following options are available for adding a Summary Column:

**Summary Column**

Include:

Header:

Aggregate Function: Sum ▼

Format: Integer ▼

1. *Include* – This checkbox adds or removes the Summary Column.
2. *Header* – Type a caption, which describes the summary value.
3. *Aggregate Function*<sup>3</sup> – Sets a cell alignment for the Value columns.
4. *Format* – Choose a display Format for the summary value.

Notes:

1. The default sort order of the Label and Header column values is dictated by the sort order of the Data Source, however a crosstab is created dynamically and may not reflect the expected sort order of the Label and Header. This is particularly true when the data has missing information.
2. The available aggregate functions for Summary Row are: Sum, Average (of crosstab rows), Standard Deviation, Count (of crosstab rows), Count Distinct, Average of All Rows, and Count of All Rows.
3. The available aggregate functions for Summary Column are: Sum, Average (of value columns), Standard Deviation, Count (of value columns), Average of All Rows (used for the particular row of the crosstab pertaining to the summary value), and Count of All Rows (used for the particular row of the crosstab pertaining to the summary value).

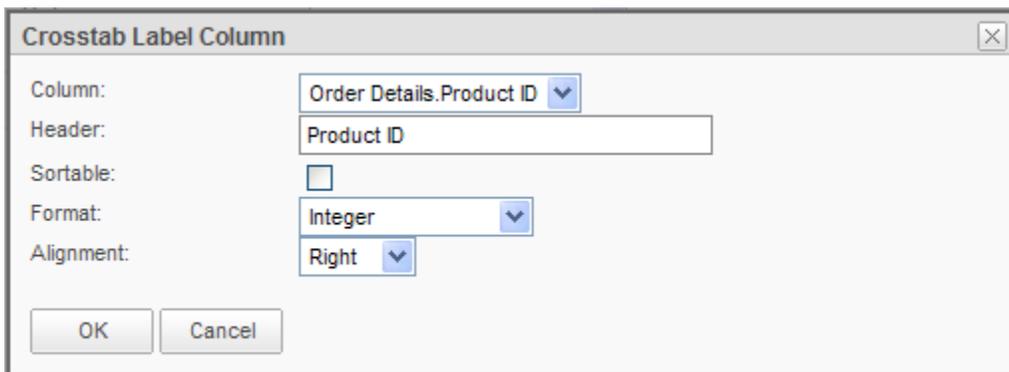
Hint:

Crosstab tables can become quite long if there are a large numbers of distinct values in the crosstab Label and Header columns. If such is the case, limit the data by setting filters on the data from the Modify Data Source step.

### Adding Drill-Down Capabilities to Crosstabs

At times you may need to drill down to the details of a crosstab layer and see the underlying data that supports the top level values.

You can add as many layers to a crosstab as you need. Click **Add a Layer** to display the following dialog box:



Each layer consists of another crosstab table identical to the main layer, but with a different *Label* column. It makes sense to pick a column that can serve as the detail for the *Label* column in the layer right above it.

All available columns, except for those that have already been selected for the previous layers, can be selected for this new layer.

Just like the main layer, a *Header* can be entered for this new *Label Column* and it can be set as sortable and/or linked (if pre-defined as being linkable). Its format and alignment can also be determined.

Once a new layer has been defined, the default view of the *Label Values Column* panel will change to a grid.

**Label Values Column**

Column Name	Header	Sortable	Linked	Format	Alignment	Actions
⋮ Order ID	Order ID	No	No	Integer	Right	▼ 📄 ✖
⋮ Product ID	Product ID	No	No	Integer	Right	▲ 📄 ✖

Show an option to Expand/Collapse all drill-down rows:

Layers can be moved up or down using ▲ and ▼ or by using drag-and-drop methods using the ⋮ handle. They may be edited using 📄 and removed using ✖ action icons.

### Adding Multiple Value Columns

If more than one *Value Column* is needed under crosstab, additional columns can be added by clicking **Add Extra Value Columns**. The following Crosstab Value Column dialog box will be displayed:

**Crosstab Value Column** ✕

Column:  ▾

Aggregate Function:  ▾

Header:

Sortable:

Format:  ▾

Alignment:  ▾

This process is exactly like adding the first *Value Column*. The difference is in the *Header* option, which is missing for the first Value column. However if multiple Value Columns have been defined, each column can have its own header, which will be displayed under the Header Column values.

	1998		1996		1997	
Ship Country	Sales Sum	Sales Avg	Sales Sum	Sales Avg	Sales Sum	Sales Avg
Germany	\$87,738.61	\$113.91	\$35,896.75	\$535.77	\$120,027.62	\$736.37
Brazil	\$48,385.07	\$733.11	\$23,846.80	\$662.41	\$42,615.11	\$426.15
France	\$20,530.01	\$247.08	\$17,180.10	\$537.16	\$47,328.60	\$525.87

Once a new Value Column has been defined, the default view of the Value Column panel will change to a grid.

**Values Column**

Column Name	Aggregate Function	Header	Sortable	Format	Alignment	Summary Row	Summary Column	Style	Actions
Quantity	Sum	Quantity Sum	No	Integer	Right				▾
Order ID	Sum	Order ID Sum	No	Integer	Right				▴

*Value Columns* can be moved up or down using or or by using drag-and-drop methods using the handle. They may be edited using and removed using action icons.

Separate *Summary Row* and *Summary Column* functions, as well as *Styles* can be defined for each *Value Column* by using respective icons in each row of the grid. If either of these items has been defined, their icons will change to an “on” state.

### Conditional Styling of Crosstabs

Conditional styling of crosstabs is very similar to that of a data table. The only difference is that styles can only be set, as well as depend on *Value* columns. Therefore the columns listed in the *Column* drop-down only consist of all selections for *Value* columns.

The following figure shows the results of conditional styling of “Order Count” to be red if the value is less than 5 and another style set to show as green if the count exceeds 10.

◀◀ Page  of 2 ▶▶

Country	1996	1997	1998
Argentina	0	6	10
Austria	8	21	11
Belgium	2	7	10
Brazil	13	42	28
Canada	4	17	9
Denmark	3	11	4
Finland	4	13	5
France	14	39	23
Germany	24	64	34
Ireland	5	10	4
Italy	3	15	10
Mexico	9	12	7
Norway	1	2	3
Poland	1	2	4
Portugal	4	7	2

### Linking from Crosstabs

If the administrator has set up links from any column that is used as the *Label* column for the crosstab, the “Linked” checkbox appears in the *Label Column* panel area.

Since both links and drill-down are defined on the *Label* column, they cannot co-exist. Therefore only last layer of a crosstab can be linked. A link can be established to any other report or website. By checking the *Linked* checkbox, the link is automatically enabled and the resulting report displays its *Label* columns as active HTML links that take you to the pre-determined report or web page, passing any required parameters to the report or site.

This feature can be used in lieu of drill-down, in order to display a report other than the detail crosstab report that is automatically generated by the application.

The following example displays a linked crosstab that opens up Google Maps and shows the map of the selected country, each time a country link is clicked on the report:

Country	1996
Germany	\$35,85
Brazil	\$23,84
France	\$17,18
Belgium	\$6,43
Switzerland	\$4,28
Venezuela	\$8,05
Austria	\$27,95
Mexico	\$4,68
USA	\$35,55
Sweden	\$7,43
	\$3,23
	\$30

## Crosstab Settings

The Crosstab Settings tab offers the ability to specify a crosstab table title and add and configure interactive paging controls for large result sets.

To modify a crosstab's settings:

Click the *Crosstab Settings* tab.

Crosstab Configuration
Crosstab Settings

?

Title:

Paging Style:  ▼

Paging Location:  ▼

Rows Per Page:

Rows Per Sub-Report Page:

The *Title* will be displayed above the display table in the generated report.

The *Paging Style* drop-down list will display the range of paging options. The default option is “Interactive Paging”. Select “None” to remove the paging controls from a report.

The *Rows Per Page* and *Rows Per Sub-Report Page* options set the number of rows displayed on the display table and drill reports, respectively.

## Charts

The Report Builder provides charting components to provide a visual representation of data in a variety of styles. The following chart types are supported in the application:

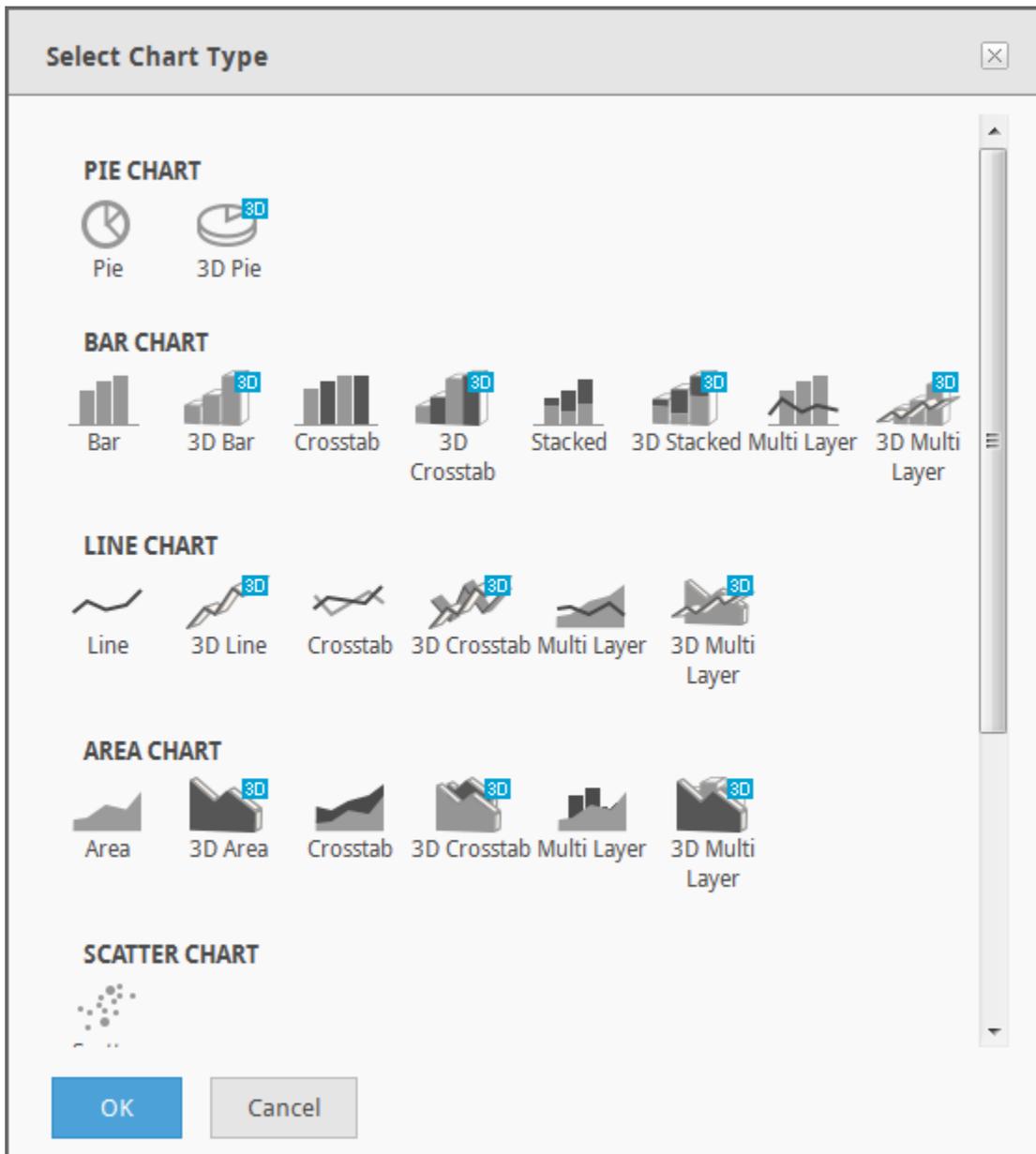
- Area
- Bar
- Heatmap
- Line
- Pie
- Scatter

In addition, 3-D and animated versions of selected chart styles are available. Since animated charts are not exportable, they are displayed in a separate section of the interface.

From the Report Builder interface, click the Chart icon in the ADD frame at the left of the interface to add the Crosstab component to the report. Use drag-and-drop methods to place a chart into the report in a specific location in the MODIFY panel.

The following palette of charts options will be displayed:

:



Click the desired chart type to add it to the report.

When a chart is added to a report definition, a tab called *Chart Settings* is created with the appropriate attributes for the chart type. If multiple charts are added, each chart will have an associated *Chart Settings* tab

The *Chart Settings* tab will appear similar to the following Bar chart example:

**Chart Settings**

Show All Attributes

**Label Column**

Column: Customers.Customer ID

**Data Column**

Column: Customers.Customer ID

Aggregate: Count

Use Percentage:

**Orientation**

Bar Direction: Horizontal

Notice that a Bar chart image was added to the Modify panel. The *Chart Settings* tab, by default, displays the most common and minimal attributes necessary to render a complete chart.

The chart can be deleted by clicking the  icon in the report layout panel.

The  icon the report layout panel will present the chart selection panel again and allow a different chart type to be selected. To the extent possible, the attributes of the current chart will be replicated in the replacement chart.

### Setting Chart Attributes

Clicking the *Show All Attributes* icon will display the advanced settings available for the chart:

**Chart Settings**

Show Minimum Attributes

Title:

**Label Column**

Column: Customers.Customer ID

Caption: Customer ID

Format: (none)

**Data Column**

Column: Customers.Customer ID

Notice the scroll bar down the right side of the *Chart Settings* tab. Scroll down to view and set the advanced attributes for the chart.

Chart attributes are grouped according to functional area. Following are the general areas that may apply to charts:

- Label Column
- Label (x-axis) Column
- Label Scaling
- Data Column
- Data (y-axis) Column
- Data Scaling
- Legend
- Relevance
- Trend Line
- Crosstab Column
- Style
- Orientation
- Bubble

**Note:**

Not all charting attribute functional areas are available for all chart types. In addition, attributes in each functional area may be different based on the chart type selected and the data type of the selected columns.

Three attributes are displayed as stand-alone properties of the chart; *Title*, *Show Data Values*, and *Allow Resizing*.

The *Title* attribute value will be displayed as a chart title over the displayed chart.

The *Show Data Values* attribute will include the numeric data values driving the chart elements in the chart display. By default this attribute is enabled.

The *Allow Resizing* attribute will display resizing handles around the chart so that the end-user can adjust the chart size.

*Functional Attribute Sections*

*Label Column* – This section allows the user to select the column to be used for a Pie chart label. Data values will be aggregated based on this column.

**Label Column**

Column:  ▼

*Label Column (x-axis)* – For X/Y charts, this section allows the user to select the column to be displayed along the X-axis, specify the caption for the X-axis and select the format:

**Label Column (x-axis)**

Column:  ▼ Apply Time Period:  ▼

Caption:

Format:  ▼

If the Label Column for the X-axis is a Date column, the *Apply Time Period* drop-down list will include time periods. Data will be aggregated according to the selected time period.

The options in the list include:

- None – Displays the date information on the x-axis and aggregate the values by date.
- Year – Displays the year information on the x-axis and aggregate the values by year.
- Quarter – Displays the first day of the quarter on the x-axis and aggregate the values by quarter.
- Fiscal Quarter – Displays the first day of the fiscal quarter on the x-axis and aggregate the values by fiscal quarter.
- Month – Displays the first day of the month on the x-axis and aggregate the values by month.

*Label Scaling* – This section allows you to override the default scaling of the X-axis by entering values for the *Lower* and *Upper Bound* attributes.

If the column used for the x-axis content is numeric, the *Linear Numeric* attribute is available and if enabled will provide fixed numeric intervals along the X-axis.

**Label Scaling**

Lower Bound:  Upper Bound:

Linear Numeric:

If the column used for the X-axis content is date oriented, the *Linear Time* attribute is available and if enabled will provide fixed time intervals along the X-axis.

**Label Scaling**

Lower Bound:  Upper Bound:

Linear Time:

*Data Column* – This section allows you to select the data to be shown in the chart, select the format from the suite of numeric formats, and select the aggregation function to be applied to the data:

**Data Column**

Column: Customers.Customer ID ▼

Format: (none) ▼

Aggregate: Count ▼

*Data Column (y-axis)* – For X/Y charts, this section allows you to select the column used for the data displayed along the Y-axis. In addition, you can specify a caption for the Y-axis, select a format for the data values, and select an aggregation function.

**Data Column (y-axis)**

Column: Customers.Customer ID ▼

Caption: Customer ID

Format: (none) ▼

Aggregate: Count ▼

*Data Scaling* – This section allows the user to override the default scaling of the Y-axis by entering values for the *Lower* and *Upper Bound* attributes:

**Data Scaling**

Lower Bound:  Upper Bound:

**Legend** – This section allows you to indicate whether a legend should be displayed for the chart. For some chart types you can also select the legend position relative to the chart and specify a legend label:

**Legend**

Include Legend:

Position:  ▼

Legend Label:

**Relevance** – This section provides a Relevance filter that allows you to specify data thresholds to be included in the chart:

**Relevance**

Use Relevance Values:

Top N rows  Percentage

You can enable/disable a relevance filter by check the *Use Relevance Values* checkbox. Specify the relevance scale by selecting either the *Top N rows* or *Percentage* options and enter the threshold value in the area provided.

For example, only the top 75% of data in the chart could be relevant. In this case, check the *Use Relevance Values* checkbox, enter a value of 75 in the value field, and click the *Percentage* radio button. Alternatively, only the top 5 rows of data in the chart could be relevant. In this case, check *Use Relevance Values*, enter a value of 5 in the value.

**Trend Line** – This section allows you to include a trend line on the chart:

**Trend Line**

Include Trend Line:

**Crosstab Column** – This section allows you to identify a second column of data to be redisplayed in the chart:

**Crosstab Column**

Column:  ▼

**Style** – This section allows you to change the size and spacing of the chart:

**Style**

Size:  ▼

Width:       Height:

The *Size* attribute drop-down list offers three standard sizes: Small, Medium, and Large. Selecting one of the standard sizes will reset the other size attributes. If the size attributes are overridden, the *Size* attribute will be set to Custom.

**Orientation** – This section allows you to select the orientation of the bars in the Bar charts.

**Orientation**

Bar Direction:  ▼

The Bar Direction drop-down list offers *Horizontal* and *Vertical* choices.

**Bubble** – This section allows you to specify a column of data that will be used to set the size of the data points/bubbles in a scatter chart:

**Bubble**

Bubble Size Column:  ▼

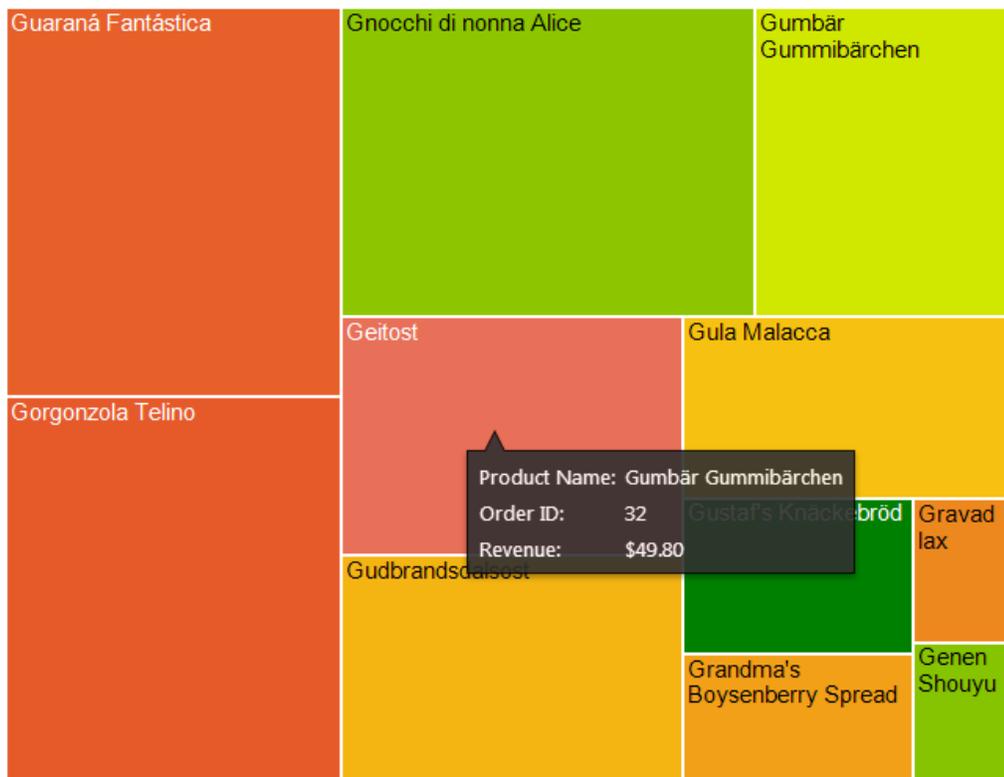
## Heat Maps

Heat maps are useful for giving business users quick views of large amounts of data to find trends and anomalies at-a-glance. It would be very difficult to view and comprehend information about 2,000 items in a pie chart; a heat map, however, makes this possible.

Heat maps can show relationships among hundreds or thousands of items in hierarchies with rectangular spaces divided into regions. Each region is divided again to correspond to each level in the hierarchy. Business users easily interact with these hierarchical, colorful regions to get more information.

Heat maps are especially useful when an organization has numerous facts to analyze, such as many sales regions, many manufacturing plants or hundreds of product lines and wants to monitor the complex activities among those many products, projects or salespeople.

Heat maps are comprised of multiple *cells* that have a varying size and color. Each cell has a specific label so that users can determine what each cell represents. The size, color and label for each cell are determined by values from three different points of data. In order to fully populate a heat map, select three distinct data columns for the label, cell size and cell color.



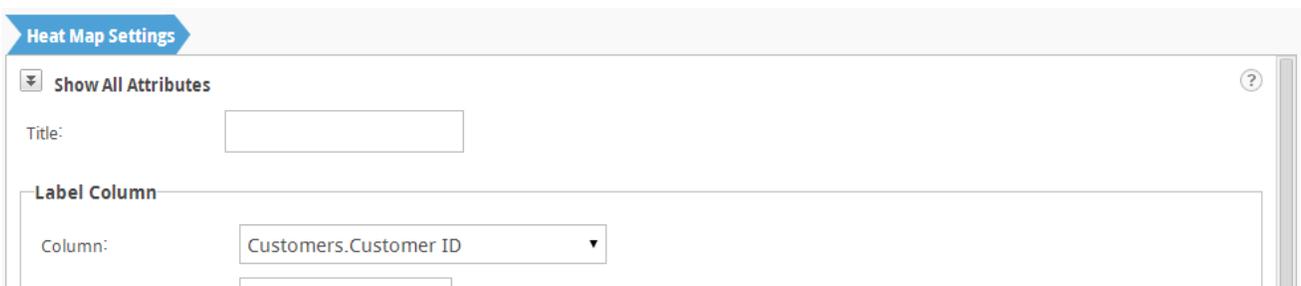
A heat map displaying the number of orders and revenue received from each product.

A cell is created for each distinct product name in the *ProductName* column. The size of the cell is determined by the corresponding value from the *Revenue* column; larger values produce larger cells. The color of the cell is determined by the value of the *Order Count* column.

**Note:**

Numeric data columns must be selected for the Cell Size and Cell Color columns.

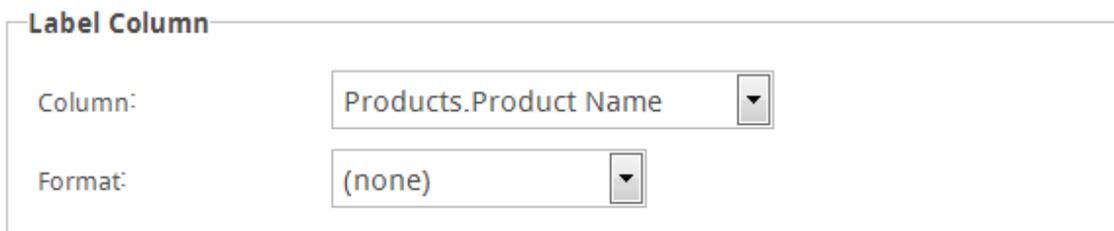
When a Heat Map chart is selected for a report, the Report Builder will create an associated Heat Map Settings tab with the various attributes that control the display of the heat map.



The image shows a 'Heat Map Settings' panel. At the top left is a blue arrow-shaped tab labeled 'Heat Map Settings'. Below the tab is a section titled 'Show All Attributes' with a dropdown arrow and a help icon. Underneath, there is a 'Title:' label followed by an empty text input box. Below that is a section titled 'Label Column' with a 'Column:' label and a dropdown menu currently showing 'Customers.Customer ID'.

The *Title* attribute value will be displayed left-justified above the rendered heat map.

The *Label Column* section contains the attributes controlling the column to be used as the primary label for each cell of the heat map and format of the value.



The image shows a 'Label Column' settings panel. It contains two rows of controls. The first row has a 'Column:' label followed by a dropdown menu showing 'Products.Product Name'. The second row has a 'Format:' label followed by a dropdown menu showing '(none)'.

The *Cell Color Column* section contains the attributes controlling the column to be used to determine the cell color, the format of the data values, and any aggregation of the data values. Aggregation options include *Sum*, *Average*, *Standard Deviation*, *Count*, *Count Distinct*, *Maximum*, and *Minimum*.

**Cell Color Column**

Column:	Calculated Columns.Revenue
Format:	Currency
Aggregate:	(none)

The *Cell Size Column* section contains the attributes controlling the column to be used to determine the cell size, the format of the data values, and any aggregation of the data values. Aggregation options include *Sum*, *Average*, *Standard Deviation*, *Count*, *Count Distinct*, *Maximum*, and *Minimum*.

**Cell Size Column**

Column:	Orders.Order ID
Format:	(none)
Aggregate:	Count

The *Color Slider* section contains the color distribution range for the heat map cells:

**Color Slider**

Low Value Color:	Crimson
Middle Value Color:	Yellow
High Value Color:	Green

The *Allow Resizing* checkbox will place drag handles on the edges of the displayed heat map, allowing the heat map image to be resized.

## Style & Formatting

The application allows a header, custom labels and images to be added to a report and the overall look and feel of the report to be configured (e.g., report style, page size, print orientation).

### Report Header

By default, a report header is included in the standard report template with the Date and Time options enabled:

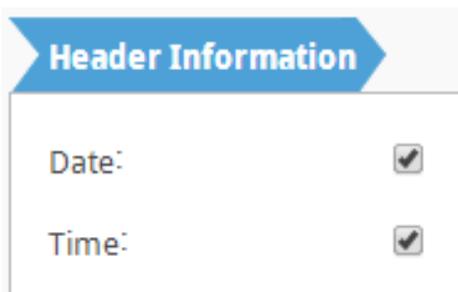
Customer Orders

Date: Tuesday, November 19, 2013

Time: 1:15:45 PM

Default report header

Click the Header icon from the ADD frame to add a Header to a report. A Header tab will be created. A report can only have one Header element.



Date:	<input checked="" type="checkbox"/>
Time:	<input checked="" type="checkbox"/>

Header Information tab with Date and Time options enabled.

#### Notes:

If a Header is added without the Date and Time options enabled, then only a report name will appear in the header.

## Adding Labels

The Label element offers the ability to add custom messages and text in the report. An unlimited number of labels can be added above or below other report elements. Use labels to add text to the report that would otherwise be too long for a table or chart caption.



CONFIDENTIAL - Do not distribute

A bar chart with a red label beneath it.

Click the Label icon in the ADD frame to add this element to the report definition. Alternatively, use the drag-and-drop method to place the label in the Report Layout panel. A corresponding *Label Information* tab will be created.

Label Information

Label:

Label Type: Simple ▼

Style: ▼

Type the text for the *Label* in the field provided.

Choose a *Label Type* from the drop-down list. The *Simple* option always centers the text and *Full Width* uses the full available width of the report.

OPTIONAL: Choose a text-style orientation from the *Style* drop-down menu (e.g., red, green, Align Text Left, etc.).

## Adding Images

The Image element offers the ability to add an image to the report layout. An unlimited number of images can be added above or below other report elements. Use images to display a company logo, disclaimer or warning or to bring emphasis to a new or updated section of a report.

The image can be added to the report from a file or referenced with a URL. Image files must be 1 megabyte or smaller in size and must be one of the following file types: JPG, JPEG, GIF, BMP. Animated images are supported.

Report Preview	Date: Friday, June 27, 2008 Time: 9:00:20 PM
----------------	---



Company Name	Contact Name	Contact Title	Address	City
Alfreds Futterkiste	Maria Anders	Sales Representative	Obere Str. 57	Berlin

A report with an image appearing before the tabular report.

Click the Image icon in the ADD frame to add an Image element to the report definition. An Image Information tab will be created.

Image Information

Source:  File  URL

Image: From My Computer Previously Uploaded

Select a Source type for the image file. If *File* is selected, click one of the location options: click **From My Computer** and then **Browse** to navigate to and select a file from your computer. To select an image from a library of uploaded images, click **Previously Uploaded** and select an image. Click **OK** when ready.

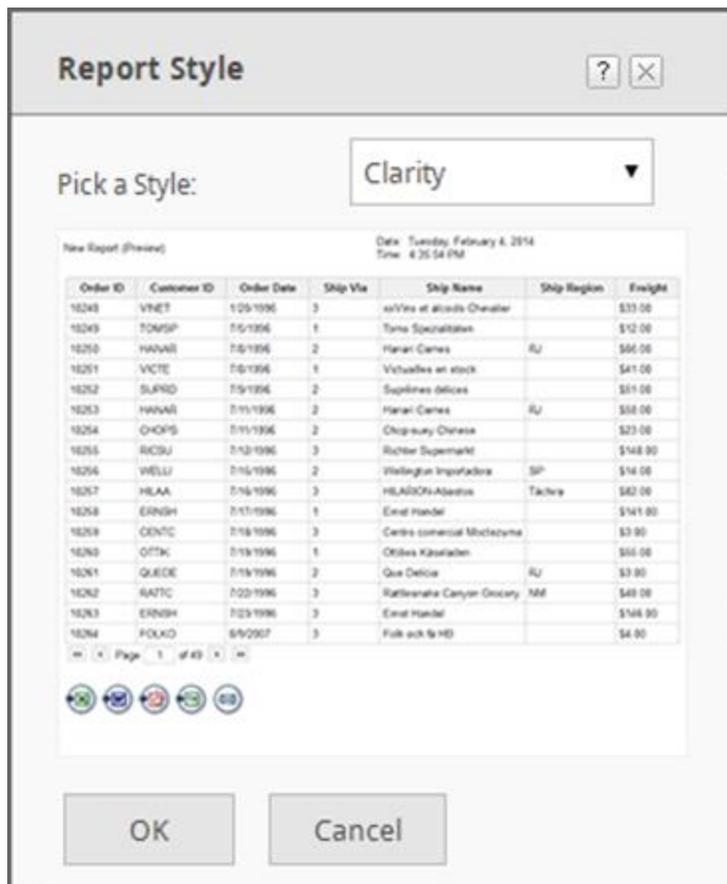
If *URL* is selected, specify the URL to access the image and then click **OK**.

**Notes:**

Images selected from your computer are automatically uploaded to the application server for later use by all users.

### Setting Report Style

To change the style sheet associated with the report, click **Select Report Style**. The *Report Style* dialog box will be displayed:



Select a style from the drop-down list and click **OK**.

## Export Options

The *Export Options* element allows links to be added to the bottom of a report to give users the ability to export reports. Reports can be printed from a browser, exported to popular formats such as Excel and PDF, or added to an archive for other users to view.

Click the Exports element in the ADD frame to add the *Export Options* tab to the report definition.

**Export Options**

Export to Excel:

Export to Word:

Export to PDF:

Export to CSV: \*

Export to XML: \*

Add to Archive:

Send Report By eMail:  PDF ▼

**i** \* Exporting a grouped report to CSV or XML may not export all data.

Export capability is added to the report by checking the individual export options.

The export options shown below are selectively available to end-users. None, some, or all of the icons may be visible to the end-user based on availability and user permissions.

- Export to Excel 
- Export to Word 
- Export to PDF 
- Export to CSV 
- Export to XML 
- Add to Archive 
- Send Email 

**Notes:**

Microsoft Office is integrated with Internet Explorer. Exporting the reports in an Office format opens a new browser window to edit and save the report. Microsoft Office is required to edit the reports from a browser window.

The Export Options are available in the rendered report to users with the appropriate Right to add the export option(s) to the report from the Report Builder.

*Export to Excel* saves the report in Microsoft Excel format. If Microsoft Excel is installed, the report can be edited as an Excel spreadsheet from the browser window.

*Export to Word* saves the report in Microsoft Word format. If Microsoft Word is installed, the report can be edited as a Word document from the browser window.

*Export to PDF* saves the report as a PDF (Portable Document Format), which can be viewed with Adobe Reader or in directly in most modern browsers, and edited with Adobe Acrobat.

*Export to CSV* saves the report to a comma-separated format. The file can be viewed with Microsoft Excel.

*Export to XML* saves the report data in XML format. The XML dataset can be viewed in most browsers.

*Add to Archive* saves a copy of the current report to the archive. Archiving is a great way to back-up a report before modifying it.

*Send Report by Email* exports the report in the format selected and attaches it to emails sent to selected recipients.

**Note:**

Archiving and XML exports are not always available when creating a new report. Contact the system administrator for assistance with archiving and XML exports.

### Export to Excel

*Export to Excel* opens a new browser window and displays the report in Microsoft Excel (spreadsheet) format.

	A	B	C	D
1	Date: Friday, June 22, 2007			
2	Orders by Employee		Time: 11:31:30 AM	
3				
4	<b>LName</b>	<b>CustomerID</b>	<b>OrderID</b>	<b>UnitPrice</b>
5	Buchanan	BERGS		
6		10654		
7				\$22.00
8				\$18.00
9				\$7.45
10				<b>Sum Unit Price \$47.45</b>
11		10866		
12				\$19.00
13				\$4.50
14				\$25.89
15				<b>Sum Unit Price \$49.39</b>
16	Buchanan	BLONP		
17		10297		
18				\$14.40
19				\$27.80
20				<b>Sum Unit Price \$42.20</b>

The report is exported to Microsoft Excel as a spreadsheet.

If Microsoft Excel is installed, the report opens as an Excel spreadsheet. Select rows or columns for sorting, copying, pasting, etc., and perform many other typical Excel functions.

Save the report in Excel format by clicking the File menu and choosing **Save as**. Choose a name and location for the file and click **Save**.

**Note:**

Reports containing drill-down groupings will not be expanded when exported.

**Hint:**

Click View > Toolbars to add standard Excel toolbars to the browser window.

### Export to Word

*Export to Word* downloads the report into a Microsoft Word document. A temporary name is given to the file, with the Word file extension (.docx).

Orders by Employee		Date: Friday, June 22, 2007 Time: 11:34:09 AM	
LName	CustomerID	OrderID	UnitPrice
Buchanan	BERGS	10654	\$22.00
			\$18.00
		\$7.45	<b>Sum Unit Price \$47.45</b>
	10866	\$19.00	\$4.50
		\$25.89	<b>Sum Unit Price \$49.39</b>
Buchanan	BLDNP	10297	\$14.40
			\$27.80
		<b>Sum Unit Price \$42.20</b>	

The report is exported to Microsoft Word format.

If Microsoft Word is installed, the report opens as a Word document. Edit the report as a Word document or save the report unedited.

Save the report in Word format by clicking the File menu and choosing **Save as**. Choose a name and location for the file and click **Save**.

**Notes:**

Reports containing drill-down groupings will not be expanded when exported.

Due to a MS-Word limitation, if a report contains more than 50 columns, then only the first 50 columns will be exported.

**Hint:**

Click View > Toolbars to add standard Word toolbars to the browser window.

### Export to PDF

*Export to PDF* opens the report in the current browser window as a PDF document viewable with Adobe Reader or in most modern browsers.

LName	CustomerID	OrderID	UnitPrice
Buchanan	BERGS 10654		\$22.00
			\$18.00
			\$7.45
			<b>Sum Unit Price \$47.45</b>
Buchanan	10866		\$19.00
			\$4.50
			\$25.89
			<b>Sum Unit Price \$49.39</b>
Buchanan	BLONP 10297		\$14.40
			\$27.80
			<b>Sum Unit Price \$42.20</b>
		Buchanan	BONAP 10730
	\$12.50		
	\$21.05		
	<b>Sum Unit Price \$51.00</b>		

The report is exported to Adobe Portable Document Format.

The Adobe toolbar is displayed across the top of the report, providing many typical PDF functions. Users can save, print and search the entire document.

Save the report in PDF format by clicking **Save a copy** from the Adobe toolbar. Choose the name and location and click **Save**. The default file type is **Adobe PDF Files (\*.pdf)**.

**Note:**

Reports containing drill-down groupings will not be expanded when exported. In order to view PDF reports from the browser, the Adobe Acrobat Reader plug-in must be installed. See the system administrator for additional help.

### Export to CSV

*Export to CSV* opens a new browser window and displays the report in comma-separated values within a spreadsheet (comma-delimited text file).

	A	B	C	D	E	F	G	H	I
1	Total Order	Product ID	Total Unit	Total Quar	Average Discount				
2	30982	27	\$105.30	90	8.33%				
3	62105	63	\$210.60	209	8.33%				
4	62934	15	\$86.80	122	1.67%				
5	63340	37	\$140.40	125	5.00%				
6	63485	48	\$71.40	138	10.83%				
7	84775	66	\$122.40	239	3.13%				
8	93217	43	\$331.20	174	0.56%				
9	106418	5	\$196.10	298	7.50%				
10	106684	50	\$149.50	235	2.50%				
11	107466	67	\$137.20	184	6.00%				
12	128318	3	\$114.00	328	1.67%				
13	129664	6	\$290.00	301	3.08%				
14	134935	28	\$473.20	252	2.69%				
15	137177	74	\$114.00	297	5.00%				
16	139671	8	\$504.00	372	6.54%				
17	144760	62	\$551.60	360	2.50%				
18	148816	73	\$201.00	293	4.71%				
19	149550	22	\$285.60	348	2.14%				
20	149984	45	\$129.20	508	7.50%				
21	150645	12	\$516.80	344	6.43%				
22	160895	32	\$460.80	297	7.33%				
23	181196	58	\$214.65	494	10.29%				
24	192258	25	\$235.20	318	8.61%				
25	202659	34	\$246.40	506	5.00%				
26	212436	4	\$413.60	453	7.50%				
27	213150	23	\$167.40	580	3.75%				
28	223507	49	\$388.00	520	3.10%				
29	224211	47	\$191.90	485	7.38%				
30	232615	14	\$469.65	404	6.73%				
31	244710	57	\$417.30	434	2.83%				
32	254972	44	\$435.20	601	6.04%				
33	258208	61	\$666.90	603	7.08%				

The report is exported to CSV format and viewed by the Microsoft Excel browser plug-in.

Save the report in CSV format by clicking the File menu and choosing **Save as**. Choose the filename and location and click **Save**. The default file type is **CSV** (comma delimited).

**Note:**

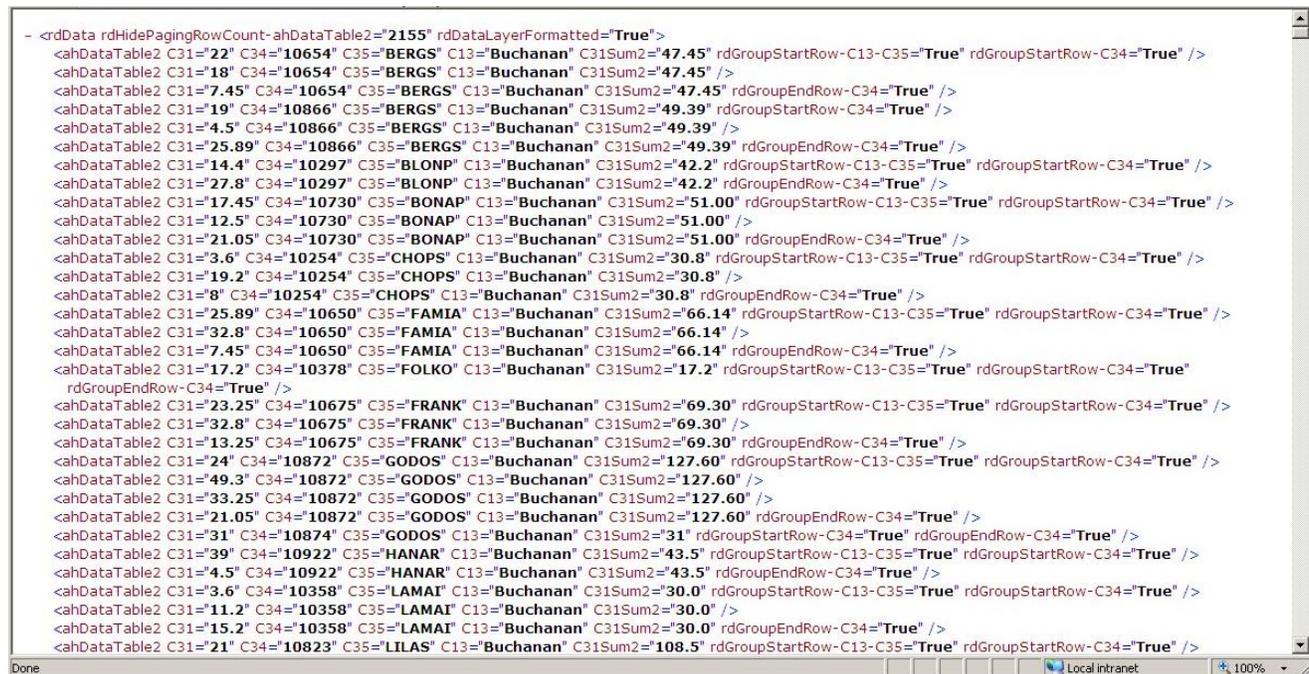
Reports containing drill-down groupings will not be expanded when exported.

**Hint:**

The CSV format is viewable by a variety of applications. It is best viewed by spreadsheet, database, and text-editing applications.

## Export to XML

*Export to XML* opens a new browser window and displays all the data displayed in the report in XML (Extensible Markup Language) format.



```

- <rdData rdHidePagingRowCount=ahDataTable2="2155" rdDataLayerFormatted="True">
  <ahDataTable2 C31="22" C34="10654" C35="BERGS" C13="Buchanan" C31Sum2="47.45" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="18" C34="10654" C35="BERGS" C13="Buchanan" C31Sum2="47.45" />
  <ahDataTable2 C31="7.45" C34="10654" C35="BERGS" C13="Buchanan" C31Sum2="47.45" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="19" C34="10866" C35="BERGS" C13="Buchanan" C31Sum2="49.39" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="4.5" C34="10866" C35="BERGS" C13="Buchanan" C31Sum2="49.39" />
  <ahDataTable2 C31="25.89" C34="10866" C35="BERGS" C13="Buchanan" C31Sum2="49.39" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="14.4" C34="10297" C35="BLONP" C13="Buchanan" C31Sum2="42.2" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="27.8" C34="10297" C35="BLONP" C13="Buchanan" C31Sum2="42.2" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="17.45" C34="10730" C35="BONAP" C13="Buchanan" C31Sum2="51.00" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="12.5" C34="10730" C35="BONAP" C13="Buchanan" C31Sum2="51.00" />
  <ahDataTable2 C31="21.05" C34="10730" C35="BONAP" C13="Buchanan" C31Sum2="51.00" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="3.6" C34="10254" C35="CHOPS" C13="Buchanan" C31Sum2="30.8" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="19.2" C34="10254" C35="CHOPS" C13="Buchanan" C31Sum2="30.8" />
  <ahDataTable2 C31="8" C34="10254" C35="CHOPS" C13="Buchanan" C31Sum2="30.8" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="25.89" C34="10650" C35="FAMIA" C13="Buchanan" C31Sum2="66.14" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="32.8" C34="10650" C35="FAMIA" C13="Buchanan" C31Sum2="66.14" />
  <ahDataTable2 C31="7.45" C34="10650" C35="FAMIA" C13="Buchanan" C31Sum2="66.14" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="17.2" C34="10378" C35="FOLKO" C13="Buchanan" C31Sum2="17.2" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True"
    rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="23.25" C34="10675" C35="FRANK" C13="Buchanan" C31Sum2="69.30" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="32.8" C34="10675" C35="FRANK" C13="Buchanan" C31Sum2="69.30" />
  <ahDataTable2 C31="13.25" C34="10675" C35="FRANK" C13="Buchanan" C31Sum2="69.30" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="24" C34="10872" C35="GODOS" C13="Buchanan" C31Sum2="127.60" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="49.3" C34="10872" C35="GODOS" C13="Buchanan" C31Sum2="127.60" />
  <ahDataTable2 C31="33.25" C34="10872" C35="GODOS" C13="Buchanan" C31Sum2="127.60" />
  <ahDataTable2 C31="21.05" C34="10872" C35="GODOS" C13="Buchanan" C31Sum2="127.60" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="31" C34="10874" C35="GODOS" C13="Buchanan" C31Sum2="31" rdGroupStartRow-C34="True" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="39" C34="10922" C35="HANAR" C13="Buchanan" C31Sum2="43.5" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="4.5" C34="10922" C35="HANAR" C13="Buchanan" C31Sum2="43.5" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="3.6" C34="10358" C35="LAMAI" C13="Buchanan" C31Sum2="30.0" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />
  <ahDataTable2 C31="11.2" C34="10358" C35="LAMAI" C13="Buchanan" C31Sum2="30.0" />
  <ahDataTable2 C31="15.2" C34="10358" C35="LAMAI" C13="Buchanan" C31Sum2="30.0" rdGroupEndRow-C34="True" />
  <ahDataTable2 C31="21" C34="10823" C35="LILAS" C13="Buchanan" C31Sum2="108.5" rdGroupStartRow-C13-C35="True" rdGroupStartRow-C34="True" />

```

The report data is exported to XML format and viewed by Internet Explorer.

Save the report data in XML format by clicking the File menu and choosing **Save as**. Choose the filename and location, and then choose **XML Files** from the drop-down menu. Click **Save** to create the XML file.

## Add to Archive

*Add to Archive* creates a new copy of the current report in the associated archive:

Sales by Employee w/Unit Price Greater Than or Equal to		Date: Friday, June 22, 2007 Time: 11:52:57 AM
Unit Price Greater Than or Equal to?:	75	Run Run and Hide Parameters
LName	UnitPrice	
Davolio		
	\$210.80	
	\$99.00	
	\$99.00	
	\$263.50	
	\$123.79	
	\$263.50	
	\$81.00	
	<b>Sum of Unit Price \$1,140.59</b>	
Fuller		
	\$97.00	
	\$263.50	
	\$123.79	
	\$123.79	
	\$123.79	
	\$263.50	
	\$263.50	
	\$123.79	
	\$123.79	
	\$263.50	
	<b>Sum of Unit Price \$1,769.95</b>	

Configuration > Archives > Archive for 'Sales by Employee w/Unit Price Greater Than or Equal to' Report

Find Archived Reports

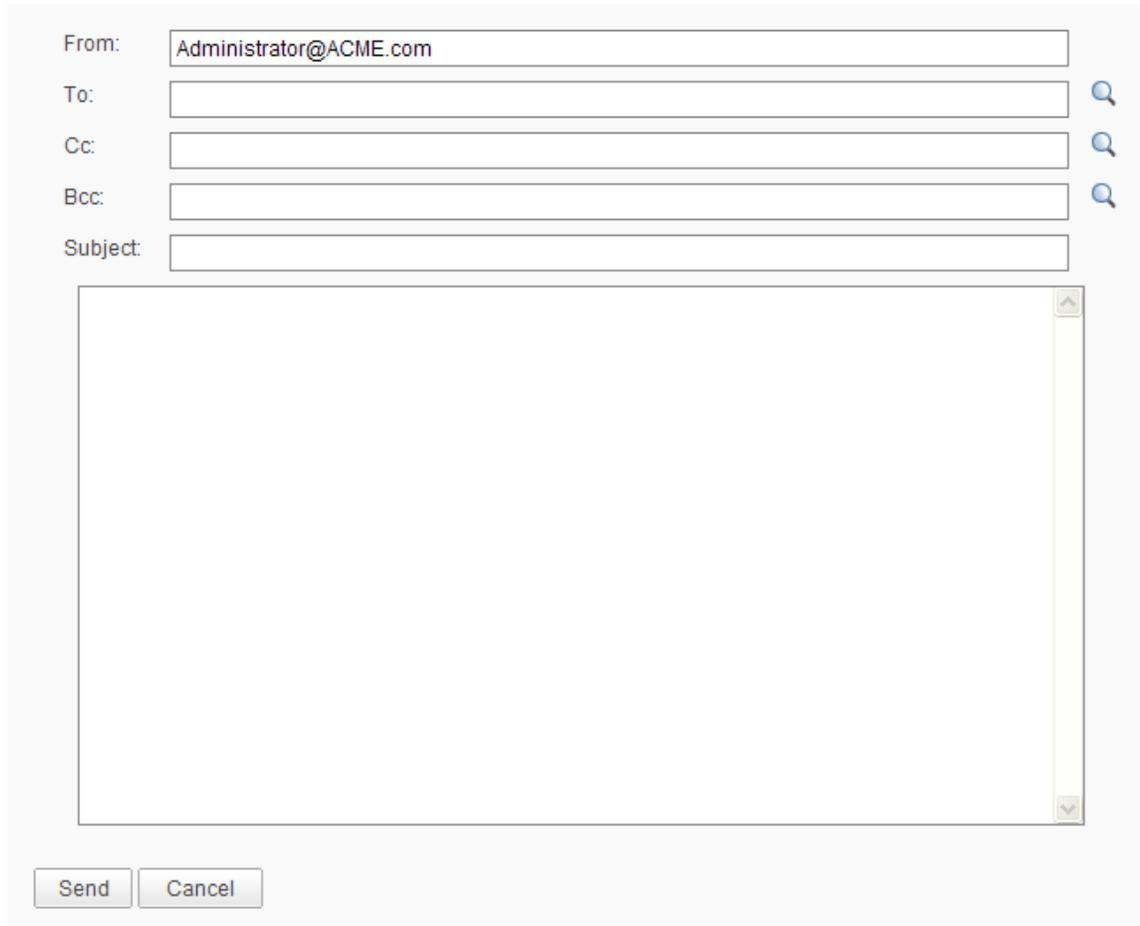
<input type="checkbox"/>	Archived Date	Owner
<input type="checkbox"/>	6/22/2007 11:53:01 AM	Admin

A copy of the *Sales by Employee w/Unit Price Greater Than or Equal to* report is added to the archive

The date and timestamp are updated when the archiving footer link is clicked. For this reason, the timestamp of the report at runtime may not match the timestamp in the archive.

## Send Report by Email

*Send Report by Email* opens a form where the email can be composed and recipients specified:



The form contains the following elements:

- From:** Administrator@ACME.com
- To:** [Empty field] with a search icon.
- Cc:** [Empty field] with a search icon.
- Bcc:** [Empty field] with a search icon.
- Subject:** [Empty field]
- Message Body:** A large, empty text area with a vertical scrollbar on the right side.
- Buttons:** 'Send' and 'Cancel' buttons at the bottom left.

Manually enter an email recipient(s) or click the respective  icon to view and select from a list of application users. Specify a Subject and message. When done, click **Send** to send the email the report attached. Click **Cancel** to cancel this export action.

**Notes:**

The 'From' email address is defaulted to the email address specified in the logged in user's Profile.

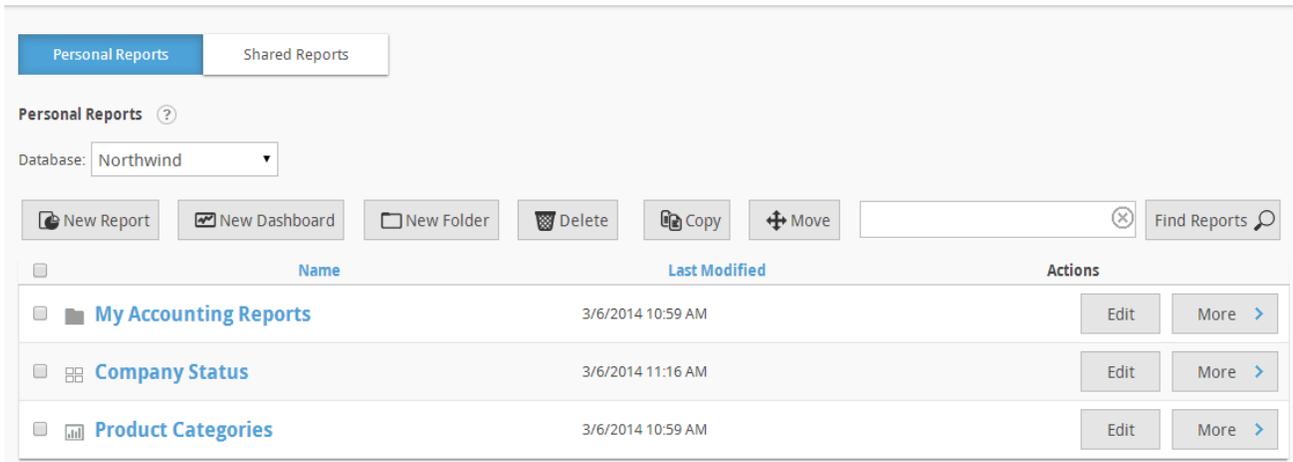
All fields except for Cc and Bcc are required.

## Running Reports

Now that you've spent time creating and polishing your reports, let's see how to run them.\



The **Reports** button displays the main page of the application.



A list of reports is available under the *Personal Reports* and *Shared Reports* tabs. If no reports have been created, this list is empty.

Click the name of the report to launch it in a new browser window.

## Interacting with a Report

### Categories (Preview)



Any reporting components that reference the *Category* data column will show only orders related to "Beverages".

The example above shows a field requesting a parameter value. Runtime parameters are defined on the *Modify Data Source* dialog box under the *Filter* tab. Click the **Modify Data Source** button to access the dialog box. A default value is chosen during the report-creation process and can be changed by the user.

**Note:**

Date values earlier than 01/01/1753 are *not* supported.

There are two options for running the report.

- **Run and Hide Parameters** - Run the report and hide parameter input box
- **Run** - Run the report and leave parameter input box visible

**Hint:**

If the report contains numerous parameters, click Run and Hide Parameters to provide more screen space for the report. Run the report again to input additional parameters. The  icon will hide the parameter area.

*Run* and *Run and Hide Parameters* affect the parameters for the report. Any additional settings specified in the Report Builder are left intact.

**Note:**

Run and Run and Hide Parameters are only available by placing a check in the 'Ask' checkbox when defining parameters.

### Cascading Filters

Cascading filter parameters produce one or more drop-down lists at runtime. The value selected from the first drop-down menu is used to filter the second drop-down menu and so on. The last parameter is selected from a list and passed to the report when the user clicks **Run**.

## New Report (Preview)

Date: Tuesday, November 19, 2013  
Time: 2:29:24 PM

Country

Region

City in list

Cascading filter parameters produce multiple, dependent drop-down menus.

### Interactive Sorting/Column Management in a Report

When a tabular report is run, the user can interact with the resulting columns. They have the ability to sort the table based on one column, adjust the column width, and rearrange the columns.



Interactions via the column header

In the example above, the column header, *Customer ID* is displayed as a link. The heading link allows the user to sort that column. The *sort* option was configured in the Column Configuration panel of the Table component in the Report Builder.

To the left of the header is a drag area. Mouse down on the drag area, move the mouse to the target location, and release the mouse to move the column.

To the right of the header is the column resize control. Mouse down on the control and drag the control to the left or right to reduce or expand the column width, respectively.

## Export Options



Export options always appear at the bottom of a report.

Export options give users the ability to export reports to popular formats such as Microsoft Excel and Adobe PDF. Users can also search the report, print from the browser and add the report to the archive. Add or remove export options through the Report Builder.

### Note:

The various export options will appear if the user viewing the report has Rights to add the respective export option(s) to the report in the Report Builder.

## Managing Reports

As reports are created in the application, it is important to learn how to organize and manage them. This chapter focuses on the various actions a user can take for each report. These actions include:

- Modify Report/Folder
- Rename Report
- Copy Report
- Move Report
- Modifying Scheduling Information
- Change Subscription to Report
- View Archives
- View Dependencies

Some actions can be performed in batch mode by enabling the checkbox adjacent to each report or report folder. Users can perform the following actions in batch mode:

- Delete Reports/Folders
- Copy Reports
- Move Reports

### **Note:**

Some of the actions listed above are not available to all users and/or all reports. Contact the system administrator if a particular action is needed but not available.

## Organizing Reports

Users can create and store reports in the instance root folder or within an existing folder. Administrators can create folders in the Shared Reports area, which can be accessed by all users or limited to users based on the role(s) assigned to the user.

### **To create a new folder to store reports:**

1. Navigate to a report area (e.g., Personal Reports, Shared Reports) or folder in which the new folder is to be created.
2. Click **New Folder**.

Personal Reports | **Shared Reports**

Shared Reports > **Create New Folder** ?

Folder:

Description:

**Folder Roles**

Access to Folder:  All Roles  Specific Roles

Available Roles: PEU, System Admin

Roles With Access: (empty)

Save | Back to Reports List

3. Enter the name of the new folder into the Folder field
4. OPTIONAL: Enter a description into the Description textbox.
5. OPTIONAL: As a designated administrator of a User Group and from the Shared Reports area, specify restricted access to this folder based on a user's role. By default, all roles have access to the folder. To limit access:
  - a. Select the **Specific Roles** option.
  - b. Move roles between the *Available Roles* and the *Roles With Access* lists by double-clicking on the listed role or by selecting the role and then clicking the ► (right) or ◀ (left) icon. At a minimum, the roles currently assigned to the user creating the folder must have access.
6. Click **Save** to create the new folder.

**To modify a report folder:**

1. Click **Edit** to modify the corresponding report folder:

<input type="checkbox"/>	Name	Last Modified	Actions
<input type="checkbox"/>	Marketing Reports	11/20/2013 9:39 AM	<input type="button" value="Edit"/> <input type="button" value="More &gt;"/>

2. Modify the folder name and the description, as desired, in the provided fields.
3. OPTIONAL: As a designated administrator of a User Group and from the Shared Reports area, specify restricted access to this folder based on a user's role. By default, all roles have access to the folder. To limit access:
  - a. Select the **Specific Roles** option.
  - b. Move roles between the *Available Roles* and the *Roles With Access* lists by double-clicking on the listed role or by selecting the role and then clicking the ► (right) or ◀ (left) icon. At a minimum, the roles currently assigned to the user creating the folder must have access.
4. Click **Save** to commit the changes.

Changes are reflected in the *Name* column and the *Last Modified* column is updated to the current timestamp.

**To delete one or more report folders:**

1. Select one or more folders by checking their checkboxes.
2. Click **Delete**.
3. Click **OK** to confirm the removal.
4. Alternatively, a single folder can be removed by hovering over the **More** button, clicking the **Delete** option, and confirming the action.

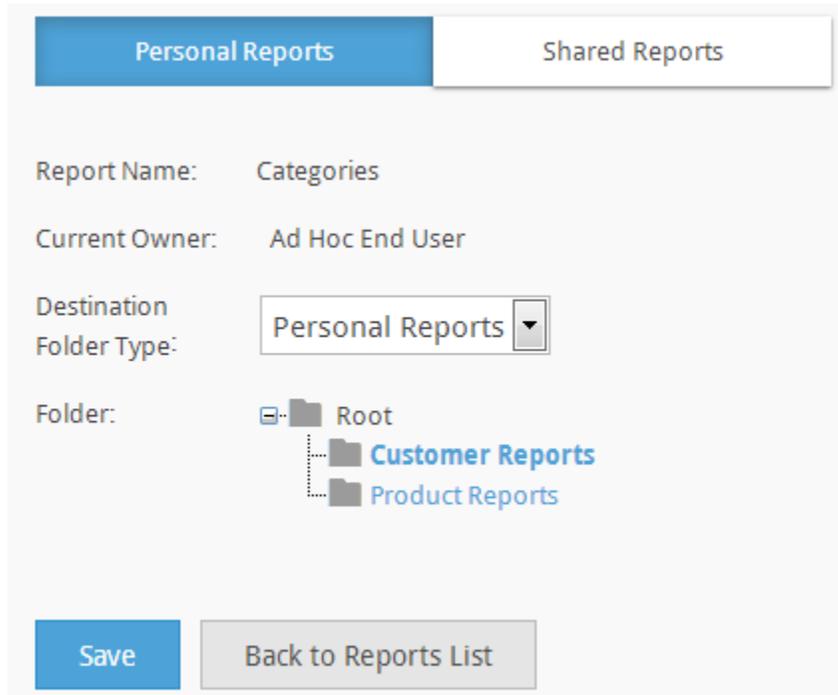
**Note:**

Deleting a report folder removes all reports stored within that folder. A backup copy of deleted reports is stored in the ..\\_Definitions\\_Reports\\_Backup directory before they are removed from the application. Imported reports will be deleted from being visible in the application interface but will not be deleted from the \_Reports directory.

After creating a new report folder, move reports out of the root folder to make the workspace more manageable.

**To move reports into a folder:**

1. To move a single report, hover your mouse cursor over the **More** button and select **Move** from the list of actions, or select the report by checking its checkbox and click **Move**. Multiple reports may be moved by selecting them reports and clicking **Move**.



The screenshot shows a configuration panel for a report. At the top, there are two tabs: "Personal Reports" (active) and "Shared Reports". Below the tabs, the following fields are visible:

- Report Name:** Categories
- Current Owner:** Ad Hoc End User
- Destination Folder Type:** A dropdown menu currently set to "Personal Reports".
- Folder:** A tree view showing a "Root" folder containing two sub-folders: "Customer Reports" and "Product Reports".

At the bottom of the panel, there are two buttons: "Save" and "Back to Reports List".

2. OPTIONAL: From the *Organization* drop-down menu, select a user group. Organizations are not available by default. The administrator must have specifically enabled the Organization capability and created multiple organizations.
3. From the *Destination Folder Type* drop-down list, select a folder type.

4. From the **Folder** tree, select a folder to store the report in.
5. Click **Save** to move the report.

## Scheduling Reports

The scheduling process is flexible and easy, and offers the ability to deliver reports via email as attachments in a variety of formats or as a link.

Scheduling reports is typically a two-step process;

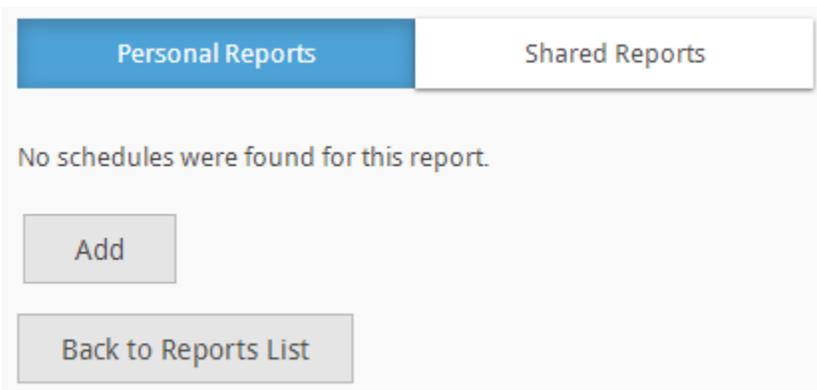
- 1) Specify when the report is scheduled to run.
- 2) Identify those who should receive it (subscribers).

### Hint:

If the option to schedule reports is not displayed, contact the system administrator. The ability to schedule reports is controlled by the role(s) assigned to the user.

To schedule a report, hover your mouse cursor over the **More** button and select *Schedule* from its drop-down list.

If the report has no schedules associated with it, the Schedules page will appear as:



If a schedule already exists for the report, the *Schedules* page will be displayed:

Personal Reports
Shared Reports

Add
Delete

<input type="checkbox"/> <b>Frequency</b>	<b>Schedule</b>	<b>Actions</b>
<input type="checkbox"/> Daily	At 10:00 AM every day Last Run Time: Never Next Run Time: 11/21/2013 10:00:00 AM	>

Back to Reports List

Click **Add** to create a new schedule for the report.

Click **Delete** to remove selected schedules for the report. Schedules can be selected by checking their checkbox.

The Schedules list can be sorted by clicking the *Frequency* or *Schedule* column headers.

The three actions available for a schedule are *Modify Schedule*, *Change Subscription*, and *Run Schedule*. The *Run Schedule* option will not be displayed until subscribers have been added to the schedule or if the report has expired.

Hover your mouse cursor over the > icon and select the appropriate action from the list.

Some or all of the following options are available when scheduling a new report:

Personal Reports
Shared Reports

Personal Reports > Schedules > Schedule for 'Customer Orders' Report ?

**Task Scheduling**

Report Name: Customer Orders

Output Format: HTML v

Add to Archive:

i Archiving format is set through AdHoc Database Administrator application.

**Scheduling Information**

Schedule Task: Daily v

Start Time: 08 v : 00 v

Start Date: 6/21/2010 v

End Date:  v

Repeat Task

Interval: 10 Minutes

Duration: 60 Minutes

**Schedule Task Daily**

Every 1 day(s)

Save
Back

The *Output Format* determines how the report is delivered in the email. HTML reports are embedded in the email and PDF, Word, Excel and CSV reports are sent as attachments.

Reports can be added to the archive whenever the scheduler delivers the report. If the report is added to the archive, the email contains a link to the directory containing the archives. The report is not embedded or sent as an attachment but rather saved to the archive directory.

The *Add to Archive* checkbox is only visible when archiving is enabled by the System Administrator. If the *Add to Archive* checkbox is checked, the *Output Format* will be set to the default archive format specified by the System Administrator and the *Output Format* list will be disabled.

The following options are displayed in the *Schedule Task* list (with the default set to *Daily*):

- Once
- Daily
- Weekly
- Monthly

As these options are selected, the following gray dialog boxes will either be hidden or will display options related to the scheduling option selected. If “Once” is selected, it’s hidden.

**Schedule Task Daily**

Every  day(s)

**Schedule Task Weekly**

Every  week(s) on:

Monday  Tuesday  Wednesday  Thursday  Friday

Saturday  Sunday

**Schedule Task Monthly**

Day  of the month(s)

The   of the month(s)

January  April  July  October

February  May  August  November

March  June  September  December

The *Start Time* specifies the time when the scheduler will run the report. The hour and minute options are displayed as drop-down lists.

The *Start Date* specifies the initial date when the scheduler will run the report. The date may be manually keyed in or populated from the calendar control by clicking on the  icon.

The *End Date* checkbox allows the user to let the report run indefinitely (if left unchecked). If checked, the option to specify a date to terminate report execution is displayed. Specification of the *End Date* is identical to the process for the *Start Date*.

The *Repeat Task* option allows a report to be run repeatedly, beginning at the *Start Time* and *Start Date* specified earlier. If the *Repeat Task* option is checked, the *Interval* and *Duration* for running the report may be specified. The *Interval* determines the frequency and the *Duration* determines “for how long”. Both values must be greater than 0, and the *Interval* value must be less than the *Duration* value.

The initial scheduling page example shown was for a report that did not require any user input. The following example is for a report that expects user input when it’s run:

Personal Reports
Shared Reports

### Task Scheduling

Report Name: Categories

Task Name: AdHoc\_ahReport1\_1

Output Format: HTML

Add to Archive:

### Scheduling Information

Schedule Task: Daily

Start Time: 08 : 00

Start Date: 11/20/2013

End Date:

Repeat Task

#### Schedule Task Daily

Every 1 day(s)

### Report Input Parameters

Parameter	Operator	Value	Actions
Categories.Category Name	Equal to	Beverages	

Save
Save As New
Un-schedule
Back

Since a scheduled report is run “unattended”, parameter values that would normally be supplied by the user (called “Ask” parameters) must be set at the time scheduling is established. The scheduling page is adjusted to allow the specification of the parameter values to be used when the scheduled report is run. Notice at the bottom of the schedule page a section labeled *Report Input Parameters* is displayed.

Reports may have multiple parameters defined. Every parameter requiring user input must have values set. To set the values for a parameter, click the icon and a *Parameter Details* dialog box will be displayed.

**Parameter Details:** ✕

Parameter: Categories.Category Name  
 Operator: Equal to  
 Value:

Clicking the “helper” icons and (when the parameter is date-based) may assist in selecting the values. Click **Save Parameter** to save the values to be used for the associated parameter when the report is run.

When the scheduling options have been completed, click **Save** at the bottom of the page to save the information and create the scheduled task.

If the *Subscribed Users* list is not displayed in the schedule page, then no users have elected to receive the report.

### Subscribed Users

User	Email
Ad Hoc End User	john.doe@MyDomain.com
Admin	administrator@MyDomain.com

Subscribed users are listed at the bottom of the schedule page.

**Hint:**

Test that the scheduled report is delivered as expected by first subscribing yourself and then running the report from the Scheduled Reports grid. The speed of delivery depends on the size of the report and the local network configuration.

## Subscribing to Reports

The Subscriber page is shown when you hover your mouse cursor over the  icon and select the **Change Subscription** option from the list of schedules for a report. Reports will only be delivered to users subscribed to receive the scheduled report.

Personal Reports

Shared Reports

Report Name: Product Summary

Frequency: Daily

Schedule: At 8:00 AM every day

Last Run: Never

Next Run: 11/21/2013 8:00:00 AM

### Subscribe / Unsubscribe Users

<input type="checkbox"/>	User	Email	Is Subscribed
<input checked="" type="checkbox"/>	Ad Hoc End User	john.doe@MyDomain.com	
<input type="checkbox"/>	Admin	administrator@MyDomain.com	

The subscriber page will present a list of potential recipients from the set of users associated with the current organization.

There are two actions available on the subscriber page; *Subscribe* and *Unsubscribe*. Clicking either of these options will perform the action on the selected user(s). The logged in user is highlighted (checked) by default.

To determine whether a user is subscribed or not, refer to the *Is Subscribed* column. The Is Subscribed status will be set to “Yes” for all users destined to receive the scheduled report.

**Notes:**

Only users with an email address can be subscribed to the report.

The ability to subscribe users to a report is controlled by the logged-in user's Role(s).

Only the logged-in user can subscribe to a report that relies upon external session parameters. Remote subscription of other users to this type of report is prohibited. Each user must subscribe to the schedule independently. This allows Ad Hoc to record the session parameter value for each user so that the correct value(s) are used when the report runs unattended.

## Sharing Reports

Reports can be copied to the *Shared Reports* area for all users to view.

Copying reports typically involves selecting the reports to be copied and clicking **Copy**. Single reports can be copied by clicking on the *Copy* action from the list of available actions for a report.

Enter a *New Report Name* and select a *Destination Folder Type* of "Shared Reports". The option to select a folder within the Shared Reports area may be displayed.

Click **Save** to save the reports in the new destination.

**Notes:**

When a report is copied, the report's name will be prefixed with Copy of (#) in order to distinguish them from the original. The "(#)" will only occur after a report is copied more than once.

An Expiration Date is used to designate when a time sensitive report is deemed obsolete. The date must be a date greater than the current date.

Any corresponding report archives are not copied with the report.

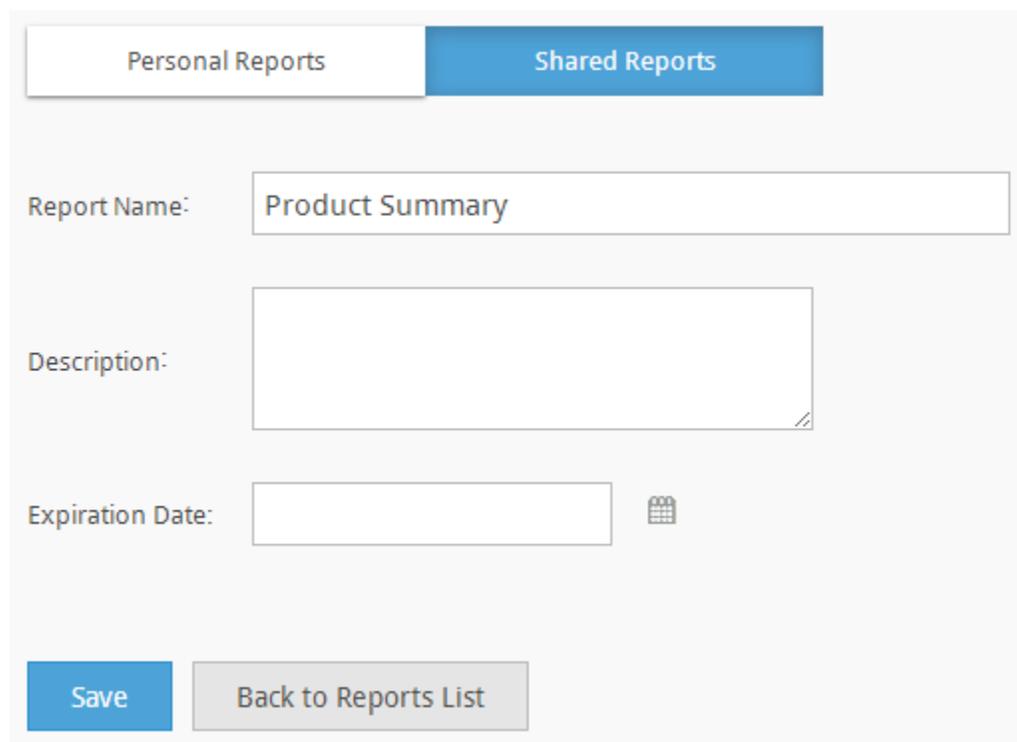
## Modifying Reports

### To modify a report:

To modify a report, click the **Edit** button associated with the report. The Report Builder interface will be invoked.

### To rename a report:

To rename a report, hover your mouse cursor over the **More** button and select *Rename* from its list. The report properties will be displayed:



The screenshot displays the Report Builder interface for modifying a report. At the top, there are two tabs: "Personal Reports" and "Shared Reports", with "Shared Reports" being the active tab. Below the tabs, there are three input fields: "Report Name:" with the value "Product Summary", "Description:" with an empty text area, and "Expiration Date:" with an empty date field and a calendar icon. At the bottom, there are two buttons: "Save" and "Back to Reports List".

Modify the *Report Name*, *Description*, and *Expiration Date* as desired.

Click **Save** to save the changes.

### To delete one or more reports and its associated archives:

Select the desired reports by checking their checkboxes. Click **Delete** to remove the selected reports.

Click **OK** when prompted to confirm the removal.

#### Note:

Deleting a report removes the report from the Reports list.

A copy of deleted reports and dashboards are placed in the `_Definitions\ Reports\ Backup` folder. Imported reports will no longer be visible in the application interface but will not be deleted from the `_Reports` folder.

Archived copies of deleted report(s) will be deleted according to the setting specified by the System Administrator in the Application Settings webpage.

## Archiving Reports

Archiving reports gives users the ability to retain copies of a single report as the report is changed over time. Reports created with Ad Hoc are interactive and dynamic - the report data may change depending on when the report is executed or modified. A report archive stores copies of the report to retain important data.

### To add a report to the archive at runtime for report built with the **Add to Archive** option:

1. Ensure that the *Add to Archive* checkbox is checked in the Export Options tab.
2. Run the report and click the *Add to Archive* icon at the bottom of the report.
3. When the Reports list is refreshed, the *View Archives* action will be available for the report.

### To view and manage an archived report:

To view archived reports, hover your mouse cursor over the report's **More** button and select *View Archives* from its drop-down list.

<input type="checkbox"/> Delete Archives		<input type="checkbox"/> Back to Reports List	
<input type="checkbox"/>	<a href="#">Archived Date</a>	<a href="#">Owner</a>	<a href="#">Actions</a>
<input type="checkbox"/>	<a href="#">11/20/2013 1:09:43 PM</a>	(shared)	

Click the *Archive Date* link of the desired archive in the list to view the report.

Click the  icon to email the archived report.

Click the *Archived Date* column header to sort the list.

Archived reports can be selected for deletion by checking their checkboxes. Click **Delete Archives** to remove the selected reports from the archives. Confirm the deletion by clicking **OK** when prompted for confirmation.

## Viewing Dependencies

Ad Hoc allows the user to view report dependencies. The broad dependency categories are:

- Firm dependencies – Items upon which the report depends.
- Loose dependencies – Items that can be adjusted and still allow the report to run.
- Firm relations – Items that depend on the presence of the report.
- Loose relations – Items that may need the report to be present.

To view the dependencies report, hover your mouse cursor over a report’s **More** button and select *View Dependencies* from its list.

Here’s an example of a fully collapsed view of a dependency page:

Selected Report:  ▼

▼ 'Product Summary' depends on the following:

▼ 'Product Summary' depends loosely on the following:

▼ The following depend on 'Product Summary':

▼ The following depend loosely on 'Product Summary':

[Back to Reports List](#)

Click the ▼ or the ▲ icons to expand or collapse a report section.

## Dashboards

Dashboards are created by adding and configuring dashboard panels. A panel contains one of the following content types:

- **Pre-defined reports** - Canned reports that provide a quick view of a user's most *frequently-viewed* and most *recently-viewed* reports.
- **Favorites** - A user-specified list of reports contained within a folder accessible from the My Personal Reports page.
- **URL** - Any valid URL the user can access.
- **Reports** - A user-specified report accessible from the My Personal Reports or Shared Reports pages.

Panels can be organized into columns in the dashboard. A column can contain one or many panels but, at a minimum, a dashboard must contain at least one panel in order to be saved.

Personal Reports > **Create New Dashboard** ?

Dashboard Name:  [Preview Dashboard](#) [Save](#) [Save As...](#) [Back to Reports List](#) [Dashboard Settings](#) ▼

[Add a Panel](#) [Delete Panels](#)

<input type="checkbox"/>	Panel Caption	Initial Column	Initial Display	Content	Actions
<input type="checkbox"/>	Order Details	0	Yes	Order Details Report	<a href="#">&gt;</a>
<input type="checkbox"/>	Logi DevNet	0	Yes	<a href="http://sampleapps.logianalytics.com/SampleBasicChart">http://sampleapps.logianalytics.com/SampleBasicChart</a>	<a href="#">&gt;</a>

The Dashboard Builder Panel Interface

The **Create New Dashboard** interface is shown above, with a few panels already defined.

The Dashboard Panel definition dialog box

**To add a dashboard panel:**

An unlimited number of panels can be added to a dashboard. The panels can be configured to appear in the dashboard layout using panel settings and the panel drag feature controls provided.

1. Click **Add** to view the Panel Settings dialog box.
2. Enter a *Name* and *Description* for the panel in the fields provided.
3. Select an *Initial Column* value to specify where the panel should initially appear in the dashboard. The default value is 1 and the available values will depend on the number of columns configured in the dashboard settings.
4. Specify the *Initial Display* setting based on:

- Yes - display the panel at initial viewing of the dashboard (default).
  - No - do not display the panel at initial viewing of the dashboard. If this setting is chosen the user can add the panel later via the Change Dashboard option within the dashboard viewer.
5. Specify the panel *Height*, *Minimum Height*, and *Minimum Width*, if necessary. If left blank, Ad Hoc will set an automatic Height.
  6. Select the *Panel Content* type (default is *Report*).
  7. Specify the report, folder, or URL in the field provided:
    - a. For *Pre-defined Reports*, select one of the listed reports and click **OK**.
    - b. For *Favorite Reports*, locate and select a *Personal Reports* folder and click **OK**.
    - c. For *URL*, specify a complete address. Click **Test URL** to confirm that the URL can be viewed.
    - d. For *Report*, locate and select a report located in the *Personal Reports* or *Shared Reports* folder.
  8. Click **Save Panel** to save the panel and return to the Dashboard Builder interface.
  9. If the dashboard has not been previously saved, then enter a name for the dashboard in the field provided.
  10. Rearrange panels as necessary with the up/down arrows
  11. Click **Save** to save the dashboard definition.

**Hint:**

The dashboard can be previewed at any time by clicking **Preview Dashboard**, as long as the Panel Settings panel is not displayed.

**To modify a dashboard panel:**

1. Hover your mouse cursor over the  icon for the panel and select *Modify Dashboard Panel* from its drop-down list.
2. Modify the panel as desired.
3. Click **Save Panel** to save your changes and return to the Dashboard Builder interface.

4. If the dashboard has not been previously saved, then enter a name for the dashboard in the field provided.
5. Click **Save** to save the dashboard definition.

**To delete one or more dashboard panels:**

1. Check the desired panels' checkboxes.
2. Click **Delete**.
3. Click **OK** to confirm the removal when prompted.
4. If the dashboard has not been previously saved, then enter a name for the dashboard in the field provided.
5. Click **Save** to save the dashboard definition.

**Note:**

At least one dashboard panel must be defined in order to be able to save the dashboard.

**To modify a Dashboard's Settings:**

Click the  icon to expand the top area of the page to show the dashboard settings, which and allow the general dashboard appearance to be customized:

Personal Reports > Create New Dashboard ?

Dashboard Name: Favorites Dashboard    Preview Dashboard    Save    Save As...    Back to Reports List    Dashboard Settings ⌵

### Description

### Dashboard Expiration Date

### Dashboard Header

Title:                       Date:

Description:                       Time:

### Dashboard Body

Free-form Layout:                       Dashboard Adjustable:

Dashboard Tabs:                       Dashboard Columns: 2 ▾

### Style

Pick a Style: Clarity ▾

New Report (Preview)                      Date: Friday, March 07, 2014  
Time: 4:08:33 PM

Page 1 of 2

Order ID	Customer ID	Order Date	Ship Via	Ship Name	Ship Region	Freight
10248	VNET	1/09/1996	3	WVine et al.croix Cavalier		\$33.00
10249	FOAMSP	1/5/1996	1	Tuna Specialities		\$12.00
10250	HAWAR	1/8/1996	2	Harar Camer	RJ	\$66.00
10251	VCTE	1/8/1996	1	Vitacalles en stock		\$41.00
10252	SUPRO	1/9/1996	2	Supplies dilices		\$11.00
10253	HAWAR	1/11/1996	2	Harar Camer	RJ	\$58.00
10254	CHOPS	1/11/1996	2	Chop sury Chinese		\$27.00
10255	RCSU	1/12/1996	3	Richter Supermark		\$148.00
10256	WELU	1/12/1996	2	Widlegen Vegetables	SP	\$14.00
10257	HLAA	1/16/1996	3	HLAARD/Alaestie	Tachra	\$52.00
10258	ERNGH	1/17/1996	1	Ernst Handel		\$141.00
10259	CENTC	1/18/1996	3	Centro comercial Mochizuma		\$3.00
10260	GRPA	1/19/1996	1	Orliva Kavalaten		\$55.00
10261	QUEDE	1/19/1996	2	Que Deice	RJ	\$1.00
10262	BATIC	1/20/1996	3	Batharata Canyon Grocery	ME	\$48.00
10263	ERNGH	1/23/1996	3	Ernst Handel		\$148.00
10264	FOLKO	6/6/2007	3	Folk och frid		\$4.00

Add a Panel    Delete Panels

The *Dashboard Settings* area, provides the ability to configure a dashboard's general appearance and provide an optional description. A panel's appearance is controlled by the selected dashboard *Style*, which gives the dashboard a specific "look and feel". The available dashboard styles are:

- (None)
- LemonLime
- RedWine
- BlackPearl
- Light
- Silver
- Clarity
- Mocha
- Technology
- Classic
- Nature
- Transit
- Gray
- Ocean
- Tropical
- Harmony
- Professional

**Notes:**

The system administrator may add additional Dashboard Styles to this list.

The Dashboard Style will not control the appearance of any of the reports viewed in a panel.

Specify or modify the *Description*, *Dashboard Expiration Date* and *Header* content.

The *Dashboard Body* properties control the initial functional behavior of the dashboard.

When checked, the *Free-Form Layout* property displays the panels in a non-columnar layout that allows you to reposition the panels anywhere on the page at runtime.

The *Dashboard Adjustable* property determines whether panel positions can be adjusted by the end-user.

The *Dashboard Tabs* property determines whether the end-user can rearrange the panels into different tabs.

The *Dashboard Columns* property sets the lattice framework for the panels. This attribute is disabled if the Free-Form Layout property is checked.

Click the  icon to collapse/hide the Dashboard Settings panel.

Click **Save** to save any changes made.

**Note:**

The *Description* text appears under the dashboard's name in the Reports list in the Personal Reports and Shared Reports areas.

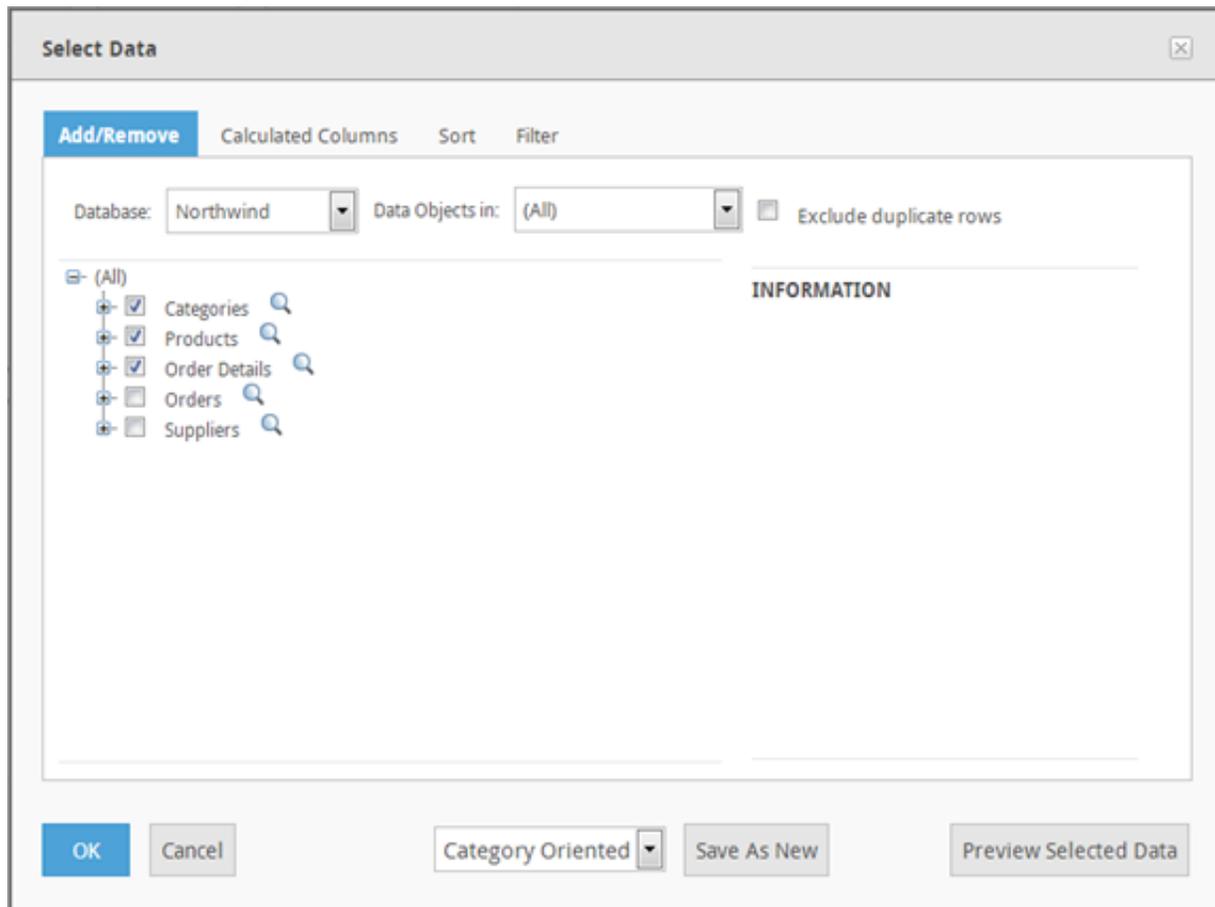
## Multiple Data Sources

Most Ad Hoc reports rely on a single data source. All of the display elements (display tables, crosstabs, and charts) in the report display data from that source. Logically this makes sense because analytical reports are typically used to make a point, tell a story, or reveal information about the data.

Ad Hoc is initially configured to accept data from a single data source; however, if the System Administrator can configure Ad Hoc to allow the end-user to select multiple data sources for a report.

If the System Administrator enables the “Multiple Data Sources” option, the *Select Data* dialog box changes for all users.

To create a new data source, click the **Modify Data Source** button. The *Select Data* dialog box is displayed.



The drop-down list of data sources appears at the bottom of the dialog box along with a **Save as New** button. Select the data objects for the new data source from the data objects tree and click the *Save as New* button. Enter a name for the data source in the *Save as New* dialog box and click **OK** to confirm it.

**Note:**

Every data-oriented display element in the report needs a data source. As they are added to the report definition, the assumption is that the currently selected data source is to be used.

## Mobile Reports

Users have the ability to create mobile reports with Ad Hoc. These reports are defined through the Ad Hoc Report Builder interface in the same way regular reports are defined.

The System Administrator must enable the Mobile Reports option for non-administrative users by including the associated right in one of the user's roles. Without that right, the mobile mode option is not displayed to the user.

However, there are limitations in the report definitions: they're not allowed to include Export options. When the Mobile On toggle is set, the Exports element is not displayed in the ADD panel.

Regular reports can be either converted to mobile reports or copied and converted to a mobile equivalent. If, during editing, the mobile option is selected, the user will be prompted to remove Export options before the report can be saved as a mobile report.

If a scheduled report is converted to a mobile report, all schedules for the report will be removed when the report is saved.

Mobile reports can only be linked to other mobile reports. Links to normal reports will be removed when a mobile report is saved.

When accessing mobile reports through a mobile device, the user may only view the report. Users can't create, modify, copy, rename, or delete a report from their mobile device. In addition, some home page considerations are basically ignored and the user is taken to the most logical report list based on their current home page settings.

The mobile device will only display the mobile reports and folders that contain mobile reports. Only the Personal, Shared and Global reports areas are available from the mobile device.

Mobile reports are identified in the reports list with an  icon. From a reports list the user would see:

	Name	Last Modified	Actions	
 	Customers	7/18/2016 1:59 PM	Edit	More >
 	Customers - Mobile	7/18/2016 1:59 PM	Edit	More >
 	Customers by Region	7/18/2016 2:00 PM	Edit	More >

The Ad Hoc Report Builder interface displays a Mobile On/Off icon that toggles the mobile mode for the building and validation of a mobile report:



Other differences between the normal and mobile mode include:

- The default *Paging Style* on the *Table Settings* and *Crosstab Settings* tabs is set to “Append Rows” for mobile mode and “Interactive Paging” for normal mode.
- Pixel widths for columns in mobile mode are removed. The table width is set to 100%.
- A resizer element is automatically added to display elements in mobile mode.

## Contact Us

For more information about other Logi Analytics products or assistance beyond this user manual, please contact Logi Analytics in the following ways:

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