



USERS' GUIDE

# Descartes Reporting Services™

20.03.0100

June 2020

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## **Descartes® Reporting Services™**

### **Version 20.03.0100**

#### **The Descartes Systems Group Inc.**

120 Randall Drive

Waterloo, Ontario Canada, N2V 1C6

Phone: 519-746-8110

Internet: <http://www.descartes.com>

#### **Customer Support**

In North America: 1-877-786-9339

Outside North America: +800 -7866-3390

email: [support@descartes.com](mailto:support@descartes.com)

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## Welcome to Descartes Reporting Services

Descartes Reporting Services™ (RPS) allows business owners to get to the data they need to make decisions. Reporting Services provides a standard reporting tool for Logistics Network Operating System (LNOS) product lines. This publishing tool can be used to create and distribute reports internally to a customer organization and externally to suppliers, vendors, subcontractors, carriers, and more. In addition, this system provides a secure and simpler way to create customized delivery statistics and metrics.


## Features

- Easy data definition for reporting.
- User and Role-Based Access Control based on business need.
- Simple drag and drop report creation.
- Point and click interface – sort by, group by and summarization capabilities
- Ability to organize data using hierarchies such as product lines, locations and regions or organizations and divisions.
- Formatting of result columns including bold and decimal capabilities
- A chart wizard enabling quick bar charts or pie charts – allows for a threshold value on bar chart for comparison.
- Flexible date selection capability – includes within a time period, a fixed date or a relative range of days selection criteria. Also, relative dates are included such as current day, week, quarter, and year, as well as previous and next day, week, quarter, and year.
- Simple summarization choices including sum, count, max, min, average, and unique count.
- Ability to choose data display capabilities such as column or chart views.
- Data can be sourced from any LNOS product or any SQL database compliant system.

## About This Guide




The tasks covered in this guide focus on the features and functionality of Reporting Services including:

- Creating a dashboard tab
- Editing existing data sources
- Creating data caches
- Creating, monitoring and executing reports
- Creating hierarchies or groups of related reports (for example, by product, buyer, location)
- Updating a user profile

-  **Note**— Instructions for various tasks found in this guide are relevant to a user role.

## Document Conventions

This document uses the following conventions:

- Names of windows, frames, dialogs, menus, list boxes, and lists begin with uppercase and bolded. (**Tools** menu, **Save** dialog)
  - Key combinations, that you press, appear in mixed case. If the keys are joined by a plus sign (+), press and hold the first key simultaneously with the remaining keys (for example, Ctrl+Alt+Del).
  - Text that a user types appears in Courier New font. (Enter `USERID` in the login field.)
  - Cross-references to other documents, or to sections within the current document, appear in italics. (See *Saving a File* for details.) *Italics* are also used for emphasis.
-  **Note**— Information important to a particular task or function is introduced with the note format and icon.
-  **Tip**— Information that may make completing a task easier, but isn't essential to the task, is introduced with the tip format and icon.
-  **Warning**— **This warning format indicates important information that a user needs to heed. Ignoring information presented as a warning could result in damage to software or data.**



## User Roles

Four types of users exist in Reporting Services. Each user role has tasks relevant with that particular login. For example, a Regular user does not have the same capabilities as a Power user. The four user role types are:

- System User
- Admin User
- Power User
- Regular User

### System User

A system user has the following roles:

- Define and create data sources
- All Admin, Power and Regular user functionality

A Descartes professional can perform the roles of the System user. This document does not cover System user functionality, as the guide is intended for Admin, Power and Regular users. Therefore, we only discuss tasks associated with those particular roles.

### Admin User

An Admin user has the following roles:

- Define and create data caches
- Edit column labels and column categories
- Define, create and edit hierarchies
- Use all Power and Regular user functionality
- Create custom prints
- Create and manage Microsoft Power BI® datasets

### Power User

A Power user has the following roles:

- Define, create and edit reports and report instances
- Create and edit system dashboard tabs
- Use all Regular user functionality
- Create Power BI reports from a Power BI dataset or from an existing Power BI report

## Regular User

A Regular user has the following roles:

- Run and print report results (report instances for all the other users)
- Export results
- Filter results based on user Run-Time parameters
- Run Power BI reports

## Application Workflow

There are four main tasks associated with using Descartes Reporting Services:

- Create data source(s)
- Create data cache(s)
- Create report(s)
- Execute report(s)

## Data Source Defined

The data source defines what tables and attributes are used from an external data source. An external data source can be from an order management system or financial system, a data warehouse or data mart, or a Descartes Systems Group application.

The definition of the data source is used when defining the data cache. A data source can only be created by a System user. However, an Admin user can create new data source column categories and move items between defined column categories.

## Data Cache Defined

The data cache defines the columns (fields) that are used in creating reports. Multiple data caches can be created from a single data source. The columns in each data cache can be unique or share common columns of interest. During the definition of the data cache, the Admin or System user can assign columns to be business keys, which should be indexed or have filters applied.

## Report Definition

Report definition defines what fields from the data cache are used in the report. Additional options can be placed on the fields such as sort order, group by and run-time parameters.

## Reports Dashboard

The reports dashboard provides a quick overview of reports chosen by the user. These reports can be stored as a tab (or as a default) and are displayed each time the user logs into Reporting Services.

- **Note**— All user roles can create and update the reports dashboard; however, Regular users cannot edit a system dashboard tab.
- **Note**— Reports and report instances must be created before users can add them to the reports dashboard (See [Creating a New Report](#) and [Creating a Report Instance](#) for details).
- **Note**— Reports with run-time parameters can be put on the reports dashboard; however, the parameters will be ignored.
- **Note**— Reports must display chart first (See [Editing a Report](#) for details).
- **Note**— Users can only have one dashboard tab checked as default. If a user checks another dashboard tab as default, the action will un-default the original.
- **Note**— Items on a dashboard tab are updated when the related data cache is refreshed, when a dashboard tab is resaved by the user, or when the related report has been changed/resaved.

## Creating a Dashboard Tab

To create a new dashboard tab:

- 1 From the main menu, select: **Reporting Services > Reports Dashboard.**
- 2 Right-click and select **New Dashboard Tab** to display this page:

Reporting Services / Customize Dashboard / New Dashboard Tab

New Dashboard Tab

SAVE CANCEL

**Dashboard Tab**

Tab Name:

Description:

Is Default:

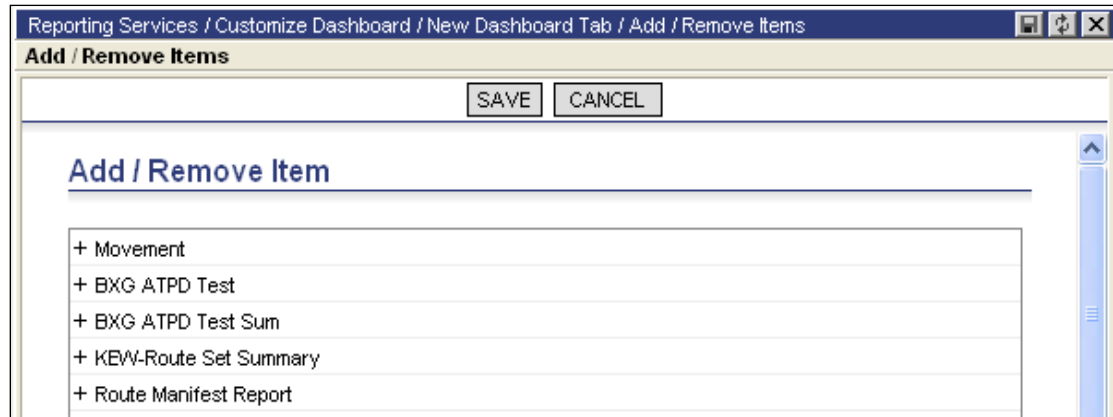
Is System Tab:

**Dashboard Items**

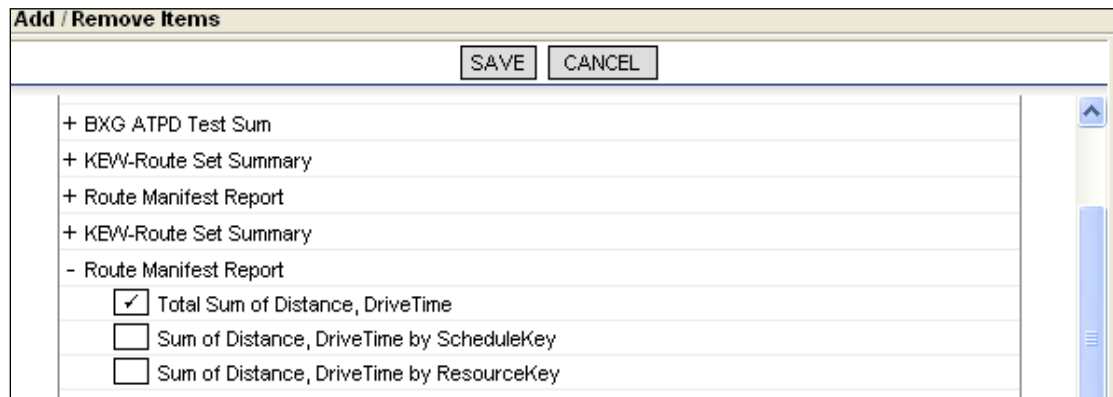
ReportName	Name	Versions	MaxVersions
< [ ] >			

ADD / REMOVE ITEMS

- 3 Enter a tab name and description (optional).
- 4 Check whether the tab will be default and/or system tab (displays for System user).
- 5 Click the **Add/Remove Items** button to display a list of reports; choose the report(s) to run:



- 6 Click the "+" sign next to the item name and select the report desired:



- 7 Click **Save** to display the dashboard items:
- 8 Enter the number of versions (optional) to display (if more than one version exists).
- 9 If you want to set threshold limits for the report, enter threshold amounts in the selected colors.
- 10 Click **Save** to display the new dashboard tab.

To add more dashboard tabs, click the **Customize Dashboard** tab and follow the steps above.

The user should remember these facts about dashboards:

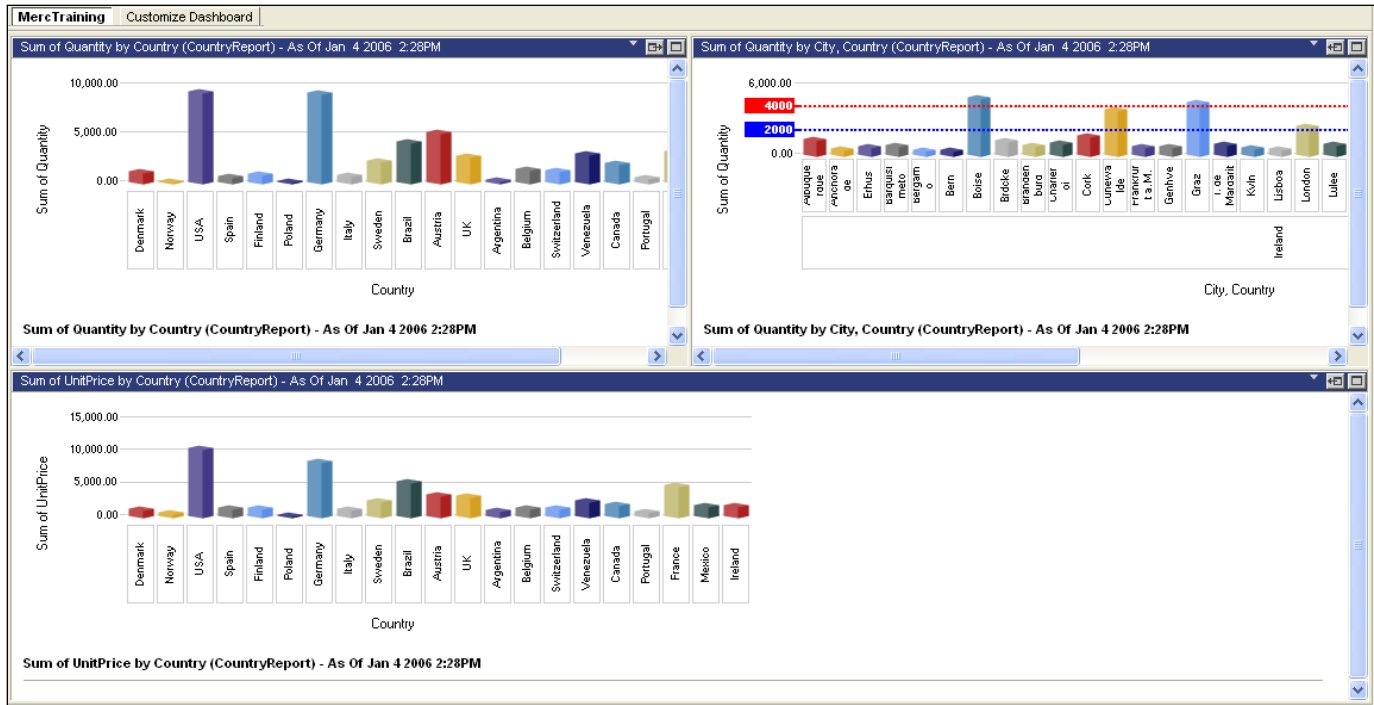
- Default dashboards are automatically displayed after logging in
- Different dashboards are displayed by clicking on another tab
- Chart size is changed by clicking the icon of a quadrant with an arrow

- Any changed chart size remains if another dashboard tab is selected
- Changed chart sizes may be reset by right-clicking and selecting **Reset Layout**.

➡ **Note**— Reporting Services remembers each dashboard tab settings per user.

When accessing a dashboard tab for the first time, Reporting Services displays the first charts selected (up to four). After first accessing the dashboard, users can display charts by click the dashboard tabs.






The second chart shows a chart with thresholds set.

## Data Source

Once a data source is defined, column categories can be created to group columns of interest. For example, a shipper category can contain the following columns: shipper code, shipper name, shipper address, shipper city, shipper state, shipper zip code, and shipper country. This arrangement is useful when defining a data cache because fields are grouped by a logical category name and become easier to find.

 **Note**— Only System and Admin users have the ability to add, update, and delete a column category.

## Adding a Column Category

To add a column category:

- 1 From the main menu, select **Reporting Services > Data Sources**.
- 2 Right-click a data source.
- 3 From the right-click menu, select **Column Categories** to display the **Column Categories** page.
- 4 Double-click **Add Custom Category** (or right-click and select **New Custom Category**) to display the **New Custom Category** window.
- 5 Type in a category name and category description to logically group the field of interest.
- 6 Click **Save** to see the new column category.

Users can also click and drag fields to be associated with the new column category (see [Editing Column Properties](#) for details). Column categories can have one or more columns associated with them. In the screenshot below, a new field, PO Buyer Name, was added to the brand-new Customers column category.

## Renaming a Column Category

To rename a column category:

- 1 Right-click the desired column category.
- 2 From the right-click menu, select **Edit Category** to display the **Edit Category** window.
- 3 Type in the new name and description.



- 4 Click **Save**.

➡ **Note**— The 'Other' category cannot be renamed.

### Deleting a Column Category

To delete a column category:

- 1 Right-click the desired column category.
- 2 From the right-click menu, select **Delete**.
- 3 When the following warning message appears, click **OK** to delete the category.

➡ **Note**— The 'Other' category cannot be deleted.

### Editing Column Properties

➡ **Note**— Only System users have the ability to edit column properties.

To edit a column property:

- 1 From the main menu, select **Reporting Services > Data Sources**.
- 2 Right-click the desired data source.
- 3 From the right-click menu, select **Edit Column Properties** to display the **Edit Column Properties** page.
- 4 Select the column from the list provided:
- 5 As appropriate, provide the following information:
  - Name
  - Name text key
  - Description
  - Description text key
  - Business key
- 6 Click **Save**.
- 7 Click **Close**.

## Entering Comments Via Context Menu

Users can enter comments via context menu in Reporting Services. In previous releases, administrators would have to maintain two sessions: one to view the report and one to set comments.

To enable this functionality:

- 1 Select **Reporting Services > Data Sources**.
- 2 Right-click on a data source in the list and select **Assign Context Menus** from the right-click menu to display the **Assign Context Menus** page.
- 3 Select an option from the **Context Menu** dropdown to add it to the list. Click **New** to add any additional options and click **Delete** to remove existing rows.
- 4 When finished, click **Save**.

➡ **Note**— Only one context menu is permitted per column, but several context menus are permitted per view.

➡ **Note**— This feature is only available in combination with Descartes Visibility and Event Management.

## Adding Comments to Document Types

Users can add comments to document types from the report's tabular results in Descartes Reporting Services. In order to add comments to a particular document type, the report must include related columns and the report's data cache must have these columns set as business keys.

➡ **Note**— Descartes Visibility and Event Management™ 18.08.0100 or later version is required. For older versions of Descartes Visibility, additional configuration is required by Descartes.

SELECTED COLUMNS		
Label	Business Key	Indexed
BOL_ID	.	.
BOLNumber	✓	.
ShipperID	✓	.
WBNumber	.	.

For example, to add a comment to BOL document, the report's data cache must have the BOLNumber and ShipperID columns marked as business keys (as shown in the image above) in the **Select Columns** pane of the **New/Edit Data Cache** page. The report must also have the BOLNumber and ShipperID included as selected columns.

This table provides a list of the columns required for each document type.

Document Type	Required Columns
Purchase Order	PONumber BuyerID RelOrderNumber
Purchase Order Line	PONumber POLineNumber BuyerID RelOrderNumber
Sales Order	SONumber SellerID
Sales Order Line	SONumber SOLineNumber SellerID
BOL	BOLNumber ShipperID
BOL Line	BOLNumber BOLLineNumber ShipperID
Warehouse Receipt	WhseRecptNumber WhseRecptOrgID
Warehouse Receipt Line	WhseRecptNumber WhseRecptLineNumber WhseRecptOrgID

**Note**— When users add a comment to a line-type document (e.g. PO Line), the comment is added to the parent document, not the line item.

Users can add a comment from a report to a purchase order document type via two possible right-click menu options for the report's data cache from the **Data Source** list page:

- New Comment Thread (appears as **Add Comment** in the images below)
- New Comment Thread Multi

To add these options to the data source context menus:

- 1 Navigate to the **Reporting Services > Data Sources** page.
- 2 Right-click on a data source and select the **Assign ContextMenus** option from the right-click menu. The **Assign ContextMenus** page appears.

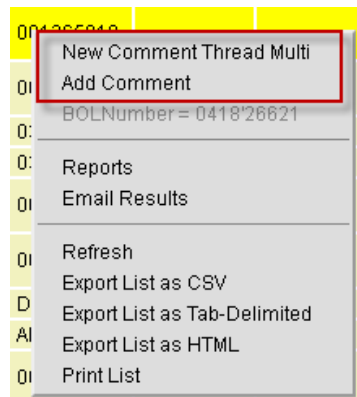
### Data Source ContextMenus

Name	Name TextKey	NavigateTo PageID
New Comment Thread	@NPADDCOMMENT	CommentsFromRPS.New CommentThread-RPS
New Comment Thread Multi	@NPADDCOMMENTMULTI	CommentsFromRPS.New CommentThread-RPS

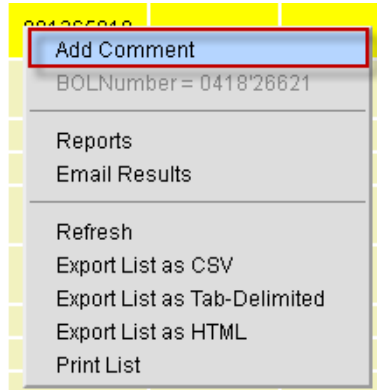
ContextMenu:  ▼

- 3 To add a right-click menu option, click **New**. A new row appears in the table.
- 4 Select an option from the dropdown menu: New Comment Thread (Add Comment) or New Comment Thread Multi.

For purchase order document types, the right-click menu on the **Tabular Results** page for a purchase order document type can both menu items as shown below.



For all other document types (BOL, for example), only the **Add Comment** right-click menu option is supported.



### Adding Comments to Multiple Documents

Users can add comments to multiple documents (BOLs, POs, SOs, etc.) from the **Tabular Results** page. To add comments to these documents, the report must have the appropriate ID values, e.g. BOL\_ID, PO\_ID, SO\_ID, etc.

To add a comment to multiple documents:

- 1 From the **Tabular Results** page of a report, select multiple document records.
- 2 Right-click and select **New Comment Thread Multi**.

Reporting Services / Reports / Tabular Results - emo comment PO						
Reports	Report Columns	Additional Options	Report Activity	Extraction Jobs	Tabular Results	Chart Results
<b>emo comment PO - Tabular Results as of 11/15/2018 2:14 PM</b>						
Summary: emo comment PO Sort By: BuyerID (Ascending), PO_ID (Ascending), POL_ID (Ascending)						
BuyerID	PONumber					PO_ID
201805616	10355510					0
201805616	25212921				<b>New Comment Thread Multi</b>	0
201805616	25258546				Add Comment	0
201805616	25324993				PO_ID = 0	0
201805616	25358397					0
201805616	25417353				Reports	0
201805616	25653213				Email Results	0
201805616	25175949					0
201805616	10549826				Refresh	0
201805616	10380150_20120412				Export List as CSV	0
201805616	20772422				Export List as Tab-Delimited	0
201805616	20772426				Export List as HTML	0
201805616	10008371_20121207				Print List	0
201805616	10647317					0
201805616	10874289					0

The **New Comment Thread** window appears.

- 3 Enter a title, your comment and select a document from the dropdown. You can also enter a reason category and set the importance, assignment and follow-up date.
- 4 Click **Save**.

### Configuration

The context menu for the data source that belongs to the report's data cache must be set as shown in the following image on the **Assign ContextMenus** page.

Name	Name TextKey	NavigateTo PageID
New Comment Thread	@NPADDComment	CommentsFromRPS.NewCommentThread-RPS
New Comment Thread Multi	@NPADDCOMMENTMULTI	CommentsFromRPS.NewCommentThread-RPS

ContextMenu: New Comment Thread Multi: CommentsFromRPS.NewCommentTh

Additionally, the Record ID field on the report's **Additional Options** page must be set to the document ID, e.g. BOL, BOL\_ID, etc.

Reports | Report Columns | **Additional Options** | Report Activity | Extraction Jobs | Tabular Results | Chart Results

REFRESH DATA CACHE | SAVE | SAVE AND RUN REPORT | CLOSE | ASSIGN CONTACTS | ASSIGN DISTRIBUTION LISTS

### Report Display Options

Report Name: BOL

Report Description:

Default Results Format: Tabular View

### Tabular View

Detail Level: Show Both Summary and Detail Rows

Summary Row Position:  Above Detail Row  Below Detail Row

Show RowCount:

Show All Group Text:

Use Server Paging:

Top N:

Enable ContextMenu:

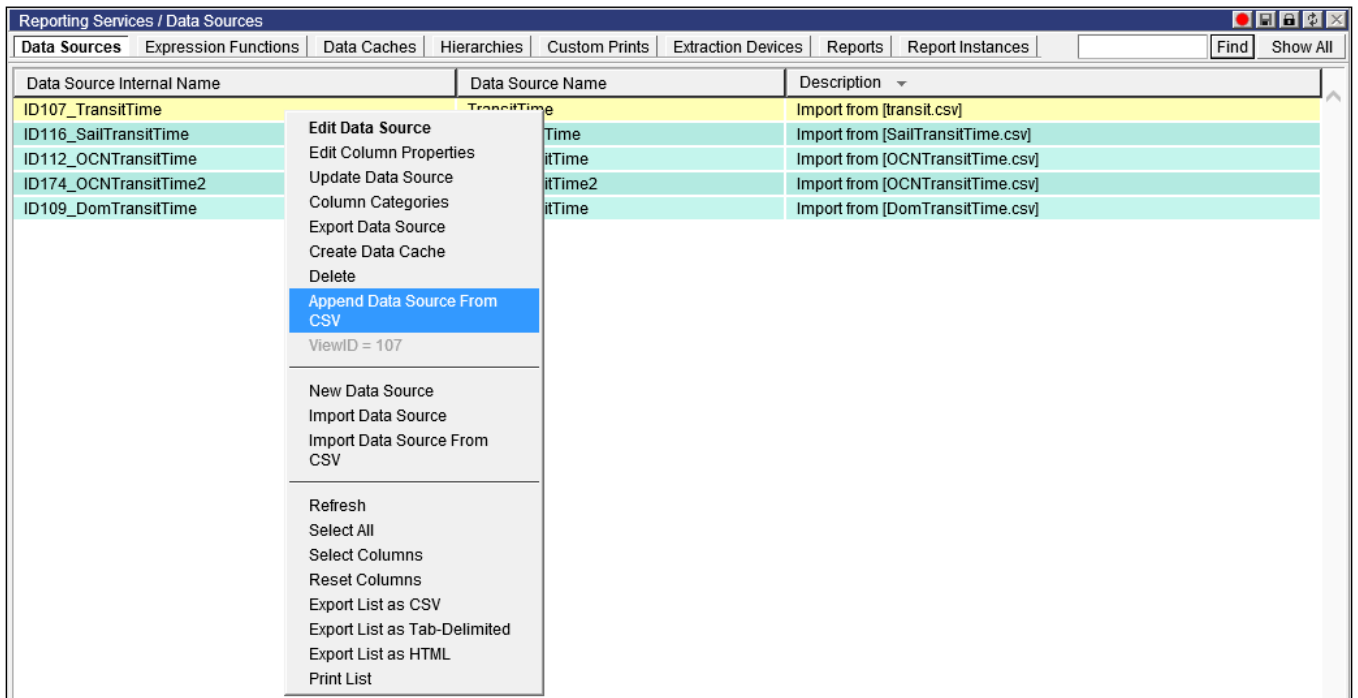
Record ID Name: BOL\_ID

## Append Existing Data Source with CSV File

Users can append an existing data source with a CSV (comma separated values) file. This functionality is only available for data sources initially created by a CSV import.

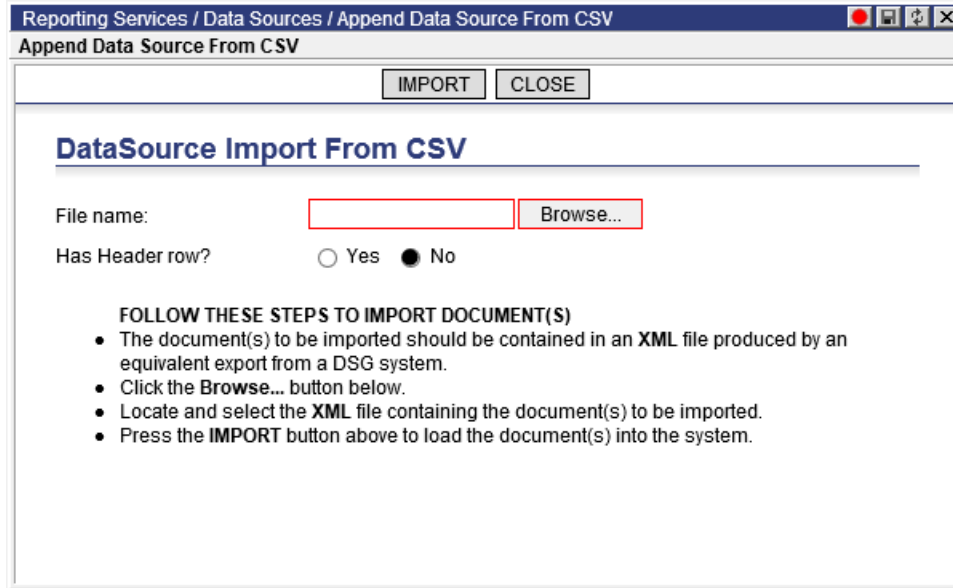
To append a data source with a CSV file:

- 1 Navigate to the **Data Sources** list page.
- 2 Right-click on a data source initially created by a CSV import. Select **Append Data Source From CSV**.





The **Append Data Source From CSV** window appears.



- 3 Click **Browse** to search for the CSV file you wish to import and specify whether or not the file has a header row.
- 4 Click **Import**. The system will append the data source with data in the CSV file.

Users can also append an existing data source with a CSV file by posting the following XML to `https://<root>/RPS/AppendCSVDataSource.asp`.

```
<?xml version='1.0' ?>
<Command>
  <Header>
    <Authentication>
      <CompanyName>org</CompanyName>
      <LoginName>user login</LoginName>
      <Password>password</Password>
    </Authentication>
  </Header>
  <Execute>
    <Parms>
      <Input>
        <parmDataSourceName>name of existing datasource
name</parmDataSourceName>
        <parmCSV>
          val11,val12,val13
                                Val21,val22,val23
                                Val31,val32,テスト
        </parmCSV>
      </Input>
    </Parms>
  </Execute>
</Command>
```

## Data Caches

A data cache is a list of columns or sub-view of a defined data source. It can contain all the columns defined in the data source or be a subset of the available columns. Different data caches can be used against the same data source depending on the audience that will be using the data (columns). For example, an invoice data source may have two data caches connected to it: one containing financial information and the other listing items detail information. Each data cache sub-view is a snapshot of the data source it is connected to.

**Note**— Only System and Admin users have access to any data cache functionality.

### Creating a Data Cache

To create a data cache:

- 1 From the main menu, select: **Reporting Services > Data Caches**.
- 2 Right-click anywhere within the **Data Cache** page to display a right-click menu.
- 3 From the right-click menu, select **New Data Cache**. A new window appears displaying a list of data source templates.
- 4 Right-click a data source and choose **Select Data Source** to display the **New Data Cache** page.
- 5 Name the new data cache.

New Data Cache				
<input type="button" value="SAVE"/> <input type="button" value="CLOSE"/>				
AVAILABLE COLUMNS	SELECTED COLUMNS			Name: Train080805
eg_northwind_invoices	Label	Business Key	Indexed	Filter
+ Customer Address				
+ Other				
+ Ship Address				

**Note**— Any available column categories (e.g., Ship Address) for the data source are displayed in the Available Columns column. Clicking the '+' displays any fields grouped under that category. If no column categories exist, all columns are shown under one group with the same name as the data source.

- 6 To select a column, do one of the following:
  - Drag and drop the column name (e.g., TodaysDate) onto the Selected Columns column

**OR,**

- Double-click on the column name to add it to the Selected Columns column
  - ➡ **Note**— Once a user drops the column labels in the Selected Columns column an asterisk (\*) appears adjacent to it in the Available Columns column.
  - ➡ **Note**— To remove a selected column from the data cache, drag and drop it back into the Available Columns column.
  - ➡ **Note**— Within the Selected Columns column of the page, users can drag and drop column labels within the list.
- 7 Once the columns are selected, click **Save**.

## Editing a Data Cache

Once a data cache has been saved, two new tabs appear:

- **Edit Data Cache:** Upon saving the new data cache, users are in an edit mode
- **Schedule Settings Data Cache:** This tab is discussed in a later section

Users can also edit an existing data cache from the main menu.

To edit a data cache:

- 1 From the main menu, select **Reporting Services > Data Caches**.
- 2 Right-click on an existing data cache and select **Edit Data Cache** to display the **Edit Data Cache** page.

Editing a data cache consists of selecting or deselecting columns as well as adding business keys, indexing and filtering. These items are discussed in the next sections.

### Business Keys

A business key uniquely identifies an object from the business point of view. In the example below, customer name was selected as a business key because it is unique. However, the country could also be selected as a business key because the same customer name could exist in more than one country.

- ➡ **Note**— At this time, Reporting Services is not using this field.

### Indexing

An indexed column allows users to create a hierarchy based on the column and to search against the column.

➡ **Note**— Having indexed columns along with run-time parameters, sort and/or grouping in the report(s) may improve report performance.

Once users have dragged columns over, they can choose which columns to index.

To index a column:

- 1 From the main menu, select **Reporting Services > Data Caches**.
- 2 Right-click on an existing data cache and select **Edit Data Cache** to display the **Edit Data Cache** page.
- 3 Click in the Indexed column to display a checkmark for the needed label.

➡ **Note**— To remove the label from the index, click the checkmark in the Index column.

## Defining Filters

Users can filter the results of the data cache relative to the selected column. The list of available filters is unique to the data source template chosen to create the data cache. Based on the value, users have different filter options to select. The three values offered are:

- Text
- Date
- Numeric

### Text

A text value is made up of text. For example, a text value can consist of a customer name or a country name. The filter options for a text value are the following:

- Is Missing
- Is Not Missing
- Starts With
- Ends With
- In a List (String)
- Not In a List (String)
- Between (String)
- Contains (String)
- Not Contains (String)
- Is Equal To (String)
- Is Not Equal To (String)
- Is Less Than (String)
- Is Greater Than (String)

- Is Less Or Equal To (String)
- Is Greater Or Equal To (String)

## Date

A date value is made up of a date or date range. The filter options for a date value are the following:

- Is Within (Period) – current day, month or year
- Is Within (Fixed Dates)
- Is Within (+/- Days) – user entered date range can be -(number) before the date and +(number) after the date
- Is Within (+/- Weeks) – user entered date range can -(number) before the date and +(number) after the date
- Is Within (+/- Months) – user entered date range can -(number) before the date and +(number) after the date
- Is Missing
- Is Not Missing

## Numeric

A numeric value is made up of numbers. The filter options for a numeric value are the following:

- Is Missing
- Is Not Missing
- Is Equal To
- Between
- In a List
- Not in a List
- Is Not Equal To
- Is Less Than
- Is Greater Than
- Is Less Than Or Equal To
- Is Greater Or Equal To

### Additional Conditions

Additional conditions can be added to create "Or/And" statements. For example, a user can filter a data cache based on customer names beginning with the letter "A" or "M" and can filter both by country. After typing, click the "+" sign to add the condition (conversely, clicking the "-" sign removes the choice):

SELECTED COLUMNS				Name: Train080805	
Label	Business Key	Indexed	Filter		
CustomerName		✓	Starts With:	'A'	[-] [+]
Address					[-] [+]

The drop-down menu displays again:

SELECTED COLUMNS				Name: Train080805	
Label	Business Key	Indexed	Filter		
CustomerName		✓	Starts With:	'A'	[-] [+]
Address					[-] [+]
Country					[-] [+]
CustomerID					[-] [+]
OrderDate					[-] [+]

▼

Is Missing

Is Not Missing

Starts With:

Between (String):

Is Equal To (String):

Is Not Equal To (String):

Is Less Than (String):

Is Greater Than (String):

▼

The screenshot below shows a data cache that will filter customer names beginning with either "A" or "M":

AVAILABLE COLUMNS	SELECTED COLUMNS				Name: Train080805	
Northwind Data Source	Label	Business Key	Indexed	Filter		
+ Customers	CustomerName		✓	Starts With:	'A'	[-] [+]
+ Other				Starts With:	'M'	[-] [+]
+ Ship Address	Address					[-] [+]
	City					[-] [+]
	Country					[-] [+]
	CustomerID					[-] [+]
	OrderDate					[-] [+]

The screenshot below now shows a data cache that will filter customer names beginning with either "A" or "M" and are in the "USA":



Starts With:	'A'	<input type="checkbox"/>
Starts With:	'M'	<input type="checkbox"/>
Is Equal To (String):	'USA'	<input type="checkbox"/> <input type="checkbox"/>

Upon completion of adding Available Columns, determining Business Keys, Indexing, and Filtering, click **Save** to save the data cache.

### Adding a Calculated Column

Users can add a calculated column to the data cache. In building calculated columns, a basic understanding of the syntax used is required.

#### Field Type

- String: Field containing alpha-numeric characters (e.g., "Suite B20" or "55cm")
- Integer: Field containing positive or negative whole numbers (e.g., "42")
- Float: Field containing positive or negative numbers, including decimals (e.g., "3.14")
- Datetime: Field containing a Date and time (e.g., "26-Dec-2020" and/or "12:30")

#### Variables

X1, X2, Xx: These are simply variables standing for "to-be-assigned" objects

#### Attributes

- [Datafield]: A field from the Available Columns to perform operations on
- Constant: A fixed value

### Functions

- Math: +
- Math: -
- Math: \*
- Math: /
- DateDiff: Seconds
- DateDiff: Days
- DateDiff: Hours
- DateDiff: Minutes
- DateName: DayOfWeek
- DatePart: Day
- DatePart: Month
- DatePart: Week
- DatePart: Quarter
- DatePart: DayOfYear
- FirstDay: Month
- FirstDay: Week
- DateToMidnight
- ByCalc

### Valid Operators

(+): Used as a plus sign from basic math. Adds two functions together. (e.g., where  $X1 = 5$  and  $X2 = 10$  ( $X1 + X2 = 15$ ))

(-): Used as a minus sign from basic math. Subtracts one function from another. (e.g., where  $X1 = 5$  and  $X2 = 10$  ( $X1 - X2 = -5$ ))

(\*): Used as a multiplier from basic math. Multiplies one function with another. (e.g., where  $X1 = 5$  and  $X2 = 10$  ( $x1 * X2 = 50$ ))

(/): Used for dividing one function by another. (e.g., where  $X1 = 5$  and  $X2 = 10$  ( $X1 / X2 = .5$ ))

➡ **Note**— The Functions should be used in place of the Valid Operators.

➡ **Note**— Custom functions can be created; please contact your Descartes Systems Group representative for assistance.

To add a calculated column:

- 1 On the **Edit Data Cache** page, click **Add Calculated Column** to display the **Add Calculated Column** page.
- 2 Enter a Column Name.
- 3 Select a type from the **Field Type** dropdown.
- 4 Select **Variable (x1)** from the first **Add/Update Attribute** dropdown.

Add / Update Attribute:	x1	▼
Add / Insert Function:	Variable	
	x1	
	x2 (New)	

➡ **Note**— As variables are added, the variable increases in numbers (x2, x3, etc.).

- 5 Click the down arrow in the second dropdown beside the **Add/Update Attribute** field and select an attribute (e.g., **Container Qty**).


Add / Update Attribute:	x1	▼	Container Qty	▼
Add / Insert Function:	Math: +		Container Qty	▲
			Commodity Code	
			SKU	
			Container Height	
			Description	
			ContainerLength	
			ContainerWidth	
			TotalLineItemWeight	▼

```

dbo.MathPlus(x1, x2)
where
x1 = [Container Qty]
    
```

- 6 Repeat steps 4 – 5 to add more attributes.
- ➡ **Note**— To create multiple math functions, see the steps below for combining multiple functions.
- 7 Click **Save**. The added calculated column appears in the **Selected Columns** list.

AVAILABLE COLUMNS	SELECTED COLUMNS			Name: Train080805
	Label	Business Key	Indexed	Filter
+ Customers	CustomerName		✓	
+ Other	Address			
+ Ship Address	City			
	Country		✓	
	CustomerID			
	OrderDate			
	ProductName		✓	
	Quantity		✓	
	UnitPrice			
	discount price			

 **Note**— Users can double-click the added calculated column label to edit it.

Multiple functions can be combined to create a formula. For instance, you can add two attributes and then divide them by another.

To combine multiple functions:

- 1 Select first function, e.g., Math: + function (adds AddFunction (x1, x2) in expression textbox).
- 2 Select second function, e.g., Math: \* function (adds MultiplyFunction (x1, x2) in expression textbox).
- 3 Cut and paste the text of the two functions in the expression textbox to make the type of function you desire. See the examples below.

**Examples**

**dbo.AddFunction(dbo.MultiplyFunction(x1, x2), x2)** results in x1 and x2 being multiplied and then added to x2 ((x1 \* x2) + x2). To create this function:

First: Select the Math:+ function.

Second: Select Math:\* function.

Third: In the expression textbox, cut the Math: \* function and paste it where x1 is in the AddFunction.

**dbo.AddFunction(dbo.MultiplyFunction(x1, x2), x3)** results in x1 and x2 being multiplied and then added to x3 ((x1 \* x2) + x3). To create this function:

First: select the **Math:+** function.

Second: Select **Math:\*** function.

Third: In the expression textbox, cut the **Math: \*** function and paste it where x1 is in the AddFunction.

Fourth: Change x2 in the AddFunction to x3).

**dbo.AddFunction(dbo.MultiplyFunction(x1, x2),  
dbo.SubtractFunction(x3, x4))** results in x1 and x2 being multiplied and x3 and x4 subtracted and then the results from both being added together. To create this function:

First: Select the **Math:+** function and **Math:\*** function.

Select: Select **Math: -** function.

Third: In the expression textbox, cut the **Math: \*** function and paste it where x1 is in the AddFunction.

Fourth: Cut the **Math: -** function and paste it where x2 is in the AddFunction.

### Copying a Data Cache

Users can copy a data cache to create another data cache by clicking **Save As**.

## Operational Data Caches

Another type of cache, the Operational Cache, allows users to view live data. The Operational Cache operates like regular data caches with the following exceptions:

- Instead of managing a table, the Operational Cache represents a view
- The Operational Cache view interacts with the data source view directly

To distinguish between different caches in the **Data Cache** list page, be sure to add the DataCache type column via the **Select Columns** right-click function.

### Creating an Operational Data Cache

To create an operational data cache:

- 1 From the main menu, select **Reporting Services > Data Caches**.
- 2 Right-click anywhere within the **Data Cache** page and a right-click menu appears.
- 3 From the right-click menu, select: **New Operational Cache**. A new window appears displaying a list of data source templates.
- 4 Right-click a data source, choose **Select Data Source** to display the **New Data Cache** page.
- 5 Enter a name for the new operational data cache.

AVAILABLE COLUMNS	SELECTED COLUMNS			Name: Train080805
eg_northwind_invoices	Label	Business Key	Indexed	Filter
+ Customer Address				
+ Other				
+ Ship Address				

**6** A list of available columns appears on the left side of the page. If column categories are set up on the data source, the available fields for each column category are grouped under the column category, otherwise all columns are shown under one group with the same name as the data source. To view these fields, simply click the "+" sign and the column names appear as shown below.

- ➡ **Note**— Once a user drops the column labels in the Selected Columns column of the page, an asterisk (\*) appears adjacent to it in the Available Columns column.
- ➡ **Note**— To remove a selected column from the data cache, drag and drop it back into the Available Columns column of the page.
- ➡ **Note**— Within the Selected Columns column of the page, users can drag and drop column labels within the list.

To select a column, do one of the following:

- Drag and drop the column name onto the **Selected Columns** column
- OR,**
- Double-click on the column name to add it to the **Selected Columns** column

Once the columns are selected, click **Save**. To edit an operational data cache, follow the same instructions detailed in *Editing a Data Cache*.

### Switching Between Data Cache Types

To convert between data cache and operational data cache types:

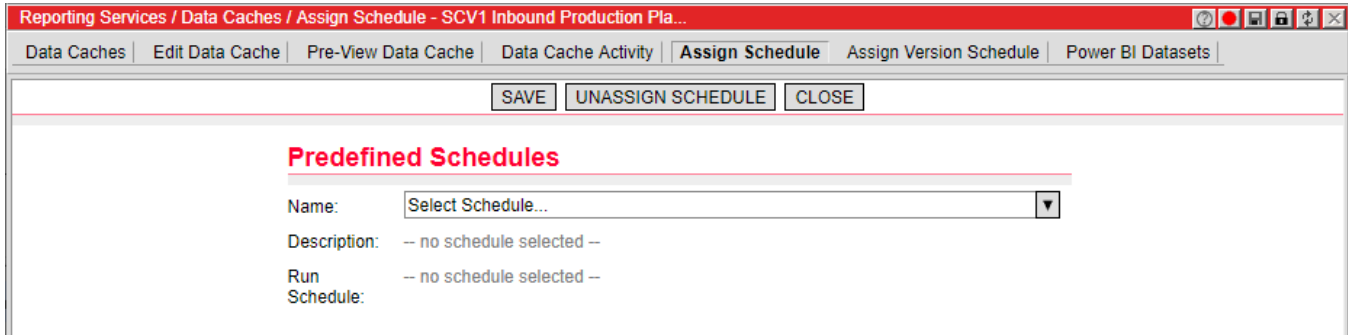
- 1 From the main menu, select **Reporting Services > Data Caches**.
- 2 Right-click on the data cache/operational cache you wish to convert and select either **Convert to Operational Cache** or **Convert to Data Cache**, respectively.
- 3 The selected cache is converted to the desired type.

### Assigning a Schedule to a Data Cache

Once a user is ready to run the data cache, a schedule must be assigned.

To assign a schedule:

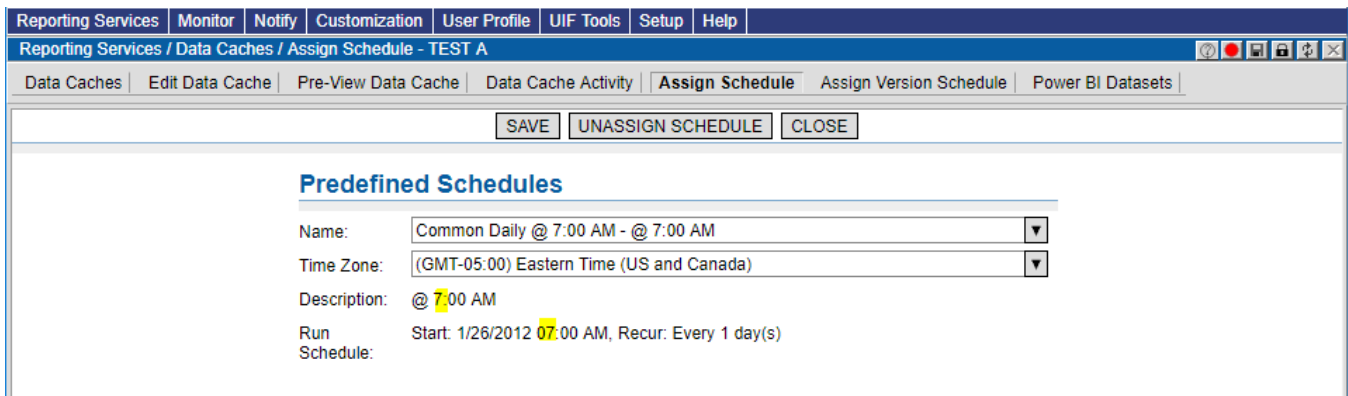
- 1 Right-click on a data cache in the list and select **Assign Schedule** from the right-click menu. The **Assign Schedule** page appears.



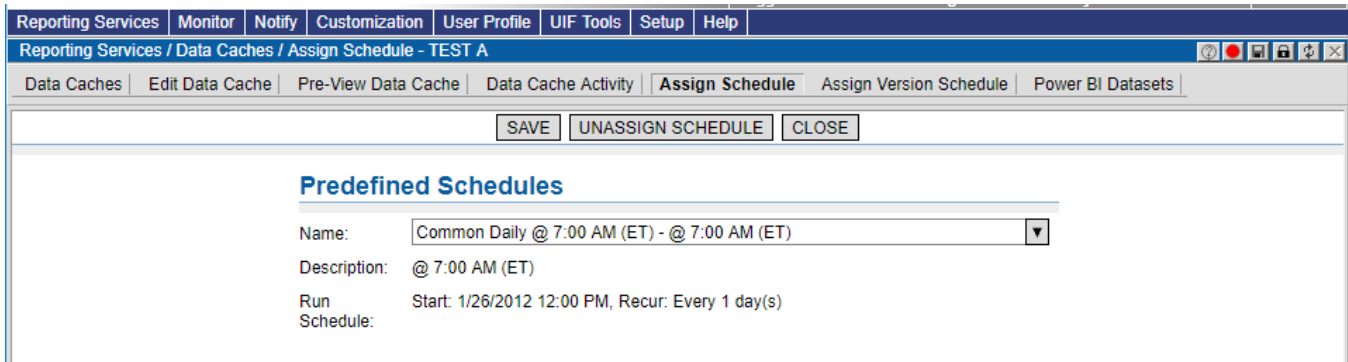
- 2 Select a schedule from the **Name** dropdown. The Description and Run Schedule fields are updated with data based on the schedule selected. Additionally, if a time zone is not predefined for a data cache schedule, the **Time Zone** dropdown appears.
- 3 If a new schedule is set to run at 7 a.m. each day but has no predefined time zone, you can select a time zone from the dropdown, and the time is adjusted accordingly for daylight savings time.

➔ **Note**— Currently, the hour portion of the Description value must match the hour portion of the Run Schedule value on the **Assign Schedule** page for the **Time Zone** dropdown to appear on the page.

So, for a schedule updated with a time zone in this manner, the **Assign Schedule** page displays a time of "7:00 AM" regardless of whether daylight savings time is in effect because the time is automatically adjusted.



Whereas for schedules with predefined time zones, the schedule's time is displayed as 7:00 AM outside of daylight savings time and as 8:00 AM during daylight savings time.



4 Click **Save**. This creates a scheduled job and will run within minutes.

### Pre-View Data Cache

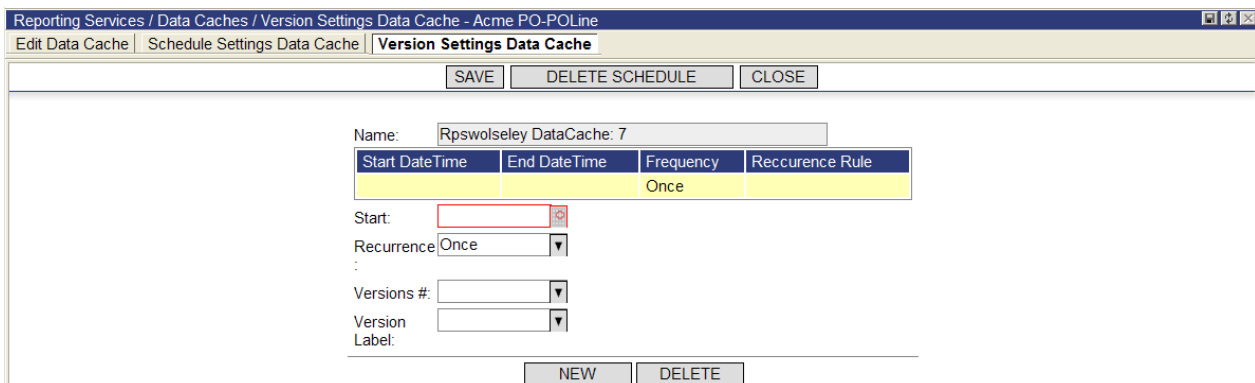
The **Pre-View Data Cache** page displays an unsorted view of all the data retrieved by the data cache after it has been refreshed either manually or scheduled using the current filter.

Right-click on a data cache in the list and select **Pre-View Data Cache** to display the **Pre-View Data Cache** page.

➡ **Note**— This view will NOT result in actual cached data. It only allows you to have a “quick” view of what will be in the data cache when it is refreshed (either by schedule or manually).

### Version Settings Data Cache

The **Version Settings Data Cache** page provides the ability to create a version (copy) of the current data cache content. Right-click on a data cache in the list and select **Version Settings Data Cache** to display the page.



For assistance on creating Version Settings, reference the steps above for creating Schedule Settings.

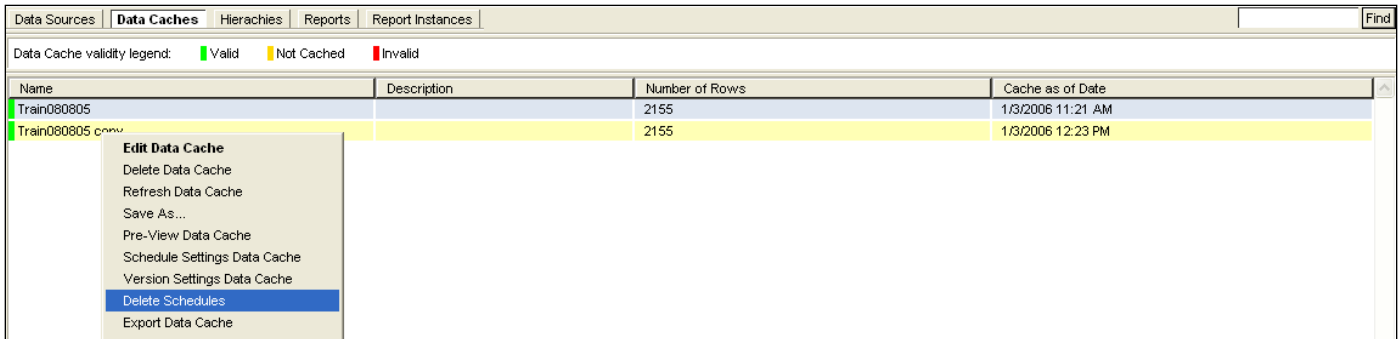


## Deleting Schedule and Version Settings

Users can delete all schedule settings and version settings for a data cache.

To delete all schedule settings and version settings:

- 1 From the main menu, select **Reporting Services > Data Caches**.
- 2 Right-click on the data cache and select **Delete Schedule**.



Users are asked to confirm whether to delete the schedules.

- 3 Click **OK** or **Cancel**.

➡ **Note**— Once a schedule has been deleted, it cannot be retrieved.

## Deleting a Data Cache

Users can delete a data cache at any point.

To delete a data cache:

- 1 From the main menu, select: **Reporting Services > Data Caches**.
- 2 Right-click the desired data cache and select **Delete Data Cache**.

Users are asked to confirm whether to delete the data cache.

- 3 Click **OK** or **Cancel**.

➡ **Note**— Once a data cache has been deleted, it can not be retrieved.

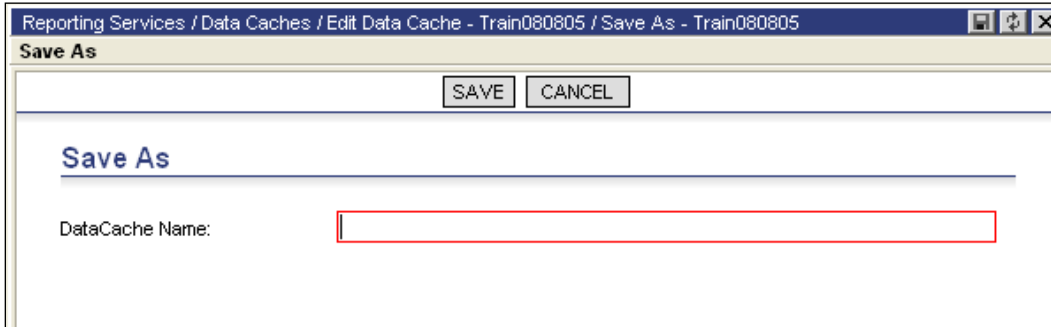
## Copying a Data Cache

Users can copy a data cache at any point.

To copy a data cache:

- 1 From the main menu, select: **Reporting Services > Data Caches**.

- Right-click the desired data cache, and select: **Save As**. The **Save As** page displays:



- Enter the new name for the copied data cache in the DataCache Name field.
- Click **Save**.

### Creating a Report within Data Cache

System users can create a report from the Data Cache tab.

To create a report from within the Data Cache tab:

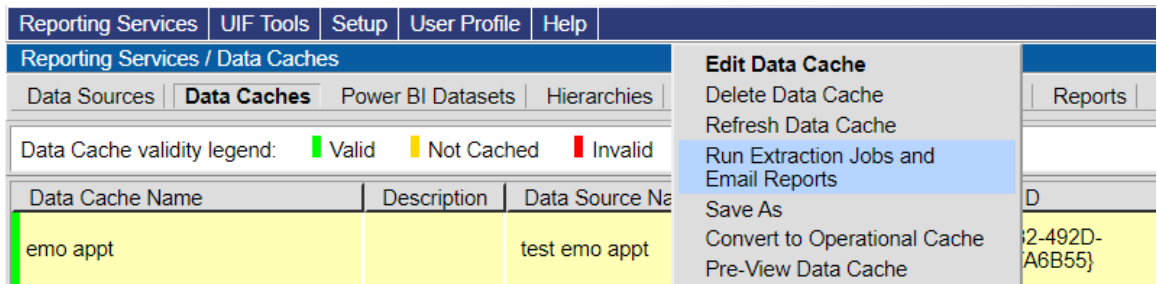
- From the main menu, select: **Reporting Services > Data Caches**.
- Right-click the desired data cache and select: **Create Report**.

See [Creating a Report](#) in the Report section for more detail on this functionality.

### Run Extraction Jobs and Email Reports for a Data Cache

You can right-click on a data cache and select the **Run Extraction Jobs and Email Reports** option to do the following:

- Runs all extraction jobs on the reports that use the selected data cache
- Emails the data cache's reports that have contacts or distribution lists assigned



Because these operations are processed by an asynchronous service, they could take a few minutes to complete depending on how busy the system is at the time.

## Reports

Reports provide the means to distribute, summarize, and chart information. A report is the template for a report instance.

Run-Time parameters enable users to run a report with the ability to change selection criteria on the fly. Each time a user executes a Run-Time parameter, Reporting Services prompts the user to confirm, or change the selection criteria.

Each data cache can filter or organize the data source differently.

➤ **Note**— Only System, Admin, and Power users have the ability to create and edit reports. Regular users can run, print, and export report results.

➤ **Note**— Avoid the use of quotation marks in labels, report names, and report category names.

### Creating a New Report

To create a new report:

- 1 From the main menu, select: **Reporting Services > Reports**. The **Reports** page appears.
- 2 Right-click on the page and select: **New Report**. The **Select Data Cache** dialog box appears.
- 3 Right-click on the desired data cache.
- 4 From the right-click menu, select: **Select Data Cache**.
- 5 The **New Report** page appears, name the report:

AVAILABLE COLUMNS		SELECTED COLUMNS										
eg_simple_cache					Summarization				Selection Criteria			
+ Other		Label	Hide	Display Format	Sort	Group By	Function	Total	Run-Time	Fixed		

Buttons: SAVE, SAVE AND RUN REPORT, ADD CALCULATED COLUMN, CLOSE

Name: TrainingMer

➤ **Note**— A report name is limited to a maximum of 30 characters and it is recommended that it be unique.

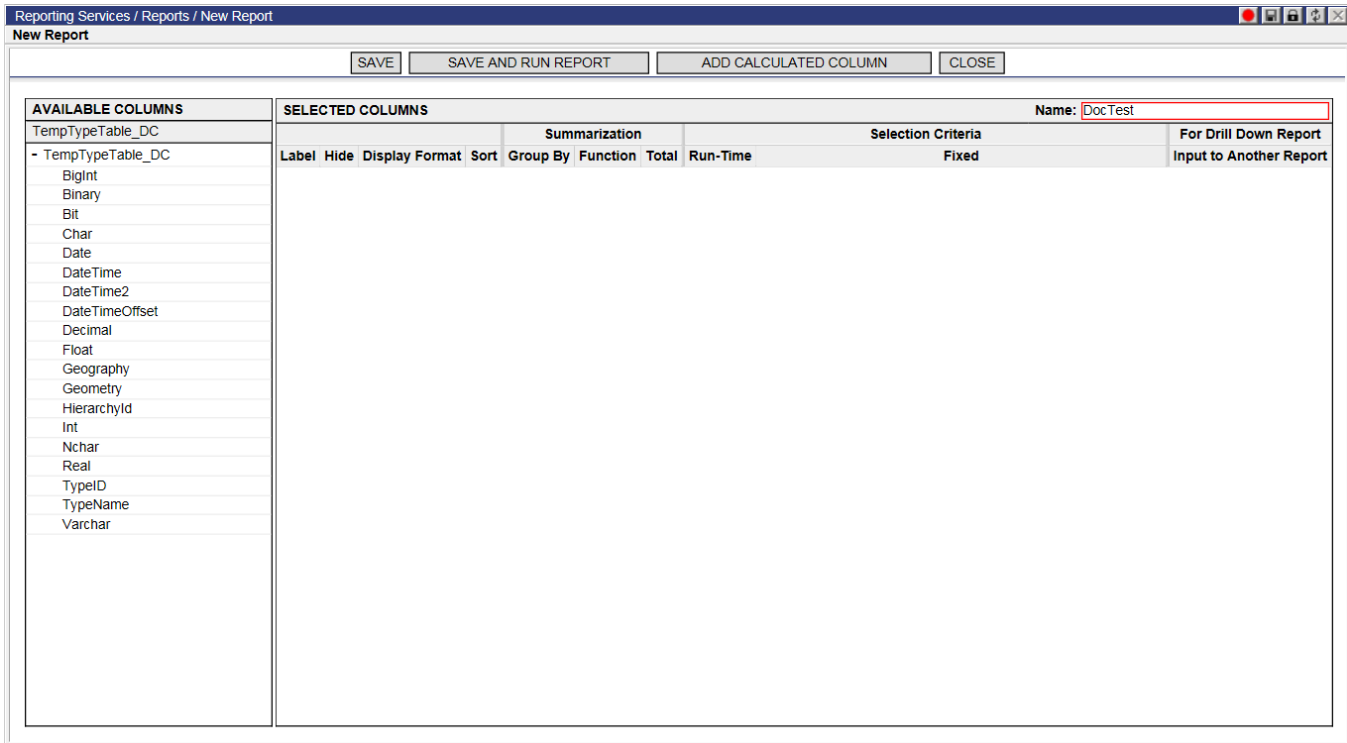
### Selecting Result Columns

Users can select the information that the report returns via the Available Columns and Selected Columns sections.

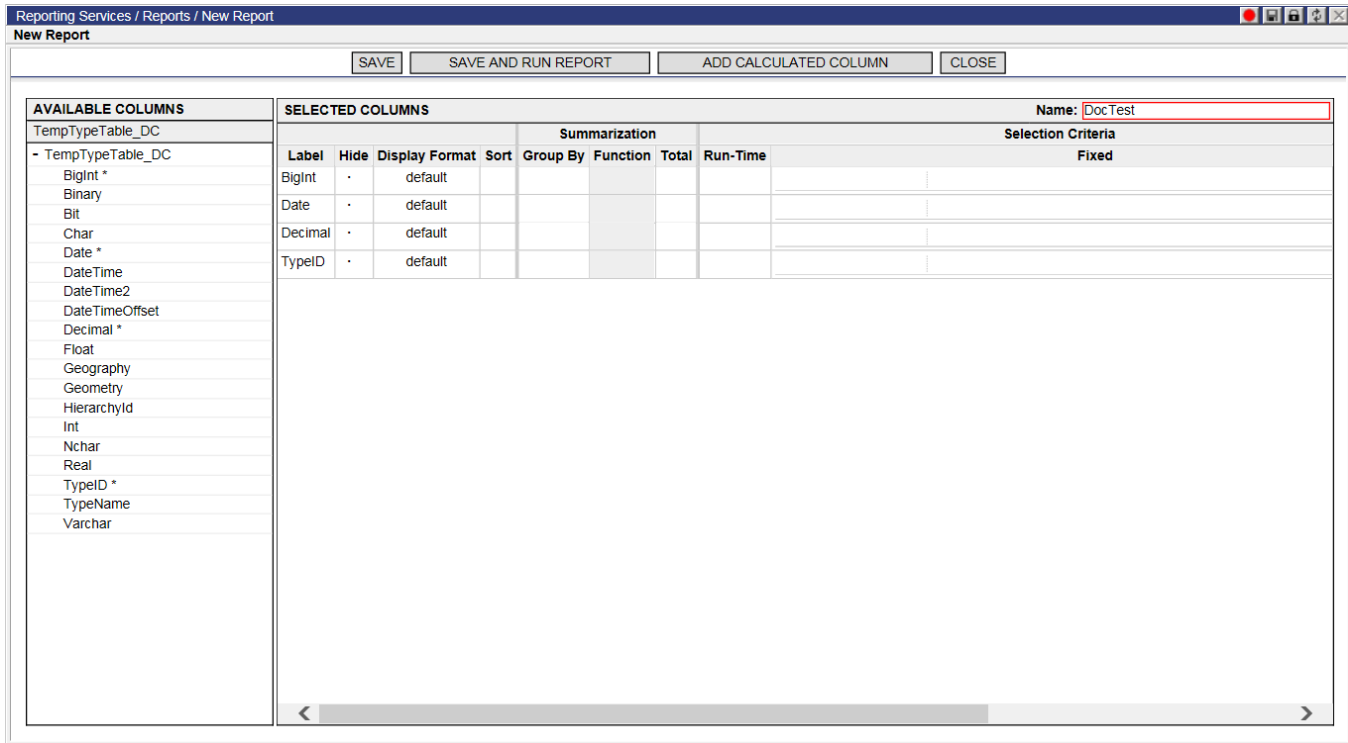
➤ **Note**— The list of Available Columns varies according to the data cache that you select to create the report. The report only returns the columns that exactly match the result columns specified.

To select a column:

- 1 To view the list of available column labels, click the "+" sign adjacent to the document header or line name:



- 2 From the list of available columns, do one of the following:
  - click and drag the desired column label to the **Selected Columns** section
  - OR,**
  - double-click on the desired column label to add it to the **Selected Columns** section



- **Note**— Once a column label has been dropped in the Result Columns section of the page, an asterisk (\*) appears adjacent to it in the Available Columns section.
  - **Note**— To remove a result column from the report, drag and drop it back into the Available Columns section of the page.
  - **Note**— Within the Selected Columns area of the page, a user can drag and drop column labels up and down the list.
- 3 Click **Save**. Report Services saves the report and offers four new menu tabs (see *Editing a Report*) that allow the user to edit the report.

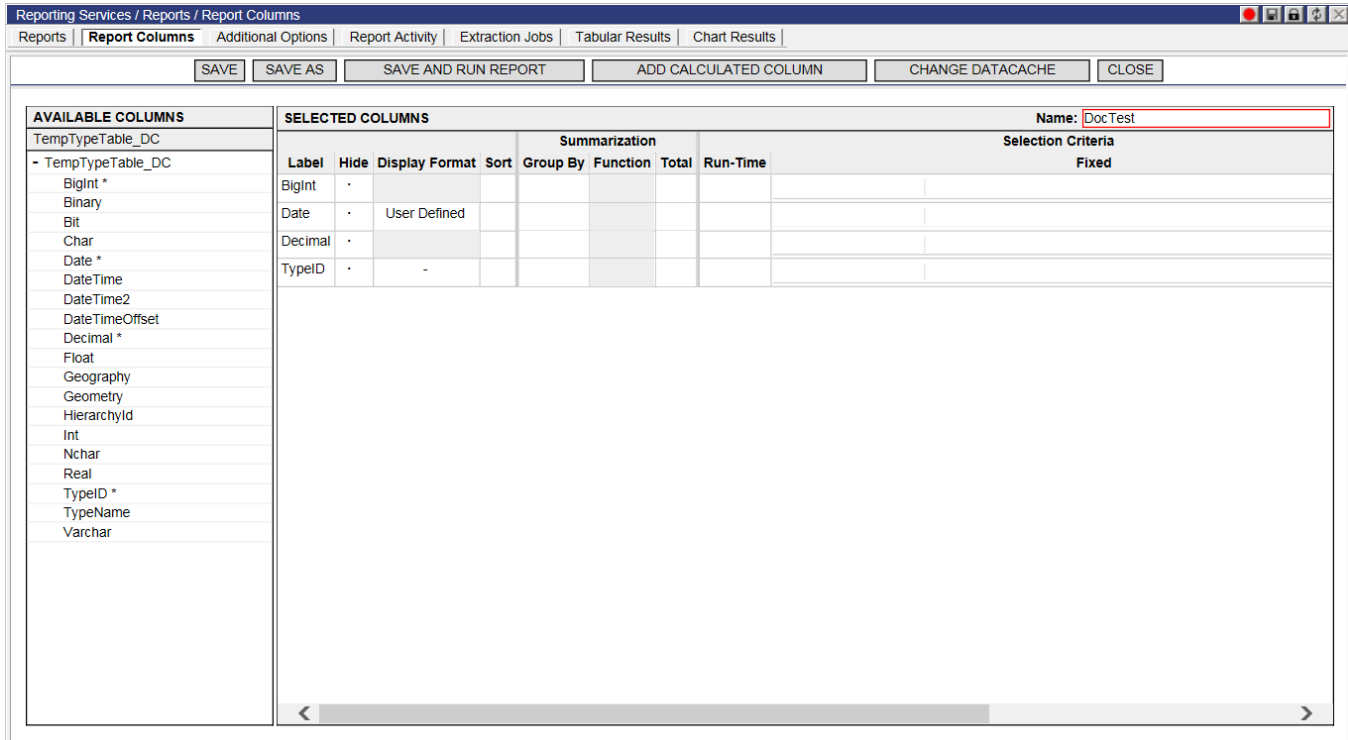
## Saving the Report

Once a user has named and selected the available columns section for the report, click **Save** to capture the changes. There are three choices for saving the report:

- Save
- Save As
- Save and run report

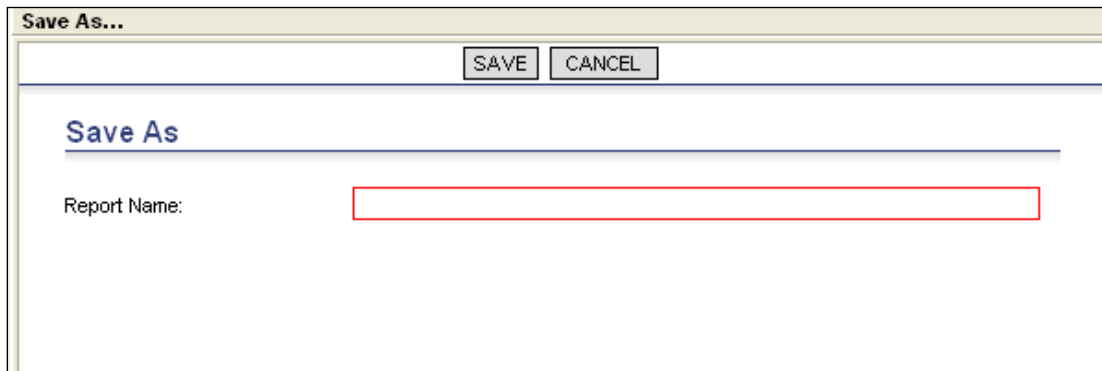
### Save

By clicking **Save**, the system saves the report and offers new menu tabs (see *Editing a Report*) that allow the user to edit the report:



### Save As

This option displays a separate **Save As** page and allows a user to rename the report, select a different report template and save the report:



### Save and Run Report

This option saves the report and runs it as well.

## Running a Saved Report

To run an existing report:

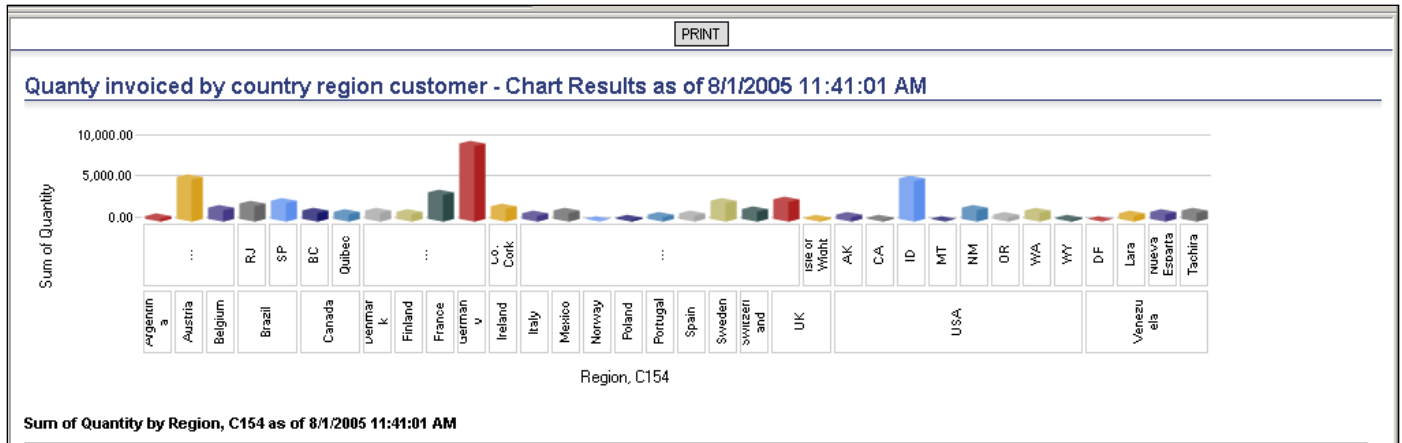
- 1 From the main menu, select: **Reporting Services > Reports**. The **Reports** page appears (listing all saved reports).
- 2 Right-click or double-click on the desired report, and select: **Run Report**. Depending on the default setting, either a Tabular Results report or a Chart Results report will be displayed. Below is an example of a Tabular Results report selected:

**Note**— If a user has checked Run Time in the selection criteria, the **Run Time Parameters** page appears. Add the parameters and click **Run Report**.

**Training Report No 2 - Tabular Results as of 8/1/2005 8:54:01 PM**

BOL_DELCityName	DEL_Carrier	SO_TransportMode	SO_SOCreateDT	SO_BuyerID	SO_SellerID	SO_SONumber	SO_SO_UDF13	BOL_DELLocationCode	BOL_DELLocationNam
	22	14244							
ZIONSVILLE	1	1							
ZIONSVILLE	UPSN	1							
ZIONSVILLE	UPSN	GN							
ZIONSVILLE	UPSN	GN	2005-02-24 18:00:27.000	0000188713	0110	0059819089	2005-02-28 00:00:00.000	0000188713	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	2	5							
ZEPHYRHILLS	UPSN	3							
ZEPHYRHILLS	UPSN	GN							
ZEPHYRHILLS	UPSN	GN	2005-01-27 14:46:29.000	0000300313	0110	0059698439	2005-02-01 00:00:00.000	0000300313	Photo Lab Manager
ZEPHYRHILLS	UPSN	GN	2005-02-04 13:58:34.000	0000178695	0110	0059736650	2005-02-09 00:00:00.000	0000178695	Cvs 3619
ZEPHYRHILLS	UPSN	GN	2005-01-26 09:48:29.000	0000178695	0110	0059690752	2005-02-02 00:00:00.000	0000178695	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	NULL	2							
ZEPHYRHILLS	NULL	GN							
ZEPHYRHILLS	NULL	GN	2005-02-02 09:10:25.000	0000178695	0110	0059723372	2005-02-23 00:00:00.000	0000178695	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	NULL	GN	2005-01-25 12:10:51.000	0000178695	0110	0059686090	2005-02-01 00:00:00.000	0000178695	Att: Jenn Fallon 813-782-9515

- 3 Users can also select the Chart Results view:



- **Note**— The columns that appear on the **Query Results** page depend on the data cache template and any customizations that were made when the named search was created.
- **Note**— The number of results displayed on the screen is limited by the Maximum Result Rows setting of the report. The only way to determine if additional rows exist is to edit the report settings to increase the Maximum Result Rows setting and then run the search again.

### Editing a Report

Once the report has been saved, it can be edited.

To edit existing reports:

- 1 From the main menu, select: **Reporting Services > Reports.**
- 2 Right-click the desired report and select: **Edit Report.**

The following menu tabs become available once a user is in edit mode:

- Report Columns
- Additional Options
- Report Activity
- Extraction Jobs
- Run-Time Parameters
- Tabular Results
- Chart Results



## Report Columns

The Report Columns tab is where the majority of editing occurs. Within this tab users can:

- Select or deselect available columns (See *Creating a Report* for details)
- Hide columns
- Change the display format
- Sort
- Determine summarization
- Change other selection criteria

### Hiding Selected Columns

To hide a selected column from the report results, simply check the box relative to the result column label.

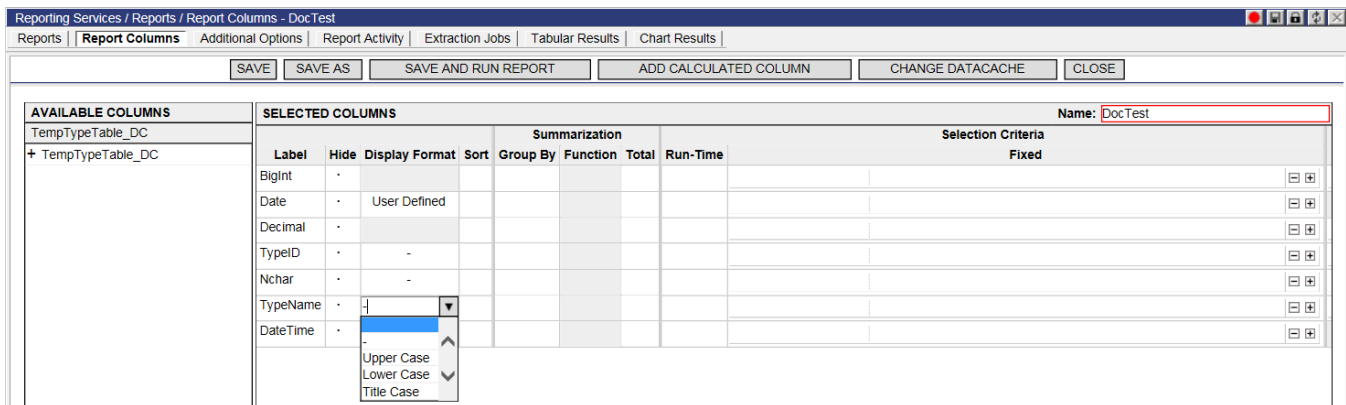
**Note**— Depending on the design of the report template, some result conditions are set to auto-hide. Users cannot un-hide these result columns. By default, an exception condition is set to auto-hide to indicate that it is not a result column. Secondly, by default, the exception condition is set to True to activate the exception condition. Users cannot un-hide an exception condition.

### Changing the Display Format

Users can change the selected column display format for text, numeric, and date fields.

The display format is automatically set to default; to change the text:

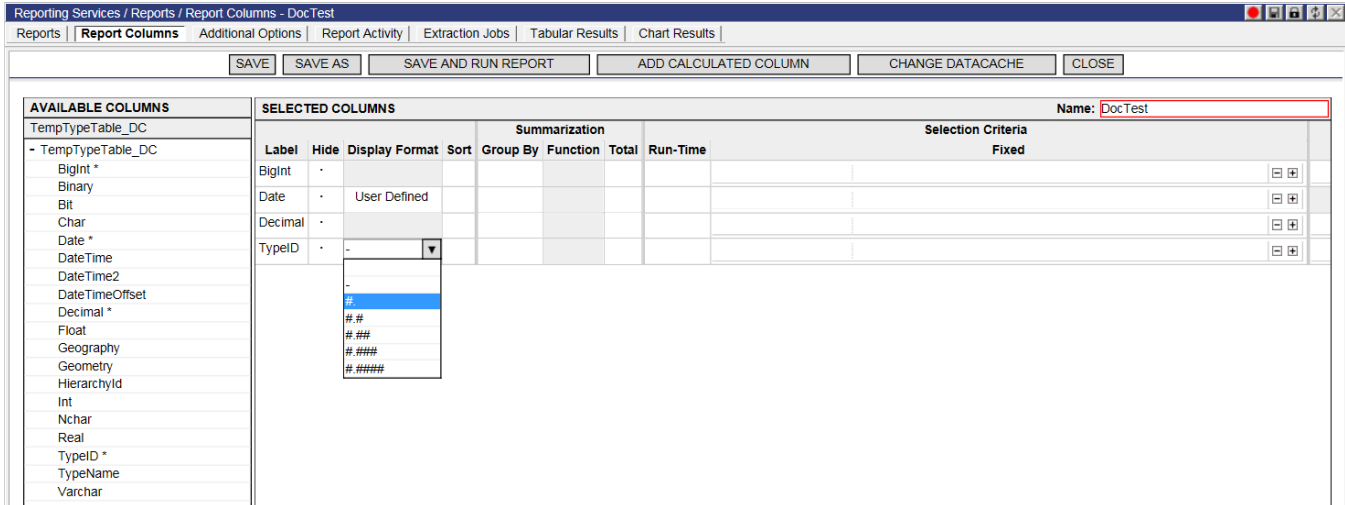
- 1 Click desired column in the **Display Format** field, select the desired format from the drop-down menu:



- To change the format back to the default, select the “-” option from the drop-down menu.

To change the numeric display format:

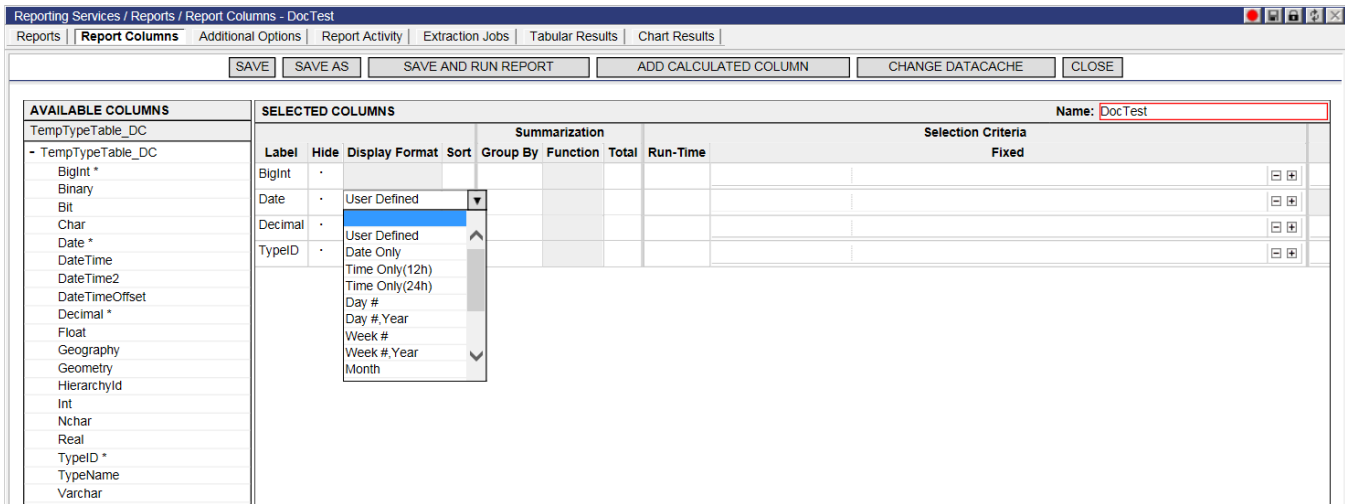
- Click the desired column in the **Display Format** field, select the desired format from the drop-down menu:



- To change the format back to the default, select the “-” option from the drop-down menu.

To change the date display format:

- Click the desired column in the **Display Format** field, select the desired format from the drop-down menu:



Date display options include:

- Date Only (shown in current user's Date/Time preference)
- Time Only (12h)
- Time Only (24h)
- Day #
- Day #, Year
- Week #
- Week #, Year
- Month
- Month, Year
- Month Abbr.
- Month Abbr., Year
- Quarter
- Quarter, Year

- 2 To change the format back to the default, select the "-" option from the drop-down menu.

### Setting the Selected Column Sort Order

Users can establish the order in which selected columns appear in the report:

 **Note**— Users can sort on a maximum of thirteen columns.

To set the order in which selected columns appear in the report from the **New Report** page, click the **Sort** field adjacent to each **Selected Column** label on which a sort is desired:

SELECTED COLUMNS			
Label	Hide	Display Format	Sort
BigInt	•		
Date	•	User Defined	
Decimal	•		
TypeID	•	-	4↑
Nchar	•	-	3↑
TypeName	•	-	2↑
DateTime	•	User Defined	1↑

## Changing the Selected Column Sort Order

Users can change the selected column sort order in the following ways:

- To change the order in which result columns are sorted, click the number until it changes to the desired sort order number. All other numbers are automatically updated in response to your change – maintaining the relative order that you initially established.
- To alternate between ascending and descending sort order, simply click the arrow icon.
- To remove a result column from the sort order, perform Ctrl + click, or click until the number disappears.

## Summarization

The Summarization section allows you to choose options for the following:

- Group By – this option groups the results by the column chosen
- Function – this option lets a user choose the numeric function for particular labels or columns. Users can choose from the following drop-down list:
  - Sum
  - Count
  - Max
  - Min Average
  - Average
  - Unique Count
- Total – this option totals the column selected

 **Note**— In order to create charts for a report, you must use summarization.

### Example:

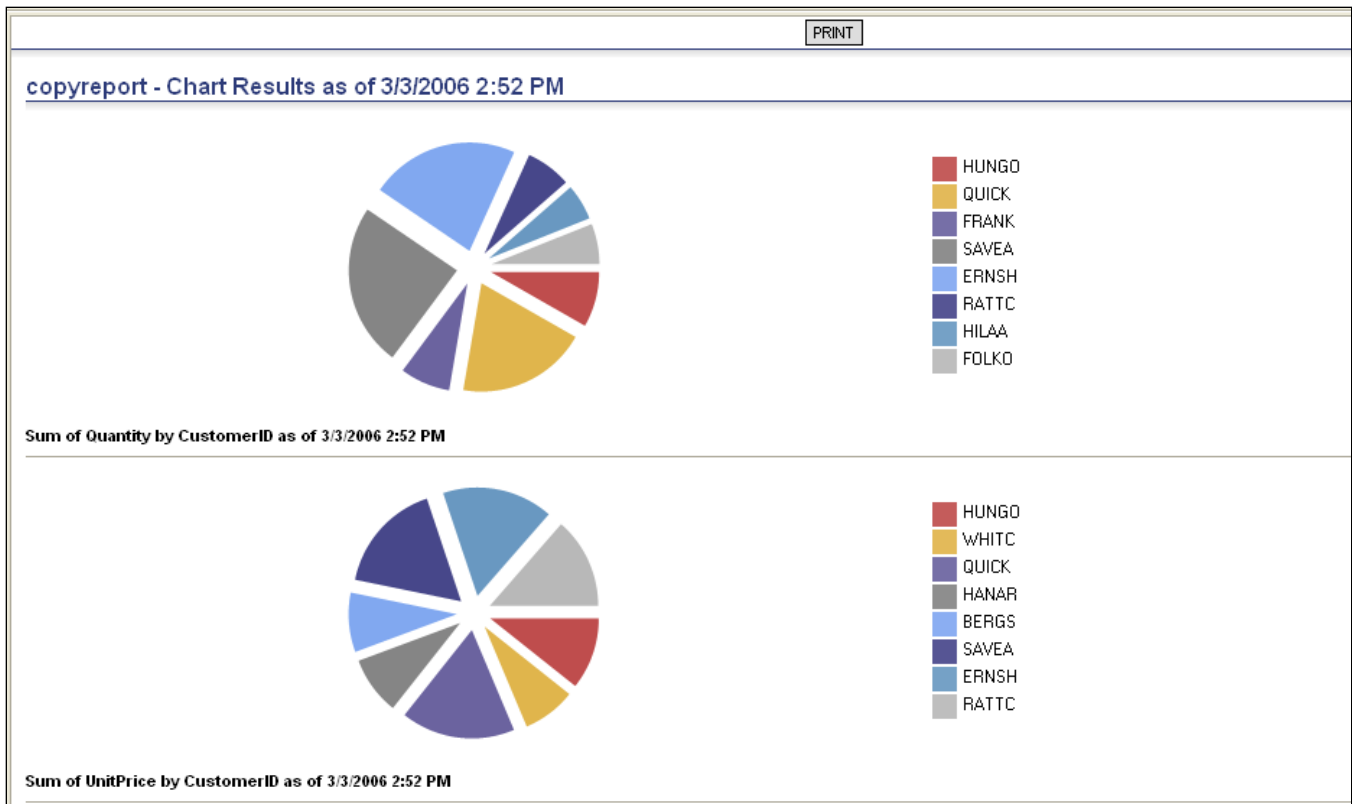
For this report, the user selects **Group By > CustomerID** and **Group By > Country**. When **Group By** is selected an additional column is created. In this case, Customer ID and Country columns are created:

SELECTED COLUMNS										Name: CustomerDreport			
										Summarization			
Label	Hide	Display Format	Sort	Group By	Function	Total	CustomerID	Country	Run-Time				
CustomerID		default	1 ↓	✓			✓						
CustomerName		default											
Address		default											
Country		default	2 ↓	✓				✓					
OrderDate		default											
Quantity													
UnitPrice		default											

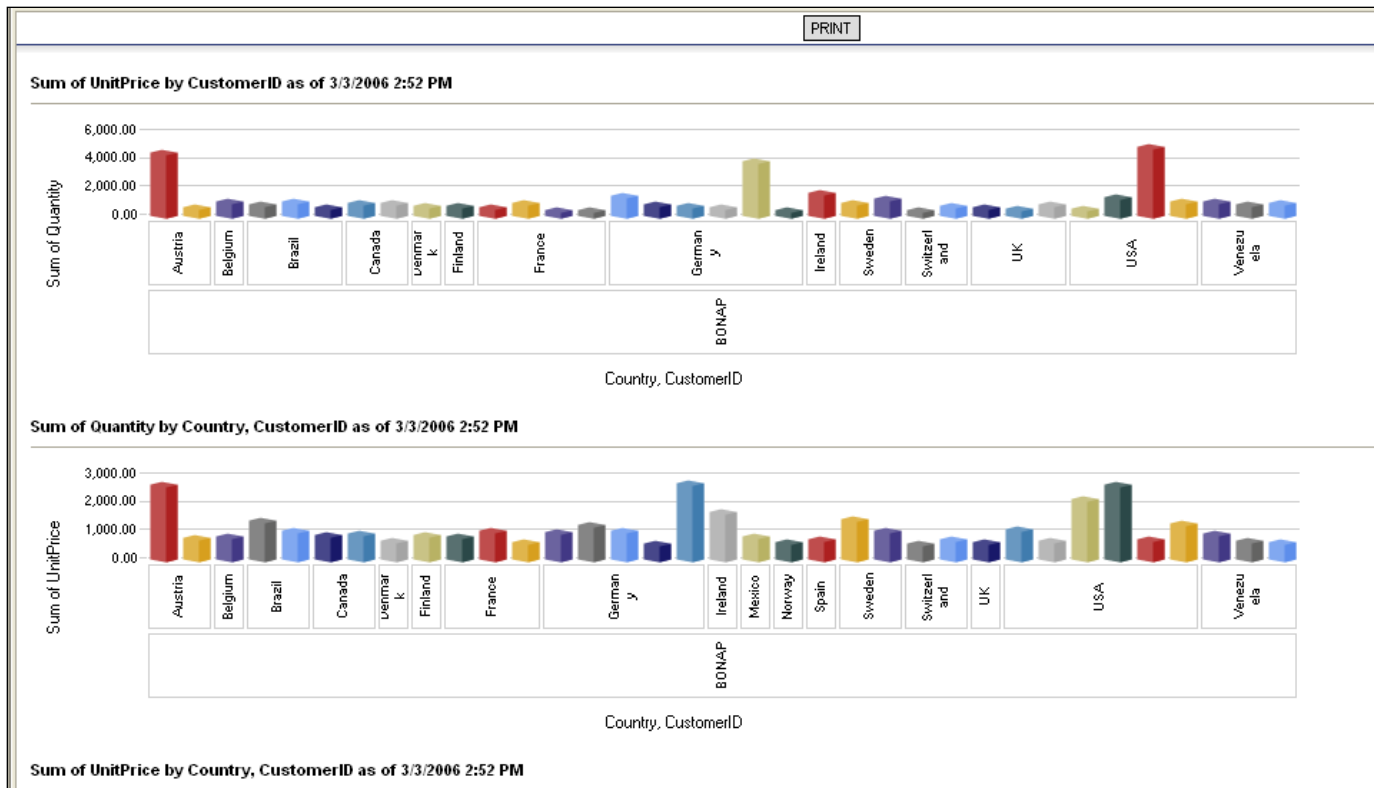
Next, the user selects **Total > Quantity** and **Total > Unit Price**. The user wants to **Sum** the totals for these items by CustomerID and by Country. By selecting the additional CustomerID and Country columns below, the total will be displayed in a report for both Quantity and UnitPrice:

SELECTED COLUMNS										Name: CustomerDreport			
										Summarization			
Label	Hide	Display Format	Sort	Group By	Function	Total	CustomerID	Country	Run-Time				
CustomerID		default	1 ↓	✓			✓						
CustomerName		default											
Address		default											
Country		default	2 ↓	✓				✓					
OrderDate		default											
Quantity					Sum	✓	✓	✓					
UnitPrice		default			Sum	✓	✓	✓					

The report is saved and ran. When Pie charts are selected, the following is displayed for the Sum of Quantity by CustomerID and Sum of UnitPrice by CustomerID reports.



If two items are selected as Country and CustomerID are below, then a bar graph is displayed for both Pie charts and Bar charts.



The user can also view the results in the Tabular view:

**CustomerIDReport - Tabular Results as of 3/3/2006 2:52 PM**  
 Summary: CustomerIDreport Group By: CustomerID, Country Sort By: CustomerID (Ascending), Country (Ascending)

CustomerID	Country	CustomerName	Address	OrderDate	Quantity	UnitPrice
					51317	56500.91
WOLZA (16)					205	330.1
WOLZA	Poland (16)				205	330.1
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	12/5/1996 12:00 AM	15	10.6
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	12/5/1996 12:00 AM	30	10
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	7/25/1997 12:00 AM	6	18
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	7/25/1997 12:00 AM	10	19
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	7/25/1997 12:00 AM	15	34
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	12/23/1997 12:00 AM	3	7.45
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	12/23/1997 12:00 AM	10	19
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	12/23/1997 12:00 AM	15	12.5
WOLZA	Poland	Wolski Zajazd	ul. Filtrowa 68	2/4/1998 12:00 AM	2	53

**Selection Criteria**

The Selection Criteria section allows users the option of choosing the following additional criteria:

- Fixed
- Run-Time

Within the Fixed and Run-Time criteria, users can choose from the following filtering options:

### **Text**

A text value is made up of text. For example, a text value can consist of a customer name or a country name. The filter options for a text value are the following:

- Is Missing
- Is Not Missing
- Starts With
- Ends With
- In a list (string)
- Not in a list (string)
- Contains (String)
- Not Contains (String)
- Between (String)
- Is Equal To (String)
- Is Not Equal To (String)
- Is Less Than (String)
- Is Greater Than (String)
- Is Less Or Equal To (String)
- Is Greater Than Or Equal To (String)
- Login User Based
- Recipient Based

### **Date**

A date value is made up of a date or date range. The filter options for a date value are the following:

- Is Within (Period) – current day, month or year
- Is Within (Fixed Dates)
- Is Within (+/- Days) – user entered date range can be -(number) before the date and +(number) after the date
- Is Within (+/- Weeks) – user entered date range can -(number) before the date and +(number) after the date



- Is Within (+/- Months) – user entered date range can –(number) before the date and +(number) after the date
- Is Missing
- Is Not Missing

### Numeric

A numeric value is made up of numbers. The filter options for a numeric value are the following:

- Is Missing
- Is Not Missing
- Starts With
- Ends With
- In a list (string)
- Not in a list (string)
- Contains (String)
- Not Contains (String)
- Between (String)
- Is Equal To (String)
- Is Not Equal To (String)
- Is Less Than (String)
- Is Greater Than (String)
- Is Less Or Equal To (String)
- Is Greater Than Or Equal To (String)

### Using the 'In a list' and 'Not in a list' Operators

The 'In a list' operator allows users to enter or copy and paste a series of search values all at once without having to click the plus button to add each value. **In a list** is only available for integer, float and string data type columns.

Values can be delimited by new lines within the text box or by commas.

X - DAS Compliance	
Appt Loc	<input type="text"/>
Appt #	In a list (String): <input type="text" value="112358"/> 11235813 1123581321
Out Appt PO#	<input type="text"/>
Out Keytrol #	<input type="text"/>
Out Keytrol Comp Date	<input type="text"/>
CIY TrailerNumber	<input type="text"/>

X - DAS Compliance	
Appt Loc	<input type="text"/>
Appt #	In a list (String): <input type="text" value="'112358','11235813','1123581321'"/>
Out Appt PO#	<input type="text"/>
Out Keytrol #	<input type="text"/>
Out Keytrol Comp Date	<input type="text"/>
CIY TrailerNumber	<input type="text"/>

In either case, when users click a new search field to edit, the values are displayed as follows.

X - DAS Compliance	
Appt Loc	<input type="text"/>
Appt #	In a list (String): <input type="text" value="'112358','11235813','1123581321'"/>
Out Appt PO#	<input type="text"/>
Out Keytrol #	<input type="text"/>
Out Keytrol Comp Date	<input type="text"/>
CIY TrailerNumber	<input type="text"/>

Each value is enclosed in single quotes so that the system recognizes that each item in the list is a separate value (Appt#=112358). When entering a value that contains a comma (e.g. "Washington,DC"), users must enclose the value with single quotes or the system will consider the comma as a delimiter and separate the value into two values ("Washington" and "DC").

In a list (String):	<input type="text" value="'Washington,DC'"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

When entering values that contain single quotes (apostrophes) and a comma is used as a delimiter (e.g. "DC's hours" and "Atlanta's hours"), users must enclose the values with single quotes and use two single quotes instead of one for the apostrophe.

In a list (String): [▼] 'DC's hours','Atlanta's hours'

No additional steps are required when using new lines as delimiters.

In a list (String): [▼] DC's hours  
Atlanta's hours

Both entries will display as follows.

In a list (String): 'DC's hours','Atlanta's hours'

Whereas the **In a list** operator will attempt to find entered values, the **Not in a list** operator will exclude entered values from the search results. The formatting requirements of the **Not in a list** operator are identical to the formatting requirements of the **In a list** operator.

**Fixed**

Users can choose to run their reports using Fixed criteria, meaning that a report will run based on the parameter chosen and have a fixed value. In the example below, the Country field has been checked to be Fixed and given a parameter of Starts With and a value of A. This means that each time this report is run, only results starting with the letter A are returned:

SELECTED COLUMNS										Name: Qtynty invoiced by country region custom	
Label	Hide	Display Format	Sort	Summarization					Run-Time	Selection Criteria	
				Group By	Function	Total	Country	Region		Fixed	
Country		default	1 ↓	✓			✓			Starts With:	A
Region		default	2 ↑	✓				✓			
CustomerName		default									
Quantity					Sum	✓	✓				

Within Fixed criteria, users can specify a hierarchy for the report to use.

SELECTED COLUMNS										Name: TrainMerc080405	
Label	Hide	Display Format	Sort	Summarization					Run-Time	Selection Criteria	
				Group By	Function	Total	Country	Region		Fixed	
Country		default	1 ↑	✓			✓				
City		default									
Address		default									
CustomerID		default							Use Hierarchy:	C Customers	
CustomerName		default									

### Run-Time

Users can choose to select a Run-Time parameter each time a report is run. Users will provide a parameter and can change the value for that parameter before running a report.

- Once the **Run-Time** box is checked, click in the column box next to the checkmark. A drop-down menu appears with a list of parameters to choose from, select one of these parameter options:

SELECTED COLUMNS						Name:	PO-POLine
Summarization				Selection Criteria			
Group By	Function	Total	Seller	PONumber	Run-Time	Fixed	
			✓				
				✓			
				✓			
				Sum			

- Once a parameter has been selected, enter in the value for the parameter. In our example below, we have selected a parameter of Starts With and our value entered is "A":

SELECTED COLUMNS								Name:	TrainMerc080405
Summarization				Selection Criteria					
Label	Hide	Display Format	Sort	Group By	Function	Total	Run-Time	Fixed	
Address		Upper Case	3↑				✓	Starts With:	'A'
City		default							
Country		default							
CustomerID		default	2↑						

**Note**— Once a user has selected to include Run-Time parameters and saves the report, a new tab called Run-Time Parameters displays. This tab is only available when a user chooses to include Run-Time parameters.

- Additional Conditions can be added to create "Or" statements. For example, a user can run a report based on customer names beginning with the letter "A" or "M". Click the "+" sign to add a condition (conversely, clicking the "-" sign removes the choice):

SELECTED COLUMNS								Name:	TrainMerc080405
Summarization				Selection Criteria					
Group By	Function	Total	Run-Time	Fixed					
			✓					Starts With:	'A'

The drop-down menu displays again:

SELECTED COLUMNS							Name: TrainMerc080405		
Summarization				Selection Criteria					
Group By	Function	Total	Run-Time	Fixed					
			✓	Starts With:				'A'	[-]
									[-]
				Is Missing					[-]
				Is Not Missing					[-]
				Starts With:					[-]
				Between (String):					[-]
				Is Equal To (String):					[-]
				Is Not Equal To (String):					[-]
				Is Less Than (String):					[-]
				Is Greater Than (String):					[-]

The screenshot below shows a report that displays customer names beginning with either "A" or "M":

SELECTED COLUMNS							Name: TrainMerc080405		
Summarization				Selection Criteria					
Label	Hide	Display Format	Sort	Group By	Function	Total	Run-Time	Fixed	
CustomerName		default					✓	Starts With:	'A'
								Starts With:	'M'
Address		Upper Case	2↑						
City		default							
Country		default							
CustomerID		default	1↑						

- Click **Save** to only capture the report and run it later; or click **Save and Run Report** to save the report and run it now. For our purposes, we will click **Save and Run Report**. Since we have entered Run-Time parameters, the following page appears:

Run-Time Parameters			
TrainMerc080405			
CustomerName	Starts With:	'A'	[-]
	Starts With:	'M'	[-]
RUN REPORT			

Notice the Run-Time Parameters tab is now available. Users can change the parameter and the value from this page and then click **Run Report**.

➡ **Note**— Run-time parameters are kept for each user until the report is saved again.

### Defining Additional Options

The next tab is **Additional Options**. This section allows a user the option of adding more information about a report.

### Report Display Options

This section allows the user to enter a more detailed Report Description as well as giving the user the option of changing the default results format from a Tabular to Chart display:

### Report Display Options

Report Name:

Report Description:

Default Results Format: **Tabular View** ▼

- Tabular View
- Tabular View
- Chart View

### Tabular View

Users can edit the Detail Level and Summary Row Position of a report in this section:

### Tabular View

Detail Level:  ▼

Summary Row Position:  Above Detail Row     Below Detail Row

Selecting **Show Details Rows Only** displays only the detail rows as shown:

Country	CustomerName	Address	CustomerID	OrderDate	Quantity	UnitPrice	discount price
					51317	56500.91	
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	1/6/1997 12:00 AM	50	8	10.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	20	8	4.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	20	15.2	7.60000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	30	19.2	14.40000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	60	12	18.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	20	9.5	4.75000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	21	21.05	11.05125
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	60	34.8	52.20000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	10/8/1997 12:00 AM	7	9.2	1.61000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	10/8/1997 12:00 AM	9	18	4.05000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	10/8/1997 12:00 AM	30	13.25	9.93750

Selecting Show Summary Rows Only displays only the summary rows as shown:

Country	CustomerName	Address	CustomerID	OrderDate	Quantity	UnitPrice	discount price
Venezuela (118)					51317	56500.91	
Venezuela	LINO-Delicatesses (35)				2936	2434.91	
Venezuela	LILA-Supermercado (34)				970	631.6	
Venezuela	HILARION-Abastos (45)				836	707.14	
Venezuela	GROSELLA-Restaurante (4)				1096	930.62	
					34	165.55	

Selecting Show Both Summary and Detail Rows displays both the summary and the detail rows as shown:

Country	CustomerName	Address	CustomerID	OrderDate	Quantity	UnitPrice	discount price
Venezuela (118)					51317	56500.91	
Venezuela	LINO-Delicatesses (35)				2936	2434.91	
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	1/6/1997 12:00 AM	50	8	10.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	20	8	4.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	20	15.2	7.60000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	30	19.2	14.40000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	3/25/1997 12:00 AM	60	12	18.00000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	20	9.5	4.75000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	21	21.05	11.05125
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	8/20/1997 12:00 AM	60	34.8	52.20000
Venezuela	LINO-Delicatesses	Ave. 5 de Mayo Porlamar	LINOD	10/8/1997 12:00 AM	7	9.2	1.61000

Select the **Use Server Paging** checkbox to enable server-side paging, which increases loading efficiency for reports with a high number of rows. Use the Top N field to specify the number of records returned. The value must be numeric and positive. If left empty, the parameter will not be used.

Entering a Top N value is especially useful for printing and/or emailing reports, allowing users to compile a particular number of top records for distribution.

**Note**— Specifying a Top N value is highly recommended for reports that have over 10,000 records.

### Chart View

Within the Chart View section, users can choose whether to display a bar chart or a pie chart:

#### Chart View

---

Top Level Chart Type: Bar chart ▼

Show All Aggregations on Same Chart:

Click the drop-down menu to select: **Pie Chart**:

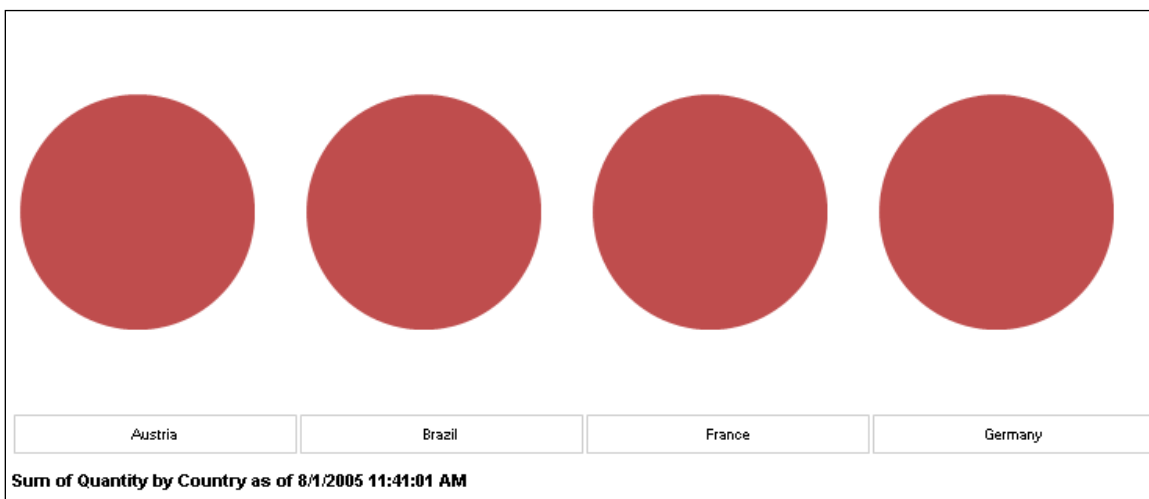
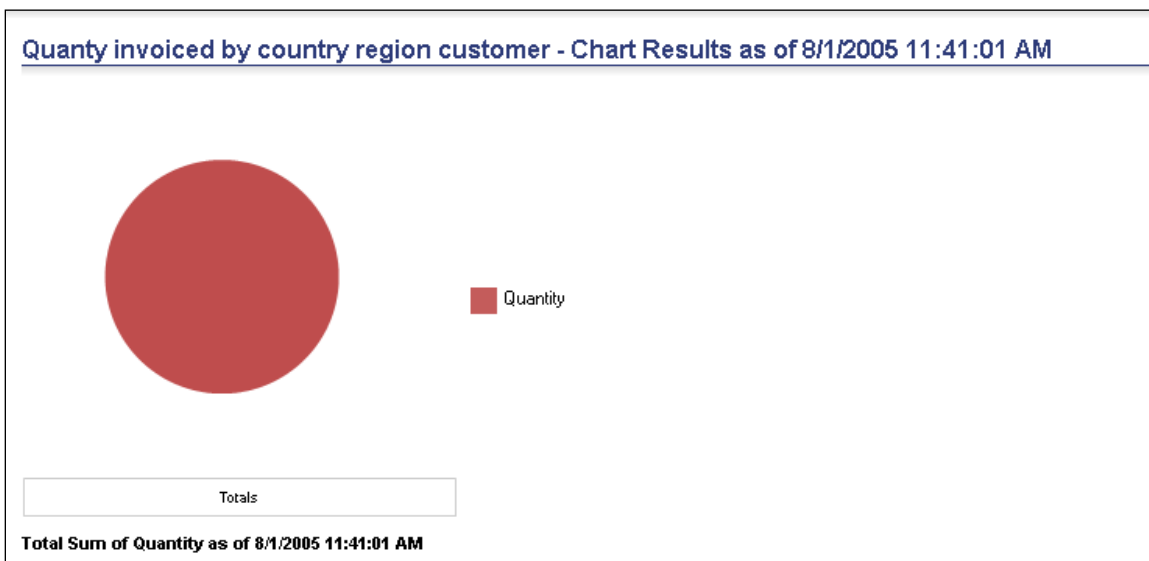


**Chart View**

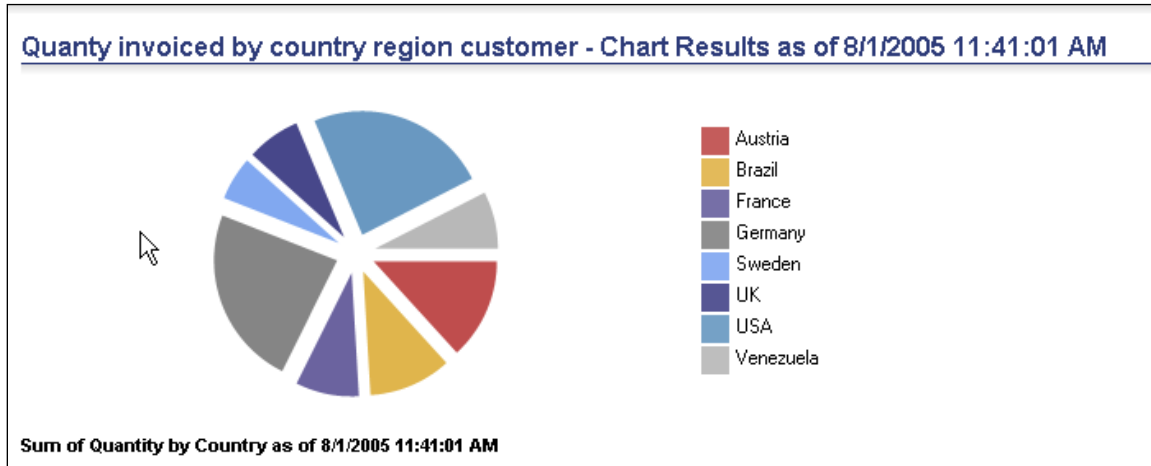
Top Level Chart Type:

Show All Aggregations on Same Chart:

By checking the **Show All Aggregations on Same Chart** box, the pie results returns a whole pie view as well as several other sums. For example:



Users can choose to leave the **Show All Aggregations on Same Chart** checkbox turned off to get the following pie results:



Once users have entered any additional information, click **Save** to capture the settings.

### Trend Reports

Users can enable trend reporting in order to create a report that captures and persist summarized results of a report's data cache. Report totals and aggregations are stored in a special DataCache that can be created with a date/time context, which then allows an Administrator to build trend reports just like normal reports.

Check **Enable Trend Reporting** to enable trend reporting and display additional trend reporting options.

### Trend Reports

---

Enable Trend reports:

Group Level 1 is Context:

Trends:

<input type="checkbox"/> Totals Trend	<input type="checkbox"/> Group Level 1 Trend
<input type="checkbox"/> Group Level 2 Trend	<input type="checkbox"/> Group Level 3 Trend
<input type="checkbox"/> Group Level 4 Trend	<input type="checkbox"/> Group Level 5 Trend

Check **Group Level 1 is Context**: if a context date is to be used as the first group level for the trend report. A context date is usually a calculated column created in

the **Report Columns** page. Example contexts days are “The first Monday of a week at midnight”, “The first day of a month at noon”. By fixing it to a specific time will ensure that the grouping on this column works as expected.

[SAVE]		[SAVE AND RUN REPORT]		[ADD CALCULATED COLUMN]		[CHANGE DATACACHE]		[CLOSE]		
AVAILABLE COLUMNS		SELECTED COLUMNS								
CostAllocation-Demp										
+ CostAllocation-Demp										
		Summarization								
		S								
Label	Hide	Display Format	Sort	Group By	Function	Total	Weekday	Load No	Run-Time	
Weekday		default	1↑	✓			✓			
Load No		default	2↑	✓				✓		
Shipment Dest Company		default								
ShipDestAddressLocNo		default								
ShipTotalWgt		default			Sum	✓	✓	✓		
Savings By Load		default			Sum	✓	✓	✓		
Total Allocated Charges		default								

The selected columns should be grouped with the date/time context column as the first group (sort is 1), and the columns should be summarized.

If the **Group Level 1 is Context:** is unchecked, a date/time context column will not be used for the trend report. The trend report will be a report with groups. The date/time context will be the refresh date of the data cache. The example below shows a **Report Column** page used for a trend report without as date/time context column.

AVAILABLE COLUMNS		SELECTED COLUMNS								
CostAllocation-Demp										
+ CostAllocation-Demp										
		Summarization								
Label	Hide	Display Format	Sort	Group By	Function	Total	Load No	Savings By Load	Run-Time	
Load No		default	1↑	✓			✓			
Shipment Dest Company		default								
ShipDestAddressLocNo		default								
ShipTotalWgt		default			Sum	✓	✓			
Savings By Load		default	2↑	✓	Sum	✓	✓	✓		
Total Allocated Charges		default								

As with trend reports with a date/time context column, the selected columns should be grouped, and summarized.

**Note**— In order to create a trend report a report with either groups and summarizations or with a date/time context column, groups, and summarizations must be created. Click **Save and Run Report** after it is setup.

The trend checkboxes is used to pick one or more trend reports. Currently all group levels and total group can be picked. However, users must be aware of the number of groups they have defined on the report.

In order to create a trend report, a user must select the desired report and select **Enable Trend Report** from the Report Instance right-click menu. This will result in

one or more sample trend reports, for each level of grouping there will be one new trend-report, marked with the blue box.

### Custom Printing

This option allows users to override the default format of the printable report by filling in a custom XSL style sheet.

**Custom Print**

---

XSL:

Development:

Here is an example of custom print XSL:

```
<?xml version="1.0"?>
<xsl:stylesheet version="1.0" exclude-result-prefixes="xsltemp"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xmlns:D2P="D2P-namespace-URI"
xmlns:Pres="Presentation-namespace-URI" xmlns:Navigation="Navigation-namespace-URI"
xmlns:xsltemp="temp" xmlns:pres="/schemas/ui/pres">
  <xsl:namespace-alias stylesheet-prefix="xsltemp" result-prefix="xsl"/>
  <xsl:output omit-xml-declaration="yes" method="xml"/>
  <xsl:variable name="XML" select=""/>
  <xsl:template match="/">
    <html>
      <body>
        <xsl:for-each select="$XML">
          <xsl:value-of select="Data/Output/parmReport/Report/C10816"/>,
          <xsl:value-of select="Data/Output/parmReport/Report/C10818"/>
          <br/>
        </xsl:for-each>
      </body>
    </html>
  </xsl:template>
</xsl:stylesheet>
```

This example outputs the following:

- 2563838, Departed
- 2571014, Departed
- 2571015, Departed

The XML data transformed for custom print is found in the UI trace of a report that has been run. An example is provided below. The column data are within the parmReport/Report elements, the attribute names begin with "C" and are followed by a number (ReportColumnID) that corresponds to a particular column which is specified in the RPSColumnInfo element.

```
<Data>
  <Output Type="ColumnInfo">
    <parmRPSColumnInfo>
      <RPSColumnInfo ReportColumnID="10818" ReportID="804" SubViewColumnID="38412"
        Name="Appt Status" SortSeq="0" DisplaySeq="6" ParameterFl="False" GroupAggrMask="0"
        GroupAggrFunction="0" FieldType="8" ColumnInternalName="Appt Status" ViewID="829" DispFormat="1"
        ViewColumnInternalName="C10818" PropertyName="T6" IsContextColumn="0"></RPSColumnInfo>
      <RPSColumnInfo ReportColumnID="11710" ReportID="804" SubViewColumnID="38413"
        Name="statuscode" SortSeq="0" DisplaySeq="0" ParameterFl="False" GroupAggrMask="0"
        GroupAggrFunction="0" FieldType="20" ColumnInternalName="statuscode" ViewID="829" DispFormat="1"
        ViewColumnInternalName="C11710" PropertyName="T0" IsContextColumn="0"></RPSColumnInfo>
      <RPSColumnInfo ReportColumnID="10816" ReportID="804" SubViewColumnID="38366"
        Name="Approval Number" SortSeq="0" DisplaySeq="3" ParameterFl="False" GroupAggrMask="0"
        GroupAggrFunction="0" FieldType="8" ColumnInternalName="Approval Number" ViewID="829"
        DispFormat="1" ViewColumnInternalName="C10816" PropertyName="T3"
        IsContextColumn="0"></RPSColumnInfo>
    </parmRPSColumnInfo>
  </Output>
  <Output Type="Report">
    <parmRPSReport>
      <RPSReport ReportID="804" ReportGUID="{95EB9012-58F3-4C0D-B3DB-B200978A3C4D}"
        SubViewID="829" SubViewInternalName="My Report" Name="My Report" QuickQueryFl="1"
        DefaultView="1" TabDetailLevel="1" TabSummaryPosition="0" ChartType="1" ChartLabels="0"
        IsInvalid="False" ModifiedBy="70" ModifyDate="2011-05-06T18:20:12" Level1ID="5" Level2ID="5"
        Level3ID="3" Level4ID="70" ContextGroupLevel1="0" TrendReportMask="0" TrendReports="False"
        ReportType="0" ShowRowCount="True" GroupText="True" TransformID="11" UseServerPaging="True"
        UseContextMenu="False" UseChartControl="False"></RPSReport>
    </parmRPSReport>
  </Output>
```

```

<Output Type="Summary">
  <parmSummary>&lt;B&gt;!_#@1LBSummaryCL:Summary#!&lt;/B&gt; My Report</parmSummary>
</Output>
<Output Type="Content">
  <parmReport>
    <Report TCR="775" RowNumber="1" GROUPID="20" GROUPCOUNT="0" L1="1" L500="1"
C11710="550" C10810="2563838" C10818="Departed" ></Report>
    <Report TCR="775" RowNumber="2" GROUPID="20" GROUPCOUNT="0" L1="1" L500="1"
C11710="550" C10810="2571014" C10818="Departed" ></Report>
    <Report TCR="775" RowNumber="3" GROUPID="20" GROUPCOUNT="0" L1="1" L500="1"
C11710="550" C10810="2571015" C10818="Departed" ></Report>
  </parmReport>
  <Paging TotalNumOfPages="16" TotalNumOfRecords="775" PageNum="1" AllIDs="0"/>
</Output>
</Data>

```

## Generating a Barcode Via Custom XSL

To generate a barcode in the custom XSL for a report, the XSL can include a vbscript function to use our DCFBarcodeUL.DCFBarcodeGenerator function (highlighted below).

```
<?xml version="1.0"?>
<xsl:stylesheet version="1.0" exclude-result-prefixes="xsltemp"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform" xmlns:D2P="D2P-namespace-URI"
xmlns:Pres="Presentation-namespace-URI" xmlns:Navigation="Navigation-namespace-URI"
xmlns:xsltemp="temp" xmlns:pres="/schemas/ui/pres" xmlns:msxsl="urn:schemas-microsoft-com:xslt">
  <xsl:namespace-alias stylesheet-prefix="xsltemp" result-prefix="xsl"/>
  <xsl:output omit-xml-declaration="yes" method="xml"/>
  <xsl:variable name="XML" select="/" />
  <msxsl:script language="VBScript" implements-prefix="Pres">
    <![CDATA[
      Function generateBarcode(number)
        Set barcodeGen = CreateObject("DCFBarcodeUL.DCFBarcodeGenerator")
        generateBarcode=barcodeGen.GetEncodedBarCode("",number,300,60)
      End Function
    ]]>
  </msxsl:script>
  <xsl:template match="/">
    <html>
      <body>
        <xsl:for-each select="$XML">
          <xsl:variable name="barcodeData">
            <xsl:value-of select="Pres:generateBarcode(number(Data/Output/parmReport/Report/@C10816))"/>
          </xsl:variable>
          </img>, <xsl:value-of
            select="Data/Output/parmReport/Report/C10818"/>
          <br/>
        </xsl:for-each>
      </body>
    </html>
  </xsl:template>
</xsl:stylesheet>
```

### Report Email

Users can specify a data size threshold in this section. When the threshold is exceeded, users will be sent an email with a link to the report instead of the report itself. This setting overrides the global data size threshold set on the **Application Configuration** page.

Report Email	
Email URL for downloading report instead of the report itself if report email's content size including attachment larger than (KB)	<input type="text"/>
Current application setting is	80 KB



## Report Activity

From the Report Activity tab, users can view all actions performed for the selected report.

Activity Type	Report Name	Data Cache Name	User Name	Activity DateTime	Activity Duration	Parameters	Number
Run Extraction	ZBA Appointment Request line	ZBA_Appointment_Request_line		6-OCT-2015 14:30	0	0	1000
Run Extraction	ZBA Appointment Request line	ZBA_Appointment_Request_line		6-OCT-2015 14:22	0	0	1000
Run Report	ZBA Appointment Request line	ZBA_Appointment_Request_line		6-OCT-2015 14:11	1	0	20
Run Report	ZBA Appointment Request line	ZBA_Appointment_Request_line		18-SEP-2015 14:11	0	0	10
Run Report	ZBA Appointment Request line	ZBA_Appointment_Request_line		18-SEP-2015 14:09	0	0	10
Run Report	ZBA Appointment Request line	ZBA_Appointment_Request_line		18-SEP-2015 14:08	0	0	10
Run Report	ZBA Appointment Request line	ZBA_Appointment_Request_line		18-SEP-2015 14:04	0	0	10

Use the fields in the Search Criteria section of the **Report Activity Search** pane to filter the activities displayed in the **Report Activity Result** pane by Activity Type, Data Cache Name, User Name, Duration Threshold and Date Range.

## Tabular Results

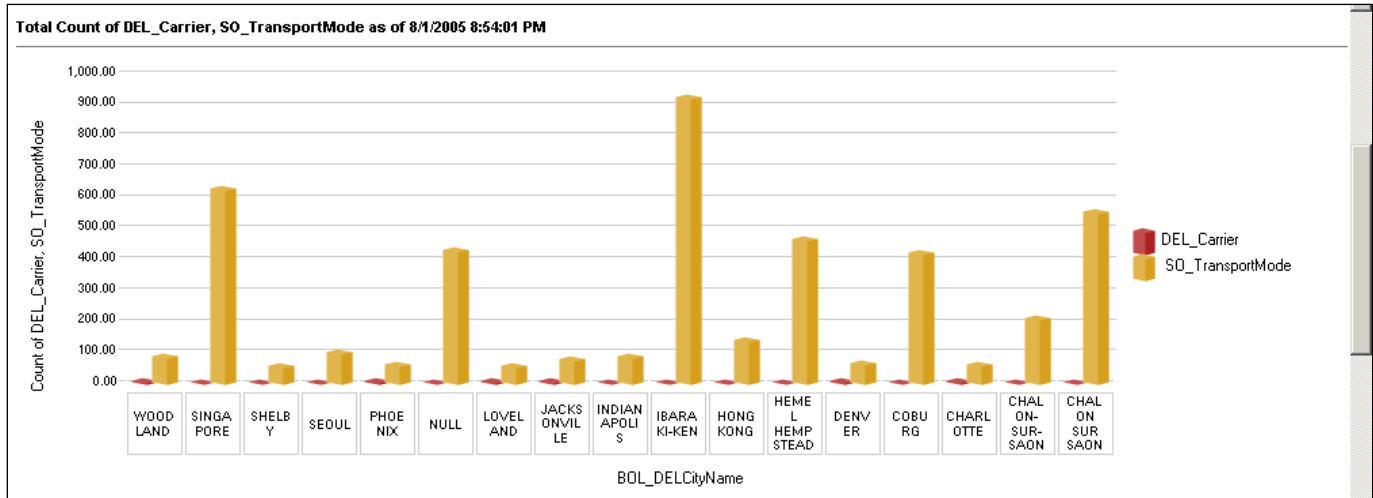
The next tab is Tabular Results. Clicking this button runs the report and provides the results in a tabular format:

**TrainMerc080405 - Tabular Results as of 8/1/2005 11:41:01 AM**

Address	City	Country	CustomerID	CustomerName
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
WALSERWEG 21	Aachen	Germany	DRACD	Drachenblut Delikatessen
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro
VINBAELTET 34	Kobenhavn	Denmark	SIMOB	Simons bistro

### Chart Results

The last tab is Chart Results. Clicking this button runs the report and provides the results in a chart format:



### Removing Chart Results

- 1 From the main menu, select: **Reporting Services > Reports**. The **Reports** page appears.
- 2 Right-click the desired report and select: **Edit Report**.
- 3 Select the **Report Columns** tab.
- 4 Remove the summarizations and click **Save**, or **Save and Run Report**.

➡ **Note**— If a user has the report selected on the dashboard, the report chart becomes “orphaned”. The chart is no longer present on the dashboard, and if the user selects the drop-down bar for the report, the report is listed as “orphaned”.

### Contact Creation and Email Distribution of Reports

Reporting Services supports email distribution of reports. Users can add and configure email addresses to the system and upon cache refresh, the reports will be sent to the addresses in the list.

This functionality impacts users of different hierarchies.

### Regular Users

Select **Reporting Services > Contacts** to view the Contacts list page.

Display Name	Email Address	Use With EmailResult	Modify Date
Boo Hoo	alan_descartes.com	False	1-JUL-2011 14:51
Tester 123	alan_descartes.com	False	1-JUL-2011 14:52
Foo2	alan_descartes.com	False	15-JUN-2011 16:22
RpsRegular 1	alan_descartes.com	False	16-JUN-2011 14:31
	alan_descartes.com	False	15-JUN-2011 16:24
Alan	alan_descartes.com	False	20-JUN-2011 14:48

From the **Contacts** page, users can add, edit or delete email addresses in the list. Emails added to this list will typically belong to the user themselves.

When creating or editing a contact, select the **Use with Email Result** checkbox indicates that the email will be used when the user runs a report and selects an option to send the report to contacts via email.

### Admin Users

In addition to the **Contacts** page, Admin users have two other lists that allow them to manage notifications: Common Contacts and Distribution Lists.

The **Common Contacts** list page allows admin users to create set up third party email addresses not necessarily linked to the user.

Display Name	Email Address	Owner	Distribution Lists
Mylist 4	foo4@mylist.com	--	View Distribution Lists ...
Mylist 3	foo3@mylist.com	--	View Distribution Lists ...
Mylist 2	foo2@mylist.com	--	View Distribution Lists ...
Mylist 1	foo@mylist.com	--	View Distribution Lists ...
Tester 123	tester@acmedepartment.com	Acme RpsRegular	View Distribution Lists ...
RpsPower 1	rpspower@acmedepartment.com	RpsPower	View Distribution Lists ...
RpsRegular 1	rpsregular@acmedepartment.com	Acme RpsRegular	View Distribution Lists ...
Edwin	edwin@acmedepartment.com	Acme RpsSystem	View Distribution Lists ...
Boo Hoo	boohoo@acmedepartment.com	Acme RpsRegular	View Distribution Lists ...
Foo2	foo2@acmedepartment.com	Acme RpsRegular	View Distribution Lists ...
RpsPower 2	rpspower2@acmedepartment.com	RpsPower	View Distribution Lists ...
Alan	alan@acmedepartment.com	Acme RpsRegular	View Distribution Lists ...
NewAddress	newaddress@acmedepartment.com	--	View Distribution Lists ...
RpsPower 3	rpspower3@acmedepartment.com	RpsPower	View Distribution Lists ...
Test 123	edwin@yahoo.com	--	View Distribution Lists ...
Test123	edwin@tester.com	RpsPower	View Distribution Lists ...
Test123	test@acmedepartment.com	--	View Distribution Lists ...
Test 123	ana_b@yahoo.com	--	View Distribution Lists ...
Acme 4	Acme4@acmedepartment.com	--	View Distribution Lists ...

As with the **Contacts** page, users can use the right-click menu to create, edit or delete common contacts.

**New Contact**

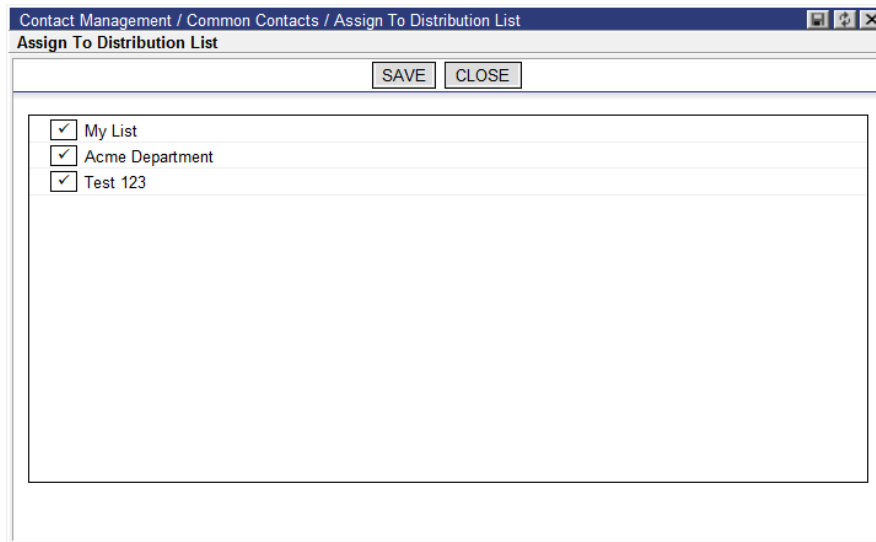
SAVE CLOSE

**Email Address**

Display Name:

Email Address:

Users can also assign any of the common contacts to a distribution list in the system using the right-click menu.

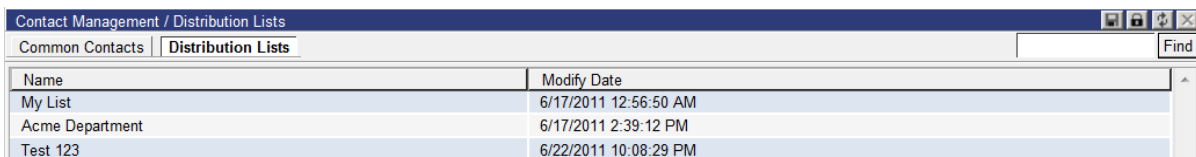


Use the checkboxes to choose which list(s) you wish to add the contact to and click **Save** when finished.

Users can view which distribution lists each common contact is assigned to by clicking the associated link in the Distribution Lists column of the **Common Contacts** list page. The **Details – Distribution Lists** window is displayed.



Essentially, the **Common Contacts** list is a repository of emails used to compile distribution lists. These distribution lists can be viewed by selecting **Reporting Services > Contacts > Distribution List** from the main menu.



Users can create, edit or delete distribution lists in the list by using the right-click menu options.

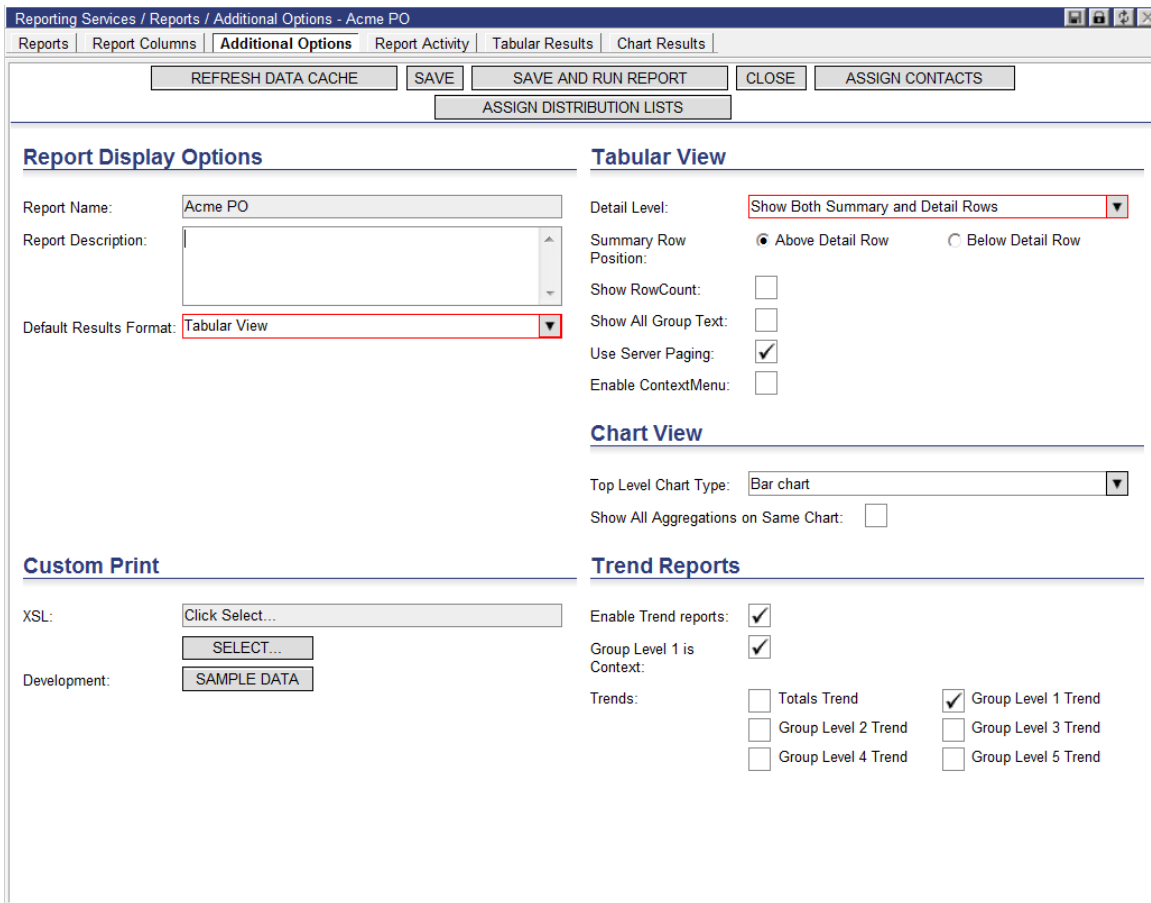
### Adding Reports to Distribution Lists

To add a report on the **Reports** list page to the contacts in a distribution list:

- 1 Right-click on the report you wish to specify and select **Add to Distribution**.
- 2 Choose an email from the list window.

➡ **Note**— If the **Add to Distribution** link is not selectable, the associated cache has not been scheduled.

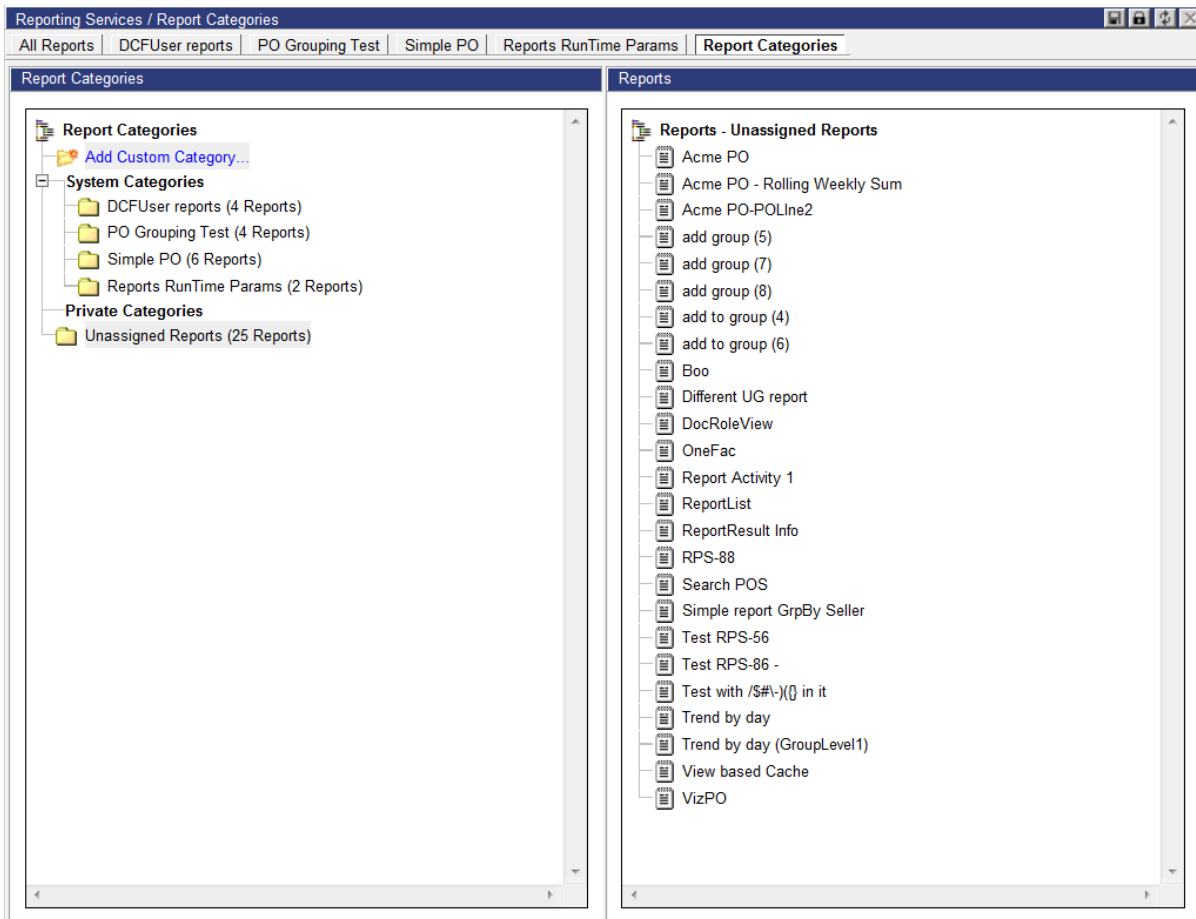
Contacts and distribution lists can also be assigned to reports from a report's **Additional Options** page. Right-click on a report in the **Reports** list and select **Additional Options** from the right-click menu.



Select the **Assign Contacts** or **Assign Distribution Lists** buttons to display a list window at the bottom of the page, allowing users to view the contacts/distribution lists currently assigned to the report and assign new contacts/distribution lists to the report.

## Creating and Using Report Categories

Users can group reports into customized categories, providing an enhanced method of organization. To access the **Report Categories** tab, select **Reporting Services > Reports** from the main menu, and click **Report Categories**.

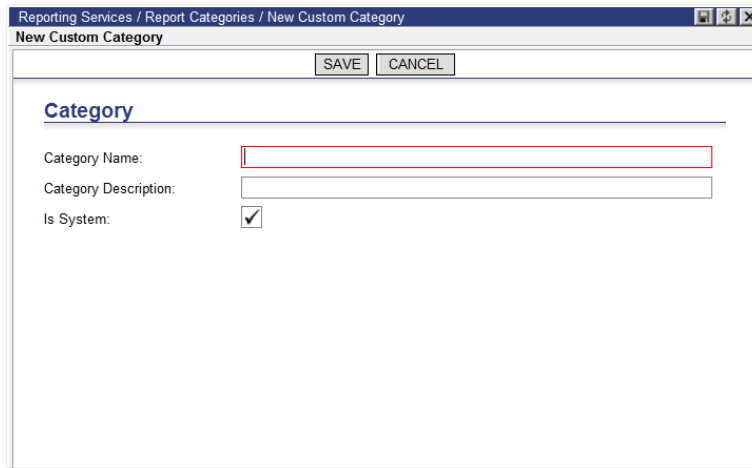


On the **Report Categories** page, the left panel displays the list of categories.

### Creating a Custom Category

To add a new category:

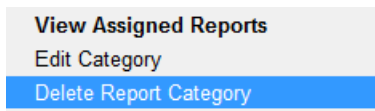
- 1 Double-click **Add Custom Category**. The **New Custom Category** window appears.



- 2 Enter the Category Name and Description. For regular users, the **Is System** checkbox is unavailable and the category will, by default, be saved as a Private Category, only available to the user that created it. Administrator users can specify whether or not the new category appears under the System Categories header by selecting the **Is System** checkbox. These categories are available for all users within a company.
- 3 Click **Save** when finished. The new category is added to the list.

### Using the Right-Click Menu to View Reports and Edit or Delete Categories

Users can right-click on custom categories and select one of the following options from the right-click menu:



- **View Assigned Reports:** Displays all reports in the category in the right panel
- **Edit Category:** Displays the **Custom Category** window with editable fields
- **Delete Report Category:** Removes the selected category

### Moving Reports Between Categories

The right panel displays a list of assigned reports for the selected category on the left panel. To add a report to from one category to another (assigned or unassigned), drag-and drop the item from the right panel to the left into the desired category. For multiple reports, hold CTRL to select more than one to move. The page will refresh with the report(s) in its new category.

To remove a report from a category and return it to the Unassigned Reports folder, right-click on the report and select **Remove From Category** from the right-click menu.



The system adds new categories to the toolbar. Click the desired category tab to display reports in a list for processing, edits and exports.

### Configuring Standalone Emailing Schedules for Reports

In general, report and report instance emails are only sent when the associated data cache was refreshed at the scheduled time. With the Standalone Emailing Schedule feature, Admin, Power and System users can specify a different emailing schedule for a report or report instance.

➔ **Note**— When a report is assigned to a standalone emailing schedule, the report will no longer be emailed after the data cache refresh completes. It is recommended that users select a schedule that differs significantly from the report’s data cache refresh schedule to avoid potential conflicts.

To set a standalone emailing schedule for a report:

- 1 Select **Reporting Services > Reports**. The **Reports** list page appears.

Report Name	Data Cache Name	Number of Rows	Cache as of Date	DataCache Type	Standalone Email Schedule
ZBA PO report test	ZBA PO test	1000	23-MAY-2016 12:27	Cache	
ZBA_Comments	ZBA_Comments	10	23-MAY-2016 12:27	Cache	
emo RPT DC with aproved hot appointments	emo DC with aproved hot appointments	2	20-MAY-2016 10:42	Cache	
emo RPT aproved hot appointments	emo aproved hot appointments	338	20-MAY-2016 10:42	Cache	
testRPSConfig	emo aproved hot appointments	338	20-MAY-2016 10:42	Cache	

- 2 Right-click on a report and select **Assign Standalone Emailing Schedule** from the right-click menu. The **Assign Standalone Emailing Schedule** page appears.

**Assign Standalone Emailing Schedule**

SAVE UNASSIGN SCHEDULE CLOSE

**Predefined Schedules**

Name: Common Daily @ 7:00 AM (ET) - @ 7:00 AM (ET) ▼

Description: @ 7:00 AM (ET)

Run Schedule: Start: 1/26/2012 12:00 PM, Recur: Every 1 day(s)

- 3 Select a schedule from the **Name** dropdown. The Description and Run Schedule fields will populate.
- 4 Click **Save**. On the **Reports** list page, the Standalone Email Schedule column will display the set schedule value. If the report has only one report instance, this

information will also be displayed in the Standalone Email Schedule column for the corresponding report instance.

➔ **Note**— When a report has multiple report instances with different standalone emailing schedules set, the Standalone Email Schedule column will display the message “See its Report Instances” and the **Assign/Unassign Standalone Emailing Schedule** options will no longer be available for the report on the **Reports** list page. Please see the *Configuring Standalone Emailing Schedules for Report Instances* section in this document for more information.

Report Name	Data Cache Name	Number of Rows	Cache as of Date	DataCache Type	Standalone Email Schedule
ZBA PO report test	ZBA PO test	1000	23-MAY-2016 11:52	Cache	
ZBA_Comments	ZBA_Comments	10	23-MAY-2016 11:52	Cache	
emo RPT DC with aproved hot appointments	emo DC with aproved hot appointments	2	20-MAY-2016 10:42	Cache	
emo RPT approved hot appointments	emo approved hot appointments	338	20-MAY-2016 10:42	Cache	
testRPSConfig	emo approved hot appointments	338	20-MAY-2016 10:42	Cache	
emo RPT 1	emo appointments 2011 2012	17333	20-MAY-2016 10:42	Cache	Common Daily @ 7:00 AM (ET)

To unassign a standalone emailing schedule from a report, right-click on a report on the **Reports** list page or click **Unassign Schedule** on the **Assign Standalone Emailing Schedule** page.

### Dynamic Report Selection Criteria Using Recipient/Login-based Lookup Tables

The **Recipient Based** and **Login Based** selection criteria are used to filter reports by values associated to particular email recipients, allowing the system to email a link to a report with information tailored to the recipient. This feature reduces the need for users to generate multiple reports for different recipients.

The main differences between **Recipient Based** and **Login Based** selection criteria are described below:

- Recipient Based:** Filters the report based on a value associated with an email recipient that is not a Descartes Reporting Service user, i.e. an individual without Descartes Reporting Service login credentials. After the report’s data cache is refreshed, an email is sent to each recipient. The email contains hyperlinks to generate a report for the recipient in CSV and HTML formats and then download the report.
  - ➔ **Note**— The report is generated when the link is clicked; the system does not send a link to a completed report.
- Login Based:** Filters the report based on a value associated with email recipient that has Descartes Reporting Service user login credentials. After the report’s data cache is refreshed, an email is sent to each recipient. The email contains a hyperlinked login URL. After logging in to Descartes Reporting Services with the emailed URL, the user is automatically directed to the report.

➡ **Note— Recipient Based and Login Based** selection criteria are not considered when extraction jobs are run.

These selection criteria are described in greater detail in the following sections.

### Understanding Lookup Tables

Lookup tables can be derived from a CSV-imported data source or from an operational data cache.

#### CSV-imported Data Source

These selection criteria use lookup tables to retrieve values associated with recipients. Lookup tables should include the following:

- An EmailAddress column (required) containing all email addresses of the recipients
- A column that will be used to retrieve the values in the lookup table (Recipient, for example)
- Columns of values associated that will be used to filter the report for the recipient

Recipient	DriverID	EmailAddress
Driver1	58	Driver1@descartes.com
Driver2	1511	Driver2@descartes.com
ManagerA	58	aManager@descartes.com
ManagerA	1511	aManager@descartes.com
Driver3	1539	Driver3@descartes.com

With the lookup table configured as shown in the table above, when a user clicks on the link in the email sent to aManager@descartes.com, the report will be run with criteria similar to the following:

```
Select X from cacheY where cacheY.DriverID in (select DriverID from
Lookuptable where Recipient='managerA')
```

The report is then generated for download. In this case, the report would contain data for DriverId 58 and 1511.

Emails are sent to the distinct email addresses in the EmailAddress column. The EmailAddress column can also serve as the lookup column.

EmailAddress	DriverID
Driver1@descartes.com	58
Driver2@descartes.com	1511
aManager@descartes.com	58
aManager@descartes.com	1511
Driver3@descartes.com	1539

In this case, the report would be run with criteria similar to the following:

```
Select X from cacheY where cacheY.DriverID in (select DriverID from
Lookuptable where EmailAddress='aManager@descartes.com')
```

After a CSV file with these values is imported, a data source is created and can be used in a report's selection criteria.

**Operational Data Cache**

An operational data cache can be used when a dynamic list of recipients is required. For example, an operational data cache could be used when a report only needs to be sent to recipients that have data in the report at the time the data cache is refreshed.

To use an operational data cache:

- 1 Create a data source. The following example uses a table from a CSV-imported data source, RpsXXX.dbo.RecipientBasedDrivers, which contains a list of all possible drivers.

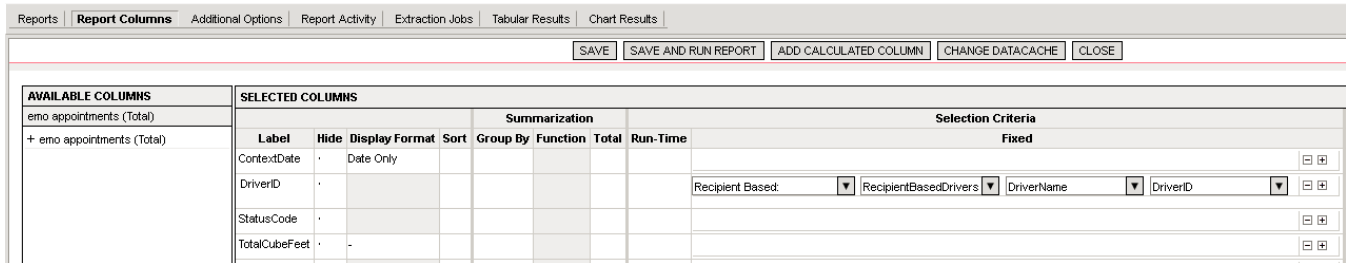
```
select R.DriverName,R.DriverID,R.EmailAddress from
RpsXXX.dbo.RecipientBasedDrivers R (nolock) inner join
(select distinct driverid from DaXXX.dbo.MonAppointment A (nolock) where
DateDiff(d,getDate(),AppointmentDTBegin) >-365 and A.driverid is not
null) D on R.DriverID=D.DriverID
```

- 2 Create a data cache from the data source and convert it to an operational data cache. The operational data cache can then be used as a lookup table for the selection criteria.

### Generating a Report with Recipient Based Selection Criteria

In the following example, a report is created to list distribution locations drivers have visited within the past 365 days:

- 1 From the **Report Columns** page, in the Selection Criteria section of the **Selected Columns** pane, select **Recipient Based** from the list.

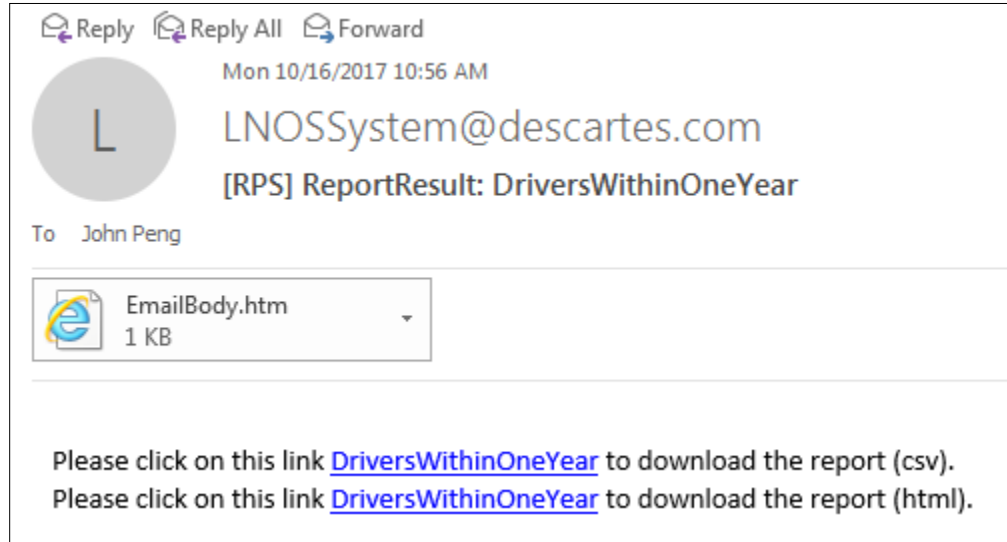


- 2 In the second dropdown, choose a lookup table from the list.
- 3 From the third dropdown, select the column that will be used to look up the values to filter the report.
- 4 From the fourth dropdown, select the value by which the report will be filtered.
- 5 After the report's data cache is refreshed, an email is sent to each recipient: Driver1, Driver2, ManagerA and Driver3.

Recipient	DriverID	EmailAddress
Driver1	58	Driver1@descartes.com
Driver2	1511	Driver2@descartes.com
ManagerA	58	aManager@descartes.com
ManagerA	1511	aManager@descartes.com
Driver3	1539	Driver3@descartes.com

- 6 When the recipient clicks on a link in the email, the system runs the report and filters it by the associated values in the lookup table. The system then prompts the user with a download link in a subsequent email.

If Driver2 received the email and clicks on the link, he or she would receive the following links in response:



The CSV file only contains data for Driver2, i.e. the recipient with a DriverID of 1511.

	A	B	C	D	E	F	G	H	I	J	K
1	DriverID	StatusCod	StreetAdd	City	State	appointmentDTBegin	ArriveTim	CheckedIn	DepartTim	CheckedOutTime	
2	1511	300	Test Stree	Test City	NY	7/25/2017 8:30					
3	1511	300	Test Stree	Test City	NY	7/4/2017 4:00					
4	1511	300	120 Randa	Waterloo		11/18/2016 9:45					
5	1511	300	Test Stree	Test City	NY	12/20/2016 20:30					
6											

When managerA clicks on the link in the email, the system will generate a report containing data for Driver1 and Driver2 and the download file will have data associated with DriverID 58 and 1511.

**Note**— If an associated value is not provided in the report with the recipient, the recipient will still receive an email but the report will be empty.

### Generating a Report with Login Based Selection Criteria

In the following example, a report must be run with selection criteria that are dependent on Descartes Reporting Services user. A column in the report must be filtered with a different value depending on the login user.

This example uses the following lookup table, where StoreNum is associated with a LoginName and EmailAddress:

LoginName	StoreNum	EmailAddress
A	1	A@xyz.com
B	2	B@xyz.com
C	3	C@xyz.com

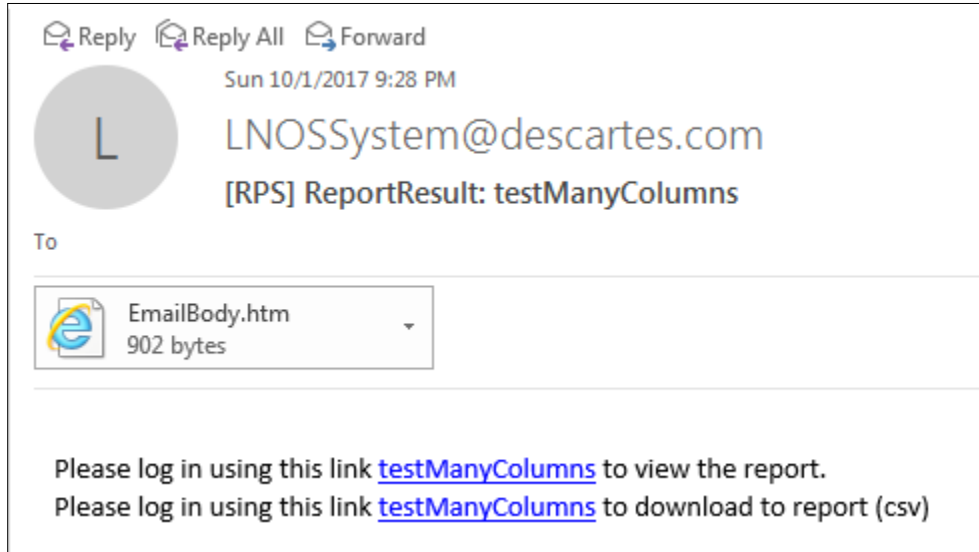
➔ **Note**— If the EmailAddress column does not exist in a lookup table for Login Based selection criteria, the ctyUser’s EmailAddress value will be used instead.

- 1 From the **Report Columns** page, in the Selection Criteria section of the **Selected Columns** pane, select **Login User Based** from the list.
- 2 In the second dropdown, choose a lookup table from the list (LoginStoreEmail).

Summarization					Selection Criteria								
Group By	Function	Total	CarrierPartyID	Run-Time	Fixed								
✓			✓						[-] [+]				
									[-] [+]				
					Login User Based:	▼	LoginStoreEmail	▼	LoginName	▼	StoreNum	▼	[-] [+]

- 3 From the third dropdown, select the column that will be used to look up the values to filter the report.
- 4 From the fourth dropdown, select the value by which the report will be filter.

- 5 After the report's data cache is refreshed, an email is sent to each recipient. The email contains a hyperlinked login URL.



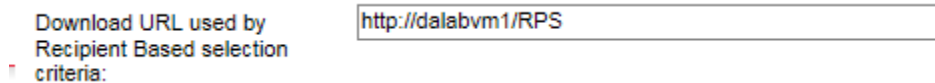
When User A logs in and runs the report, the report will be filtered with the StoreNum=1 value. When User B logs in and runs the report, the report will be filtered with StoreNum=2.

### Additional Configuration

Additional configuration may be required for this feature if the system has not already been set up by a configuration specialist. To adjust these settings, log into the LNOS Setup user interface with an organization admin account and navigate to the Applications **Configuration > RPS Configuration** page.

### Recipient Based Selection Criteria

Configuration specialists can set the download URL for Recipient Based selection criteria using a new field on the **RPS Configuration** page.





### Login Based Selection Criteria

Configuration specialists can set the download URL for Login Based selection criteria and set a recipient threshold per email using two new fields on the **RPS Configuration** page.

Login URL used by Login User Based selection criteria:

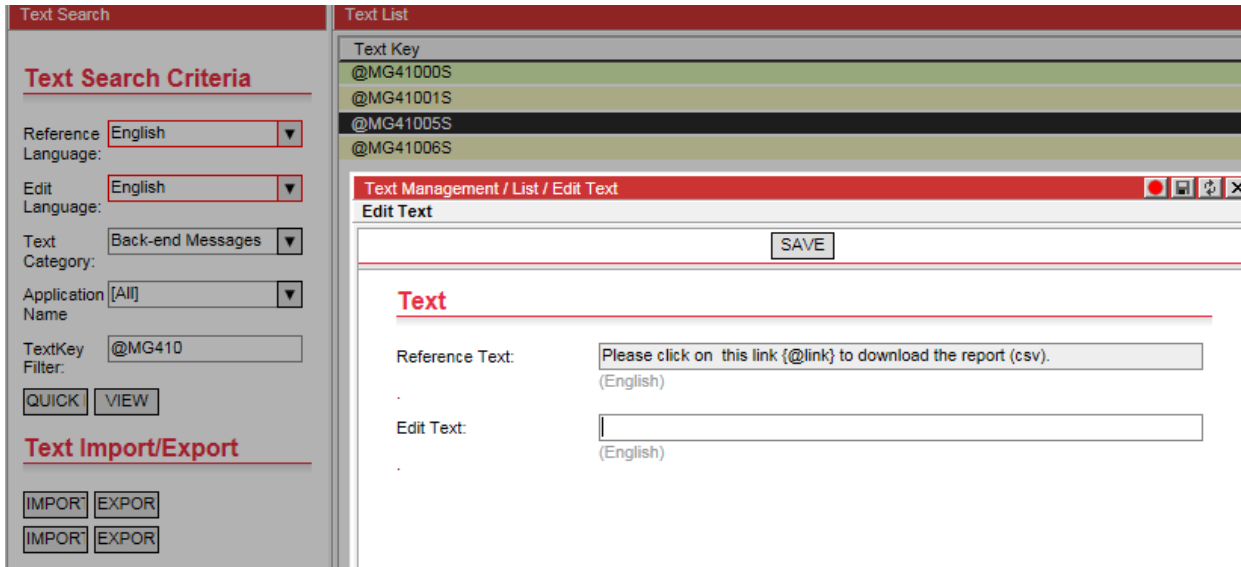
Number of recipients per email (depends on e-mail server configuration):

If Federated Single Sign On is configured, enter the appropriate URL. Otherwise, the application URL is used.

The number of recipients allowed per email is controlled by the email server or anti-virus rules. This threshold can be set in the Number of recipients field. If the number of recipients for an email exceeds this number, the system will send one email for each batch of recipients. For example, if the Number of recipients is set to 100, and the email has 983 recipients, the system will send 10 emails: nine with 100 recipients each and one with 83 recipients.

### Customizing Email Messages

Configuration specialists can customize the emails sent by the system for **Recipient Based** and **Login Based** selection criteria by editing the text keys listed below.



Recipient Based Selection Criteria:

- @MG410
- @MG41005S
- @MG41006S

Login Based Selection Criteria:

- @MG4100
- @MG41000S
- @MG41001S

### Creating and Using Drilldown Reports

Drilldown Report functionality allows users to run a drilldown report from the **Tabular Results** page of a parent report using a configured field value hyperlink as a filter.

Reporting Services / Reports / Tabular Results - Appointments

Reports | Report Columns | Additional Options | Report Activity | Extraction Jobs | **Tabular Results** | Chart Results | Find

**Appointments - Tabular Results as of 14-SEP-2015 15:01**  
 Summary: Appointments

RequestNumber	AppointmentDTBegin	AppointmentDTEnd	TotalCases	TotalQty
1054723	1-AUG-2015 08:30			50
1054722				2
1054721				1
1054720	01-OCT-2014 00:00			1

Rows 1 - 50 of 167 / Page 1 of 4 | Rows per Page: 10 / 20 / 50 | Page 1 2 3 4

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Reporting Services / Reports / Tabular Results - Appointment PO lines

**Tabular Results** | Find

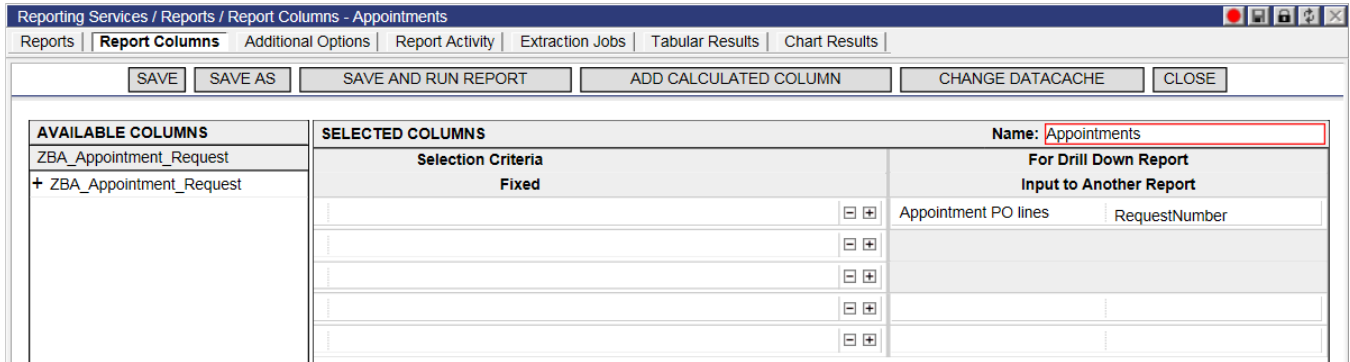
**Appointment PO lines - Tabular Results as of 31-JUL-2015 11:49**  
 Summary: Appointment PO lines, (RequestNumber=1054723)

AppointmentID	AppointmentLineNumber	ItemQty	PONumber	RequestNumber	SupplierPartyID
54723	50		zba0050	1054723	
54723	49		zba0049	1054723	
54723	48		zba0048	1054723	
54723	47		zba0047	1054723	
54723	46		zba0046	1054723	
54723	45		zba0045	1054723	
54723	44		zba0044	1054723	
54723	43		zba0043	1054723	
54723	42		zba0042	1054723	
54723	41		zba0041	1054723	
54723	40		zba0040	1054723	
54723	39		zba0039	1054723	
54723	38		zba0038	1054723	
54723	37		zba0037	1054723	
54723	36		zba0036	1054723	

In the example provided in this section, the user wants to configure **Report Columns** for the "Appointments" report and to be able to run a drilldown report, "Appointment PO lines", and filter by appointment request number values. This example functionality is detailed in the following section.

### Configuration and Use

A set of configuration options is available on the Selected Columns section of the **Report Columns** page, For Drill Down Report.



The left-hand drop-down menu provides a list of other reports in the system. From this menu, choose the drilldown report. In this example, the user selects the “Appointment PO lines” report.

When a report is selected in the left-hand drop-down, the right-hand drop-down menu is populated with a list of the drilldown report’s columns (non-datetime). Select the field by which the selected drilldown report will be filtered. In this example, the user selects the RequestNumber field for the “Appointment PO lines” report.

When the "Appointments" report is run, the RequestNumber column values appear as hyperlinks on the **Tabular Results** page.

Reporting Services / Reports / Tabular Results - Appointments

Reports | Report Columns | Additional Options | Report Activity | Extraction Jobs | **Tabular Results** | Chart Results | Find

**Appointments - Tabular Results as of 14-SEP-2015 15:41**  
 Summary: Appointments

RequestNumber	AppointmentDTBegin	AppointmentDTEnd	TotalCases	TotalQty
<a href="#">1054723</a>	1-AUG-2015 08:30			50
<a href="#">1054722</a>				2
<a href="#">1054721</a>				1
<a href="#">1054720</a>	24-OCT-2014 09:30			1
<a href="#">1054719</a>				1
<a href="#">1054718</a>	30-JUN-2014 12:45			1
<a href="#">1054717</a>	27-JUN-2014 12:45			1
<a href="#">1054716</a>	26-JUN-2014 12:45			1
<a href="#">1054715</a>	25-JUN-2014 12:45			1
<a href="#">1054714</a>	24-JUN-2014 12:45			1
<a href="#">1054713</a>	23-JUN-2014 12:45			1
<a href="#">1054712</a>	20-JUN-2014 12:45			1
<a href="#">1054711</a>	19-JUN-2014 12:45			1
<a href="#">1054710</a>	18-JUN-2014 12:45			1
<a href="#">1054709</a>	18-JUN-2014 12:45			1
<a href="#">1054708</a>				1
<a href="#">1054707</a>	12-JUN-2014 10:10	23-JUN-2014 13:45		1
<a href="#">1054706</a>	30-JUN-2014 10:10			1
<a href="#">1054705</a>	27-JUN-2014 10:10			1
<a href="#">1054704</a>	26-JUN-2014 10:10			1
<a href="#">1054703</a>	24-JUN-2014 10:10			1
<a href="#">1054702</a>	23-JUN-2014 10:10			1
<a href="#">1054701</a>	20-JUN-2014 10:10			1
<a href="#">1054700</a>	19-JUN-2014 10:10			1
<a href="#">1054699</a>	17-JUN-2014 10:10			1
<a href="#">1054698</a>	16-JUN-2014 10:10			1
<a href="#">1054697</a>	13-JUN-2014 10:10			1

Click the hyperlink to filter and display the drilldown report. The drilldown report ("Appointment PO lines") appears in a window at the bottom of the page listing only rows that match the field value, in this case, only the purchase orders with a RequestNumber of 154723.

Reporting Services / Reports / Tabular Results - Appointments

Reports | Report Columns | Additional Options | Report Activity | Extraction Jobs | **Tabular Results** | Chart Results | Find

**Appointments - Tabular Results as of 14-SEP-2015 15:41**  
 Summary: Appointments

RequestNumber	AppointmentDTBegin	AppointmentDTEnd	TotalCases	TotalQty
<a href="#">1054723</a>	1-AUG-2015 08:30			50
<a href="#">1054722</a>				2
<a href="#">1054721</a>				1

Rows 1 - 50 of 167 / Page 1 of 4      Rows per Page: 10 / 20 / **50**      Page 1 2 3 4

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Reporting Services / Reports / Tabular Results - Appointment PO lines

**Tabular Results** | Find

**Appointment PO lines - Tabular Results as of 31-JUL-2015 11:49**  
 Summary: Appointment PO lines, (RequestNumber=1054723)

AppointmentID	AppointmentLineNumber	ItemQty	PONumber	RequestNumber	SupplierPartyID
54723	50		zba0050	1054723	
54723	49		zba0049	1054723	
54723	48		zba0048	1054723	
54723	47		zba0047	1054723	
54723	46		zba0046	1054723	
54723	45		zba0045	1054723	
54723	44		zba0044	1054723	
54723	43		zba0043	1054723	
54723	42		zba0042	1054723	
54723	41		zba0041	1054723	
54723	40		zba0040	1054723	
54723	39		zba0039	1054723	
54723	38		zba0038	1054723	
54723	37		zba0037	1054723	
54723	36		zba0036	1054723	

**Please note the following regarding this feature:**

- If a drilldown report contains previous run-time parameters, the run-time parameters will apply when running the drilldown report from the parent report. For example, if "Appointment PO lines", contained run-time parameter columns such as SupplierPartyID, when users run the "Appointment PO lines" report from the **Tabular Results** page of the "Appointments" report by clicking a RequestNumber value hyperlink, "Appointment PO lines" report will be filtered by the request number **and** the SupplierPartyID.
- If the drilldown report's run-time parameter has the same column name as the parent report the run-time parameter will not be used.
- If the drilldown report's run-time parameter has the same column name as the parent report's column name configured in the For Drill Down Report section of the **Report Columns** page, when the drilldown report is run via the **Run Report** right-click menu option, the system will navigate the user to the **Run-Time**

**Parameters** tab. When the drilldown report is run from the parent report, the system will not prompt the user to enter a value for the identical run-time parameter column. The system will use the value from the parent report to filter the drilldown report instead.

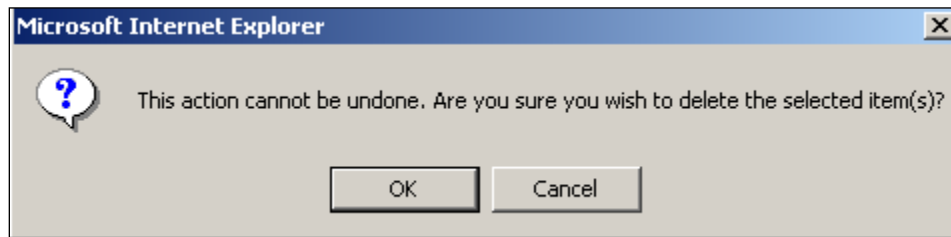
The following table outlines the above scenarios.

Parent Report's Column Configured for Drilldown	Drilldown Report's Run-time Parameter Columns	Drilldown Report Tabular Result from Run Report	Drilldown Report Tabular Result via Hyperlinked Value on Parent Report
X	Y,Z	Result is filtered by run-time parameters Y,Z	Result is filtered by run-time parameters Y, Z and X's value.
X	X	Result is filtered by drilldown report's X	Result is filtered by parent report's X

### Deleting a Saved Report

To delete a saved report:

- 1 From the main menu, select: **Reporting Services > Reports**. The **Reports** page appears.
- 2 Right-click the desired report to delete. A right-click menu appears.
- 3 From the right-click menu, select: **Delete Report**. The following warning message appears:



- 4 Click **OK** to confirm the deletion.

### Applying an Extraction Device

Users are now able to create Extraction Devices through the Descartes Reporting Services user interface to export report data into different formats using SMTP, FTP and HTML transfer methods.

Reporting Services / Extraction Devices / New Extraction Device

**New Extraction Device**

SAVE CLOSE

### Extraction Device

Name:

Description:

Device Type:

---

#### Subscriber

Common Subscriber:

User Name:

Password:

Confirm Password:

#### Device

Common Device:

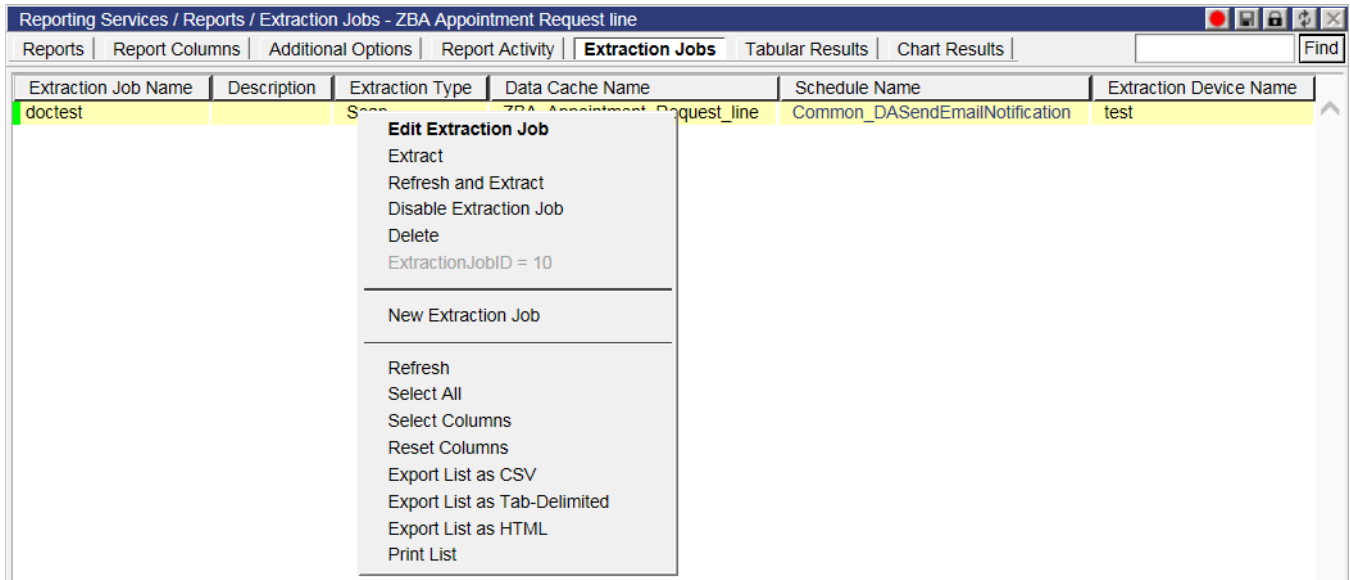
Address:

Environment Type:

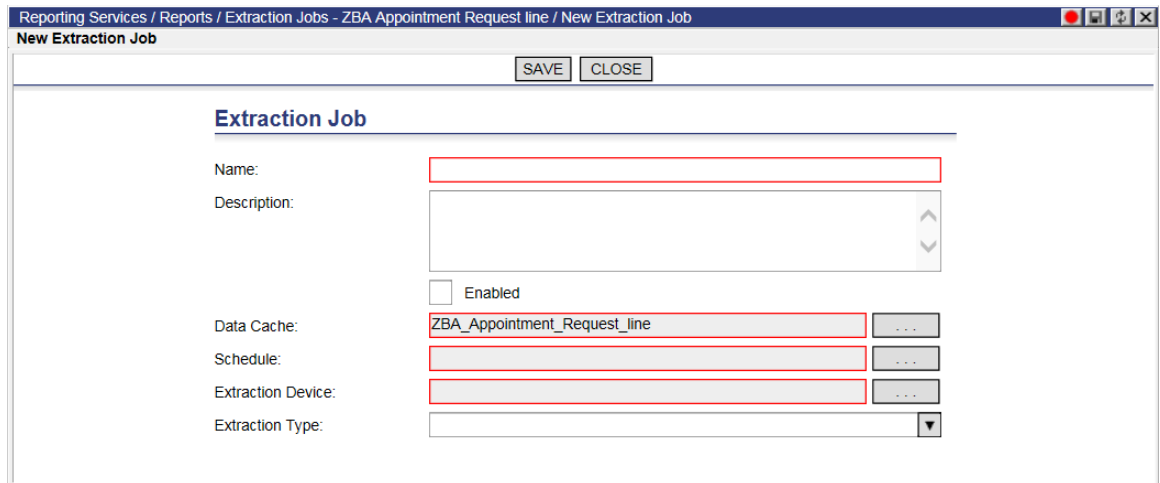


To apply an extraction device to a report:

- 1 Right-click on a report in the list and select the **Extraction Jobs** right-click option. The **Extraction Jobs** list page appears.



- 2 Right-click on the page and select **New Extraction Job** from the right-click menu, or, if there are no current extraction jobs listed, click the **New Extraction Job** button. The **New Extraction Job** page appears.



- 3 Enter a name and then select a data cache and schedule.
- 4 Select an Extraction Device. If an FTP or HTTP-type extraction device is selected, the Additional Optional Parameters section appears, allowing users to substitute

certain parameter values. This feature allows the extraction device to be reused by different extraction jobs.

To add a parameter to an HTTP or FTP extraction device:

- a In the Additional Optional Parameters section, enter the Name of the parameter you wish to substitute. For example, if the device address is `https://myserver/receive.asp?CategoryID={SomeID}&RecvTime={TimeStamp}`, users would enter the values between the brackets, `SomeID` and/or `TimeStamp` in this case.

<h3>Extraction Job</h3> <p>Name: <input style="border: 1px solid red;" type="text" value="testHTTP"/></p> <p>Description: <input style="border: 1px solid gray;" type="text"/></p> <p><input type="checkbox"/> Enabled</p> <p>Data Cache: <input style="border: 1px solid gray;" type="text" value="test_2"/> <input type="button" value="..."/></p> <p>Schedule: <input style="border: 1px solid gray;" type="text"/> <input type="button" value="..."/></p> <p>Extraction Device: <input style="border: 1px solid red;" type="text" value="http on dalabvm1"/> <input type="button" value="..."/></p> <p>Extraction Type: <input type="text" value="Tab"/> ▼</p> <p><input type="checkbox"/> Format DateTime and Float Fields According to Report Columns' Settings.</p>	<h3>Additional Optional Parameters</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #2c4e64; color: white;"> <th>Name</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PostTimeoutSeconds</td> <td>30</td> <td>For large output that takes longer time to post</td> </tr> <tr> <td>SomeID</td> <td>1234</td> <td>may be used in the URL of http device</td> </tr> <tr style="background-color: yellow;"> <td>TimeStamp</td> <td>%t</td> <td>may be used in the URL of http device</td> </tr> </tbody> </table> <p>Name: <input style="border: 1px solid red;" type="text" value="TimeStamp"/></p> <p>Value: <input type="text" value="%t"/></p> <p>Description: <input type="text" value="may be used in the URL of http device"/></p> <p style="text-align: right;"> <input type="button" value="NEW"/> <input type="button" value="DELETE"/> </p>	Name	Value	Description	PostTimeoutSeconds	30	For large output that takes longer time to post	SomeID	1234	may be used in the URL of http device	TimeStamp	%t	may be used in the URL of http device
Name	Value	Description											
PostTimeoutSeconds	30	For large output that takes longer time to post											
SomeID	1234	may be used in the URL of http device											
TimeStamp	%t	may be used in the URL of http device											

- b Enter a Value. The parameter specified by name will be substituted by this value.
- c Enter a description.
- d Click **Save**.

When users run the extraction job used in the above example, where `{SomeID}` has a value of "1234" and `{TimeStamp}` has a value of "%t" (a timestamp value), the following URL is posted:

`https://myserver/receive.asp?CategoryID=1234&RecvTime=201610181900230z`

Additionally, the `PostTimeoutSeconds` parameter sets the timeout of the HTTP POST request and response.

➡ **Note**— When a `PostTimeoutSeconds` parameter name value pair is not specified, the default timeout is 20 seconds.

In the next example, the DFL\_FTP\_TARGETMASK parameter specifies the filename of the file sent to the FTP server.

### Extraction Job

Name:

Description:

Enabled

Data Cache:  ...

Schedule:  ...

Extraction Device:  ...

Extraction Type:  ▼

Format DateTime and Float Fields  
According to Report Columns' Settings.

### Additional Optional Parameters

Name	Value	Description
DFL_FTP_TARGETMASK	MyTest-%t.csv	

Name:

Value:

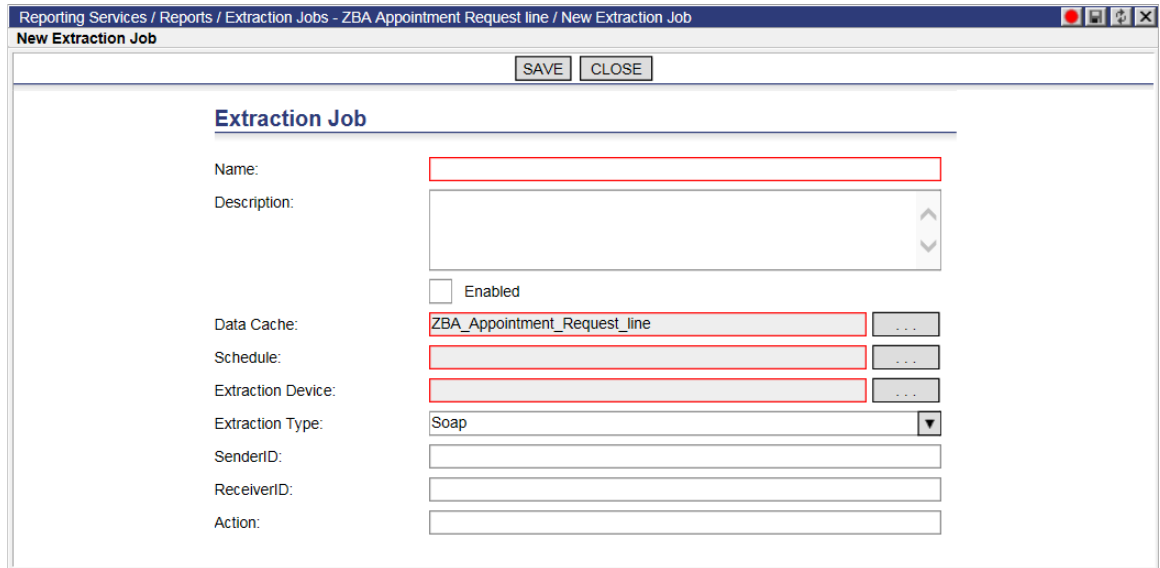
Description:

With the Value set to MyTest-%t.csv, where "%t" is substituted with a timestamp, when users run the extraction job, the file is named according to the parameter value and appears on the FTP server as "MyTest-20161018195738Z.csv".

Name	Size	Type	Date modified	Date created	Date accessed
MyTest-20161018195738Z.csv	4 KB	CSV File	10/18/2016 7:57 PM	10/18/2016 7:57 PM	10/18/2016 7:57 PM
20161018195208Z	4 KB	File	10/18/2016 7:52 PM	10/18/2016 7:52 PM	10/18/2016 7:52 PM
20161018194639Z	4 KB	File	10/18/2016 7:46 PM	10/18/2016 7:46 PM	10/18/2016 7:46 PM

- 5 Select the extraction type. The file formats are CSV, tab delimited, soap (XML) or Custom.

The page will display additional fields when certain formats are selected. For example, when Soap is selected as the Extraction Type, the SenderID, ReceiverID and Action fields are displayed.



When **Tab** or **CSV** is selected as the **Extraction Type**, the **Format DateTime and Float Fields According to Report Columns' Settings** checkbox will display.

**6** To activate the extraction job for the report, click the **Enable** checkbox.

**7** Click **Save** when finished. The new extraction job is added to the list.

From the **Extraction Jobs** list page, users can right-click on an extraction job and perform the following functions:

- **Edit Extraction Job:** Displays the **Edit Extraction Job** page
- **Extract:** Immediately performs an extract
- **Refresh and Extract:** Refreshes the data cache and performs an extract
- **Disable Extraction Job:** Disables the selected extraction job
- **Delete:** Removes the extraction job

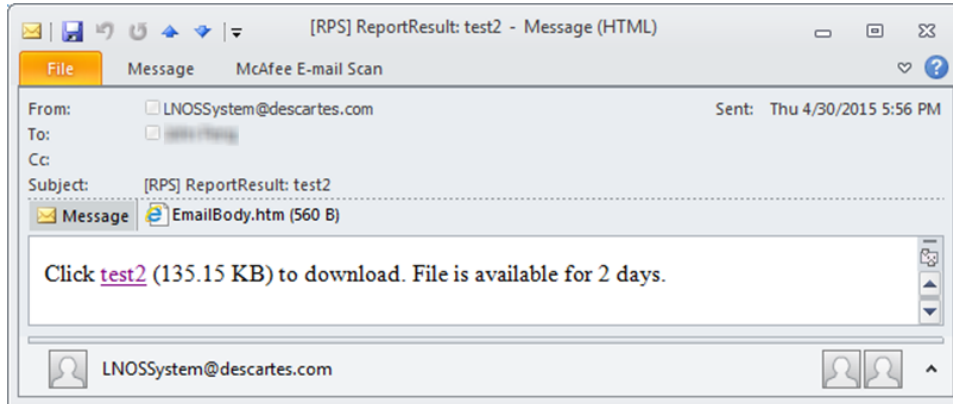
### Configuring Data Size Thresholds for Emailing Reports and Extraction Jobs

Admin users can instruct the system to provide links to reports and extraction jobs by email instead of the document itself.

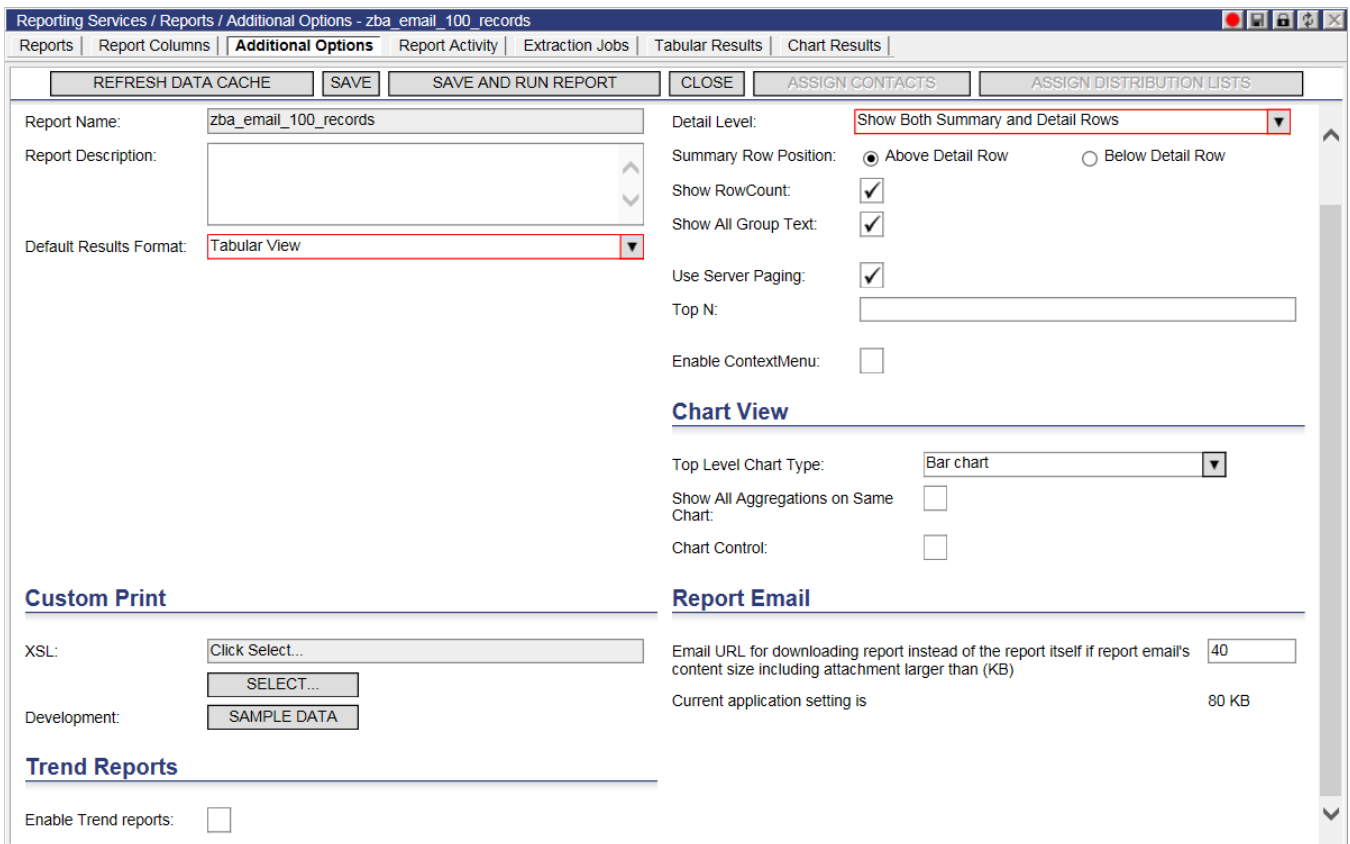
The configuration of this feature is identical for reports and extraction jobs. All fields in each section must be populated. To enable and configure this feature:

- 1 On the **Configuration** page, click the **Email URL for downloading report** checkbox.
- 2 Enter the threshold (in kilobytes) at which the system will email a URL instead of a document for reports and/or extraction jobs.
  - **Note**— The threshold is the total size of the attachment and the report in the email body.
- 3 Enter the root URL of your Descartes Reporting Services application.
- 4 Specify the number of days the report or extraction job will be available for download.

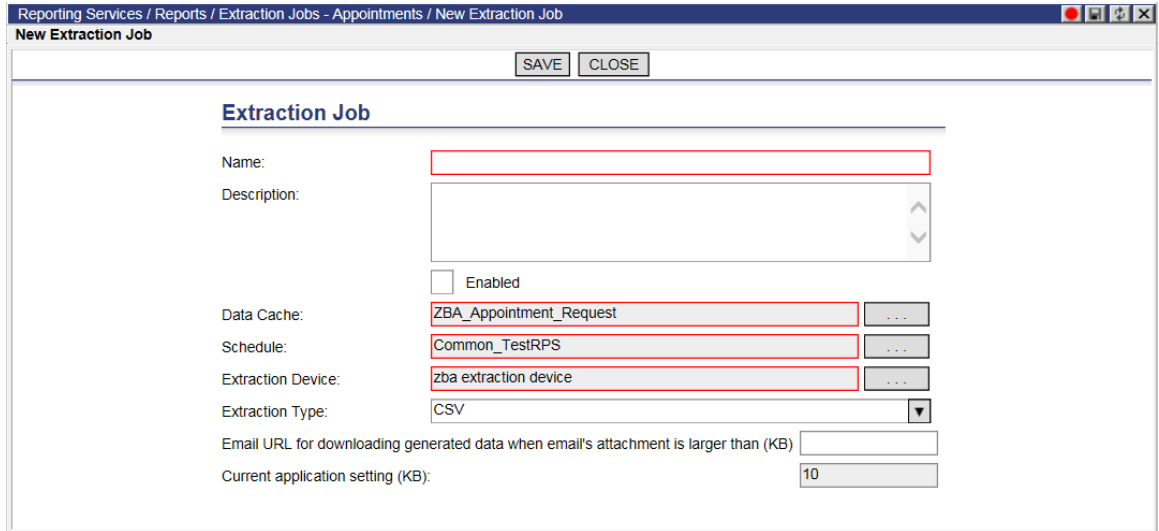
When a report or extraction job exceeds the set size threshold, customers will receive an email with a link to the document and the information regarding the number of days file is available.



Users can also set size thresholds for specific reports **Additional Options** page. This value overrides the report threshold value set on the **Configuration** page.



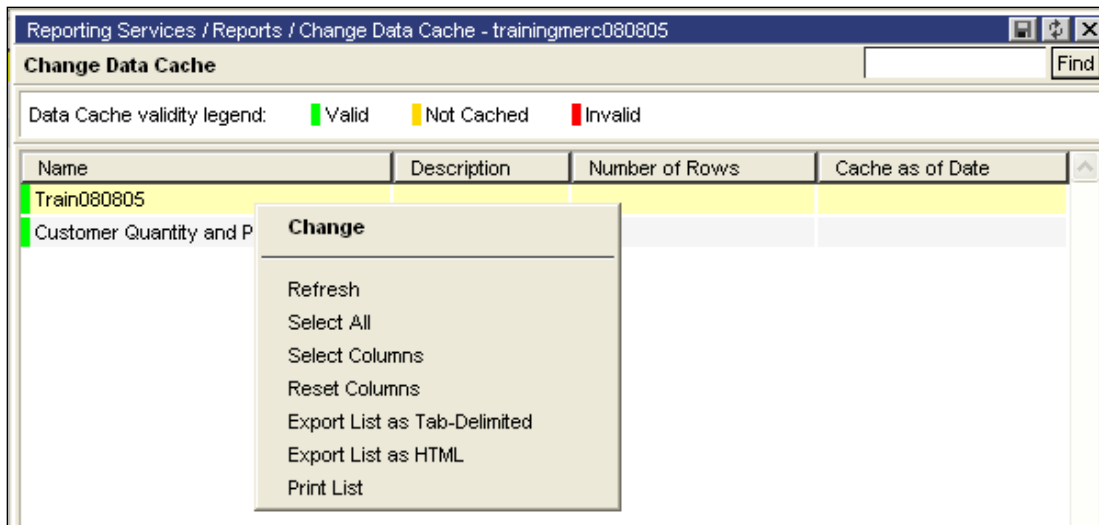
For extraction jobs with an SMTP Device Type selected, users can set size thresholds for specific extraction jobs on the **New/Edit Extraction Job** pages. This value overrides the extraction job threshold value set on the **Configuration** page.



## Change Data Cache

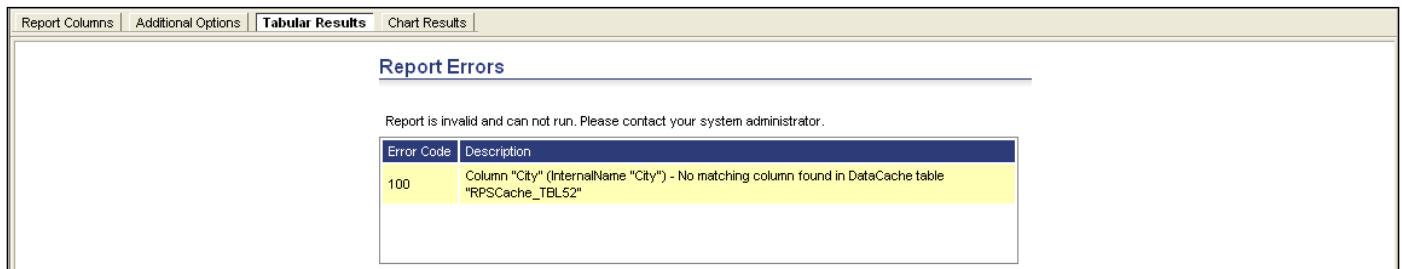
Users can change the data cache they are using for the current report. However, if the user wants to see the report for the current data cache after they change the data cache, the current data cache has to be reselected. Report Instances allows a user to change the data caches while retaining the report for each data cache.

- 1 From the main menu, select: **Reporting Services > Reports**. Right-click on a report, and select: **Change Datacache**; or from the **Edit Report** page, click the **Change Data Cache** button.
- 2 In the pop-up window, right-click on a data cache and select: **Change**:



## Report Errors

If a user removes a data cache column that is used in a report, the following error message displays:



### Notification Sent for Errors in Data Generation Stage of Extraction Jobs

Users can configure Descartes Reporting Services to notify specified users when an error is encountered while generating data for an extraction job. As an example, such an error might occur for reports with too many rows and columns.

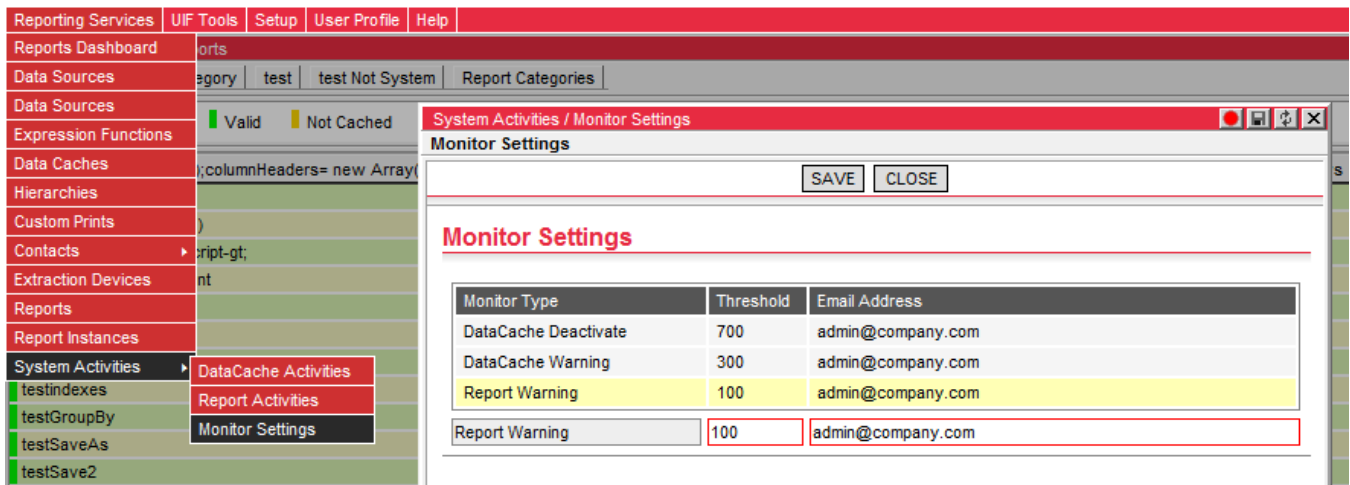
- **Note**— This notification only applies to the first stage of an extraction job, when report data is generated after the data cache refresh and output as an XML file for further processing. This error notification is only sent when an error occurs during this stage.

The system determines how notifications are sent as follows:

- If the user account responsible for the creation or modification of the extraction job has an email address specified, a notification will be sent to that address.



- If the account does not have an email address specified, the system will attempt to notify the user who assigned the schedule for the data cache used by the extraction job's report.
- The notification is also sent to addresses specified on the **Monitor Settings** window for the DataCache Deactivate monitor type.
- If no email addresses are specified for any of the user accounts or monitor type, no notification email is sent.



Previously, if there were several extraction jobs on one or more reports that use the same data cache, when the data cache was refreshed at the scheduled time, the system triggered these extraction jobs. If an error was encountered due to an issue with data generation with one extraction job, all subsequent extraction jobs were not processed. Now, with this feature, the system will halt the extraction job in error, send a notification for the error to the configured users and then continue processing subsequent extraction jobs.

To illustrate this functionality, please consider the following example. There are three extraction jobs that use the same data cache: A, B and C.

- Extraction Job A is generated properly; the associated report is a manageable size.
- Extraction Job B returns an error because the associated report is too large.
- In previous versions, the system would not generate data for Extraction Job C even if the associated report would not cause the system to encounter an error.
- With this feature, the system will send an error notification for Extraction Job B and then generate the data for Extraction Job C.

The notification email appears as follows:

From: [LNOSSystem@descartes.com](mailto:LNOSSystem@descartes.com) [<mailto:LNOSSystem@descartes.com>]  
 Sent: Monday, July 24, 2017 5:43 PM

To: [admin@company.com](mailto:admin@company.com)  
Subject: [RPS] Extraction Job: TooLargeExtractionJob

#### ALERT ####: ExtractionJob failed !!!!!.  
Please review DataCache/Report and ExtractionJob.

Organization : Test  
User name : RPStester  
Server name : L00678  
Owner name : n/a  
Datetime : 2017-07-24T17:42:29

ReportID :55  
SubViewID :49  
ExtractionJobID :3

## Microsoft Power BI® Reports

For subscribing customers, Microsoft Power BI reports can be created, edited and run within Descartes Reporting Services using datasets from Descartes services. In order to use this functionality:

- For a hosted environment, a Power BI workspace is created by Descartes using Descartes' Power BI account. For a non-hosted environment, customers must create their own Power BI workspaces.
  - Descartes Reporting Services requires configuration by Descartes integration specialists to use the workspace
- 🔄 **Note**— This functionality is only compatible with the Google Chrome™ or Microsoft Edge® browsers.

## Power BI Datasets

To create a Power BI report, you must create a Power BI dataset first. A dataset can consist of one or more tables and these tables are created from Descartes Reporting Services data caches. Only **RPS – Admin Users** and **RPS – System Users** can create and manage these datasets as they are the only user types who can create and manage data caches.

There are two types of Power BI datasets in Descartes Reporting Services:

- Datasets for Power BI reports pre-created by Descartes Systems Group using the Power BI desktop application
- Datasets created by Descartes Reporting Services users from the Descartes Reporting Services user interface (via Power BI REST API using the cloud-based Power BI service). Currently, users who have access to a data cache can access the dataset created from that data cache by default.

Both kinds of datasets are listed on the **Reporting Services > Power BI Datasets** page.

Name	ID	Associated Data Caches	User Dataset Refresh	Application Dataset Refresh
sampleDataset	19323949-907c-422a-a5b3-229bb3230e7a	sampleDataCache		Completed 25-MAR-2019 21:05 - 25-MAR-2019 21:06
testRelAndMeasure	73dbca24-cf3b-4e99-b87f-bb6c34778d44	emo PO lines, emo cache PO	18-MAR-2019 12:19	

Because these datasets are created using different methods and the data are updated via different routes, the refresh status is provided in different columns, which should help you distinguish between datasets of each type from the list page:

- For datasets pre-created by Descartes, refresh status is provided in the Application Dataset Refresh column.
- The refresh status of datasets created by users are provided in the User Dataset Refresh column.

The following limitations exist when creating datasets from the Descartes Reporting Services user interface because this method relies on the Power BI REST API. These limitations do not apply to datasets created by Descartes using the Power BI desktop application.

- Maximum of 75 columns per table in a dataset
- Maximum of 75 tables per dataset
- Maximum of one million rows added per hour per dataset. If a dataset consists of one table from a data cache with one million rows of data, it cannot be refreshed more than once per hour. Given this limitation, a data cache with more than one million rows should not be used.
- Maximum of 4000 characters per value for string column

More information on the limitations of the REST API method is [provided by Microsoft](#).

**Note**— External links are maintained by third parties and are provided here as a convenience only. Descartes does not endorse, approve, or make any claims as to the accuracy or reliability of the contents, which may be changed from time to time by the third party without warning.

### Creating Power BI Datasets from the 'Power BI Datasets' Page

To create a Power BI dataset from the **Power BI Datasets** page:

- 1 Select **Reporting Services > Power BI Datasets** from the main menu. The **Power BI Datasets** page appears.
- 2 Right-click in the **Power BI Datasets** page and select **Create a New Dataset** from the right-click menu.

Reporting Services / Power BI Datasets		
Data Sources	Expression Functions	Data Caches
Report Instances	Power BI Reports	
Name	ID	Associated Data Caches
sampleDataset	19323949-907c-422a-a5b3-229bb32	sampleDataCache
testRelAndMeasure	73dbca24e99-b87bb6c347	cache
emo Edge 2	69775ee42a1-ad326b78cd	che wo
emo dataset 3	9e1407e14543-bb297dfa4bk	emo
emo dataset 2	40b709e14d0b-a27	o

Create Power BI Report

Edit Measure Columns

Disable Dataset Refresh

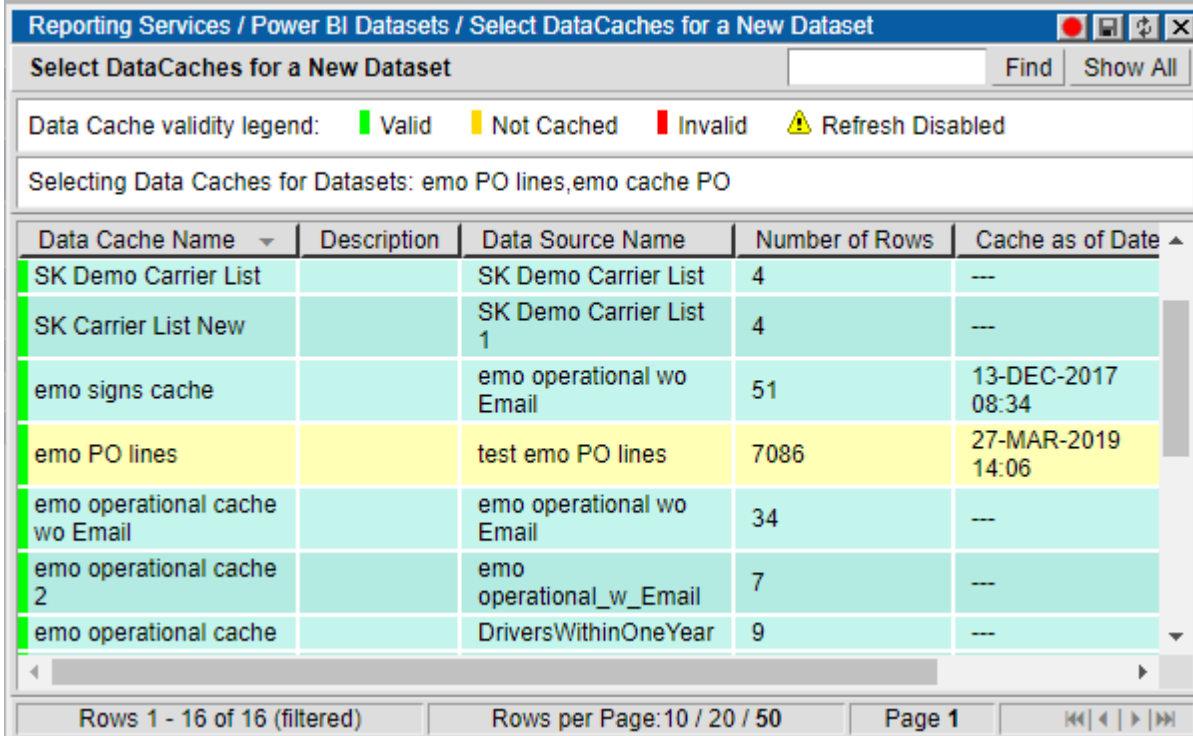
Delete

DatasetID = 19323949-907c-422a-a5b3-229bb3230e7a

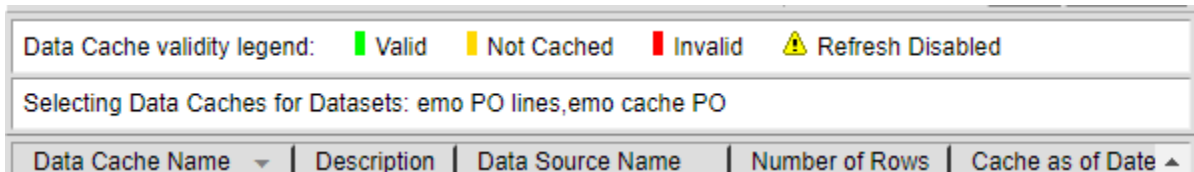
**Create a New Dataset**

Refresh

The **Select DataCaches for a New Dataset** window appears.



- From this window, you can select multiple data caches using the Ctrl or Shift key across all pages in the window. These selections persist even when you navigate from page to page. The system keeps track of your selections, which you can view in the Selecting Data Caches for Datasets information row under the legend.



Hold the Ctrl key to deselect rows without losing all your other selections.

- When you finish selecting your data caches, right-click in the window and select the **Create Dataset** option from the right-click menu. The **Create Power BI Dataset** page appears.

Reporting Services | Monitor | Notify | Customization | User Profile | UIF Tools | Setup | Help

Reporting Services / Data Caches / Create Power BI Dataset

Create Power BI Dataset

CREATE CLOSE

Dataset Name:

Add All Rows:

Maximum Number of Rows to Add Now:

### Table Relationships

Name	From Table	From Column	Cross Filtering Direction
Rel1	emo cache PO	PONumber	Automatic

Name:

From Table:

From Column:

Cross Filtering Direction:

To Table:

To Column:

NEW DELETE

### Measures

Table	Name	Expression

Table:

Name:

Available Columns:

Expression:

NEW DELETE

- Enter the dataset name and decide how many rows of data should be included. If the data cache has a lot of data, the system may take several minutes to populate the dataset upon creation. Use the Maximum Number of Rows to Add Now field to limit the number of data rows initially. After the scheduled data cache refresh is completed, all data will be populated to the corresponding table in the dataset.

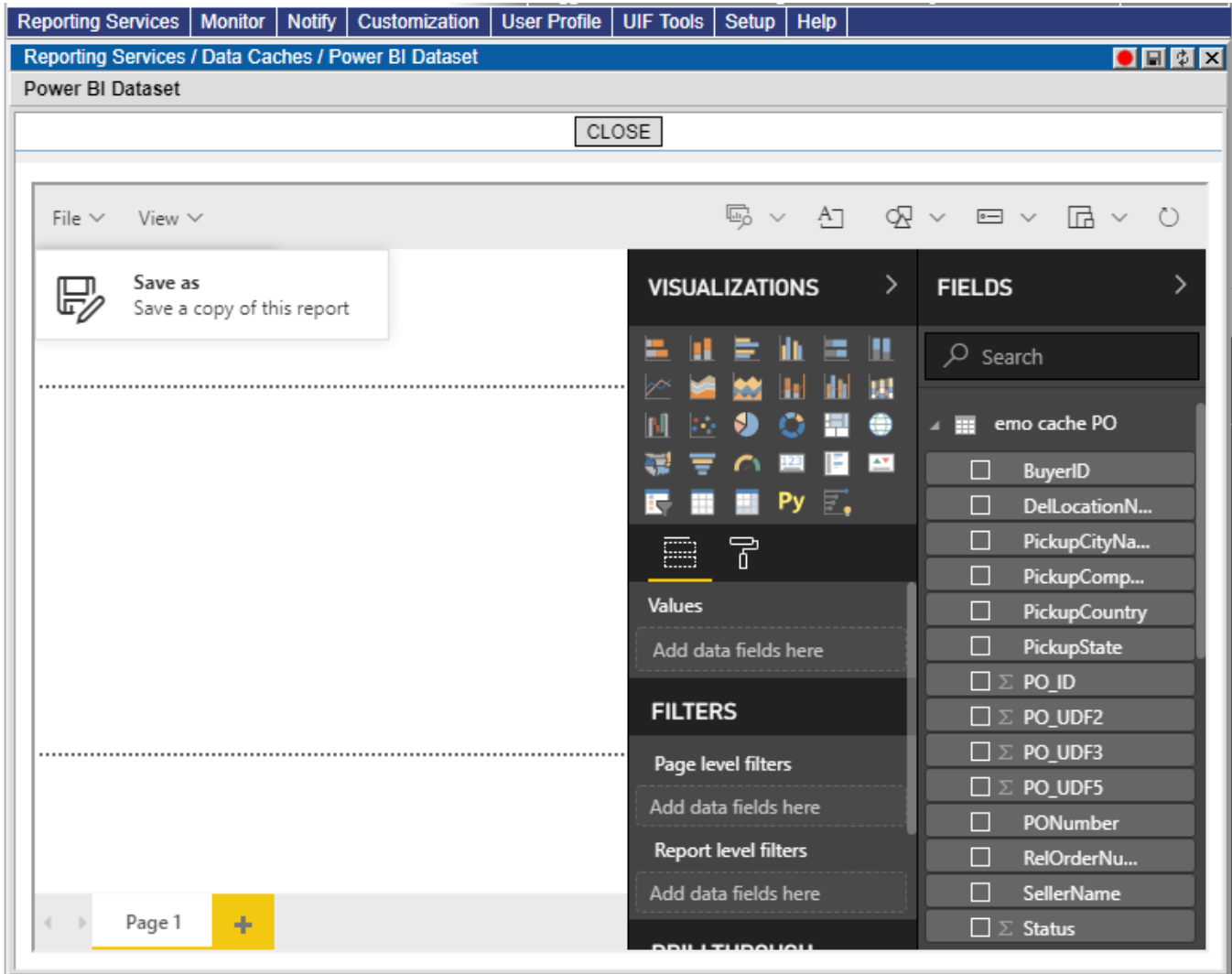
- 6 Create table relationships and measure-type columns. Table relationships are only applicable if multiple data caches are selected. Measure-type columns can be added to tables but are optional. To create a measure column:
  - a Select a table and enter a name for the measure column.
  - b Enter the desired expression in the Expression field, e.g., `count ([PONumber])`.
  - c Select a column from the **Available Columns** dropdown. The column name is automatically populated into Expression field. You can then edit the Expression field further to finish formulating the expression.

For details on how to set up table relationships and measure-type columns, please refer to the information provided in the following links to Microsoft documentation:

- A blog post on new features for [table relationships](#)
- Information on [CrossFilteringBehavior](#) for table relationships
- This article provides additional information on [table relationships](#) in the Power BI desktop application, but the concepts are the same.
- Microsoft documentation on [understanding and creating measures](#)



- Click **Create**. The new dataset is displayed within Power BI embedded in Descartes Reporting Services. From this page, you can then create a Power BI report. For information on how to create a Power BI report, please refer to Microsoft's Power BI documentation.



➡ **Note**— The report is not created until it is saved. To do this, select **File > Save As** and enter a name.

### Creating Power BI Datasets from the 'Data Caches' Page

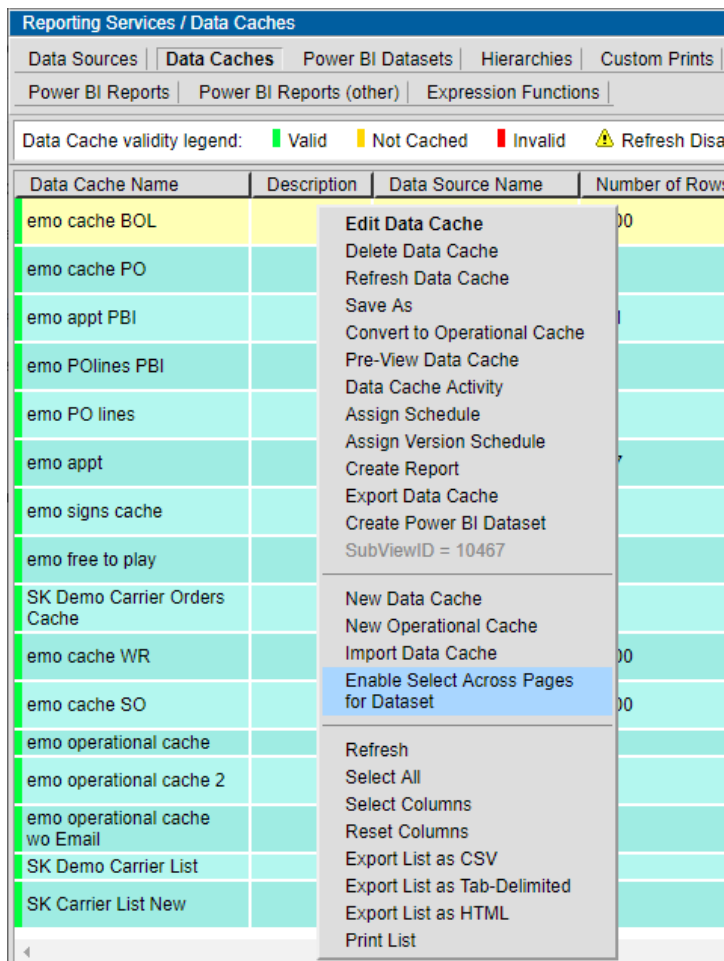
Alternatively, you can select data caches directly from the **Reporting Services > Data Caches** list page to create a Power BI dataset.

If the data caches are all on the current page:

- 1 Select a data cache or use the Ctrl and/or Shift keys to select multiple rows on the same page.
- 2 Select **Create Power BI Dataset** from the right-click menu.
- 3 Follow Steps 4 to 7 described in the [previous section](#) to finish creating the dataset.

If the data caches are on different pages:

- 1 Right-click on the page and select the **Enable Select Across Pages for Dataset** option from the right-click menu.



The Selecting Data Caches for Datasets information row appears.

Reporting Services / Data Caches				
Data Sources	<b>Data Caches</b>	Power BI Datasets	Hierarchies	Custom Prints
Power BI Reports	Power BI Reports (other)	Expression Functions	Extraction Devices	Reports
Report				
Data Cache validity legend: <span style="color: green;">■</span> Valid <span style="color: orange;">■</span> Not Cached <span style="color: red;">■</span> Invalid <span style="color: yellow;">⚠</span> Refresh Disabled				
Selecting Data Caches for Datasets: emo appt,emo appt PBI,emo cache PO				
Data Cache Name	Description	Data Source Name	Number of Rows	Schedule Name
emo cache BOL		emo_BOL	1000	--
emo cache PO		emo_PO	21	--
emo appt PBI		test emo appt	241	--
emo POlines PBI		test emo PO lines	37	--
emo PO lines		test emo PO lines	37	Common Daily @ 5:00 AM (ET) - @ 5:00 AM (ET)
emo appt		test emo appt	337	--

- Follow Steps 3 to 7 described in the [previous section](#) to finish creating the dataset.

### Dataset Refresh

A dataset table is refreshed in the following circumstances:

- After the dataset table's corresponding data cache is refreshed at the scheduled time
- When the **Refresh Data Cache** right-click menu option is selected from the **Data Caches** list page for the corresponding data cache
- When the **Refresh Dataset** right-click menu option is selected from the **Power BI Reports** list page, which triggers a refresh of the dataset's associated data caches and then updates those tables in the dataset

Consider the following example to illustrate the refresh functionality. If a dataset has the following data...

- Table A* from *Data Cache A* with *Schedule A*
- and *Table B* with *Schedule B*

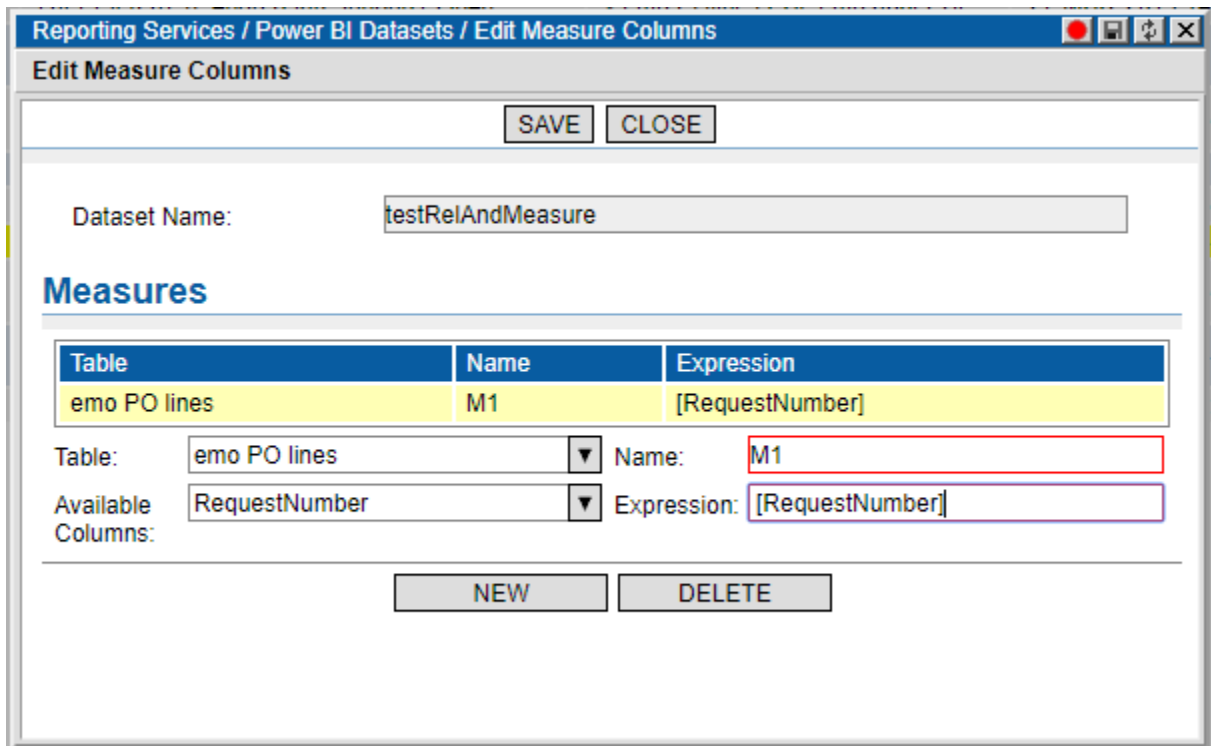
...then after *Data Cache A* is refreshed at *Schedule A*, then the dataset's *Table A* is updated. After *Data Cache B* is refreshed at *Schedule B*, then *Table B* updated with new data.

### Dataset Schema Changes

When a data cache used by a dataset has schema changes such as columns added or removed to the data cache, the corresponding table in the dataset is also updated after the data cache is saved from the **Edit Data Cache** tab.

The following limitations apply to this functionality:

- If a new column is added to the data cache, its data is populated in the dataset table after the data cache is refreshed.
- If a column is used in the table relationship settings for a Power BI dataset, that column cannot be removed because the table relationship settings cannot be modified after dataset creation. If such a column is removed from the corresponding data cache, the system returns an error upon save.
- If the column used is a measure-type column, you can modify the measures. To edit measure-type columns, right-click on a dataset on the **Power BI Datasets** page and select the **Edit Measure Columns** option from the right-click menu. Make any required changes from the **Edit Measure Columns** window and click **Save**.



## Power BI Reports

Users with the **RPS - Power User**, **RPS - Admin User**, or **RPS - System User** roles can create Power BI reports from a Power BI dataset or from an existing Power BI report. Users with the **RPS - Regular User** role can run Power BI reports as well as other Descartes Reporting Services reports.

### Creating and Viewing Power BI Reports

In addition to creating a Power BI report at the end of the dataset creation process, you can also create new Power BI reports from datasets listed on the **Power BI Datasets** page by right-clicking on a dataset and selecting **Create Power BI Report** from the right-click menu. The new dataset is displayed within Power BI embedded in Descartes Reporting Services. For information on how to create a Power BI report, please refer to Microsoft's Power BI documentation.

Power BI reports created by users are listed on the **Reporting Services > Power BI Reports** page. Reports created by a user via editing a Descartes-created report from the Power BI Reports (other) page are also listed on this page. See [Editing Power BI Reports](#) for more information.

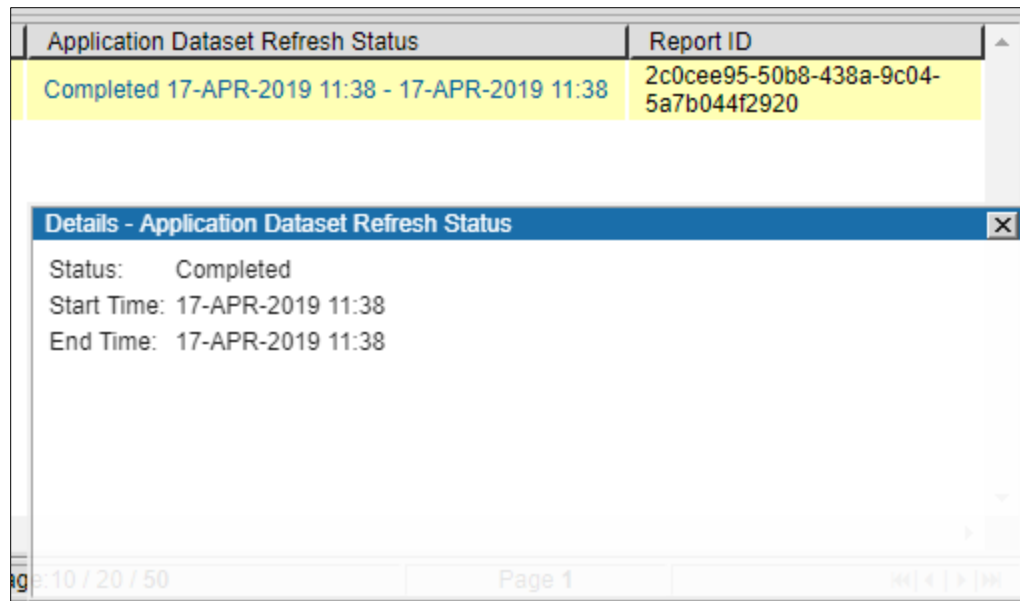
Reporting Services / Power BI Report List										
Data Sources	Data Caches	Power BI Datasets	Hierarchies	Custom Prints	Extraction Devices	Reports	Report Instances	Power BI Reports	<input type="text"/>	Find
Power BI Reports (other)		Expression Functions								
Name	Dataset ID	Associated Data Caches	User Dataset Refresh	Application Dataset Refresh Status	Report ID					
sample	{678B2259-5C1B-49E8-A4B9-207C795ECDA5}	TEST A	22-APR-2019 18:31		{4814FE48-EBE9-4371-8375-2A6B488C4643}					
emo 2	{AEC1B12C-5E41-4ED6-86BA-DDAC762E3BB4}				{6C1F4CE4-101E-4C51-8D01-42EFBDA80FC0}					
emo Measure DIVIDE	{05E27829-451E-4B29-B23B-29D82DE8D635}	emo appt PBI	23-APR-2019 11:29		{D7428F54-E8A5-441D-9478-FB2DE35EE204}					
my copy	{F2A56EDE-790B-4B12-9C4F-39D7F757B35C}	emo signs cache, emo free to play		View Status ...	{7A7882E4-88C6-4A5E-9497-53106483BD78}					
emo Refresh SaveAs	{FEE06565-81E3-4C90-8795-F89E112967B1}	emo appt PBI, emo operational cache wo Email	23-APR-2019 11:29		{AADE3318-AAFA-4547-B0A2-C6B445AFD328}					
emo Refresh X	{DD3296EA-8F1B-4F96-BD05-9BE2744E7F14}	emo operational cache 2, emo appt PBI	23-APR-2019 12:01		{20158397-8C21-4327-B9EF-F6E173F9A5AE}					
emo DSGDCAdmin	{F2A56EDE-790B-4B12-9C4F-39D7F757B35C}	emo signs cache, emo free to play		View Status ...	{0961076A-33E6-4A08-A291-C56F38283153}					
testUser	{99373968-F285-4152-BA5B-B7ED2FF6BCD5}	US Canada Offshore Compliance Milestone by Vendor	23-APR-2019 13:01		{7FE93C05-C551-487A-937D-142A110D84E0}					

Power BI reports created by Descartes are listed on the **Reporting Services > Power BI Reports (other)** page.

Reporting Services / Power BI Report List									
Data Sources	Data Caches	Power BI Datasets	Hierarchies	Custom Prints	Extraction Devices	Reports	Report Instances	<input type="text"/>	Find
Power BI Reports		Power BI Reports (other)		Expression Functions					
Name	Dataset ID	Associated Data Caches	Application Dataset Refresh Status	Report ID					
testSaveEmo	{2a56ede-790b-4b12-9c4f-39d7f757b35c}	emo signs cache, emo free to play	View Status ...	2c0cee95-50b8-438a-9c04-5a7b044f2920					

The refresh status of the dataset used to create a report is also listed on these pages. This information is displayed in different columns depending on how the dataset associated with the report was created.

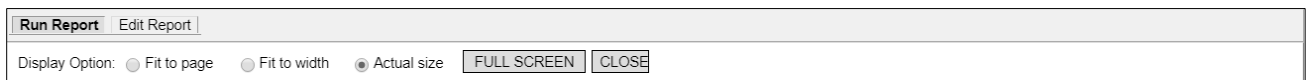
- For Power BI reports created by users based on datasets created by users, the refresh status is displayed in the User Dataset Refresh column.
- For Power BI reports based on datasets created by Descartes, the refresh status is displayed in the Application Dataset Refresh Status column. Click the **View Status** link to display the refresh status in a pop-up window.



For a dataset that consists of multiple data caches with different refresh schedules, the datetime value displayed is the date and time of the last data cache refresh.

### Display Options for Power BI Reports

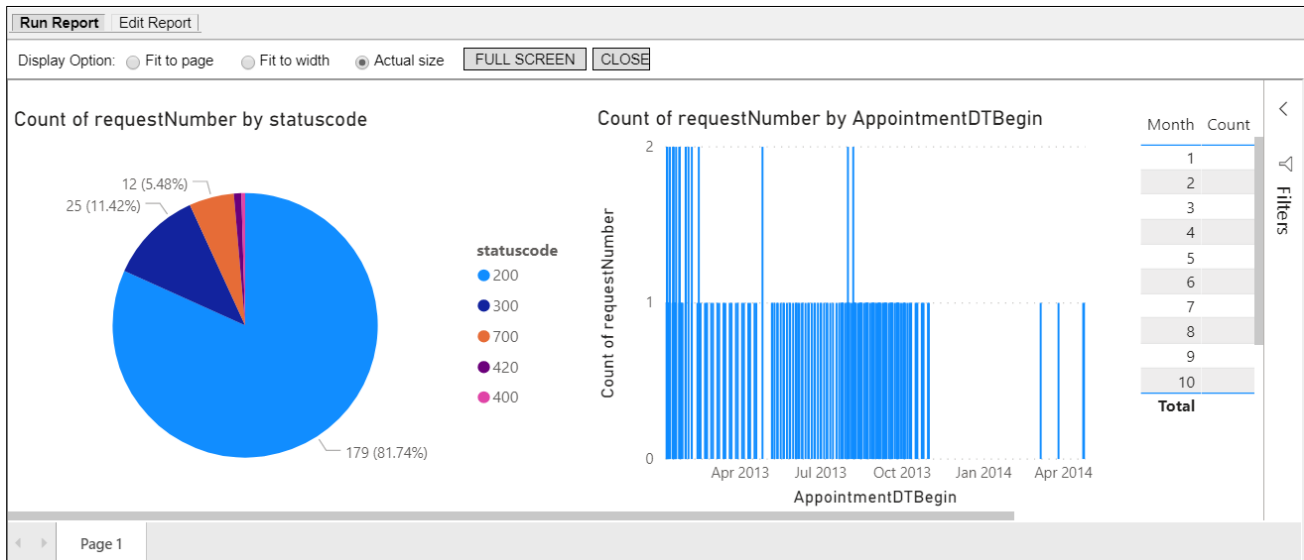
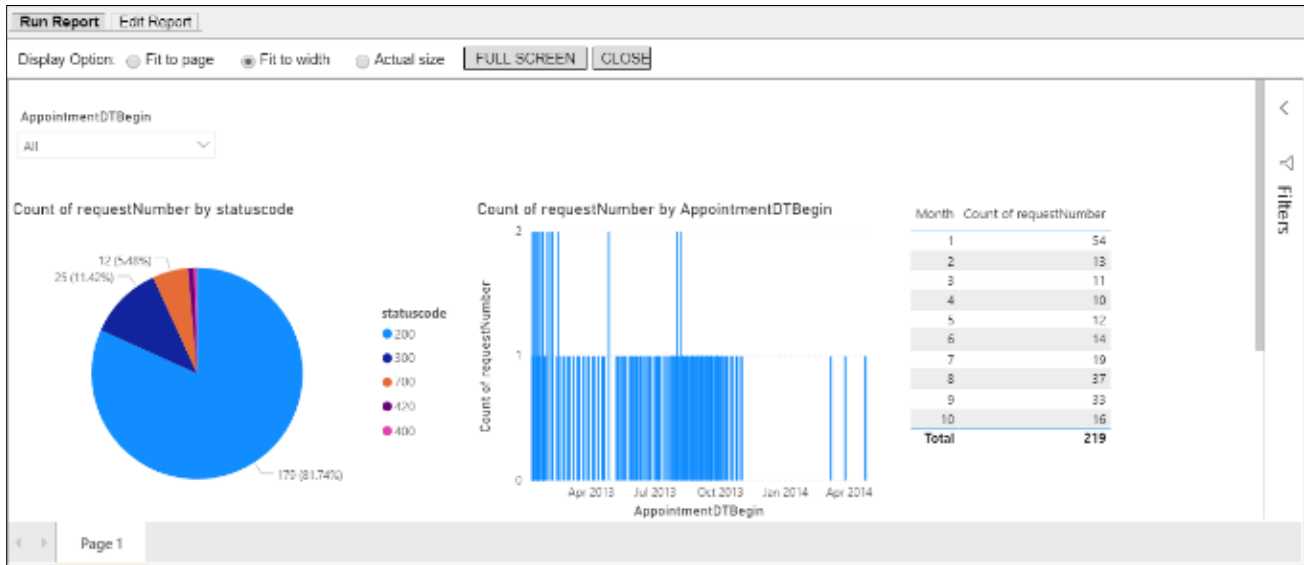
After you run a Power BI report, you can select one of these display options from the header to change the display:



- Fit to Page
- Fit to Width
- Actual Size
- Full Screen

By default, when a report is viewed for the first time, the view is set to Fit to **Page**. When you select a different view option, this option persists in a browser cookie for 30 days.

For example, if you select **Actual Size** for the report, the system will remember your selection and will display the report in **Actual Size** the next time it is displayed.



### Creating Data Cache Associations for Descartes-Created Reports

A Power BI report created by Descartes must be associated with the data caches used to create its dataset so that the dataset is updated when each selected data cache is refreshed. Typically, only one data cache is required. The necessary associations depend on how the data are used in the report and how frequently the report must be updated.

For example, a dataset uses two data caches, Data Cache A and Data Cache B. If you associate Data Cache B with the Power BI report, an API call is made when Data Cache B is refreshed to request a dataset refresh, which pulls data from *all* data cache tables currently used by the dataset (i.e., data from Data Cache A and Data Cache B). If you want the report updated more frequently, you can associate additional data caches, provided they are scheduled to refresh at different times.

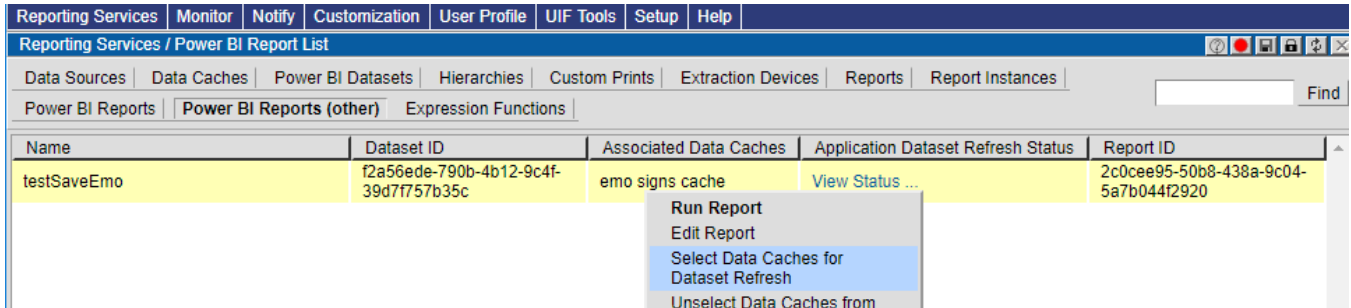
The following table provides additional details. For reference, the dataset uses Data Cache A and Data Cache B. Data Cache A is scheduled to refresh every day at 8 a.m. Data Cache B is scheduled to refresh every day at 6 p.m. The checkmarks denote association with the Power BI report.

Data Cache A Associated?	Data Cache B Associated?	Dataset Updates
	✓	After the Data Cache B refresh is completed at 6 p.m., the system retrieves the following data for the dataset: <ul style="list-style-type: none"> <li>• Data Cache A table, which has data as of 8 a.m.</li> <li>• Data Cache B table, which has data as of 6 p.m.</li> </ul>
✓		After the Data Cache A refresh is completed at 8 a.m., the system retrieves the following data for the dataset: <ul style="list-style-type: none"> <li>• Data Cache A table, which has data as of 8 a.m.</li> <li>• Data Cache B table, which has data as of 6 p.m. the previous day</li> </ul>
✓	✓	The dataset is refreshed twice a day: at 8 a.m. when the Data Cache A refresh is completed and at 6 p.m., when the Data Cache B refresh is completed, updating the report with data from the most recent data cache refresh.

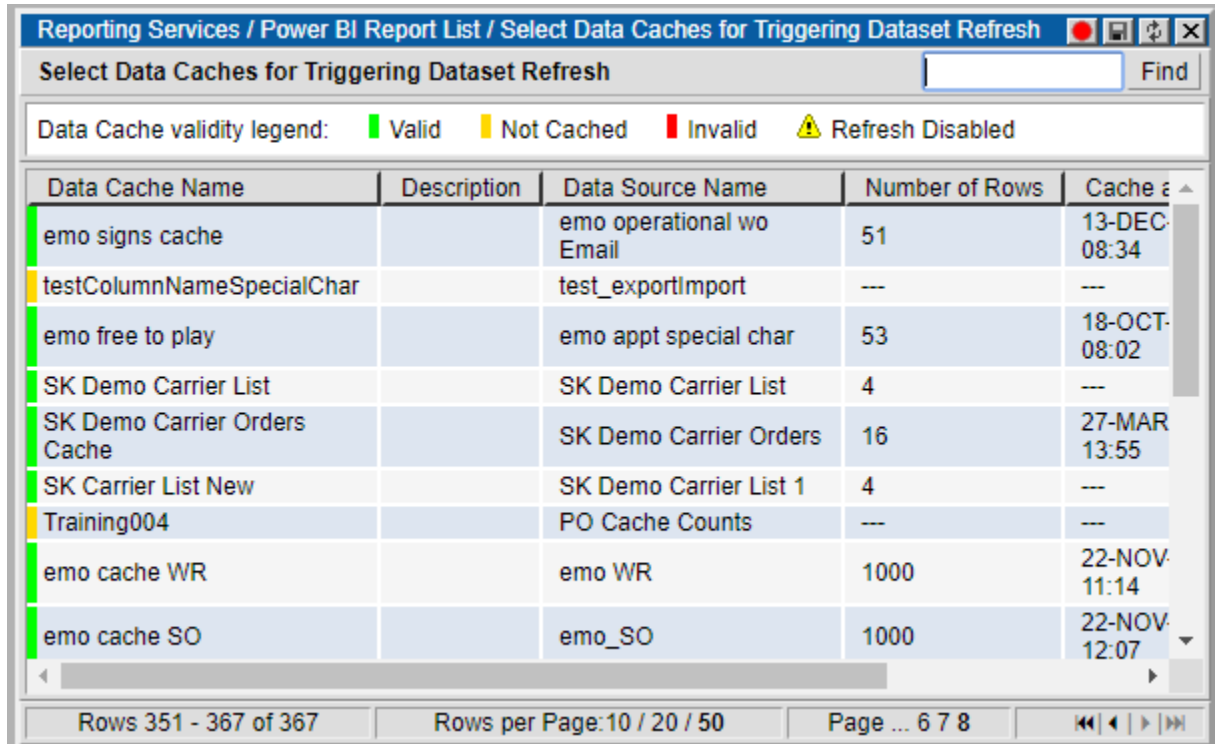


To associate a data cache with a Power BI report:

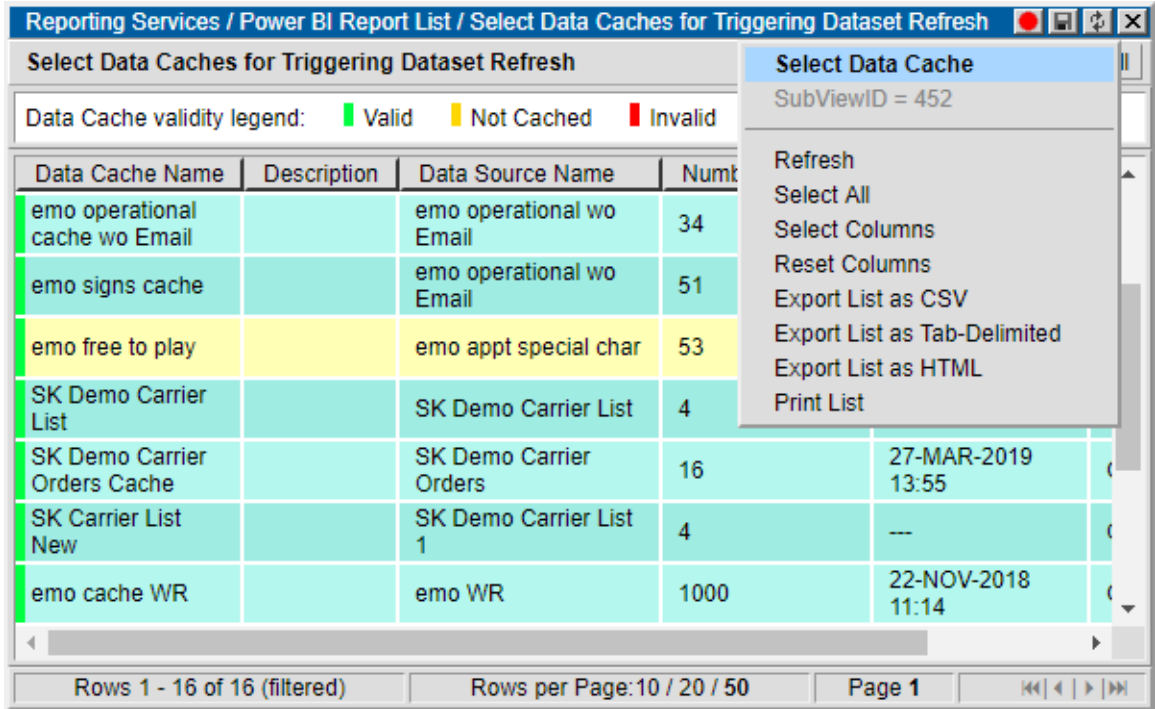
- 1 From the **Power BI Reports (other)** page, right-click on the desired report and click **Select Data Caches for Dataset Refresh** from the right-click menu.



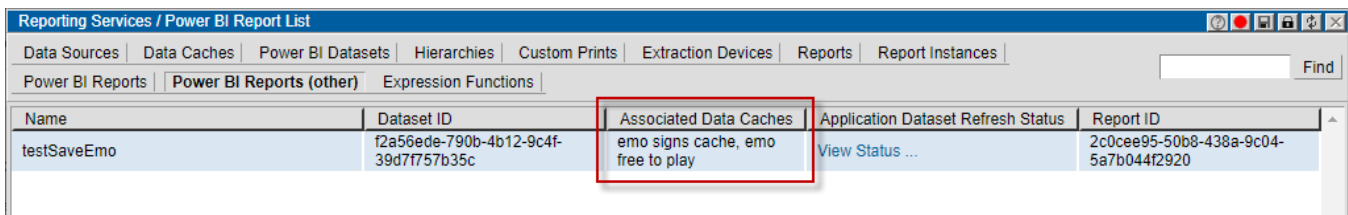
The **Select Data Caches for Triggering Dataset Refresh** window appears.



- 2 Select the desired data caches, then click the **Select Data Cache** option from the right-click menu.



- 3 The selected data cache is added to the report. The report now has two data caches to trigger the dataset refresh.



Additionally, the report's dataset is added to the **Power BI Datasets** list page.

Name	ID	Associated Data Caches	User Dataset Refresh	Application Dataset Refresh
emo DAX	05e27829-451e-4b29-b23b-29d82de8d635	emo appt PBI	23-APR-2019 11:29	
emo Retest	fee06565-81e3-4c90-8795-f89e112967b1	emo appt PBI, emo operational cache wo Email	23-APR-2019 11:29	
emo woRel	7d9c0682-eb92-4e47-9d4e-50961d5d6763	emo operational cache wo Email, emo appt PBI	23-APR-2019 11:29	
emo wRel	0520eac7-0052-47d5-8a3b-b8834c4d9cc4	emo operational cache wo Email, emo appt PBI	23-APR-2019 11:44	
emo wRel2	dd3296ea-8f1b-4f96-bd05-9be2744e7f14	emo operational cache 2_emo appt PBI	23-APR-2019 12:01	
testPBI	f2a56ede-790b-4b12-9c4f-39d7f757b35c	emo signs cache, emo free to play		View Status ...

To remove data cache associations from the report:

- 1 Right-click on the desired report and click **Unselect Data Caches from Refresh**.

Data Cache Name	Description	Cache as of Date	DataCache Type
emo signs cache			Cache
emo free to play			Cache

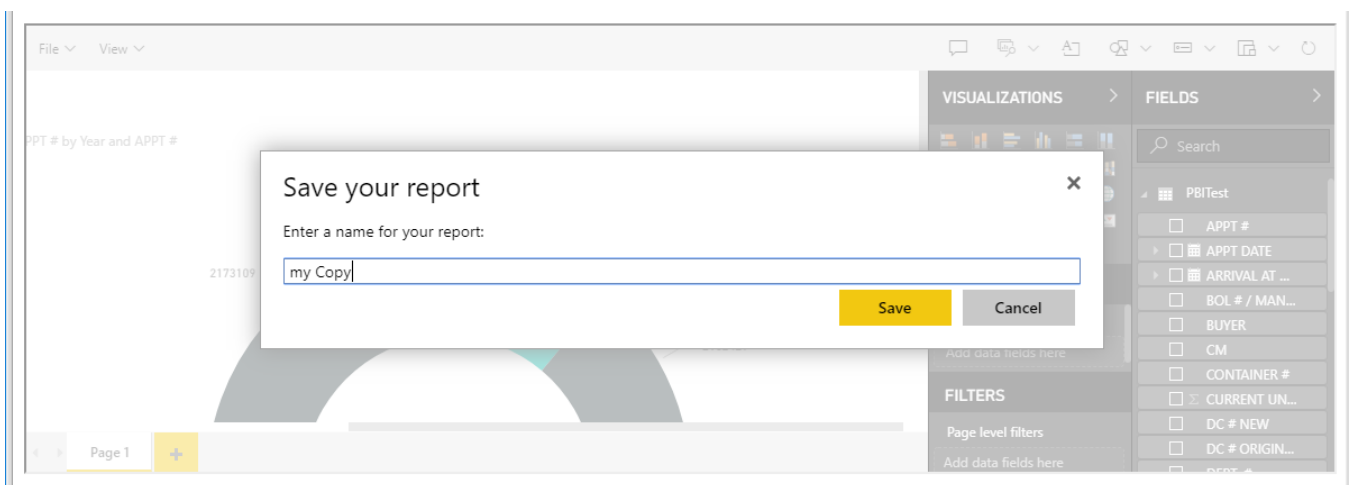
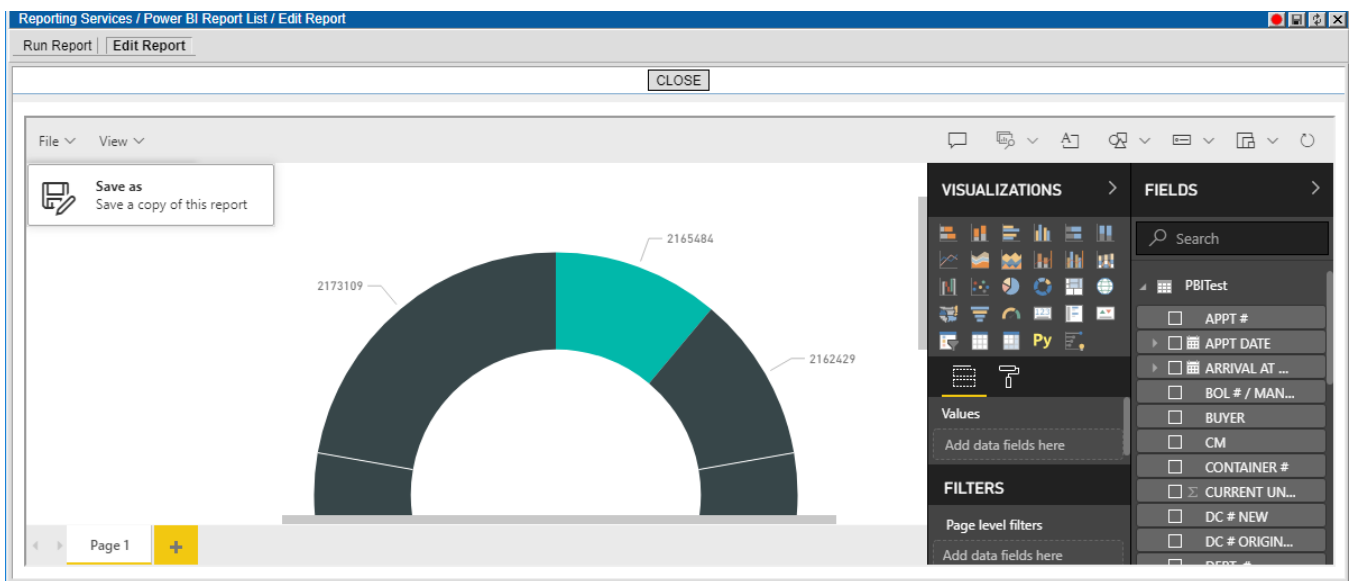
- 2 Select the caches you wish to remove, then click the **Unselect Data Cache** option from the right-click menu.

For reports created by users from user-created datasets, the dataset's association is configured once the data caches are selected as part of this process, so no additional steps are required.

### Editing Power BI Reports

On the **Power BI Reports** page, the **Edit Report** right-click menu option allows you to make changes to a report or create a new report based on the selected report by using the **File** menu in Power BI.

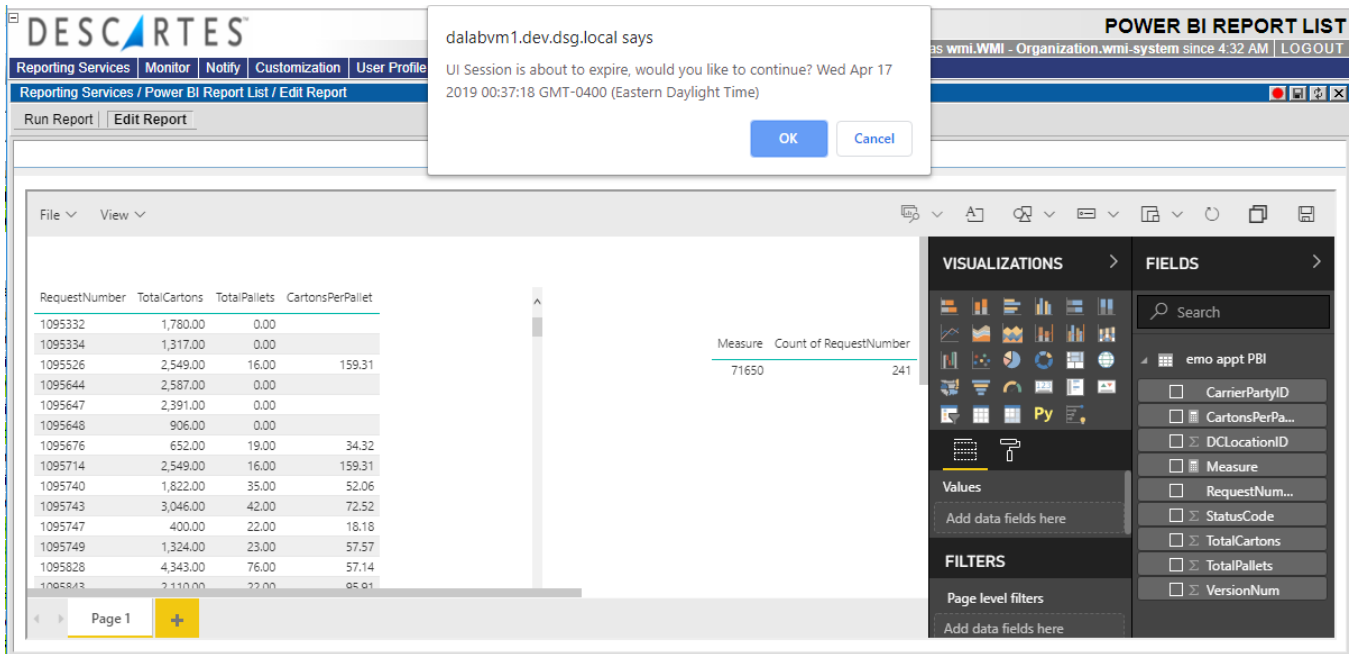
From the **Power BI Report (other)** page, you cannot edit Descartes-created reports via the **Edit Report** option, but you can modify the report and save it as a new report by selecting **File > Save As** in Power BI. Reports created in this manner appear in the **Power BI Reports** page with other user-created reports, but the dataset refresh status appears in the Application Dataset Refresh Status column instead of the User Dataset Refresh column.



### Keeping the User Interface Session Active

Most user interface interactions within the Power BI embedded content area (e.g. clicking report elements or navigating Power BI options) are http POST or GET requests to Power BI Services, not to the Descartes Reporting Services UI web server (Power BI content can be thought of as if it is displayed in another browser window or tab). As a consequence, these interactions do not keep user interface session active.

When the Descartes Reporting Services user interface detects that the session is about to expire, the system displays a prompt asking if you want to continue. Click **OK** to keep the session active so that, when navigating to another part of the application, you are not logged out and can continue to use the application without needing to log back in.



### Rebinding Power BI Reports to Another Dataset

The dataset of a Power BI report can be changed to a different dataset provided the dataset is compatible with the report. If the dataset is not compatible, the system will return an error when the report is run after the change.

To change the dataset, right-click on a Power BI report on the **Power BI Reports** or **Power BI Reports (other)** pages and select the Rebind to Another Dataset option from the right-click menu.

Name	ID	Associated Data Caches	User Dataset Refresh	Application Da
Carrier QA	2b90bba7-38e8-495f-a6b4-c9ea0c76409d	Carrier QA Summary		
Carrier QA	420c2b5c-9526-4a57-9d64-856f5e4dda6a	Carrier Event QA	26-MAR-2019 19:14	
docTest	678b2259-5c1b-49e8-a4b9-207c795ecda5	TEST A	22-APR-2019 15:16	
emo DAX	05e27829-451e-4b29-b23b-29d82de8d635	emo appt PBI	17-APR-2019 09:15	
	de63f80b-			

Rows 1 - 10 of 10      Rows per Page: 10 / 20 / 50      Page 1

Double-click a dataset from the **Bind to Another Dataset** window to complete the process.

### Pause and Resume Capacity Used by Power BI Workspaces

Microsoft Azure® capacities used by Power BI workspaces can be paused and resumed depending on usage and scheduled hours. This feature is configured by performed by Descartes integration specialists.

If a capacity is assigned to a Power BI workspace associated with a particular organization and its Reporting Services users usually run Power BI reports during certain business hours, then scheduled tasks can be configured to pause the capacity at one time and resume at another. For example, the capacity could be paused at 6:00 pm EST after operating hours and then resumed at 7:00 am when the business opens again.

In this example, between 6:00 pm and 7:00 am an hourly task is scheduled to pause the capacity if no one is using it. If the capacity is resumed by someone running a Power BI report or refreshing a dataset, the capacity will be paused again after these activities are complete.

Users are still able to run Power BI reports during off hours. When users perform any action from the Reporting Services user interface that involves the Power BI workspace (e.g. run a Power BI report, create or use a Power BI dataset), Reporting Services will check if the capacity is active and resume the capacity if it is paused. This process can take up to one minute.

This check and the resulting resumption of the capacity is done automatically in the Reporting Services backend, so no additional steps are required for end users. However, users may experience additional wait time; the process of resuming a capacity can take about one minute or so to complete.

## Report Instances

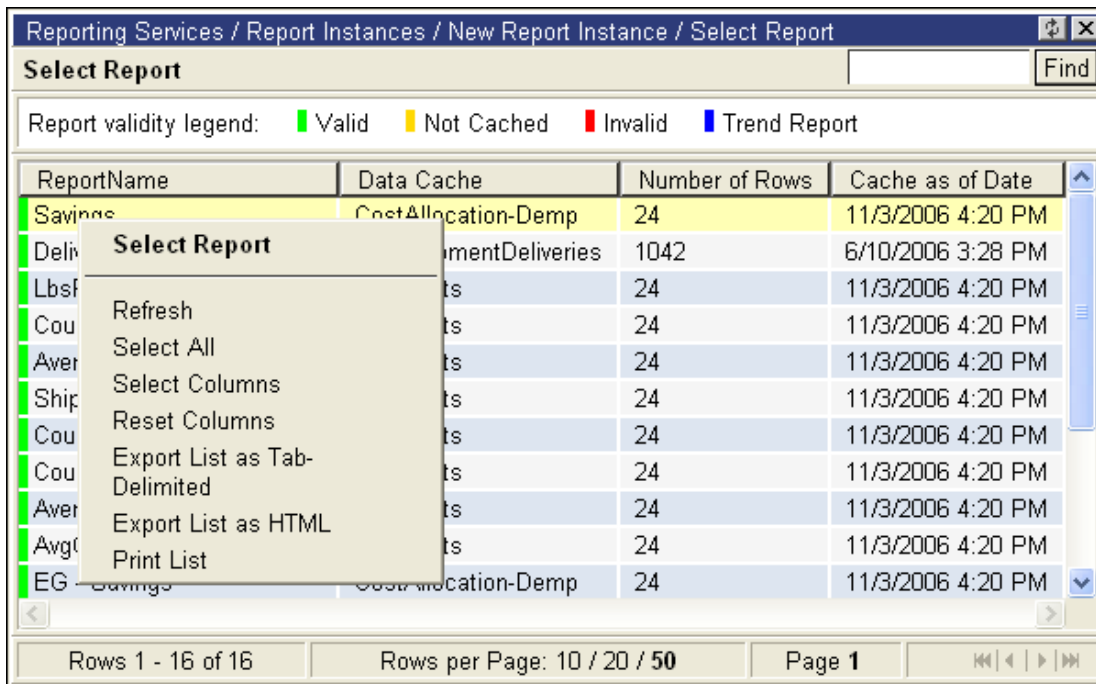
A Report Instance links a report with a data cache. Users can choose from various data caches to be used as a source for the report. In addition, new data caches can be pointed to existing reports.

- **Note**— Only System, Admin, and Power users can manage Report Instances.
- **Note**— Regular users will see Reports instead of Report Instances.

## Creating a Report Instance

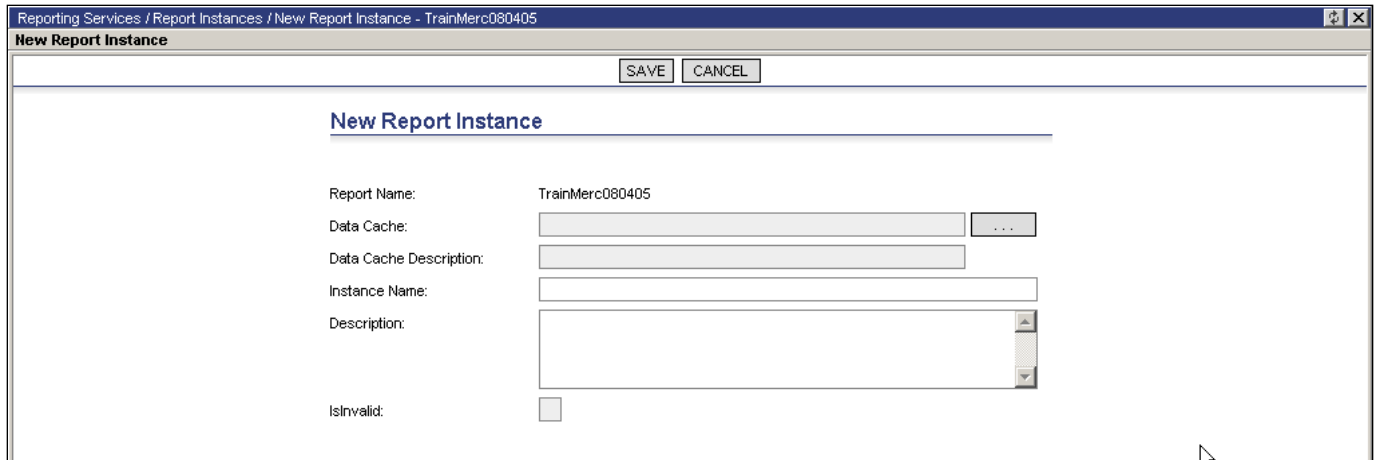
To create a new Report Instance:

- 1 From the main menu, select: **Reporting Services > New Report Instances**. The **Report Instances** page appears.
- 2 Right-click on a report and select: **New Report Instance**.
- 3 From the **Select Report** page, right-click on a report and select: **Select Report:**



- 4 Fill in the appropriate information in the **New Report Instance** page:

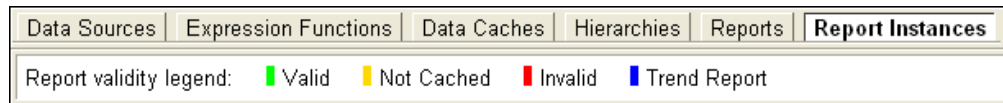




- 5 Select a data cache from the list. To view a list, click the dialog box next to Data Cache; this brings up a list of available data caches.
- 6 Enter a description for the **Data Cache**, a name for the **Report Instance**, Description and check whether it is Valid or Invalid:

➡ **Note**— Invalid means that the data cache may not have the appropriate columns. Any changes a user makes to the columns with the exception of adding columns affects the report and could cause the report instance to become invalid.

➡ **Note**— Valid reports are tagged green and Invalid reports are tagged in red:

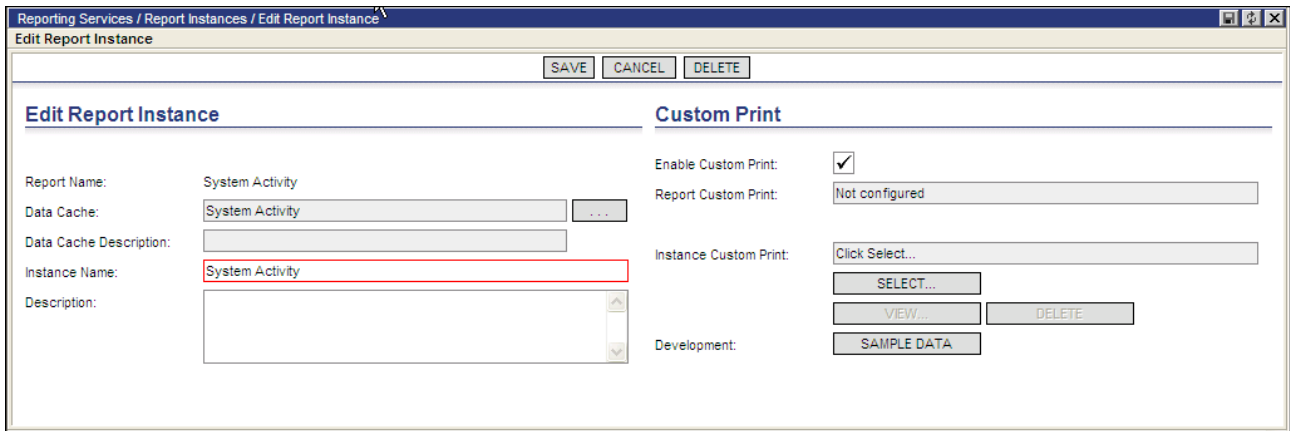


- 7 Click **Save**.

## Editing a Report Instance

To edit a Report Instance:

- 1 From the main menu, select: **Reporting Services > Report Instances**.
- 2 Right-click the desired Report Instance and select: **Edit Report Instance**. The **Edit Report Instance** page appears allowing the user to make changes:



- 3 Enter in the appropriate information including Custom Print options and click **Save**.

### Running a Saved Report Instance

To run a Report Instance:

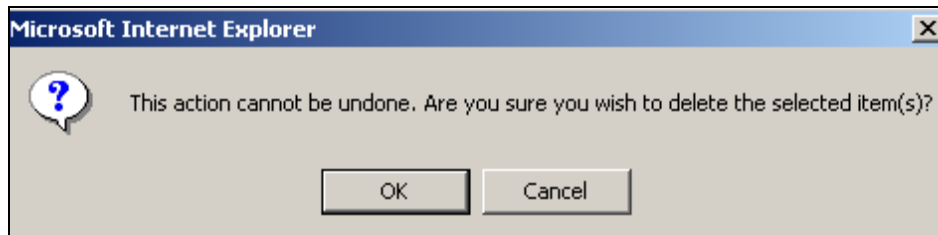
- 1 From the main menu, select: **Reporting Services > Report Instances**.
- 2 Right-click an **Instance**.
- 3 From the right-click menu, select: **Run Report Instance**.
- 4 The report appears in tabular view below but users can also choose to view in chart view:

Training Report No 2 - Tabular Results as of 8/1/2005 8:54:01 PM									
BOL_DELCityName	DEL_Carrier	SO_TransportMode	SO_SOCreateDT	SO_BuyerID	SO_SellerID	SO_SONumber	SO_SO_UDF13	BOL_DELLocationCode	BOL_DELLocationNam
	22	14244							
ZIONSVILLE	1	1							
ZIONSVILLE	UPSN	1							
ZIONSVILLE	UPSN	GN							
ZIONSVILLE	UPSN	GN	2005-02-24 18:00:27.000	0000188713	0110	0059819089	2005-02-28 00:00:00.000	0000188713	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	2	5							
ZEPHYRHILLS	UPSN	3							
ZEPHYRHILLS	UPSN	GN							
ZEPHYRHILLS	UPSN	GN	2005-01-27 14:46:29.000	0000300313	0110	0059698439	2005-02-01 00:00:00.000	0000300313	Photo Lab Manager
ZEPHYRHILLS	UPSN	GN	2005-01-26 09:48:29.000	0000178695	0110	0059690752	2005-02-02 00:00:00.000	0000178695	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	UPSN	GN	2005-02-04 13:58:34.000	0000178695	0110	0059736650	2005-02-09 00:00:00.000	0000178695	Cvs 3619
ZEPHYRHILLS	NULL	2							
ZEPHYRHILLS	NULL	GN							
ZEPHYRHILLS	NULL	GN	2005-02-02 09:10:25.000	0000178695	0110	0059723372	2005-02-23 00:00:00.000	0000178695	Att: Jenn Fallon 401-770-2607
ZEPHYRHILLS	NULL	GN	2005-01-25 12:10:51.000	0000178695	0110	0059686090	2005-02-01 00:00:00.000	0000178695	Att: Jenn Fallon 813-782-9515

### Deleting a Report Instance

Users can also delete a report instance:

- 1 From the main menu, select: **Reporting Services > Report Instances.**
- 2 Right-click on the instance and select: **Delete Report Instance.**
- 3 The following warning message appears, click **OK** to delete:



### Configuring Standalone Emailing Schedules for Report Instances

When a standalone emailing schedule is set for the report, associated report instance is updated as well. Users can assign multiple report instances for one report and a different standalone emailing schedule for each report instance. When a report's report instances have differing standalone emailing schedules set, the Standalone Email Schedule column, instead of a set schedule, will display the following message: "See its Report Instances".

To set a standalone emailing schedule for a report instance:

- 1 Select **Reporting Services > Report Instances**. The **Report Instance** list page appears.

Report Name	Description	Data Cache Name	Number of Rows	Cache as of Date	Standalone Email Schedule
ZBA PO test report		ZBA PO test	1000	23-MAY-2016 12:27	
ZBA PO test report		ZBA PO test	1000	23-MAY-2016 12:27	
ZBA PO report test		ZBA PO test	1000	23-MAY-2016 12:27	
ZBA_Comments		ZBA_Comments	10	23-MAY-2016 12:27	
ZBA PO report Test 2nd inst		ZBA PO test	1000	23-MAY-2016 12:27	
emo RPT DC with aproved hot appointments		emo DC with aproved hot appointments	2	20-MAY-2016 10:42	
emo RPT aproved hot appointments 1		emo aproved hot appointments	338	20-MAY-2016 10:42	

- 2 Right-click on a report instance and select **Assign Standalone Emailing Schedule** from the right-click menu. The **Assign Standalone Emailing Schedule** page appears.

**Reporting Services / Report Instances / Assign Standalone Emailing Schedule**

Assign Standalone Emailing Schedule

SAVE UNASSIGN SCHEDULE CLOSE

**Predefined Schedules**

Name: Common Monthly - 1st day @ 2:00 AM (ET) - 1st day @

Description: 1st day @ 2:00 AM (ET)

Run Schedule: Start: 1/1/2012 7:00 AM, Recur: The First day of every 1 month(s)

- 3 Select a schedule from the **Name** dropdown. The Description and Run Schedule fields will populate.
- 4 Click **Save**. On the **Report Instance** list page, the Standalone Email Schedule will populate with the set schedule value.

To unassign a standalone emailing schedule from a report instance, right-click on a report on the **Reports** list page or click **Unassign Schedule** on the **Assign Standalone Emailing Schedule** page.

## Enabling a Trend Report

To enable a trend report:

- 1 From the main menu, select: **Reporting Services > Report Instances**.
- 2 Right-click an **Instance**.

➡ **Note**— The Instance must be setup for trend reporting.

**3** From the right-click menu, select: **Enable Trend Reports**.

The trend report appears on the **Report Instance** page.

ReportName	@Description	Data Cache	Number of Rows	Cache as of Date
Savings		CostAllocation-Demp	24	11/3/2006 4:20 PM
DeliveriesByDate		TM_ShipmentDeliveries	1042	6/10/2006 3:28 PM
LbsPerSate		LaneStats	24	11/3/2006 4:20 PM
ShipmentsPerStateByMonth		LaneStats	24	11/3/2006 4:20 PM
AverageShipLbsByMode		LaneStats	24	11/3/2006 4:20 PM
ShipmentsByWeekday		LaneStats	24	11/3/2006 4:20 PM
CountShipmentsByMonth		LaneStats	24	11/3/2006 4:20 PM
CountShipmentsByMode		LaneStats	24	11/3/2006 4:20 PM
AverageShipmentCosts		LaneStats	24	11/3/2006 4:20 PM
AvgCostPerStateByMode		LaneStats	24	11/3/2006 4:20 PM
EG - Savings		CostAllocation-Demp	24	11/3/2006 4:20 PM
Carrier Spend Summary		DempUGFreightBills	2	6/11/2006 8:40 PM
Carrier Payables		DempUGFreightBills	2	6/11/2006 8:40 PM
ST Test - Savings (GroupLevel1)		ST Test - Savings	17	11/20/2006 3:48:02 PM
Load Savings		CostAllocation-Demp	24	11/3/2006 4:20 PM
Load Savings (GroupLevel1)		Load Savings	5	11/21/2006 3:33:23 PM

To view the trend report:

- 1 Right-click on the **Trend Report**.
- 2 From the right-click menu, select **Tabular View**.

The trend report appears in tabular view as shown below but users can also choose to view in chart view:

ContextDate	AcntShipmentNo	Savings By Load	Savings	RowCount
5/31/2004	2380384	454.52142022391718	454.52142022391718	2
5/31/2004	2380380	-6.5250903245214431E-2	-6.5250903245214431E-2	18
5/31/2004	2380374	62.113228734555513	62.113228734555513	1
5/31/2004	2379150	62.113228734555513	62.113228734555513	1
5/31/2004	2379149	146.65291493822204	146.65291493822204	2

## Disabling Trend Reports

To disable a trend report:

- 1 From the main menu, select: **Reporting Services > Report Instances**.
- 2 Right-click the **Instance** used to create the trend report.

- From the right-click menu, select: **Disable Trend Reports**.  
The trend reports are removed from the **Report Instance** page.

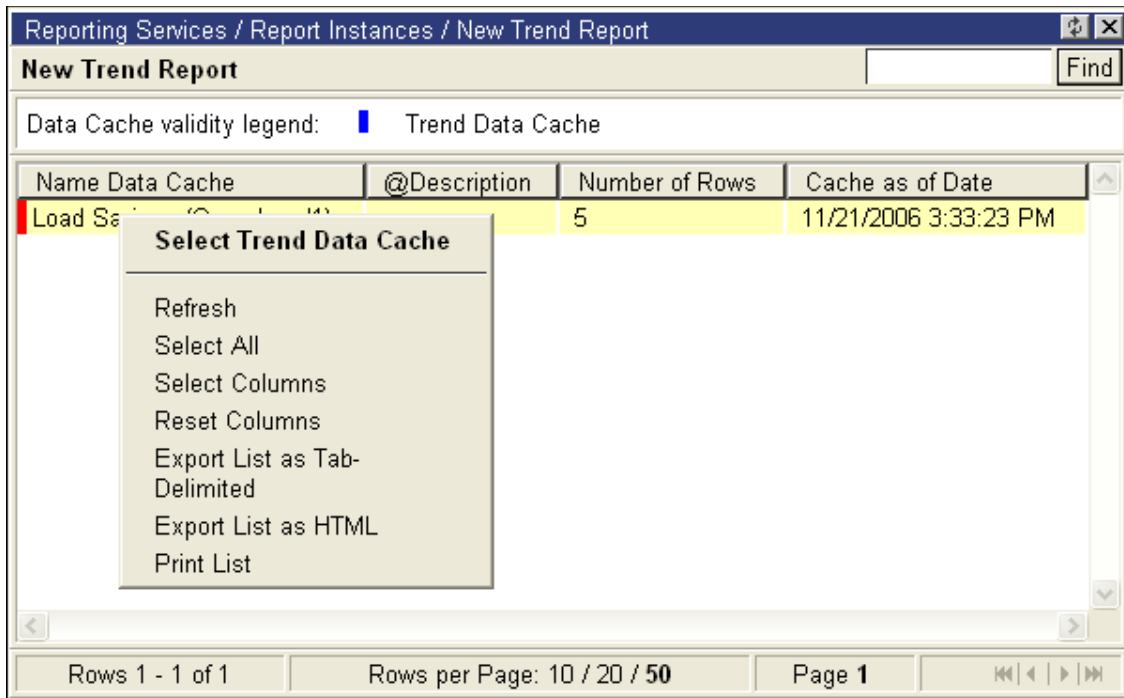
### Adding New Trend Reports

When a Trend Report has been enabled for a report, the administrator has the ability to add new Trend Reports. This allows administrators the ability to create their own reports.

To add a new Trend Report:

- From the main menu, select: **Reporting Services > Report Instances**.
- Right-click the Instance used to create the trend report.
- From the right-click menu, select: **New Trend Report**.

The **New Trend Report** page is displayed.



- Right-click on the desired data cache and select **Select Trend Data Cache**.
- Set up the Trend Report data cache. See [Creating a Data Cache](#) in the [Data Cache](#) section for more information.

## Hierarchies

Hierarchies enable users to group data, according to a preference, so that reports can more easily be created. Typically, users create hierarchies to group products, locations, and buyers.

As an example, companies typically use many part numbers to identify their products. A user could set up a hierarchy for a company's part numbers, dividing the part numbers into Pens, Pencils, and Rulers; a user could also include pens and pencils in the category Writing Instruments. Then when a report is created, a user could choose to include:


- Involved shipments of pens
- Involved shipments of writing instruments, including both pens and pencils

A hierarchy consists of general hierarchy information, nodes (which define the hierarchy's structure), and leaf nodes (the content of the hierarchy referencing values in a business document). Nodes can contain leaf nodes, as well as other nodes.

Hierarchies also enable users to group information more generally; for example, a user could create a hierarchy with countries grouped into continents. So, a hierarchy could have a node for North America that would include USA and Canada, and the user would be able to select North America to select both of these countries.

This section explains how to perform the following tasks:

- Creating a hierarchy
- Changing the leaf node, hierarchy node association
- Disassociating a leaf node from a hierarchy node
- View a hierarchy's properties
- Renaming a hierarchy node
- Deleting a hierarchy
- Deleting a hierarchy node

 **Note**— To perform the tasks associated with hierarchies, a user must be logged in as an admin user.

## Creating a Hierarchy

To create a complete hierarchy, users must complete the following tasks:

- Define the hierarchy's properties
- Add nodes to the root node
- Associate leaf nodes with hierarchy nodes
- Optimize the hierarchy

## Defining the Hierarchy's Properties

To define the hierarchy's properties:

- 1 From the main menu, select: **Reporting Services> Hierarchies**. If hierarchies already exist, a list is displayed; right-click on the list and select: **New Hierarchy**.

Hierarchy Name	Fields	Description Field	Last Scavenged On	Last Optimized On
Countries	Countries.Country		1/3/2006 9:23:44 AM	1/3/2006 9:26:05 AM
Country 2	Country 2.Country		1/2/2006 2:40:36 PM	1/2/2006 2:41:07 PM
DC0 UG	DC0 UG.UserGrpName		1/3/2006 9:32:24 AM	1/3/2006 9:33:41 AM
Hierarchy Country	Hierarchy.Country		1/2/2006 2:40:36 PM	1/2/2006 2:41:07 PM
Test			1/2/2006 1:55:27 PM	1/1/2000 12:00 AM
Test Hierarchy			12/14/2005 9:49:53 AM	12/13/2005 3:17:17 PM
Training Hier			1/2/2006 12:03:32 PM	12/29/2005 9:26:01 AM
Training Hier			1/2/2006 2:08:11 PM	1/2/2006 2:10:07 PM
Training Hier2			1/2/2006 2:14:01 PM	1/2/2006 2:14:16 PM

- 2 The **New Hierarchy** dialog appears. In the Hierarchy Name field, enter a name for the hierarchy:

Reporting Services / Hierarchies / New Hierarchy

SAVE CLOSE

**Hierarchy Properties**

Hierarchy Name:

Table:

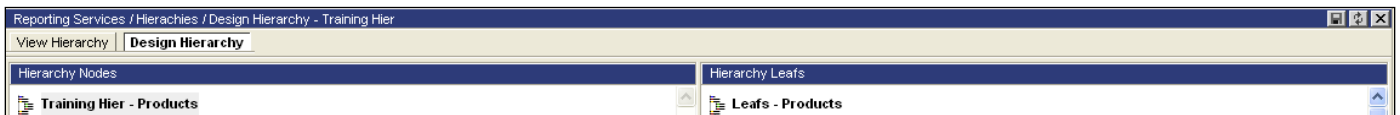
Field:

Description Field:

Map to Existing Hierarchy:



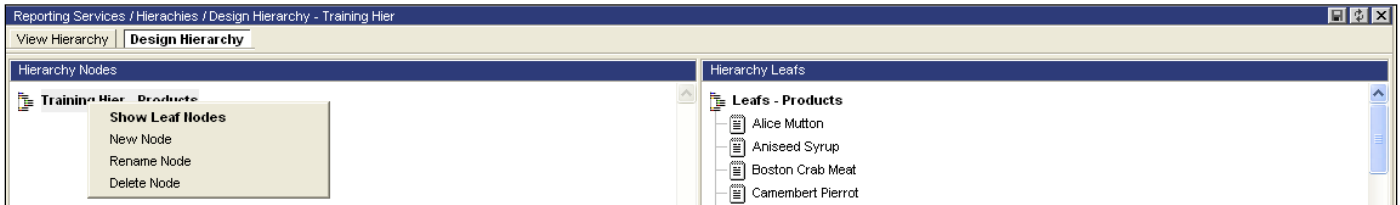
- **Note**— Valid characters for a hierarchy name include “a” through “z” and “0” through “9”.
- 3 From the Table list, select the table on which to base the hierarchy.
  - **Note**— The table selected provides all of the leaf nodes that a user is categorizing in the hierarchy. Each table relates to a business document and the business document contains the leaf node, such as product, location, etc.
- 4 From the **Field** list, select the field on which to base the hierarchy.
  - **Note**— These fields have the same names as those in Queries, Reports, etc.
- 5 To base this hierarchy's structure on the structure of an existing hierarchy, select the **Map to Existing Hierarchy** check box. A list appears:
- 6 From the list, select the appropriate hierarchy.
- 7 Click **Save**. The newly created hierarchy now appears as part of the **Design Hierarchy** page:



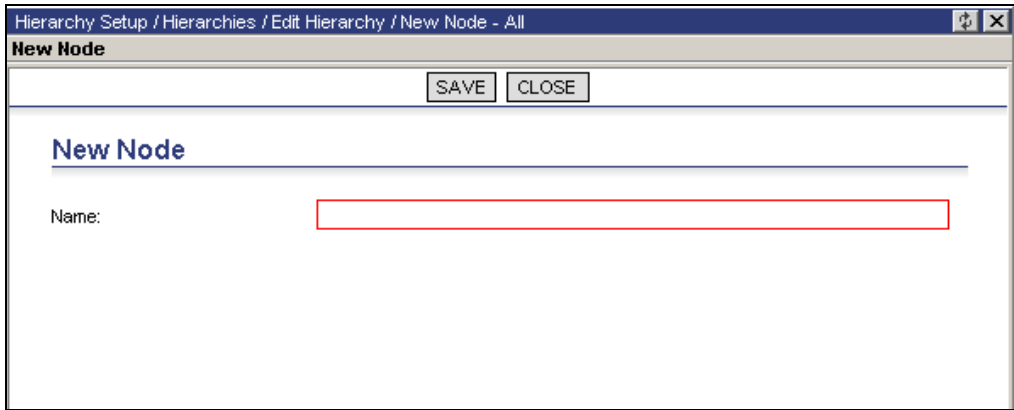
### Adding a Node to the Root Node

To add a node to the root node:

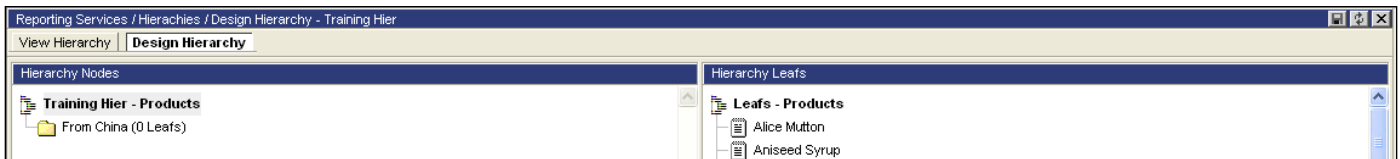
- 1 From the **Design Hierarchy** page, right-click on the root node. The right-click menu appears:



- 2 From the right-click menu, select: **New Node**. The **New Node** dialog box appears:



- 3 In the **Name** field, enter a name; for example, From China.
- 4 Click **Save**. The node is now added to the root node or top level of the of the hierarchy structure.



### Associating a Leaf Node with a Hierarchy Node

A leaf node can only be associated with one hierarchy node; that is, a leaf node can only exist in one place in the hierarchy.

**Note**— Data caches must be created before a leaf node can be associated to a hierarchy node.

When associating a leaf node with a hierarchy node, a user can do so:

- Using the scavenge utility to select
- Manually entering the name of the leaf node

**Note**— If a user adds a leaf node manually, it must exactly match a record that exists in the table to which the user's hierarchy refers. Therefore it is often safer to add a leaf node by scavenging. Scavenging reduces the chance of error and speeds the association of the leaf node with the hierarchy.

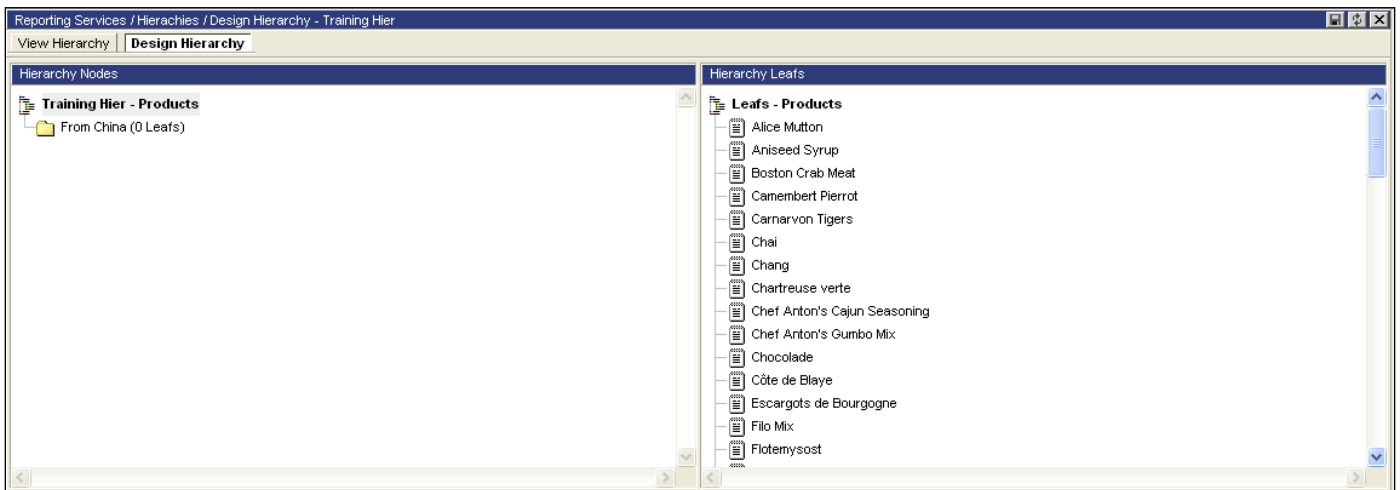
### Scavenging a Leaf Node

To scavenge a leaf node:

- 1 From the **View Hierarchy** page, select: **Scavenge**:

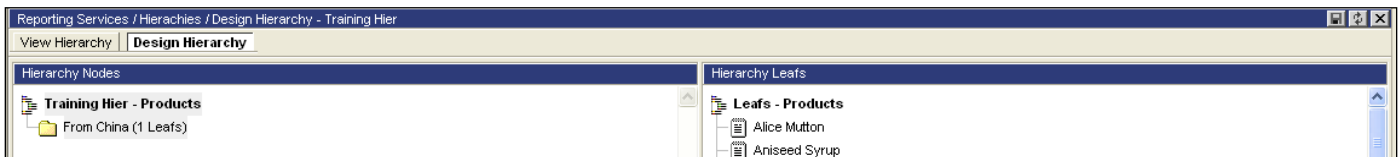


2 A list of leaf nodes, corresponding to actual data in the database appears:



In this example, leaf nodes for Products displays.

- 3 Find the leaf node desired to associate with either the root node, or the newly created node (for example From China).
- 4 Click and drag the leaf node (for example Chai) to the hierarchy node (for example From China). The number next to Leafs changes from 0 to 1:

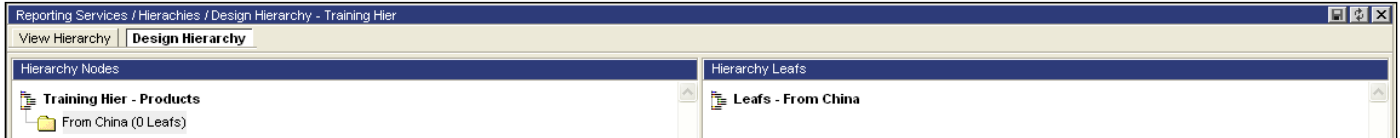


### Manually Associating a Leaf Node with a Hierarchy Node

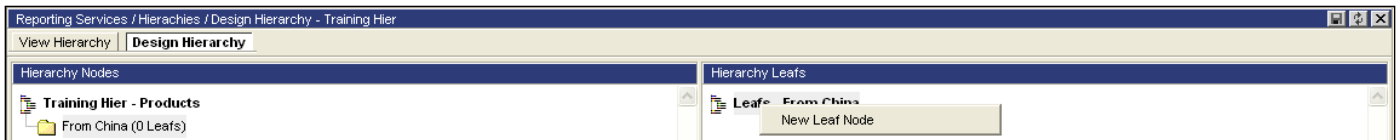
As an alternative to using the Scavenge utility to associate a leaf node with a hierarchy node, a user can manually enter the name of the leaf node instead of selecting it.

To manually associate a leaf node with a hierarchy node:

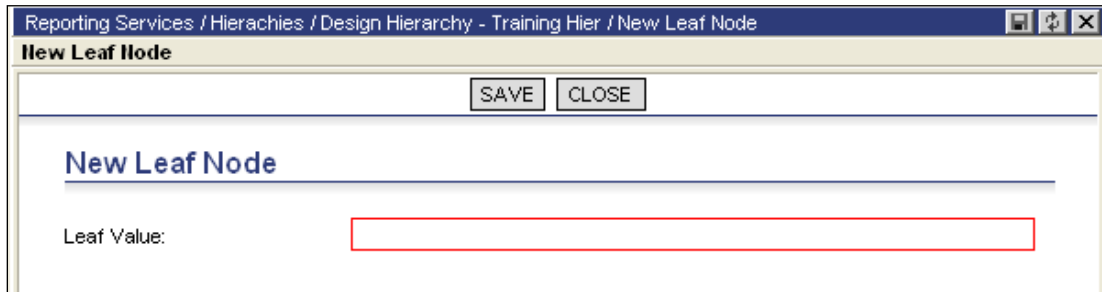
- 1 From the **Design Hierarchy** page, double-click on the hierarchy node, for example From China. The Leaf Node listing appears as follows:



- 2 Right-click on **Leafs** and select: **New Leaf Node**:



The **New Leaf Node** dialog box appears:



- 3 In the **Leaf Value** field, enter a name.
- 4 Click **Save**.

### Optimizing a Hierarchy

When building a new hierarchy or making changes to an existing hierarchy, users must optimize it to connect to the database.

- 1 When finished removing and/or adding nodes in the hierarchy, select: **View Hierarchy**, and then select: **Optimize**:

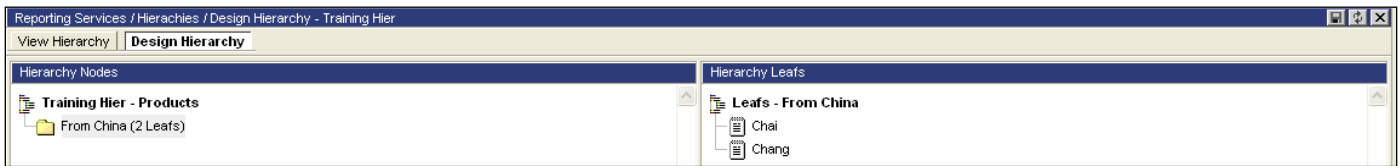


- 2 The newly associated leaf nodes are now available throughout the Reporting Services application.

### Changing the Leaf Node, Hierarchy Node Association

To change the leaf node, hierarchy node association:

- 1 Double-click the hierarchy node where the leaf node currently exists. A list of the nodes or leaf nodes, associated with the selected node, appears in the right portion of the page:

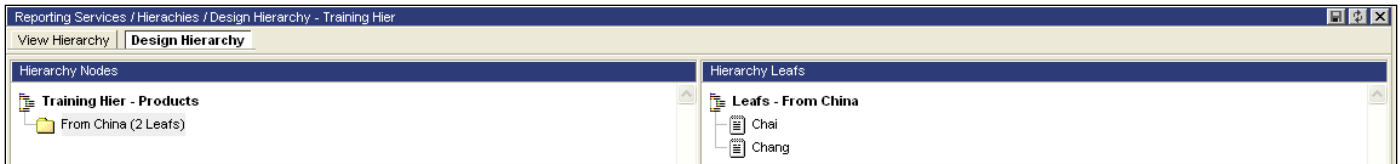


- 2 Click and drag a leaf node to another hierarchy node (in the left portion of the page).
- 3 To ensure that the leaf node moved is now located in the correct hierarchy node, right-click the hierarchy node where the leaf node was moved. The right-click menu appears.
- 4 From the right-click menu, select: **Show Leaf Node**. A list of the leaf nodes, associated with the hierarchy node, appears in the right portion of the page. A user should see the name of the leaf node moved.

### Disassociating a Leaf Node from a Hierarchy Node

To remove a leaf node from a hierarchy node:

- 1 Double-click the hierarchy node where the leaf node currently exists. A list of the leaf nodes associated with the hierarchy node appears:

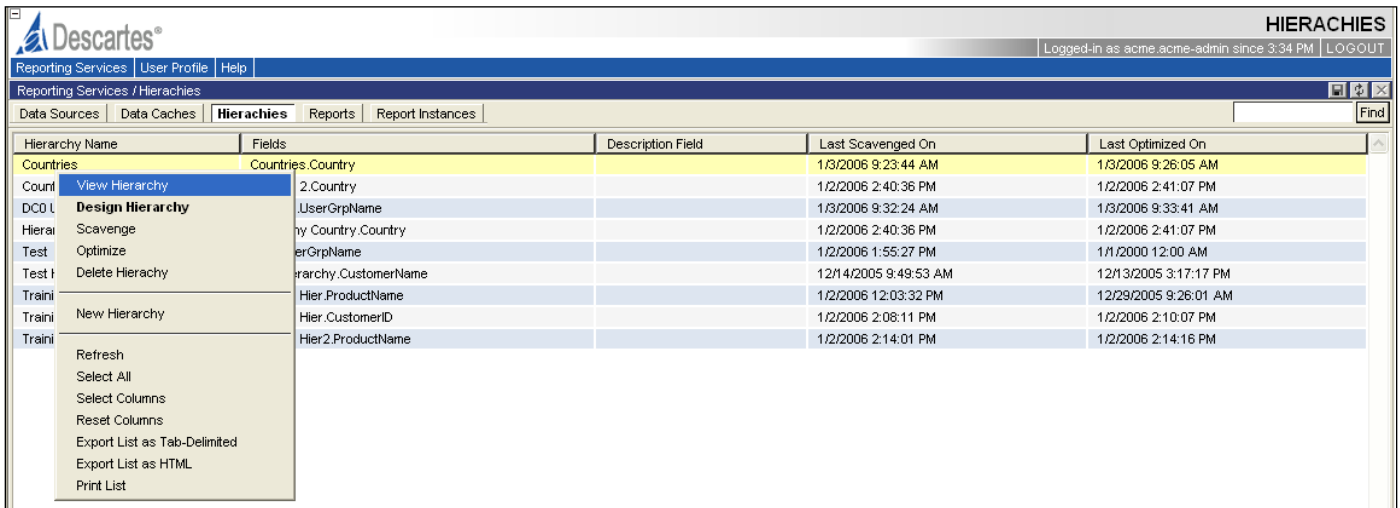


- Click the leaf node desired to remove (in this example, Chai) and drag it to the top level of the hierarchy (the node at the top of the hierarchy, designated with the icon — in this example Training Hier – Products). The leaf node is now available for scavenging and adding to other nodes.

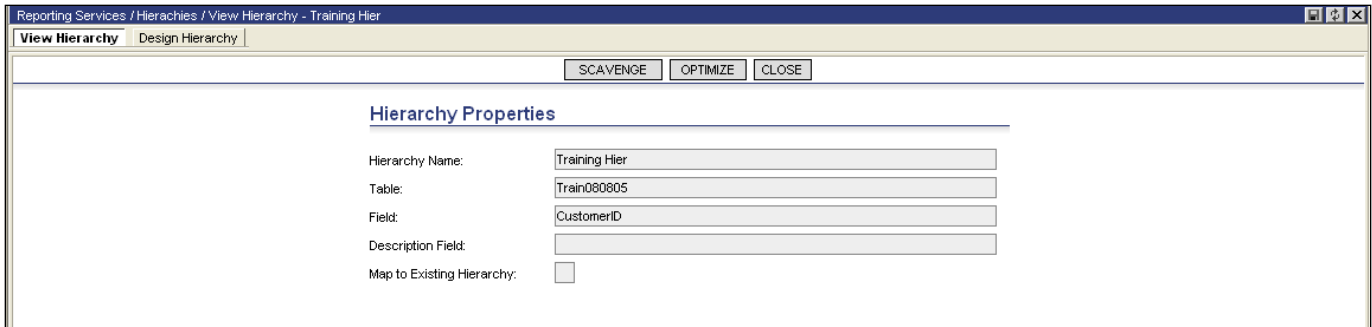
### Viewing Hierarchy Properties

To view hierarchy properties:

- From the main menu, select: **Reporting Services > Ρεπορτινγ Hierarchies**. The **Hierarchies** page appears listing the hierarchies that currently exist.
- Right-click the desired hierarchy to view the properties and select: **View Hierarchy**:



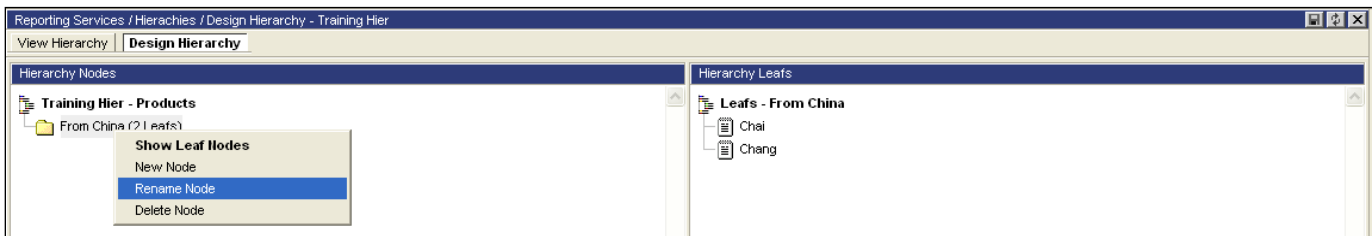
The **Hierarchy Properties** page appears:



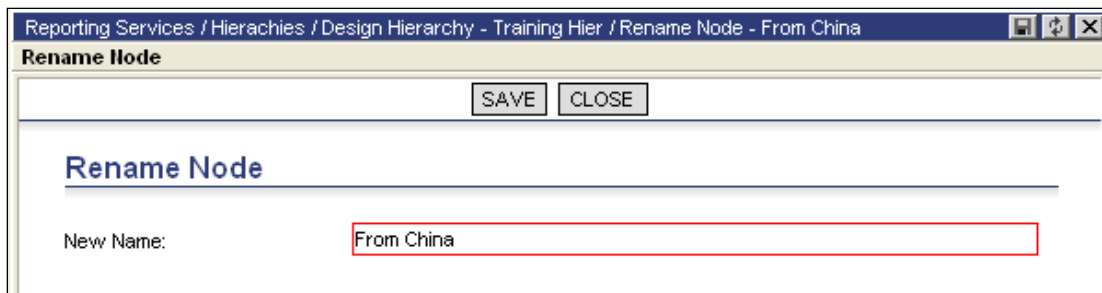
### Renaming a Hierarchy Node

To rename a hierarchy node:

- 1 Right-click the hierarchy node desired to rename. The right-click menu appears:



- 2 From the right-click menu, select: **Rename**. The **Rename Node** dialog box appears:



- 3 In the **New Name** field, enter the new name for the node.
- 4 Click **Save**.

### Deleting a Hierarchy

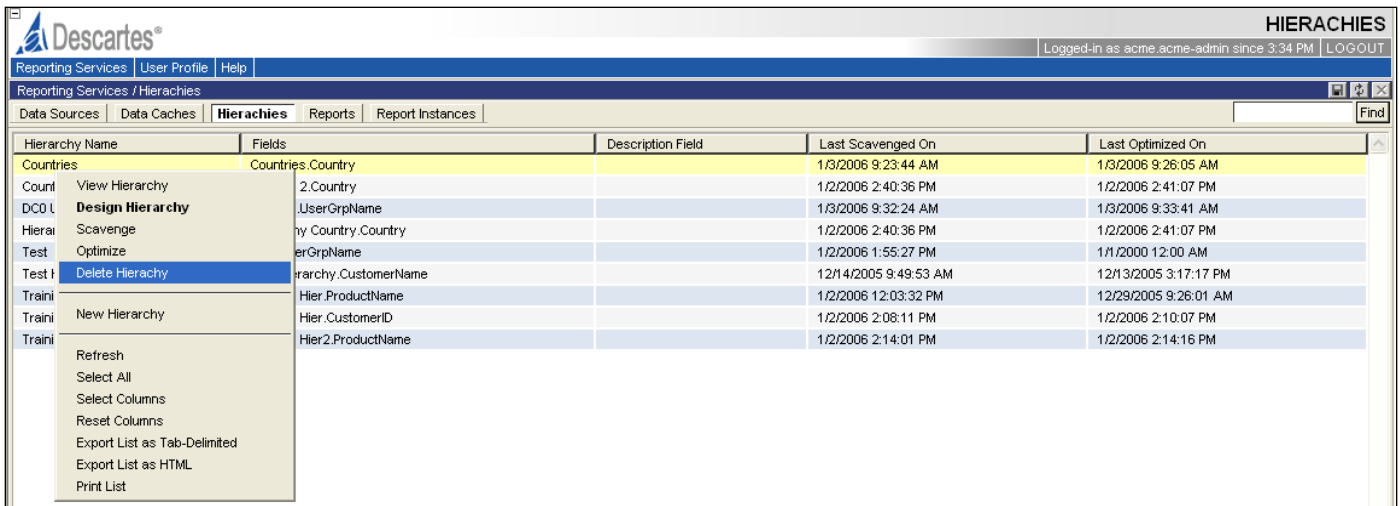
Users can delete an entire hierarchy, or delete the nodes in a hierarchy (and the leaf nodes they contain).

**Note**— Leaf nodes can only be deleted by deleting their parent node.

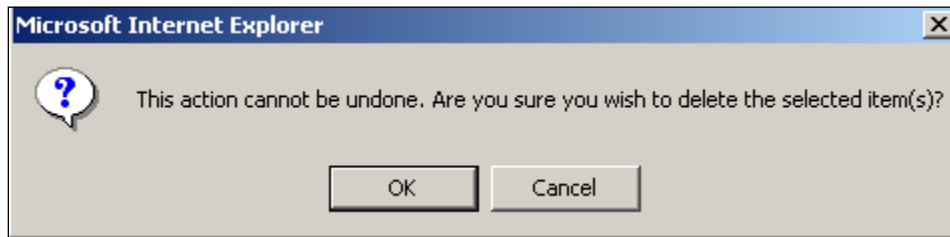
- ➡ **Note**— If the hierarchy is used as a selection criterion in a search, then deleting the hierarchy causes the selection criteria to be removed and the report no longer produces the desired results.

To delete an entire hierarchy:

- 1 From the main menu, select **Reporting Services > Hierarchies**. The **Hierarchies** page appears listing the hierarchies that currently exist. Right-click the desired hierarchy to delete:



- 2 From the right-click menu, select: **Delete**. A warning message appears:



- ➡ **Note**— Users can only delete one hierarchy at a time.

- 3 Click **OK**. The hierarchy is removed.

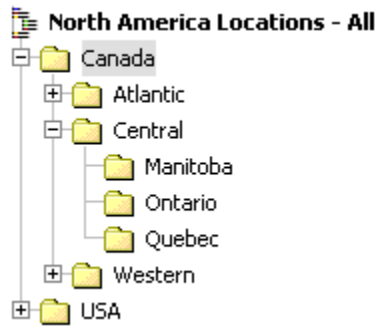
### Deleting a Hierarchy Node

When a user deletes a hierarchy node, the leaf nodes associated with it are also removed.

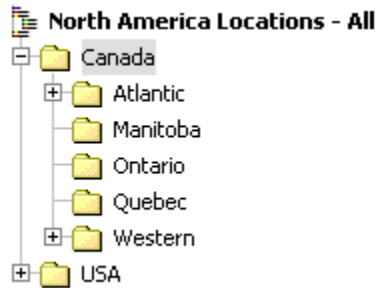


If a deleted node has child nodes, the child nodes move up the hierarchy to the level where the deleted node was.

For example, the following illustrates a hierarchy that represents locations in North America.

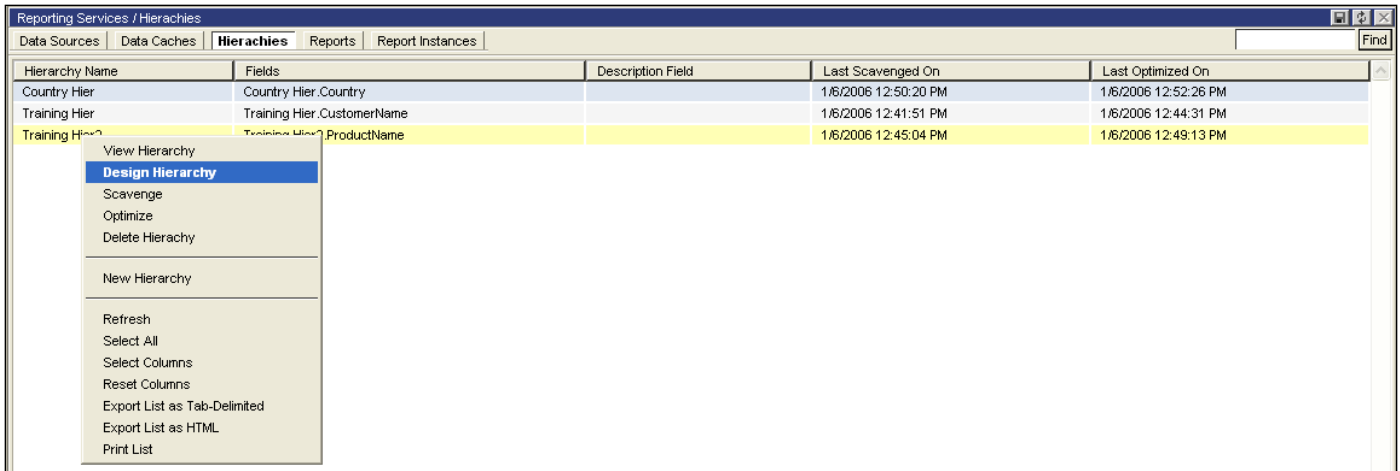


When a user deletes the Central node, its three child nodes (Manitoba, Ontario, and Quebec) move up one level and become child nodes of the Canada node. The following illustrates the previous hierarchy after the Central node is deleted.

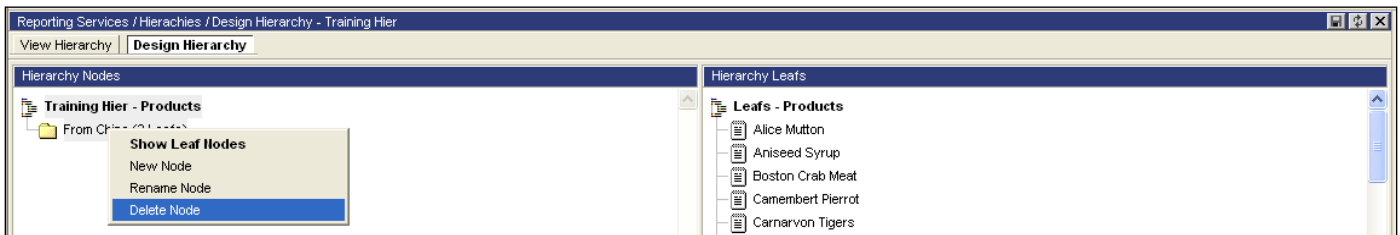


To delete a hierarchy node:

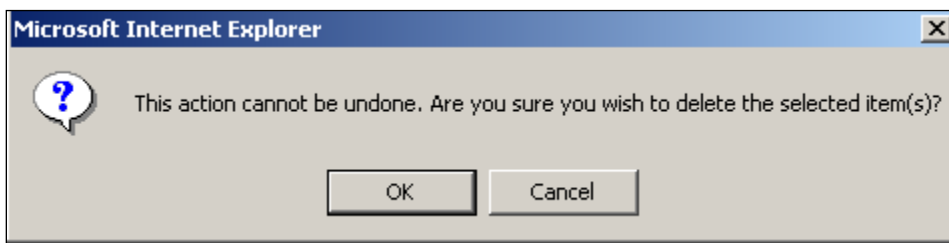
- 1 From the main menu, select: **Reporting Services > Reporting Hierarchies**. The **Hierarchies** page appears listing the hierarchies that currently exist, right-click on the hierarchy that contains the node desired to delete. Select **Design Hierarchy**:



2 The **Design Hierarchy** page appears showing the hierarchy's nodes. Right-click the desired node to delete and select: **Delete**:



3 A warning message appears:



4 Click **OK**. The node is deleted from the hierarchy, and the child nodes move up to the deleted node's level, as described previously.

## Appendix A – Web Queries

Web Query, a CSV file data importing feature, can pull data from a web URL into a spreadsheet, use any custom formula adjacent to the downloaded data, and refresh the data automatically each time the file is reopened. It is available in Excel 97 and newer versions.

Web Query works well with the printer-friendly view of data in Reporting Services. The loaded data that is stored on the Reporting Services server from within Excel has many applications. Users can pull data from multiple Reporting Services reports into a single file, merge the data with other data not maintained within Reporting Services, and consolidate it into pivot tables, charts, and data dashboards that refresh automatically at fixed intervals.


### How Web Queries Work

Excel Web Query files are text files with a .iqy extension that store the URL for retrieving results directly into the spreadsheet. When you double-click one of these files, the file opens in CSV format and a warning message pops up. When you click **Open**, if you are opening user reports, a dialog box asking for Login Name will pop up; however, if you are opening shared reports, a Windows authentication window pops up. See *Reporting Services Web Queries Application* below.

After authenticating the user, the data starts downloading. A **Refresh** button is available in the toolbar when you select a cell in the results table. The toolbar also has a button called **Data Range Properties** that allow you to specify automatic refresh and other options.

### Reporting Services Web Queries Application

Reporting Services Web Queries application makes it easy for all users to access reports using web queries. It generates web query files and makes them available on a web server within a user's network.

 **Note**— This application must be hosted with a user's network in order to use Windows security to safeguard access to the data. A Windows authentication window pops up within Excel when the data is loaded.

Hosting the application is useful when sharing reports with the organization, where all uses of the data do not have a Reporting Services user account. Access can also be controlled for the Reporting Services user. The application can be configured to bring up an additional dialog box that will prompt users for their Reporting Services login credentials. Reporting Services Web Queries stores one or more sets of configurations to support either one or both of these methods to secure access to the data.

## Setting Up Reporting Services Login Accounts

➡ **Note**— ONLY a Security Administrator for the organization can set up Reporting Services Logins.

The steps below assume that two user groups to segregate user reports from shared reports are needed, and that these reports are designed by the same user. For use cases that differ from this, the security settings could be different from what is described below.

To setup the two new user groups:

- 1 Login to Reporting Services, and click **Organizations** from the **Setup** menu.
- 2 Right-click on your organization and select **User Groups**.
- 3 Right-click within the **User Groups** page and select **Add New User Group**.
- 4 In the Name field, enter **Web Query User Reports** and click **Save**.
- 5 In the **Assign Roles** tab, add **RPS – Regular User** and click **Save**.
- 6 In the **Assign Rights** tab, add **Hierarchy, RPS – Dataview, RPS – DataSubView** and **RPS – Report with Logged-In Organization access**, and **RPS – Report Instance with User's User Group access**.
- 7 Click **Save**, and then **Resecure**.

## Saving a Report as a WebQuery File

To save a report as a Web Query Excel file:

- 1 Select **Reporting Services > Report Instances** from the main menu. The **Report Instances** page appears.
- 2 Right-click on a report in the list and select **Save as WebQuery** from the right-click menu.

Reporting Services / Report Instances

Data Sources | Expression Functions | Data Caches | Hierarchies | Custom Prints | Reports | **Report Instances**

Report validity legend: ■ Valid ■ Not Cached ■ Invalid ■ Trend Report

ReportName	Description	Data Cache
PO-POLine		Acme PO-POLine
Totals By Week, Seller	<b>Run Report Instance</b>	Acme PO-POLine
Totals By Seller, Week wFilter	Run Report Instance Version	Acme PO-POLine
PO By given weekno	Edit Report	Acme PO-POLine
All PO with Lineitem 1000.00	Edit Report Instance	Acme PO-POLine
By State, WeekNo, Seller	Save As WebQuery	Acme PO-POLine
Daffy Duck PO Count	Enable Trend Reports	Acme PO-POLine
Item ordered by ItemPrice (Acme)	Disable Trend Reports	Acme PO-POLine
Max price for Items (Wile E Coyote)	New Trend Report	Acme PO-POLine
	Delete Report Instance	
	Refresh Data Cache	
	Tabular View	
	Chart View	
	Print Charts	
	<hr/>	
	New Report Instance	
	<hr/>	
	Refresh	
	Select All	
	Select Columns	
	Reset Columns	
	Export List as CSV	
	Export List as Tab-Delimited	
	Export List as HTML	
	Print List	

The system will display a prompt to save the Web Query Excel file. Click **Save** and select a location.

- 3 Open the Web Query Excel file.
- 4 Enter the Company, User Name and Password for Reporting Services in the series of prompts. The file will pull all related data from the system and populate the spreadsheet. This may take a few minutes.

	A	B	C	D	E	F	G	H
1	Seller	PONumber	SeqNumber	Item	Qty	UnitPrice	ItemPrice	
2	Wile E. Coyote (2187)							
3	Wile E. Coyote	1992 (6)					3867.76	
4	Wile E. Coyote	1992	1	Acme - Anfill	12	19.99	239.88	
5	Wile E. Coyote	1992	2	Acme - Female Road Runner Costume	19	140.75	2674.25	
6	Wile E. Coyote	1992	3	Acme - Rocked Sled	3	199.99	599.97	
7	Wile E. Coyote	1992	4	Acme - School Of Self Defense	11	20	220	
8	Wile E. Coyote	1992	5	Acme - Triple Strength Fortified Leg Muscle Vitamins	18	2.99	53.82	
9	Wile E. Coyote	1992	6	Acme - Dehydrated Boulders	16	4.99	79.84	
10	Wile E. Coyote	1988 (6)					5937.43	
11	Wile E. Coyote	1988	1	Acme - Railroad Ties	19	48.25	916.75	
12	Wile E. Coyote	1988	2	Acme - School Of Self Defense	17	20	340	
13	Wile E. Coyote	1988	3	Acme - Atom Re-Arranger	12	20.29	243.48	
14	Wile E. Coyote	1988	4	Acme - Cannon	24	50.5	1212	
15	Wile E. Coyote	1988	5	Acme - Rocket Sled	24	110.99	2663.76	
16	Wile E. Coyote	1988	6	Acme - Helmet	22	25.52	561.44	
17	Wile E. Coyote	1984 (6)					5083.5	
18	Wile E. Coyote	1984	1	Acme - Railroad Ties	12	48.25	579	
19	Wile E. Coyote	1984	2	Acme - Little Giant Do-It-Yourself Rocket-Sled Kit	13	80.15	1041.95	
20	Wile E. Coyote	1984	3	Acme - Earthquake Pills	11	120.05	1320.55	
21	Wile E. Coyote	1984	4	Acme - Iron Pellets	21	1.5	31.5	
22	Wile E. Coyote	1984	5	Acme - School Of Self Defense	7	20	140	
23	Wile E. Coyote	1984	6	Acme - Female Road Runner Costume	14	140.75	1970.5	
24	Wile E. Coyote	1957 (6)					3042.47	

5 Be sure to save the file before closing.