



## Pentaho User Console Guide



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# Introduction

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The Pentaho BI Platform is a Web-based framework that leverages elements of Pentaho Analysis and Pentaho Reporting to provide easy-to-use tools for creating and sharing Pentaho Analyzer reports, ad hoc reports, and dashboards. It is the heart of the BI Suite, which also includes powerful software to prepare your data and create detailed reports.

The BI Platform Enterprise Edition includes two graphical user interfaces: The Pentaho User Console, which helps you discover patterns, trends, and other hidden information about your data; and the Pentaho Enterprise Console, which gives sysadmins, IT managers, CIOs, and database administrators fine-grained control over every aspect of BI Platform configuration, management, and security.

The purpose of this guide is to teach business users how to use the Pentaho User Console. The instructions below assume that the BI Platform has been properly configured for users, roles, and data sources through the Pentaho Enterprise Console.

# First Steps

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Your system administrator, IT manager, or supervisor should have provided you with a Web address and login credentials for the Pentaho User Console. If not, now is the time to inquire about them.

## How to Log Into the Pentaho User Console

---

Follow these steps to log into the Pentaho User Console:

1. Open a Web browser and type in the address of the Pentaho server.  
You'll see an introductory screen with a **Login** button in the middle.
2. Click **Login**.  
A login-related pop-up appears.
3. Type your user name and password in the appropriate fields and click **Login**.

You are now logged into the Pentaho User Console, and ready to start creating and running reports and Pentaho Analyzer reports.

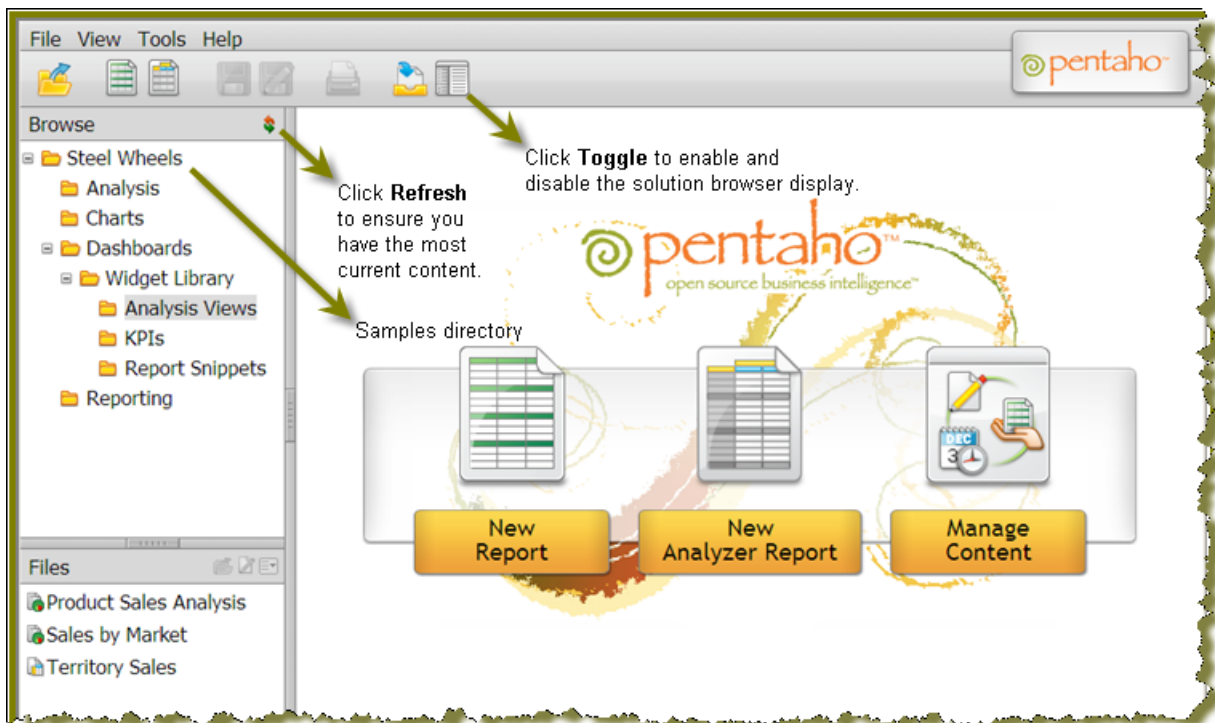


## Navigating the Pentaho User Console

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The Pentaho User Console was designed to be intuitive to users accustomed to standard file managers like Windows Explorer, and Web browsers like Firefox.

The first thing you will see when logging in is the quick launch, shown below:



**Note:** If you do not have a Pentaho Dashboards Enterprise Edition entitlement, the **New Dashboard** button will instead be **Manage Content**, which will open a dialog box that offers quick availability to the edit, share, and schedule functions for existing content.

Click one of the three icons in the center of the screen to create a new ad hoc report, Pentaho Analyzer report, or dashboard.

The button bar near the top of the page also contains icons for starting new ad hoc reports, Pentaho Analyzer reports, and dashboards, along with a button to print the current report or Pentaho Analyzer report, and to open a previously saved solution.

The menu above the button bar performs these same functions, plus administrative actions if you are logged in as an administrator, and also offers access to My Workspace and external links to help and support resources.


The three buttons on the quick launch page appear when you log onto the Pentaho User Console for the first time, and when you close all tabs in the solution browser.

You can change views between My Workspace and the solution browser at any time by clicking the rightmost icons in the top button bar, or through the **View** menu.

The navigation pane on the left allows you to browse through your existing solution folders. Solutions are content files such as dashboards and reports inside the folder. You can create and delete solution folders by right-clicking inside the navigation pane. You can also examine information associated with solution folder contents by right-clicking and selecting **Properties**.

## Creating a New Solution Folder

Follow the instructions below to create a new solution folder in which to save solution (content) files such as dashboards, ad hoc, and analyzer reports.

1. Click  (Toggle Browser) so that you can see navigation pane (Browse) on the left.
2. Scroll down to the end of the list of solution folders and right-click to display the **New Folder** dialog box.

**Note:** If you want to create a sub-folder inside an existing solution folder, right-click on the existing folder and select **New Folder**.


3. In the **New Folder** dialog box, type a name for your folder and click **OK**.


**Note:** The repository is refreshed. This action may take a moment.

The new folder appears in the navigation pane.

## Deleting a Solution Folder

Follow the instructions below to delete a solution folder.

1. Click  (Toggle Browser) so that you can see navigation pane (Browse) on the left.
2. Scroll down to the solution folder you want to delete, right-click, and select **Delete**. You will be asked to confirm your delete request.
3. Click **OK**.

 **Note:** The repository is refreshed. This action may take a moment.

The folder disappears from the navigation pane.

## Using My Workspace

My Workspace is a graphical overview of the reports and Pentaho Analyzer reports you've created and scheduled. Click the triangle on the left side of each category to see the elements it contains.

Reports that you've created or have access to will have options to the right of each report listing to suspend or run them, and schedules have options to suspend, run, or delete them.

### Waiting

This category lists all private schedules that will run in the future. Clicking **Cancel** will delete the schedule. If you want to suspend a schedule, you should use the **Suspend** function of the My Schedules list instead.

### Complete

Each report that has been run via a schedule will show up in this list. Every time the schedule executes, it overwrites that report's previous entry in the Complete list.

### My Schedules

This category contains a comprehensive list of your private schedules, including those that are not currently waiting to run. This will be identical to your Waiting list unless you have suspended any of your schedules.

### All Schedules

This is a combined list of public and private schedules under your control. It is only viewable by administrator-level users.

### Public Schedules

This is a list of all public schedules set by the administrator from the Pentaho Enterprise Console. You can run a public schedule manually, but you cannot change its interval through the Pentaho User Console.




# Adding a Data Source in the Pentaho User Console

---



The Data Sources feature allows you to connect to your data quickly so that the data can be used to create reports, (such as ad hoc reports, dashboards, and analyzer reports), in the Pentaho User Console. For example, when CSV data is uploaded to the Pentaho BI Server metadata models are automatically generated for each data source. The models can be further customized to adjust field names, formatting, aggregation types, and dimensional hierarchies (for Pentaho Analysis).

If you are running a test environment, you can quickly add, edit, and delete a relational or CSV data source in the Pentaho User Console using the Data Source wizard. You can restrict access to a data source by individual user or user role; by default, authenticated users are limited to view-only permissions. (See "Assigning Data Source Permissions for the Pentaho User Console" in the **Pentaho Security Guide** for more information.) This means that they are limited to selecting a data source from a list of available options.

 **Note:** Non-administrative users of the Pentaho User Console do not see icons or buttons associated with adding, editing, or deleting a data source. They are also not allowed to create a data source.

When selecting a relational data source, users can query against the data source within the scope of data defined in query you set up. If users choose a CSV-based data source, data is loaded from the CSV file and staged on the Pentaho BI Server.

The **Data Source Wizard**, which allows you to set up access to a relational data source or CSV data source in the Pentaho User Console, is available in the following instances:

- When you click the **New Data Source** button on the Pentaho User Console Quick Launch page
- When you select **File -> New -> Data Sources** in the Pentaho User Console menu bar
- When you select **File -> Manage -> Data Sources** from the Pentaho User Console menu bar and click  (Add)
- When you click **Add** in the **Select a Data Source** step in Ad Hoc Reports
- When you click **Create Data** in charts in the Dashboard
- When you click  (Add) as a first step of the create **Data Table** process
- When you click **Create New Data Source** when creating a new Analyzer report

## Using Pentaho Metadata Editor


In a production environment, users of the Pentaho User Console get access to data for creating ad hoc reports and building dashboards from metadata models provided by an administrator. Using Pentaho Metadata Editor (PME), you can restrict what data a user can access down to a table, column, or row. This type of security fine-tuning, and many other capabilities, are not provided by the Data Sources feature. The default metadata models created when adding new data sources in the Pentaho must be opened in Pentaho Metadata Editor for further customization.

For more information, refer to the *Pentaho Metadata Editor Guide* available in the Pentaho Knowledge Base.

## Adding a JDBC Driver

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Before you can connect to a data source in any Pentaho server or client tool, you must first install the appropriate database driver. Your database administrator, CIO, or IT manager should be able to provide you with the proper driver JAR. If not, you can download a JDBC driver JAR file from your database vendor or driver developer's Web site. Once you have the JAR, follow the instructions below to copy it to the driver directories for all of the BI Suite components that need to connect to this data source.


 **Note:** Microsoft SQL Server users frequently use an alternative, non-vendor-supported driver called JTDS. If you are adding an MSSQL data source, ensure that you are installing the correct driver.

## Backing up old drivers


You must also ensure that there are no other versions of the same vendor's JDBC driver installed in these directories. If there are, you may have to back them up and remove them to avoid confusion and potential class loading problems. This is of particular concern when you are installing a driver JAR for a data source that is the same database type as your Pentaho solution repository. If you have any doubts as to how to proceed, contact your Pentaho support representative for guidance.

## Installing JDBC drivers

Copy the driver JAR file to the following directories, depending on which servers and client tools you are using (Dashboard Designer, ad hoc reporting, and Analyzer are all part of the BI Server):

 **Note: For the BI Server:** before copying a new JDBC driver, ensure that there is not a different version of the same JAR in the destination directory. If there is, you must remove the old JAR to avoid version conflicts.

- **BI Server:** /pentaho/server/biserver-ee/tomcat/lib/
- **Enterprise Console:** /pentaho/server/enterprise-console/jdbc/
- **Data Integration Server:** /pentaho/server/data-integration-server/tomcat/webapps/pentaho-di/WEB-INF/lib/
- **Data Integration client:** /pentaho/design-tools/data-integration/libext/JDBC/
- **Report Designer:** /pentaho/design-tools/report-designer/lib/jdbc/
- **Schema Workbench:** /pentaho/design-tools/schema-workbench/drivers/
- **Aggregation Designer:** /pentaho/design-tools/agg-designer/drivers/
- **Metadata Editor:** /pentaho/design-tools/metadata-editor/libext/JDBC/

 **Note:** To establish a data source in the Pentaho Enterprise Console, you must install the driver in both the Enterprise Console and the BI Server or Data Integration Server. If you are just adding a data source through the Pentaho User Console, you do not need to install the driver to Enterprise Console.

## Restarting


Once the driver JAR is in place, you must restart the server or client tool that you added it to.

## Connecting to a Microsoft SQL Server using Integrated or Windows Authentication

The JDBC driver supports Type 2 integrated authentication on Windows operating systems through the **integratedSecurity** connection string property. To use integrated authentication, copy the **sqljdbc\_auth.dll** file to all the directories to which you copied the JDBC files.


The **sqljdbc\_auth.dll** files are installed in the following location:

```
<installation directory>\sqljdbc_<version>\<language>\auth\
```

 **Note:** Use the **sqljdbc\_auth.dll** file, in the x86 folder, if you are running a 32-bit Java Virtual Machine (JVM) even if the operating system is version x64. Use the **sqljdbc\_auth.dll** file in the x64 folder, if you are running a 64-bit JVM on a x64 processor. Use the **sqljdbc\_auth.dll** file in the IA64 folder, you are running a 64-bit JVM on an Itanium processor.

## Creating a Relational Data Source in the Pentaho User Console

Follow the instructions below to create a relational data source. In addition to allowing you to connect to your database (using JDBC), you must also enter a SQL statement that defines the "scope," (similar to a database view), of your data source.


 **Note:** In the context of the Pentaho User console, a relational "data source" is a combination of a connection plus a query. Pentaho recommends that you use the Pentaho Metadata Editor to create relational data sources for a production environment.


You can customize how columns are presented to users who are building queries against the new data source; for example, you can define "friendly" column names and select options that define how data is aggregated (sum, min., max., etc.), and more.

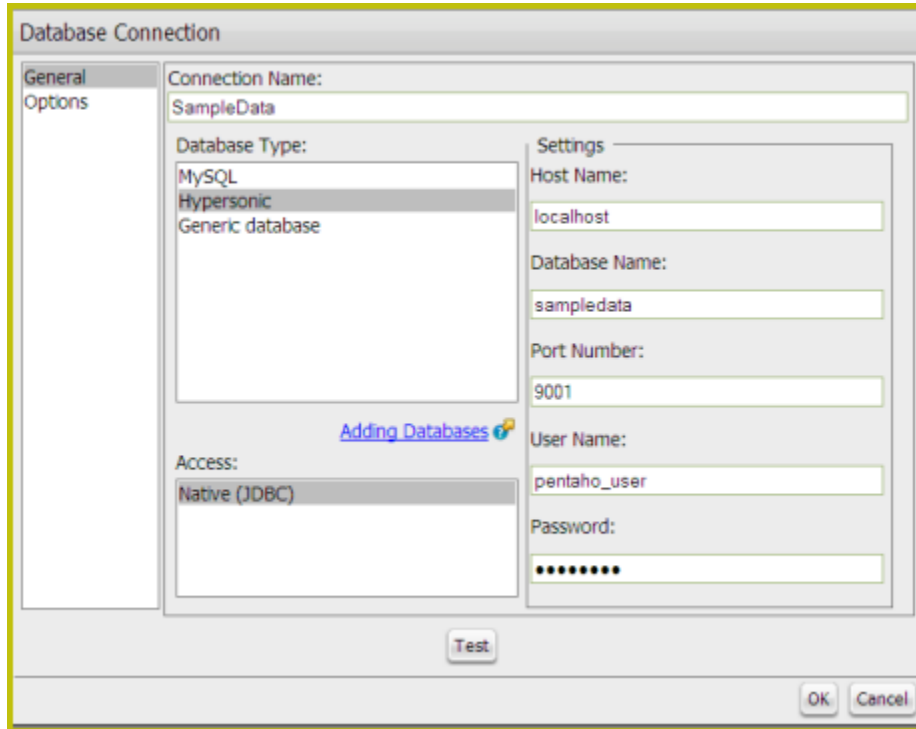
Once you create the data source, it is available to users of the Dashboard Designer, Chart Designer, and Ad Hoc Report.


You must be logged on to the Pentaho User Console as an administrator to follow the instructions below. Additionally, your database must be up and running in order for you to complete the steps required in the Data Source Wizard.

1. In the **Data Source Wizard**, type a name for the new data source in the **Data Source Name** field.

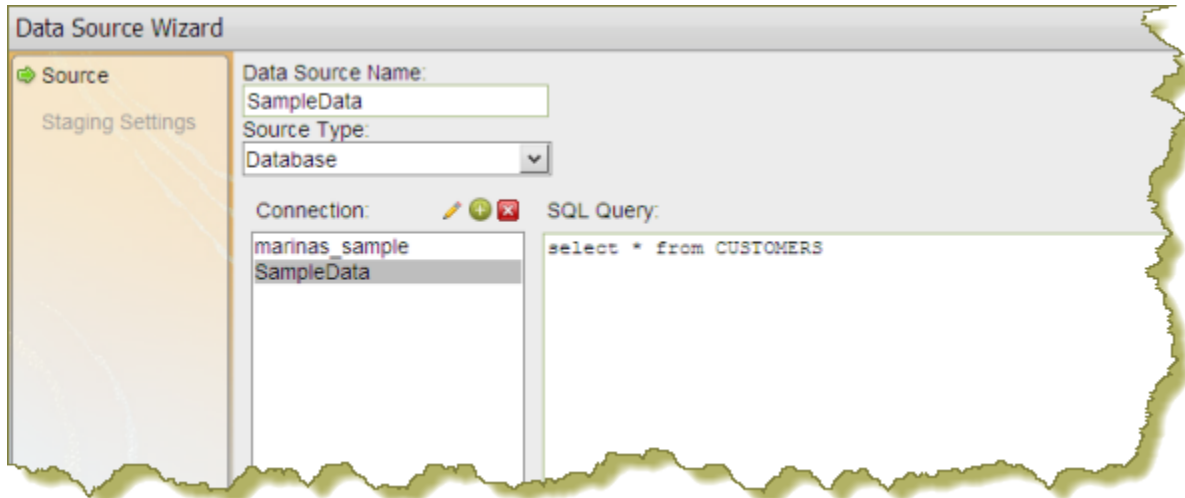
 **Note:** The name of the data source is important because it becomes the name of the data source displayed in Analyzer, Ad Hoc Report, and Chart Designer.

2. Under **Source Type**, select **Database** as your data source type.
3. If not already configured, click  (Add) to add a connection to the database that contains the content you want to access. The **Database Connection** dialog box appears.



 **Note:** If this is the first time you are using the wizard, you will not see a list of connections under Available Connections. When you have added your connection, the connection name will appear in the list. Click the **Adding Databases** hyperlink if you need help connecting to your database.

4. In the **Connection Name** text box, enter an easy-to-remember name that identifies the data you are accessing.
5. Select a **Database Type** from the list.  
Text fields for required settings associated with your connection type appear under **Settings** on the right. See [Adding a JDBC Driver](#) if the driver you need is not listed.
6. Enter the appropriate connection information for your database type.  
Consult the [list of JDBC class names](#) for more information.
7. In the Connection dialog box, click **Test** to test your connection and click **OK**.  
A success message appears if your settings are correct. The connection name appears in the list.
8. Under **SQL Query**, enter your SQL Query. Click **Preview** to ensure that your query returns data.



9. Click **Close** to exit the Preview window.


## 10. Click **Finish**.

In the background, after you click **Finish**, a default metadata model is generated based on the query for use in Analyzer, Ad Hoc Reporting, Report Designer, and Chart Designer. See [Editing a Data Source Connection](#) for instructions about changing connection details.

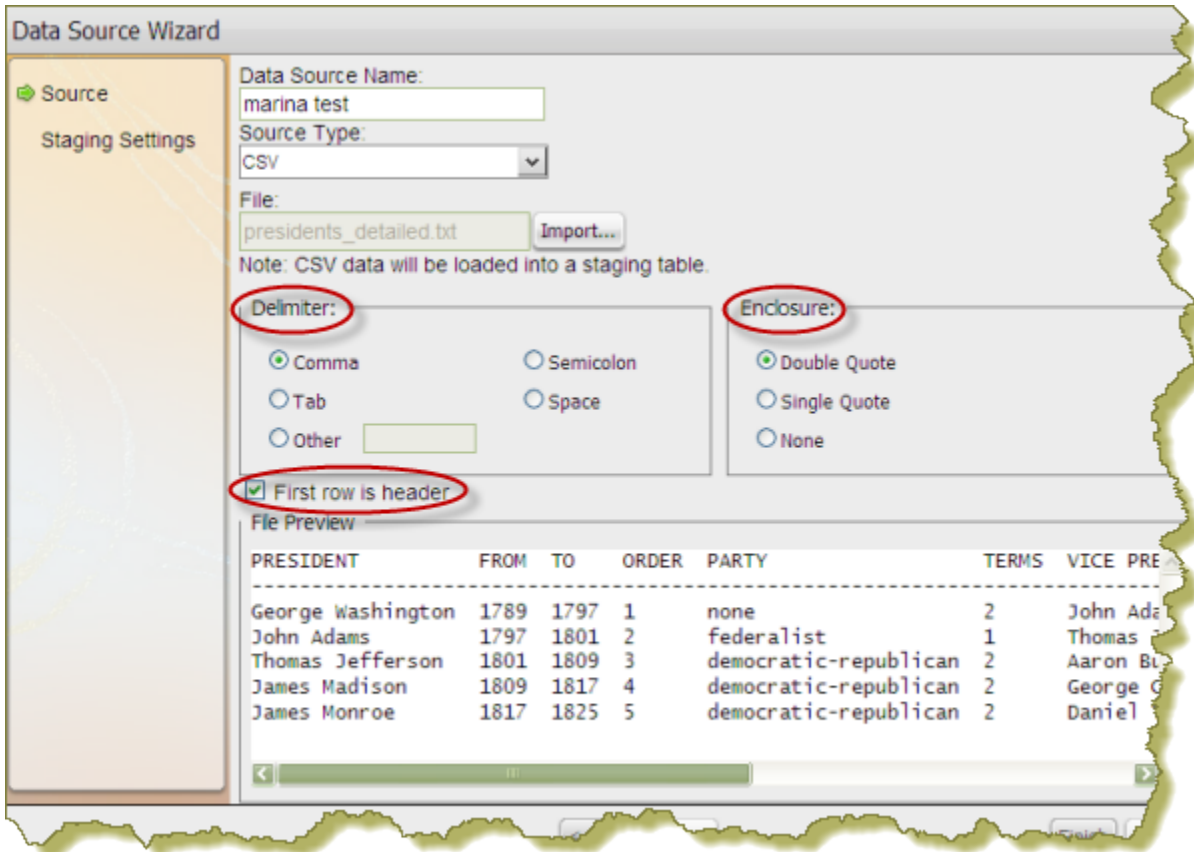
## Creating a CSV Data Source in the Pentaho User Console

Follow the instructions below to create a CSV-based data source. For testing purposes, you can save an Excel spreadsheet as a CSV file.

1. In the **Data Source Wizard**, type a name that identifies your new data source in the **Data Source Name** field.
2. Under **Source Type** select **CSV** from the list to define a CSV file as your data source and click **Next**.
3. Click **Import** to open the **Import File** dialog box.
4. Click **Browse** to search for your CSV file; click **Import** when you locate the file.  
The Import File dialog box closes and the CSV file is uploaded to the BI Server. You can click **Cancel**, if necessary, and select different file.


 **Note:** Notice that a preview of the contents of your file appears in the lower portion of the wizard page. If items are not aligning correctly, it is because you must specify your delimiter and enclosure types. Go on to the next step.

5. Specify the delimiter and enclosure types. Enable **First row is header** if the first row of your CSV file is a heading for columns in the file.




The screenshot shows the 'Data Source Wizard' interface. The 'Data Source Name' field contains 'marina test'. The 'Source Type' dropdown is set to 'CSV'. The 'File' field contains 'presidents\_detailed.txt' with an 'Import...' button. A note states: 'Note: CSV data will be loaded into a staging table.' Below this, the 'Delimiter' section has radio buttons for 'Comma' (selected), 'Semicolon', 'Tab', 'Space', and 'Other' (with an empty text box). The 'Enclosure' section has radio buttons for 'Double Quote' (selected), 'Single Quote', and 'None'. The 'First row is header' checkbox is checked. The 'File Preview' window displays a table with the following data:

PRESIDENT	FROM	TO	ORDER	PARTY	TERMS	VICE PRE
George Washington	1789	1797	1	none	2	John Ada
John Adams	1797	1801	2	federalist	1	Thomas
Thomas Jefferson	1801	1809	3	democratic-republican	2	Aaron B
James Madison	1809	1817	4	democratic-republican	2	George G
James Monroe	1817	1825	5	democratic-republican	2	Daniel


 **Important:** You must make selections under **Delimiter** and **Enclosure** for the Metadata table to build correctly. In the example line, 1,4,5,02/12/77,"String Value" the commas are delimiters and the quotation marks around "String Value" is the enclosure.

The **File Preview** window displays the first few lines of your CSV file based on the selections you made for specifying the delimiter, enclosure, and header. Once the columns align correctly in the preview you will know that the delimiter and enclosure have been set correctly.

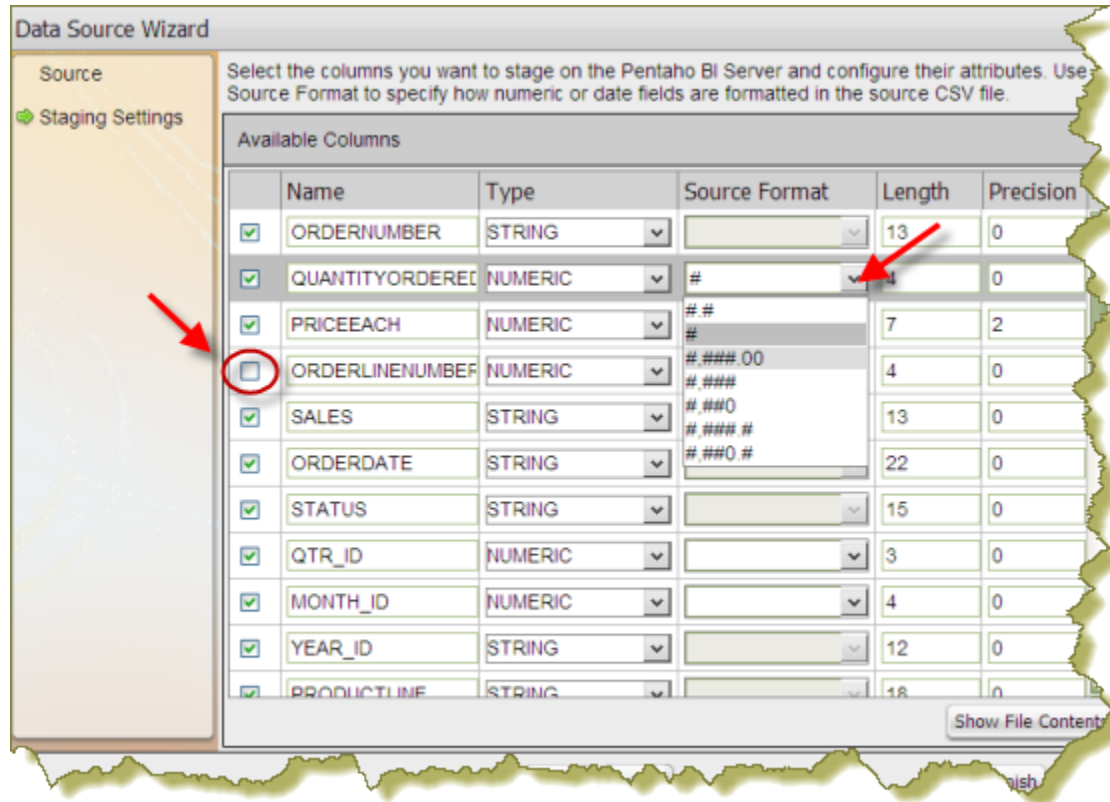
6. Click **Next** to display more details about the columns in your source file and to edit staging-related settings.


 **Note:** Notice that all columns are enabled in this step. Click **Deselect All** to disable all columns. You can then select the columns that require formatting individually. Click **Select All** to enable all columns again, if necessary.

7. If applicable, change the **Name** and **Type** values. Use the drop-down list to display format options for dates and numeric values. Formats are auto-detected based on the contents of your data source; however, if you see a format option that is not correct, enter it manually in the appropriate **Source Format** text box.

 **Note:** Refer to [Sample Date Formats](#) for additional help formatting dates. Refer to [Decimal Formats](#) for additional help formatting numbers.

**Length** indicates the maximum number of characters allowed in a field. **Precision** is the number of digits after a decimal point. Drop-down lists are not enabled for certain data types such as the String data type.



 **Important:** Boolean values are rendered as "true" or "false."

8. Click **Show File Contents** to see a sample of the data in your source file. Click **OK** to return to staging and make changes if necessary.
9. Click **Finish** when you have completed your configuration and formatting tasks. A success message appears indicating the number of rows being loaded into the database and that a default metadata model was created. Enable **Keep default model** to use the default model or click **Customize model now** to customize the model.

The data in your CSV file is extracted and staged temporarily in a database table. Your new data source is now available to users. To refine the data and make it more accessible to users of reports, dashboards, and data tables, you must use the Data Source Modeler. See [Editing a Data Source in the Pentaho User Console](#).

## Increasing the CSV File Upload Limit

Follow the instructions below if you need to increase the size of the upload limit associated with CSV files.

1. Go to ... \biserver-ee\pentaho-solutions\system and open the **pentaho.xml** file
2. Edit the XML as needed; (sizes are measured in bytes):

```
<file-upload-defaults>  
  <relative-path>/system/metadata/csvfiles/</relative-path>
```

```

    <!-- max-file-limit is the maximum file size, in bytes, to allow to be uploaded
to the server -->
    <max-file-limit>10000000</max-file-limit>

    <!-- max-folder-limit is the maximum combined size of all files in the upload
folder, in bytes. -->
    <max-folder-limit>500000000</max-folder-limit>

</file-upload-defaults>

```

3. Save your changes to the file.
4. In the **Pentaho User Console**, go to **Tools -> Refresh System Settings** to ensure that the change is implemented.

## Changing the Staging Database


Hibernate is the default staging database for CSV files. Follow the instructions below if you want to change the staging database.

1. Go to ... \biserver-ee\pentaho-solutions\system\data-access and open **settings.xml**.
2. Edit the settings.xml file as needed. The default value is shown in the sample below.

```

<!-- settings for Agile Data Access -->
<data-access-staging-jndi>Hibernate</data-access-staging-jndi>


```

 **Note:** This value can be a JNDI name or the name of a [Pentaho Database Connection](#).


3. Save your changes to the **settings.xml** file.
4. Restart the Pentaho User Console.


## Where Models are Stored

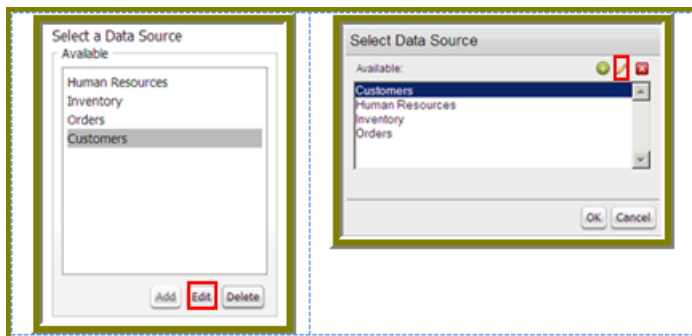
All generated models are stored in the following location, \pentaho-solutions\admin\resources\metadata.


 **Important:** Pentaho recommends that you *do not* change the location where models are stored.

## Using the Modeler to Edit a Data Source

You can edit a data source in Ad Hoc Reports, Pentaho Analyzer, and in the Dashboard. If you are editing a data source while using Ad Hoc Reports, select the data source you want to edit from the list of available data sources and click **Edit**. If you are creating a chart or data table, select the data source you want to edit from the list and click 

(Edit). If you have created an Analyzer report, click  (Edit) in the upper right corner next to **Available Fields**. You can also edit a data source by navigating to **File -> Manage -> Data Sources** in the Pentaho User Console menu bar and opening the **Select Data Source** dialog box.

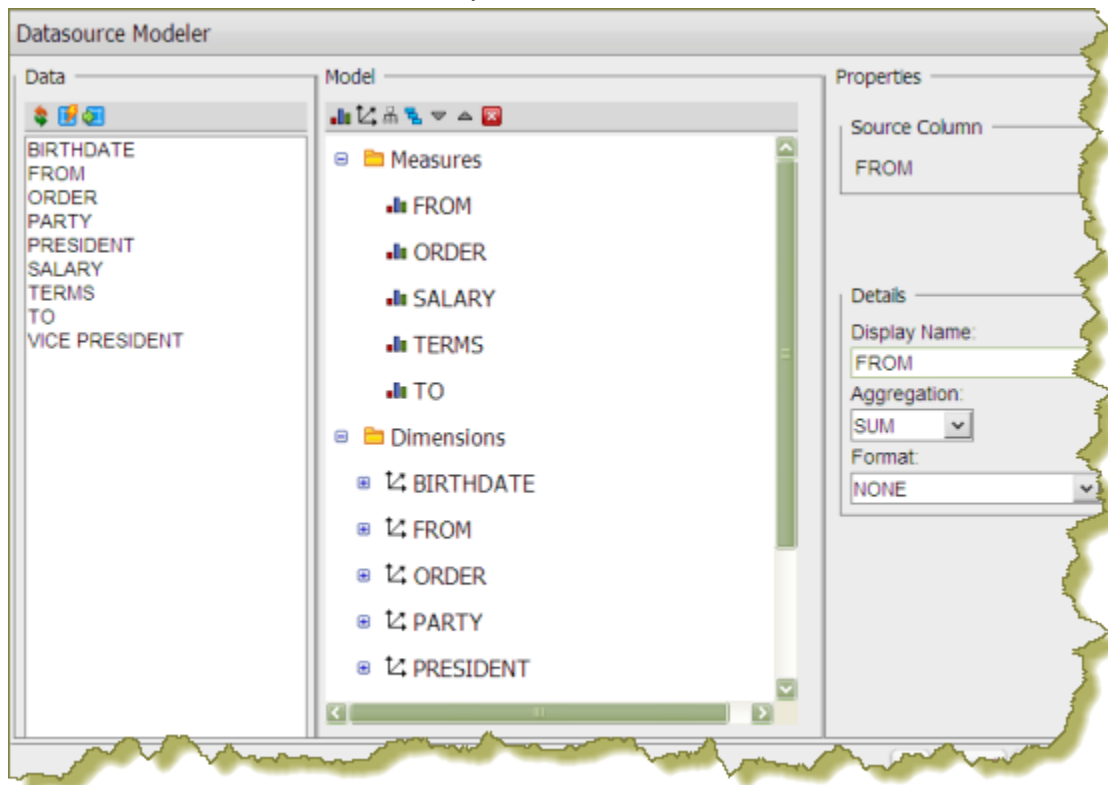


 **Note:** If you want to edit the connection information, see [Editing a Data Source Connection in the Pentaho User Console](#).

When you edit a data source you are using the Data Source Modeler. The modeler allows you to design reporting and OLAP metadata models on the fly. The modeler also allows you to refine and organize your data so that it is more accessible to report users. For example, you can change the field display names, set an aggregation type, and change formatting,


Follow the instructions below to edit a data source:

1. In the **Data Source Modeler**, examine your data.





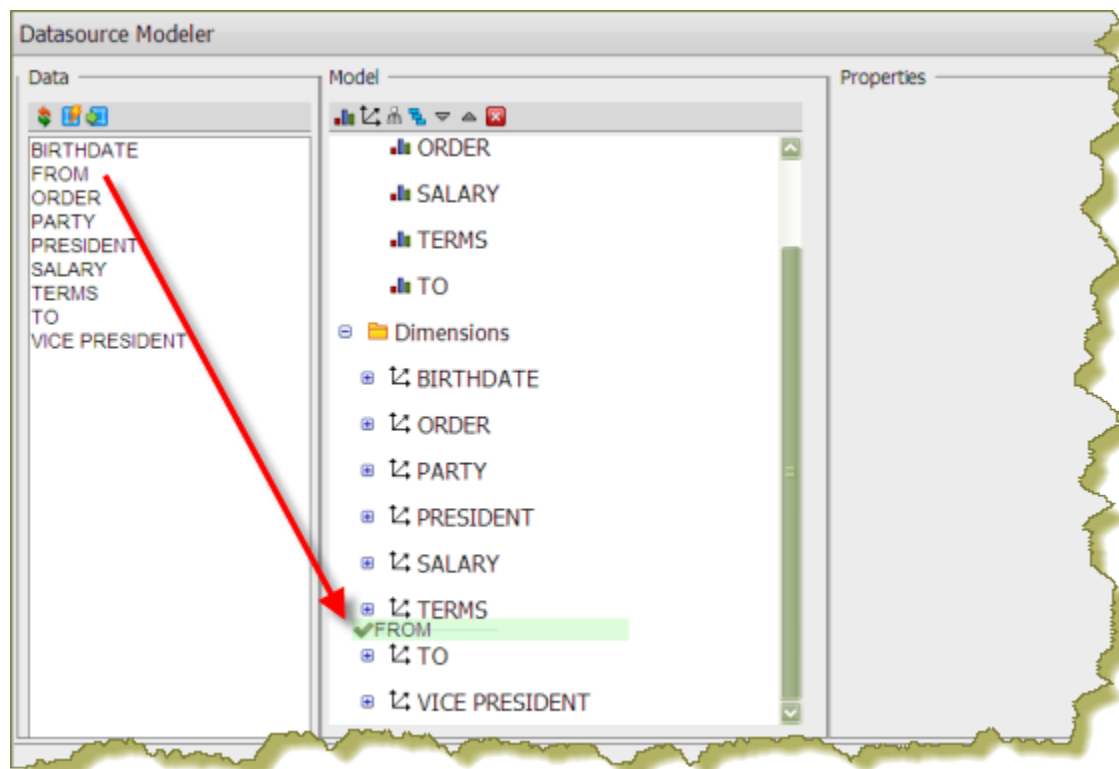
Measures are numeric values such as sales price, cost, and profit. **Dimensions** are the context that allow users to understand the significance of the measures. For a sales database, the dimensions could include Product, Store, Salesperson and so on. In other words, users can examine the sales figures by store, by product, and by sales.

Dimensions can have one or more hierarchies (☰); (hierarchies are not shown in the example). Hierarchies are levels that organize data into a logical structure. Click (+) next to fields under Measures and Hierarchies to display their contents. Moving up and down between the levels of a hierarchy is called *drilling*.

You can also edit the source data to define the properties of your CSV file or re-enter a SQL query. In the example above, the FROM, TO, TERMS, and ORDER fields must be redefined as string types, not numeric. The only applicable measure in this example, is SALARY. Unnecessary fields can be removed clicking  (Delete) in the modeler toolbar.

You can also move a field under Measures or Dimensions by clicking and dragging the field into its appropriate location. A green check mark indicates that you can place your field without error.

 **Note:** Click  (Clear Model, in the upper right corner) to clear the existing model and start over.




2. If you have clicked **Edit Source** in the modeler to make changes to a SQL query or CSV flat file (delimiter, enclosure, or header), click **Finish** to update the metadata table.  
If you disable columns that were previously enabled, a prompt appears in the modeler indicating that the data has been deleted. You must adjust the data in the modeler before proceeding.
3. Click **OK** to update the data source.

The updated data source is now available to users.


## Editing a Data Source Connection in the Pentaho User Console


Follow the instructions below to edit a data source connection in the Pentaho User Console:

1. In the **New Data Source** dialog box, under **Connection**, select the connection you want to edit.
2. Click .  
The Database Connection dialog box appears.
3. Update the connection information as needed. You can click **Test** to make sure your connection is working correctly.
4. Click **OK** to exit the Database Connection dialog box.

## Deleting a Data Source Connection in the Pentaho User Console

Follow the instructions below to delete a data source connection associated with the Pentaho User Console.

 **Important:** If you delete a data source connection, all reports, charts, and other content users have created using the connection will no longer render.

1. Under **Connection** in the New Data Source dialog box, select the connection you want to delete.
2. Click  (Delete).  
A warning dialog box appears.
3. Click **OK** to delete the connection.



## Deleting a Data Source in the Pentaho User Console




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If you have administrative permissions, you can delete data sources associated with ad hoc reports and dashboards in the Pentaho User Console.



**Important:** When you delete a data source all reports or charts that end-users have created based on that data source will no longer render. Deleting a data source also deletes the model associated with that data source.

The delete Data Source option is available in the following instances:

- When you select a data source and click  (Delete) when in the **Select Data Source** dialog box available from **File -> Manage -> Data Sources**
- When you select a data source and click **Delete** in the **Select Data Source** step in Ad Hoc Reports
- When you select a data source and click  (Delete) when creating a chart
- When you select a data source and click  (Delete) when creating a data table

# Working With Ad Hoc Reports

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The procedures below explain everything you need to know about working with ad hoc reports in the Pentaho User Console.



**Note:** The ordering of all of the list elements in the ad hoc reporting interface is determined by the data source's metadata, which is created and modified through Pentaho Metadata Editor.

## Creating An Ad Hoc Report

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Pentaho Report Designer is the most comprehensive report design tool in the Pentaho BI Suite Enterprise Edition, but for preliminary report exploration or to generate a report quickly use the ad hoc report wizard built into the platform. Ad hoc reporting helps you quickly identify and group interesting and relevant data, apply constraints to it, and generate a report. The resulting reports are viewable through the built-in preview feature; through a Pentaho Reporting-based Web application; or as a standalone PDF, XLS, CSV, or HTML file. To create an ad hoc report, follow these steps:

1. In the **File** menu, select the **New** sub-menu, then click **Report**.  
The ad hoc reporting wizard appears in a new solution browser tab.
2. In the first step of the wizard, select a **Data Source**. The **Details** table will populate with available tables and columns.  
Data Sources are defined by your administrator.
3. In the **Apply a Template** field, select a predefined report template. A thumbnail preview of the template will appear in the **Template Details** field.  
A template specifies a variety of properties in the report that affect its appearance, like font size and background colors for various report elements.
4. Click **Next**.
5. In the **Available Items** list, select the business columns that you want to see in your report, and click and drag them to the **Groups**, **Details**, or **Filters** lists on the right. You must have at least one business column in the Details list for a report to be valid.  
You can select multiple items by holding down the **Ctrl** key. If you want to delete an item, click the **X** in the upper right corner of the field the item is in; if you need to move an item up or down in the list or to other groups, click the up or down arrows at the top of the **Groups** list.
6. In the **Preview as** drop-down box, select a preview format, then click **Go**. When the preview appears in a new browser window or tab, verify that it contains the data you selected and that it's presented appropriately.
7. Click **Next** when you're ready to start refining your report.
8. Click the **Level 1** item in the **Groups** list. The **General** options list will appear on the right.
9. Modify the level options to your preference.  
By default, the **Show Group Summary** checkbox is selected; uncheck it if you do not want to see group summary information. The default name for the group summary uses the group name as a variable; you can change this if you like. The options in the **Formatting** lists determine where in the report the information in the selected level will appear.
10. Repeat the above two procedures for other levels that you configured earlier.
11. Click the first item in the **Details** field. Three new options lists will appear on the right.
12. In the **Formatting** field, select the numerical formatting and alignment options appropriate for your situation.
13. In the **Calculation** list, select the function you want to use to refine the element you selected. For instance if you selected a Business Column that contains product prices, clicking on **Sum** would add all of the prices together.
14. Click **Add a Constraint**. The field will expand to show the name of the element, a conditional drop-down box, a text field, and a checkbox.
15. Select a conditional symbol from the drop-down box, then type in a value in the text box.  
This specifies the exact constraint you are applying to the element, meaning that you are decreasing the amount of detail by adding a higher level of specificity.
16. Add further constraints as necessary by clicking **Add a Constraint** again. Remove a constraint by clicking its checkbox and then clicking the **X** at the top of the list.

If there is more than one constraint in the list, you will have the option of adding conditional operators for the constraints via a drop-down box to the left of each item in the list, meaning you can specify AND or OR conditionals on each constraint.

17. In the **Sort Columns** field, click **Add** to specify how each element in the Details list should be sorted, then select the sort order from the drop-down box.

18. Repeat the above steps for any other items in the **Details** list.

19. Click the first item in the **Filters** list. The **Constraints** list will appear on the right.

20. Add constraints as necessary, per the above instructions for adding constraints to items in the Filters list.

For string-type Business Columns, you will have the option of searching the database tables that apply to the column. When this option is available, it is accessible via a magnifying glass icon to the right of the text box.

21. Repeat the above instructions for additional filters.

22. Click **Next** to move on to the next screen.

23. To set the header, footer, description, paper type, and page orientation, change the values accordingly.

PDF is the only output type that has a concept of a page, so the **Page** portion of the **Header** and **Footer** sections only applies to PDFs.

24. Click either the **Save** or **Save As** button to save your report, or select **Save** from the **File** menu. In the ensuing file dialog, navigate to the location you want to save the report to, type in a filename for the report, and click the checkboxes next to the file formats you want to save in.

You can continue to modify your report after it's been saved; just click the **Save** button to update the saved report after you've made changes.



**Note:** The Save dialog does not list output types; instead, it pulls the currently selected preview output type. By default that is HTML, so that will also be the default format to save as. If you want to save as a different output type, select it from the Preview drop-down list before saving.

You now have a complete ad hoc report in the format or formats you specified.

## Editing an Existing Report

---

After you've created and saved a report, you can go back to it later and change its properties.

1. In the upper left pane, navigate to the location of your report. It should appear in the lower left list when you've selected the proper directory.
2. In the lower left pane, right-click the report you want to edit, then click **Edit** in the popup menu.

The ad hoc report wizard will open in a new tab.

## Deleting a Report

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After you've created and saved a report, you can delete it using the Explorer-like Pentaho User Console file browser.

1. In the left pane, navigate to the location of your report. It should appear in the lower left list when you've selected the proper directory.
2. Right-click the report you want to eliminate, then click **Delete** in the popup menu.

The selected report will be removed from your computer. Any associated artifacts will not be removed, so some manual cleanup may be required if you want to remove more than just the report.

## Running a Report

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After you've created and saved a report, you can execute it manually at any time.

1. In the left pane, navigate to the location of your report. It should appear in the lower left list when you've selected the proper directory.
2. Right-click the report you want to run, then click **Run** in the context menu.

You can alternatively double-click on a report to run it.


3. In the **Run** sub-menu, select one of the following options: **New Tab**, **New Browser Window**, or **Background**.

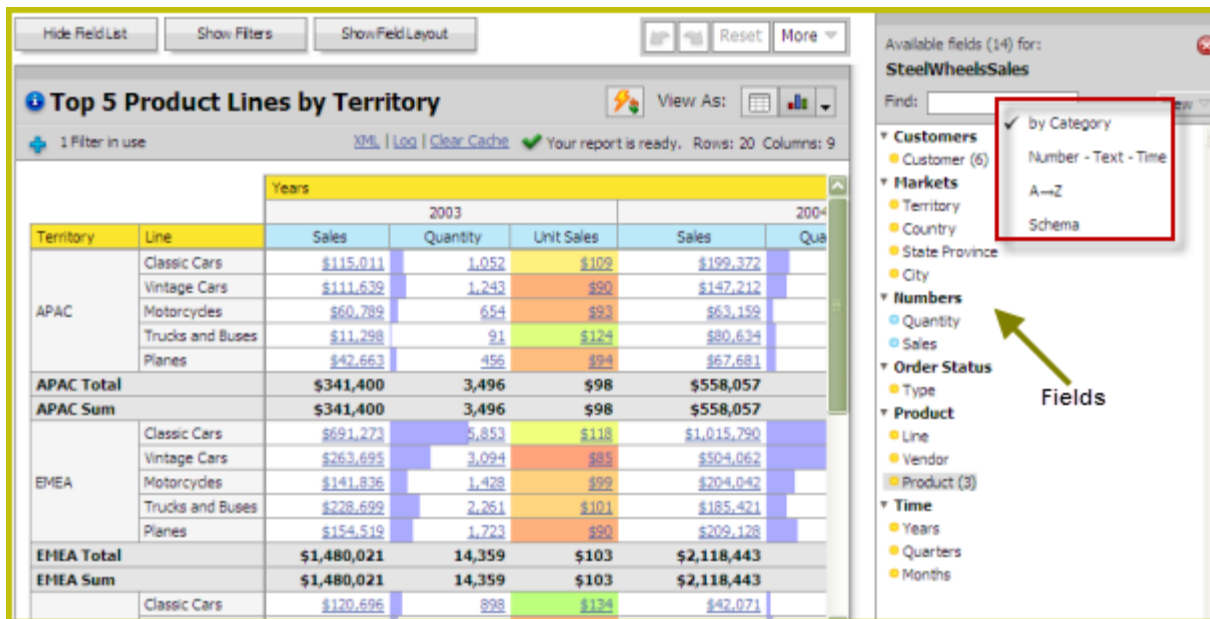
The options will open the report in a new tab, a new browser window (which may open in a new browser tab, depending on which Web browser you are using and how it is configured), or it will run in the background and inform you when the report is ready to view. The popup dialogue that informs you of the report's completion will ask you if and where you would like to display it.

The selected report will be executed, and display according to the option you selected.

# Creating a New Analyzer Report

Pentaho Analyzer is an interactive analysis tool that provides you with a rich drag-and-drop user interface, which makes it easy for you to create reports based on your exploration of your data. You can also display Pentaho Analyzer reports in a dashboard. Unlike standard reports which tend to be static or minimally interactive after they are created, Pentaho Analyzer reports allow you to explore your data dynamically and to drill down into the data to discover previously hidden details. Pentaho Analyzer presents data multi-dimensionally and lets you select what dimensions and measures you want to explore. Use the Analyzer to drill, slice, dice, pivot, filter, chart data and to create calculated fields. Users of Analyzer reports can query the data in a database without having to understand how the database is structured.

 **Note:** The field view in the sample report below is organized **by Category** (hierarchies and levels within a dimension). You can organize the field view in your Analyzer report alphabetically (**A-Z**), by **Number** (measures) - **Text** (names, categories, etc.) - **Time** (months, quarters, and years), and by **Schema**, which displays the dimensions as defined in the Mondrian schema.




		Years				
		2003		2004		
Territory	Line	Sales	Quantity	Unit Sales	Sales	Qua
APAC	Classic Cars	\$115,011	1,052	\$109	\$199,372	
	Vintage Cars	\$111,639	1,243	\$90	\$147,212	
	Motorcycles	\$60,789	654	\$93	\$63,159	
	Trucks and Buses	\$11,298	91	\$124	\$80,634	
	Planes	\$42,663	456	\$94	\$67,681	
<b>APAC Total</b>		<b>\$341,400</b>	<b>3,496</b>	<b>\$98</b>	<b>\$558,057</b>	
<b>APAC Sum</b>		<b>\$341,400</b>	<b>3,496</b>	<b>\$98</b>	<b>\$558,057</b>	
EMEA	Classic Cars	\$691,273	5,853	\$118	\$1,015,790	
	Vintage Cars	\$263,695	3,094	\$85	\$304,062	
	Motorcycles	\$141,836	1,428	\$99	\$204,042	
	Trucks and Buses	\$228,699	2,261	\$101	\$185,421	
	Planes	\$154,519	1,723	\$90	\$209,128	
<b>EMEA Total</b>		<b>\$1,480,021</b>	<b>14,359</b>	<b>\$103</b>	<b>\$2,118,443</b>	
<b>EMEA Sum</b>		<b>\$1,480,021</b>	<b>14,359</b>	<b>\$103</b>	<b>\$2,118,443</b>	
	Classic Cars	\$120,696	898	\$134	\$42,071	


In this exercise, you will be creating a report that displays the actual versus budgeted expenses by region for each department in the fictitious Steel Wheels company (SampleData).

Follow the instructions below to start creating the Analyzer report.

1. In the Pentaho User Console menubar, go to **File -> New** and select **Analyzer Report**. Pentaho Analyzer opens.
2. Select your **Schema** and **Cube** from the list. For the purposes of this exercise, select **SampleData:Quadrant Analysis**.

 **Note:** The list of available schemas and cubes are provided by your administrator. A **schema** is the structure of the relational database and includes tables, fields, views, and more. A **cube** is a data structure that allows information in a database to be analyzed quickly and from multiple perspectives.

3. In the list of fields (on the right), click and drag **Department** to the **Analyzer** workspace in the left pane. The **Department** column appears in the workspace.
4. In the list of fields, click and drag **Budget** to the **Analyzer** workspace in the left pane. The **Budget** column appears in the workspace.
5. Right-click the **Budget** column to display the **Edit Column** dialog box. Select **Column Name and Format -> Currency (\$)** from the **Format** list so that your values display as dollar amounts. Click **OK**.
6. In the list of fields, click and drag **Actual** to the **Analyzer** workspace in the left pane. The **Actual** column appears in the workspace.
7. Right-click the **Actual** column to display the **Edit Column** dialog box. Select **Column Name and Format -> Currency (\$)** from the **Format** list so that your values display as dollar amounts. Click **OK**.
8. Click and drag the **Region** column to the report. (Read the note below.)

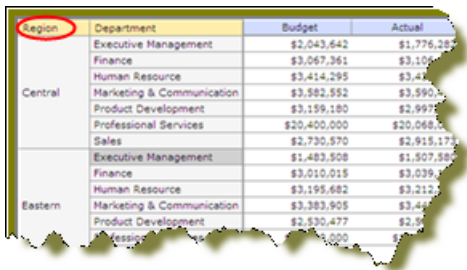
 **Note:** Notice that the **Region** column appears in the workspace; however, you want this column to be the first column in the report.





Department	Region	Budget	Actual
Executive Management	Central	\$2,043,642	\$1,776,387
	Eastern	\$1,483,508	\$1,507,581
	Southern	\$1,923,908	\$1,905,100
Finance	Western	\$1,443,808	\$1,802,100
	Central	\$3,067,361	\$3,100,000
	Eastern	\$3,010,015	\$3,039,000
Human Resource	Southern	\$3,010,015	\$3,039,000
	Western	\$3,000,015	\$3,039,100
	Central	\$3,414,295	\$3,438,000
Marketing & Communication	Eastern	\$3,195,682	\$3,212,000
	Southern	\$3,195,682	\$3,212,000
	Western	\$3,183,682	\$3,212,000
Product Development	Central	\$3,582,552	\$3,590,000
	Eastern	\$3,383,905	\$3,400,000
	Southern	\$2,530,477	\$2,500,000


9. In the workspace, click and drag the **Region** column to the left of the **Department** column.

Pentaho Analyzer is designed to provide you with great flexibility when designing the visual structure of your report.



Region	Department	Budget	Actual
Central	Executive Management	\$2,043,642	\$1,776,387
	Finance	\$3,067,361	\$3,100,000
	Human Resource	\$3,414,295	\$3,438,000
	Marketing & Communication	\$3,582,552	\$3,590,000
	Product Development	\$3,159,180	\$2,997,000
	Professional Services	\$20,400,000	\$20,068,000
	Sales	\$2,730,570	\$2,915,170
	Executive Management	\$1,483,508	\$1,507,581
	Finance	\$3,010,015	\$3,039,000
	Human Resource	\$3,195,682	\$3,212,000
Eastern	Marketing & Communication	\$3,383,905	\$3,400,000
	Product Development	\$2,530,477	\$2,500,000
	Professional Services	\$20,400,000	\$20,068,000

10. At this point you have a functioning report and you can view your data in chart form. Click  (Switch to Chart Format) to examine your report data in a chart format. The default display is a bar chart but if you click  (Choose Chart Type) you can select a different chart type to display your data.

11. Save your report before continuing the exercise. In the Pentaho User Console, click  (Save As). When the **Save As** dialog box appears, save your report as **Regional Expense Report** under /Steel Wheels/Analysis and click **OK**.

## Simple Conditional Formatting of Measures

Conditional formatting in the Analyzer data grid means that cells will be physically affected by the data they contain. The most common form of conditional formatting is stoplight reporting, where cell backgrounds are colored red, green, or yellow depending on user-defined thresholds. Analyzer offers some simple pre-defined methods of conditionally formatting numeric data. Follow the directions below to implement conditional cell formatting.

1. Right-click a measure in the grid, then select **Conditional Formatting** from the context menu.

A sub-menu with conditional formatting types will appear.

2. Select your preferred number format from the list.

Consult [Conditional Formatting Types](#) on page 22 for more information on simple conditional formatting types.

The analyzer report will refresh and apply the formatting choice you specified.

## Conditional Formatting Types




Indicator Type	Description
Color scale	The background cell color will be shaded according to the value of the cell relative to the highest and lowest recorded values in that measure. There are several color progressions to choose from.
Data bar	The cell background is partially filled with a solid color proportional to the scale of the cell's value relative to the highest and lowest recorded values in that measure.

Indicator Type	Description
Trend arrow	An upward or downward arrow is displayed to the right of the cell value depending on whether it contains a positive or negative value.

## Enhancing the Pentaho Analyzer Report

You have created a working Analyzer report; however you can make the data in the report more useful if you can show the difference, in dollar amounts, between the actual and budgeted expenses.



Follow the instructions below to enhance your report.

1. In the Pentaho User Console menubar, go to **File -> Open**.
2. Browse to `/Steel Wheels/Analysis` and select **Regional Expense Report**.
3. Click  (Switch to Table Format) if you are in chart mode when the report appears.
4. Right-click the **Actual** column and select **User Defined Number -> Calculated Number**. The **New Calculated Number** dialog box appears.
5. In the **Name** field, type **Difference**.  
This step creates a new column in the report.
6. Select **Currency (\$)** from the **Format** list so that the data in your report displays as dollar amounts.
7. In the right pane of the dialog box, click  so that a minus sign appears next to **[Actual]-**.
8. Click **Budget** in the left pane and click  to move it to the right pane so that you create a formula that subtracts the budgeted expenses from the actual expenses, **[Actual]-[Budget]**. Click **OK**. The **Difference** column appears in the report.
9. Right-click the **Region** column and select **Show Subtotals**. The subtotals for each region is displayed in the report.
10. Save the report.

## Adding Filters to an Analyzer Report

Filters are used to restrict or limit the data that is presented in a report. For example, a report shows sales by product line. A filter on **Quarter** restricts the data so that sales for the fourth quarter in 2006 only are shown. If you were to add a regional filter of Europe, the report displays data pertaining to European sales in the fourth quarter of 2006, exclusively. If you were to add a filter on the **Product Line** field to exclude **Surfing**, the report displays data pertaining to European sales in the fourth quarter of 2006 that are not in the surfing product line, exclusively.

Follow the steps below to add a filter to your sample report:

1. Open the **Regional Expense Report**.
2. Under the report name click **Show/Hide Filters** next to **No Filter in Use**. A workspace for filters appears at the top of the report.
3. Click and drag the **Region** field/column into the filter workspace. The **Filter on Region** dialog box appears. Notice that the values, (Central, Eastern, Southern, and Western), associated with the **Region** field are listed in the dialog box. You can choose one of these values or you can enable **Match a specific string** to filter the report on a specific string of data.
4. Select **Eastern** from the list of values and click  (Add Selected) to move it into the right pane. **Eastern** appears with a green checkmark next to it in the right pane.
5. Select **Western** from the list of values and click  (Add Selected) to move it into the right pane. **Western** appears with a green checkmark next to it in the right pane.
6. Click **OK** to exit the dialog box. Your sample report displays data for the **Eastern** and **Western** regions only.



**Note:** You can click **Undo** or **Reset** to return to the previous version of the report.

7. Click **OK** and save your report.


## Adding Query Parameters to Analyzer Reports

---

You must be logged into the Pentaho User Console, and have an Analyzer report open for editing in order to continue. Follow the below procedure to parameterize your MDX query in Analyzer.

1. Right-click on the dimension member you want to create a parameter for, and select **Filter** from the context menu.
2. Select the level you want to set as the default parameter value, then click the right arrow to move it to the list on the right.
3. Click the checkbox at the bottom of the window, then type in a name for the parameter in the **Parameter Name** field.
4. Click **OK**.

Your parameter is now created as a filter in Pentaho Analyzer. Whenever this Analyzer report is run, users will have a selection of columns to filter by.

 **Note:** If you create a dashboard with this Analyzer report, then this filter can be used by Dashboard Designer as a parameter as well.

## Exporting the Analyzer Report

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Pentaho Analyzer allows you to export your report as a PDF, a Microsoft Excel spreadsheet, or a CSV file.

Follow the instructions below to export your report:

1. In the Pentaho Analyzer toolbar, click **More** and select **Export Report**.  
The export options list appears.
2. Select **Export to PDF**.  
A PDF of the report appears.
3. Examine your report.

Notice that Pentaho Analyzer appends metadata about the report itself in the PDF. Information about the report author, the location of the source file, fields used, filter summary, are included.

## Filtering by Member Properties

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If a dimension has a number in parenthesis next to it in the field list, that means that it has **member properties** associated with it. To constrain a dimension by controlling its member properties, follow the instructions below.


1. Open the field layout by clicking **Show Field Layout** button above the grid.  
Depending on how you have them oriented, you will see your selected dimensions in either the **Row Labels** or **Col Headers** fields.
2. Right-click on a dimension in the row label or column header fields, then select **Show Properties** from the context menu.  
A sub-menu with all available member properties will appear.
3. Check or un-check the member property boxes to add or remove them from the report, then click **OK**.

The analyzer report will refresh and show the filter choices you've selected.


## Configuring Drill-Down Links

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To create reports based on specific number value data, you can implement drill-down links in Pentaho Analyzer. This will turn all non-calculated number fields into links which, when clicked, bring up a configurable data grid that enables you to quickly view more details for that data point without having to reconfigure your report. Follow the directions below to turn on drill-linking.

 **Note:** Calculated members are unavailable for drill-down at this time.



 **Note:** Drill-down links will not work in reports that have filters that are not being used. If you have any filters in an Analyzer report, they must be used in the report in order to view drill-down links.

1. Open the Analyzer report that you want to add drill links to.
2. Go to the **More** menu in the upper right corner of the report, and select **Set Report Options** from it.
3. Select the **Show drillthrough links on Number cells** checkbox, then click **OK**.  
The number fields in your report will turn into links.
4. Click on a drill-down link to see a data grid that shows all of the available details for that value.
5. To add or remove columns from the grid, click on the down arrow on the right side of any column and select the **Columns** sub-menu. From there you can select which columns you want to appear. You can also sort by ascending or descending values for any column through this menu.


You now have drill-down links for numeric, non-calculated members.

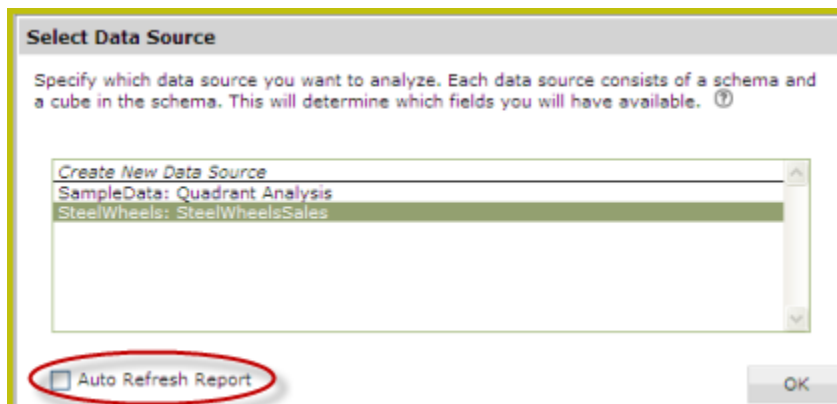
## Disabling Auto Refresh Mode

When you disable the **Auto Refresh Report** feature in Analyzer you can design your report layout first, including calculations and filtering, without querying the database until you are done. Once the report layout is complete, you can re-enable Auto Refresh Report. Data retrieval will occur once and your report will display the requested data.


Follow the instructions below to disable auto refresh and build a report.

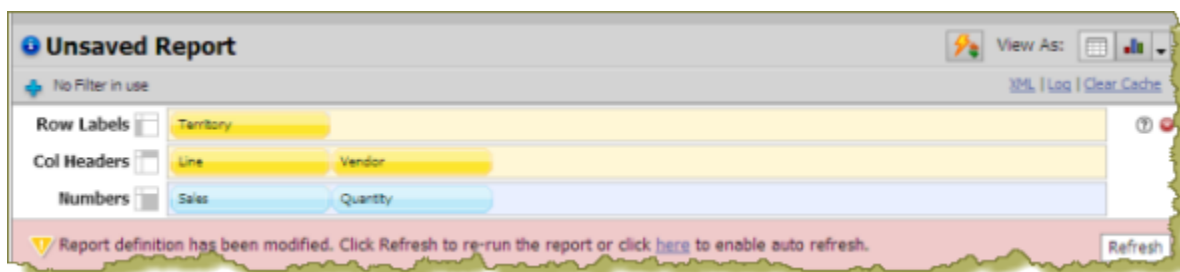
1. In the Pentaho User Console menubar, go to **File -> New** and select **Analyzer Report**.  
Pentaho Analyzer opens.
2. Select your Data Source, (schema and cube), from the list.
3. Disable **Auto Refresh Report**.

 **Note:** Auto Refresh Report is enabled by default.

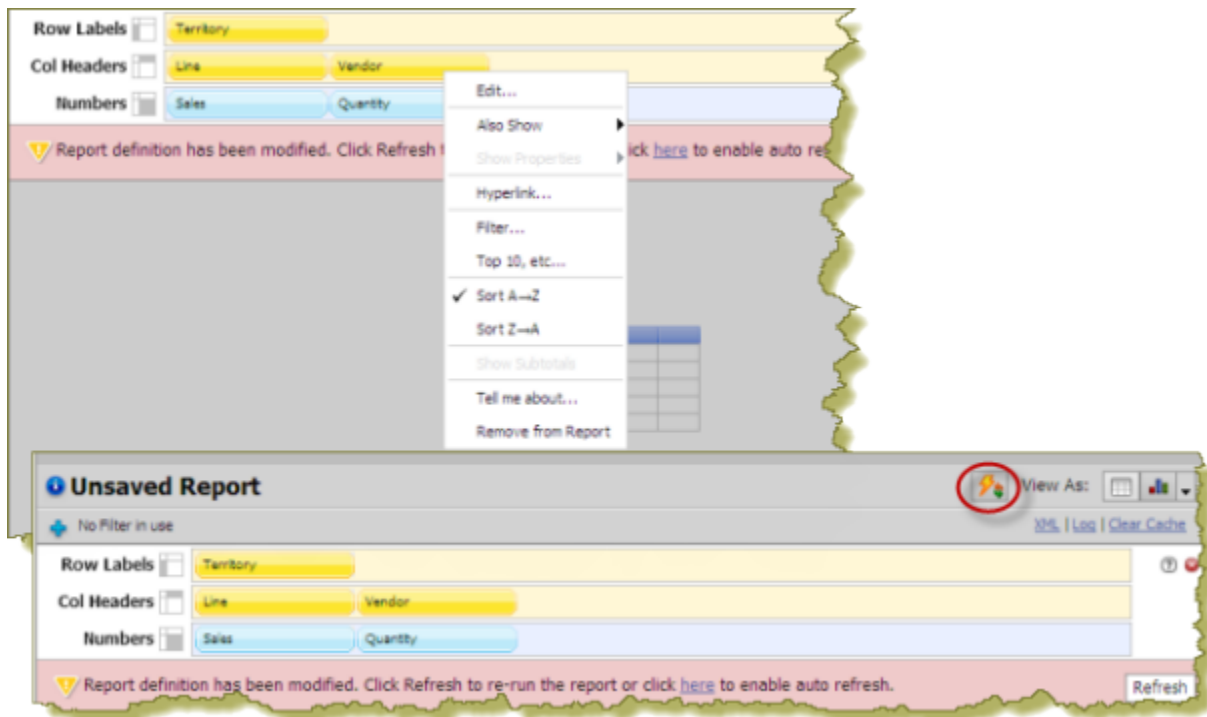


4. Click **OK**.  
The Analyzer workspace appears.
5. To begin creating your report layout, select a field and drag it to the **Field Layout** area at the top of the workspace.

 **Note:** If you are not seeing the Field Layout area, click the **Show Field Layout** button.



A message appears when you place the first field allowing you to refresh the report or to re-enable Auto Refresh. Right-click menus are available for each of the fields you have dragged to the field layout area. You can continue to build your report and only query the database when the layout is complete. You will build your report in the field layout area exclusively while Auto Refresh is disabled. The icons next to **Row Labels**, **Col (Column) Headers**, and **Numbers** indicate the position of the fields once they are placed in the report. Also, a color indicator (yellow or blue) allows you to differentiate between the field types. Notice that the Analyzer workspace is disabled (greyed out) if you are not in live query mode.



 **Note:** Click the enable/disable **Auto Refresh** button () in the toolbar to toggle between the two modes.

- When your report is complete, click **Refresh** in the pink band of the field layout area. Alternatively, use the toggle button.

The Analyzer report updates based on the report definition and displays the results. You can continue to edit the report as needed and click **Refresh** to run the query again.

Territory	Classic Metal Creations			Classic Cars			Sales
	Sales	Quantity	Unit Sales	Sales	Quantity	Unit Sales	
EMEA	356,060	2,855	125	290,141	2,369	122	
NA	281,427	2,039	128	209,749	1,663	126	
APAC	87,288	694	126	62,652	513	122	
Japan	37,919	242	157	22,578	170	133	

## Creating Hyperlinks to Pentaho Solution Repository Content

This feature allows you to create hyperlinks in an Analyzer report that will link to content in the Pentaho Solution Repository.

The instructions below show you how to create hyperlinks to content inside your Pentaho Solution Repository (reports, action sequences, etc.). You must adjust the instructions to work with your own data.

1. Create a simple Analyzer report.
2. Select a row label or column header, right-click, and choose **Hyperlink**.

Line	Years	2003	2004	2005
Classic Ca	Sales	407	1,838,275	738,738
Motorcycl		220	590,580	286,325
Planes		755	528,928	200,074
Ships		821	375,672	128,178
Trains		802	124,750	36,917
Trucks an		430	531,976	201,875
Vintage C		949	997,560	388,718

**Note:** In the example above, **Line** is a row label and **Years** is a column header. Under these, are the individual members that belong to that field/level (for example, Classic Cars, Motorcycles, and so on are members of **Line**).

The **Link on (Name of Field Level)** appears.

3. Click **Enable Link** to activate the hyperlink feature.

You are not creating a hyperlink to the field header itself but rather to the members under the field level. You can disable linking at any time by clearing the Enable Link checkbox.

4. Click the down arrow next to **Link to** and choose **Pentaho Repository File**.
5. If you choose Pentaho Repository File, you can link to a report (.prpt), an action sequence, or any other file inside the Pentaho Solution Repository which contains a parameter that can be associated with the content in your Analyzer report. Click **Browse** to locate your file in the Pentaho Repository. When you have found the file click **Open**.

The **Link on Field Name** dialog box appears. If a destination parameter that matches the field name in your Analyzer Report is found, field name is associated to that parameter. Click the checkbox next to the destination parameter name to enable it.

**Link on Line**

Show a hyperlink on Line values that opens a Pentaho Repository File or URL. To dynamically substitute the current Line value into a parameter or URL, use the string: **{Line}**

**Enable Link**

Link To: Pentaho Repository File

File: Inventory List

Destination Parameter	Value to Use
Line	<input checked="" type="checkbox"/> {Line}

If there are more parameters available for linking in the report or other content, they are also listed. You can override the values to the available parameters or leave them as is. You can also define how hyperlink content will display (Open in **New Tab**, **Window**, **Current Window**). Finally, you can enter a tool tip that displays when users hover over the hyperlinks.

6. Click **OK**.

Hyperlinks appear in your Analyzer report. Click on the links to make sure the content associated with them appears correctly.

	Years		
	2003	2004	2005
Line	Sales	Sales	Sales
<a href="#">Classic Cars</a>	1,514,407	1,838,275	738,738
<a href="#">Motorcycles</a>	397,220	590,580	286,325
<a href="#">Planes</a>	347,755	528,928	200,074
<a href="#">Ships</a>	244,821	375,672	128,178
<a href="#">Trains</a>	72,802	124,750	36,917
<a href="#">Trucks and Buses</a>	420,430	531,976	201,875
<a href="#">Vintage Cars</a>	679,949	997,560	388,718

7. Save your Analyzer Report.

## Creating Hyperlinks to a URL

This feature allows you to create hyperlinks in an Analyzer report that will link to a URL for system to system linking, for example.

The instructions below show you how to create hyperlinks to a URL. You must adjust the instructions to work with your own data.

1. Create a simple Analyzer report.
2. Select a row label (or column), right-click, and choose **Hyperlink**. In the example below, **Line** is row label and **Years** is a column header. Under these, are the individual members that belong to that field/level; for example, Classic Cars, Motorcycles, and so on are members of **Line**.

	Years		
	2003	2004	2005
Line	Sales	Sales	Sales
<a href="#">Classic Cars</a>	1,514,407	1,838,275	738,738
<a href="#">Motorcycles</a>	397,220	590,580	286,325
<a href="#">Planes</a>	347,755	528,928	200,074
<a href="#">Ships</a>	244,821	375,672	128,178
<a href="#">Trains</a>	72,802	124,750	36,917
<a href="#">Trucks and Buses</a>	420,430	531,976	201,875
<a href="#">Vintage Cars</a>	679,949	997,560	388,718

The **Link on (Name of Field)** appears.

3. Click **Enable Link** to activate the hyperlink feature.

You are not creating a hyperlink to the field header itself but rather to the members under the field. You can disable linking at any time by clearing the Enable Link checkbox.

4. Click the down arrow next to **Link to** and choose **URL**. The **Link on Field Name** appears.

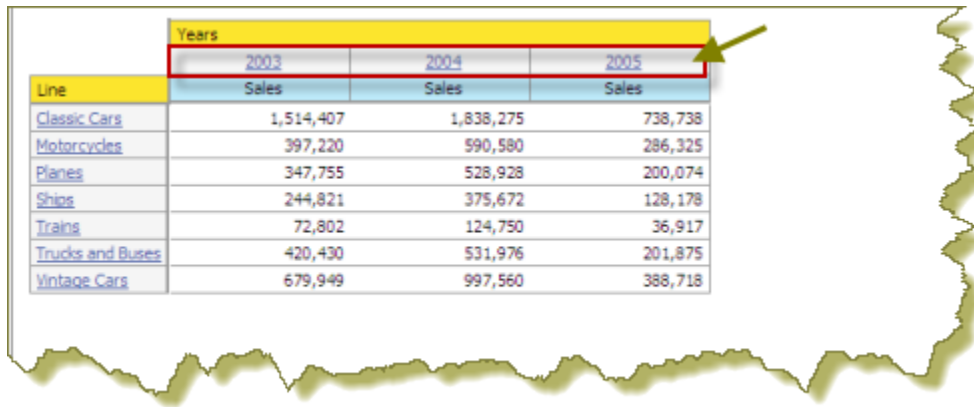
5. Enter the URL path. You must use the `{FieldNameInsideCurlyBraces}` format to pass a parameter in your URL as shown in the example below where **{Years}** is the parameter:

```
http://www.google.com/search?query={Years}
```

You can also define how hyperlink content will display (Open in **New Tab**, **Window**, **Current Window**). Finally, you can enter a tool tip that displays when users hover over the hyperlinks.

6. Click **OK** to return to your report.

Hyperlinks appear in your Analyzer report. Click on the links to make sure the content associated with them appears correctly.



The image shows a screenshot of a report table. The table has a yellow header row for 'Years' and a blue header row for 'Line'. The data rows are white with blue text for the category names. A green arrow points to the '2005' column header.

Years			
	2003	2004	2005
Line	Sales	Sales	Sales
<a href="#">Classic Cars</a>	1,514,407	1,838,275	738,738
<a href="#">Motorcycles</a>	397,220	590,580	286,325
<a href="#">Planes</a>	347,755	528,928	200,074
<a href="#">Ships</a>	244,821	375,672	128,178
<a href="#">Trains</a>	72,802	124,750	36,917
<a href="#">Trucks and Buses</a>	420,430	531,976	201,875
<a href="#">Vintage Cars</a>	679,949	997,560	388,718

# Displaying Data in a Dashboard

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Dashboard Designer enables you to create dashboards that provide users with immediate access to business-related information they need. Using Dashboard Designer you can customize dashboards to address the needs of different types of users. For example, your sales staff may want see current leads, while your support staff may want to see a list of open issues. You can create dashboard pages that address the needs of both user groups.

Creating a dashboard is as simple as selecting a layout, theme, and the content you want to display. This content can include reports, charts, data tables, URLs, and even interactive Pentaho Analyzer reports. Dashboard Designer also provides you with the ability to add dynamic filter controls making it easy for dashboard consumers to filter the entire contents of their dashboard using a simple pick list.

The Dashboard Designer allows you to display the following content types in your dashboard:

- **Chart** — When selected, opens the Chart Designer that allows you to create bar, line, area, pie, and dial charts for display in your dashboard.
- **Data Table** — When selected, allows you to display database-related content in tabular format.
- **File** — When selected, opens the Pentaho Solution browser that allows you to locate an existing file, such as a report or chart that you can display in your dashboard.
- **URL** — When selected, opens a dialog box that allows you to enter the URL of the Web site you want to display in your dashboard.

To display the content types in the Pentaho User Console, click  (Insert) in one of the panels in the dashboard.

If you are displaying a chart or data table you must first connect to the data source that contains data you want displayed.


## Content Linking

Content Linking provides you with a flexible way of creating interactivity between content inside your dashboard panels. For example, it allows users to click on a slice of a pie chart in one dashboard panel and have their action filter the content in other dashboard panel. For more information about content linking, see [Linking to Content in a Dashboard](#).

## Creating a New Dashboard

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You must be logged into the Pentaho User Console. Follow the instructions below to create a new dashboard:

1. In the Pentaho User Console quick launch bar, click **New Dashboard**. Alternatively, you can click **File > New > Dashboard** or click  (New Dashboard) in the tool bar. The New Dashboard page appears.
2. In the edit pane (lower portion of the page), click **Properties**, and enter a title for your dashboard page in the **Page Title** text box.  
The name you entered appears on the top left corner of the dashboard. This name helps you identify the page if you want to edit, copy, or delete it later.
3. Click **Templates** to select a dashboard layout.  
A blank dashboard with the layout you selected appears.
4. Click **Theme** to select a theme for your dashboard.  
The theme you selected is applied to your dashboard.

## Working with the Chart Designer

The Chart Designer allows you to create bar, pie, line, dial, and area charts that can be added to a dashboard. Below are the general steps associated with creating a chart:

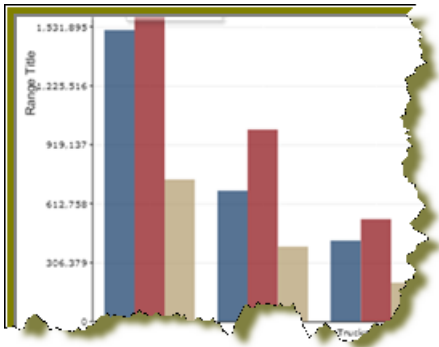
1. Select a data source.
2. Build a query.
3. Set the data definitions: values, series, category.
4. Select a chart type and theme.
5. Enter labels for the chart title, and x,y axes.
6. If applicable, adjust scaling and label rotation.

7. Place your chart in the dashboard.
8. Save your dashboard.

If you are new to charting, here are some minimal guidelines that may help you determine what type of chart is best suited for the data you want to present in your dashboard:

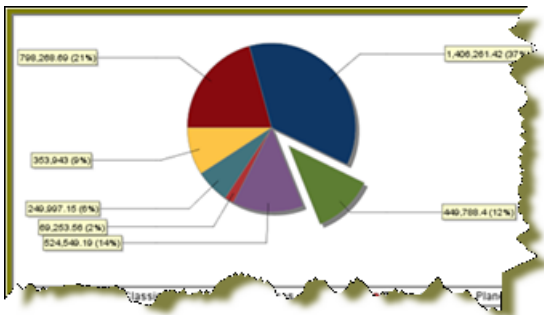
### Bar Charts

If you want to compare items during a specific time period, consider using a bar chart. Key words to think about when creating a bar chart are *compare* or *rank*. For example if you want to compare items sold to show which one made the most profit, you might create a bar chart that ranks the products from the lowest to highest profit. The bar's length determines its ranking; the label identifies the item. Bar chart data can be presented horizontally or vertically depending on your requirements.



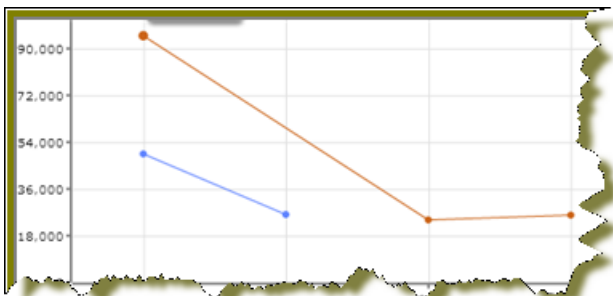
### Pie Charts

If you are comparing parts of a whole, consider using a pie chart. Key words associated with charts include, *portion*, *share*, and *percentage*. If for example, you want to demonstrate the proportion of the company's budget spent on health insurance, use a pie chart. To make the chart easier to read limit the number of slices to five. Pie charts can also be *exploded*, which means certain slices are pulled away from the remainder of the chart for emphasis.



### Line Charts

Line charts are useful for showing changes over time. Key words associated with data that is best suited for a line chart are *trend*, *growth*, and *decline*. If, for example, you want to show how product sales have changed over five years, use a line chart. The slope of the line helps users quickly identify the direction of the trend.



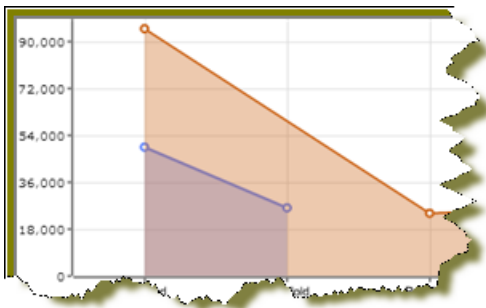
## Dial Charts

Dial charts are often associated with Key Performance Indicators (KPIs). Dial charts are circular and contain a scale, a needle, and one or more a dial sectors. The dial sector is used to identify a specified area on a dial chart using a particular color. For example, you could have a dial plotting inventory with a minimum dial value of 10000 and a maximum dial value of 50000. There could be a red dial sector for the region between 2000 and 4000 indicating that if the needle is in this area, there is a danger of a supply inventory shortage.



## Area Charts

Area charts can be used to show a comparison of the same thing during different points in time. Area charts are not designed to provide exact data but they do give users visual clues of the relative sizes of the items they are representing.




## Adding Data to Your Chart

Before you can start creating a chart you must select a data source that contains the data you want to use. You must then define the data that will be displayed in the chart.

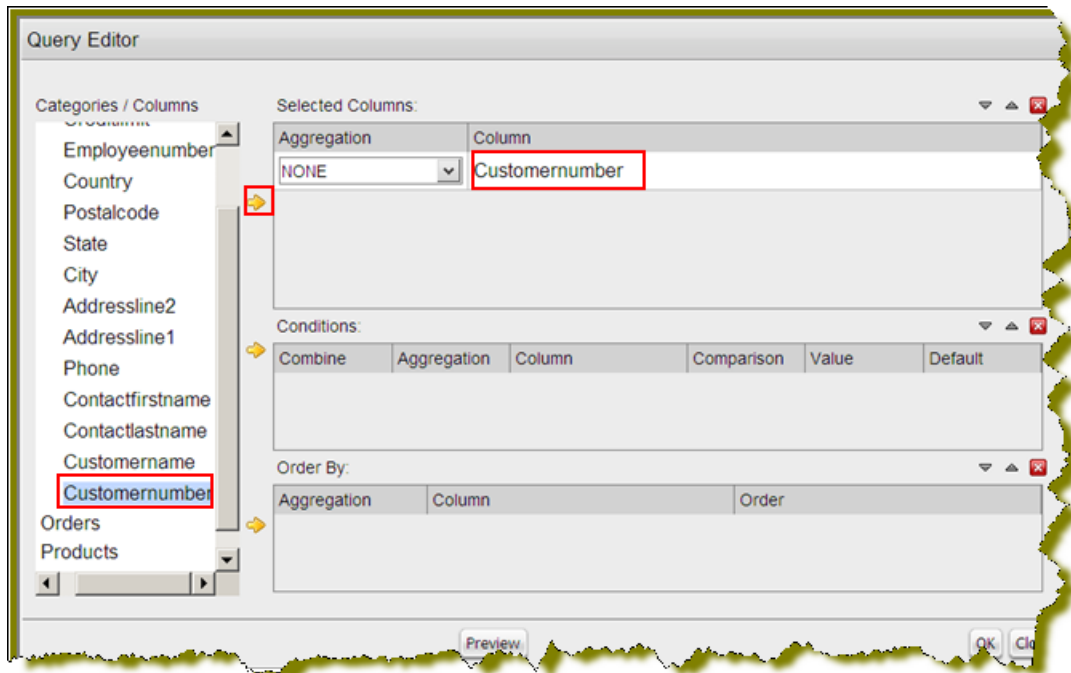


**Note:** If you are unsure what chart type is best for displaying your data, see [Choosing the Correct Chart Type](#) for more information.

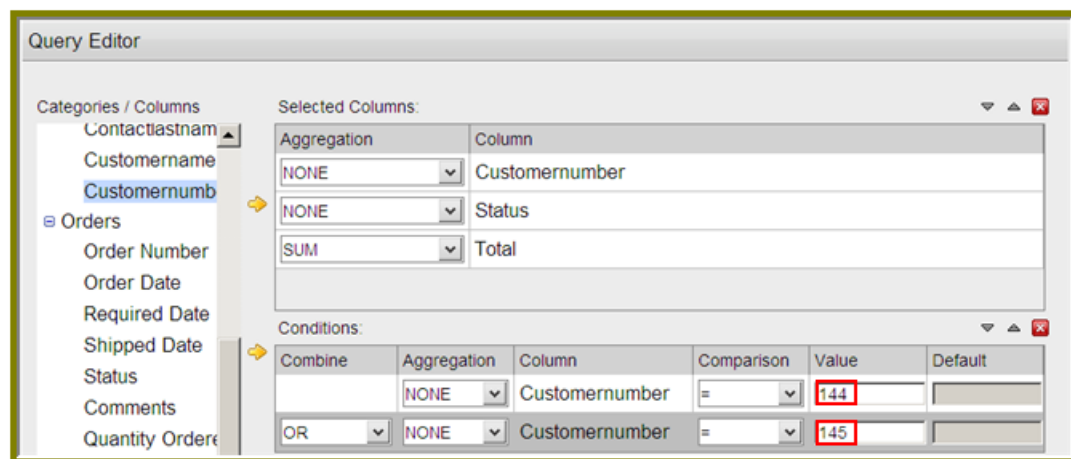
Follow the instructions below to add data to your chart:

1. In the Dashboard, choose a dashboard panel and click  (Insert) and select **Chart**. The **Select a Data Source** dialog box appears.
2. Select the data source from the list of available choices. The data source contains the content you want to display in your chart. The **Query Editor** appears.
3. The Query Editor allows you to retrieve dynamic data from a database for display in a chart. Defining your query is the first step in ensuring that the correct data is selected. In the Query Editor, click (+) next to a category name to display its associated table columns.
4. Click the small yellow arrow to place the column name under **Selected Columns**. In the example below, the **Customernumber** column has been selected and moved under Selected Columns. Notice that the column names appear under Selected Columns. Continue adding columns as needed.







- Now add the **Conditions**; these are your constraints that filter what you are selecting. You can add multiple conditions. In the example below, the search is limited to customer numbers.



Under **Combine**, you can select your constraint (and, or, and not, or not) from the drop-down list. Under **Comparisons** you can click the drop-down list to display options for comparisons, =, <, >, and so on; (for example, where the customer number is *equal* to 144 or 145). You can also select an aggregation type from the drop-down list for table columns that contain numeric data. The table below contains a definition for each aggregate type:

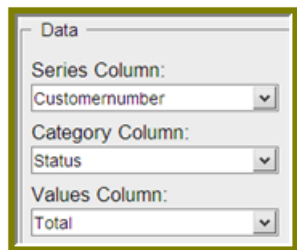
Aggregate Type	Description
SUM	Sums a column's values
COUNT	Counts a column's values
AVG	Averages a column's values
MIN	Selects the minimum column value
MAX	Selects the maximum column value


 **Note:** For information about adding parameters in the Query Editor, see [Assigning Parameters in the MQL Query Editor](#).

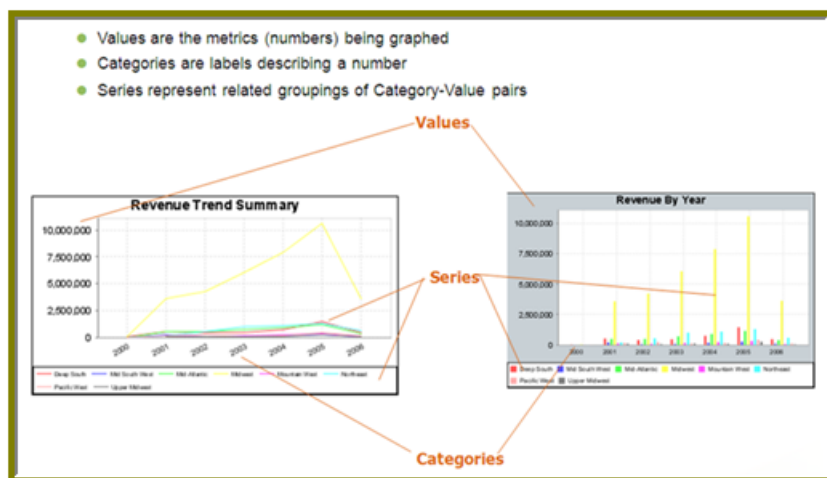
 **Note:** Click **Preview** at any time to view the data associated with your query.

- Add the columns that you want to **Order By**. The ordering of the selected data is accomplished by one or more columns in a table. For example, you can sort the data by customer name and address.
- Click **OK** in the Query Editor when you are done. The Chart Designer appears.

8. Under **Data**, click the drop-down arrow to display and select the table columns.




Data Definition	Description
Series Column	Series show up as the individual columns on a bar chart and as individual lines in a line chart. Area charts display each series as a point.
Category Column	Categories are displayed as bars or groups of bars on the x-axis (horizontal axis). In line charts, categories are usually associated with time periods. In area charts, the x-axis displays the category labels.   <b>Note:</b> If you don't want to display categories, select <b>None</b> .
Values Column	The value is always numeric. The value determines the height of columns in a bar chart and the height of lines in a line chart. In area charts, the y-axis values determine the heights of the points.



A preview of the chart appears in a box in the upper-right corner of the Chart Designer as you select your options.

9. Under **Chart Type**, click on a chart type to select it.

 **Note:** By default, pie and dial charts display in "animated" Flash mode. You can turn animation off by disabling the **Animated** check box in the Chart Designer. Animated charts bring focus to important aspects of your data. For example, animation allows you to bring out a data point if it reaches a critical value, such as high or low sales numbers.

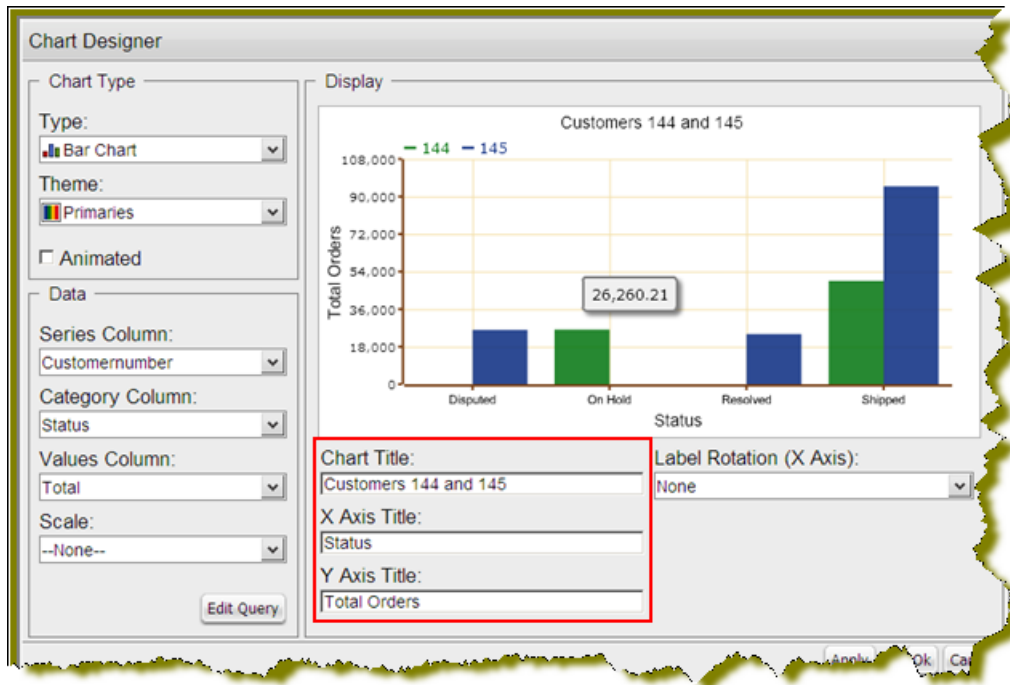
If you selected a pie or dial chart, see [Working with Pie Charts](#) or [Working with Dial Charts](#), respectively.

10. Under **Theme**, select a theme from the list.

The theme is applied to your chart.

11. Enter the labels for the **Chart Title**, **X Axis Title** (horizontal axis), and **Y Axis Title** (vertical axis).

Entries are displayed in the chart preview.

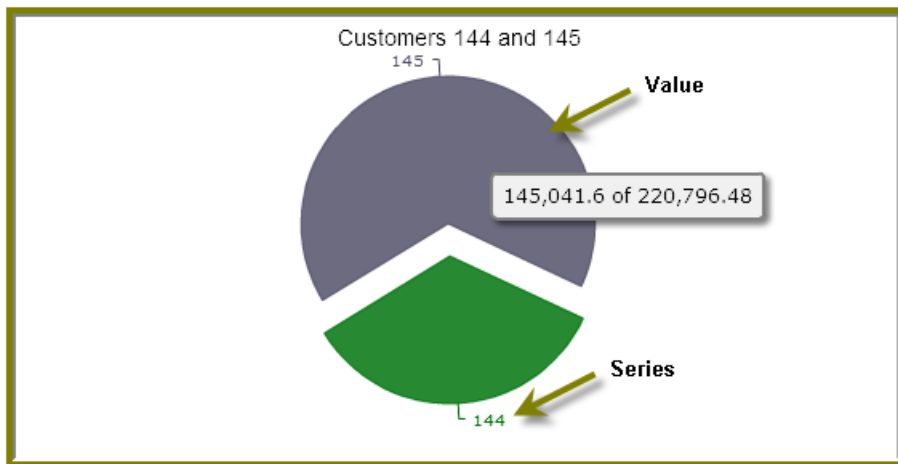


12. Click **Apply** to see the chart preview.

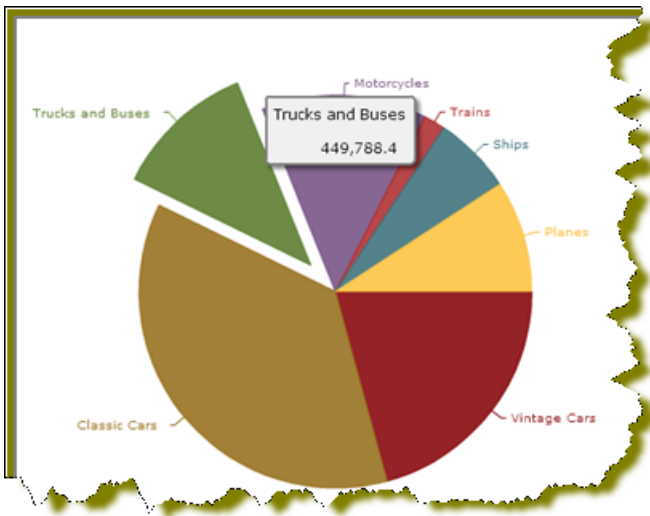
13. Click **OK** display your chart in the dashboard panel.

## Working with Pie Charts

A pie chart gives dashboard consumers an immediate visual clue of the relative sizes of the shares of a whole. Categories are represented by individual slices. The size of the slice in a pie chart is determined by the value.



You can animate a pie chart if you want its pieces to be *exploded*, which means that the individual slices of the pie can be pulled away from the rest of the pie.



To animate a pie, enable **Animated** check box in the Chart Designer.

## Working with Dial Charts

For dial charts to display correctly, you must enter values for your range and the chart title. In the example below, the dial chart preview is displaying ranges associated with sales. Notice that each dial sector is represented by a color, red, yellow, or green. The needle is positioned in the 220796.48 range, indicating that total orders, while not stellar, are not near the danger zone indicated by the red sector in the dial.

**Chart Designer**

**Chart Type**

Type:  Pie Chart  **Dial Chart**

Theme:  Primaries

Animated

**Data**

Series Column:

Category Column:

Values Column:

Scale:

**Display**

Chart Title:

Label Rotation (X Axis):

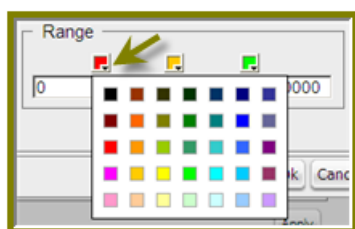
X Axis Title:

Y Axis Title:

Range:

## Changing Dial Sector Colors

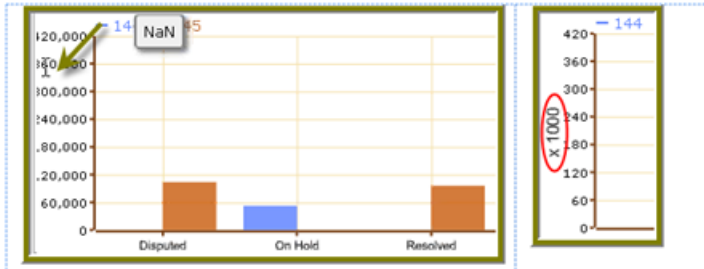
You can change the color of a dial sector by clicking the small down arrow in the color boxes associated with Range. Select a color from the palette so that you can preview it on your dial chart. Click **Apply** to preview your dial chart. Click **OK** to place your dial chart into the dashboard.



## Correcting Scaling Issues

Use the scaling feature in instances where numeric values in a chart are so long that they affect the display.

1. Preview your chart in the Chart Designer.
2. Under **Scale**, click to display the drop-down list of scaling options. In the example below, the scaling option used is "1000." Notice the change in the display of numeric values when scaling is applied. Users of the chart can see actual values when they hover over the bars in the chart.



3. Click **OK** to display the chart in the dashboard.



**Note:** The scaling feature is available for all chart types except pie.


## Rotating Chart Axis Labels

If your chart axis labels become unreadable because they are too long, **Label Rotation** may correct the problem.

1. In the Chart Designer, display your chart.
2. Under **Label Rotation**, select **Diagonal** or **Vertical** and click **Apply**.  
The labels display with the rotation you set.
3. Click **OK** to display the chart in the dashboard panel.


## Editing a Chart

Follow the instructions below to edit a chart.

1. In the Dashboard Designer, select the panel that is displaying the chart you want to edit.
2. In the upper right corner of the panel click  (Edit)  
The Chart Designer appears.
3. Click **Edit Query**.  
The Query Editor opens.
4. Edit the query as needed and click **OK**.  
The Chart Designer appears.
5. Select the appropriate data definitions to build the chart.
6. If applicable, change the chart type and theme and click **Apply** to see a preview of the edited chart.
7. Click **OK** to display the chart in the dashboard.

## Adding a Data Table to a Dashboard

The Data Table feature allows you to display a tabular representation of a database query in a dashboard. It also allows you and consumers of the dashboard to manipulate the display of the data in the data table, while in the dashboard. For example, users can resize, sort, and change the order of columns. Follow the instructions below to add a data table to your dashboard.

1. Select a panel in the Dashboard Designer.
2. Click  (Insert) and select **Data Table**.  
The **Select a Data Source** dialog box appears.
3. Select a data source from the list of available data sources and click **OK**.  
The Query Editor opens.

4. Begin building your query. Click (+) next to the category name to display its associated table columns. When the column names appear, click to select the column that contains the data you want displayed in your data table.
5. Click the small yellow arrow to place the column name under **Selected Columns**.
6. Now add the **Conditions**; these are your constraints that filter what you are selecting. You can add multiple conditions.

Under **Combine**, you can select your constraint (and, or, and not, or not) from the drop-down list. Under **Comparisons** you can click the drop-down list to display options for comparisons, =, <, >, and so on; (for example, where the customer number is *equal* to 144 *or* 145). You can also select an aggregation type from the drop-down list for table columns that contain numeric data. The table below contains a definition for each aggregate type:

Aggregate Type	Description
SUM	Sums a column's values
COUNT	Counts a column's values
AVG	Averages a column's values
MIN	Selects the minimum column value
MAX	Selects the maximum column value



**Note:** Click **Preview** at any time to view the data associated with your query.

7. Add the columns that you want to **Order By**. The ordering of the selected data is accomplished by one or more columns in a table. For example, you can sort the data by customer name and address.
8. Click **OK** in the Query Editor when you are done. The Data Table appears in the dashboard panel.



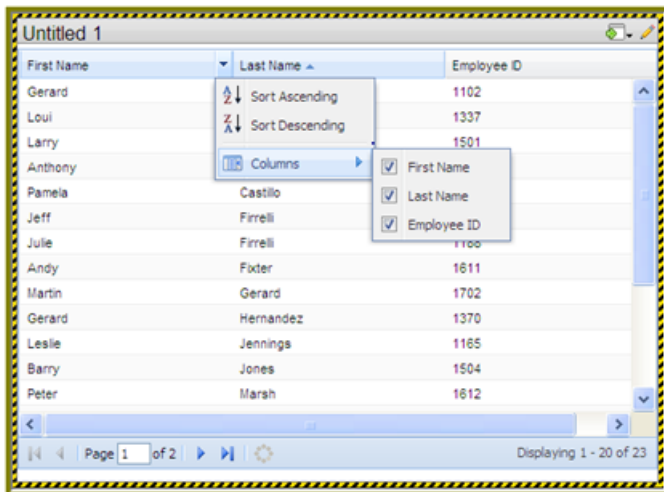
**Note:** For more information about adding parameters in the Query Editor, see [Adding Parameters to Your Query Using the Query Editor](#).

## Updating the Data Table Display

You can edit the data table display directly in the dashboard panel.

### Sorting Column Data

To change the sort order data under a column, click the drop-down arrow in the header and choose **Sort Ascending** or **Sort Descending**. You can also hide one or more columns by disabling the appropriate check boxes next to the column names.

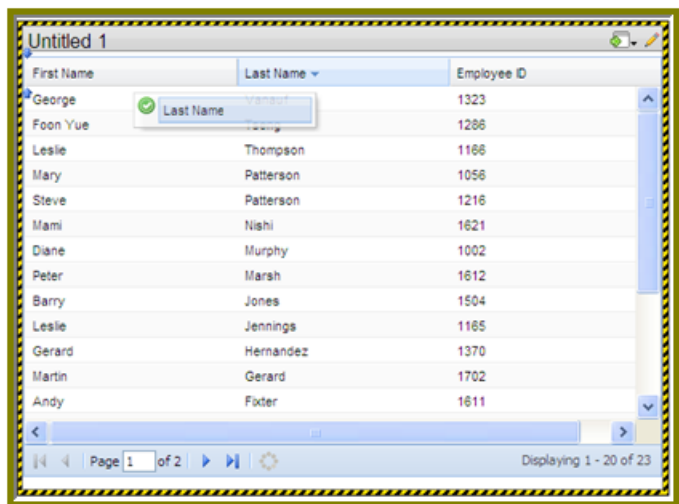


### Adjusting Column Width

You can adjust the width of a column by clicking the right border of the column header and dragging it to the right or left. Release the mouse button when you are done.

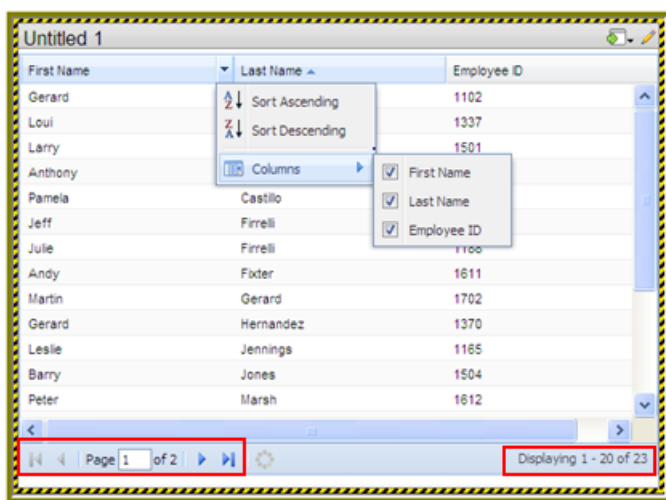
## Moving Columns

To move the placement of a column, click and drag the column it to the appropriate location in the Data Table as shown in the example below:



## Paginating

The pagination feature allows you to page through a large number of records.

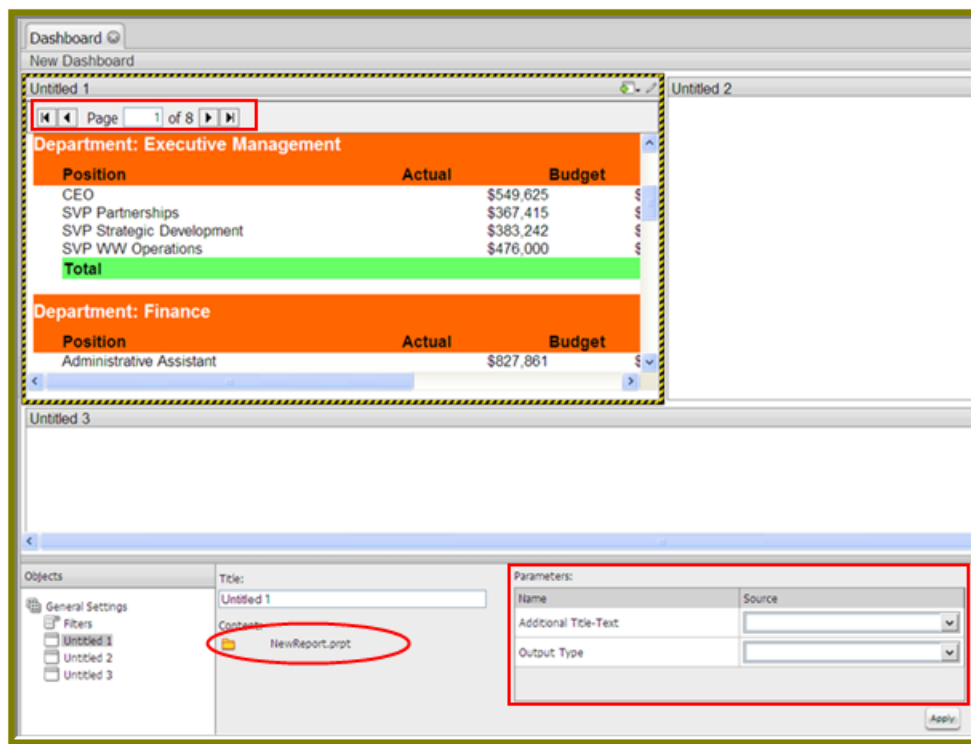


## Displaying a Report Designer File in the Dashboard

Follow the instructions below to display a report created in Report Designer and in a dashboard.

1. Select a panel in the Dashboard Designer.
2. Click (Insert) and select **File**.  
A browser window opens.
3. Locate the appropriate report file.
4. Click **Select** to place the report inside the dashboard panel.

Pagination control arrows at the top of a report allows you to scroll through long reports. Notice that the report file name, *NewReport.prpt*, appears under **Content**: in the dashboard edit pane in the sample below. This sample report contains parameters, (*Additional Title-Text*, *Output Type*), that do not have default values. You can enter values manually and link them to a dashboard filter in the text boxes under **Source**. When the report renders again, the parameter value(s) you entered are included in the report.



**Important:** If you select a Report Designer file to place in a dashboard, but do not supply values for required parameters, the report will show up blank.

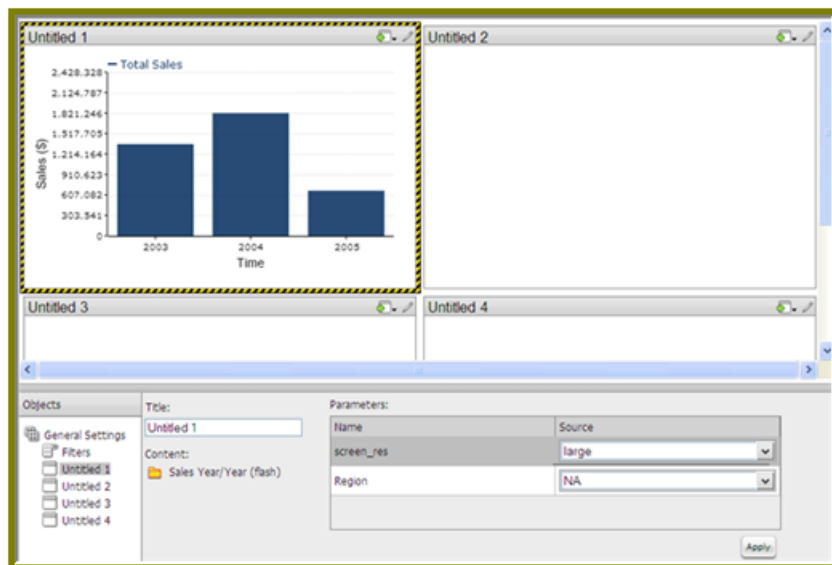
## Displaying an .xaction File in the Dashboard

Follow the instructions below to display the contents of an .xaction file in a dashboard.

**Note:** Generally, .xaction files are provided to you by an administrator. An .xaction file may contain a report, a chart, or other type of content.

1. Select a panel in the Dashboard Designer.
2. Click (Insert) and select **File**. A browser window opens.
3. Locate the appropriate .xaction file.
4. Click **Select** to place the contents of the file inside the dashboard panel.

Notice that the file name, *Sales Year/Year*, appears under **Content:** in the dashboard edit pane of the sample below. This sample chart contains parameters, (*screen\_res*, *Region*), and default values (*large*, *NA*).






5. Save your dashboard. See [Saving Your Dashboard](#) for instructions.


## Displaying an Analyzer Report in a Dashboard

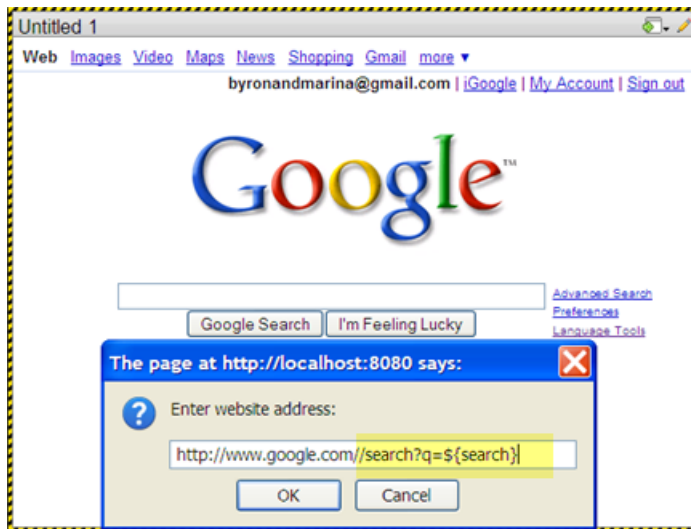
Follow the instructions below to display an Analyzer report in a dashboard.

1. Select a panel in the Dashboard Designer.
2. Click  (Insert) and select **File**.  
A browser window opens.
3. Locate the appropriate Analyzer report and click **Select**.  
The Analyzer Report appears inside the dashboard panel.
4. Save your dashboard. See [Saving Your Dashboard](#).

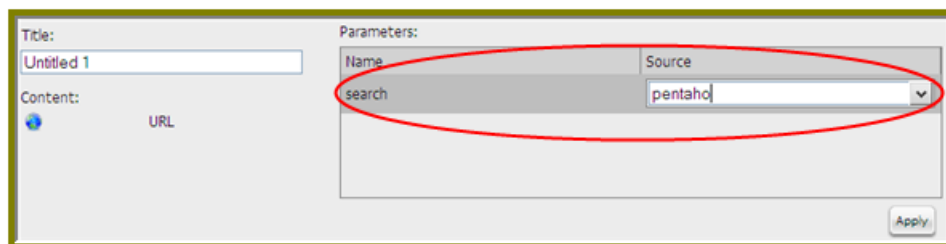
## Displaying a Web site in a Dashboard


Follow the instructions below to display contents of a Web site in a dashboard panel. You may need administrator privileges to display a Web site content in a dashboard.

1. Select a panel in the Dashboard Designer.
2. Click  (Insert) and select **URL**.  
The **Enter Web site** dialog box appears.
3. Enter the Web site URL in the text box and click **OK**.  
In the example below, a search parameter has been added to the URL.



When the parameter displays in the edit pane of the dashboard, you can enter a value for the parameter in the text box next to the parameter name.



4. If applicable, click  (Edit) to make changes.
5. Save your dashboard when you are done.

## Working with Filters


Filters allow you to display a subset of data based on the dashboard user's point of view. For example, the dashboard user's point of view of *Region* may be "East;" his or her point of view of *Time* may be, "Fourth Quarter." Pentaho Dashboards allows you to designate a point of view based on the filters in your source data.



**Note:** To ensure that a filter links to the correct content in a dashboard, the content to which you are linking (data table or chart) must contain at least one parameter. See [Adding Parameters to a Chart or Data Table Using the Query Editor](#) for more information.

The parameter features available in dashboards do not apply to action sequences, Report Designer reports (.prpt), and Analyzer reports. Parameters must be defined within the tools themselves. See [Creating Content to Content Links in an Analyzer Report](#), [Linking an Action Sequence Parameter to Content in other Dashboard Panels](#), and [Allowing a Report Designer \(.prpt\) Hyperlink to Drive a Parameter in Another Dashboard Panel](#), for more information.

Below are general instructions below for adding filters to your dashboard:

1. In the dashboard page, under **General Settings**, select **Filters**.  
The Filter Editor appears on the right. No filters are listed if this is the first time you are assigning filters.
2. To display a filter toolbar to users of the dashboard, enable **Show Filter Toolbar**.  
A placeholder for the filter toolbar appears at the top of the dashboard.
3. Click  (Add) to start adding filters.  
The **Filter Properties** dialog box appears.
4. In the **Filter Properties** dialog box, type a display name for the control label. For example, "Region."
5. Enable **Display Name as Control Label** if you want users to see the display name in the filter toolbar.
6. Select your control type. Control types define how your filter values are selected; for example, in a drop down list, radio button, checkbox, and so on.

The table below contains a description of each control type.

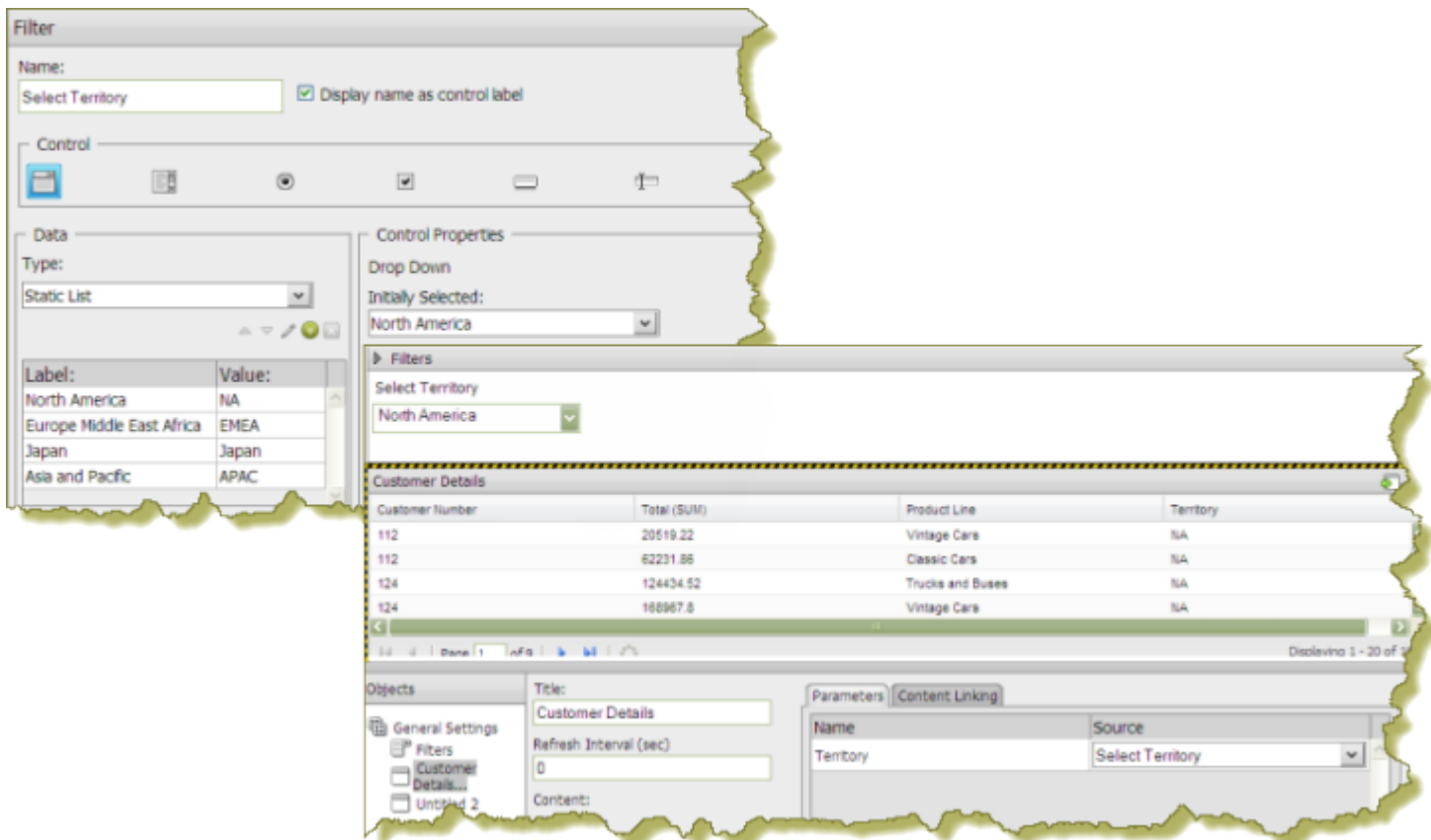
Control Type	Description
Drop Down	Users select a filter value from a drop-down list.
List	Users select a filter value from a scrolling list. This filter control supports multiple selections.
Radio button	Users click a radio button to select a filter value.
Checkbox	Users enable a checkbox to select a filter value. This filter control supports multiple selections.
Button	User click a button to select a filter value. This filter control supports multiple selections.
Text Field	Users enter a text string or number into a text field manually.
Date Picker	Users examine filter values based on calendar date.

7. If you plan to provide hard-coded names and values for your dashboard users, see [Creating a Static List of Filters](#). If you plan to provide a dynamic list of filters based on a SQL query, see [Creating a SQL List of Filters](#).




### Creating a Static List of Options

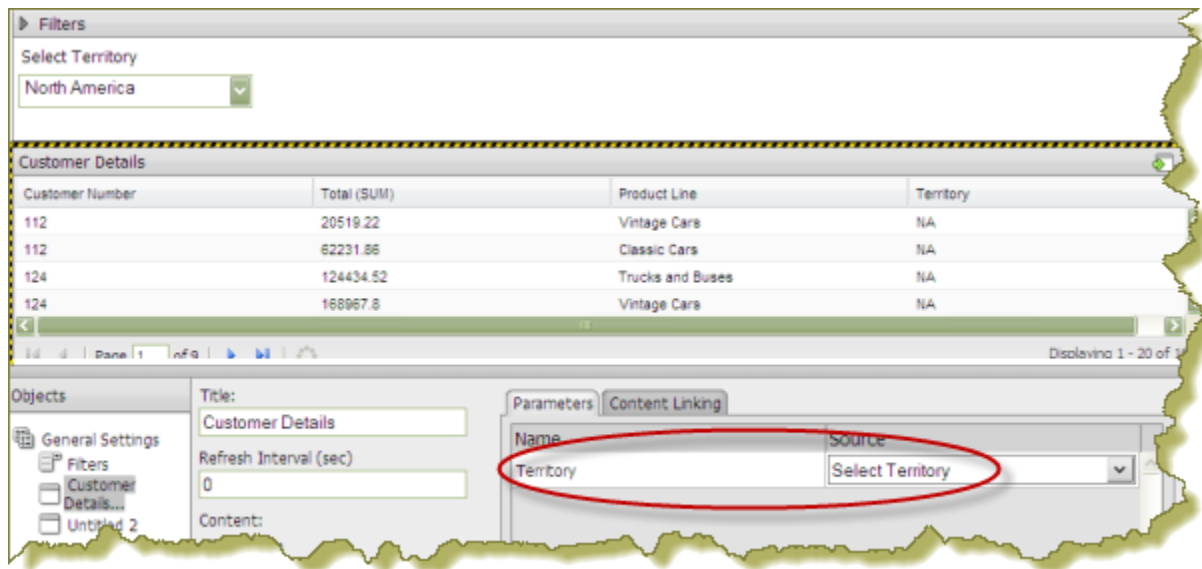
You must have a data table or chart that contains at least one parameter for your filter control to function correctly. See [Adding Parameters to a Chart or Data Table Using the Query Editor](#) for more information.

When you create a static list, you define a static list of options to present to the dashboard user. Each option consists of a display name that appears in a drop-down list and a value that is used to restrict the data query in the filter toolbar as shown in the example below:



Follow the instructions below to create a static list:

1. In the dashboard page, under **General Settings**, select **Filters**.  
The Filter Editor appears on the right. No filters are listed if this is the first time you are assigning filters.
2. To display a filter toolbar to users of the dashboard, enable **Show Filter Toolbar**.  
A placeholder for the filter toolbar appears at the top of the dashboard.
3. Click  (Add) to add a filter.  
The **Filter Properties** dialog box appears.
4. Click on an icon to select your **Filter Control** type. In the example above, the  (Drop Down) control was used.
5. Ensure that **Static List** is selected under **Type**. Static List is the default selection.
6. Click  (Add).  
The **List Value** dialog box appears.
7. In the **List Value** dialog box, enter the label and a value for the first option in the list. The label is the option that is visible to dashboard users; the value is passed as the parameter's source value.
8. When you are done adding labels and values, click **Close** to exit the List Value dialog box.
9. In the Filter Control dialog box, change the label (filter option) that will appear first in the filter control selecting another label from the list under **Initially Selected**.
10. In the dashboard, select your chart or data table. Click the **Parameters** tab and choose another **Source** for the parameter from the list. That source should be the name of your filter control; in this example, **Select Territory**.



The original default value (Source) for the **{Territory}** parameter was **NA** but for the filter to display correctly, the **Source** was changed to **Select Territory** in the dashboard so that the filter control could drive the content in the data table.

11. Click **OK** to exit the **Filter Control** dialog box.

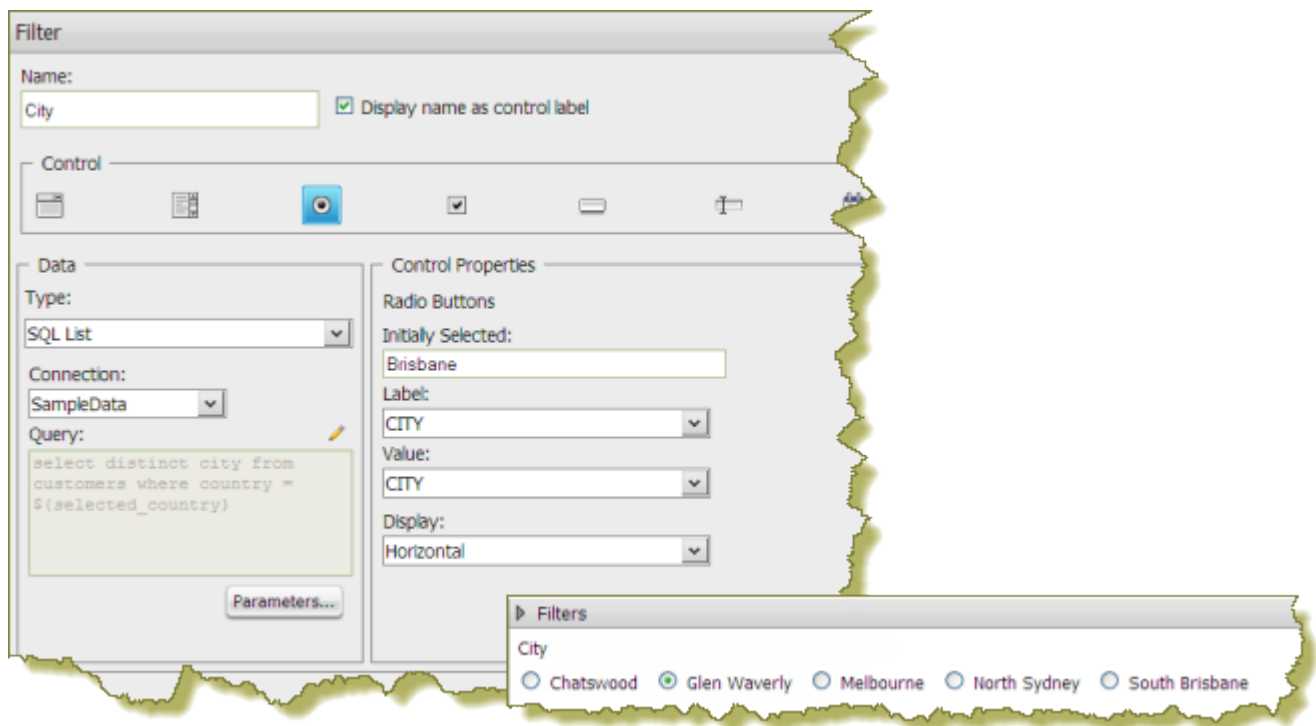
The filter options are displayed to the dashboard user when viewing the data table.

12. Click **OK** to exit the Filter Properties dialog box and save your dashboard.

## Creating a SQL List

You must have a data table or chart that contains at least one parameter for your filter control to function correctly. See [Adding Parameters to a Chart or Data Table Using the Query Editor](#) for more information.



When you create an SQL List, you are using a SQL query to dynamically retrieve a list of display names and corresponding values directly from a relational database as shown in the example below:




a


**Note:** You must have administrative permission to create SQL-based filters.

Follow the instructions below to create a SQL List:

1. In the dashboard page, under **General Settings**, select **Filters**.  
The Filter Editor appears on the right. No filters are listed if this is the first time you are assigning filters.
2. To display a filter toolbar to users of the dashboard, enable **Show Filter Toolbar**.  
A placeholder for the filter toolbar appears at the top of the dashboard.
3. Click  (Add) to add a filter.  
The **Filter Properties** dialog box appears.
4. In the **Filter Properties** dialog box, enter a **Name** for your filter.
5. Enable the **Display Name as Control Label**, if appropriate.
6. Click the appropriate icon to select your filter control. In the example above, the Radio Button control was selected.
7. Under **Type**, select **SQL List**.
8. Select the data source (**Connection**) that contains the content you need to set options from the drop-down list.
9. Click  (Edit) to display the **Query** input text box.
10. Type the SQL query in the area provided for you. If you enter a parameter query, use the following format **`\${parametername}** and provide a default value for the parameter.
11. Click **Test** to ensure that your SQL query is displaying the correct values.

 **Note:** Use a SQL query that returns two columns — one for the display name and one for the value.

12. Adjust your SQL query as needed and click **OK**.
13. Under **Control Properties**, enter a **Default Label/Value** for the *initially selected* option in your filter control.
14. Select a **Label** to display in the filter control; this is the user-friendly name that users will see in the dashboard.
15. Select the **Value**; this is the field that is passed as the parameter's source value.
16. If applicable, select your **Display** type from the list.

 **Note:** Some filter controls allow you to choose the position of your filter options. If you have a long list of options, for example, a list of cities, you can change the Display type to horizontal.

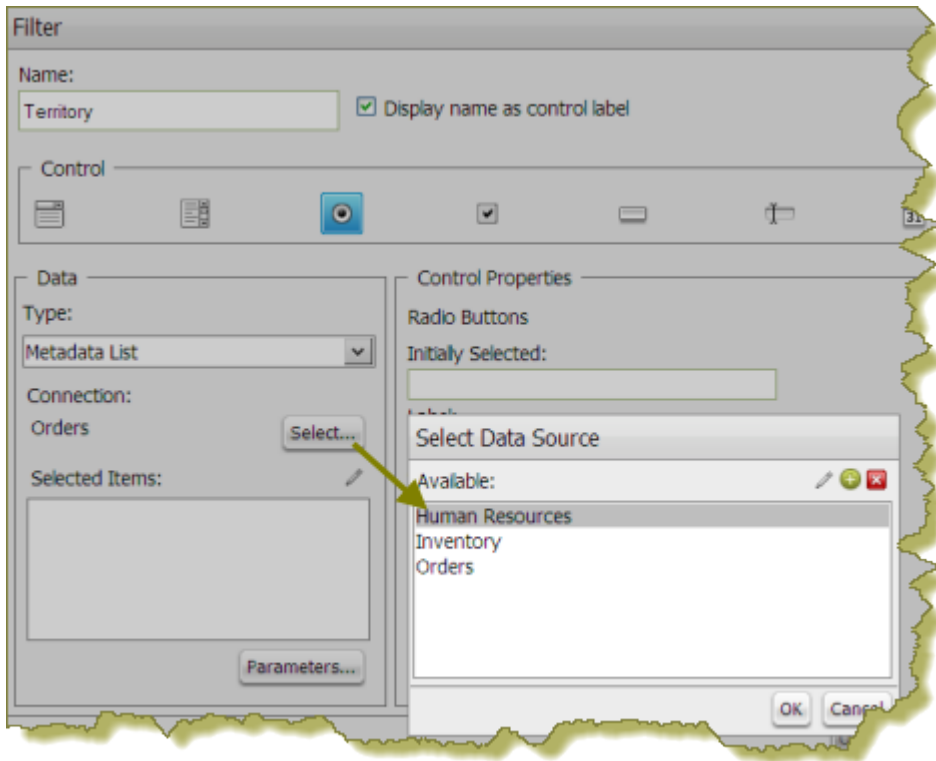
17. Click **OK**.



The list of values appear in the filter toolbar in the dashboard.

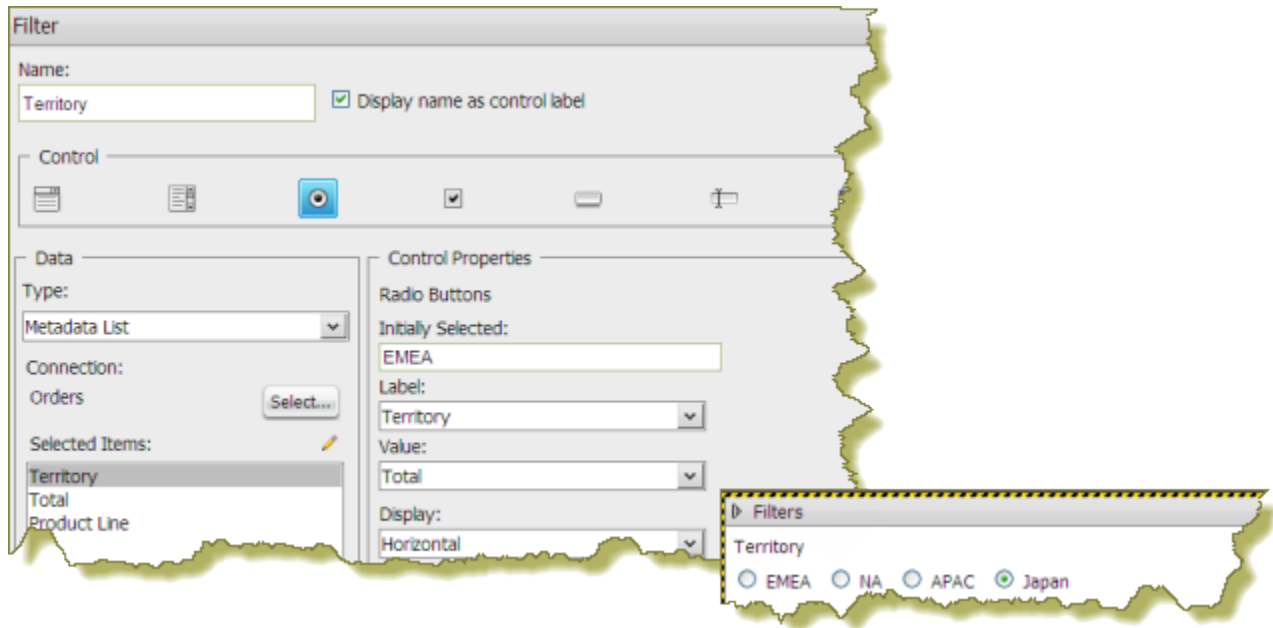
## Creating a Metadata List

You must have a data table or chart that contains at least one parameter for your filter control to function correctly. See [Adding Parameters to a Chart or Data Table Using the Query Editor](#) for more information.


When you create a Metadata List, you are defining a query to retrieve a list of display names and corresponding values from a metadata data source provided by your administrator.



1. In the dashboard page, under **General Settings**, select **Filters**.  
The Filter Editor appears on the right. No filters are listed if this is the first time you are assigning filters.
2. To display a filter toolbar to users of the dashboard, enable **Show Filter Toolbar**.  
A placeholder for the filter toolbar appears at the top of the dashboard.
3. Click  (Add) to add a filter.  
The **Filter Properties** dialog box appears.
4. In the **Filter Properties** dialog box, enter a **Name** for your filter.
5. Under **Data Type**, select **Metadata List**.
6. Click **Select** to choose the data source that contains the content you need to set options from the drop-down list and click **OK**.  
The **Query Editor** opens.
7. In the **Query Editor**, build a query to select either a single column (that represents both a name and a value), or two columns representing the display names and corresponding values.  
 **Note:** If a single column query is defined the values of that column will be used for both the display names and the values.
8. Click **OK** to exit the Query Editor.  
Your options appear under **Selected Items** in the Filter Properties dialog box.
9. Under **Control Properties**, enter a **Default Label/Value** for the *initially selected* option in your filter control.



10. Select a **Label** to display in the filter control; this is the user-friendly name that users will see in the dashboard.
11. Select the **Value**; this is the value in the database that is associated with the Label you selected in the previous step.
12. If applicable, select your **Display** type from the list.

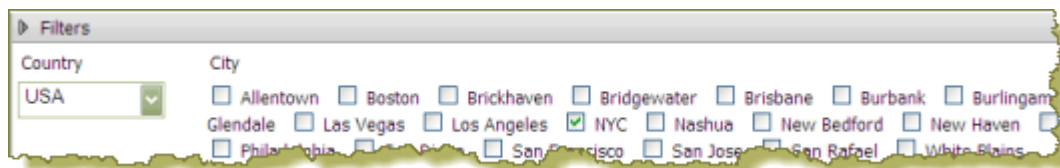
 **Note:** Some filter controls allow you to choose the position of your filter options. If you have a long list of options, for example, a list of cities, options may not appear correctly in the user console unless you change the Display type to **Horizontal**.

13. Click **OK**.

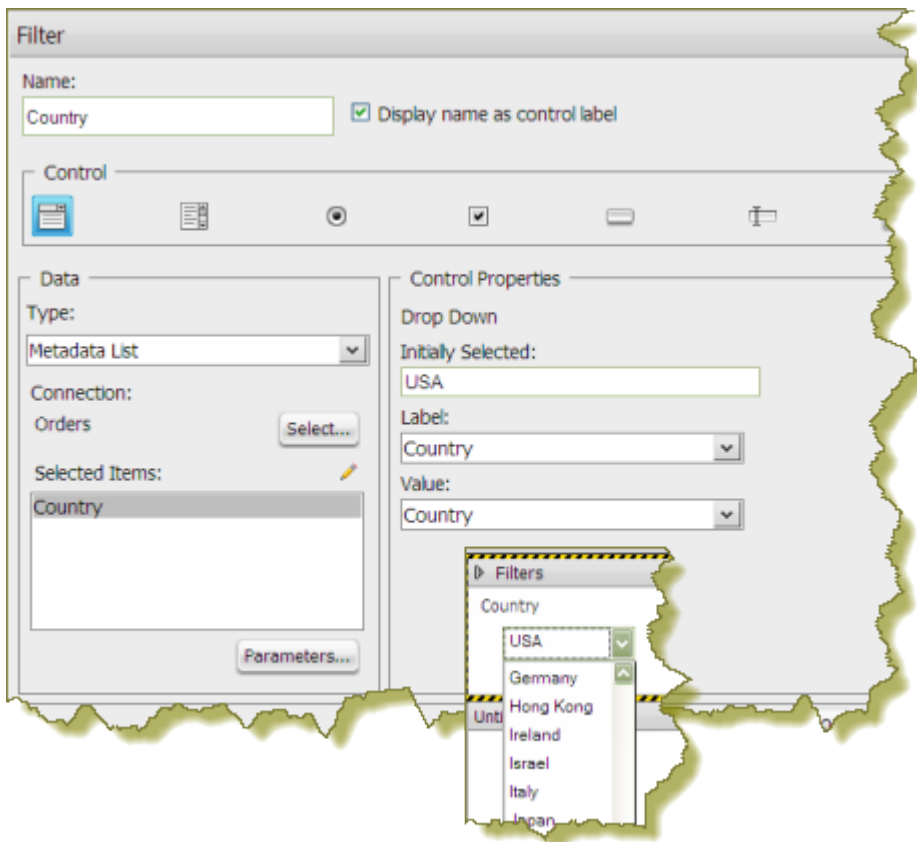
The list of values appear in the filter toolbar in the dashboard.

## Creating a Cascading Filter

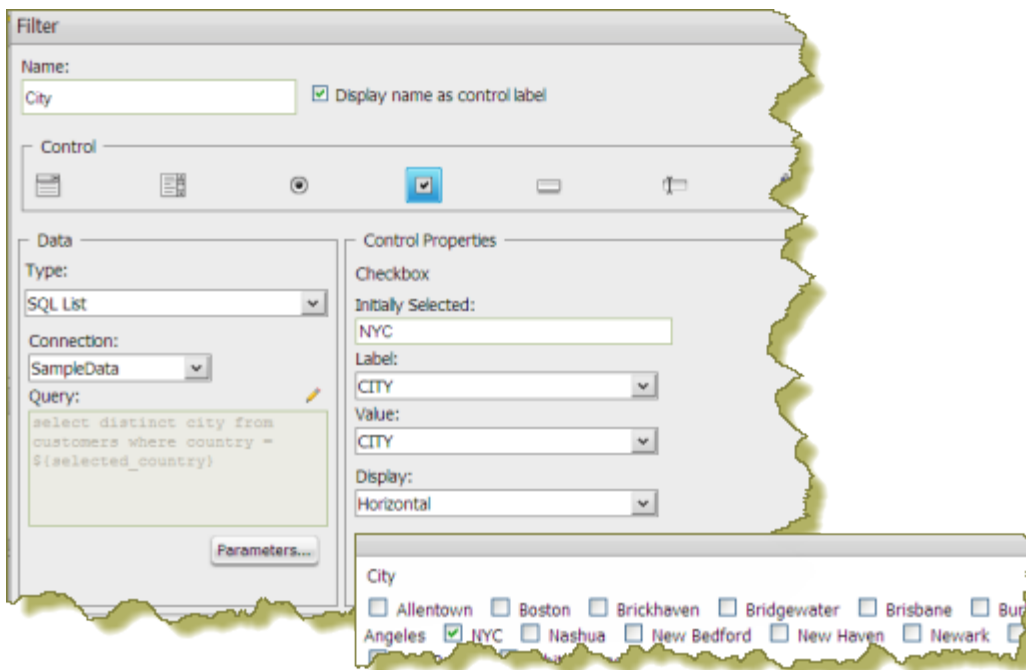
A cascading filter changes based on a value a user selects. When the value in the drop down list, (Country), changes, the filter is automatically applied to the second filter, (City) thus changing its values.



The example above was created using a Metadata List for the drop down filter (Country).

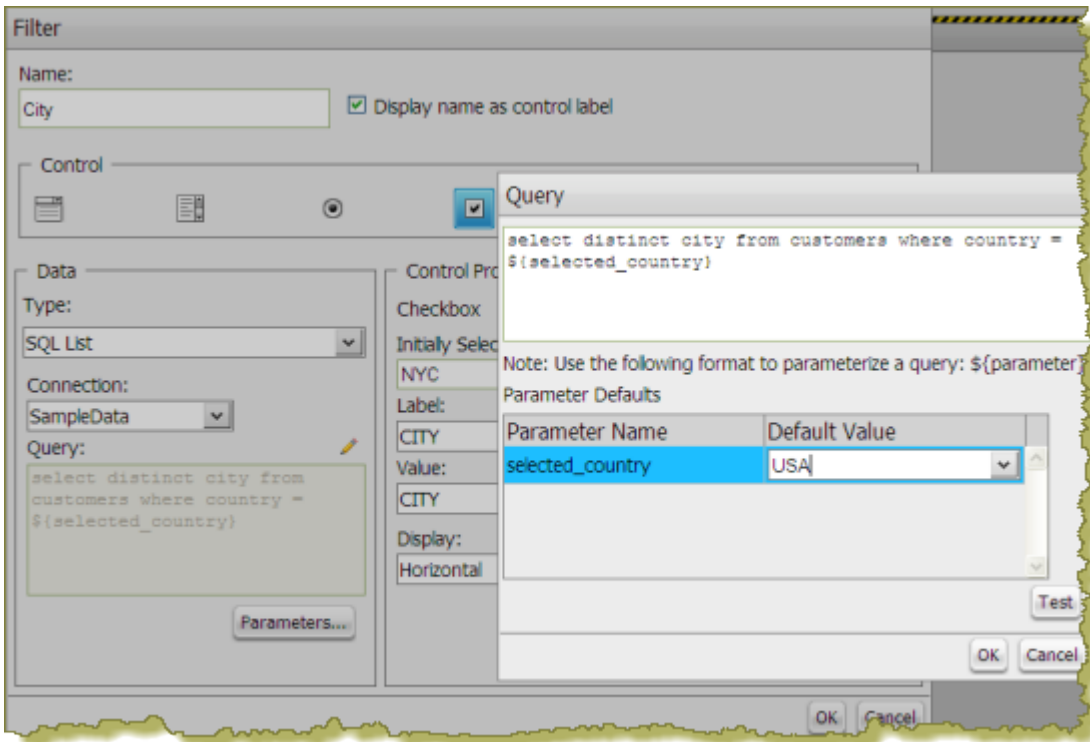


A SQL List that included a parameter, **\$(selected\_country)**, in its associated query was used for the checkbox filter (**City**).

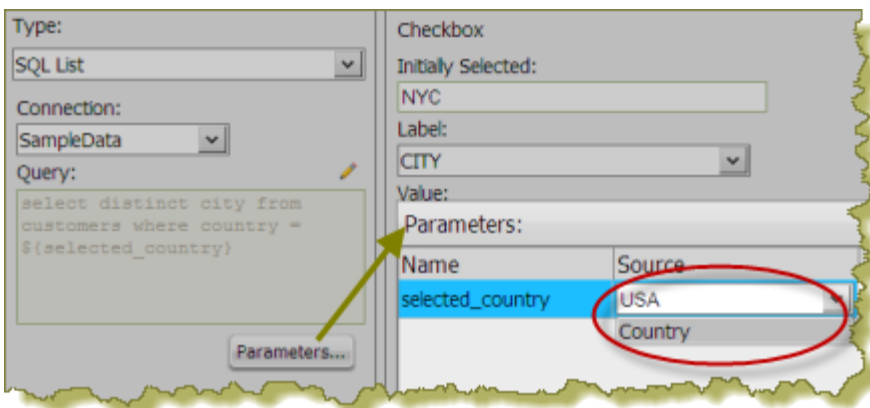


The **Default Value** for the **selected\_country** parameter was set to **USA** with New York City (**NYC**) as the initially selected value for the checkbox filter.





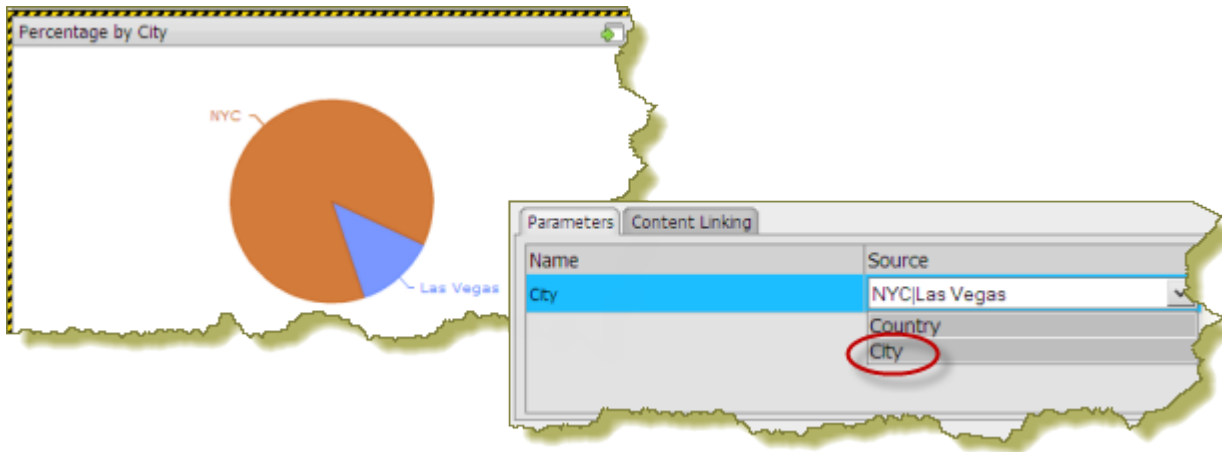
To link the City filter to the Country filter, another **Source** for the **selected\_country** parameter was chosen. The alternate source is the **Country** filter.



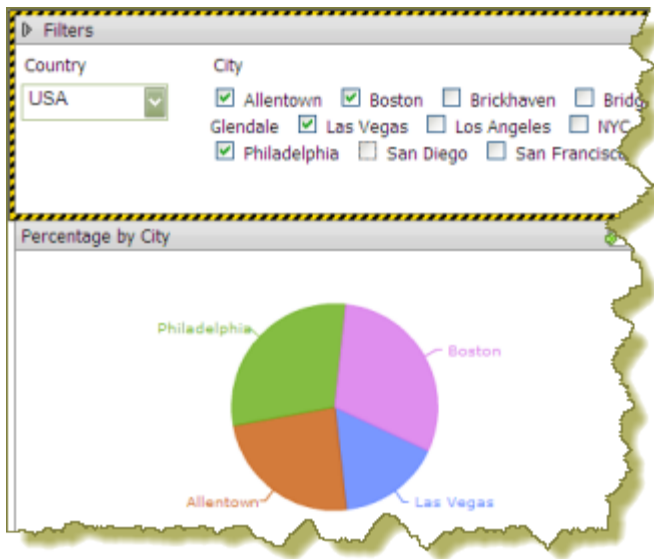
Once the filters are linked, users can select a country and then select a city (or cities) in the country of their choice.

Using this example, the report designer can now add a data table, chart, or other content in the dashboard that can be driven by the filter he or she just created. Suppose the designer decides to add a pie chart to the dashboard. The pie chart will display the percentage of sales per city.

In the Query Editor, the report designer creates a parameter, **{City}**, with an extended default value: **NYC|Las Vegas**. The resulting pie chart displays values for New York City and Las Vegas. Under the Parameters tab associated with the pie chart, the **Source** value for the City parameter is changed to the **City** filter.




When the report is saved, users of the dashboard can see results for a country and multiple cities within that country.



## Editing Filters

You can edit filters as needed. Follow the instructions below to edit filters:

1. In the dashboard page, select an existing dashboard.
2. Under **Objects**, click **Filters** to display the filters associated with the dashboard you selected.
3. Select the filter you want to edit and click . The **Filter Properties** dialog box appears.
4. Make your changes as needed and click **OK** to update the filter-related options in the dashboard.

## Linking Dashboard Filters to Analyzer Parameters

This process only applies to dashboards that include parameterized Analyzer reports. You must have an Analyzer report with a query parameter in it in order to proceed.

The instructions below explain how to parameterize an Analyzer report to a dashboard in Dashboard Designer.

1. In Analyzer, select a field in your report to which you want to link; then, right-click and choose **Filter**.  
In the example below, data will be filtered by **Territory**.

Territory	Line			
	Classic Cars	Motorcycles	Planes	Ships
	Sales	Sales	Sales	Sales
APAC	193,086	89,969	74,854	4,176
	167,198	99,849	46,572	34,176
	132,890	4,176	-	14,176
	101,459	26,048	17,860	9,176
EMEA	20,137	-	5,625	31,176
	157,182	-	7,586	35,176
	153,552	47,867	34,375	29,176
	388,951	226,390	108,156	66,176
	148,315	7,498	23,001	5,176
	31,689	4,953	11,784	-
Show Subtotals	133,183	11,609	113,718	17,176
Tell me about...	134,787	51,769	29,501	-
Remove from Report	476,165	74,635	89,986	12,176
	15,653	-	8,900	-

- In the **Filter** dialog box, enter a name for the parameter in the **Parameter Name** text box and click the check box to enable it.

Showing 1 of 5 values

TERRITORY\_PARAM Parameter Name

- Select the values you want associated with the parameter. Use the arrows to add values to the box on the right.

**Filter on Territory**

Select from a list (Includes- Excludes)

Match a specific string (Contains, Doesn't Contain)

Choose values from list:


Currently Included

#null  
APAC  
EMEA  
Japan  
NA

APAC  
 EMEA  
 Japan  
 NA

Add all  
 Remove all

- Click **OK** to exit the Filter dialog box.
- Save your Analyzer report.

In the upper left corner of the report, you can see that a filter is in use. Click  (Edit) to edit your filter; click  to delete the filter.

1 Filter in use

Territory includes APAC, EMEA, Japan and NA

Territory	Country	Line	
		Classic Cars	Motorcycles
	Australia	193,086	89,9
APAC	New Zealand	167,198	99

6. Create a dashboard and drag the Analyzer report into a panel.

The name of the parameter appears in the lower portion of the dashboard under **Parameters**.

7. Add a filter to the dashboard based on the parameter you created in your Analyzer report.

The filter appears in the dashboard.

## Working with Parameters

If you are placing a file, such as an .xaction or .prpt, inside a dashboard panel, it is possible that the author of the file, defined meaningful parameters for the content. If previously defined, the parameters and their associated default values, appear under **Parameters** in the edit pane of the dashboard. In the example below, when the chart initially rendered, it displayed a parameter called, "chart\_type" with a default value called, "bar." A user can change the value of the parameter to see the content rendered as a pie, line, or area chart.

The image shows two examples of a dashboard panel titled 'Chart Pick List'. Each example displays a chart and a 'Parameters' control panel.

**Top Example: BAR CHART**  
 The chart is a bar chart titled 'Product Line Sales Year to Year'. The y-axis is labeled 'Sales' and ranges from 500,000 (\$) to 1,750,000 (\$). The chart shows two groups of bars. The 'Parameters' panel below the chart has a 'Name' field with 'chart\_type' and a 'Source' dropdown menu set to 'bar'.

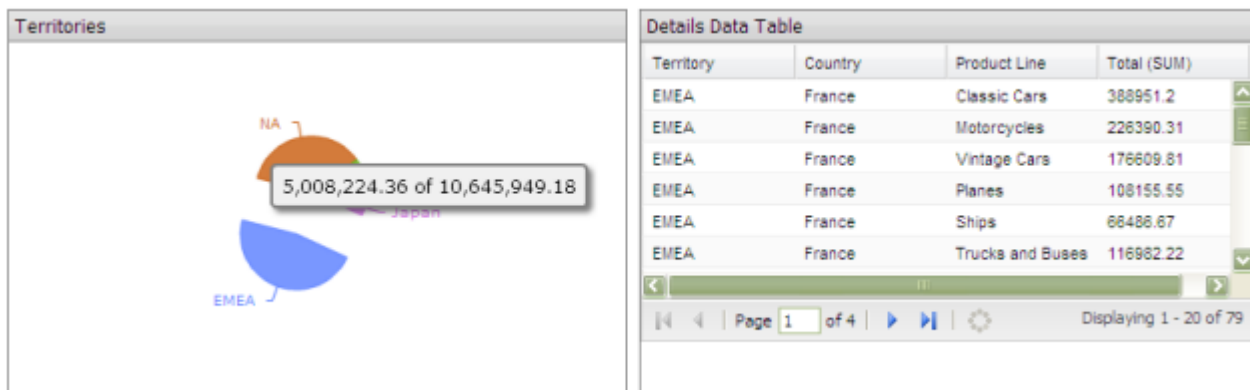
**Bottom Example: Line Chart**  
 The chart is a line chart titled 'Product Line Sales Year to Year'. The y-axis is labeled 'Sales' and ranges from 500,000 (\$) to 1,750,000 (\$). The chart shows two lines with markers. The 'Parameters' panel below the chart has a 'Name' field with 'chart\_type' and a 'Source' dropdown menu set to 'line'.

Parameter names are "hard-coded," in the file; that means they cannot be changed. Neither can you change the number of parameters associated with a file. When you create a chart using the Chart Designer, embed a URL into a dashboard, or create a data table, you can change both the name and value of a parameter.

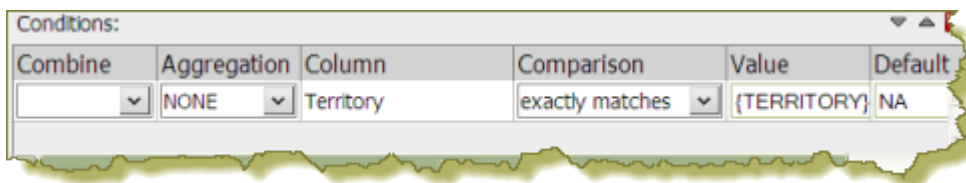
## Adding Parameters to a Chart or Data Table Using the Query Editor

When you place a chart in a dashboard panel, you use the Query Editor to retrieve data from a database for display on your chart or data table. If applicable, you can add Conditions or constraints that filter the data so that the chart or data table displays the information you want dashboard consumers to see.

Using parameters is critical if you plan on using dashboard filters or linking content in one dashboard panel to content on another dashboard panel. For example, suppose you create a pie chart and you want to filter details associated with an exploded pie slice in the adjoining data table as shown in the example below. In this instance, you must use a parameter that allows the data table to update when a dashboard consumer clicks on a pie slice. Optionally, you can parameterize the query condition so that the content is updated based on a user interaction, such as changing a filter value.

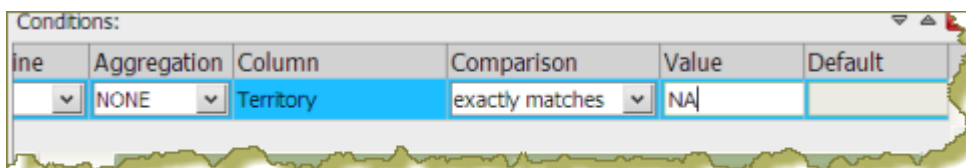


To create a parameter, in the **Value** field, type the name of the parameter inside curly braces, as in **{Parameter Name}**. In the example below, the designer created a parameter called, **{TERRITORY}**; the default value, or source, for the parameter is, "NA" (North America). When a chart or data table renders, it displays data associated with North America. Remember that this is a *default value*. When you enclose a parameter name with curly braces, you are creating a *parameter query*. That means, that users can change the query dynamically by replacing the default, "NA," with a different territory acronym, (for example, EMEA), when the query runs.



You can define two defaults by adding a pipe (|) between the values, as in NA|EMEA.

Suppose a dashboard designer chooses to limit the data to North America (NA) exclusively? In this instance, he or she would not include the curly braces around "NA," (as shown in the example below), and **Default** (value) is disabled. This is an example of a static query.



## Using Content Linking to Create Interactive Dashboards

Depending on your needs, you can create a "static" dashboard, which contains content in each panel that is separate but related. For example, you may provide users with a bar chart that contains total sales figures by region. Additionally, you may provide a data table that displays sales details for each state in a specific region. You may also want to provide sales data associated with each salesperson in a specific region. The content in your dashboard is useful to dashboard consumers, but to make it more "interactive," you may want to consider using *content linking*.

The content linking features in dashboards allow you to associate (link) content in one dashboard panel to content on another dashboard panel as long as query parameters have been defined. These features are particularly helpful for drilling down or for dynamic filtering; for example, when dashboard consumers explode a single slice in a pie chart to launch content in a data table associated with that pie slice. In this instance, dashboard consumers are moving from a summary view to a detailed view interactively.

You can use content linking if your dashboard panel contains a data table, chart, .xaction, .prpt, and Analyzer report.

### Content Linking and Query Parameters

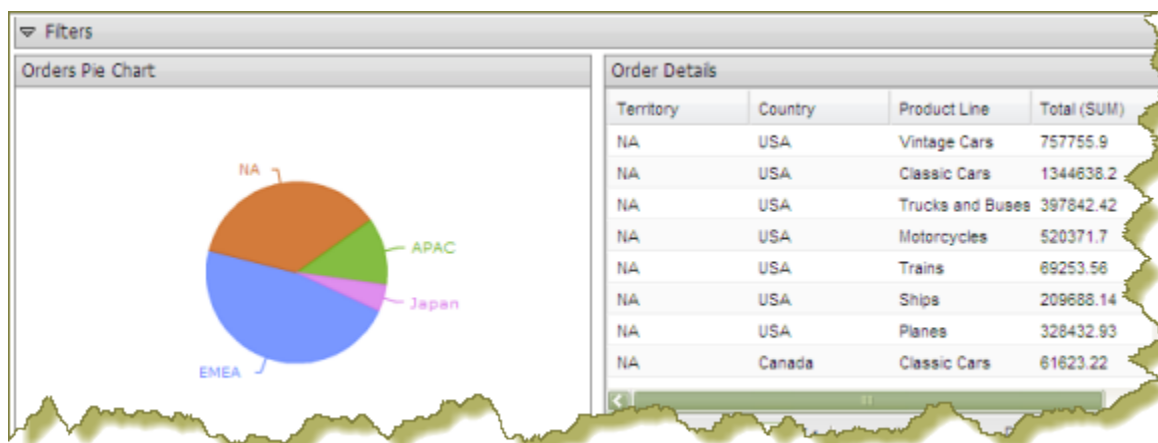
Query parameters are required for content inside a dashboard panel to receive values used to filter data from a filter control. They are also required when receiving values from content in other dashboard panels that are broadcasting values associated with Content Linking. The way in which query parameters are defined is different depending on the type of content you are placing inside your dashboard panels:

If	Then
You are defining parameters in the <b>Analyzer</b> ...	See <a href="#">Adding Query Parameters to Analyzer Reports</a>
You are defining parameters in an <b>Action Sequence</b> (.xaction)...	Refer to the section, "Content Linking in Dashboards," in the <i>Creating Action Sequences</i> guide available from the <a href="#">Pentaho Knowledge Base</a> .
You are defining parameters for a <b>chart</b> or <b>data table</b> ...	Use the Query Editor to define your parameterized query. See <a href="#">Linking Charts and Data Tables</a> and <a href="#">Linking Columns in a Data Table to Content in other Dashboard Panels</a>

### Linking Charts and Data Tables


Below are general instructions for linking charts and data tables in a dashboard. This is just an example. You must adjust the instructions when working with your own data.

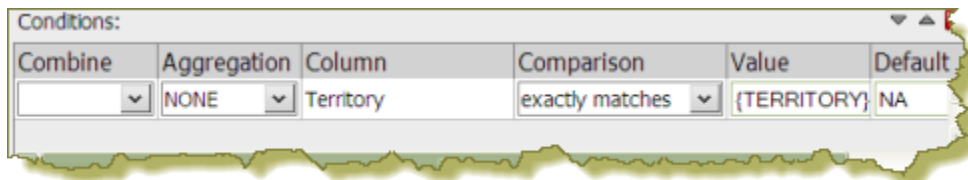
1. Create a simple dashboard that contains a chart and a data table. At this point, none of the content has been linked and you have a "static" dashboard.



Notice the pie chart in the example above. You want dashboard consumers to click a slice (NA, APAC, Japan, EMEA) and have the data table on the right update with the values associated with that slice exclusively. For example, if a report consumer clicks the EMEA slice, the data table will display values associated with EMEA and nothing else. To get the correct filter display, you must first create a parameterized query that drives the content in the data table.

2. Add a parameterized condition to the query for the data table by specifying a parameter name in curly braces in the **Value** text box; then, provide a default value for that parameter in the **Default** text box. In the example below, a parameter called **TERRITORY** with a default value of **NA** has been created.

 **Note:** Parameterizing a query, as described here, allows you to pass values dynamically and update the chart based on events triggered by other elements of the dashboard such as a user selecting an item from a filter control or following links defined in content associated with another panel in the dashboard.



In the Pentaho User Console, click the data table and examine its available parameters. In the example below, there is an available parameter called **TERRITORY** with a default source value of NA (North America). There are no more other sources that control the TERRITORY parameter.

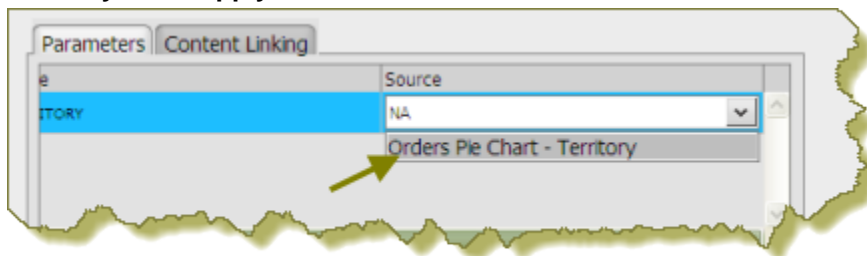


- To enable content linking, select the chart. Click the **Content Linking** tab then click the check box next to the field name you want enabled for content linking. Click **Apply**.



This step enables content linking on the chart series; in this example, the chart series is **Territory**. When you enable content linking on a chart series, you make the series value available as a source of parameters for content in other dashboard panels.

- Click the data table to display the available parameter, then click the down arrow, (in the **Source** text box), to display a new source for the parameter. Select the new source. In the example below, the new source is **Orders Pie Chart - Territory**. Click **Apply**.



The new source for the parameter corresponds to the title of the dashboard panel that contains the chart as shown in the example above. This new source will now drive the display in the data table.

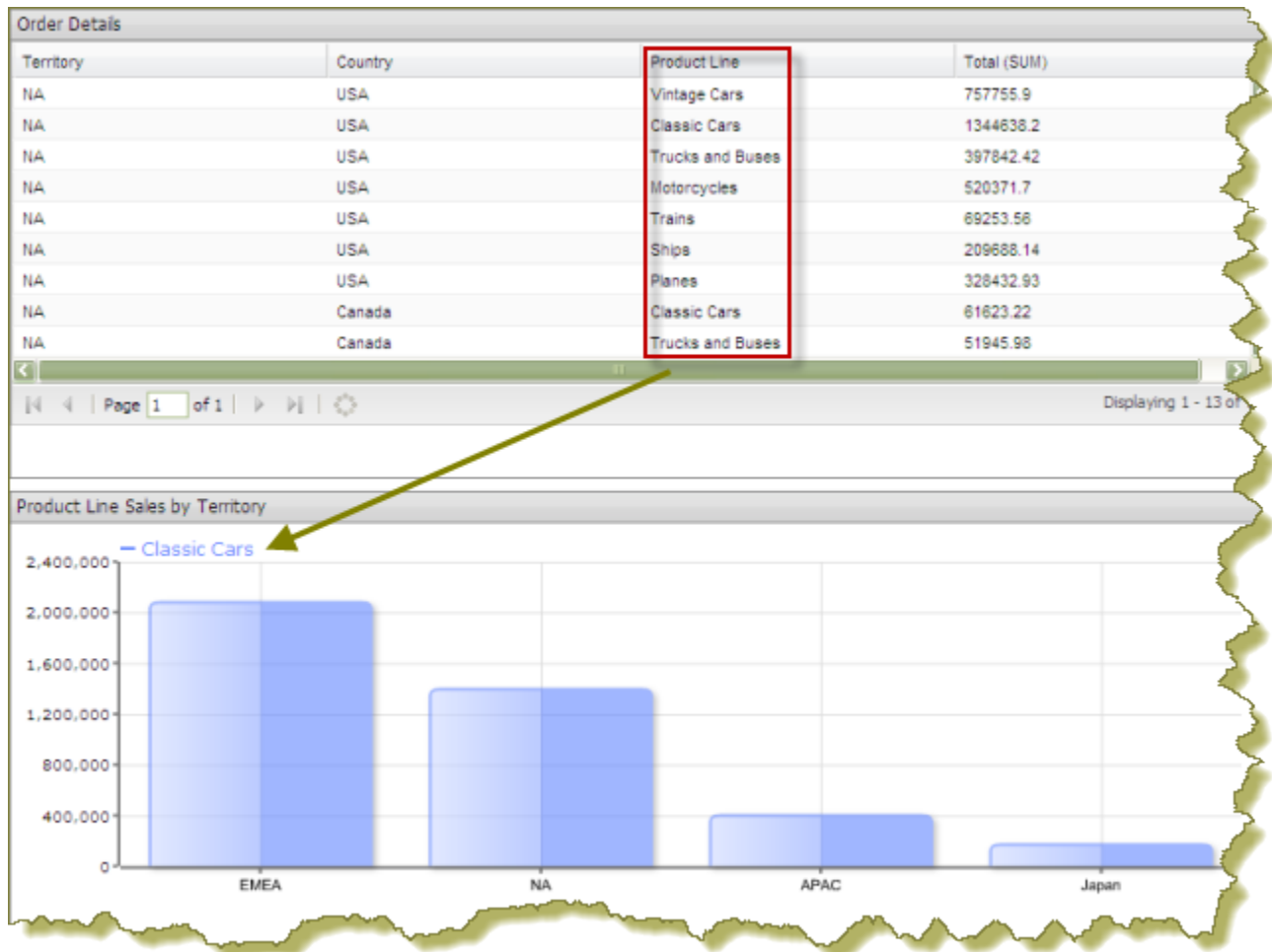
- Save your dashboard. See [Saving Your Dashboard](#).

When users click a pie slice or bar in a chart, the data table displays content associated with that specific pie slice or bar.

## Linking Columns in a Data Table to Content in other Dashboard Panels

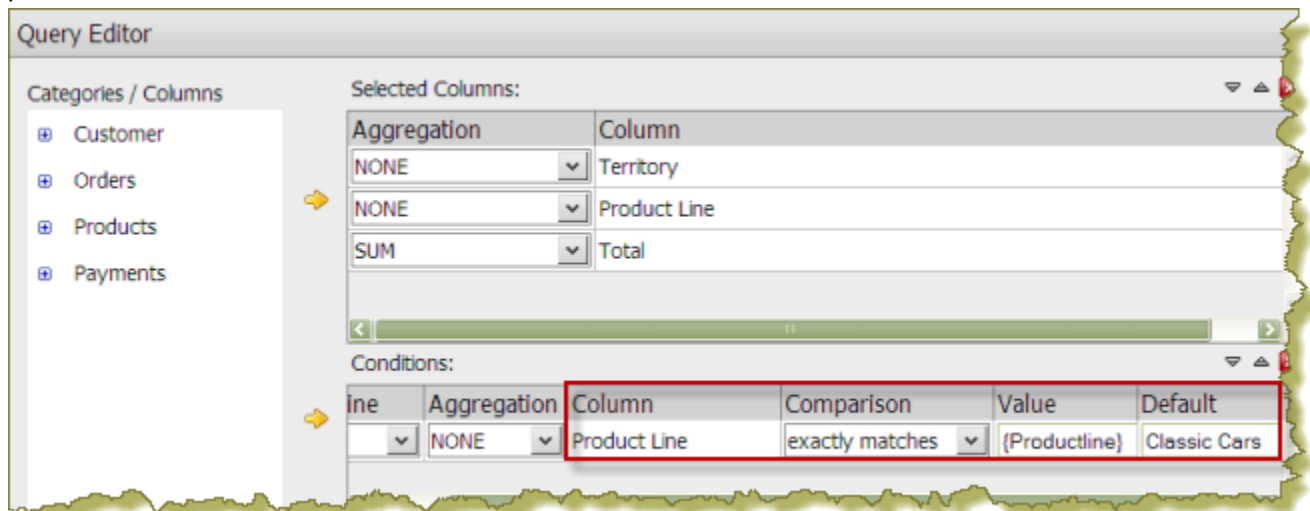
The instructions that follow show you how to link a chart to a column in a data table. You must adjust the instructions when working with your own data.

1. Create a simple dashboard that contains a data table and a bar chart. At this point, none of the content has been linked and you have a "static" dashboard.



Notice the data table in the example above. You want dashboard consumers to click on a product in the **Product Line** column and have the bar chart update with information about sales by territory for that specific product line.

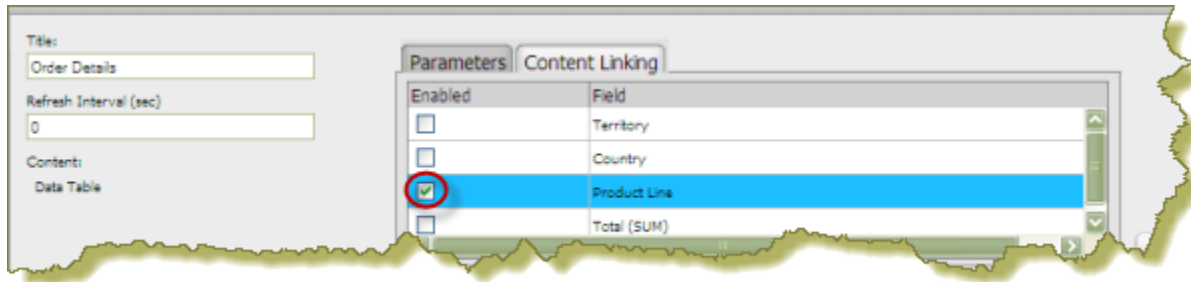
2. Add a parameterized condition to the query for the bar chart by specifying a parameter name in curly braces in the **Value** text box; then, provide a default value for that parameter in the **Default** text box. In the example below, a parameter called **Productline** with a default value of **Classic Cars** has been created.



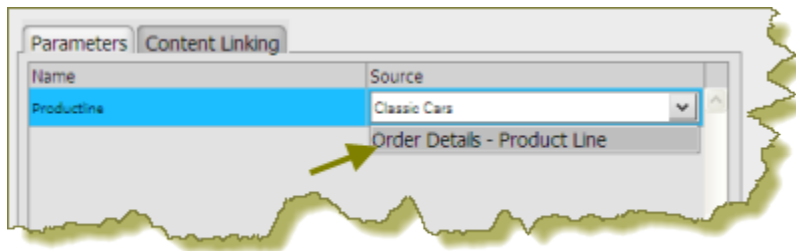
3. In the Chart Designer, set the data definitions for the series, category and values columns associated with your bar chart and click **OK**.



- Under **General Settings**, select the data table and click the **Content Linking** tab. Enable content linking on the column in your data table that will filter content in your chart. Each of the columns in a data table are able to broadcast values to other dashboard components.

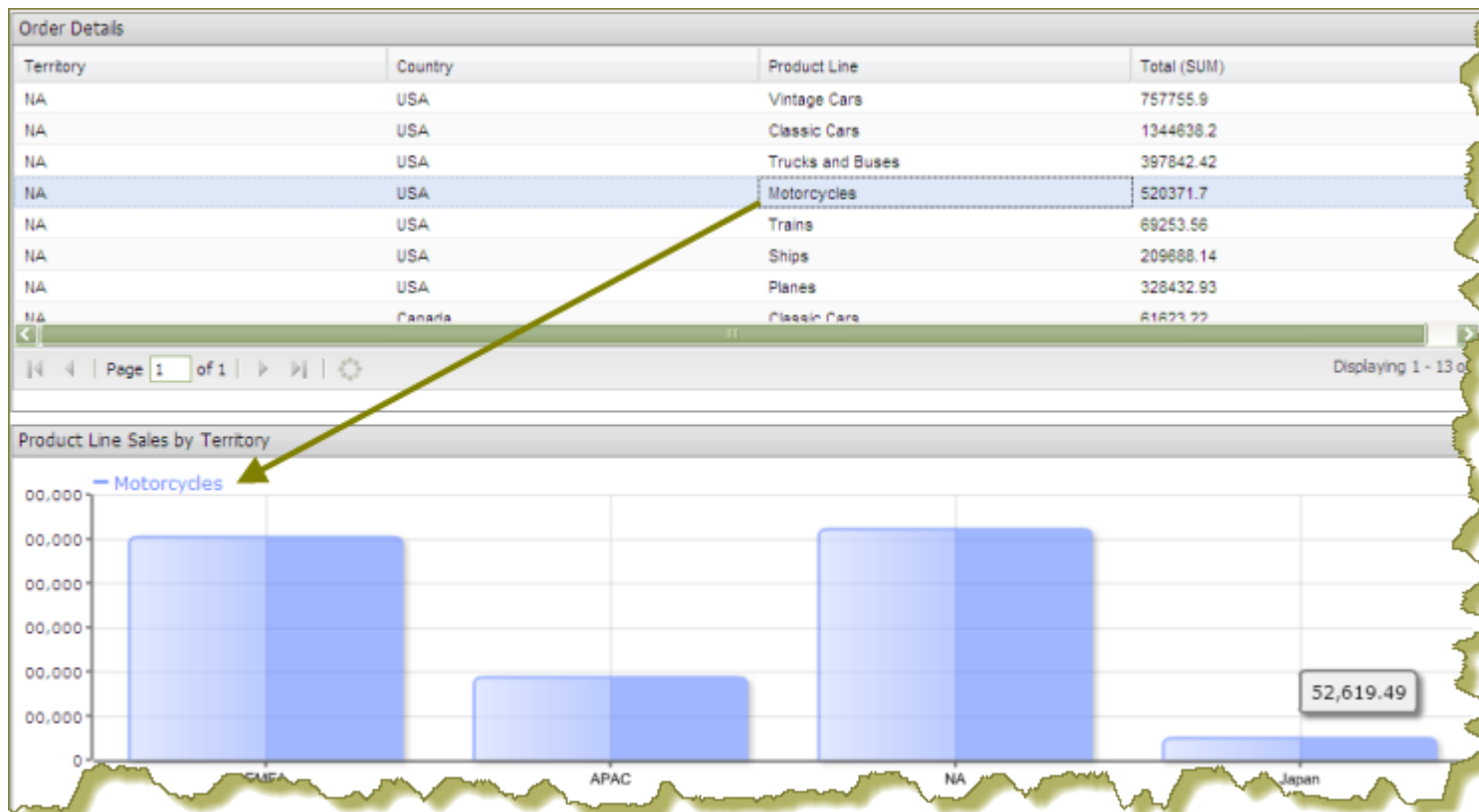


- Under **General Settings**, select the chart and click the **Parameters** tab. Click the down arrow, in the **Source** text box to display another source for the parameter you created. In the example below, notice that **Order Details - Product Line**, (this is the name of the dashboard panel that contains the data table), can now be selected as a source for the **Productline** parameter.



- Save your dashboard. See [Saving Your Dashboard](#) for instructions.
- In the data table, select an item in the column that has content linking enabled. The content in the chart updates in response to the item that was clicked in the data table.

In the example below, the **Product Line** column was enabled for content linking.



## Creating Content to Content Links in an Analyzer Report

Below are general instructions for creating content links in an Analyzer report, (inside a dashboard), that can be used to drive the parameter values of content in other dashboard panels. You must adjust the instructions when working with your own data.

1. Create a simple dashboard that contains an Analyzer Report and a data table. At this point, none of the content has been linked and you have a "static" dashboard.

Untitled 1

No Filter in use ✔ Your report is ready

Line	Classic Cars	Motorcycles	Planes	Ships	Trains	Trucks and Buses	Vintage Cars
Territory	Sales	Sales	Sales	Sales	Sales	Sales	Sales
APAC	411,956	189,818	121,426	38,393	9,907	145,666	36,100
EMEA	2,091,601	507,138	491,655	427,265	138,506	500,979	851,000
Japan	181,601	52,619	109,733	33,016	16,802	57,848	52,000
NA	1,406,261	524,549	353,943	249,997	69,254	449,788	796,000

Untitled 2

Customer Name	City	State
American Souvenirs Inc	New Haven	CT
Auto-Moto Classics Inc.	Brickhaven	MA
Boards & Toys Co.	Glendale	CA
Cambridge Collectables Co.	Cambridge	MA
Canadian Gift Exchange Network	Vancouver	BC
Classic Gift Ideas, Inc	Philadelphia	PA
Classic Legends Inc.	NYC	NY
Collectable Mini Designs Co.	San Diego	CA
Collectables For Less Inc.	Brickhaven	MA
Corporate Gift Ideas Co.	San Francisco	CA
Dist. Logistics Inc.	Albany	NY

In the example above, when content linking is achieved, the list of territories (APAC, EMEA, Japan, and NA) will become hyperlinks that, when clicked, will update customer details data table. To get the correct filter display, a parameterized query that drives the content in the data table must be created.

2. Add a parameterized condition to the query for the data table by specifying a parameter name in curly braces in the **Value** text box; then, provide a default value for that parameter in the **Default** text box. In the example below, a parameter called **TERRITORY** with a default value of **NA** has been created.

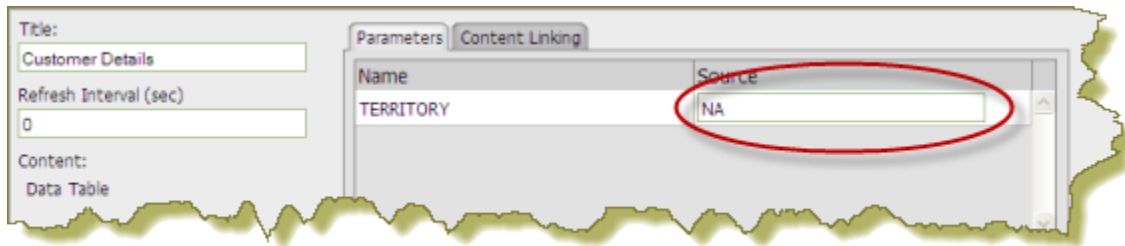


**Note:** Parameterizing a query, as described here, allows you to pass values dynamically and update the chart based on events triggered by other elements of the dashboard such as a user selecting an item from a filter control or following links defined in content associated with another panel in the dashboard.

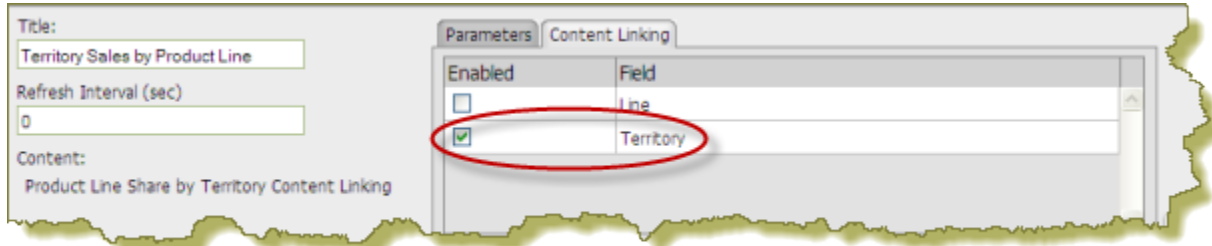
Conditions:

Combine	Aggregation	Column	Comparison	Value	Default
	NONE	Territory	exactly matches	{TERRITORY}	NA

Under **General Settings**, click the data table and examine its available parameters. In the example below, there is an available parameter called **TERRITORY** with a default source value of NA (North America). A drop-down arrow in the **Source** text box indicates that there are additional values to control the available parameter. In this example, there are no additional source values that control the TERRITORY parameter.



- Under **General Settings**, select the Analyzer report. Click the **Content Linking** tab then click the check box next to the field/column name you want enabled for content linking. Click **Apply**.



In the Analyzer report, the values under the **Territory** become hyperlinks.

Territory	Line		P
	Classic Cars	Motorcycles	
APAC	411,956	189,818	S
EMEA	2,091,601	507,138	
Japan	181,601	52,619	
NA	1,406,261	524,549	

- Under **General Settings**, select the data table and examine its available parameters. Notice that there is a drop-down arrow in the **Source** text box. Click the down arrow to display and select a new source value for the available parameter. Click **Apply**.
- Save your dashboard. See [Saving Your Dashboard](#).

In the example below, content linking was applied. When users click on a territory hyperlink in the Analyzer report, the data table updates and displays customer-related details associated with that specific territory exclusively.

Territory Sales by Product Line

No Filter in use ✔ Your report is ready. Rows: 4

Territory	Line						
	Classic Cars	Motorcycles	Planes	Ships	Trains	Trucks and Buses	Vintage Cars
	Sales	Sales	Sales	Sales	Sales	Sales	Sales
APAC	411,956	189,818	121,426	38,393	9,907	145,666	364,521
EMEA	2,091,601	507,138	491,655	427,265	138,506	500,979	851,000
Japan	181,601	52,619	109,733	33,016	16,802	57,848	52,330
NA	1,406,261	524,549	353,943	249,997	69,254	449,788	798,269

Customer Details

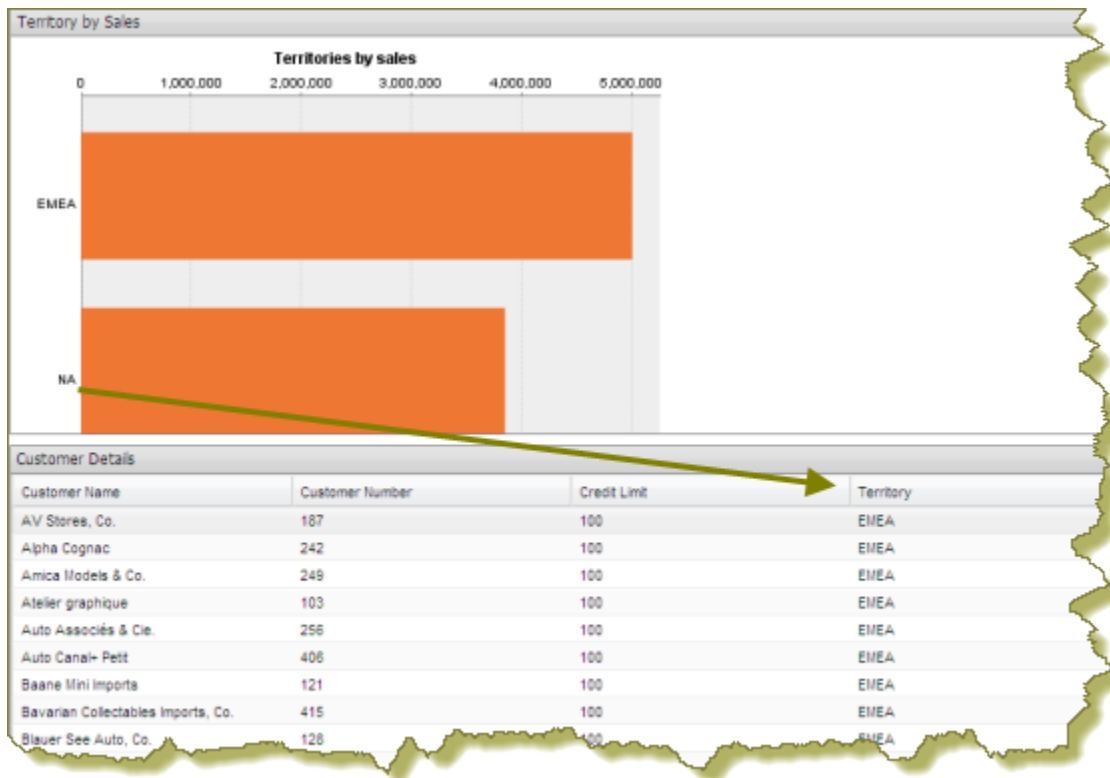
Customer Name	City	State
AV Stores, Co.	Manchester	null
Alpha Cognac	Toulouse	null
Amica Models & Co.	Torino	null
Atelier graphique	Nantes	null
Auto Associés & Cie.	Versailles	null
Auto Canal+ Petit	Paris	null
Baane Mini Imports	Stavern	null
Bavarian Collectables Imports, Co.	Munich	null
Blauer See Auto, Co.	Frankfurt	null

## Linking an Action Sequence Parameter to Content in other Dashboard Panels

To complete this task you must have an action sequence (.xaction) that contains at least one parameter. For information about defining parameters in an action sequence see the *Creating Action Sequences* guide available in the [Knowledge Base](#).

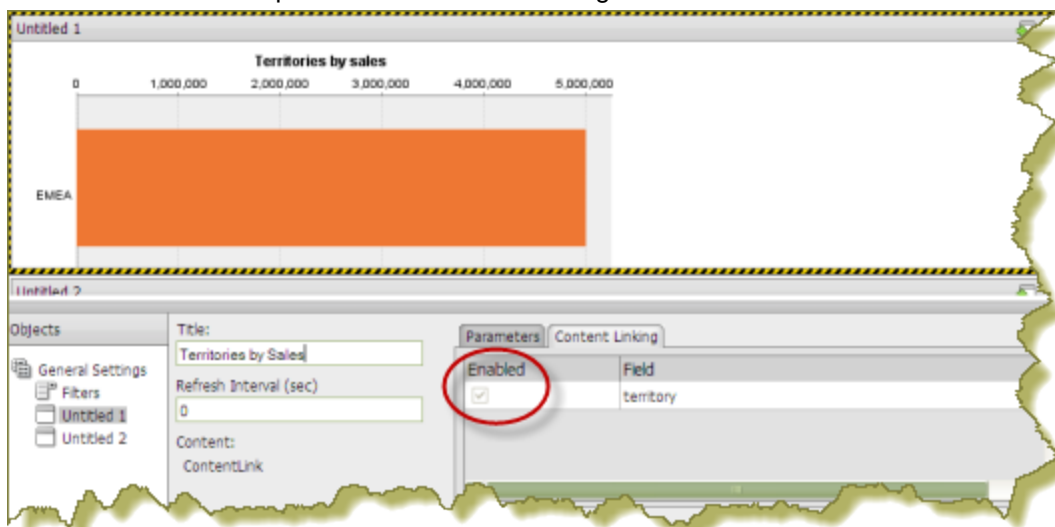
Below are general instructions for allowing an Action Sequence parameter to drive the filter associated with content in another dashboard panel. You must adjust the instructions when working with your own data.

1. Create a simple dashboard that contains an action sequence file and a data table. At this point, none of the content has been linked and you have a "static" dashboard.




Notice the chart (action sequence file) in the example above. You want dashboard consumers to click on a territory (APAC, EMEA, etc.), bar and have the data table update with information about that territory specifically.

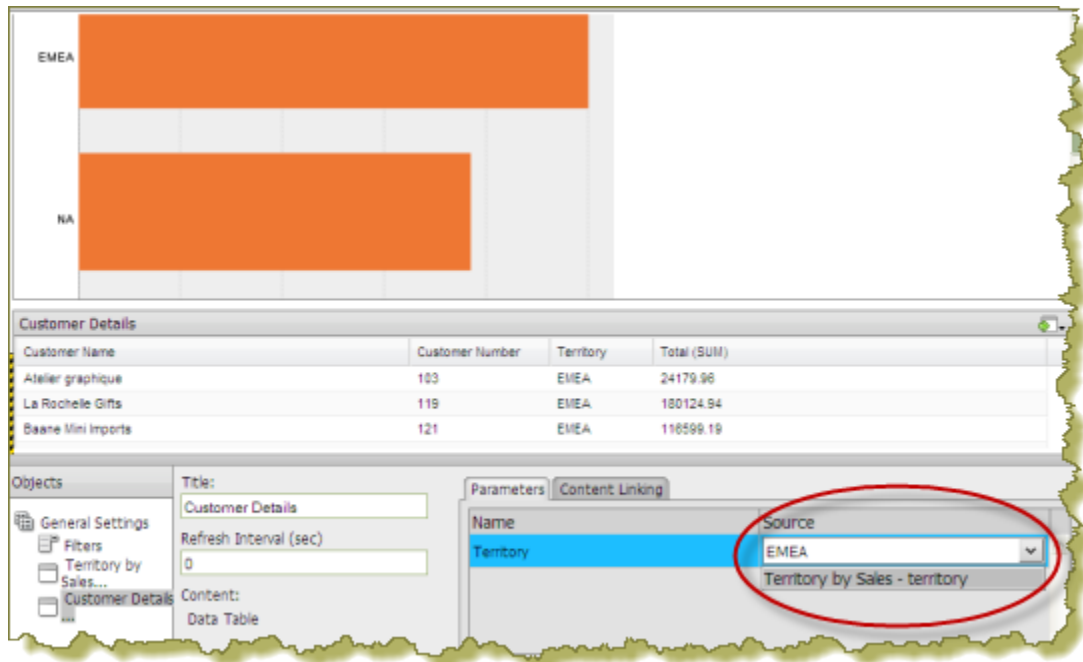
2. Under **General Settings**, select the action sequence file and click **Content Linking**. If parameters have been defined in the action sequence, they will appear as values to be enabled for content linking. Parameters are hard-coded in the action sequence and cannot be changed.



3. Add a parameterized condition to the query for the data table by specifying a parameter name in curly braces in the **Valuetext** box; then, provide a default value for that parameter in the **Default** text box.

 **Note:** Parameterizing a query, as described here, allows you to pass values dynamically and update the chart based on events triggered by other elements of the dashboard such as a user selecting an item from a filter control or following links defined in content associated with another panel in the dashboard.

Under **General Settings**, click the data table and examine its available parameters. In the example below, there is an available parameter called **TERRITORY** with a default source value of EMEA. A drop-down arrow in the **Source** text box indicates that there is an additional value to control the available parameter. The value comes from the parameter in the action sequence.



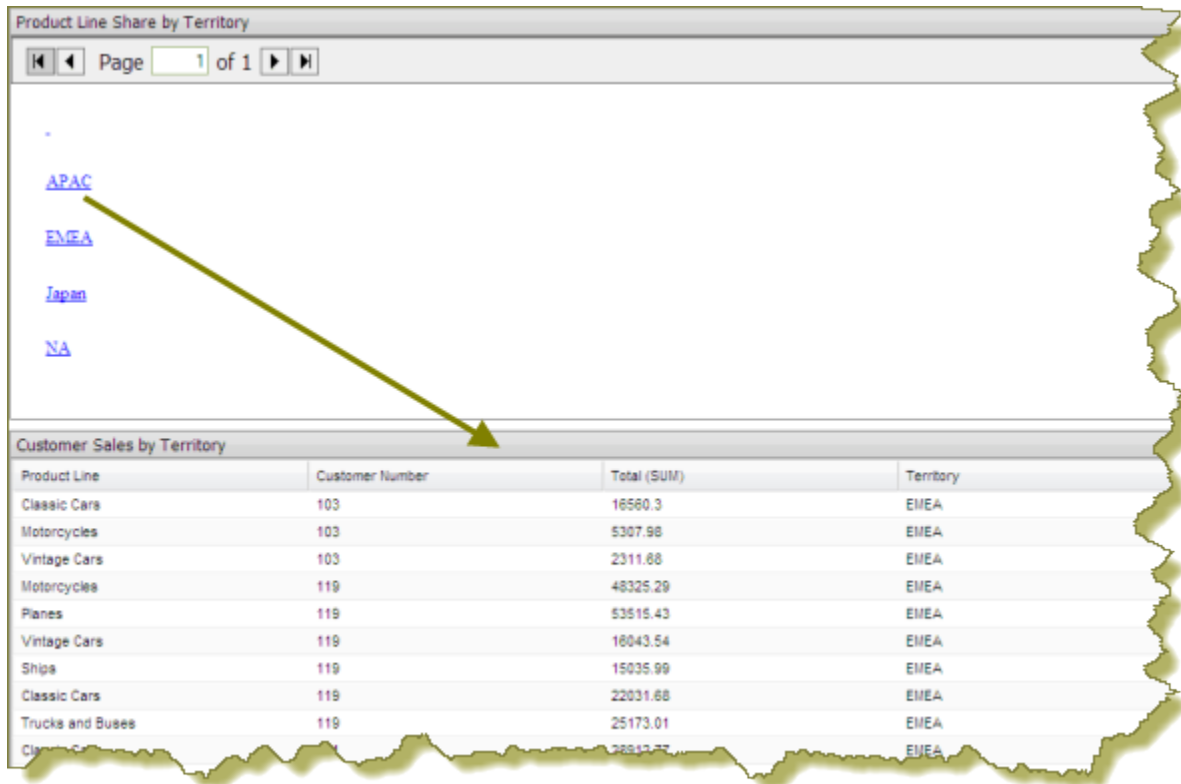
4. Save your dashboard. See [Saving Your Dashboard](#).
5. In the action sequence file click on an object such as a bar as shown in the example above. The content in the data table updates in response to the object that was clicked in the action sequence.

### Controlling a Dashboard Parameter From a PRPT Hyperlink

You must have a report (.prpt) that contains a hyperlink before you can complete this task. See the *Report Designer User Guide*, (available in the Pentaho Knowledge Base), for instructions about adding hyperlinks to a report.

The instructions that follow show you how a link inside a Report Designer report (.prpt) can drive a parameter in content on another dashboard panel. You must adjust the instructions when working with your own data.

1. Create a simple dashboard that contains a .prpt report and a data table. At this point, none of the content has been linked and you have a "static" dashboard.



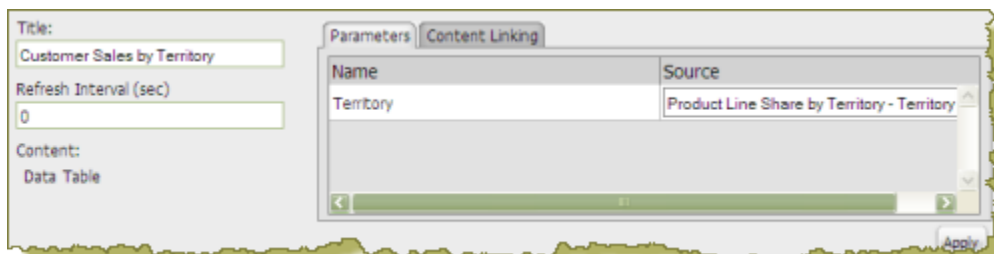
Notice the report (.prpt) in the example above. You want dashboard consumers to click on a territory (APAC, EMEA, etc.), hyperlink and have the data table update with information about that territory specifically.

- Under **General Settings**, select the report (.prpt) and click the **Content Linking** tab. Click the checkbox next to the field you want used for content linking.
- Add a parameterized condition to the query for the data table by specifying a parameter name in curly braces in the **Value** text box; then, provide a default value for that parameter in the **Default** text box. In the example below, a parameter called **TERRITORY** with a default value of **NA** has been created.



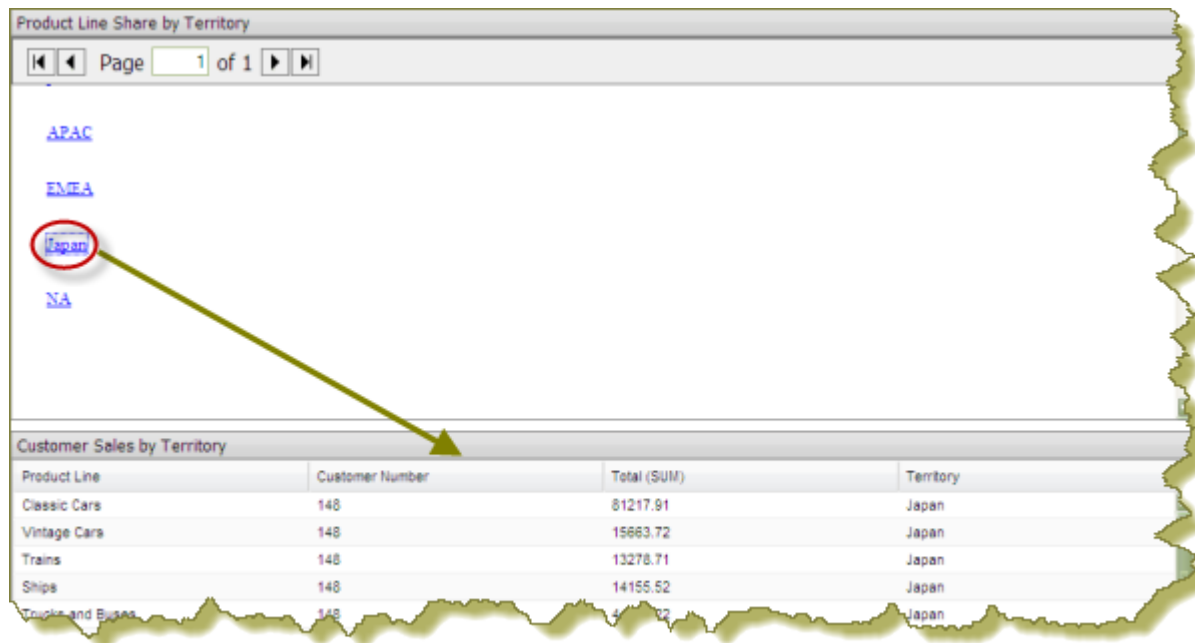
**Note:** Parameterizing a query, as described here, allows you to pass values dynamically and update the data table based on events triggered by other elements of the dashboard such as a user selecting an item from a filter control or following links defined in content associated with another panel in the dashboard.

- Under **General Settings**, select the data table and click the **Content Linking** tab. Click the drop-down arrow, in the **Source** text box to display another source for the parameter you created. In the example below, notice that **Product Line Share by Territory - Territory**, (this is the name of the dashboard panel that contains the .prpt), is now selected as a source for the **Territory** parameter.



- Save your dashboard. See [Saving Your Dashboard](#).


When content linking is achieved, the data table updates when a link in the report (.prpt) is clicked as shown in the example below.



## Saving Your Dashboard

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Follow the instructions below to save your dashboard:

1. In the Pentaho User Console toolbar, click  (Save) to open the **Save** dialog box.
2. In the **File Name** text box, type a file name for your dashboard.
3. Enter the path to the location where you want to save your dashboard. Alternatively, use the up/down arrows or click **Browse** to locate the solution (content files) directory in which you will save your dashboard.
4. Click **Save**. See [Editing Your Dashboard](#).

## Editing Your Dashboard

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Follow the instructions below to edit an existing dashboard:

1. In the lower left corner of the Pentaho User Console, (under Files), select an existing dashboard file. The dashboard panels and their related content appear.
2. Click  (Edit) from the console toolbar to go into Edit mode.
3. Click  (Edit) in the upper-right corner of the dashboard panel you want to edit.  
 **Note:** Some content such as action sequence files (.xaction) and Report Designer files (.prpt) cannot be edited directly in the dashboard. In such instances,  (Edit) is disabled.
4. Make your changes as needed.
5. In the toolbar, click  (Save As) to open the **Save As** dialog box.
6. In the **File Name** text box, type a file name for your dashboard. Alternatively, use the up/down arrows or click **Browse** to locate the solution (content files) directory in which you will save your dashboard.
7. Click **Save**.  
The name of your dashboard file appears in the list under **Files** in the lower left portion of the Pentaho User Console.



## Adding Content to a Dashboard Using Drag-and-Drop

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Follow the instructions below to add an existing chart, table, or file to your dashboard panels using the drag-and-drop feature.

1. Create a new dashboard. See [Creating a New Dashboard](#) for specific instructions.
2. In the left pane of the Pentaho User Console, under **Files**, locate to the content (chart, table, or file) you want added to your dashboard.
3. Click and drag the content into a blank panel on your dashboard. You will see the "title" of the content as you move it around the dashboard. Notice that the title background is red; it turns green when you find a panel where the content can be dropped.

Repeat steps 2 and 3 until your dashboard contains all the content you want to display. To swap content from one panel to another, click the title bar of the panel that contains the content you want moved and drag it over the panel you want swapped. You will see the swap icon as you are moving the content.

If you are working with an existing dashboard, you can perform steps 2 and 3 steps; however, a warning message appears when you try to place content in a panel that already contains content. The new content will override the existing content.

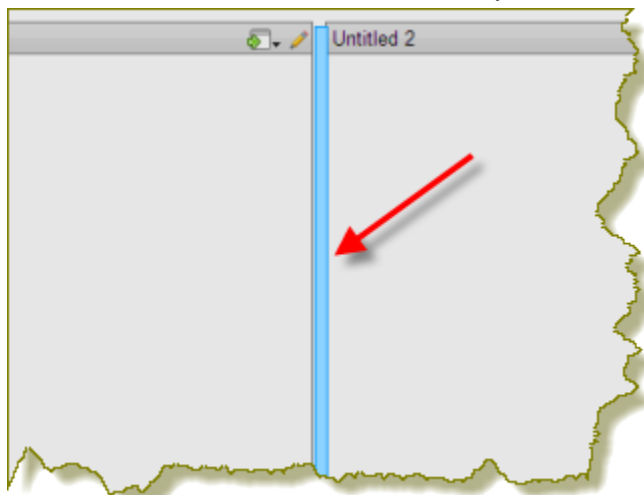
4. Save your dashboard.

## Adjusting Whitespace in Dashboard Panels

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Sometimes you must adjust the whitespace in dashboard panels, (or the filter panel), so that content appears correctly. Follow the instructions below to adjust whitespace.

1. Open an existing dashboard.
2. In the lower pane, click **General Settings** and then click the **Properties** tab.
3. Click **Resize Panels**.  
The whitespace between the dashboard panels turns blue.
4. Adjust the panel size by clicking and holding the left mouse button down as you move the blue lines (whitespace) around. Release the mouse button when you are satisfied with the positioning of the panel.



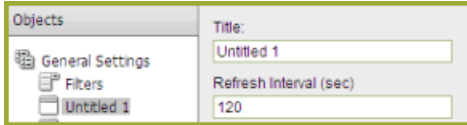
5. Click **Close** in the lower right corner of the dashboard to exit resize layout mode.
6. Examine the dashboard contents to make sure they are placed correctly. You can return to the resize layout mode if you need to make additional changes.
7. Save your dashboard.

## Setting the Refresh Interval

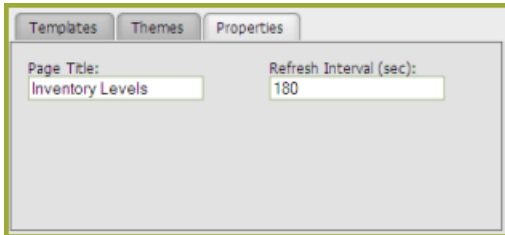
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The content in your dashboard may need to be refreshed periodically if users are examining real-time data. You can set refresh intervals for individual panels on your dashboard or for the entire dashboard.

To set the refresh interval for *individual panels* in the dashboard, select the panel that contains the content you want refreshed. Under **Refresh Interval (sec)** enter the interval time in seconds and click **Apply**.



If you want the *entire dashboard* to refresh, click the **Properties** tab in the dashboard and set your refresh interval.



# Scheduling Reports

The Pentaho User Console has the ability to run reports at specified intervals, even if user input is required to properly execute the report. The sections that follow explain how to set up and configure private schedules. Private schedules are ad hoc, non-subscription schedules; subscription schedules, also referred to as *public schedules* are set up by an administrator. You must have proper permissions to set up a private schedule.

For more information about schedules, see the demo, [Scheduling, Subscription and Distribution](#), on the Pentaho Pre-Sales Sandbox.

## Scheduling a Report

You can configure the Pentaho BI Server to run reports at regular intervals, or on certain dates and times. Follow the instructions below to create a private schedule.

1. In the left pane, navigate to the location of your report. It should appear in the lower left list when you've selected the proper directory.
2. Right-click the report you want to schedule, then click **Schedule** in the context menu.  
The **New Schedule** window appears.
3. Type in a name to identify the schedule by in the **Name** field, and a group name (for groups of schedules) in the **Group** field. Optionally you can also enter a description of the schedule in the **Description** field.
4. Select an interval from the **Recurrence** drop-down box. If you would like to enter a custom interval, select **Cron** and consult [the Quartz reference](#) to learn the Quartz syntax.
5. Adjust the interval settings accordingly; these settings should be self-explanatory.
6. Click **OK** to complete the schedule.

The report is scheduled to execute at the interval you specified. It will also be listed in My Workspace.

## Quartz Cron Attributes

The Quartz cron engine supports a seven-attribute time declaration with many possible values. The number format is the same for every expression, even if the values are different -- it must be listed as seconds, minutes, hours, day of month, month, day of week, then the year. A space separates each attribute.

Possible values for each attribute should be mostly obvious -- 0 to 59 for seconds and minutes, 0 to 23 for hours, 1 to 31 for days, 1 to 12 for months, 1 to 7 for day of week, and a four-digit year. Alternatively you can use three-letter values for the day of week (MON, TUE, WED, THU, FRI, SAT, SUN), and three-letter values for the month (JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC).

An asterisk (\*) indicates *all values*, so an asterisk in the minute field would mean that the report runs once every minute. You can specify a range of values with the - (dash) operator, and you can specify multiple individual values with a comma. If you need to excuse a value in the day of month and day of week field from a cron job, you can use the question mark (?) character to indicate that this value doesn't matter. If you need to split values, you can do so with the slash (/) character -- this operator literally means "every," so \*/15 would mean "Every 15." In the day of month field, you can use the # character to indicate a certain instance of a day of the month, for instance the second Friday of the month would be 6#2. Lastly, you can use a capital L in the day of month and day of week field to indicate "Last," as in the last day of the week. A capital C in either of these fields means "Calendar," and combined with a number means that the report should execute at the interval indicated by the C number according to the loaded calendar. A capital W in the day of month attribute means "Weekday," which only encompasses Monday through Friday. Most of these values can be combined to create unusual cron schedules.

Attribute	Conditionals and Operators
Seconds	, - * /
Minutes	, - * /
Hours	, - * /
Day of month	, - * ? / L W C
Month	, - * /
Day of week	, - * ? / L C #
Year	, - * /

Execute a report at 10:15 AM on every last friday of every month during the years 2008, 2009, and 2010:

```
0 15 10 ? * 6L 2008-2010
```

## Deactivating Schedules

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Once you've scheduled a report, you can easily delete the schedule without deleting the report. You must have administrative privileges to delete a schedule.



**Note:** To reliably delete a schedule, suspend the schedule first then delete it from your workspace. After the delete process completes, you may restart the schedule.

1. Click the **My Workspace** button, which is the second one in from the right side of the toolbar.
2. Click the triangle next to the **Waiting** section to see a list of scheduled reports.
3. Click **Cancel** next to the schedules you'd like to delete.

The previously scheduled report will no longer run at the specified interval.

## Refreshing the Reporting Data Cache

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By default, reports created with Report Designer and published to the BI Server will have their data sets cached to improve performance. If you are working with a volatile data source and will be regenerating reports frequently, you may need to manually flush the report cache, which will force the Reporting engine to recalculate the result sets for all reports.

To do this, log into the Pentaho User Console as an administrator user, then go to the **Tools** menu, select the **Refresh** sub-menu, and click the **Reporting Data Cache** item.

# Troubleshooting

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Below are problems that have been discovered by other Pentaho User Console users and testers, and solutions for addressing them.

## **Internet Explorer 8 can't preview CSV/PDF/XLS ad hoc report content**

Internet Explorer 8 has extra security features that prevent users from downloading content files generated by the ad hoc reporting interface. In order to work around this, you must force IE8 to recognize the BI Server host as an intranet zone.

To do this, go to the **Tools** menu in Internet Explorer, then select **Internet Options**. In the ensuing options screen, click the **Security** tab, then the **Local Intranet** icon. Click the **Sites** button. In the dialogue that follows, deselect the **Automatically detect intranet network** option, then click **OK** to close this window, then **OK** again to close the Internet Options window.