Information Builders

IBM DB2 Web Query for IBM i

Version 2 Release 1.0

Contents

Preface

This documentation describes the functions that are available for IBM DB2 Web Query for IBM i.

How This Manual Is Organized

This manual includes the following chapters:

	Chapter/Appendix	Contents
1	Introducing IBM DB2 Web Query for IBM i	Provides an overview of IBM DB2 Web Query for IBM i and describes the end-user components and tools you use to run, view, create, and edit reports.
2	Using the Reporting Interface	Describes the reporting interface for IBM DB2 Web Query for IBM i, which you can use to select a domain, use items (reports, graphs, URLs) in the Domain Tree, search top-level folder, access reporting tools such as InfoAssist.
3	Visualizing Trends in Reports	Describes how to insert visual representations (in the form of bar graphs) of selected data directly into your report output.
4	Creating a Reporting Procedure With SQL Report Wizard	Describes how to use the SQL Report Wizard.
5	Using Report Broker	Describes how to access and use Report Broker and the Report Broker Scheduler tool.
6	Using the DB2 Web Query Spreadsheet Client Add-in	Describes how to use the Spreadsheet Client Add-in to connect Microsoft Excel to DB2 Web Query reporting tools to access and analyze data on IBM i.

	Chapter/Appendix	Contents
7	DB2 Web Query Change Management	
A	Running DB2 Web Query Reports Using the Java Batch Run Utility	Describes how to run DB2 Web Query Reports using the Java Batch Run Utility.

Documentation Conventions

The following table lists and describes the conventions that apply in this manual.

Convention	Description
`THIS TYPEFACE` or `this typeface`	Denotes syntax that you must enter exactly as shown.
this typeface	Represents a placeholder (or variable), a cross-reference, or an important term.
underscore	Indicates a default setting.
this typeface	Highlights a file name or command. It may also indicate a button, menu item, or dialog box option you can click or select.
Key + Key	Indicates keys that you must press simultaneously.
`{ }`	Indicates two or three choices; type one of them, not the braces.
`[ ]`	Indicates a group of optional parameters. None is required, but you may select one of them. Type only the parameter in the brackets, not the brackets.
`|`	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
`...`	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (...).

Convention	Description
. . .	Indicates that there are (or could be) intervening or additional commands.

1 Introducing IBM DB2 Web Query for IBM i

This documentation provides an overview of IBM DB2 Web Query for IBM i. It also describes the components and tools you use to run, view, create, and edit reports. Use this documentation to learn about the structure and the capabilities of each component and tool.

Topics:

IBM DB2 Web Query for IBM i Overview

IBM DB2 Web Query for IBM i is a complete, Web-ready data access and reporting system, which takes advantage of the low-cost, low-maintenance, and wide distribution capabilities of the World Wide Web and internal corporate Web sites. This system also provides a streamlined reporting environment that virtually eliminates the complexities of today's corporate data.

Reporting Concepts

The reporting environment includes top-level folder which are the highest level of organization. Top-level folder provide data on a particular topic (such as sales, inventory, or finance). The data is stored in different forms in the following domain tree components: Reports and Other Files. The Other Files folder, available to administrators and developers, can contain images (.gif, .jpg), HTML files, and other files that you can use to customize and enhance reports.

Reporting Features

InfoAssist is a Rich Internet Application (RIA) that uses AJAX (Asynchronous JavaScript and XML) technology. This powerful ad hoc reporting tool enables rapid and efficient design and deployment of reports and charts. It uses an interactive and fully customizable WYSIWYG (What You See Is What You Get) development environment. Users receive instant feedback throughout the development process to ensure that reports and charts are properly built.

Note: IBM supports only reports specifically developed in Web Query.

Reporting Interface

The reporting interface is ideal for users who quickly need to run reports. Check your installation manual for information about browser compatibility. This interface offers you the ability to access InfoAssist.

The reporting interface is an HTML-based front-end that allows you to:

- Run reports.
- Create reports and graphs using InfoAssist.
- Save reports and graphs.
- Share reports with other users.
- Edit reports.
- Manage Metadata.

Development Environment

The DB2 Web Query Developer Workbench product is an optional add-on Windows-based development environment for creating applications. Developer Workbench provides intuitive GUI tools that free developers from the hassles of coding, thereby allowing them to concentrate on interface design, business logic, and data manipulation. Using Developer Workbench, developers can build powerful Web page interfaces that allow users to run customized reports.

Security Concepts

In this section:

The following outlines role-based security concepts.

Web Query Groups

Web Query Groups are pre-defined to represent a specific set of functions or role. Global Groups define a role at the Web Query product level and apply across folders whereas folder Groups define a role at the top level folder level.

There are two global Groups are defined as follows.

Group Name	Role Description
WebQueryAdministrator	Can perform all functions in Web Query and can access all folders.
DevWorkBench	Can connect to Web Query using Developer Workbench.

The six folder Groups are defined as follows.

Group Name	Role Description
Folder-run	Can run procedures in the respective folder.
Folder-analyst	Folder-run role plus ability to develop and run procedures in private folders.

Folder-dev	Folder-analyst role plus ability to develop, run and publish procedures in published folders within the respective folder.
Folder-dba	Can manage metadata in the respective folder's application folder.
Folder-sched	Can manage schedules and distribution lists in the respective folder.
Folder-admin	Can manage users in the respective folder. **Note:** A Folder-admin cannot acquire or release a developer or group profile license.

Each top level folder that is created will automatically have the six folder based groups created in the Web Query repository.

For example, if you add a top-level folder named *Sales*, the following six groups are automatically created:

- **Sales-run**. Can run reports in the Sales folder.
- **Sales-analyst**. Can develop and run reports in private folders within the Sales folder.
- **Sales-developer.** Can develop, run, and publish reports in a published folder within the Sales folder.
- **Sales-dba.** Can manage metadata in the Sales folder application directory.
- **Sales-sched.** Can manage schedules and distribution lists in the Sales folder.
- **Sales-admin.** Can add a user to or remove a user from the Sales folder group.

Users are added to one or more groups to provide the functionality they require to perform their job. This is done using the Security Center. For more information on how to add users to Web Query groups, see *Security Center* on page 23.

2 Using the Reporting Interface

When you enter the reporting interface you are automatically connected to IBM DB2 Web Query for IBM i.

From the reporting interface, you can:

- Navigate the Repository tree.
- Right-click any item to perform different functions on that item.
- Access InfoAssist to develop reports, charts, documents, or active dashboards.

Note: The browser Back and Forward buttons cannot be used to navigate between pages in the interface, or from an interface page to a page viewed before connecting to the interface.

Topics:

Recommended Browser Setup

The following browser setup is recommended for use with the interface:

- ❑ Do not cache page content.
- ❑ Disable pop-ups for reporting environment.

For information on browser setting options, see the browser Help system.

Logging into DB2 Web Query

How to:

Log into DB2 Web Query

The Port numbers have changed for Web Query 2.1.x to allow it to coexist with Web your 1.1.x installation. The port number in the URL is *always* 12331 - this is the pre-configured port for DB2 Web Query 2.1.x.

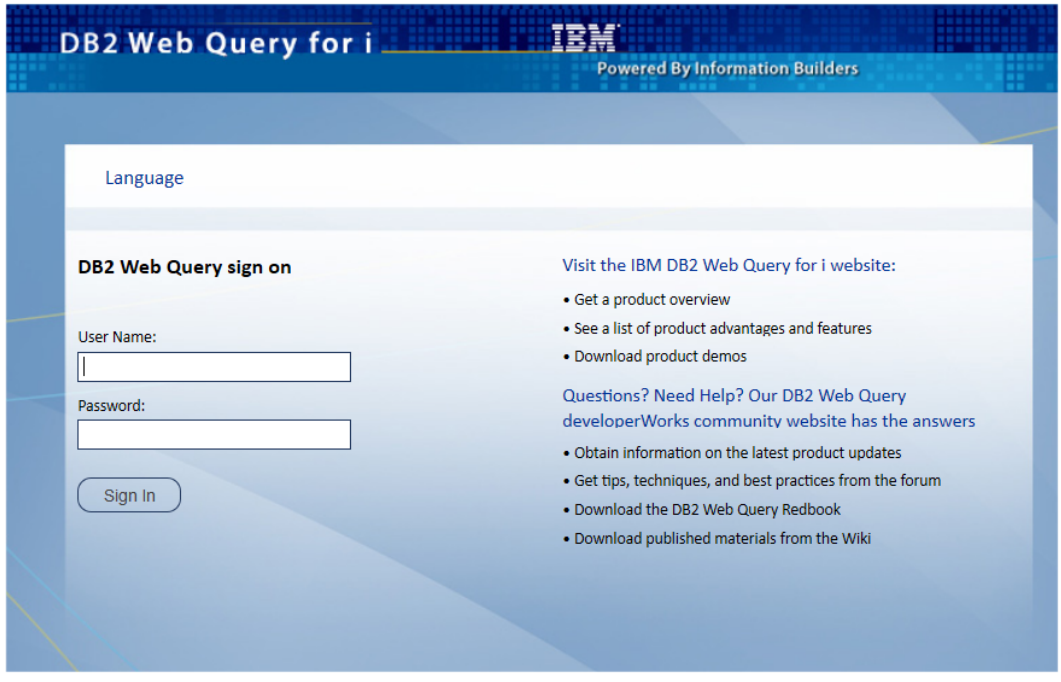
Procedure: How to Log into DB2 Web Query

In the following task, the system name is MYSYSTEM.ABC.ACME.COM:

1. Enter the following internal URL:

```
http://mysystem.abc.acme.com:12331/webquery
```

A Web page opens like the example shown in the following image.



2. Sign onto DB2 Web Query with the same user profile and password that you use to access the IBM i machine.

   Tip: Add your DB2 Web Query URL to your browser Favorites.

If your DB2 Web Query instance was configured with Dynamic Language selection, your login provides a Language pull down as shown in the following image.

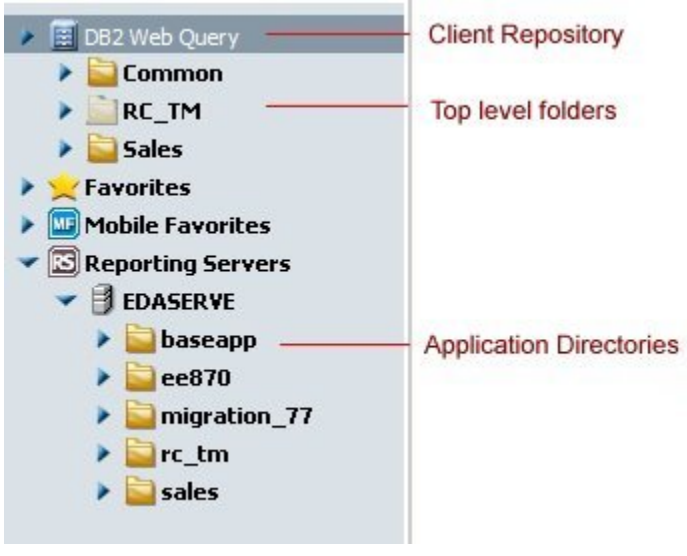
Web Query Folders

In this section:

Top Level Folders

Application Directories and Metadata Management

For Web Query 2.1.0, almost all content is stored in the Web Query Client (DB2) as shown in the following image. The only exception is Web Query metadata. Synonyms are still stored in the IFS in application directories.



Web Query content consists of procedures, HTML files, Stylesheets, images, Report Broker schedules and distribution lists. This content is stored in one or more folders.

Top Level Folders

How to:

Hide the Common Top Level Folder

Top level folders reside at the top of the Web Query Client and are used to segregate applications. For example, you may want to have a top level folder for Sales and another folder for Human Resources (HR) where users can be assigned to one or more folders. A user can have a different set of roles for each folder. For example, a user can be assigned to only run reports in HR but takes on a developer/dba role in Sales.

Each top level folder is created with its own set of Web Query Groups that define the authorization rules for the folder.

The Common top level folder exists for all Web Query installations. The purpose of this folder is to contain content that can be run by all users. If you prefer not to display the Common top level folder, there is an option to hide it.

Procedure: How to Hide the Common Top Level Folder

Note: Customers that have migrated from Web Query 1.1.x will have their Common Domain contents migrated to the Common top level folder.

1. Login to Web Query using the QWQADMIN user ID.
2. Right-click on the *Common* top level folder and click *Hide*.

Application Directories and Metadata Management

Application directories are where synonyms are created. They are IFS directories which map to the following path:

```
/qibm/UserData/qwebqry/apps
```

In Web Query 1.1.x, the baseapp application directory is the default location for newly created synonyms. Synonyms in the baseapp directory are accessible from all Domains. If Developer Workbench was licensed, it could be used to create new application directories which could be linked to a Domain's application directory path.

In release 2.1.0, the baseapp application directory fulfills the same role in 1.1.x. However, a new application directory is created for every top level folder and is automatically linked to the folder as the 1st directory of the application directory path.

The application directory path is searched whenever a synonym is required to:

1. Develop a new procedure
2. Edit an existing procedure
3. Run an existing procedure

The automatic creation of this application directory and making it first in the application directory path allows you to segregate synonyms without using Developer Studio. Synonyms that only pertain to one top level folder or application should be created in that folder's application directory. Synonyms that need to be shared across all applications should be copied or created in the baseapp directory.

Note: If a synonym with the same name exists in both application directories of the application directory path, the first one found in the path will be used.

Security Center

In this section:

Adding an IBM i Group Profile to a Web Query Folder-Run Group

How to:

Launch the Security Center

Create a User

Designate a Web Query Administrator

Add a User to a Group

Assign an IBM i Group Profile to a Folder-run Group

Remove a User From a Web Query Group

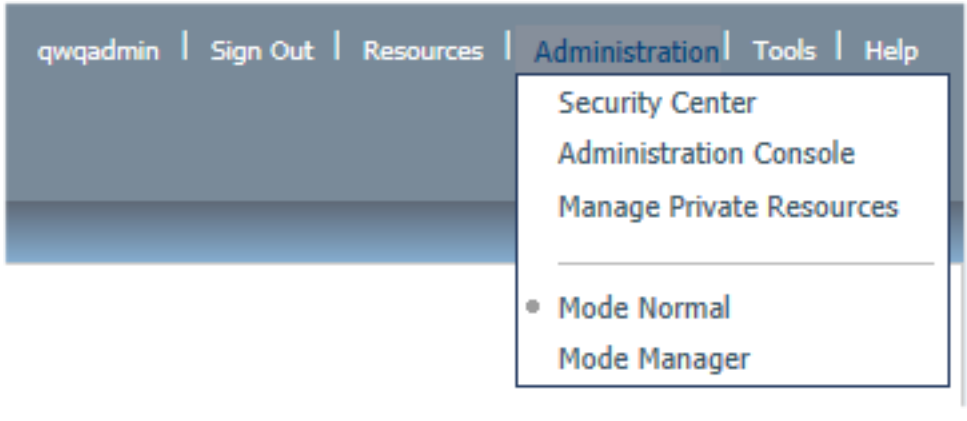
Change a User Password

Manage a User and Their Attributes

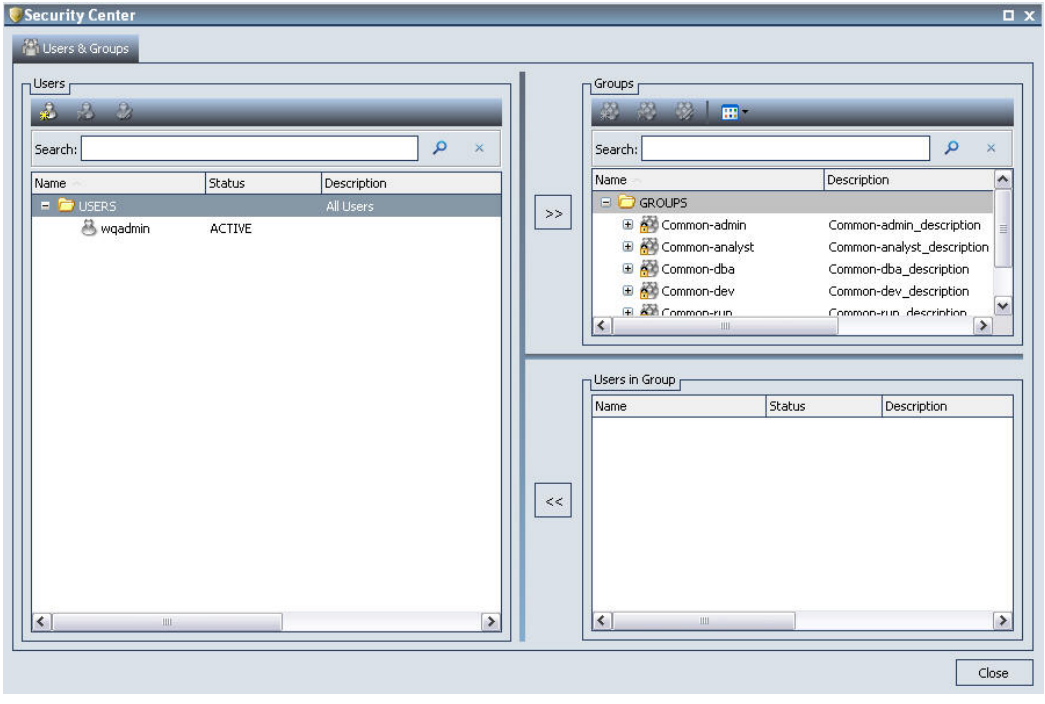
User Management is now handled through the Web Query Security Center. This is a graphical user interface that simplifies Web Query user administration because it is tightly integrated with License Manager and will dynamically update license information.

Procedure: How to Launch the Security Center

1. Sign into Web Query as *QWQADMIN*.
2. On the menu bar, right-click *Administration*, and select *Security Center*.



The Security Center opens, as shown in the following image.

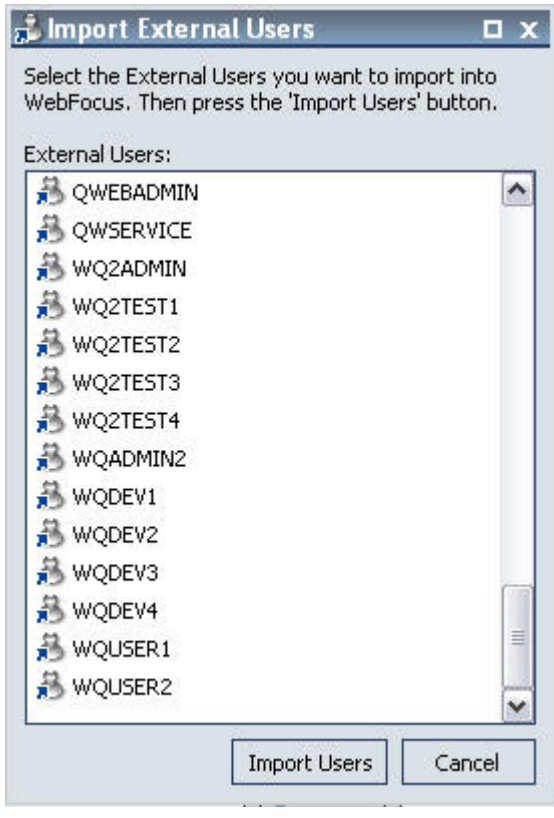


Procedure: How to Create a User

Once you add a new folder, you can create users and add them to a group in that folder.

1. Launch the Security Center.

2. Click the *New User*  icon. The New User dialog box opens, as shown in the following image.



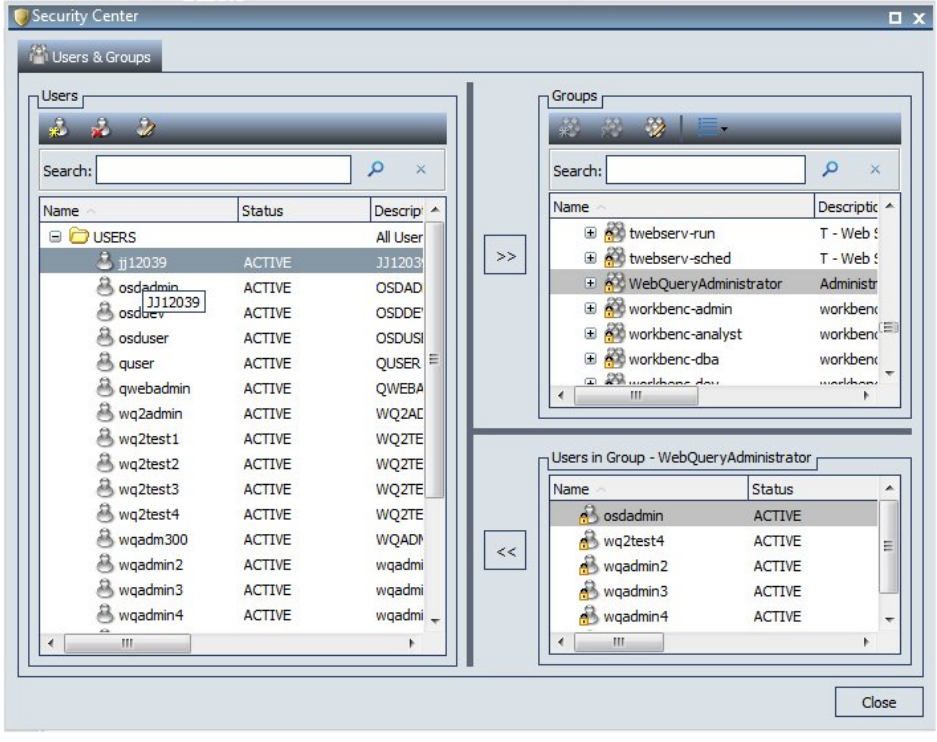
3. Select one or more users from the list and click the *Import Users* button to add the user ID(s) as a named user (developer) to Web Query 5733WQX.

Procedure: How to Designate a Web Query Administrator

The first task in user management is for the owner of the QWQADMIN user ID to add a user to Web Query and assign it the role of a Web Query Administrator. This user ID will in turn be able to create top level folders and perform user management. These users cannot add another Web Query Administrator.

1. Launch the Security Center.
2. In the Users panel, select the user(s) to add to the group.

3. In the Groups panel, select the *WebQuery Administrator Group* as shown in the following image.



4. Click the *Add selected users to group* button to add the user to the group.

   Tip: You can also add users by dragging and dropping the selected users into a group.

5. Click *Done* or close the Security Center to exit.

   The owner of this newly added Web Query Administrator user ID can now login and manage the Web Query environment:

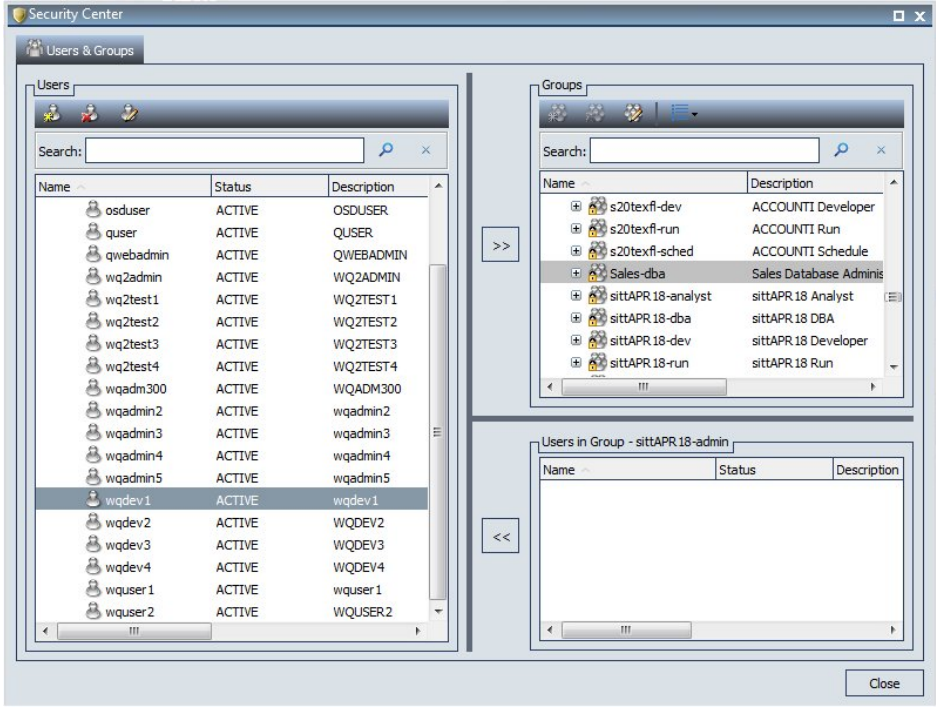
   - Create top level folders. See the Web Query manual for information on how to create new folders.
   - Launch Security Center to add users and assign them to folder groups.

Procedure: How to Add a User to a Group

This example assumes a Sales top level folder exists in the Web Query . The Web Query Administrator user ID or a user ID in the Sales-Admin group can add users to one or more of the six folder groups for the Sales top level folder.

1. Launch the Security Center.
2. In the Users panel, select the user(s) to add to the group.
3. In the Groups panel, select one or more groups that the user(s) will be added to.

   In the following image, the user wqdev1 is being added to the Sales-dba group. This will make the user a DBA within the Sales application folder.



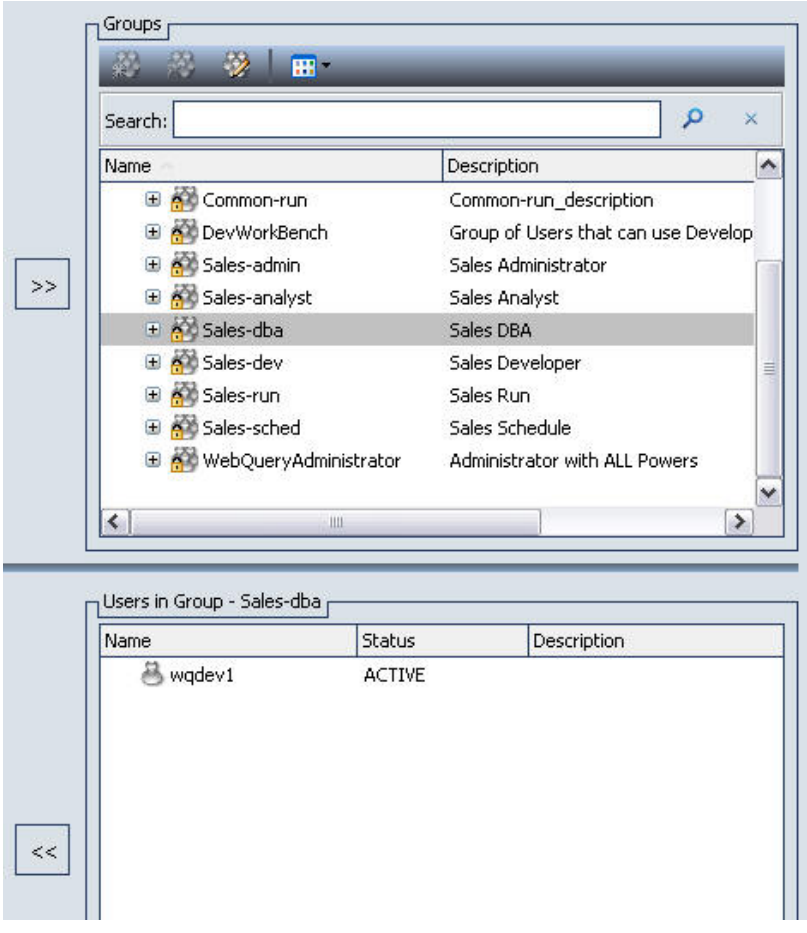
4. Click the *Add selected users to group* 

button to add the user to the group.

   Tip: You can also add users by dragging and dropping the selected users into a group.

5. Click *Done* or close the Security Center to exit.

The salesdev1 user is now in the Sales-dba group, as shown in the following image.



Adding an IBM i Group Profile to a Web Query Folder-Run Group

Just like in Web Query Release 1.1.2, IBM i group profiles are assigned to authorize a user for the Web Query Runtime Enablement feature. This section will describe how to add an IBM i group profile to a folder-run group.

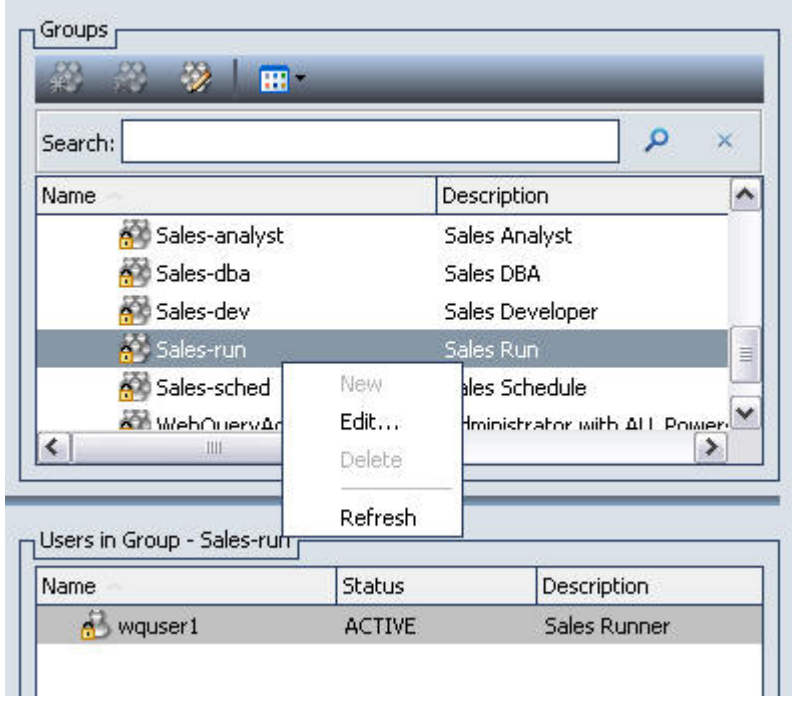
Note: The migration procedure performs this procedure for any group profiles that were assigned to users in Release 1.1.2.

Procedure: How to Assign an IBM i Group Profile to a Folder-run Group

This procedure assumes we have a Sales top level folder and the objective is to assign the MUSALES group profile to the Sales-run group to allow users with this group profile to run reports in the Sales top level folder.

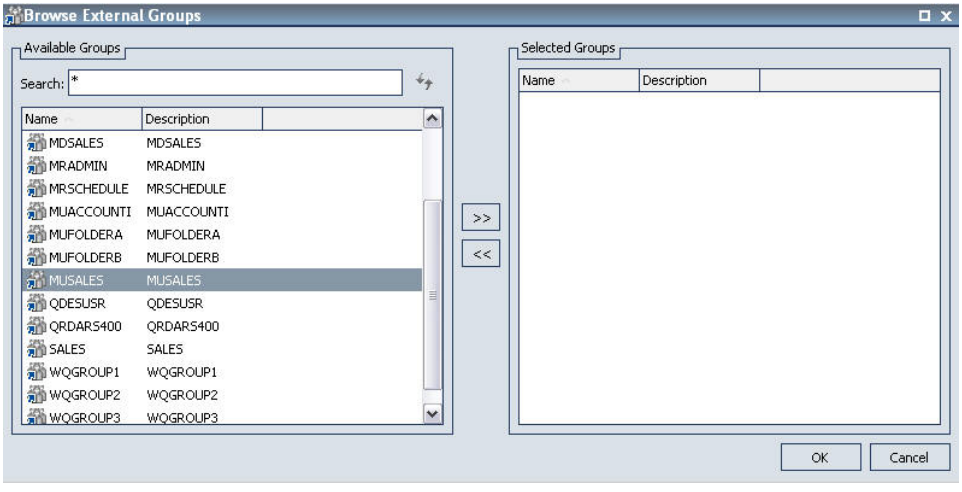
Note: Any existing group profile can be assigned to a Folder-Run group role, the group profile does not have to be an MUxxxxx group profile.

1. Login as a Web Query Administrator or folder administrator. Launch the Security Center.
2. In the Groups panel, select the folder-run group that should be associated with the IBM i group profile.
3. Click the *Edit Group* button or right-click the folder-run group and select *Edit*, as shown in the following image.



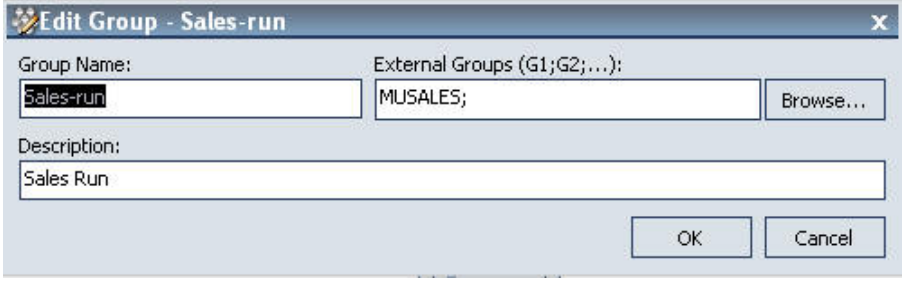
The Edit Group dialog appears.

4. Click the *Browse* button to retrieve a list of IBM i group profiles as shown in the following image.



5. Click the *Add all selected Groups* button to add the selected group profile to the Web Query folder-run group. In this example, we are adding IBM i group profile MUSALES to the Web Query Sales-run group.

6. Notice a Group is now associated with the Web Query folder-run group as shown in the following image.



7. Click *OK*.

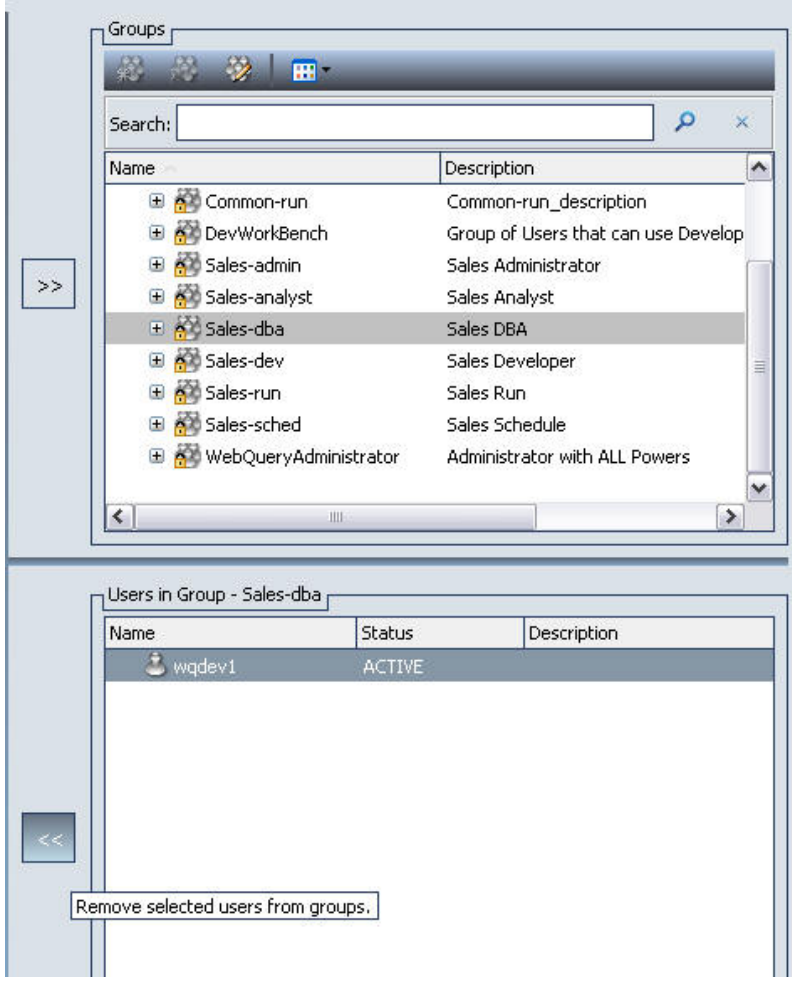
   Notice the Sales-run group icon has changed to indicate a linkage to an IBM i group profile.

8. Click *Close* to exit the Security Center.

Procedure: How to Remove a User From a Web Query Group

1. Launch the Security Center.

2. In the Groups panel, select the group that you want to modify. The members of the selected group are listed in the Users in Group panel, as shown in the following image.



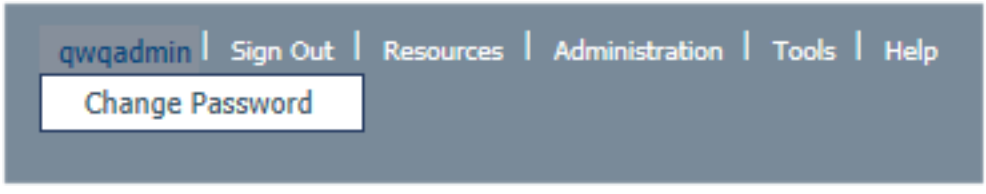
The reference to groups in this context do not refer to IBM i group profiles. In the proceeding image, a user is being removed from the Sales-DBA role and not an IBM i group profile.

3. In the Users in Group panel, select the user or users that you want to remove from the group. You can choose multiple users by pressing the Ctrl key as you make your selections.

4. Click the *Remove selected users from group* << button to remove the users from that group.
5. Click *Done* or close the Security Center to exit.

Procedure: How to Change a User Password

1. Click the user ID description on the menu bar and select *Change Password*.



2. Type the current password, then the new password, and then again type the new password to confirm the change.

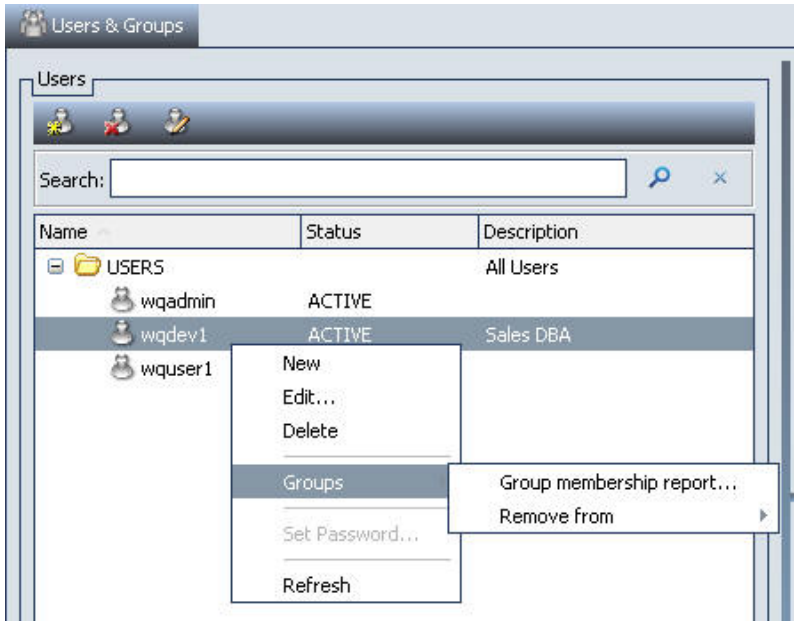
3. Click *OK* to save the changed password.

Procedure: How to Manage a User and Their Attributes

If you are an Administrator:

1. Launch the Security Center.

2. In the Users panel, right-click the user and select any one of the following options, as shown in the following image.



New

Creates a new user.

Edit

Edits the user attributes.

Delete

Deletes the user.

Groups

Opens a submenu that contains the following options:

- **Group Membership Report.** Generates a report listing all the groups to which the user belongs.
- **Remove from.** Opens a dialog box to remove the user from one or more groups.

Web Query Administration

In this section:

Web Query provides several administration consoles to manage the different components of Web Query. There are three consoles:

- **Administration Console.** Manages Web Query options and configuration settings, including Report Broker configuration settings.
- **Report Broker Console.** Manages the Report Broker distribution server, schedules and blackout dates.
- **Reporting Server Console.** Manages the reporting server configuration, for example, NLS, JVM and diagnostic settings.

Administration Console

How to:

Launch the Administration Console

This console is used to manage Web Query options and configuration settings, including Report Broker Distribution Server configuration settings. The Administration Console is only available to the QWQADMIN Administrator user ID.

Procedure: How to Launch the Administration Console

1. Login to Web Query using the QWQADMIN Administrator user ID.
2. Click the *Tools* option on the menu bar and select *Administration Console*. The Web Query Administration Console appears.

   Notice that there is a Report Broker section that is used to manage the Distribution Server Configuration settings.

   Note: Click the *Help* button for a detailed online Help on the Administration Console.

Report Broker Console

This console is used to manage the Report Broker distribution server, jobs, log files, blackout dates and global updates.

Reporting Server Console

How to:

Launch the Reporting Server Console

This console is used to manage the reporting server's configuration, for example, NLS, JVM and diagnostic settings. The Reporting Server Console is only available to the QWQADMIN user ID.

Procedure: How to Launch the Reporting Server Console

1. Login to Web Query as QWQADMIN.
2. Expand the Reporting Servers node.
3. Right-click *EDASERVE* and click *Server Console*. The Reporting Server console appears.

   Note: Click the *Help* option for a detailed online help on the Reporting Server Console.

Web Query Developer User Interface

In this section:

Once you log on to Web Query, you are presented with the Reporting page as the default view. The Reporting page displays the Repository tree in the left pane and the Output panel in the right pane, as shown in the following image. The menu bar displayed at the top of the window has commonly used commands, such as Sign Out and Help.

Describing the Repository Tree

You can access the DB2 Web Query tree, as shown in the following image. DB2 Web Query is the top-level node. It contains one predefined folder, Common. The Administrator manages the content in the Common folder.

The Repository tree, located on the left side of the page, contains your DB2 Web Query Content. The following image shows the Repository tree that is displayed when you are signed in to DB2 Web Query. The content is secured using the security system in a folder-based system similar to desktop operating systems. The content will differ for every user, including the public user, who will see only public content.

In order to separate your applications, you can create folders in the Repository. For example, you can have a Payroll folder and a Sales folder to separate these two applications. You can also create and store procedures, report output, and schedules in the Repository.

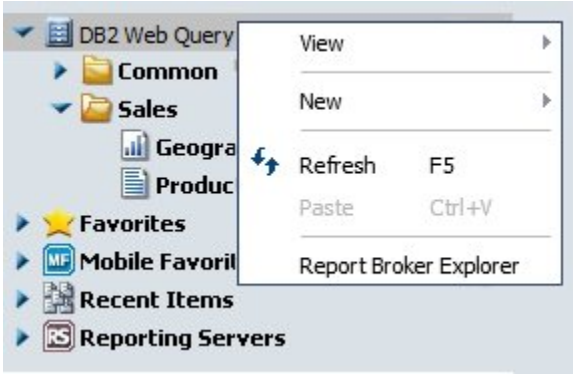
The right-click options in the Repository tree allow you to launch the development tool, schedule procedures for distribution, and administer users and authorization to objects.

- **DB2 Web Query.** The is where applications are developed. Its contents are folders, procedures, and scheduling objects.
- **Favorites.** The Favorites folder contains objects that have been added using the Add to Favorites option from the tree.
- **Mobile Favorites.** The Mobile Favorites folder contains procedures that have been added using the Add to Mobile Favorites option from the tree. These procedures are easily accessible from mobile devices, such as an Apple iPhone or Android phone.
- **Recent Items.** The Recent Items folder contains procedures that were recently run. Right-click and select *Clear Recents* to clear the contents of this folder.
- **Reporting Servers.** The Reporting Servers node appears for administrators only. Only one Reporting Server is configured with the product. This is where metadata is managed across applications.

Using Right-Click Options in the Repository Tree

In the Repository tree, you can right-click an object and select from a list of available options that are displayed in the context menu. Some options are available only to Administrators.

If you right-click the Repository tree, the options shown in the following image are available.



View

Allows you to view the contents of the Repository.

- Display By Title.
- Display By Name.

New Folder

Creates a new top-level folder.

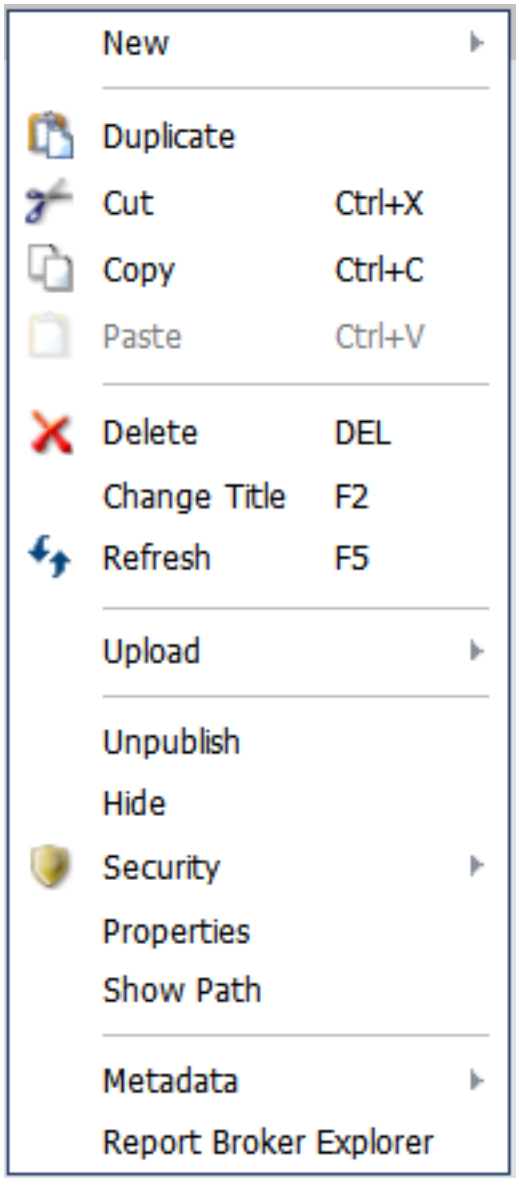
Refresh

Refreshes the Repository tree.

Paste

Pastes a copied item into the Repository.

If you right-click a top-level folder or subfolder in the Repository, the following options are available.



New

Opens a submenu that contains the following options:

- **Folder.** Creates a private subfolder.
- **Report.** Launches InfoAssist in Report development mode.
- **Chart.** Launches InfoAssist in Chart development mode.
- **Dashboard.** Launches InfoAssist in Dashboard development mode.
- **Document.** Launches InfoAssist in Document development mode.
- **Text Editor.** Launches the text editor. This option is only available to the Web Query Administrator group and should not be used to develop procedures. It is intended for debugging only.
- **URL.** Launches a Create URL dialog box to prompt for necessary information to create a URL report.
- **Distribution List.** Launches a dialog box from which you can create a new distribution list for Report Broker.

Duplicate

Duplicates the folder. This option is not available on a top-level folder.

Cut

Cuts the folder from this location and enables you to paste it in another location. This option is not available on a top-level folder.

Copy

Copies the folder and enables you to paste it in another location. This option is not available on a top-level folder.

Paste

Pastes a folder that was copied. This option is available only in subfolders.

Delete

Deletes the selected folder.

Change Title

Changes the description or name of the folder.

Refresh

Refreshes the contents of the selected folder.

Upload

Uploads data, documents, or images into the Repository.

Publish and Unpublish

Publishes/unpublishes the folder contents to users with access to the Repository. This option is not available on a top-level folder.

Hide and Show

Hides/shows a folder from a run only user. This option is only available to Developers and Administrators.

Security

Administrators or owner sets ownership of the object. This option is not available on a top-level folder.

Properties

This option is only available to Web Query Administrators to view report properties. A Web Query Administrator is any user belonging to the WebQueryAdministrator group.

Show Path

Displays the full path of the object within the Repository.

Metadata

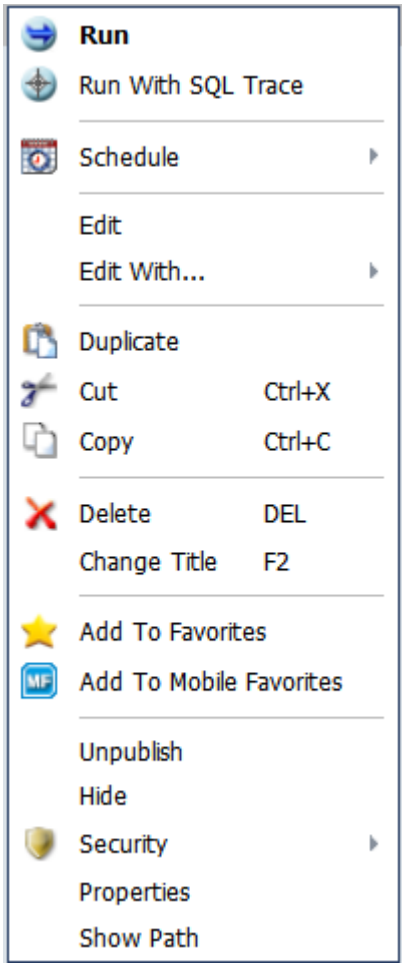
Launches the Metadata Manager to guide you through the process of defining connections and metadata that map to your data sources.

- **New.** Launches the Metadata Manager and directs you to My Console.
- **Edit.** Launches the Metadata Manager and directs you to the Applications Directories tree where synonyms can be edited to contain custom fields, descriptions, and joins.

Report Broker Explorer

Launches the Report Broker Explorer to manage Report Brokerobjects. This option is available to Schedulers and Administrators.

If you right-click a report in the Repository, the following options are available.



Run

Runs the selected report in the report output panel.

Run With SQL Trace

Run the report with SQL Trace. The SQL Trace will appear in a panel below the report.

Schedule

Sets the distribution method for the schedule.

- **Email.** Distributes the report through email.

- **FTP.** Distributes the report through FTP.
- **Printer.** Distributes the report to one or more printers.
- **Repository.** Distributes the report back to a folder.

Edit

Opens the selected report using InfoAssist.

Duplicate

Duplicates the selected report.

Cut

Cuts the selected report.

Copy

Copies the selected report.

Delete

Deletes the selected report.

Change Title

Changes the Title of the report.

Add To Favorites

Adds the selected report to the Favorites folder in the Repository.

Add To Mobile Favorites

Adds the selected report to the Mobile Favorites folder in the Repository.

Publish and Unpublish

Publishes/unpublishes the report to allow public access to users who belong to the folder.

Hide

Hides a folder from being displayed run only user. This option is only available to Developers and Administrators.

Show

Displays a folder for a run only user repository.

Security

Opens a submenu that allows you to set the Resource owner for the selected report. Owner opens the Set Owner dialog box.

Properties

This option is only available to Web Query Administrators to view report properties. A Web Query Administrator is any user belonging to the Web Query Administrator group.

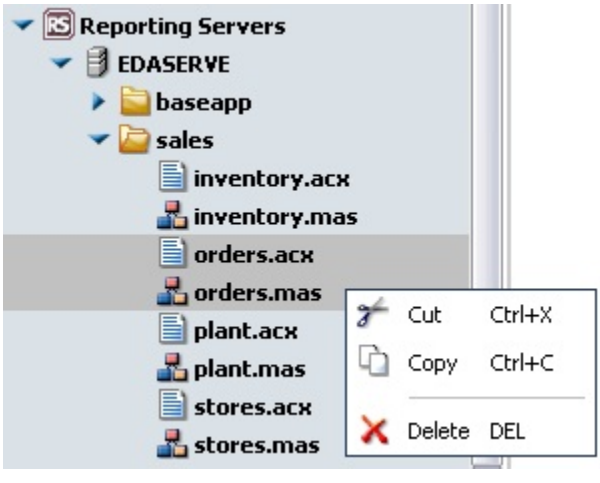
Show Path

Displays the full path of the object within the Repository.

Administering the Reporting Server

The Reporting Servers node appears for Administrators only. This allows an administrator to manage, delete, copy, and paste synonyms across application folders. This functionality is needed when a procedure is copied to a different folder. The synonym(s) used by the procedure must also be copied to that same folder in order for the report to run in the new folder.

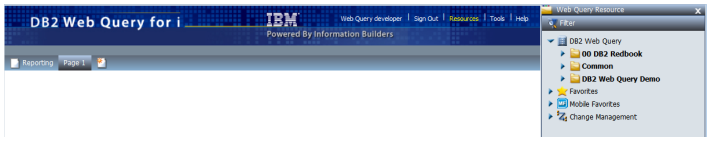
The baseapp folder is visible to all users. A synonym that needs to be shared by all users should be copied into the baseapp folder.



Creating a Page

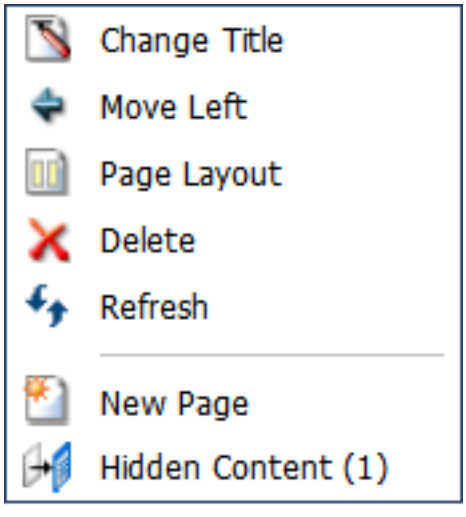
You can create multiple pages that show different reports. To create a page, click the New Page icon located above the tree.

Press the F8 function key or click the Resources link on the menu bar to open the Resource Tree, as shown in the following image.



You can drag and drop reports from the Resource Tree onto the blank page.

You can right-click any page tab and select from a list of available options in the context menu, as shown in the following image.



Change Title

Renames the selected page.

Move Left

Moves the selected page to the left.

Page Layout

Chooses a page layout to align your content into the desired number of columns.

Delete

Deletes the selected page.

Refresh

Refresh the contents of the page by running all procedures on the page.

New Page

Creates a page.

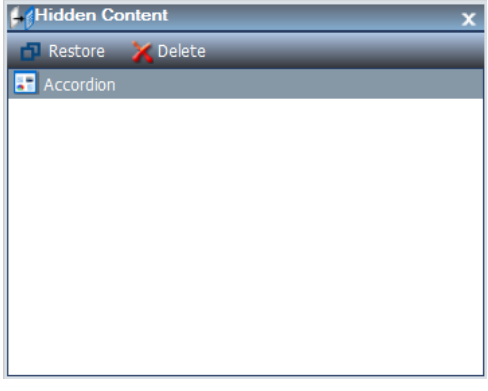
Hidden Content

Shows hidden content in a separate dialog box.

Hiding Content

Procedures that are dragged onto a page are put into a panel and are defined as content of a page. The content can be can be removed or hidden from a page by clicking on the close button.

To restore or delete the hidden content, select the *Hidden Content* option. The Hidden Content dialog box appears, as shown in the following image.



Click the content you want to manage. Click the *Restore* or *Delete* button to choose the desired option.

Managing Folders

How to:

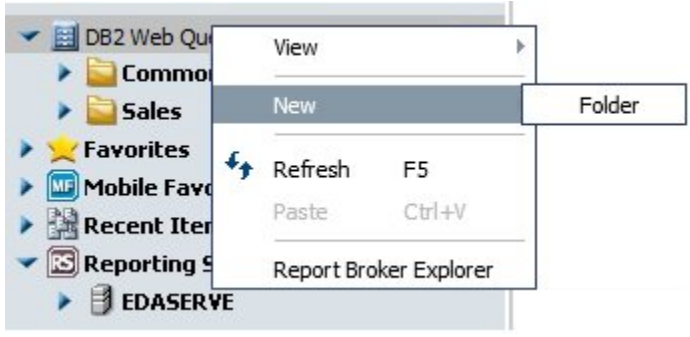
Create a Folder

The Repository is composed of folders and subfolders. A top-level folder that is created in the Repository defines applications for a specific set of users. Users are associated with a folder by adding them to one or more Groups that are created with each top-level folder.

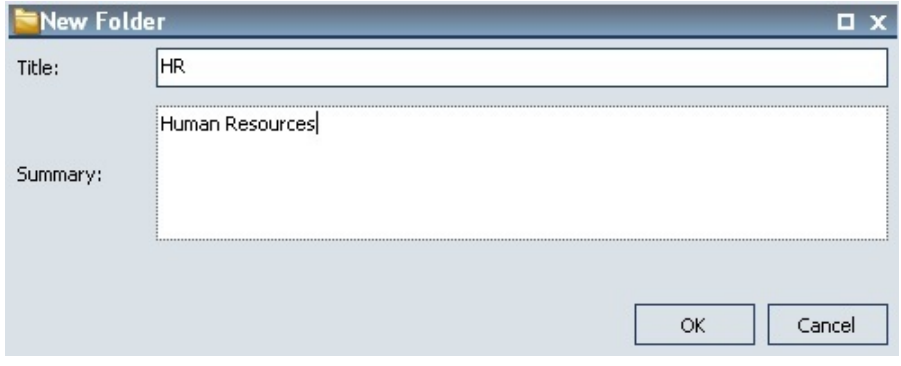
A top-level folder is created as a Published Object by default. A subfolder is created as a Private folder and only the owner of the folder can access objects within it. The owner of a Private folder can change the permissions of the folder by right-clicking the folder and selecting *Security*.

Procedure: How to Create a Folder

1. Right-click *DB2 Web Query* and click *New Folder*, as shown in the following image.



The Create Folder dialog box opens, as shown in the following image.



2. Type a title and summary in the provided input fields. By default, the folder description is displayed in the Repository tree.

   Note: If you create a folder with the same title, Web Query will automatically create a unique name for the folder. To see a folder's name, right click on the folder and click *Properties*.

3. Click *OK* to create the folder.

Selecting a Top-Level Folder

All of the top-level folders that a user is authorized to access are displayed in the Repository tree. Depending on how your user profile is set up, you may not have access to all top-level folders.

The icon located next to an item in the top-level folder represents the type of item. In the following table, the first column lists the icon, and the second column describes what the icon represents.

Icon	Identifies...
 - Reports Folders	Location of created reports.
 - Reports	Reports in a folder.
 - Internet Links	Web pages and reports run from launch pages.

Building a Report, Chart, Document, or Dashboard

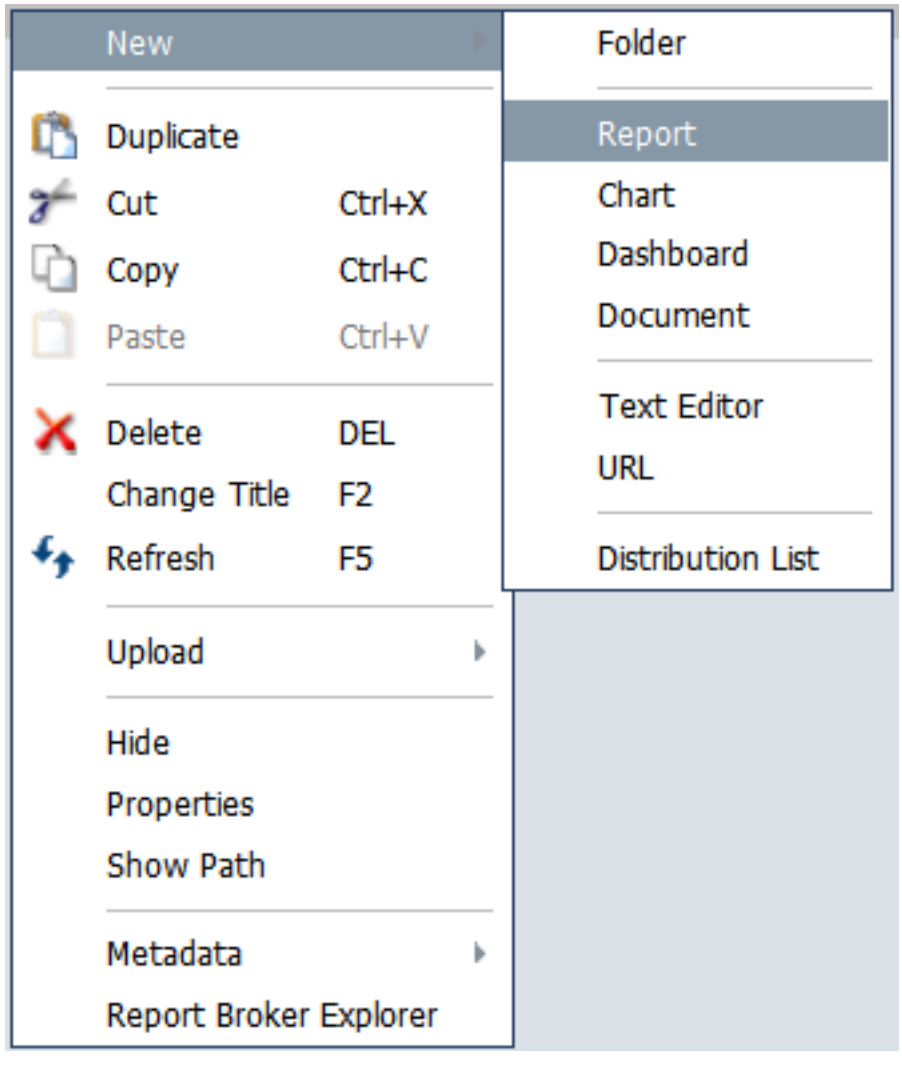
How to:

Build a Report, Chart, Dashboard, or Document

InfoAssist is a single development tool used to create reports, charts, documents, and dashboards. There are four modes in which the tool can be launched.

Procedure: How to Build a Report, Chart, Dashboard, or Document

1. Right-click a folder in Web Query and select *New*, as shown in the following image.



2. Select the mode that is required:

- **Report.** Launches InfoAssist in Report development mode.
- **Chart.** Launches InfoAssist in Chart development mode.
- **Dashboard.** Launches InfoAssist in Dashboard development mode, which is similar to Document mode but set for Active Technologies format.

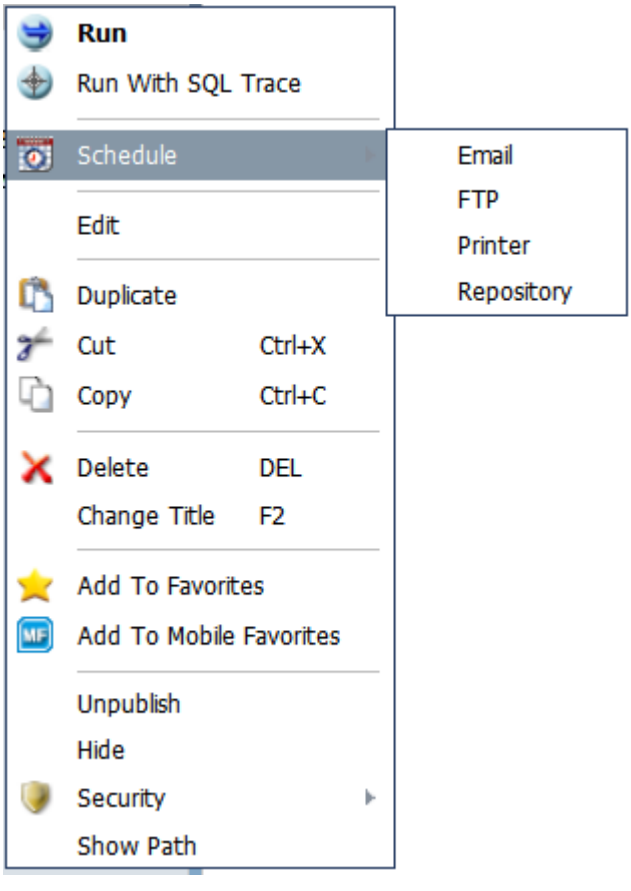
- **Document.** Launches InfoAssist in Document development mode (combination of reports and charts).

Scheduling a Procedure

You can schedule to run any procedure that you develop using InfoAssist and electronically distribute the output using Report Broker.

Right-click a procedure from the Repository tree and select *Schedule*, then the type of distribution method. The supported distribution methods are Email, FTP, Printer, and Repository.

The Repository distribution method will deliver your report output into the same folder where the procedure resides.



Using Menu Bar Hyperlinks

In this section:

The hyperlinks in the menu bar provide a way to easily navigate the reporting interface:

- **Login name.** Allows you to change the password.
- **Sign Out.** Allows you to logoff the interface.
- **Resources.** Contains your Web Query content.
- **Administration.**
  - Security Center
  - Administration Console (if signed in as administrator)
  - Manage Private Resources
  - Switch between Normal mode (seeing your own content) and Manager mode (which allows you to manage other user content)
- **Tools.**
  - **FOC Message Lookup** - Lookup detailed error message text for a given error code.
  - **Stop Requests** - Terminate a running Web Query procedure.
  - **Runtime Environments** - Dynamically change library lists. For more information, see the DB2 Web Query Dynamic Runtime Implementation guide at:

    https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en_US#/wiki/W516d8b60d32c_4fc5_a811_5f3d840bf524/page/Dynamic%20Runtime%20Environments
  - **Report Broker Explorer** - Launch this tool to manage Report Broker schedules and distribution lists. Refer to the Report Broker online help for more information on the Report Broker tools.
  - **Report Broker Console** - Launch this tool to manage the Report Broker configuration. Refer to the Report Broker online help for more information on the Report Broker tools.
- **Help.** Opens a menu where you can select:
  - *DB2 Web Query Online Help* which opens the online help.
  - *About DB2 Web Query* which provides release information.

Understanding DB2 Web Query Error Text

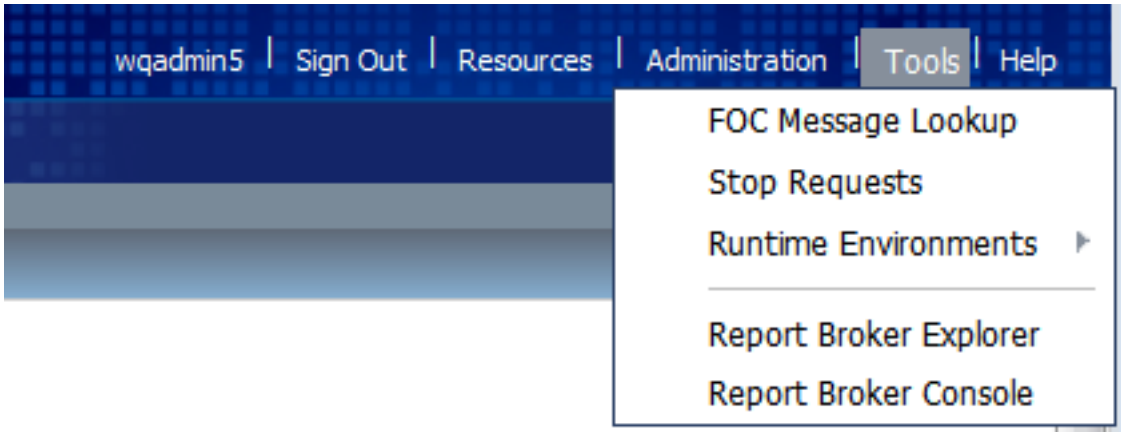
How to:

Define an Error Message

You can use the Error Message Lookup feature to understand what the error messages mean. The link provides the full text associated with a Reporting Server error message (FOCXXXX). To use this feature, you need the numeric portion of the error message. Enter only the numeric portion of the error number. If you enter "FOC", an error will occur. This option is available for administrators and developers only, run only users will not see this option. To access the Error Message Lookup feature, click the Tools link located on the DB2 Web Query banner.

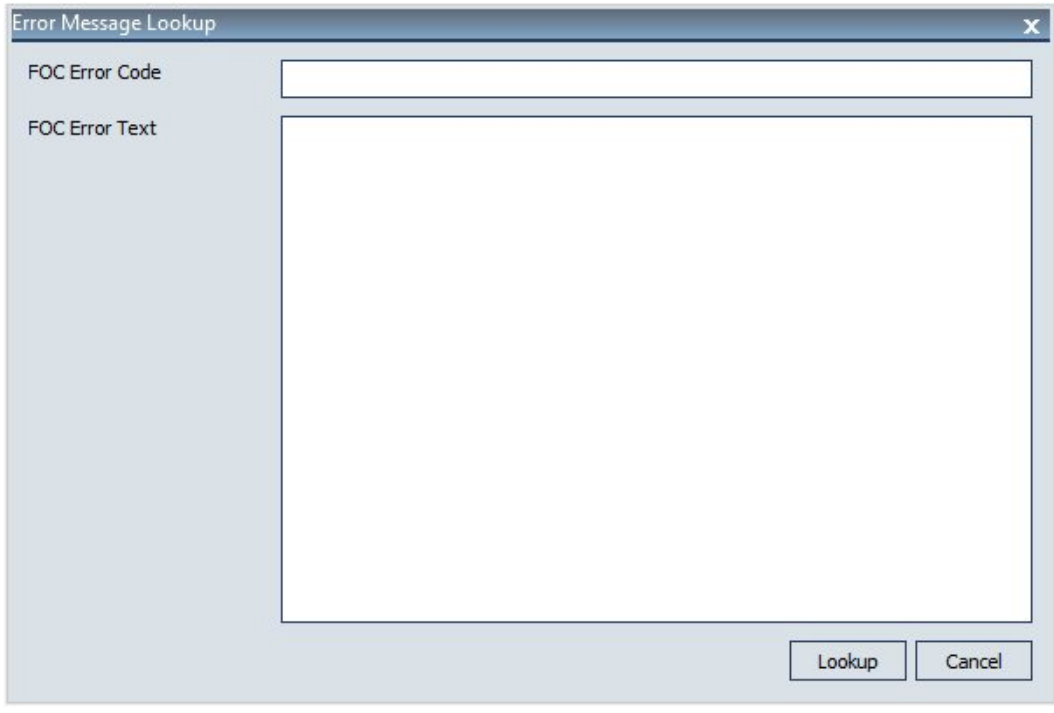
Procedure: How to Define an Error Message

For administrators and developers, the banner contains the Tools drop-down link as shown in the following image.



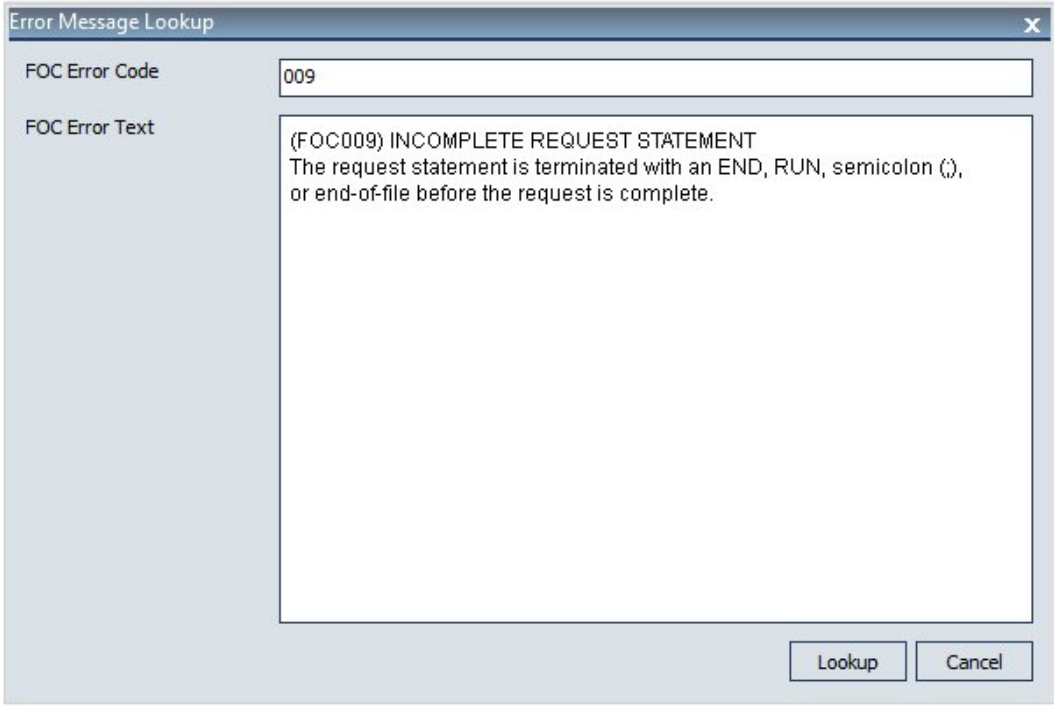
1. Click the *FOC Message Lookup* link.

The Error Message Lookup screen appears.



2. Enter the numeric portion of the error message.

3. Click *Lookup*.



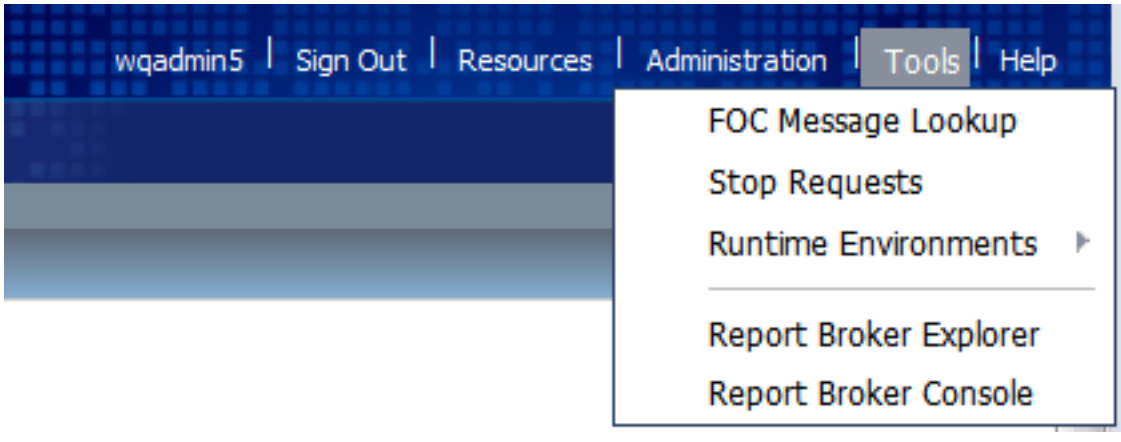
The full text description associated with the FOC error message appears.

Stopping a DB2 WebQuery Request

Reference:

Stopping a DB2 Web Query Request

Users can cancel active requests that are initiated from their browser session on the reporting server by clicking *Stop Requests* on the top banner as shown in the following image.



Reference: **Stopping a DB2 Web Query Request**

All active requests for the current browser session are canceled and the following confirmation message displays:

```
xx request(s) stopped.
```

where:

xx
: Is the total number of requests that were canceled.

  Note: The Reporting Server may take some time to complete the stop request. Clicking *Stop Requests* during this time may result in an incorrect number of cancel requests being reported.

Once the request is canceled, DB2 Web Query displays the following message to the user that ran the request:

```
Reporting server request terminated by operator.
```

If the request is stopped while data is already being output, the following message displays in the report output:

```
This report is invalid because the data retrieval has been killed or the
job has been stopped.
```

If the report output is a PDF and the request is stopped while data is already being output, the following message displays:

```
The File is damaged and could not be repaired.
```

3 Visualizing Trends in Reports

To make your HTML reports more powerful, you can insert visual representations of selected data directly into the report output. These visual representations are in the form of vertical or horizontal bar graphs that make relationships and trends among data more obvious.

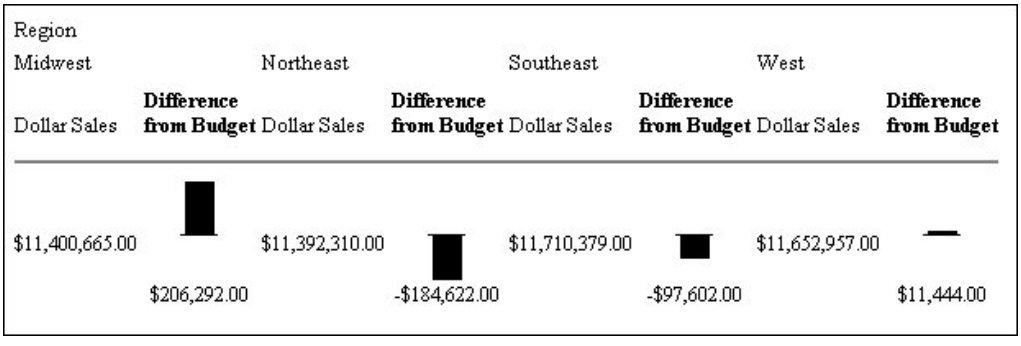
Topics:

- Applying Bar Graphs
- Associating Bar Graphs With Measures

Applying Bar Graphs

Vertical or horizontal bar graphs highlight relationships and trends among data.

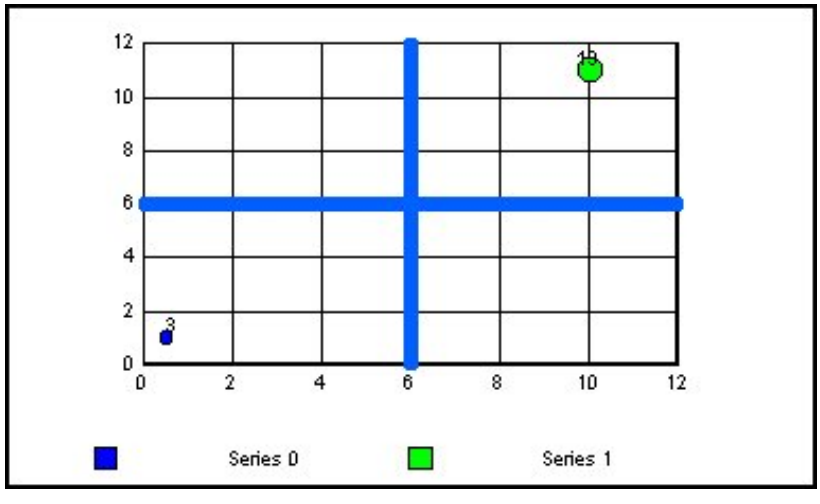
- **Vertical Bar Graph.** You can apply a vertical bar graph to report columns associated with an ACROSS sort field. The report output displays a vertical bar graph in a new row above the associated data values as shown in the following image.



Bar graphs that project above the zero line represent positive values, while bar graphs that project below the zero line represent negative values.

- **Horizontal Bar Graph.** You can apply a horizontal bar graph to report columns. The report output displays a horizontal bar graph in a new column to the right of the associated data values as shown in the following image.

City	Budget Dollars	Dollar Sales	DIFFERENCE
Atlanta	$4,247,597.00	$4,100,107.00	$147,490.00
Boston	$3,818,397.00	$3,707,986.00	$110,411.00
Chicago	$3,866,856.00	$3,924,401.00	-$57,545.00
Houston	$3,680,679.00	$3,714,978.00	-$34,299.00
Los Angeles	$3,669,484.00	$3,772,014.00	-$102,530.00
Memphis	$3,689,979.00	$3,687,057.00	$2,922.00
New Haven	$3,832,202.00	$3,782,049.00	$50,153.00
New York	$3,926,333.00	$3,902,275.00	$24,058.00
Orlando	$3,870,405.00	$3,923,215.00	-$52,810.00
San Francisco	$3,916,863.00	$3,870,258.00	$46,605.00
Seattle	$4,055,166.00	$4,010,685.00	$44,481.00
St. Louis	$3,646,838.00	$3,761,286.00	-$114,448.00



Bar graphs that project to the right of the zero line represent positive values, while bar graphs that project to the left of the zero line represent negative values.

The length of each vertical or horizontal bar graph is proportional to the magnitude of its associated data value. The shortest bar graph appears for the value with the minimum magnitude, the longest bar graph for the value with the maximum magnitude, and bar graphs of varying length appear for each value within the minimum-maximum magnitude range. Notice in the figure that a value of 147,490.00 produces a longer horizontal bar graph than a value of 50,153.00. Therefore, a complete row of vertical bar graphs or a complete column of horizontal bar graphs forms a bar chart.

You can only apply data visualization bar graphs to numeric report columns (integer, decimal, floating point single-precision, floating point double-precision, and packed). Bar graphs applied to alphanumeric, date, or text field formats are ignored.

You can display data visualization bar graphs in OLAP-enabled HTML reports, where bar graphs are applied to Measures. See *Associating Bar Graphs With Measures* on page 60.

Associating Bar Graphs With Measures

In this section:

You can associate data visualization bar graphs with any numeric measure that appears in the report output.

The type of bar graph that you can apply depends on the placement of the dimensions included in the report:

- If all report dimensions are vertical (By) sort fields (listed in the Drill Down box in the OCP), you can apply a horizontal bar graph to the specified measures.
- If any dimension is a horizontal (Across) sort field (listed in the Drill Across box in the OCP), you can apply a vertical bar graph to the specified measures.

For illustrations, see *Applying Bar Graphs* on page 58.

For more information about OLAP reports, see *Analyzing Data in an OLAP Report*.

Data Visualization Bar Graph Attributes

The following table outlines the default attributes used to display data visualization bar graphs applied from the OLAP selections pane or the OLAP Control Panel. The first column lists the bar graph attribute, while the second column lists the default value.

Bar graph attribute	Default value
Color	Positive values: Blue Negative values: Red
Length	Vertical bar graph: 60 pixels Horizontal bar graph: 80 pixels
Width	The size of the font in the report output is used to define a default value for the width of the bar graph.

Note: Currently, you cannot modify bar graph attributes from the OLAP selection panel or the OLAP Control Panel.

Applying Bar Graphs to Measures in an OLAP Report

How to:

Apply Bar Graphs to Measures in an OLAP Report

The quickest way to apply data visualization bar graphs to numeric measures is from the report itself.

Procedure: How to Apply Bar Graphs to Measures in an OLAP Report

1. Right-click the title of a measure column.
2. Choose *Visualize* from the menu.

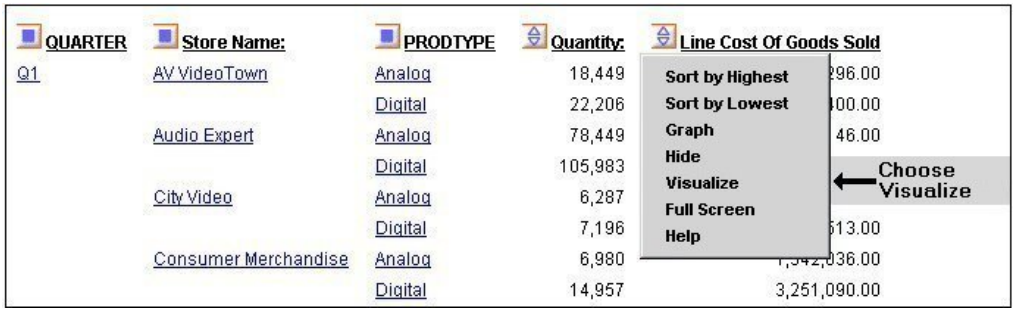
The report runs automatically, displaying a column of bar graphs following the selected measures column.

Tip: To remove the bar graphs, right-click the measure column title and choose *Remove Visualization* from the menu.

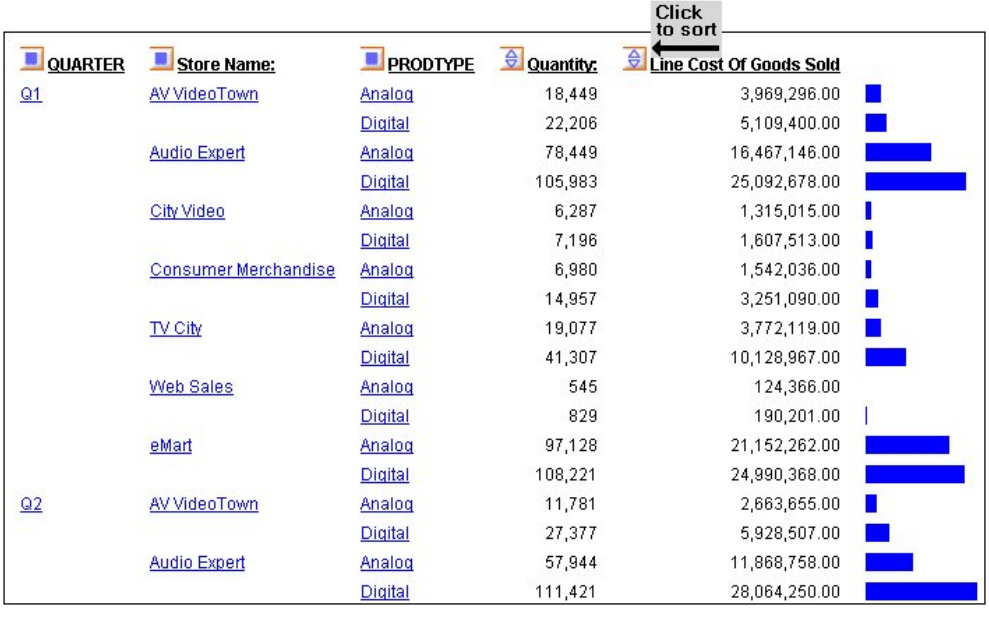
Example: Applying and Sorting Bar Graphs in a Report

In the following OLAP report:

1. Right-click *Line Cost of Goods Sold* and choose *Visualize* to apply a data visualization bar graph to each value in the column, as shown in the following image.



The display changes instantly, as shown in the following image.



2. Sort the data by highest value. You can either right-click *Line Cost of Goods Sold* and choose *Sort by Highest*, or click the *Up* arrow (the tool tip reads *Sort LINE_COG highest to lowest*).

The following image shows the results of sorting the data by the highest value.

QUARTER	Store Name:	PRODTYPE	Quantity:	Line Cost Of Goods Sold
Q2	Audio Expert	Digital	111,421	28,064,250.00
Q1	Audio Expert	Digital	105,983	25,092,678.00
Q1	eMart	Digital	108,221	24,990,368.00
Q2	eMart	Digital	115,102	24,971,512.00
Q1	eMart	Analog	97,128	21,152,262.00
Q2	eMart	Analog	74,737	16,789,403.00
Q1	Audio Expert	Analog	78,449	16,467,146.00
Q4	eMart	Digital	72,126	14,000,951.00
Q3	eMart	Digital	66,156	13,867,709.00
Q2	Audio Expert	Analog	57,944	11,868,758.00
Q3	Audio Expert	Digital	50,076	11,210,406.00
Q4	Audio Expert	Digital	53,275	11,190,923.00
Q1	TV City	Digital	41,307	10,128,967.00
Q4	eMart	Analog	39,515	9,383,389.00
Q3	eMart	Analog	36,306	8,308,647.00
Q2	TV City	Digital	29,627	6,732,303.00
Q2	AV VideoTown	Digital	27,377	5,928,507.00
Q4	Audio Expert	Analog	25,897	5,916,936.00

Applying Bar Graphs to Measures Using the Selections Pane or Control Panel

How to:

Apply Bar Graphs to Measures Using the Selections Pane

Apply Bar Graphs to Measures Using the Control Panel

Remove Bar Graphs Using the Selections Pane or Control Panel

Reference:

Display Modes in the OLAP Control Panel

You can apply data visualization bar graphs to any numeric measure.

To indicate the measures for which you want to display bar graphs, you click the check box located to the left of each measure. This check box has three states that control the display modes for the measure.

In the following table the first column shows the three check box states and the second column provides descriptions for the display modes.

Check Box State	Display Mode for the Measure
Check mark	Displays the measure.
Graph icon	Applies a bar graph to the measure and displays both the measure and its associated bar graph.
Blank box	Does not display the measure or an associated bar graph.

You click the check box next to a measure until it reflects the display mode you want.

If an OLAP report contains a measure that does not appear in the report, the Measure control shows a blank check box. To display the measure, click the check box once. To display the associated bar graph, click the check box again.

Note: The three-state check box is *not* active when you apply Stack Measures to your report. These features are mutually exclusive.

Procedure: How to Apply Bar Graphs to Measures Using the Selections Pane

1. From the OLAP selections pane, click the arrow to the left of the Measures control.
2. Click the check box beside each numeric measure to which you want to add a bar graph. The check mark in the box is replaced with the Graph icon.
3. Click *Run*. The new report appears with the associated bar graphs.

Procedure: How to Apply Bar Graphs to Measures Using the Control Panel

1. Click the *OLAP* button in the OLAP selections pane to open the OLAP Control Panel. The Measures box appears in the lower right corner.
2. If Stack Measures is applied to the report, click the *Stack Measures* check box to turn off this feature.
3. To apply data visualization bar graphs to a measure, click the check box to the left of the measure.

   To apply data visualization graphs to a non-displaying measure, click the check box twice.

The check mark in the box is replaced with the Graph icon. This icon indicates that data visualization bar graphs are applied to the measure. (If you have not done so in step two, this also deactivates the Stack Measures feature.)

You can apply data visualization bar graphs to as many numeric measures as you want.

4. After you select all the measures for which you want to display bar graphs, click *Run*.

   The new report output appears with the associated bar graphs.

5. To continue to modify the report (either data visualization or another OLAP configuration), click the *OLAP* button again.

Procedure: How to Remove Bar Graphs Using the Selections Pane or Control Panel

1. From the Measures drop-down list in the OLAP selections pane or the Measures box in the OLAP Control Panel, click the check box for any measure to which you have applied data visualization bar graphs.

   This removes the Graph icon and displays a blank check box indicating that the measure will not appear in the report output when you run the report.

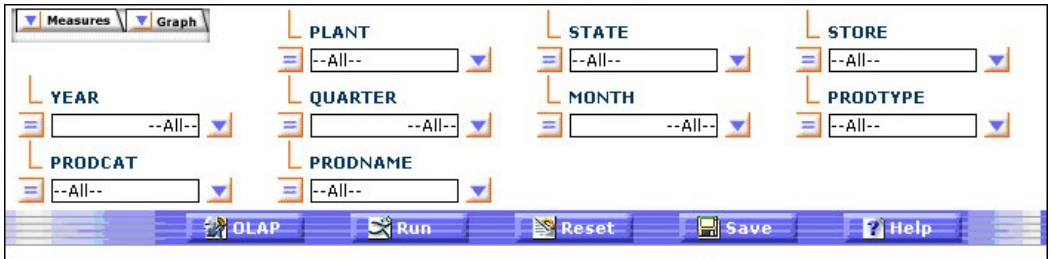
2. To display the measure, click the same check box again. A check mark appears in the box.

3. Click *Run* to display the new report output, where the measure appears without its associated bar graph.

Example: Applying Data Visualization Bar Graphs to Measures Using the Selections Pane

Suppose that you want to associate data visualization bar graphs with the Profit column in the following report in order to represent visually the differences between the Costs for and the Prices of your various Products.

You have created the following OLAP report, as shown in the following image, which displays the report data by Product Name.

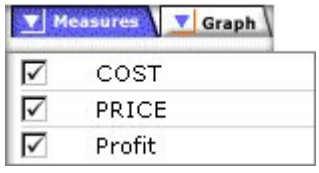


PAGE 1

Product Name:	Our Cost:	Price:	Profit
110 VHS-C Camcorder 20 X	744,759.00	1,043,859.00	299100
120 VHS-C Camcorder 40 X	796,943.00	1,227,723.00	430780
150 8MM Camcorder 20 X	1,303,440.00	1,732,489.00	429049
2 Hd VCR LCD Menu	185,889.00	257,939.00	72050
250 8MM Camcorder 40 X	251,520.00	313,614.00	62094
330DX Digital Camera 1024K P	32,437.00	45,477.00	13040
650DL Digital Camcorder 150 X	940,750.00	1,191,175.00	250425
750SL Digital Camcorder 300 X	105,750.00	140,859.00	35109
AR2 35MM Camera 8 X	64,385.00	88,835.00	24450
AR3 35MM Camera 10 X	13,395.00	18,189.00	4794
Combo Player - 4 Hd VCR + DVD	1,166,404.00	1,610,364.00	443960
DVD Upgrade Unit for Cent. VCR	754,909.00	1,080,769.00	325860
QX Portable CD Player	245,916.00	419,796.00	173880
R5 Micro Digital Tape Recorder	297,459.00	383,679.00	86220
ZC Digital PDA - Standard	233,313.00	280,163.00	46850
ZT Digital PDA - Commercial	1,376,805.00	1,968,555.00	591750

To associate data visualization bar graphs with the Profit column:

1. Click the *Measures* drop-down list in the report (or open the OLAP Control Panel (OCP) by clicking the *OLAP* button), as shown in the following image.

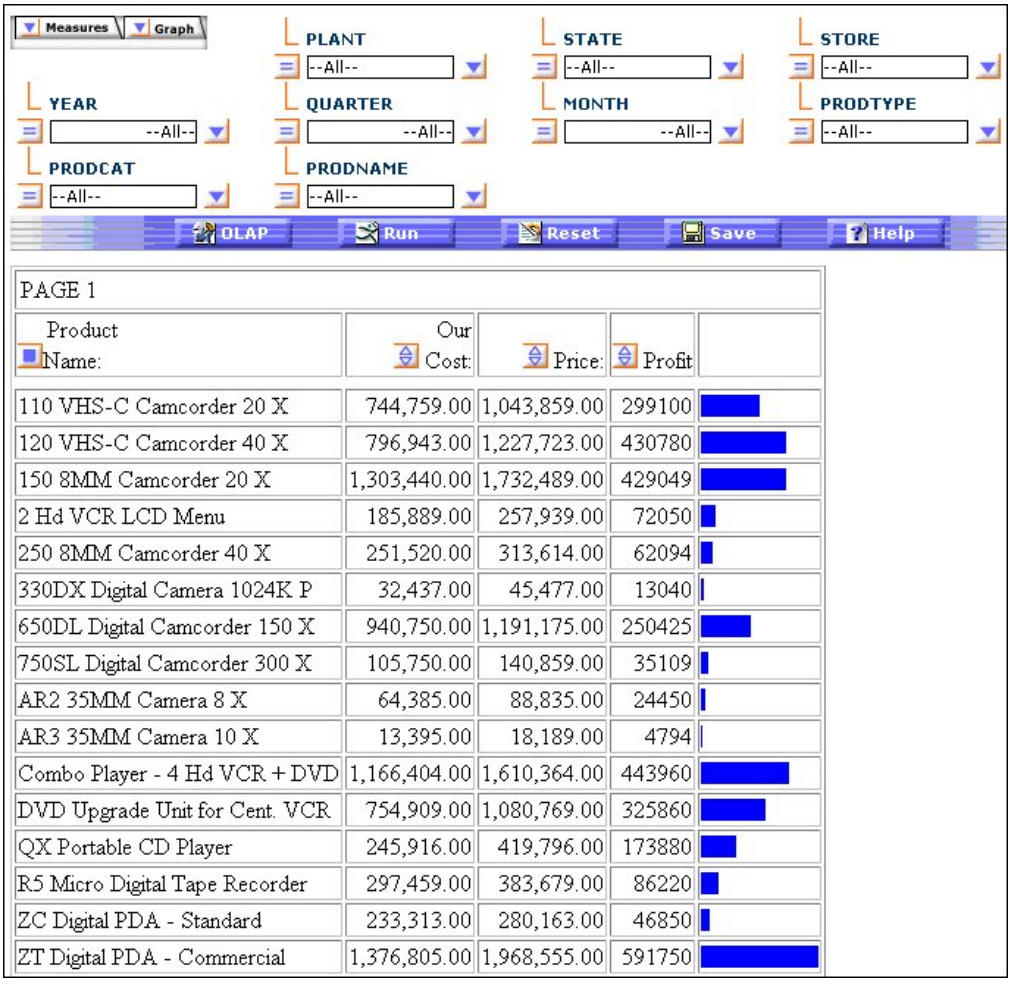


The check marks indicate that the measures will appear in the report output.

2. Click the *Profit* check box again. The following images shows the Measures drop-down list in the OCP with the Profit check box selected as a Graph icon.

The Graph icon replaces the check mark. This icon indicates that the measure will appear with its associated bar graph.

3. Click the *Run* button to display the new report output, as shown in the following image, visualizing the Profit values in a bar graph representation.



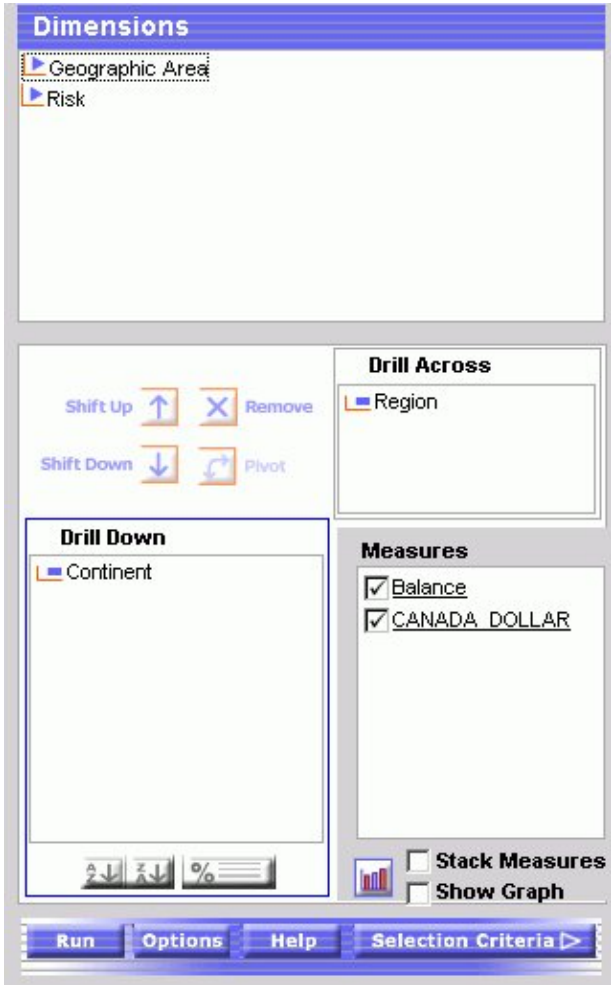
PAGE 1

Product Name:	Our Cost:	Price:	Profit	
110 VHS-C Camcorder 20 X	744,759.00	1,043,859.00	299100	
120 VHS-C Camcorder 40 X	796,943.00	1,227,723.00	430780	
150 8MM Camcorder 20 X	1,303,440.00	1,732,489.00	429049	
2 Hd VCR LCD Menu	185,889.00	257,939.00	72050	
250 8MM Camcorder 40 X	251,520.00	313,614.00	62094	
330DX Digital Camera 1024K P	32,437.00	45,477.00	13040	
650DL Digital Camcorder 150 X	940,750.00	1,191,175.00	250425	
750SL Digital Camcorder 300 X	105,750.00	140,859.00	35109	
AR2 35MM Camera 8 X	64,385.00	88,835.00	24450	
AR3 35MM Camera 10 X	13,395.00	18,189.00	4794	
Combo Player - 4 Hd VCR + DVD	1,166,404.00	1,610,364.00	443960	
DVD Upgrade Unit for Cent. VCR	754,909.00	1,080,769.00	325860	
QX Portable CD Player	245,916.00	419,796.00	173880	
R5 Micro Digital Tape Recorder	297,459.00	383,679.00	86220	
ZC Digital PDA - Standard	233,313.00	280,163.00	46850	
ZT Digital PDA - Commercial	1,376,805.00	1,968,555.00	591750	

Notice that the report now contains a new column to the right of the Profit measure. This column displays a horizontal bar chart comprised of bar graphs that represent the individual data values for the Profit measure.

Reference: Display Modes in the OLAP Control Panel

The Measures box, from which you select a display mode, is located in the lower right corner of the Control Panel, as shown in the following image.



The state of each measure's check box determines how the measure appears in the report output. In this illustration:

- The COST and PRICE measures will appear in the report output (check mark in the boxes).
- The Profit measure and its associated bar graph will appear in the report output (Graph icon in the box).

Note that the Stack Measures option is inactive when a bar graph is applied to a measure.

4 Creating a Reporting Procedure With SQL Report Wizard

The SQL Report Wizard assists you with SQL passthru, which allows you to execute SQL code that retrieves data from an RDBMS.

Note: The SQL Report Wizard is accessible only through the DB2 Web Query Developer Workbench.

Topics:

- Using the SQL Report Wizard

Using the SQL Report Wizard

How to:

Include SQL Commands From an External .sql File

Pass SQL Commands to the RDBMS Using SQL Passthru

Import SQL Commands From an Existing .sql File

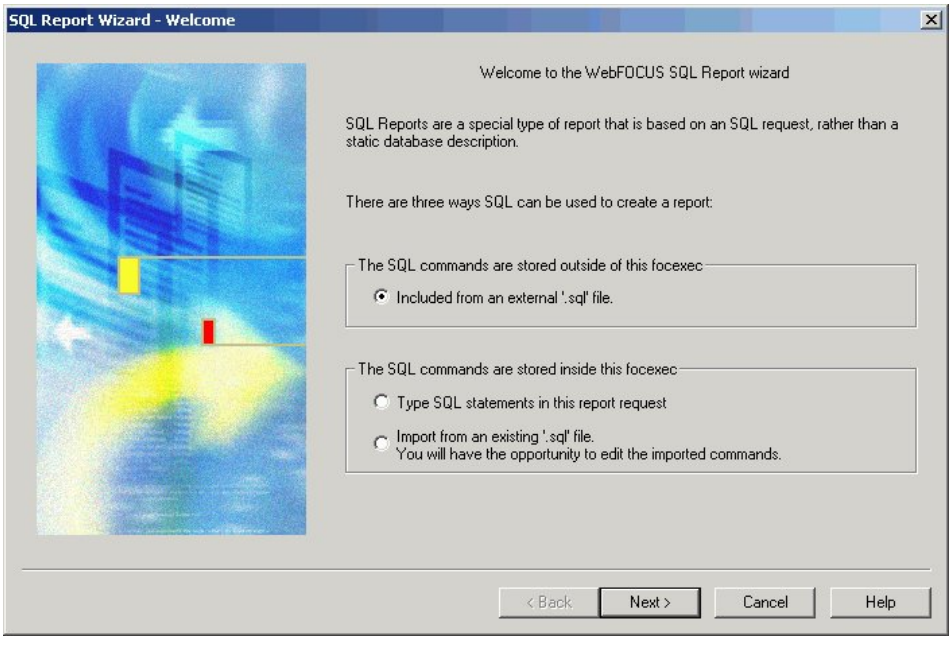
The SQL Report Wizard supports DB2 cli engines.

Procedure: How to Include SQL Commands From an External .sql File

1. Access the SQL Report Wizard:

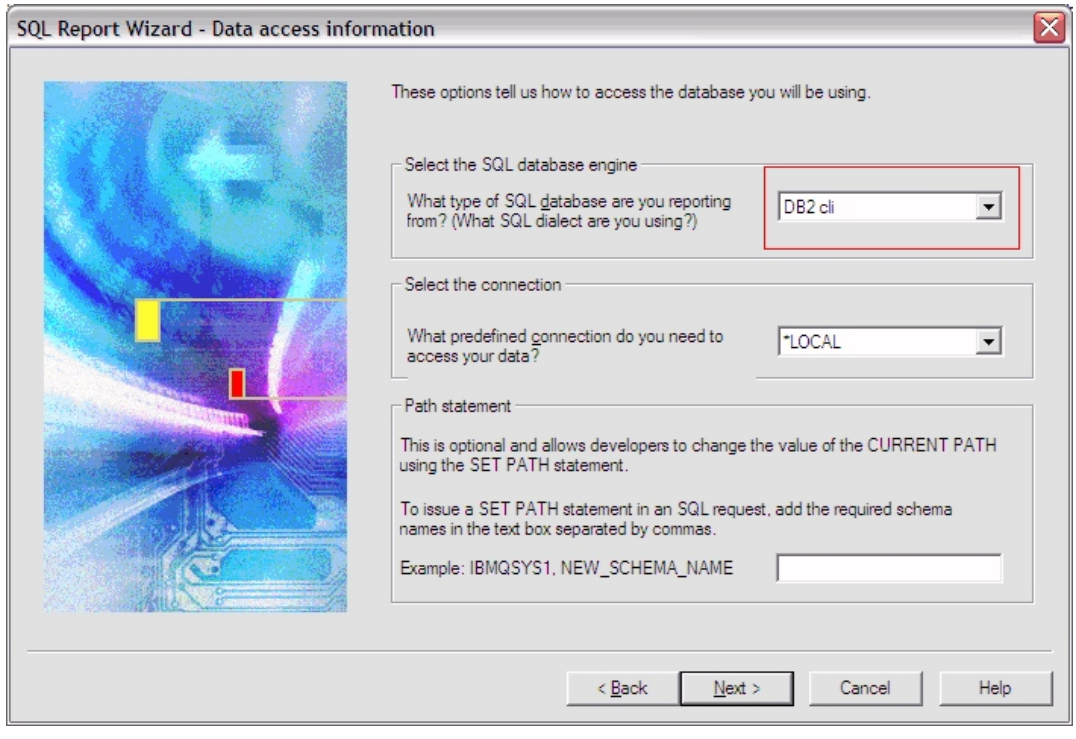
   In the Explorer, right-click a group folder under the Reports folder and select *New*, then *Procedure*. In the New Procedure dialog box, type a file name and then select *SQL Report Wizard* from the Create with drop-down list. Click *Create*.

   The SQL Report Wizard - Welcome window opens, as shown in the following image.



2. Click the *Included from an external '.sql' file* option button. This enables you to browse and select external procedures that exist in the repository. This enables sites to leverage pre-existing SQL procedures.

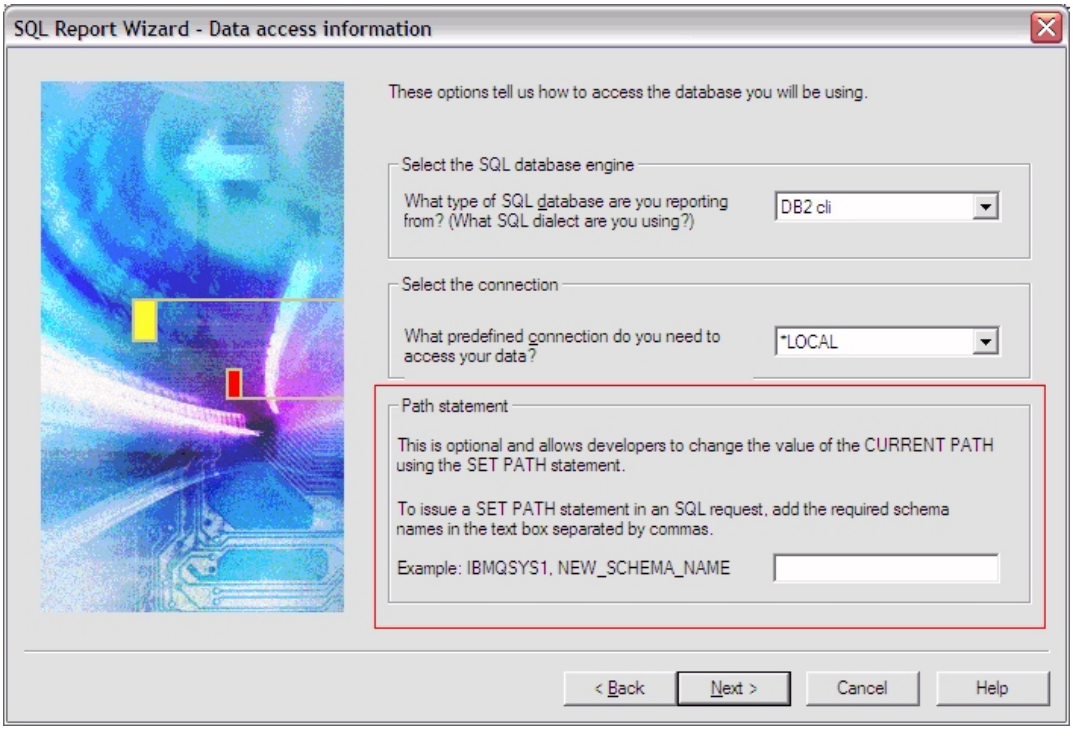
3. Click *Next* to see the SQL Report Wizard - Data access information window, as shown in the following image.



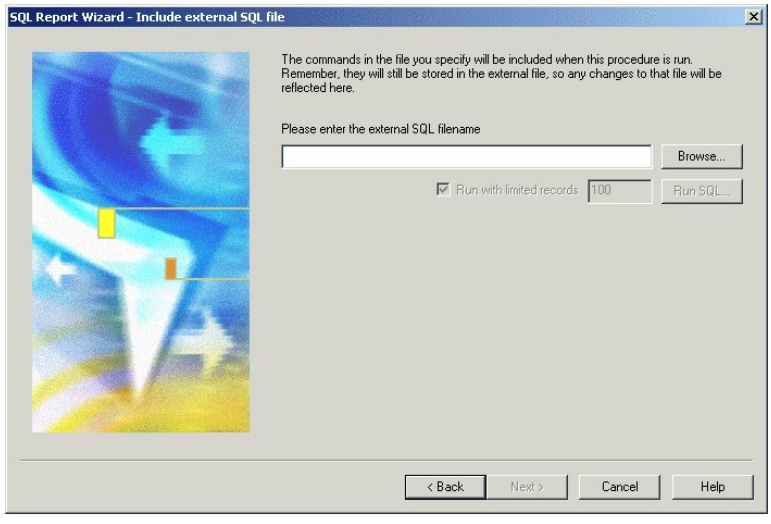
4. In the Select the SQL database engine area, select a database engine from the drop-down list. The list consists of available database engines configured with DB2 Web Query.

5. In the Select the connection area, choose a connection from the drop-down list generated from the engine that you selected. You can choose the default value, which is the first connection for the selected engine, or choose another connection you may have defined.

6. The Path Statement area is used to issue a SET PATH statement in an SQL request. This statement is optional and when specified it changes the value of the CURRENT PATH. To issue a SET PATH statement, add the required schema names in the text box separated by commas. For example, *IBMQSYS1, NEW_SCHEMA_NAME*. This will generate a SET PATH statement as follows: SET PATH ' IBMQSYS1', 'NEW_SCHEMA_NAME';.



7. Click *Next* to see the SQL Report Wizard - Include external SQL file window, as shown in the following image.



8. Enter the external SQL file name in the field, or click *Browse* to select it.
9. Optionally, you can run with limited records by clicking *Run SQL*. By default, the *Run with limited records* check box is selected so you can test your procedure with a read limit if the engine supports it. There is a field box next to the check box in which you can enter the number of records to be read. 100 is the default limit.
10. Click *Next* to see the SQL Report Wizard - Summary of SQL options window.

    Do one of the following:

    - To create a report, select the *Create Report* option button. This option is selected by default.
    - To create a graph, select the *Create Graph* option button.

11. Click *Finish* to run the SQL procedure. When you have completed the procedure, you can run it from the group folder in the Explorer view.

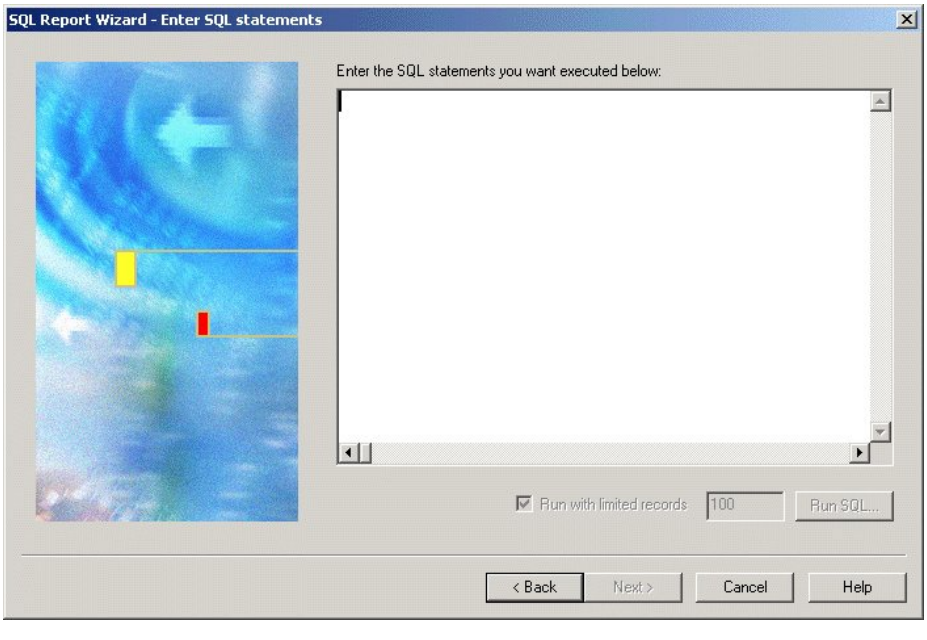
Procedure: How to Pass SQL Commands to the RDBMS Using SQL Passthru

1. Access the SQL Report Wizard:

   In the Explorer, right-click a group folder under the Reports folder and select *New*, *Procedure*. In the New Procedure dialog box, type a file name and then select *SQL Report Wizard* from the Create with drop-down list. Click *Create*.

   The SQL Report Wizard - Welcome window opens.

2. Click the *Option* button next to *Type SQL statements in the report request*. This enables you to enter SQL commands that will be passed on to the RDBMS with the SQL Passthru feature.
3. Click *Next* to see the SQL Report Wizard - Data access information window.
4. In the Select the SQL database engine area, select a database engine from the drop-down list. The list consists of available database engines configured with DB2 Web Query.
5. In the Select the connection area, choose a connection from the drop-down list generated from the engine that you selected. You can choose the default value, which is the first connection for the selected engine, or choose another connection you may have defined.
6. Click *Next* to see the SQL Report Wizard - Enter SQL statements window, as shown in the following image.



7. In the field box, type the SQL statements you want to pass to the RDBMS.

8. Optionally, you can run with limited records by clicking *Run SQL*. By default, the Run with limited records check box is selected so you can test your procedure with a read limit if the engine supports it. There is a field box next to the check box in which you can enter the number of records to be read. 100 is the default limit.
9. Click *Run SQL* to run your report.
10. Click *Next* to see the SQL Report Wizard - Summary of SQL options window.

    Do one of the following:

    - To create a report, select the *Create Report* option button. This option is selected by default.
    - To create a graph, select the *Create Graph* option button.

11. Click *Finish* to run the SQL procedure. When you have completed the procedure, you can run it from the group folder in the Explorer view.

Procedure: How to Import SQL Commands From an Existing .sql File

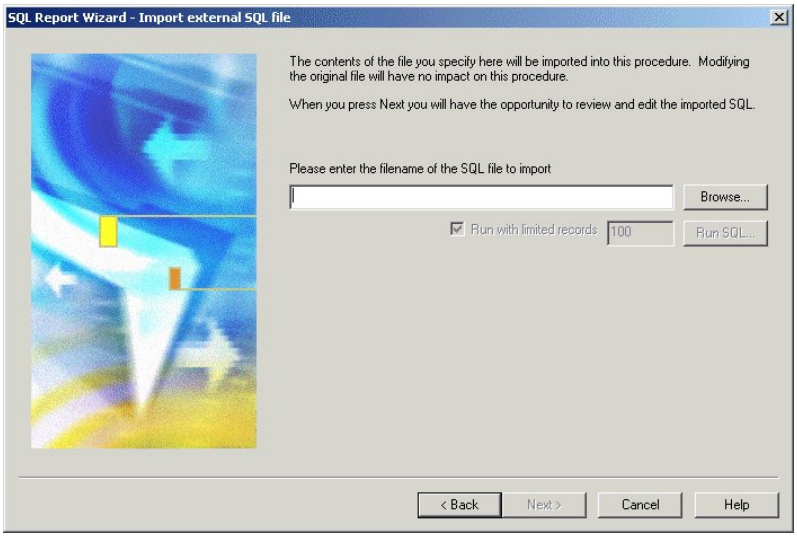
1. Access the SQL Report Wizard:

   In the Explorer, right-click a group folder under the Reports folder and select *New*, *Procedure*. In the New Procedure dialog box, type a file name and then select *SQL Report Wizard* from the Create with drop-down list. Click *Open*.

   The SQL Report Wizard - Welcome window opens.

2. Click the *Option* button next to *Import from an existing .sql file*. This enables you to modify SQL code after importing it from an external file to the procedure being built. It enables you to modify the request using bits of code.
3. Click *Next* to see the SQL Report Wizard - Data access information window.
4. In the Select the SQL database engine area, select a database engine from the drop-down list. The list consists of available engines database engines configured with DB2 Web Query.
5. In the Select the connection area, choose a connection from the drop-down list generated from the engine that you selected. You can choose the default value, which is the first connection for the selected engine, or choose another connection you may have defined.

6. Click *Next* to see the SQL Report Wizard - Import external SQL file window, as shown in the following image.



7. Type the SQL file name that you want to import or click *Browse* to select it.
8. Optionally, you can run with limited records by clicking *Run SQL*. By default, the Run with limited records check box is selected so you can test your procedure with a read limit if the engine supports it. There is a field box next to the check box in which you can enter the number of records to be read. 100 is the default limit.
9. Click *Run SQL* to run your report.
10. Click *Next* to see the SQL Report Wizard - Enter SQL statements window. You can edit the imported SQL code, if necessary.
11. Click *Run SQL* to run your report.
12. Click *Next* to see the SQL Report Wizard - Summary of SQL options window.

    Do one of the following:

    - To create a report, select the *Create Report* option button. This option is selected by default.
    - To create a graph, select the *Create Graph* option button.

13. Click *Finish* to run the SQL procedure. When you have completed the procedure, you can run it from the group folder in the Explorer view.

5 Using Report Broker

Report Broker is a report scheduling and distribution tool that provides a central point from which you can automatically distribute essential and current information to select people in an organization.

Topics:

- Introducing Report Broker
- Report Broker Console
- Creating and Maintaining Distribution Lists
- Creating a Report Broker Schedule in the Basic Scheduling Tool
- Running a Schedule from Control Language (CL)
- Maintaining Schedules
- Report Broker Explorer
- Tracking Schedules
- Report Broker Tracing
- Administering Report Broker
- Report Broker Formats for Scheduled Output

Introducing Report Broker

In this section:

Through Report Broker, you can schedule a report to run at specific times or intervals and be distributed through e-mail, to a printer, via FTP to the Web Query repository. You have the option to distribute the report to a single address or to a group of recipients using a distribution list.

You can distribute an entire report or you can break a report into sections using the Report Broker burst feature. When you burst a report, you send only the relevant report sections to the users you specify.

The Report Broker Scheduling tool is the interface through which you create schedules. It offers all of the scheduling options you need to define the parameters of a schedule.

Report Broker Overview

The following Report Broker tools can be accessed by authorized users from the Repository tree in the Business Intelligence Portal and from Developer Workbench. The Client Security Authorization Model controls whether users are authorized to access the Report Broker Scheduling tools. To enable named users access to the Report Broker tools, they must belong to the Web Query group, folder-sched.

Note: A named user is a user ID that exists in the License Manager entry for the base DB2 Web Query product.

- **Schedule Tool.** The Basic Scheduling tool provides the options to define the parameters of a schedule, such as when a report procedure (FEX) will run, what format the output will take, and where the output will be distributed. For more information about the Basic Scheduling tool, see *Basic Scheduling tool*.
- **Distribution List.** A list stored in the Repository that allows you to specify multiple recipients to whom the report output of a schedule will be distributed. For more information, see *Creating and Maintaining Distribution Lists*.
- **Log Report.** This report enables you to view information about a distributed job, such as whether or not the job executed successfully, when the report output was distributed, in what format the report output was sent, and the method of distribution. For more information about Log Reports, see *Tracking ReportCaster Schedules*.

- **Report Broker Console.** The Console is the interface that provides access to the Report Broker administration tools (Server Status, Job Status, Configuration, Global Update) and schedule management tools (Job Logs and Blackout Dates) for Report Broker. For more information about the Console, see *ReportCaster Console*.

Authorizing Users for Report Broker

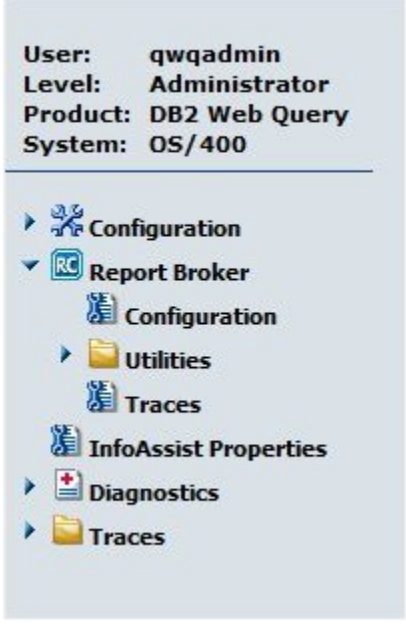
To enable named users access to the Report Broker tools, they must belong to the Web Query group, folder-sched.

Note: A named user is a user ID that exists in the License Manager entry for the base DB2 Web Query product.

Accessing the DB2 Web Query Administration Console

A Web Query Administrator has access to the Administration Console. To launch the Administration Console, click the *Administration* option on the menu bar and select *Administration Console*.

To use the Administration Console to update Client configuration settings, click one of the categories in the menu at the left side of the screen (for example, Report Broker).



You can also click any of the following options located on the right side, along the top of the screen:

Install Info. Displays information about the version of DB2 Web Query you are using and the installed and licensed product components. The following parameters appear:

- **Product Release.** Version and Release.
- **Service Pack.**
- **Build Version.** Track version.
- **Build/GEN Number.** Specific DB2 Web Query build number.
- **Build/GEN Date.** Date and time the build number was generated.
- **Application Server.** Application Server and version number which DB2 Web Query is deployed against.

Clear Cache. Clears your memory cache, which contains information that gets processed with every DB2 Web Query Servlet request. This includes DB2 Web Query script and configuration files, and the default Managed Reporting Driver cache.

By clearing the cache, it fully revokes the Report Broker scheduling privileges from a user. This should be done after the MRSCHEDULE group profile is removed from a user.

Login As. Redirects you to the Administration Console logon screen.

Logout. Logs you off the Administration Console.

Help. Opens the online help file.

Distribution Server Features

In this section:

Authorized users should be aware of the following Distribution Server activities and features:

- *Distribution Server Startup* on page 83
- *Recovery* on page 83
- *Scanback* on page 84
- *Verifying Report Broker Distribution Server Configuration Settings* on page 85

Distribution Server Startup

During startup, the Distribution Server calls the IBFS system to obtain information about how to communicate with the DB2 Web Query Repository. If the Distribution Server cannot communicate with the Repository, it will not start. If the Distribution Server does not start, check the Distribution Server startup trace and log files for error messages. For more information, see *Distribution Server Startup Trace Files* on page 194.

Upon successful initialization, the Distribution Server checks for jobs that need to be recovered, as specified by the Recovery and Scanback parameters and jobs that need to run as specified by the NEXTRUNTIME value of each schedule.

Recovery

Reference:

How Jobs Are Recovered

The purpose of the Recovery parameter is to recover jobs that were placed in the Distribution Server queue but did not complete schedule execution processing. This could be due to the Distribution Server or Reporting Server being stopped. You can activate the recovery feature by setting Recovery to ON in the Report Broker section of the Administration Console.

When you create a schedule and the Recovery parameter is set to ON, the RECOVERY field for the schedule is set to N. When the schedule is placed in the run queue, the RECOVERY field is set to Y. This means that if the Distribution Server becomes unavailable while the job is still in the queue, Report Broker will recover the job when the Distribution Server becomes available, even if the Recovery parameter is set to OFF. After the job is run and all log records have been written, the RECOVERY field is set back to N.

Any job that is running because the Recovery parameter is set to ON runs only once. After the job is placed in the run queue, its NEXTRUNTIME is updated to the next time it should run after the current time. For example, if a job is scheduled to run hourly and the Distribution Server is unavailable for four hours, when the Distribution Server becomes available, the job will run only once and will resume running on an hourly basis thereafter.

Note: The Recovery option works independently of the Scanback option. For more information about the Scanback option, see *Scanback* on page 84.

Reference: How Jobs Are Recovered

Scheduled jobs are recovered as follows:

1. When you start the Distribution Server, it checks for Recovery ON in the Report Broker configuration.

2. If Recovery is set to ON, the Distribution Server reads all records whose RECOVERY field is set to Y and places them in the run queue, regardless of schedule information and NEXTRUNTIME value.
3. The Distribution Server begins the process of polling and looking for jobs to run after having queued all the jobs whose RECOVERY field is set to Y.
4. After the scheduled job is placed on the Distribution Server queue, its NEXTRUNTIME is updated to the next time it should run after the current time.

Note:

- If the Recovery parameter is set to OFF, the Distribution Server modifies all jobs with a RECOVERY field value of Y to N. This turns recovery off for all jobs.
- If the Recovery parameter is set back to ON, it is only activated for jobs whose NEXTRUNTIME is later than the time at which the Recovery parameter was set back to ON.

Scanback

In certain instances, the Distribution Server may be unavailable for a period of time. During this time, no scheduled jobs can run. By default, when the Distribution Server becomes available again, it searches for and runs all jobs with a next run time less than the current time and resets the next run time according to the next scheduled run time of the job. If the Distribution Server is unavailable for a long time, you may want to adjust this behavior. Using the Scanback parameter, you can run only those jobs found in a specified time period of the outage, or just reset the next run time of all unexecuted jobs without running them.

There are two Scanback parameters:

- Scanback Type (On, Off or Reset Next Run Time)
- Scanback Interval (number of days)

The Scanback Interval is active only when the Scanback Type is On.

The Scanback Type parameter can have the following settings:

- **On, when Scanback interval is an integer value greater than zero.** Represents the number of 24-hour periods (beginning with the Distribution Server restart time) that the Distribution Server will scan back to look for and run jobs with a next run time less than the current time.

  For example, if the Distribution Server is unavailable for three days and Scanback is set to 2, then the Distribution Server will only run those jobs it finds with a next run time within the previous 48 hours of the server restart time.

  A valid value is any integer from 1 to 365. The default value is 15 days.

- **Reset Next Run Time.** Looks for all jobs with a next run time less than the current time and resets the next run time to the next scheduled run time of the job.
- **Off.** Disables Scanback. This means the Distribution Server follows its default behavior to find, run, and reset all jobs with a next run time that is less than the current time.

Note:

- The Scanback option works independently of the Recovery option. For more information about the Recovery option, see *Recovery* on page 83.
- Consider Daylight Saving Time when setting the Scanback parameter. For more information, see *http://webexhibits.org/daylightsaving/b.html*.

Verifying Report Broker Distribution Server ConfigurationSettings

Web Query Administrators can manage the Distribution Server Configuration Settings using the Administration Console. For details, please see *Verifying the Report Broker Configuration Settings* on page 198.

Note: It is important to verify these settings before using Report Broker.

Report Broker Console

In this section:

Describes configuration options for authorized users using the Report Broker Console.

The Report Broker Console is the interface that provides access to the tools that administer the Distribution Server and manage schedule job logs, and blackout dates.

Note: Throughout this section, the Report Broker Console will be referred to as the Console.

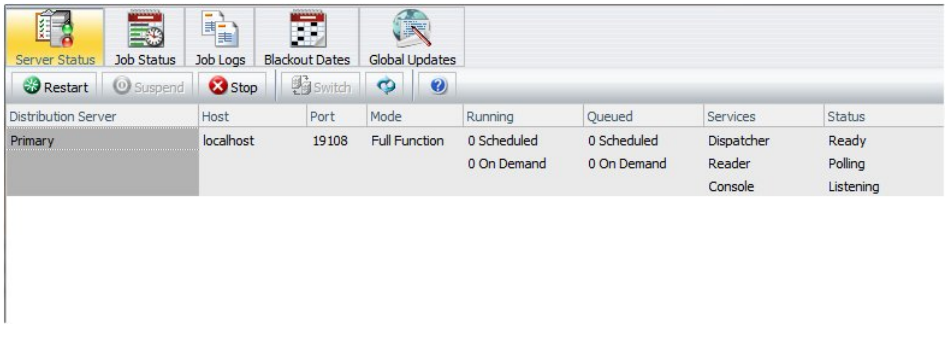
Using the Report Broker Console

The following tools are accessible from the Console.

- Server Status
- Job Status
- Job Logs
- Blackout Dates
- Global Updates

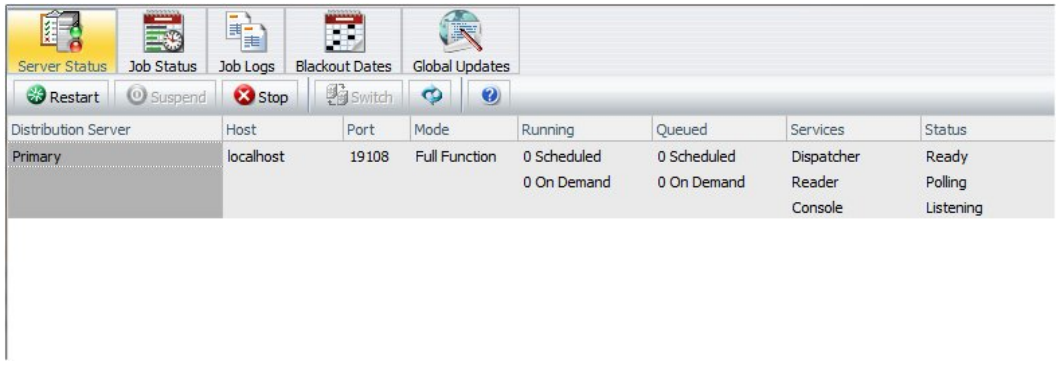
In configurations licensed for Report Broker, authorized users can access the Console from the Tools menu, as shown in the following image.

The Console intuitive ribbon displays in a new browser window, as shown in the following image. The ribbon displays a tab for each tool the user is authorized to access.



Server Status

The Server Status tool allows administrators to select a Distribution Server to restart, suspend, stop distribution, switch servers, or refresh data, as shown in the following image.



Viewing the Distribution Server Status

The Server Status tool, accessed by selecting the Server Status tab in the Console, enables you to view the status of the Distribution Server. The Server Status tool provides details about the Distribution Server, such as the host name and port number, the status, and the number of jobs that are running and in the queue. The Distribution Server information includes:

- **Distribution Server.** The name used to identify the server in the Console.

  Note: When the Distribution Server attempts to make an SMTP connection to an Email server, the connection will time out after five minutes.

- **Host** and **Port.** The host name and port number where the Distribution Server is installed.
- **Mode.** The state and function of the Distribution Server. Options include:
  - **Manager.** When a Distribution Server operates as a Manager, the server listens for requests for on-demand jobs and polls the repository for scheduled jobs. Scheduled and on-demand jobs are dispatched by the Manager to a Distribution Server operating as a Worker. The Manager does not execute jobs. The Manager monitors jobs running on the Worker and communicates job status information to the Client and the Report Broker API.

- **Worker.** When a Distribution Server operates as a Worker, it receives a job from a Manager and executes the job. The Worker communicates with the Client to retrieve procedures stored in the Repository and with the Reporting Server to run schedule job procedures. The Worker also dispatches HTTP requests and communicates with the file system or FTP servers to retrieve files for distribution. The Worker distributes the results returned from the Reporting Server, or HTTP or file requests by Email, FTP, Printer, or to Managed Reporting, as specified in the schedule. The Worker also updates the Report Broker logs with job information and updates the schedule with the next run time.
- **Full Function.** Indicates that the Distribution Server is up and functioning. When you configure Report Broker with a secondary Distribution Server, this indicates that the server is acting as the primary Distribution Server.
- **Down.** Indicates that the Distribution Server is stopped.

- **Running Jobs.** The number of scheduled and on demand jobs that are currently running.
- **Queued Jobs.** The number of scheduled and on demand jobs that are in the Distribution Server queue.
- **Services.** The services currently running on the Distribution Server. Options include:
  - **IBFS Cache Cleaner.** The Distribution Server uses this service to refresh the IBFS Cache. The frequency at which the cache is refreshed is controlled by the setting IBI_Repository_Sync_Interval in the Administration Console.
  - **Console.** The Distribution Server uses this service to listen for communication from the Report Broker application or API.
  - **Reader.** The Distribution Server uses this service to poll the Repository.
  - **Dispatcher.** The Distribution Server uses this service to execute scheduled jobs.
- **Status.** The status of each service currently running on the Distribution Server. Options include:
  - **Ready.** The service is available.
  - **Standing By.** The service is standing by.
  - **Suspend.** The service is suspended.
  - **Listening.** The Console service is actively listening.
  - **Polling.** The Reader service is active.
  - **Monitoring.** The Repository Monitor is active.

From the Server Status interface, you can perform the following tasks:

- **Refresh.** Retrieves the most current information and refreshes the Distribution Server status with this information.
- **Server.** Displays a drop-down menu listing the servers, whose status you can view.
- **Restart.** Recycles the Distribution Server and the Application Server.
- **Suspend.** This option is always available, regardless of whether a failover Distribution Server is configured or not. Suspends the Distribution Server services, but the server remains running. When you suspend a server, the Suspend button label will change to Resume.
- **Stop.** Brings the Distribution Server completely down.

  Important: When you stop the Distribution Server using this option, you must restart it from the machine where it resides. You cannot restart the Distribution Server remotely.
- **Help.** Opens the Console Server Status online documentation.

Stopping and Restarting the Distribution Server

How to:

Start and Stop the Distribution Server Using CL Commands

The Server Status interface enables you to stop and restart the Distribution Server, as follows:

- To stop the Distribution Server, click the *Stop* button. A window opens, asking you to confirm that you want to stop the server. Click *Yes*.

  Important: When you stop the Distribution Server using this option, the Server Status Restart option cannot be used to restart the Distribution Server. To start the Distribution Server, log on to the machine Distribution Server is installed on.
- To restart the Distribution Server, click the *Restart* button. A window opens, asking you to confirm that you want to restart the server. Click *Yes*.

  When you restart the server, the Distribution Server and the Application Server are recycled.
- To obtain the most current information about the Distribution Server, click *Refresh*.

Procedure: How to Start and Stop the Distribution Server Using CL Commands

Use the following CL commands to start and stop the Distribution Server:

1. To start the Distribution Server:

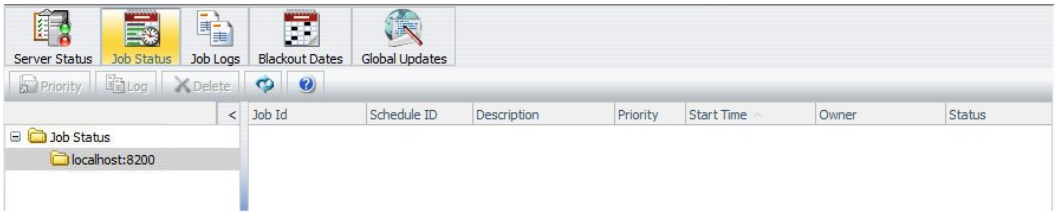
   ```
   STRWEBQRY START(*DSTSRV)
   ```

2. To stop the Distribution Server:

   ```
   ENDWEBQRY START(*DSTSRV)
   ```

Job Status

Another resource for tracking schedules is the schedule job status. The schedule status provides a list of scheduled jobs that are in the Distribution Server queue. Status information includes the Schedule ID, the time it started running, and the status of the job.



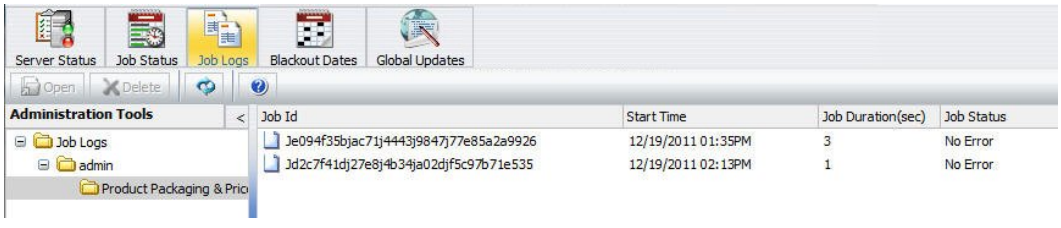
The schedule information includes:

- **Job Id.** The ID assigned to the job.
- **Schedule ID.** A unique Report Broker generated key assigned to the job when it was scheduled.
- **Description.** The description provided when the schedule was created.
- **Priority.** The priority level of the schedule. 1 is the highest and 4 is the lowest priority.
- **Start Time.** The time that the schedule run began.
- **Owner.** The name of the user who owns the schedule.
- **Status.** The status of the scheduled job. It contains one of the following values:
  - **Running.** The scheduled job is currently running.
  - **Queue.** The scheduled job is waiting for a thread to become available to run the request.
  - **Server Name.** The Reporting Server to which the job has been submitted.

Job Logs

The Job Logs interface enables you to view the logs of executed jobs belonging to you or to users whose job logs you are authorized to see. You can open job logs, delete job logs, refresh job logs, or access related help for job logs on the Job Logs interface, as shown in the following image.

Note: The Job Logs Tab supports the functionality of a multi-select, whereby you can open or delete multiple files simultaneously.



The job logs information includes:

- **Job Id.** The ID assigned to the job.
- **Start Time.** The time that the schedule was run.
- **Job Duration(seconds).** The amount of time needed to complete a job.
- **Job Status.** The status of the job when it completed processing.
  - **Success.** No errors occurred during the scheduled job processing.
  - **Error.** One or more errors occurred during the scheduled job processing. No report was generated or distributed.
  - **Warning.** One or more warnings occurred during the scheduled job processing. A report was generated and distributed.

Blackout Dates

In this section:

Importing Blackout Dates

Extracting Blackout Dates

How to:

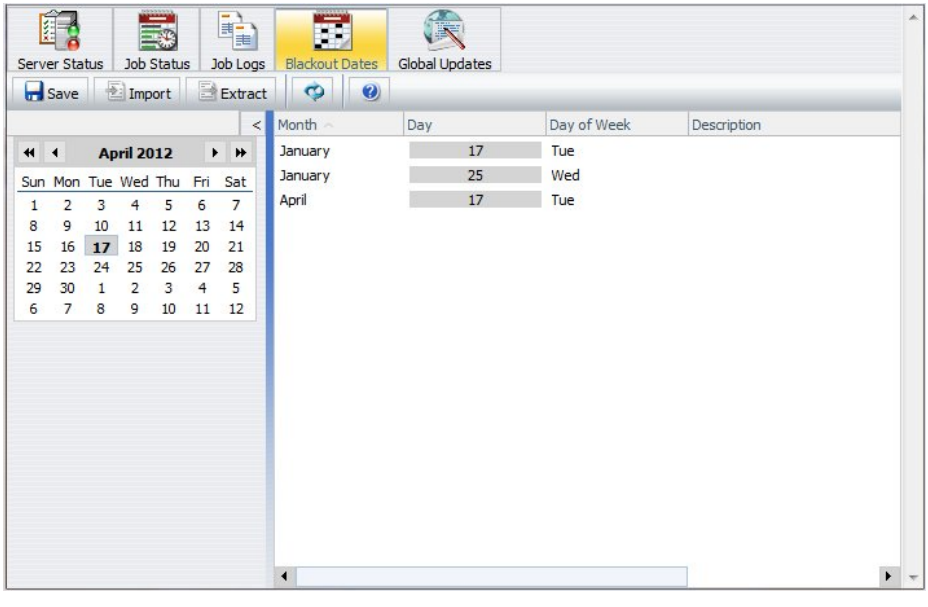
Define Blackout Dates

Reference:

Schedule Behavior for Blackout Dates

Schedule blackout dates are those dates on which schedules will not run and cannot be set to run. A user authorized to access the Blackout Date tool can view, define, update, and delete schedule blackout dates.

To view schedule blackout dates, in the Console, select *Blackout Dates*. The Schedule Blackout Dates interface, shown in the following image, provides a calendar in the left panel and a list of schedule blackout dates in the right panel.



Web Query Administrators can add new blackout dates, delete and replace the description of existing blackout dates, and extract existing blackout dates to a file for future use. In the Report Broker Blackout Dates interface, these tasks can be completed using the following:

- The Blackout Dates interface provided in the Blackout Dates tab. This interface provides an interactive calendar through which you can select blackout dates, and a list of groups to which you can assign blackout dates.
- The Import Dates utility, accessed from the Blackout Dates tab.
- The Extract Dates utility, accessed from the Blackout Dates tab.

You can change the month or year using the arrows at the top of the calendar. Click *Refresh* to load the latest blackout dates. Dates only appear as available or unavailable. You can toggle between exposing and hiding the left panel by clicking the arrow in the top-right corner of the panel. The following image shows the display with the left panel hidden.

Reference: Schedule Behavior for Blackout Dates

Blackout dates are enforced during schedule creation and at run time:

- When creating or editing one of the date fields in a schedule, Report Broker dynamically checks the first upcoming date on which the schedule will run to ensure that this date has not been blacked out. If there is a conflict with the date, an error message appears and the schedule cannot be saved until the conflict is resolved by either changing the schedule date or by not blacking out the date.
- At run time, each schedule is checked against the list of blackout dates. If a blackout date has been defined for the scheduled date, the schedule will not run. If notification is enabled, a notification is distributed indicating that the schedule did not run because of a defined blackout date.

  Note: Schedule blackout dates for a specific user include the global blackout dates and the blackout dates assigned to the group(s) to which the user belongs.

Procedure: How to Define Blackout Dates

To define blackout dates:

1. In the left panel of the Blackout Dates tab, select the group for which you are defining blackout dates.

   Note: Only authorized users can set Global schedule blackout dates.

2. In the calendar, click on the dates that you want to black out. Click the single arrows to change the month and click the double arrows to change the year.

If you are choosing global dates, the day on the calendar is highlighted in gray. If you are choosing a group blackout date, the day on the calendar is highlighted in yellow. The following image shows an example of group (August 11, 19, and 30) schedule blackout dates.

3. Click *Save*.

   A confirmation window opens to tell you that the dates have been saved.

4. Click *OK*.

The blackout dates you saved appear in the Schedule Blackout Dates calendar and are displayed in the right panel.

Importing Blackout Dates

How to:

Import Blackout Dates From the User Interface

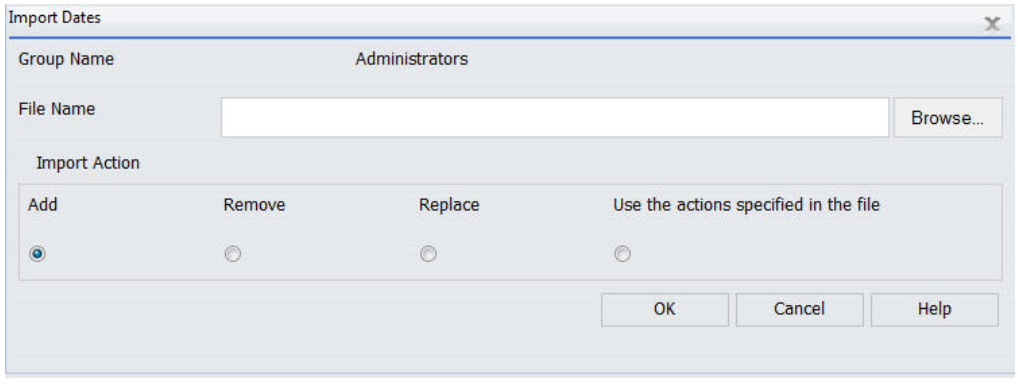
You can import a file that contains blackout dates into Report Broker.

Procedure: How to Import Blackout Dates From the User Interface

To import schedule blackout dates:

1. In the Blackout Dates tab, select the group for which you are importing blackout dates.
2. On the toolbar, click *Import*.

The Import Dates dialog box opens, as shown in the following image.



3. In the *File Name* field, type the full path to the file, or click *Browse* and navigate to the file you want to import.
4. Select one of the following Import Actions:
   - **Add.** Adds the dates specified in the import file to the blackout dates.
   - **Remove.** Deletes the dates specified in the import file from the blackout dates.
   - **Replace.** Updates the description of the specified dates.
   - **Use the actions specified in the file.** Use this option when the import file contains a combination of commands (add, remove, replace) and date ranges.
5. Click *OK*.

   The following confirmation message is displayed:

   ```
   Blackout Dates have been successfully imported.
   Select Save on the Schedule Blackout Dates toolbar to save the changes.
   ```
6. Click *OK*.
7. In the Schedule Blackout Dates option menu, click *Save*.

   Note: The imported blackout date changes do not take effect until you save them.
8. In the save confirmation window, click *OK*.

The Schedule Blackout Dates calendar is updated with the blackout date changes.

Extracting Blackout Dates

How to:

Extract Schedule Blackout Dates From the User Interface

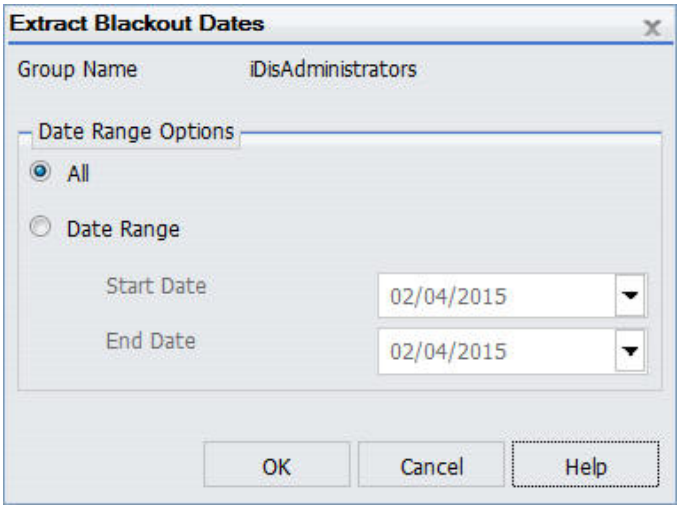
You can extract existing blackout dates in the Report Broker Development Interface to a .txt file.

Procedure: How to Extract Schedule Blackout Dates From the User Interface

To extract schedule blackout dates:

1. On the toolbar of the Blackout Dates tab, click *Extract*.

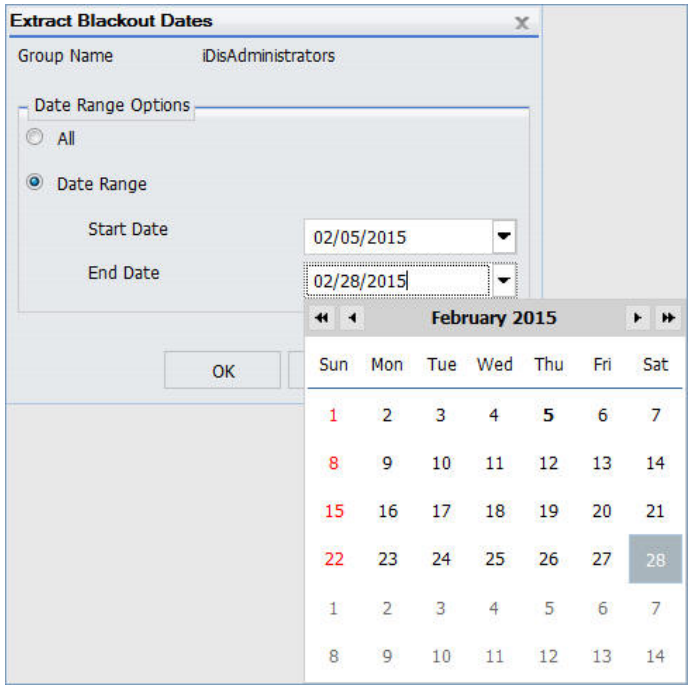
   The Extract Blackout Dates dialog box opens. The group name from which you are extracting the blackout dates appears at the top of the dialog box, as shown in the following image.



2. Select one of the following from the Date Range Options:

   - *All* to extract all currently saved blackout dates.
   - *Date Range* to specify the range of dates with blackout dates that you want to extract.

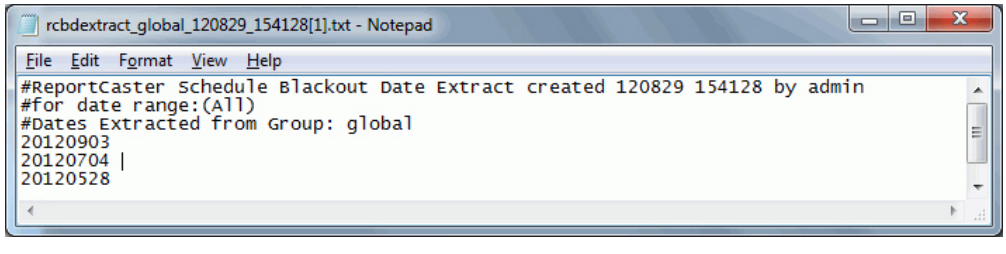
If you select Date Range, type or select the Start Date and End Date. To select a date, click the down arrow next to the field. A calendar opens, as shown in the following image, from which you can choose a date.



3. Click *OK*.

A window opens, asking if you want to open or save the file.

If you choose to open the file, a window opens, displaying the contents of the extracted content. The following is an example of the data in an extracted file.



If you choose to save the file:

a. Click *Save*.

b. In the Save As window, browse to the directory where you want to save the extract file and click *Save*.

Note: The default extract file name is *rcbdextract_GroupName_YYMMDD_HHMMSS.txt*, where *GroupName* is the name of the group from which the blackout dates are extracted, YYMMDD and HHMMSS are the date (year, month, day) and time (hour, minute, second) that the file was created.

Global Updates

How to:

Make a Global Update for a Mail Server

Make a Global Update for an FTP Server

Make a Global Update for a Printer

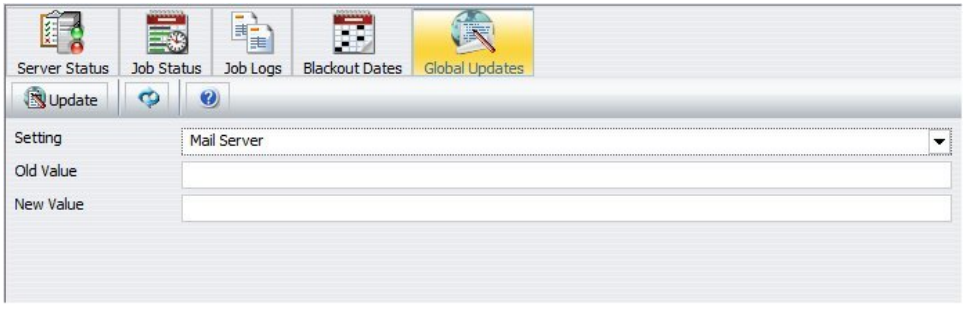
Make a Global Update for an Email Address

Make a Global Update for an Email From

Authorized users can make global updates in the Global Updates interface for the Mail Server, Printer, Email Address, and Email from values stored in schedules and distribution lists.

Procedure: How to Make a Global Update for a Mail Server

1. In the Global Updates interface, click the *Setting* drop-down and select *Mail Server* (the default), as shown in the following image.



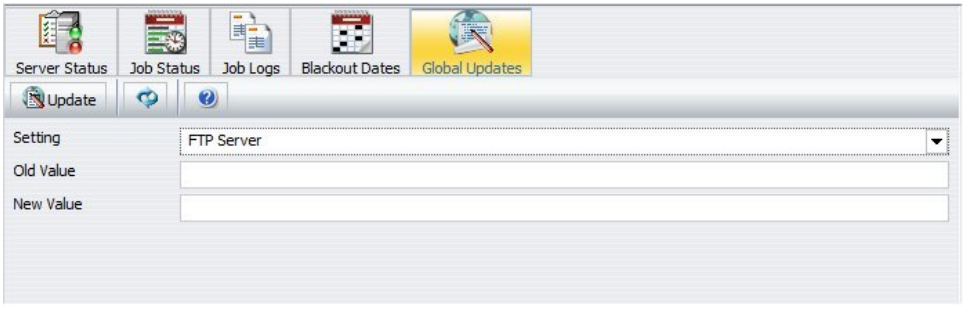
2. Type the existing Mail Server in the *Old Value* box.

3. Type the new Mail Server in the *New Value* box.

4. Click *Update* to update the new Mail Server value in schedules.

Procedure: How to Make a Global Update for an FTP Server

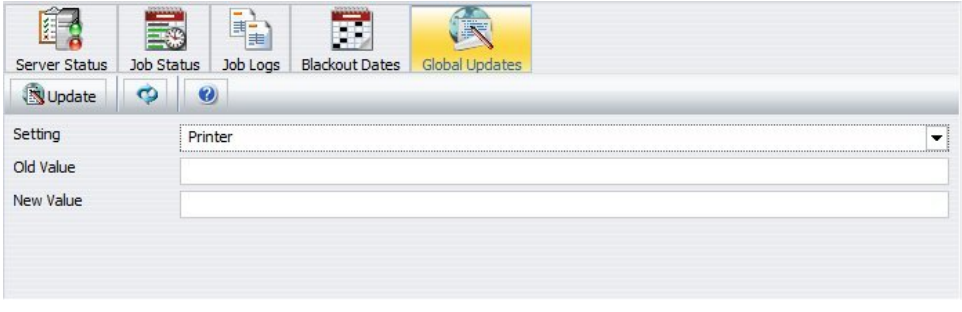
1. In the Global Update interface, click the *Setting* drop-down and select *FTP Server*, as shown in the following image.



2. Type the existing FTP Server in the *Old Value* box.
3. Type the new FTP Server in the *New Value* box.
4. Click *Update* to update the new FTP Server value in schedules and distribution lists.

Procedure: How to Make a Global Update for a Printer

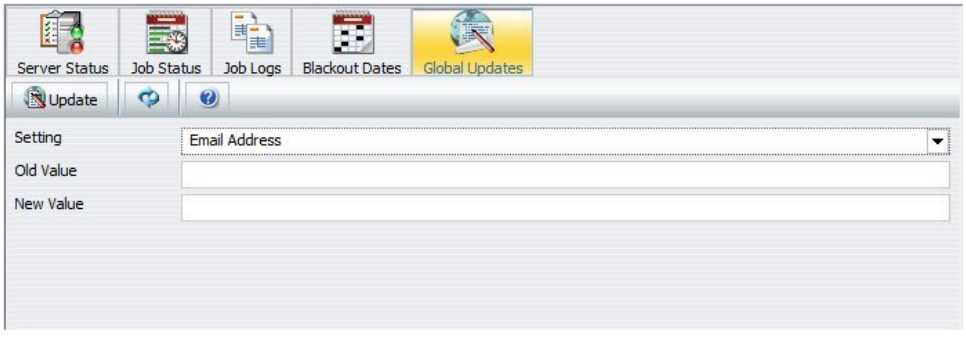
1. In the Global Update interface, click the *Setting* drop-down and select *Printer*, as shown in the following image.



2. Type the existing Printer in the *Old Value* box.
3. Type the new Printer in the *New Value* box.
4. Click *Update* to update the new Printer value in schedules and distribution lists.

Procedure: How to Make a Global Update for an Email Address

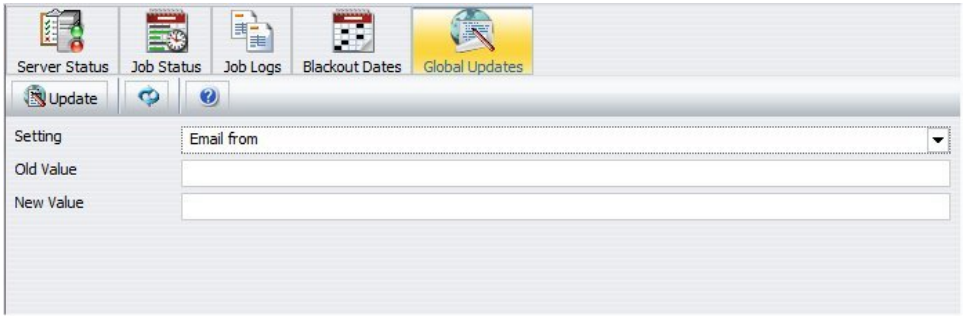
1. In the Global Update interface, click the *Setting* drop-down and select *Email Address*, as shown in the following image.



2. Type the existing Email address in the *Old Value* box.
3. Type the new Email address in the *New Value* box.
4. Click *Update* to update the new Email address value in schedules and distribution lists.

Procedure: How to Make a Global Update for an Email From

1. In the Global Update interface, click the *Setting* drop-down and select *Email from*, as shown in the following image.



2. Type the existing Email from in the *Old Value* box.
3. Type the new Email from in the *New Value* box.
4. Click *Update* to update the new Email from value in schedules.

Creating and Maintaining Distribution Lists

In this section:

Describes how you can edit the properties of a distribution list, delete a distribution list, copy a distribution list, or run a distribution list once you have created it.

A Distribution List is an easy way to distribute content to multiple recipients by specifying the name of a list stored in the Repository that contains the individual recipients rather than entering each recipient separately into a schedule. A Distribution List can be made available to other users by sharing it or changing its ownership to be managed or published.

Creating a Distribution List

How to:

Create a Distribution List

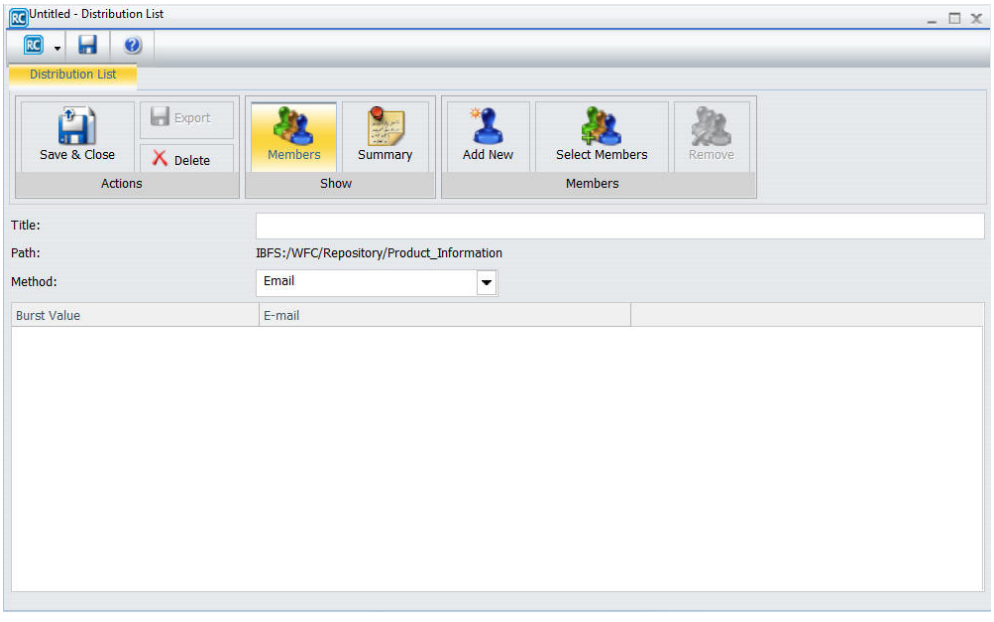
A Distribution List is an easy way to distribute content to multiple recipients by selecting a list that contains the individual recipients rather than entering each recipient separately into a schedule.

Before creating a Distribution List, understand what groups or individual users require access to it to determine the folder in which to create it.

Procedure: How to Create a Distribution List

1. Right-click a Repository folder and select *New*, *Distribution List*.

The Distribution List window opens, as shown in the following image.



2. In the *Title* box, type a descriptive name for the Distribution List.
3. From the Method drop-down list, select the distribution method for the Distribution List. Email is the default distribution method.

   - **If you select Email,** you must provide a list of email addresses and can optionally burst values associated with an address. For details on entering burst values, see *Bursting a Report* on page 105.

     In the *Address* box, specify the email addresses of the recipients (for example, chuck_hill@ibi.com for an individual user or #sales@ibi.com for an email server list that contains multiple email addresses). Be careful typing this information because there is no edit checking. The maximum number of email addresses you can specify in a Distribution List is 9999. You can specify a maximum of 800 characters within a single Address line.

     You can specify multiple email addresses within a single Address field. For more information, see *Specifying Multiple Email Addresses* on page 111.

     If the Email Delivery, Restrict Email Domains option is set to yes, then only those email domains (the portion of the email address following the at (@) symbol) listed in Allowed Email Domainsare valid email recipients.

   - **If you select FTP,** you must specify the names of the FTP files that will hold the report (including the extension) and, optionally, burst values associated with FTP file.

The extension specified here should be appropriate for the format selected when creating the schedule. For example, if you selected Excel or EXL2K on a Windows platform, the file should be *drive:\directory\filename.xls*. The maximum number of FTP files you can specify in a Distribution List is 9999.

When using FTP to transfer Cascading Style Sheet (CSS) files from any platform to z/OS UNIX and the z/OS UNIX httpd.conf file contains the default MIME type of 8-bit for CSS files, then the CSS files must be transferred in binary mode.

- **If you select Print,** you must specify the printers that will receive the distribution and, optionally, burst values associated with the printer. For details on entering burst values, see *Bursting a Report* on page 105. For more information on creating printer Distribution Lists, see *Using the Printer Distribution Option in the Basic Scheduling Tool* on page 147.

  In the Printer input field, specify the printer using the following format:

  queue@printserver

  where:

  queue

  Is the name of the printer queue.

  printserver

  Is the host name or IP address of the printer.

  Although Report Broker supports specifying only the print server (host name or IP address), we recommend that you specify both the print queue and print server. (Report Broker differentiates between the printer queue and the printer server by detecting the presence of the '@' separator.)

4. If you are finished creating a Distribution List, click *Save & Close*.

Editing and Deleting a Distribution List

How to:

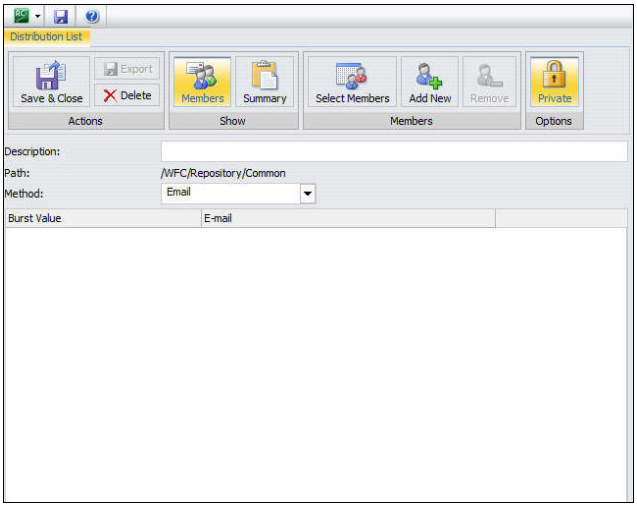
Edit a Distribution List

If you are authorized to access the Distribution List tool, you can view and edit the Distribution Lists of which you are the owner. If the Distribution List is owned by a group or is published, you have to be authorized to edit it.

Procedure: How to Edit a Distribution List

1. From the tree, select the Distribution List you want to edit and click *Open*, or double-click the list.

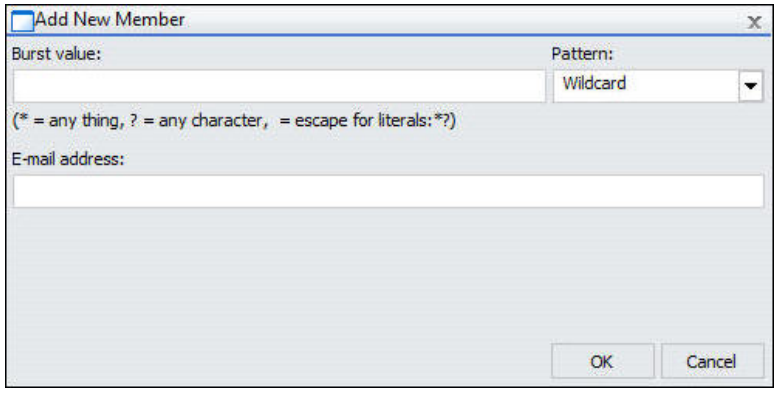
A window opens displaying the properties of the selected Distribution List, as shown in the following image.



2. From this window, you can perform the following:

- Change the name of the Distribution List by typing a new name in the *Title* field.
- Change the value of the existing Distribution List entries. For example, you can change the Distribution Method.

- Click *Add New* or double-click within the area below the Burst Value column to add a New Member to the Distribution List below Burst Value and Email. The Add New Member dialog box appears, as shown in the following image.



- Delete a Distribution List entry by selecting the item to be deleted, then click *Delete*.

3. When you have completed your changes, click *Save & Close*.

   To exit the editing window without making changes, click *Close*.

Bursting a Report

In this section:

Bursting Guidelines and Limitations

Reference:

Considerations When Distributing a Burst Report Using FTP

Instead of distributing an entire report from a scheduled report procedure (FEX), you can use the Report Broker burst feature to break the report into sections to be distributed separately to the same or different destinations. Bursting enables you to target relevant sections of a report to individual users. Each report section is saved to a separate file.

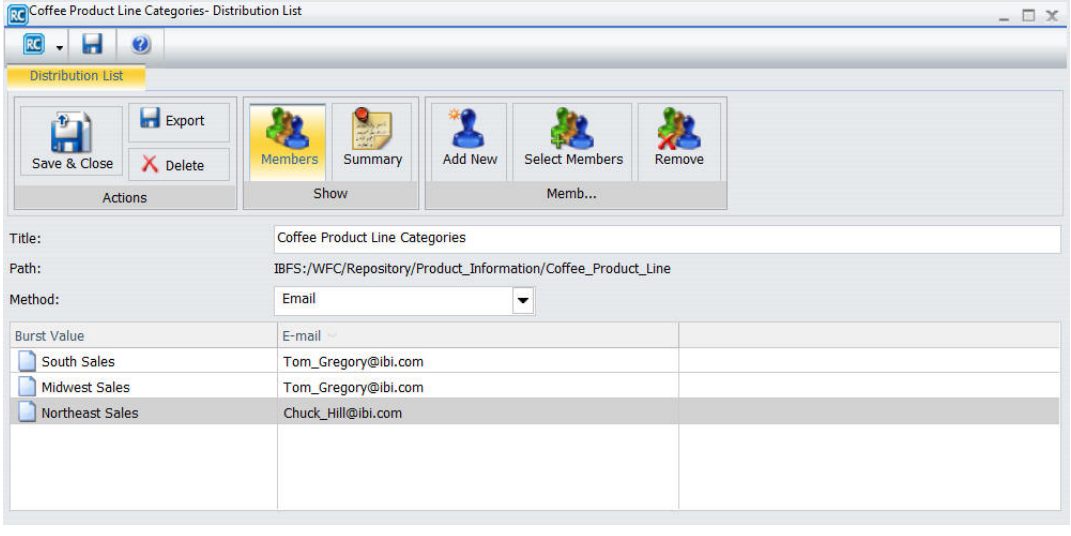
If you are distributing a burst tabular report, the burst value is determined by the first BY field. If you are distributing a burst graph report, the burst value is determined by the second BY field. The burst value is automatically determined by the internal matrix, which is a memory area that stores each database field value and calculates values referenced by the TABLE or GRAPH request.

You can send several report sections to one recipient by specifying the destination of that recipient (email addresses , FTP server locations,and files or printers) for each section you want to send. You can also send several report sections to one destination. The burst values you specify in the Distribution List must exist in the data source you are reporting against.

Note: If you want to burst a report, you must enable the bursting option within the Task for a schedule. The burst values specified in the Burst Value column in the Distribution List are ignored unless the Task specifies to burst the report.

Example: Specifying Burst Values in a Distribution List

You can specify sort field burst values and destinations (email addresses, FTP, or printers) when creating or editing a Distribution List. The following image shows burst values and the destination email addresses specified in the Distribution List window.



Using the primary sort field values (Northeast Sales, South Sales, and Midwest Sales), the email address of each representative is associated with the relevant sales report data. Since Chuck Hill needs only the data for the Northeast branch, the sort value Northeast is listed in the Burst Value column and is associated with his email address in the E-mail column.

However, Tom Gregory works in both the Midwest and South regions. Since he requires data for both regions, his email address is listed in the E-mail column twice, next to a Burst Value column entry for each region.

Note: You can click on a column heading to sort the data in that column.

Tip: You can specify multiple email addresses on a single Address line. For details, see *Specifying Multiple Email Addresses* on page 111.

Reference: Considerations When Distributing a Burst Report Using FTP

When distributing a burst report using FTP, consider the following:

- When using a format of HTML, PDF, or EXL2K, an index page for the burst report output is generated.
- The index page for FTP distribution will only contain the burst values specified in the Distribution List. The report output is distributed only for the specified burst values.
- The index page links for burst report output distributed using FTP are incorrect when specifying BASEURL in the scheduled procedure. This is because Report Broker does not parse and evaluate the procedure code of the scheduled job. To resolve this, move the distributed files to the BASEURL directory or specify the fully qualified directory path of the distributed output in the index page.
- On z/OS, burst report output distributed using FTP is created in sequential data sets having the following qualifiers:
  - **High-level Qualifier:** User ID specified for the FTP Server.
  - **Additional Qualifiers:** Location value in the Distribution tab and file(s) supplied in a Distribution List.

  To send burst output to a partitioned data set, specify an existing partitioned data set as Location and specify member names, without extensions, in the Distribution List File column. For example, *highlevelqualilfier.location.file*.
- On z/OS, do not use an index name that is the same as the data (input) file from which you are reporting. If you specify an index name that is the same as the DDNAME in the DYNAM for your data file, the data file is overwritten with the report output.
- On z/OS, the index page is generated with extra characters preceding the burst values. The links on the page to the report sections are correct.

Bursting Guidelines and Limitations

This section provides detailed information to assist you in defining burst values.

When a schedule task specifies to burst a report procedure (FEX), all data values generated for each burst section are returned to the Distribution Server.

- For the email and printer distribution methods, specific burst sections are distributed based on the burst values specified when creating the Distribution List or Single Address used by the schedule.

The following are guidelines and limitations that apply to the burst feature:

- **Case.** Burst values are case-sensitive.

- **Keywords.** Burst values can contain the following keywords:
  - **Wildcard Characters.** Use an asterisk (*) and a question mark (?) as wildcards to represent characters at the beginning, end, or middle of the burst values. The asterisk represents one or more characters, while the question mark represents any single character. Precede each instance of a burst value using a wildcard with the wildcard keyword enclosed in brackets followed by a colon, [wildcard]:, as shown in the following examples.

    [wildcard]:abc* = all values that start with 'abc'.

    [wildcard]:a?c = all three-character values that start with 'a' and end with 'c'.

    [wildcard]:a?c* = all values that start with 'a' and have a 'c' as the third character.

    Note: Wildcards in a distribution list are not supported with FTP.
  - **Java Regular Expressions.** Use to identify strings of text. Precede each instance of a burst value using a Java regular expression with the regular expression keyword enclosed in brackets followed by a colon, [regexp]:, as shown in the following examples.

    [regexp]:[bcr]at = values that are bat, cat, or rat.

    [regexp]:[^bcr]at = any value that is not bat, cat, or rat.
  - **Default Distribution.** You can provide a default destination for burst values that are not specified in the Distribution List. To do this, enter the following in the burst value column of the Distribution List.

    [elsesend] = reports for burst values not contained in the Distribution List will be sent to the named recipient.

The following are example entries in an email Distribution List that illustrate the use of the wildcard and default distribution keywords in burst values.

Burst Value	Address
[wildcard]:*an*	sml@company.com
England	ray@company.com
[elsesend]:	jt@company.com

Using a scenario where the report output from a scheduled report procedure (FEX) is burst on the Country field that contains values of Germany, USA, France, Canada, Italy, Chile, England, and Japan, then:

- Report information for Germany, France, Canada, England, and Japan will be delivered to sml@company.com.
- Report information for England will be delivered to ray@company.com.
- Report information for USA, Italy, and Chile will be delivered to jt@company.com.

- **Formats.** All formats support bursting except XML and EXCEL. Each burst section of the report output from a scheduled report procedure (FEX) will be named *burstvalue_filename.format* (for example, Northeast_Sales.pdf).
- **ACROSS command.** This command is not evaluated as a primary sort field. To burst report output from a scheduled report procedure (FEX), you must also include a BY field. Bursting occurs on the BY field.
- **TABLEF.** No internal sort processing is performed. The specification of a BY field requires that the data already be sorted in the data source.
- **ON TABLE SUBHEAD/ON TABLE SUBFOOT.** Creates a SUBHEAD for only the first page of the report output from a scheduled report procedure (FEX), and a SUBFOOT for only the last page of the report output from a scheduled report procedure (FEX). When bursting report output from a scheduled report procedure (FEX), the SUBHEAD and SUBFOOT should occur for each sort break. Therefore, specify the primary sort field in place of TABLE in the ON command. For example:

  ```
  ON primarysortfield SUBHEAD
  ```

- **AnV field types.** Bursting is not supported on a field with the A*n*V (where *n* is an integer value) field type.

Creating a Dynamic Distribution List

A Dynamic Distribution List enables you to return in memory either a list of burst values and destinations, or only a list of destinations from a data source (for example, a flat file or SQL database). You must use a Web Query procedure that resides in an accessible application directory on the Reporting Server. Two procedures, dynburst.fex and dynlist.fex, have been provided in the baseapp application directory. Each procedure will return the distribution information (using the PCHOLD command) with the data in a specific layout that you define. This layout must contain specific values and destinations so that Report Broker can identify and process the information returned, where the VALUE column contains the burst values and the DEST column contain the email address values.

Example: Creating a Dynamic Distribution List

This example shows the provided Web Query procedures making a call to an SQL stored procedure. This call happens each time the scheduled report is run. The SQL stored procedure will return burst values and email addresses in memory. The Web Query procedure will store these values into a text file that is properly formatted for Report Broker to process.

When BURSTING is required, use dynburst.fex, where &SQLPROC is the name of a stored procedure you created to return the correct values.

The column names and the order in which they are returned must be 'VALUE' for burst values and 'DEST' for email addresses.

```
SQL DB2 EX &sqlproc;
TABLE FILE SQLOUT
PRINT burst_value AS 'VALUE'
email_addr AS 'DEST'
ON TABLE PCHOLD
END
```

where:

sqlproc
: Is the SQL stored procedure retrieving burst values and destination email addresses. This procedure must be created in a library that is accessible from DB2 Web Query.

burst_value
: Is the column name containing the burst values.

email_addr
: Is the column name containing destination email address values.

When BURSTING is not required, use dynlist.fex.

The following is a sample procedure for non-bursting. In this case, the 'VALUE' column does not need to be provided, since a burst value is not required.

```
(dynlist.fex)
SQL DB2 EX &sqlproc;
TABLE FILE SQLOUT
PRINT email_addr AS 'DEST'
ON TABLE PCHOLD
END
```

where:

sqlproc
: Is the SQL stored procedure retrieving destination email address values. This procedure must be created in a library that is accessible from DB2 Web Query.

email_addr

Is the column name containing destination email address values.

Specifying Multiple Email Addresses

When creating a schedule or Distribution List, you can specify multiple email addresses within a single field, row, or record.

When creating a schedule or Distribution List, you can separate each email address with a comma (,) or a semicolon (;).

The multiple email addresses will appear in the To line of a single email when the scheduled output is distributed.

Note:

- To distribute separate emails for each address, specify the email addresses on separate lines within the Distribution List.

Example: Specifying Multiple Burst Email Addresses

If you are using the default configuration (Packet Email = YES), one email is distributed for multiple burst values specified for the same email address. The email address values specified on each row are treated as a string that is a key. If there are multiple rows with the same address value (key), one email is distributed with all the burst values. For example, consider the following Distribution List:

Burst Value Address

```
A          user1@abcd.com;user2@abcd.com
B          user1@abcd.com
C          user1@abcd.com
```

In this example, user1@abcd.com receives two emails when the scheduled output is distributed. In the first email, user1@abcd.com; user2@abcd.com appears in the email To line and one attachment is distributed for burst value A. In the second email, user1@abcd.com appears in the To line and two attachments are distributed, one for burst value B and one for burst value C.

If you are using the configuration that specifies to distribute a single email for each row (Packet Email = NO), then the following behavior occurs for our example. Three separate emails are distributed. In the first email, user1@abcd.com; user2@abcd.com appears on the To line and one attachment is distributed for burst value A. The second email is sent to user1@abcd.com with one attachment for burst value B. The third email is sent to user1@abcd.com with one attachment for burst value C.

If a schedule has multiple tasks and Packet Email = BURST, then for each burst value the output of all of the tasks is combined and distributed. In our example, three separate emails are distributed. In the first email, user1@abcd.com; user2@abcd.com appears on the To line and all output from the multiple tasks for burst value A are distributed. The second email is sent to user1@abcd.com with all output from all tasks for burst value B. The third email is sent to user1@abcd.com with all output from all tasks for burst value C.

Another consideration is when using the default configuration (Packet Email = YES) and the same burst value is specified multiple times for the same Address (key) value. For example, consider the following Distribution List:

Burst Value Address

```
A          user1@abcd.com;user2@abcd.com
B          user1@abcd.com
B          user1@abcd.com
```

In this Distribution List, only two emails are distributed for user1@abcd.com. In the first email, user1@abcd.com; user2@abcd.com appears in the To line and the attachment is for burst value A. In the second email, user1@abcd.com appears in the To line and the attachment is for burst value B. The third row in the Distribution List is ignored since it contains the same key and the same burst value, B, as the second row.

As a best practice, be sure to review your distribution information to make sure you have not duplicated the same burst and address value pairs.

Example: Specifying Multiple Non-Burst Email Addresses

Consider the following sample Distribution List, which does not contain burst values:

Address

```
user1@abcd.com;user2@abcd.com
user1@abcd.com
user2@abcd.com
user3@abcd.com
user1@abcd.com;user2@abcd.com;user3@abcd.com
```

In this Distribution List, an email is distributed for each address line regardless of whether Packet Email is set to YES or NO. This is because each address value is unique. For the first email, user1@abcd.com; user2@abcd.com appears in the To line and the attachment is for the full report output from a scheduled report procedure (FEX). The second email is distributed to user1@abcd.com, and so on.

If one of the address lines is repeated in the Distribution List (for example, if user3@abcd.com is added as the sixth line in the example Distribution List), the behavior would work as follows. If Packet Email = YES, only one email is distributed for user3@abcd.com. However, if Packet Email = NO, two separate emails are distributed to user3@abcd.com.

Creating a Report Broker Schedule in the Basic Scheduling Tool

In this section:

Describes how to create a schedule using the Basic Scheduling tool.

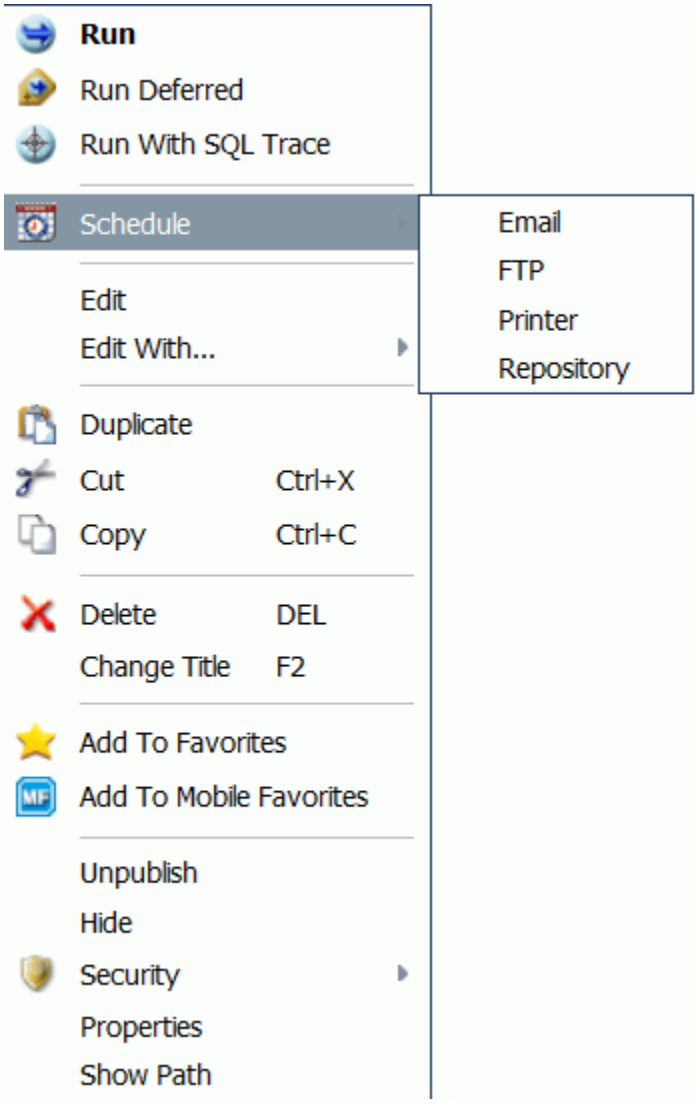
A schedule allows you to specify when to run a report, the format in which to create the output, and how it will be distributed. Schedules are created with the Basic Scheduling tool.

About the Basic Scheduling Tool

In this section:

The Basic Scheduling tool provides the ability to create a schedule for a procedure (FEX). The Release 2 DB2 Web Query Client security authorization model controls whether users are authorized to access the application content stored in the Repository and the Scheduling tools.

To create a new schedule for a report procedure (FEX), go to the tree and expand a folder to display your report procedures (FEX). Right-click the report procedure (FEX) you want to schedule, select *Schedule*, and then select the method to distribute the report procedure (FEX). You can distribute the report procedure (FEX) by Email, FTP, Printer, or Repository, as shown in the following image.



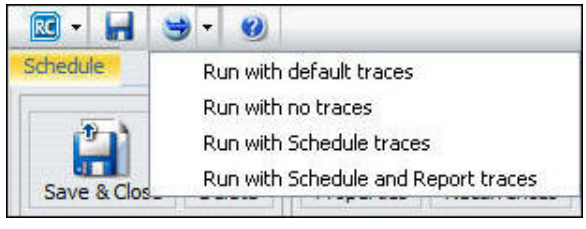
Basic Scheduling Tool Quick Access Toolbar

The Quick Access Toolbar, located at the top of the Basic Scheduling tool, is always visible no matter which options are selected. It provides access to the most commonly used functions. From the Quick Access Toolbar, you can select the Report Broker button to access the New Distribution List, Save, Save As, Delete, and Close options. You can also access the Save, Run, and Help options from the toolbar, as shown in the following image.

Run options are available for selection from the Run drop-down list.

Note: The schedule must be saved for Run options to be available or enabled.

The Run options you can select include: Run with default traces, Run with no traces, Run with Schedule traces, and Run with Schedule and Report traces, as shown in the following image.



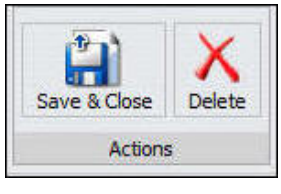
Note: Online help is available my clicking the online help  icon.

Basic Scheduling Tool Ribbon

The Basic Scheduling tool ribbon partitions the scheduling options into the following categories:

- **Actions**

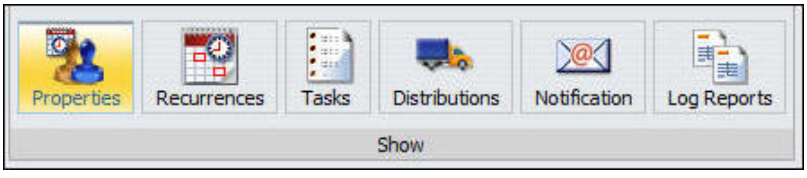
  The Actions portion of the ribbon is shown in the following image.

  - **Save & Close.** Saves and closes the schedule.
  - **Delete.** Deletes the schedule and closes the Scheduling tool.

- **Show**

The Show portion of the ribbon is shown in the following image.



- **Properties.** Provides a Title, Path where the schedule will be created or was opened from, Summary, Job Priority Level, and the following settings for the schedule:
  - The *Delete this schedule if it is not scheduled to run again* check box specifies to delete the schedule if, after it is run, it is not scheduled to run again.
  - The *Enabled (Scheduled job runs at specified time)* check box specifies to run the schedule as specified by the Recurrence settings within the schedule.
- **Recurrences.** Provides run-time intervals for distribution and repeat options. Provides the facility to Manage Recurrences (New, Edit, and Remove).
- **Tasks.** Provides information on the report procedure (FEX) that is being scheduled. The Advanced Scheduling tool also provides options to create and delete tasks. Provides the facility to Manage Tasks (New, Edit, and Remove).
- **Distributions.** Provides options to specify the recipients or location to which the report will be distributed.
- **Notification.** Provides the options to set up notification of the schedule status.
- **Log Reports.** Shows the Number of Jobs and the Log Report for individual jobs.

Creating a Schedule in the Basic Scheduling Tool

How to:

Create a Schedule

This section provides the overall procedure to create a new schedule for a report procedure (FEX). Some steps in the procedure contain details on the associated options, while other steps direct you to a separate section that contains detailed descriptions of the options and additional information, such as tips in making a selection.

To save a schedule, the required information in the Properties, Recurrences, Distribution and Notification tabs must be provided. If required schedule information is missing when you save the schedule, a message will display informing you of the schedule information that needs to be entered.

Procedure: How to Create a Schedule

1. Open the Basic Scheduling tool, as described earlier in this section. For more information, see *About the Basic Scheduling Tool* on page 113.
2. In the Properties tab, you can edit the name for the schedule in the *Title* box.

   This is a required field and a default name is provided.
3. Type a descriptive summary in the *Summary* box.

   Note: This is an optional field.
4. Select a Job Priority Level.

   Normal - 3 Job Priority Level is the default.
5. Check the *Delete this schedule if it is not scheduled to run again* check box if you do not want this schedule to be stored in the Repository if it will not run again as specified in the Schedule recurrence settings.
6. Leave the *Enabled (Scheduled job runs at specified time)* check box checked if you want scheduled jobs to run as specified in the recurrence settings.
7. Select the Recurrences tab and make the following selections:
   a. From the Settings radio button list, select a time interval that the schedule will use to run the report procedure (FEX).

      You can set the interval to Run Once, Minutes, Hourly, Daily, Weekly, Monthly, Yearly, or at Custom intervals.

   b. From the Start Schedule options, select the date (from the drop-down calendar) and time you want the schedule to begin running.

      Note: To change the time setting, select either the hour or minutes and use the arrows to increase or decrease the value.

   c. If applicable to the Run Interval selection, from the End Schedule options, select the date and time you want the schedule to stop running.

   d. If applicable to the Run Interval selection, from the Advanced settings, click the *Repeat schedule every:* check box to enable custom intervals.

      Note: This option is disabled for the Run Once, Minutes, and Hourly settings options.
8. Select the *Tasks* tab. The Path, Procedure, Server Name, and Save Report As fields are populated according to the report procedure (FEX) you selected to schedule. For a description of the Task tab, see *About Tasks in the Basic Scheduling Tool* on page 119.

9. Select the *Distributions* tab and specify the information for the distribution method you selected. For options related to each distribution method, see *Distribution Options in the Basic Scheduling Tool* on page 139.

10. Select the *Notification* tab and specify whether or not you want to send a notification when the schedule runs and under what conditions to send it. The notification options are:

    - **Never.** Report Broker will not send a notification of the schedule status under any circumstances. This is the default value.
    - **Always.** Send a notification each time the schedule runs.
    - **On Error.** Only send a notification when there is an error running the schedule.

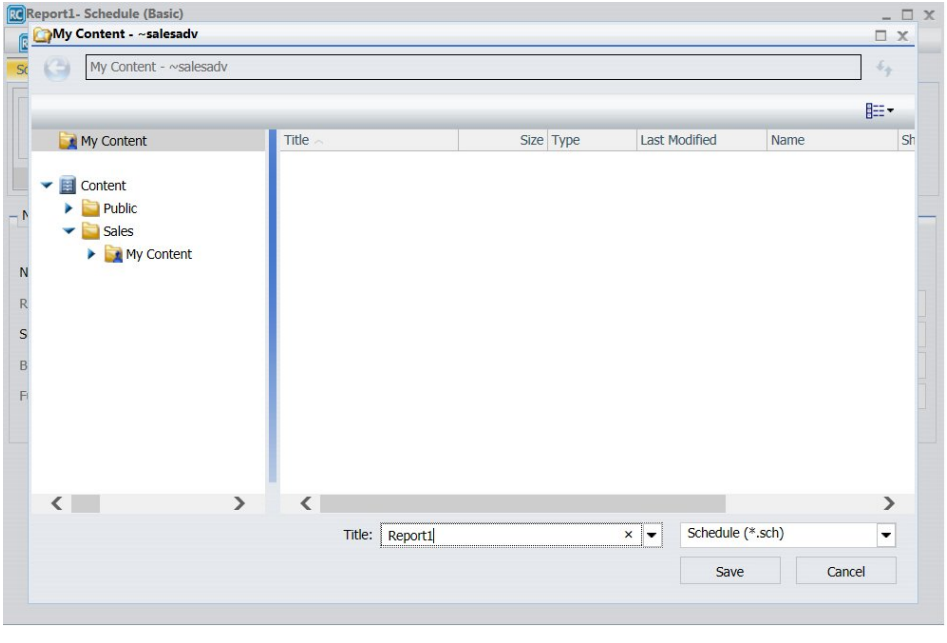
    For more information, see *Notification Options in the Basic Scheduling Tool* on page 151.

11. In the Log Reports tab, you can view log and manage log reports for the schedule.

12. To save the schedule, click *Save & Close* on the ribbon.

    Note: You can optionally click *Save* on the toolbar to remain in the scheduling tool.

    The Save dialog box appears, as shown in the following image.



13. Select the folder that will contain the schedule.

Note:

- You must be authorized to create content in this folder.
- The default location for saving a schedule is dependent upon your privileges. If you can create content in the folder where the scheduling tool is launched, the Save dialog will be positioned in that folder. If you are not allowed to create content in that folder, the Save dialog will be positioned in the My Content folder located under that folder. If a My Content folder is not available, the Save dialog will be positioned in the first writable folder found.

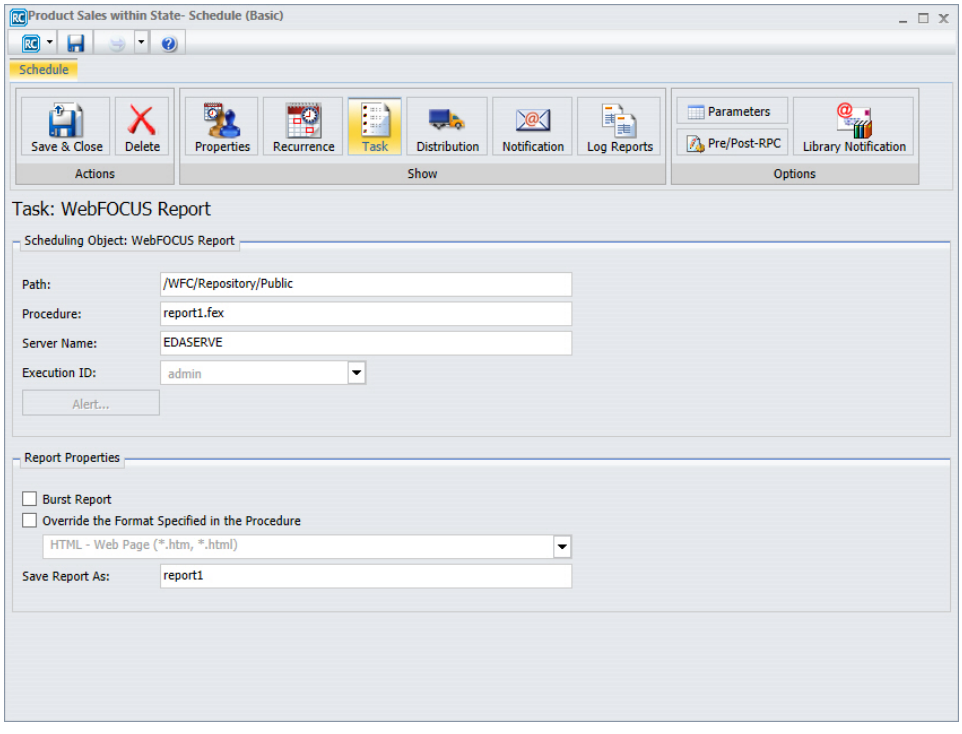
14. Enter a name for the schedule and click *Save*.

About Tasks in the Basic Scheduling Tool

In this section:

When you access the Basic Scheduling tool, the information for the Task tab options is predefined with the selected report procedure (FEX) information. You can complete the available task options, such as specifying parameter values, as well as select whether or not to burst the report.

The following image shows an example of a predefined Task tab in the Basic Scheduling tool.



Task Options in the Basic Scheduling Tool

The options available when you select the Task tab are:

- **Path.** Shows the report path in the Repository or on the Reporting Server.
- **Procedure.** The name of the procedure you are scheduling.
- **Server Name.** The Reporting Server to which the report procedure (FEX) will be submitted.
- **Burst Report.** If you want to burst the report, select the *Burst Report* check box. The burst feature enables you to instruct the Reporting Server to create the report in sections so that they can be distributed separately. For more information about bursting, see *Bursting a Report* on page 105.
- **Report Format.** If you want to override the format that is specified in the procedure, select the *Override the Format Specified in the Procedure* check box. Select a format output from the Report Format drop-down list. HTML is the default value. Report formats can be limited depending on the Report Broker configuration.

Note: When scheduling a Graph procedure (.fex) containing a PCHOLD statement that uses JPEG, GIF, PNG, or SVG, if you do not select a format in the schedule, the output will be distributed in PNG format, unless you add the extension JPEG, GIF, or SVG to the Save As value or file name in a Distribution List. Optionally, if you require that the output be distributed as a JPEG, GIF, or SVG file, specify that format in the schedule. To do so, you can select the *Override the Format Specified in the Procedure* check box, as described above.

- **Save Report As.** Type a file name to assign to the report when it is distributed. This field defaults to the name of the report procedure (FEX) and has an .htm extension. Blank spaces and special characters are replaced with an underscore character. For example, the Schedule for the Product Packaging & Price report assigns the default Save Report As value as Product_Packaging_Price.htm.

Specifying Parameter Values

In this section:

How to:

Reference:

You can customize a report and control its execution with parameters. When scheduling a report procedure (FEX), the schedule task Parameters section allows you to supply a value for parameters referenced in the report procedure or add a parameter to the schedule by creating a new parameter and specifying the parameter name and value.

Procedure: How to Specify Parameter Values

If the scheduled procedure contains parameters for which values must be supplied at run time, these parameters are displayed in the parameters section of the scheduling tool.

In the Basic Scheduling tool, click on the *Parameters* tab in the ribbon to open the Task Parameters dialog box.

Parameters may have default values and may have values that can be selected from a static or dynamic list. For more information about selecting parameters in the Scheduling Task Parameters dialog box, see the examples provided in this chapter.

Reference: Considerations When Specifying Parameter Values

The following are considerations when specifying parameter values for a procedure:

- The maximum number of characters for each individual parameter value is 3200. You can store multiple values for a single parameter. Multiple values for a parameter are stored as one entry, which must not exceed the 3200 maximum character limit.
- Report Broker displays the description for the parameter when it is specified in the procedure. Otherwise, Report Broker displays the parameter name.
- Report Broker displays default variable values, as well as static or dynamic single-select and multiselect lists.

  Note:

  - The No Selection option is displayed for dynamic multiselect lists. When selected, this option does not perform any data selection test on that field.
  - Report Broker does not support using the -HTMLFORM command to create a dynamic selectable list of parameter values.
- ReportCaster displays global variables that are used in FILTERS defined in Master Files and referenced by a procedure. For example, if a Master File contains

  ```
  FILENAME=CAR,SUFFIX=FOC
  VARIABLE NAME=&&COUNTRY1, USAGE=A10, DEFAULT=ENGLAND,$
  FILTER FILTER1=COUNTRY EQ '&&COUNTRY1'; $
  ```

  and the procedure being scheduled contains

  ```
  WHERE FILTER1
  ```

  then ReportCaster displays COUNTRY1 in the Parameters window.
- Report Broker will not prompt for variables with defaults set by the -DEFAULTH command. The purpose of the -DEFAULTH command is to assign a default value to amper variables and not be dynamically prompted for that variable.
- Report Broker does not prompt for the value of its internal variables that are set by the Distribution Server at schedule execution time. For example, &DSTOWNER is the user ID of the schedule owner. If this parameter is referenced in a scheduled procedure, the value will be available because the Distribution Server sets the value to the owner of the schedule at schedule execution time. However, the scheduling tool will not prompt for this value in the Task Parameters dialog box.

- When specifying parameters with special characters (for example, %, &, |):
  - If you are specifying the entire WHERE condition as the parameter value, you must enclose the value within two single quotation marks rather than a double quotation mark. For example, ''WHERE CAR NOT LIKE MOTO%''.
  - If you are only specifying a value as the parameter value, you do not need to enclose the parameter value within quotation marks. For example, O&DINFO.
- Once a parameter is stored for a schedule, Report Broker will continue to display that parameter in the Parameter list and submit the parameter to the Reporting Server when the schedule is run even if the parameter is removed from the underlying report. To remove the parameter from the schedule information, edit the schedule and delete the parameter. For information on how to delete a parameter from a schedule, see *Deleting a Parameter* on page 136.

Example: Specifying a Default Parameter Value in the Report Procedure (FEX)

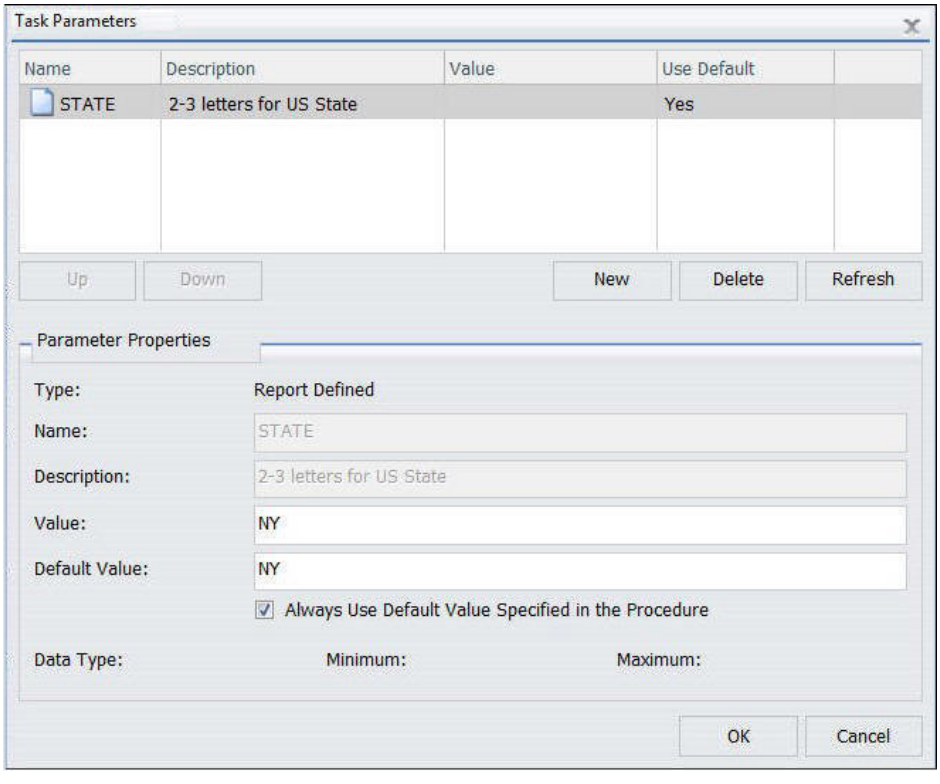
Specifying default parameter values can be done with the -DEFAULT or -DEFAULTH command or within the WHERE statement. Default values specified with the -DEFAULTH command are not prompted for.

The following procedure sets a default value of NY for the STATE (2-3 letters for US State) parameter.

```
-DEFAULT &STATE=NYTABLE FILE GGSALES
SUM DOLLARS UNITS
BY ST
BY CATEGORY
BY PRODUCT
ON TABLE SUBHEAD
"Product Sales Report"
WHERE ST EQ '&STATE.2-3 letters for US State.'
END
```

The parameters that have default values defined in the report procedure (FEX) are listed within the Parameters tab with the default value in the Value column. When parameters are stored in a schedule, Report Broker adds a -SET for the parameter to the schedule procedure sent to the Reporting Server to be run. A -SET command overrides a value specified in a -DEFAULT command.

The following image shows the Task Parameters dialog box with parameter STATE that has a default value specified. The STATE parameter has the value *Yes* displayed in the Task Parameters table *Use Default* column. The STATE parameter is indicated in the Parameter Properties section, displaying a value of *NY* in the *Value* field.



Note: If you want the schedule to use the default parameter value specified in the procedure (FEX), uncheck the *Enabled* check box to specify that the parameter should not be saved with the schedule.

To use a value other than the default value at schedule execution time, so that it will be used even if the procedure is changed, click the parameter and change the parameter value within the Parameter Properties section. Values for simple parameters are specified by entering a value for the parameter in the *Value* field. There are also static and dynamic parameter types that allow selection of a single or multiple values, which are explained in the following examples.

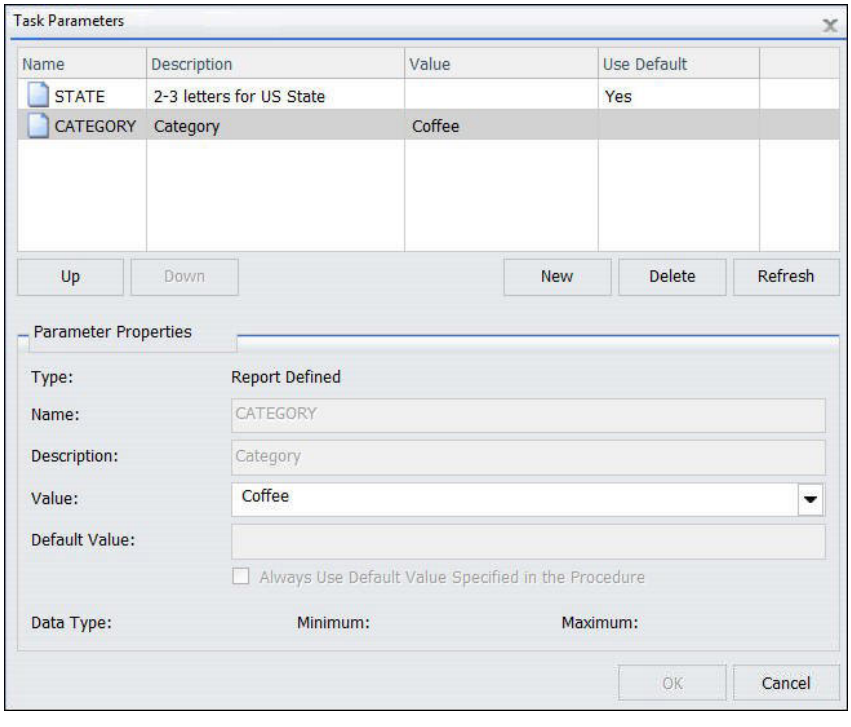
When parameters are stored in a schedule, Report Broker adds a -SET for the parameter to the schedule procedure sent to the Reporting Server to be run. A -SET command overrides a default value specified in a -DEFAULT command.

Example: Adding a Static Single-Select List of Parameter Values

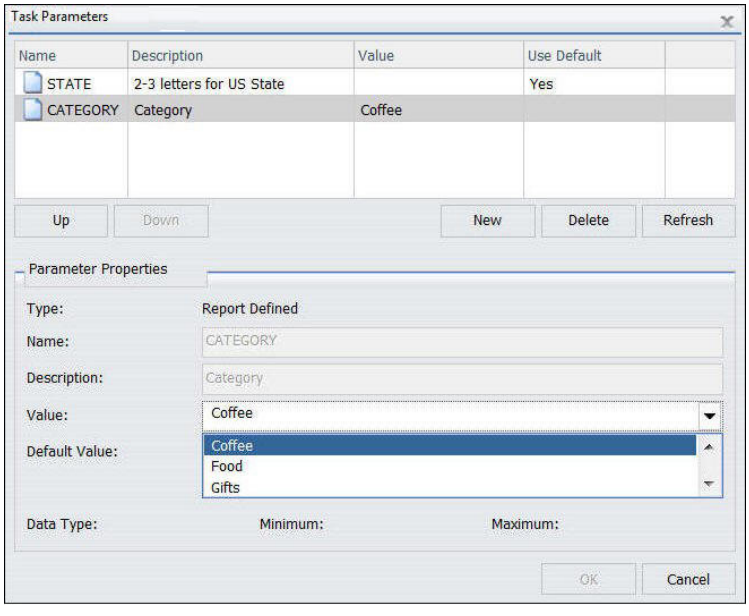
The following procedure provides a list of static values that are valid for the CATEGORY (Category) parameter.

```
-DEFAULT &STATE=NY
TABLE FILE GGSALES
SUM DOLLARS UNITS
BY ST
BY CATEGORY
BY PRODUCT
ON TABLE SUBHEAD
"Product Sales Report"
WHERE ST EQ '&STATE.2-3 letters for US State.'
WHERE CATEGORY EQ '&CATEGORY.(Coffee,Food,Gifts).Category.'END
```

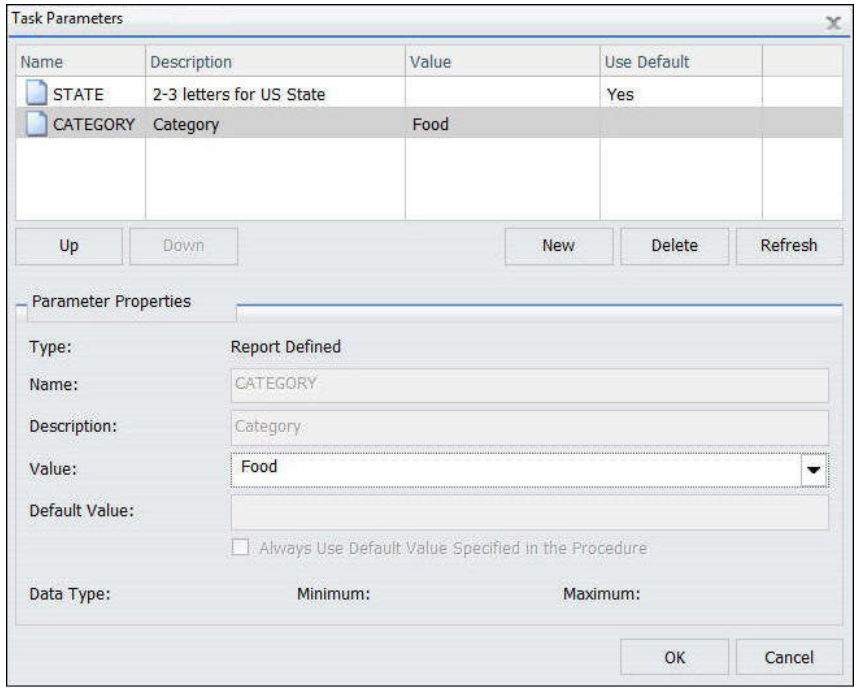
The following image shows the CATEGORY (Category) parameter selected in the Task Parameters table. The CATEGORY parameter has a default value of Coffee. The Task Parameter *Use Default* column is blank for CATEGORY and the Parameter Properties section *Value* field is blank for STATE.



To supply a value for a single select parameter, select the parameter in the Task Parameters table and select the list control at the end of the *Value* field in the Parameter Properties section. From the list of the values, select a value to assign to the parameter. You can select only one value for a static single-select parameter.



The selected value appears in the *Value* field and the *Value* column. The following image shows the value *Food* was selected.

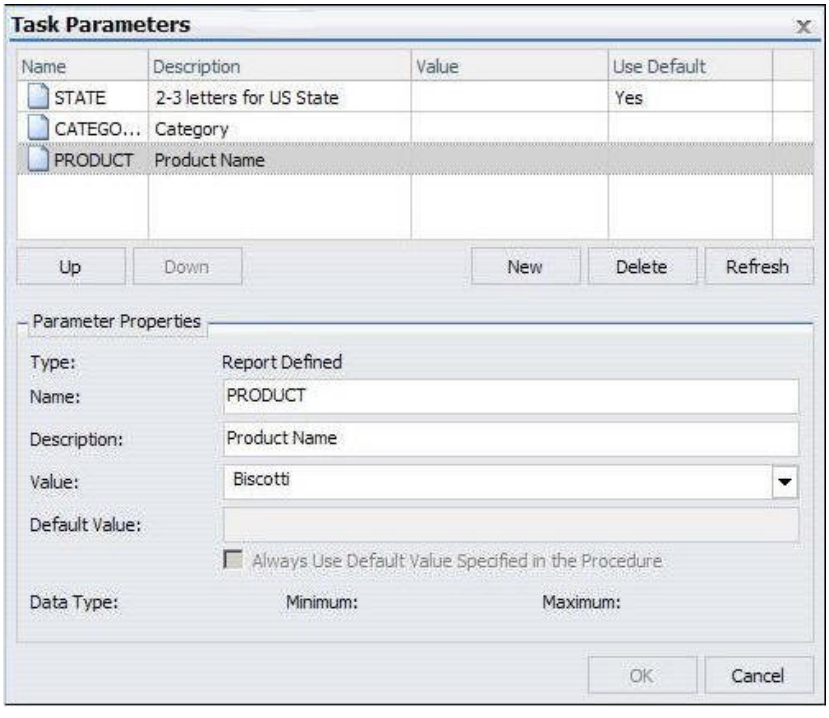


Example: **Adding a Dynamic Single-Select List of Parameter Values**

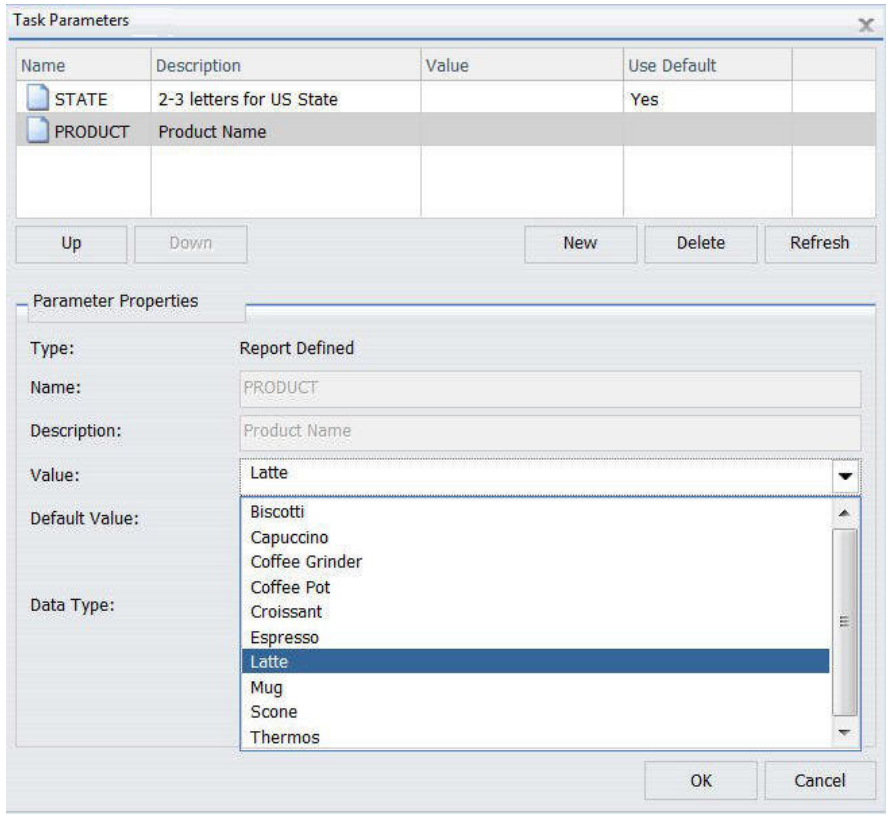
The following procedure provides a single select list of values that are valid for the PRODUCT (Product Name) field. This list is dynamically populated with values from the GGSALES data source.

```
-DEFAULT &STATE=NY;
TABLE FILE GGSALES
SUM DOLLARS UNITS
BY ST
BY CATEGORY
BY PRODUCT
ON TABLE SUBHEAD
"Product Sales Report"
WHERE ST EQ '&STATE.2-3 letters for US State.'
WHERE PRODUCT EQ '&PRODUCT.(FIND PRODUCT IN GGSALES).Product Name.'END
```

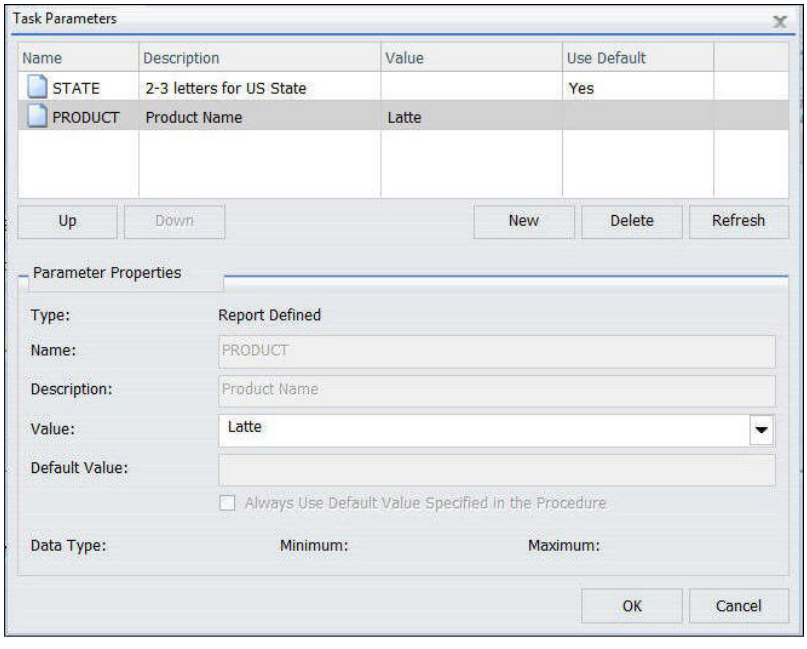
The following image shows the PRODUCT (Product Name) parameter selected in the Task Parameters table. The PRODUCT parameter does not have a default value specified so the Task Parameter *Use Default* column and the Parameter Properties section *Default Value* field are blank.



To supply a value, click the PRODUCT (Product Name) parameter in the table and change the parameter value within the Parameter Properties section. Select the list control at the end of the *Value* field to list the values specified for the parameter. You can select only one value from the dynamic single-select list.



Select the value to be used. The selected value appears in the *Value* field and the *Value* column. The following image shows the value Latte was selected.

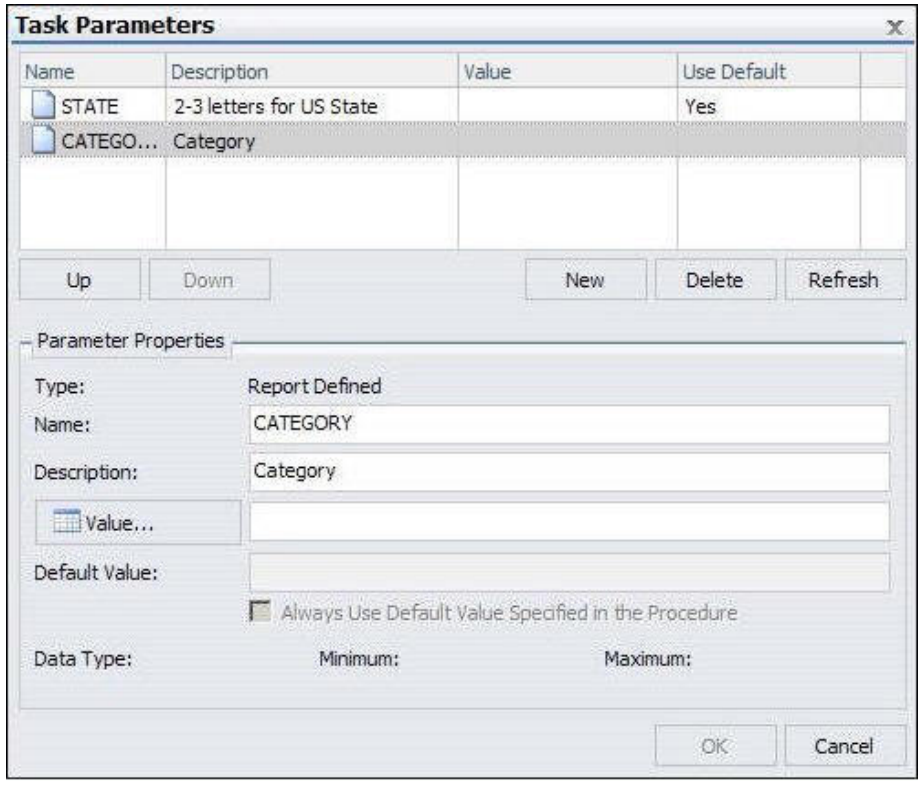


Example: Adding a Static Multi-Select List of Parameter Values

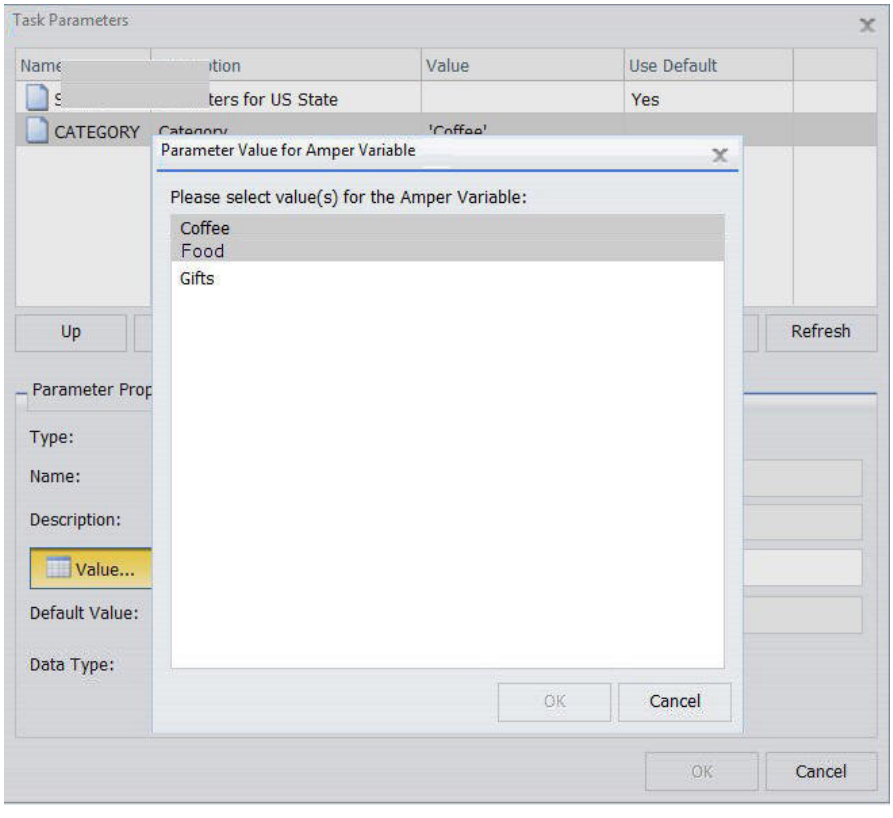
The following procedure provides a static multiselect list of values that are valid for the CATEGORY (Category) field.

```
-DEFAULT &STATE=NY
TABLE FILE GGSALES
SUM DOLLARS UNITS
BY ST
BY CATEGORY
BY PRODUCT
ON TABLE SUBHEAD
"Product Sales Report"
WHERE ST EQ '&STATE.2-3 letters for US State.'
WHERE CATEGORY EQ '&CATEGORY.(OR(Coffee,Food,Gifts)).Category.'END
```

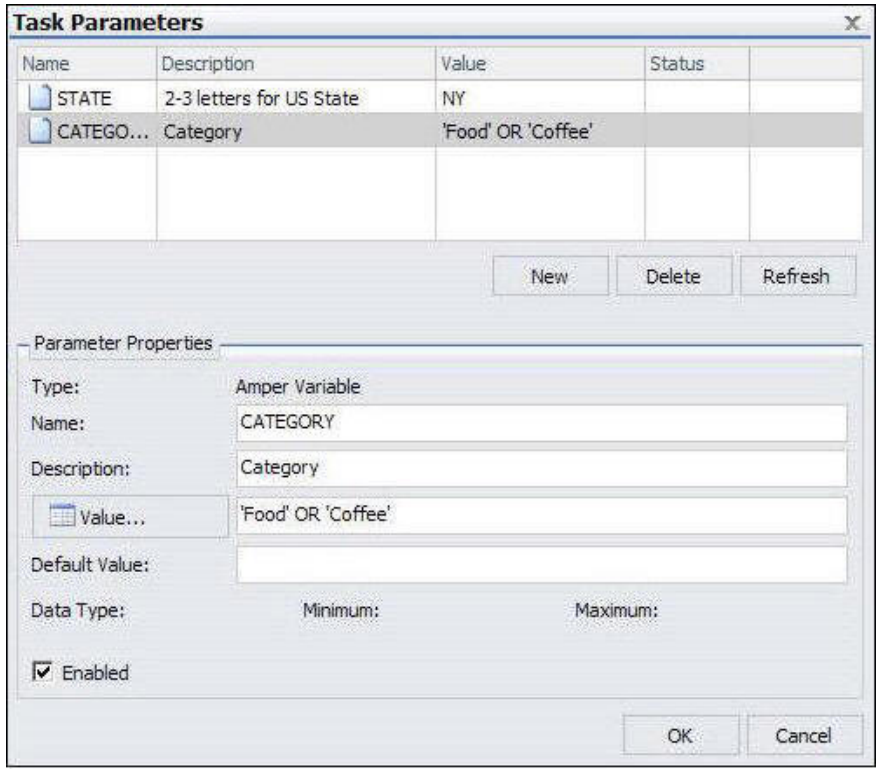
The following image shows the CATEGORY parameter selected in the Task Parameters table.



To supply values, click the CATEGORY (Category) parameter in the table and then in the Parameter Properties section, click the *Value* button to open the Parameter Value selection dialog box. You can select one or more values from the list, as shown in the following image.



Once you have selected the values from the list, click *OK*. The selected values appear in the *Value* field in the Parameter Properties section and in the *Value* column in the parameter table. The following image shows that the values Food and Coffee were selected.

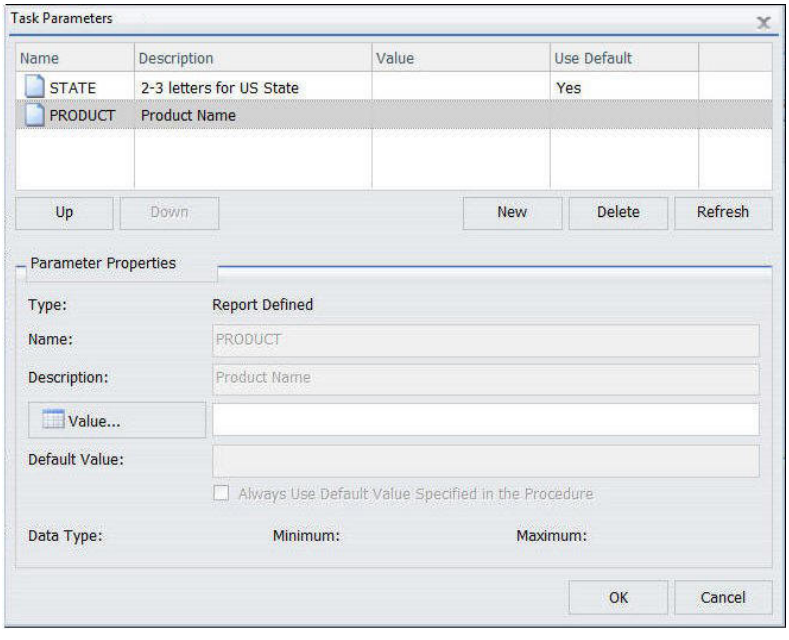


Example: **Adding a Dynamic Multi-Select List of Parameter Values**

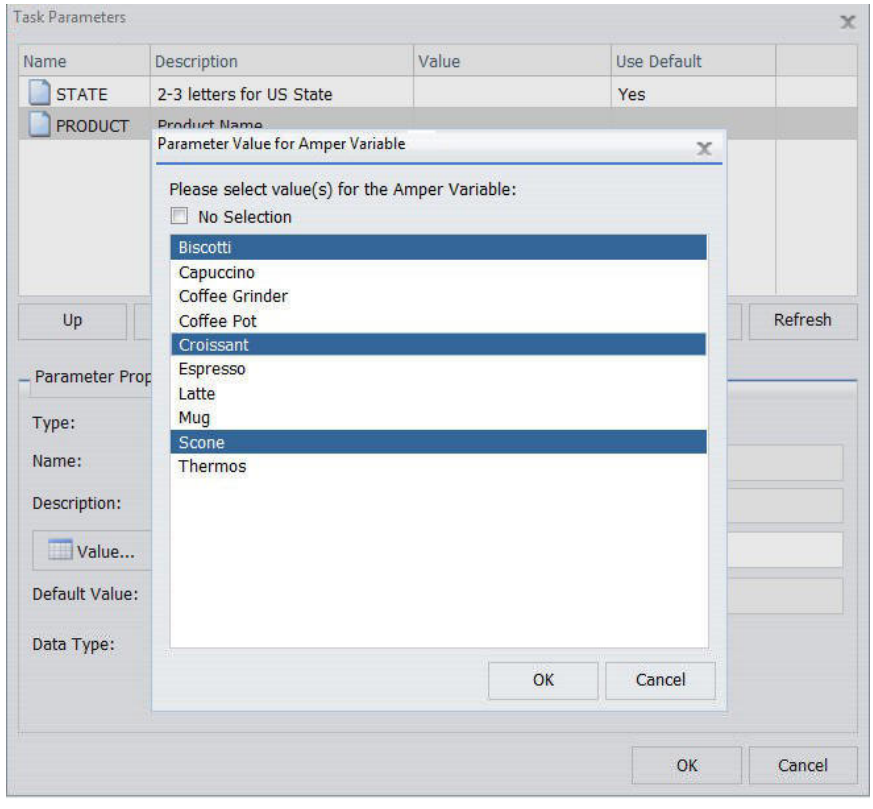
The following procedure provides a dynamic multiselect list of values that are valid for the PRODUCT (Product Name) field. This list is dynamically populated with values from the GGSALES data source.

```
-DEFAULT &STATE=NY;
TABLE FILE GGSALES
SUM DOLLARS UNITS
BY ST
BY CATEGORY
BY PRODUCT
ON TABLE SUBHEAD
"Product Sales Report"
WHERE ST EQ '&STATE.2-3 letters for US State.'
WHERE PRODUCT EQ '&PRODUCT.(OR(FIND PRODUCT IN GGSALES)).Product Name.'END
```

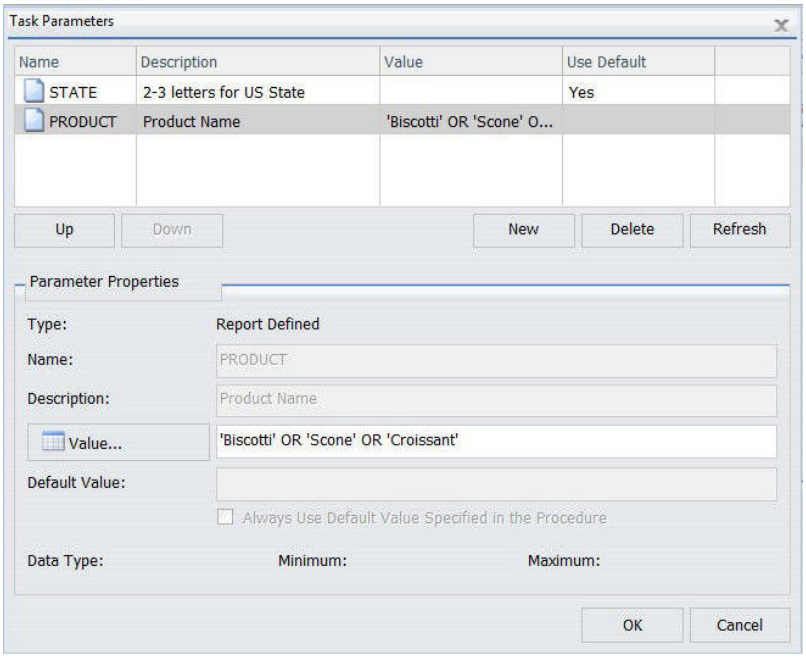
The following image shows the PRODUCT parameter selected in the Task Parameters table.



To supply values, click the PRODUCT parameter in the table and then in the Parameter Properties section, click the *Value* button to open the Parameter Value selection dialog box. You can select one or more values from the list, as shown in the following image, or select the *No Selection* check box if you do not want to perform any data selection test.



Once you have selected the values from the list, click *OK*. The selected values appear in the *Value* field in the Parameter Properties section and in the *Value* column in the parameter table.



Deleting a Parameter

It is important to verify that the parameters you delete when scheduling a report procedure (FEX) will be handled as follows so that the scheduled job will run successfully:

- A default value is specified in the report procedure (FEX) being scheduled.
- A value will be dynamically assigned to the parameter by the report procedure (FEX) processing when the scheduled job runs on the Reporting Server.
- The parameter will not be referenced when the report procedure (FEX) is processed by the Reporting Server.

To delete a parameter so that it is not stored with the schedule information, highlight the parameter in the parameter table you want to delete, and click the *Delete* button.

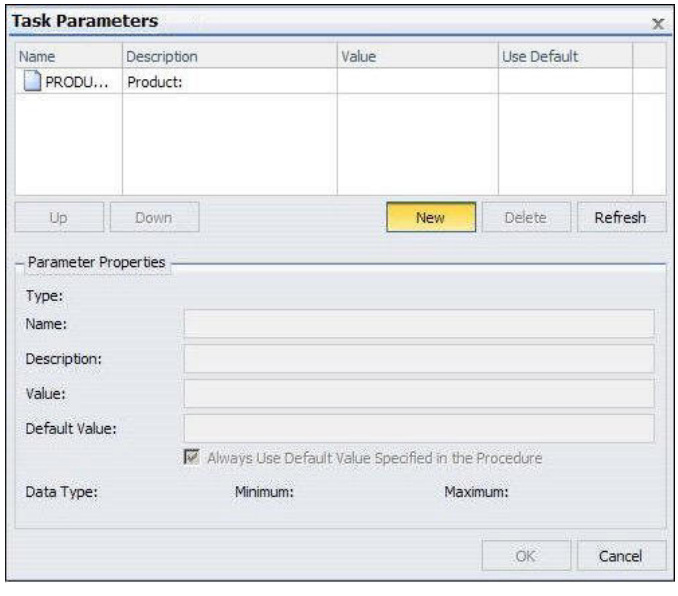
Creating a New Parameter

If you need to have the schedule job send a parameter and value that is not defined in the report procedure being scheduled, you can create a new parameter in the Task Parameters dialog box. Parameters referenced during processing by the Reporting Server must be assigned a value for the scheduled job to run successfully. The schedule job log report will contain information when required parameter values were not provided.

Procedure: How to Create a New Parameter

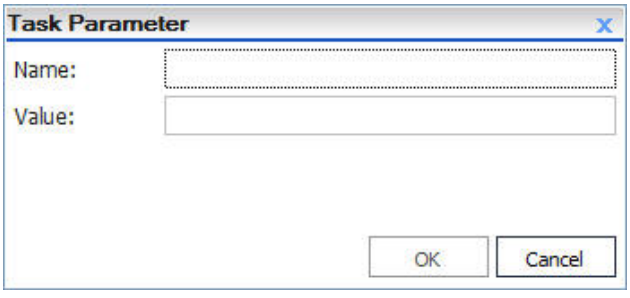
You can create parameters for a task as follows:

1. Click *Parameters* on the ribbon to display the Task Parameters dialog box, as shown in the following image.



2. Click the *New* button located above the Parameter Properties section.

The Task Parameter dialog box displays, as shown in the following image.



3. Enter a value in the *Name* and *Value* boxes.
4. Click *OK*.

   The *Name* and *Value* boxes are populated in the Task Parameters dialog box Parameters table.
5. If you would like to specify a description or change the parameter value, select the parameter in the Parameters table and specify the values in the *Description* and *Value* fields located in the Parameter Properties section.
6. Click *OK* when you have completed entering parameter settings for the task.

Selecting a Report Format

Use the following guidelines when selecting a format:

- The report format specified in the Report Format field overrides the format statement in the procedure, except for specialized format (EXL2K FORMULA). When a report procedure (FEX) uses a specialized format, the format selection in the report schedule must match what is specified in the report procedure (FEX).
- The formats that support bursting are AHTML, DHTML, DOC, EXL2K, EXL2K FORMULA, EXL97, GIF, HTML, JPEG, PDF, PNG, PS, SVG, and WP. Coordinated compound reports can only be burst with DHTML, PDF, and PPT formats.
- When a format is selected, ReportCaster automatically adds an appropriate file extension to the output file name in the Save As field. In certain cases, you must manually change the extension added by ReportCaster. For example, if you select format DHTML in the schedule and the report output is not a web archive file, you must change the extension to .htm. If you select format HTML in the schedule and the report output is a web archive file, you must change the extension to .mht. For more information about the DHTML format, see *ReportCasterReport Broker Formats for Scheduled Output*.

- The WP, DOC, and PS formats support printing. The PDF format supports printing when Report Broker is configured to enable PDF to print and the printer is configured with the appropriate driver.
- Only the HTML, DHTML, WP, and DOC formats can be distributed as an inline email message. Additionally, when distributing a report inline, the appearance of the report can be affected by the email server, or potentially blocked. Review the restrictions for your mail server provider before utilizing reporting formats and options that utilize JavaScript™, embedded images, and referenced CSS.

Distribution Options in the Basic Scheduling Tool

In this section:

The Distribution tab in the Basic Scheduling tool provides the options available for distributing the report output for the scheduled report procedure (FEX). You can distribute a report output using one of the following methods.

- Email
- FTP
- Printer
- Repository

Note:

- Distribution methods can be limited globally (for all users) in Report Broker configuration and for groups or individual users by security operations.
- Maps can only be distributed to the Web Query Repository.

Using the Email Distribution Option in the Basic Scheduling Tool

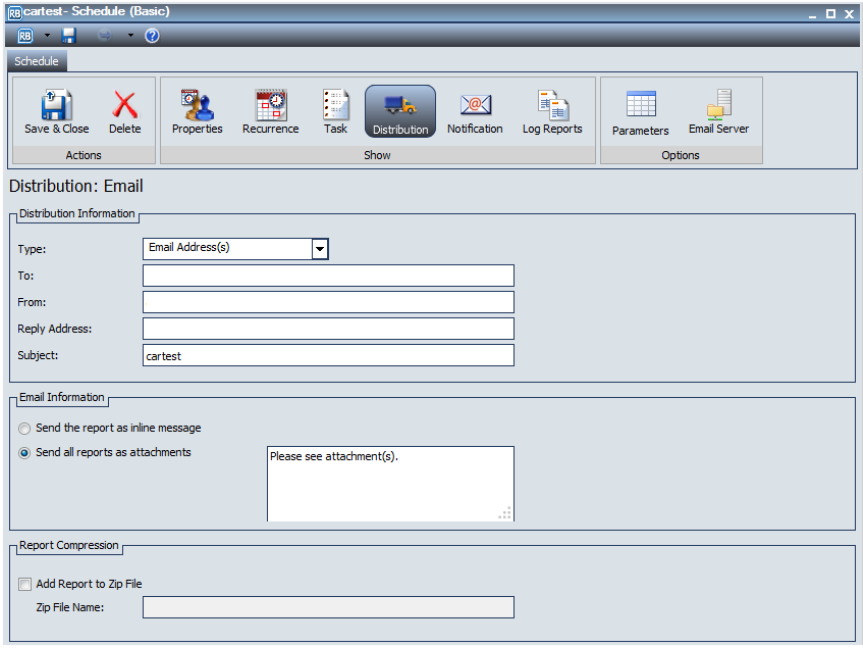
How to:

Use the Email Distribution Option

When you distribute a report through email, you can include the report in the body of the email (known as an inline email message) or send it as an attachment. Only the HTML, DHTML, WP, and DOC formats can be distributed as an inline email message.

Note: You must be authorized to distribute by Email in order to create a schedule that uses Email distribution.

Distributing a report as an inline email message is particularly useful when the report is distributed to mobile devices, fax machines, or through email systems that do not support attachments. You can also distribute a report to a Fax machine, as explained later in this section. The following image shows the email distribution options in the Distribution tab of the Basic Scheduling tool when the email method is selected.



Note:

- The availability of the inline message option when you create a schedule depends on the *Inline Report Distribution* setting accessible from the Report Broker Console.

- The display of a report that is distributed as an inline email message can be affected by settings and restrictions of your email server or email client.

Procedure: How to Use the Email Distribution Option

1. Right-click a report procedure (FEX), select *Schedule*, and then select *Email*.

   The Basic Scheduling tool appears.

2. Select the *Distribution* tab.

3. From the Type drop-down list, select the method you will use to provide the email addresses that will receive the distribution. The options are Distribution List, Dynamic Distribution List, and Email Address(es). For more information, see *Creating a Distribution List* on page 101. These options all show where the report procedure (FEX) distributes To, From, Reply Address, and Subject. Additionally, in the Email Information section, select whether you would like to send all reports as attachments or send a report as an inline message.

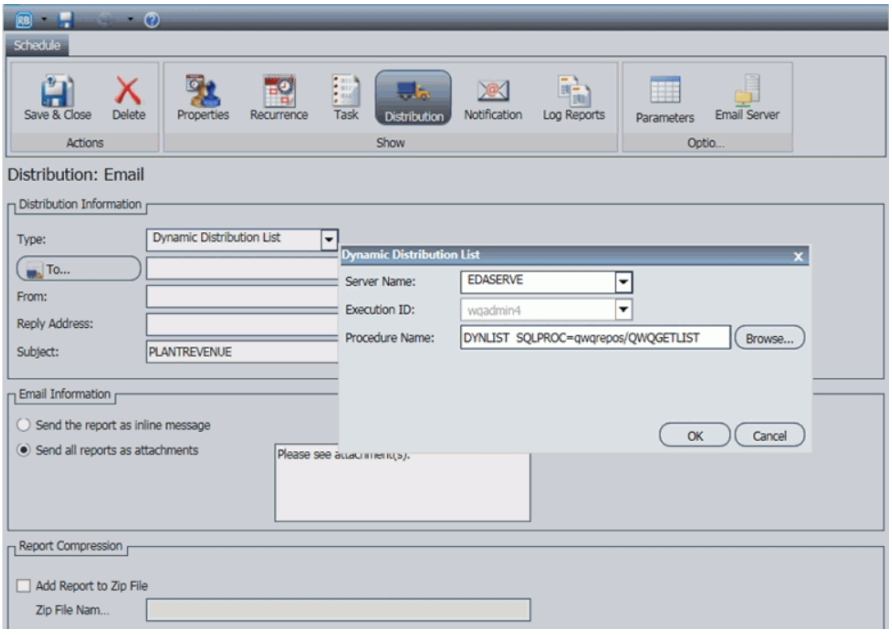
   - **Distribution List.** The report will be sent to all email addresses in the selected email Distribution List. For more information, see *Creating a Distribution List* on page 101.

   - **Email Address(s).** This is the default method for supplying email addresses in the scheduling tools. The default value of this field is the email address of the user that is creating the schedule. You can specify multiple email addresses in the Email Address(s) field. Separate each email address with a comma (,) or a semicolon (;). The email addresses will appear in the To line of a single email when the scheduled output is distributed. Each individual email address can be a maximum of 130 characters, according to the SMTP specification. The total maximum length of this field is 800 characters. For more information, see *Specifying Multiple Email Addresses* on page 111.

     Additionally, you can use group mail lists (defined on your mail server) with the Email Address(es) option. You can use group mail lists to distribute a report or notification to multiple recipients without having to maintain multiple email addresses in the Repository. The format of the group mail list depends on the mail server being used. For example, if you are using a Microsoft Exchange Server and your group mail list is defined as #group1, you would enter group1@*listdomain* in the Email Address(es) field. If the group mail list contains a space within its name, enclose the space with double quotation marks (" "). For more information, see your mail server administrator.

   - **Dynamic Distribution List.** You can use a Dynamic Distribution List to return in memory either a list of burst values and destinations, or only a list of destinations from a data source (for example, a flat file or SQL database). For more information, see *Creating a Dynamic Distribution List* on page 109.

When Dynamic Distribution List is selected, the To field is enabled to facilitate the selection of the Procedure Name. Once a procedure is selected, you can pass a parameter on the command line of the fex, as shown in the following image.



In the Dynamic Distribution List dialog box, there are several fields:

- Server Name is the DB2 Web Query Reporting Server name. This is always EDASERVE.
- Execution ID is the owner of the schedule.
- Procedure name is the DB2 Web Query procedure used to retrieve burst values and destination email address values. There are two sample DB2 Web Query procedures residing in the baseapp application directory: DYNLIST or DYNBURST. Both have been designed to accept a parameter called SQLPROC, which identifies the SQL stored procedure used to retrieve burst values and destination email address values from a DB2 file.

  In this example, SQLPROC=qwqrepos/QWQGETLIST.

4. In the *To* box, type the email address of the recipient.
5. In the *From* box, type any value (for example, the name of the person creating the schedule). Report Broker does not require a value for this field, but your email system may require one.

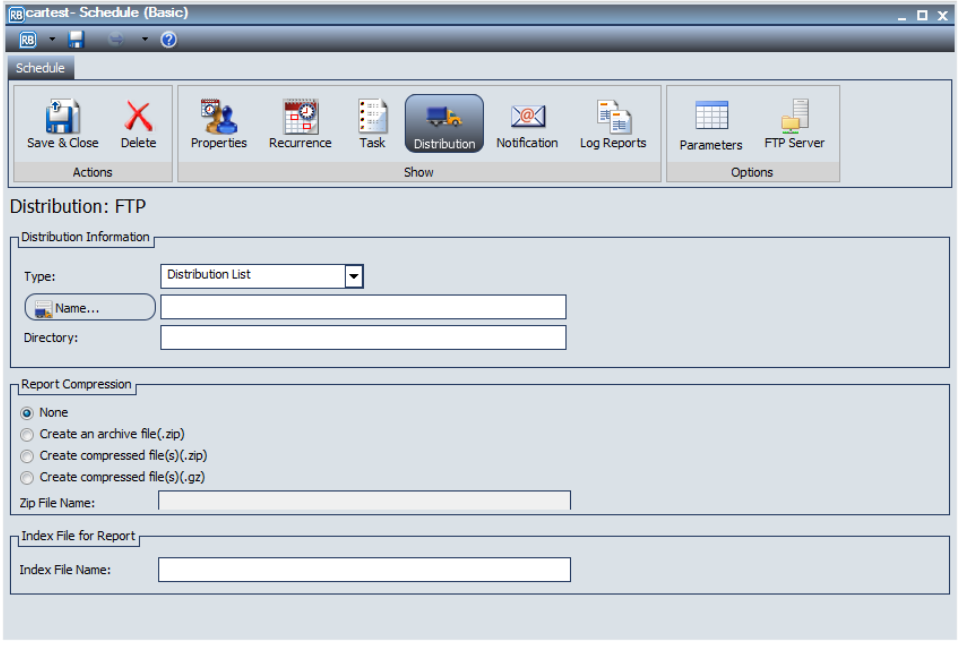
6. In the *Reply Address* box, type a valid email address. If recipients reply to the email, their messages will be sent to this address. If your email system is unable to deliver the content, the undeliverable output message is also returned to this address. Report Broker requires this field.
7. In the *Subject* box, type the text you want to appear in the email subject line. Report Broker may not require this information, but it may be needed by your email system. The value you entered in the schedule Title field is the default Subject value.
8. Specify whether or not you want to send the report as an email attachment or within the body of the email inline by selecting or clearing the *Send all reports as attachments* option.
9. Optionally, you can type a message to appear in the email body.
10. Select the *Notification* tab to specify whether to send an email notification of the schedule job status. If you select Always or On Error, then you have to specify the Reply Address, Subject, Brief Message To, and Full Message To.
11. Next, select the *Properties* tab specify the Title, Priority, whether to delete the schedule if it will not run again, and whether the schedule is enabled to run. For more information, see *About Properties in the Basic Scheduling Tool* on page 153.
12. Select the *Recurrence* tab to specify how often to run the schedule. If you want the schedule to run on the current day, set the Start Date and Start Time to values later than the current time. For more information, see *About Recurrence in the Basic Scheduling Tool* on page 155.
13. Select *Save & Close* to save the schedule.

Using the FTP Distribution Option in the Basic Scheduling Tool

How to:

Use the FTP Distribution Option

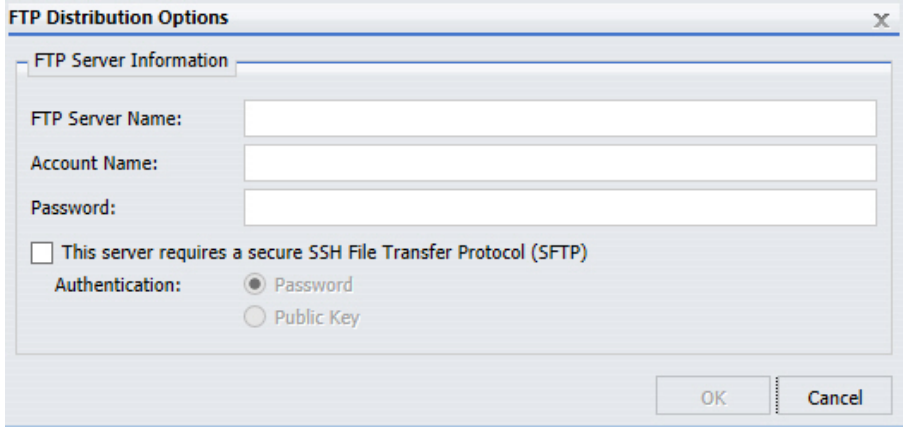
This section provides information about distributing scheduled output using File Transfer Protocol (FTP), as shown in the following image.



Note:

- You must be authorized to distribute by FTP in order to create a schedule that uses FTP distribution.

- Credentials for FTP servers are stored on a user level when a schedule is created in the same way that Reporting Server credentials are stored. The user needs to enter credentials only once for each FTP server. Those credentials will be available in the Basic Scheduling tool each subsequent time that the user creates a new schedule that utilizes that FTP server for distribution, as shown in the following image.



- When distributing HTML reports by FTP, the following types of reports are not supported:
  - Accordion reports
  - Table of Contents (TOC) reports
  - Peer Graphics/Data Visualization graphical reporting
  - Multi-drill reports
  - HFREEZE options

Procedure: How to Use the FTP Distribution Option

1. Right-click a report procedure (FEX), select *Schedule*, and then select *FTP*.

   The Basic Scheduling tool appears.

2. Click the *Properties* tab.
3. Enter a title in the *Title* box or leave the default. Optionally, enter a summary in the *Summary* box.
4. Click the *Distribution* tab.
5. From the *Type* drop-down menu, select the method in which you will provide the file names to distribute to the FTP server. The options are:

- **Distribution List.** The report will be sent to all FTP addresses in the selected Distribution List. For more information, see *Creating a Distribution List* on page 101.
- **Single File.** Type the name of the fully qualified path and file name to the file containing the file names to distribute. Report Broker cannot validate the file existence. The burst option is not supported with this distribution option. The maximum length of this field is 800 characters.
- **Dynamic Distribution List.** A Dynamic Distribution List enables you to return in memory either a list of burst values and destinations, or only a list of destinations from a data source (for example, a flat file, SQL database, FOCUS data source, or LDAP). For more information, see *Creating a Dynamic Distribution List* on page 109.

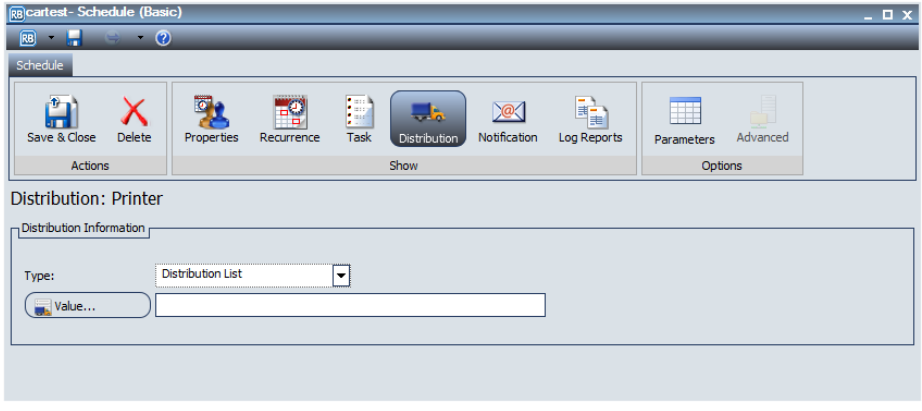
6. Select the *Notification* tab to specify whether to send an email notification of the schedule job status. If you select Always or On Error, you must specify the Reply Address, Subject, Brief Message To, and Full Message To.
7. Select the *Properties* tab to specify the Title, Priority, whether to delete the schedule if it will not run again, and whether the schedule is enabled to run. For more information, see *About Properties in the Basic Scheduling Tool* on page 153.
8. Select the *Recurrence* tab to specify how often to run the schedule. If you want the schedule to run on the current day, set the Start Date and Start Time to values later than the current time. For more information, see *About Recurrence in the Basic Scheduling Tool* on page 155.
9. Select the *Save & Close* button.

Using the Printer Distribution Option in the Basic Scheduling Tool

How to:

Use the Printer Distribution Option

The report formats that support printing are DOC, PDF (when you configure Report Broker to enable PDF to print and the printer has the appropriate driver), PS, and WP. The following image shows the printer distribution options in the Distribution tab section of the Basic Scheduling tool.



Note:

- You must be authorized to distribute to a Printer in order to create a schedule that uses Printer distribution.
- Problems may occur in printed output if the distributed reports contain UTF-8 characters.

Procedure: How to Use the Printer Distribution Option

1. Right-click a report procedure (FEX), select *Schedule*, and then select *Printer*.

   The Basic Scheduling tool appears.

2. Click the *Distribution* tab.
3. From the Type drop-down menu, select the method in which you will provide the file names to distribute to the printer. The options are:

   - **Distribution List.** The report will be sent to all printers in the selected Distribution List. To select a Distribution List, click the icon next to the Distribution List field.

- **Printer Name.** Specify the printer using the following format.

  queue@printserver

  where:

  queue

  Is the name of the printer queue.

  printserver

  Is the host name or IP address of the printer.

  Report Broker can differentiate between the printer queue and the printer host name or IP address due to the presence of the '@' separator. Although Report Broker supports specifying only the host name or IP address of the printer, we recommend specifying both the printer queue and host name or IP address when distributing Report Broker output to a printer. The maximum length of this field is 800 characters.

- **Dynamic Distribution List.** A Dynamic Distribution List enables you to return in memory either a list of burst values and destinations, or only a list of destinations from a data source (for example, a flat file, SQL database, FOCUS data source, or LDAP). For more information, see *Creating a Dynamic Distribution List* on page 109.

4. If you select Distribution List, select the *Value* button which will display the Open dialog box to allow you to select a Distribution List. If you select Printer Name, specify the printer name in the Value field.
5. Select the *Notification* tab to specify whether to send an email notification of the schedule job status. If you select Always or On Error, then you must specify the Reply Address, Subject, Brief Message To, and Full Message To.
6. Select the *Properties* tab to specify the Title, Priority, whether to delete the schedule if it will not run again, and whether the schedule is enabled to run. For more information, see *About Properties in the Basic Scheduling Tool* on page 153.
7. Select the *Recurrence* tab to specify how often to run the schedule. If you want the schedule to run on the current day, set the Start Date and Start Time to values later than the current time. For more information, see *About Recurrence in the Basic Scheduling Tool* on page 155.
8. Select *Save & Close* to save your changes.

Using the Repository Distribution Option in the Basic Scheduling Tool

How to:

Use the Repository Distribution Option

When distributing scheduled output to the Repository in the Basic Scheduling tool, specify the Repository folder location to which to distribute the report output.

Note: You must be authorized to distribute to the Repository in order to create a schedule that uses Repository distribution.

The best practice for recurring and burst schedules is to create and specify a different folder location for each report being distributed for the same report procedure (FEX). This is important so the security access can be defined and managed at the folder level and when opting to burst the distributed report output because the burst value is assigned as the title value to each report section that is distributed. The title value is the value that displays in the DB2 Web Query tree.

When the report output is distributed using the Repository distribution option, the Day, Date, and Time information is prepended to the Save Report As value specified in the schedule task information. For example, the Schedule for the Product Packaging & Price report assigned the default *Save Report As* value 'Product_Packaging_Price.htm' (blanks and special characters are replaced with an underscore character).

The report output distributed to the Repository on Monday December 19, 2011 at 1:35pm EST is assigned the description: Mon, 19 Dec 2011 01:35 PM EST Product Packaging Price.

Procedure: How to Use the Repository Distribution Option

1. Right-click a report procedure (FEX), select *Schedule*, and then select *Repository*.

   The Basic Scheduling tool displays in a new window.

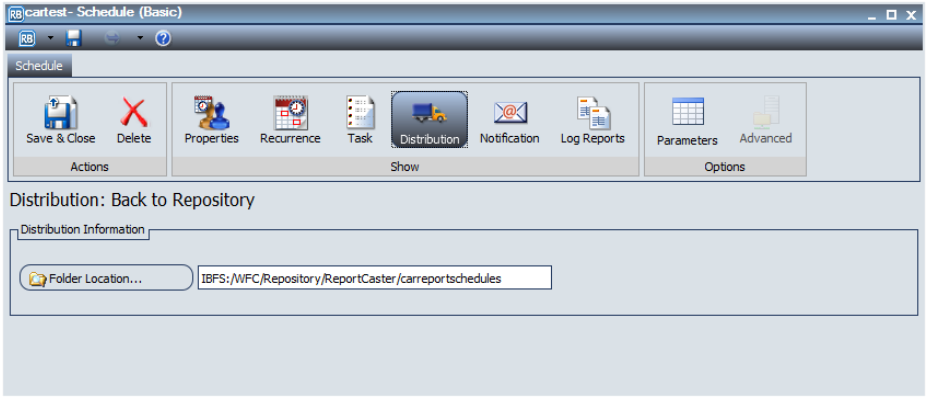
2. Enter or verify task information. For more information, see *About Tasks in the Basic Scheduling Tool* on page 119.

3. Click the *Distribution* tab.

   The Distribution Server adds Day, Date, and Time to the beginning of the *Save Report As* value specified in the Task tab.

   Verify that the folder location is the folder to which you want to distribute the report output. The folder location defaults to the same folder as the report procedure (FEX) being scheduled, as shown in the following image. Users can select a different folder to distribute the report output to by clicking the *Folder Location* button, which will display a dialog box of the repository tree from which a folder location can be selected.

The user must have must have authority to write and create content in the selected folder when the scheduled job runs for the report output to be successfully distributed. When the report is distributed, the Distribution Server adds Day, Date, and Time to the beginning of the Save Report As value specified in the Task tab.



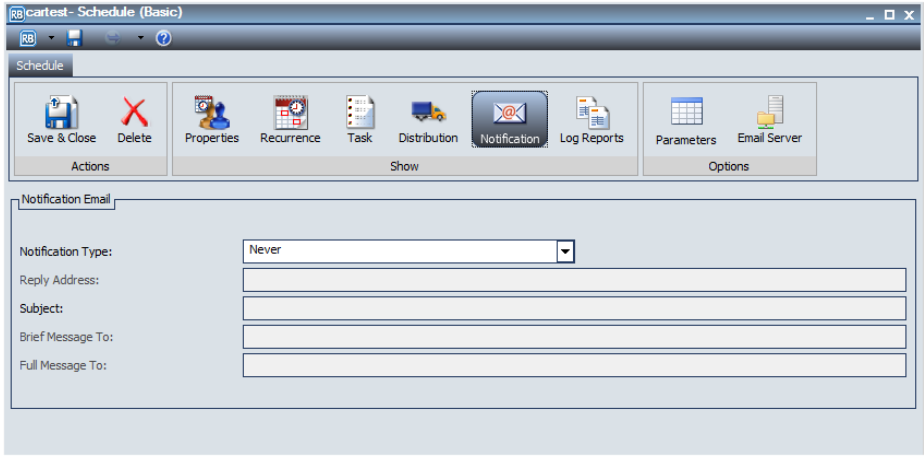
4. Select the *Notification* tab to specify whether to send an email notification of the schedule job status. For more information, see *Notification Options in the Basic Scheduling Tool* on page 151. If you select Always or On Error, then you must specify the Reply Address, Subject, Brief Message To, and Full Message To.
5. Select the *Properties* tab to specify the Title, Priority, whether to delete the schedule if it will not run again, and whether the schedule is enabled to run. For more information, see *About Properties in the Basic Scheduling Tool* on page 153.
6. Select the *Recurrence* tab to specify how often to run the schedule. If you want the schedule to run on the current day, set the Start Date and Start Time to values later than the current time. For more information, see *About Recurrence in the Basic Scheduling Tool* on page 155.
7. Select *Save & Close* to save your changes.

Notification Options in the Basic Scheduling Tool

In this section:

Setting On Error and Always Notification in the Basic Scheduling Tool

The Notification tab in the Basic Scheduling tool, shown in the following image, provides the options to send a notification of the schedule status to specific email recipients.

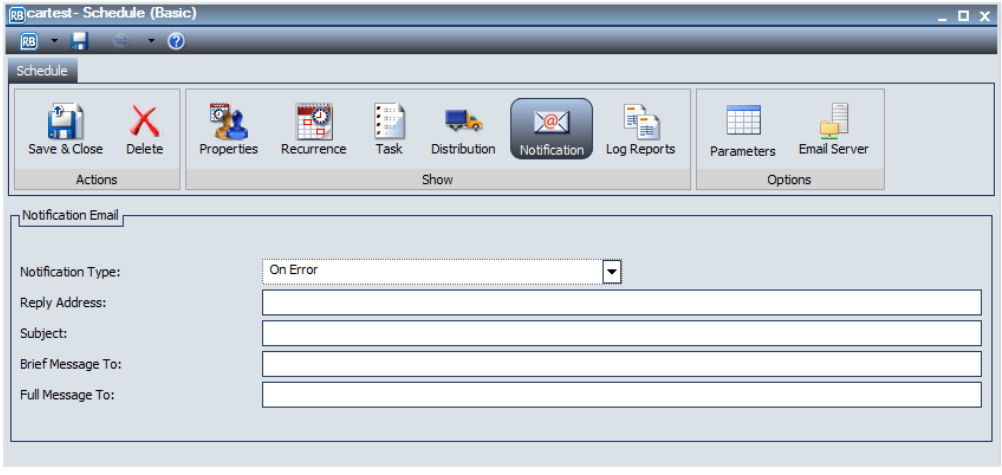


The notification options are:

- **Never.** Report Broker will not send a notification of the schedule status under any circumstances. This is the default value.
- **Always.** The specified users are always notified when the schedule runs.
- **On Error.** The specified users are notified when errors are encountered while running the schedule.

Setting On Error and Always Notification in the Basic Scheduling Tool

When you select the On Error or Always notification option, additional options become available, as shown in the following image.



The On Error and Always notification options are:

- **Reply Address.** Type the email address of the sender. If report recipients reply to the report sender, then their messages are sent to this address. If your email system is unable to deliver a report, then the undeliverable report message is also returned to this address.

  Note:

  - If you are authenticating to the mail server with your user ID and password, then the reply address will be the email address associated with that user ID.
  - If the mail server is configured with authentication and the Reply Address is configured in the Report Broker Configuration tool, then the Reply Address field in the scheduling tools will be disabled. If a Reply Address is not configured, then the field is enabled to allow a Reply Address to be sent to the email server, however the actual Reply Address of the delivered email will be that of the authenticating account.

- **Subject.** Type the text you want to display in the subject line of the email notification. There is a limit of 255 alphanumeric characters. By default, this field contains the report name and date and time stamp.

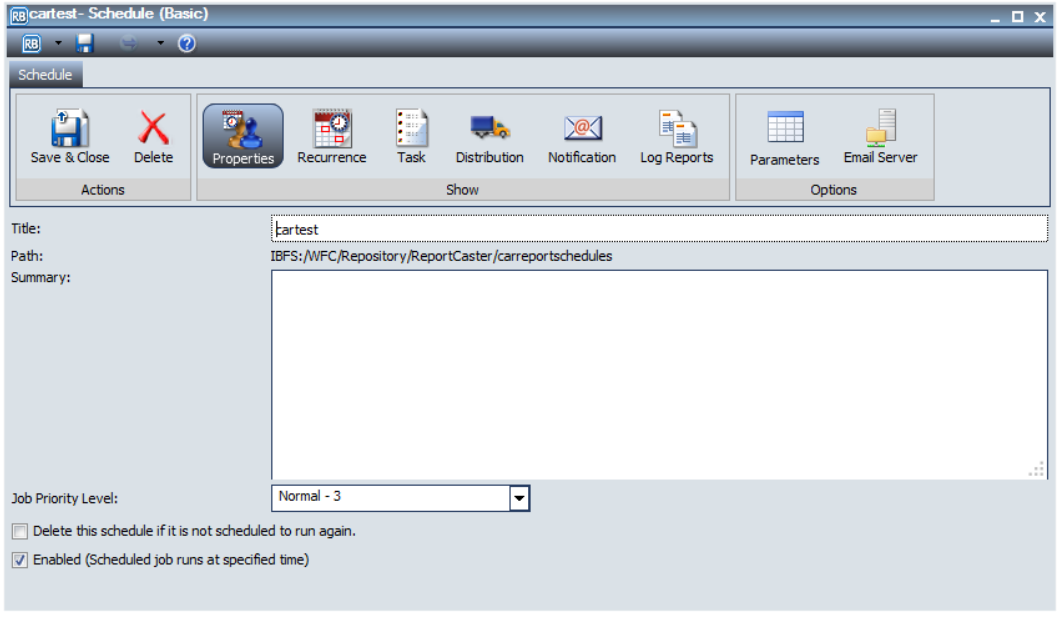
- **Brief Message To.** Type the email address where you want a full notification sent. There is no syntax error checking for this field.

Tip: Use the Brief Message To option when you are sending notification to devices that have limited memory, such as pagers and cell phones. If you want to notify multiple recipients, you can use group mail lists defined on your mail server provided that you append an at sign (@) followed by a valid domain.

- **Full Message To.** Type the email address to which you want a full notification sent. There is no syntax error checking for this field.

About Properties in the Basic Scheduling Tool

When you access the Basic Scheduling tool, the Title and Path Properties options are predefined for the selected report procedure (FEX). The following image displays the Properties tab in the Basic Scheduling tool.

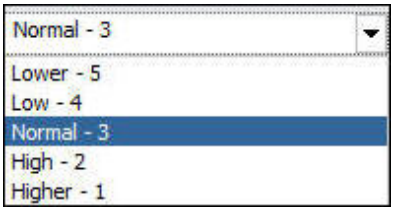


The options within the Properties tab are:

- **Title.** This allows you to provide a brief description of the purpose of the schedule. It is pre-populated with the Title of the report procedure being scheduled when creating schedules with the Basic Scheduling tool. You can edit the Title while creating the schedule or after saving the schedule from within the Schedule tools. You can also edit the title from the Properties option from the tree after saving the schedule.

  The Title of the schedule is the default name assigned when saving the schedule. If the name value already exists in the selected tree folder, a message is displayed informing you that the name already exists. You can change the Title field in the Save dialog box, which when saved, will also update the Title field within the schedule information.

- **Path.** This is the Repository path of the report procedure (FEX) you selected to schedule.
- **Summary.** This allows you to insert a detailed description for the schedule. This is an optional field.
- **Job Priority Level.** This specifies the priority the scheduled job will be given when processed by the Distribution Server. The default Job Priority Level is set to Normal - 3. However, you can use the drop-down list to set the priority level, as shown in the following image.

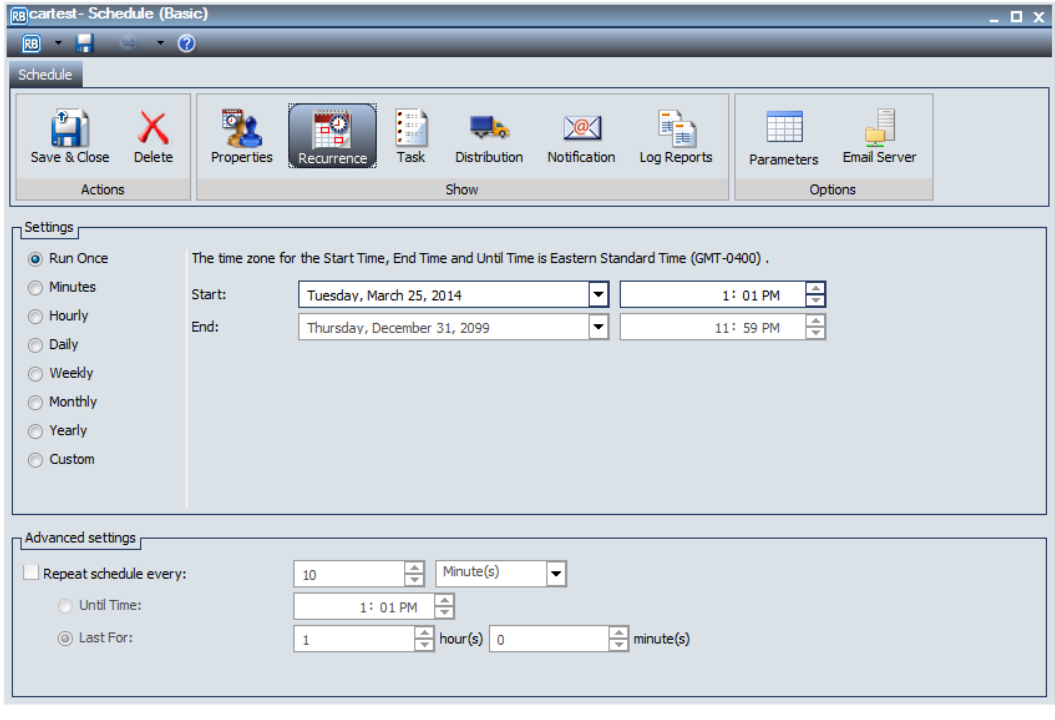


- **Delete this schedule if it is not scheduled to run again.** This check box allows you to specify that the schedule should be deleted after the scheduled job processing is completed if the schedule is not scheduled to run again. Selecting this option for schedules you will not utilize again is recommended as it will improve overall performance within the tree listing folder contents.
- **Enabled (Scheduled job runs at specified time).** This check box is selected by default to specify that the schedule should be evaluated by the Distribution Server when polling for scheduled jobs to run. If you do not want to distribute the schedule based on its NEXTRUNTIME value, clear this check box.

About Recurrence in the Basic Scheduling Tool

In this section:

When you access the Basic Scheduling tool, the Recurrence tab options allow you to define how often to run the schedule. The following image displays the Recurrence tab in the Basic Scheduling tool.



Options that users must determine include frequency of distribution, start and end times, and Advanced interval settings. Select one of the following frequency of distribution settings:

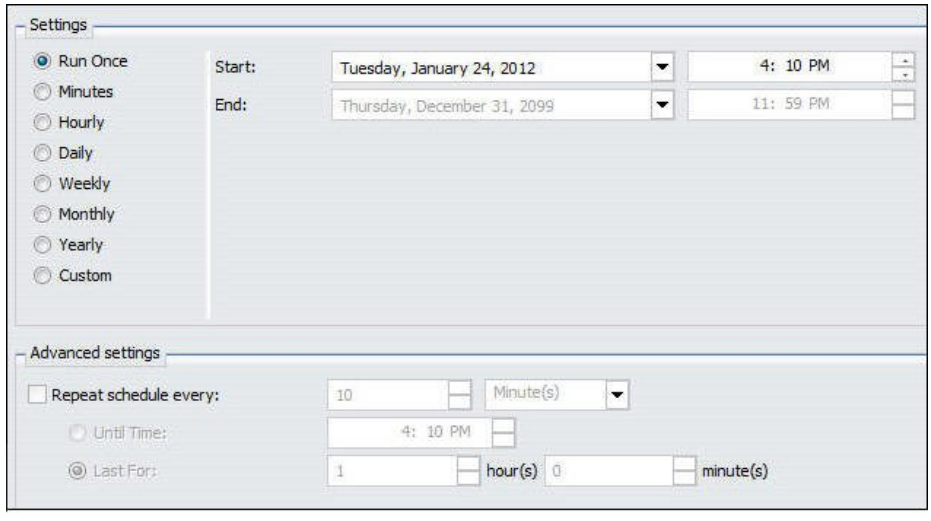
- Run Once
- Minutes
- Hourly
- Daily
- Weekly
- Monthly
- Yearly
- Custom

You can assign start and end times by using the drop-down lists. When you click on the down arrow, a calendar will display that enables an authorized user to set the date for schedule distribution. Use the up and down arrows to set a specific time for schedule distribution. Alternatively, you can enter the time manually.

If the user has the privilege to set Advanced settings, check the *Repeat schedule every* check box to enable Advanced interval setting options. Set how often you want to repeat schedule distribution, when you want to stop distributing the schedule (Until Time), and the duration to distribute the schedule (Last For). Enter this information manually or use the up and down arrows to set parameters.

The Run Once Interval

The *Run Once* option sets the job to execute immediately. This is the default value. You can modify the date or time if you do not want the schedule to run immediately. You can specify the date and time you want the schedule to run using the Start Schedule options, as shown in the following image.

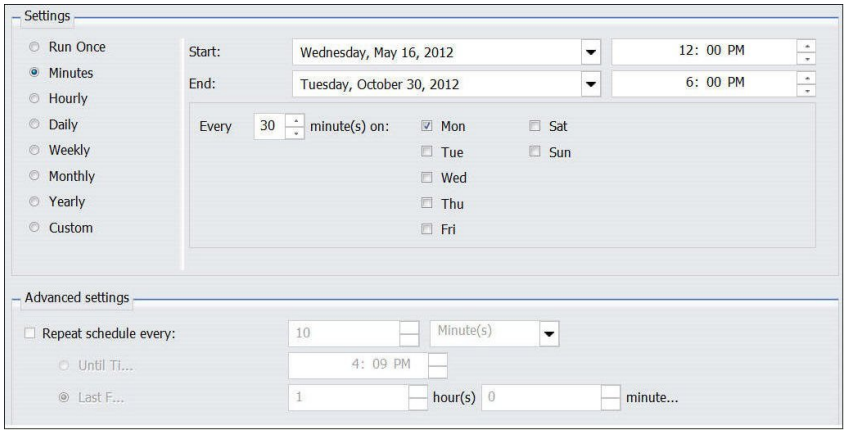


To select a date, choose a date from the drop-down date calendar. To select a time, select either the hour or minutes and use the up and down arrows to increase or decrease the value. Alternatively, you can enter the time manually.

The Minutes Interval

The *Minute(s)* option sets the schedule to run every *n* minutes.

In the *Every minute(s)* field, type or select the minutes interval (1 to 59), check the days of the week on which you want to run the schedule, and select the *Start* and *End* date and time to define the time period in which the schedule will run. For example, the following schedule will run every 30 minutes on Mondays beginning at noon May 16, 2012 and ending 6:00 PM October 30, 2012.

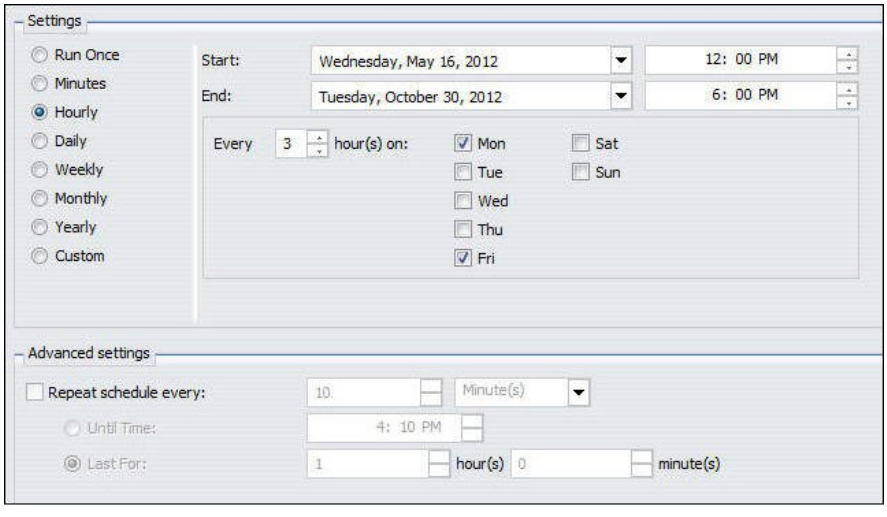


Tip: Selecting this option may affect system performance if you choose to run the schedule every 5 minutes or less. We recommend specifying a minimum of 30 minutes. The minute interval option is primarily for alert schedules.

The Hourly Interval

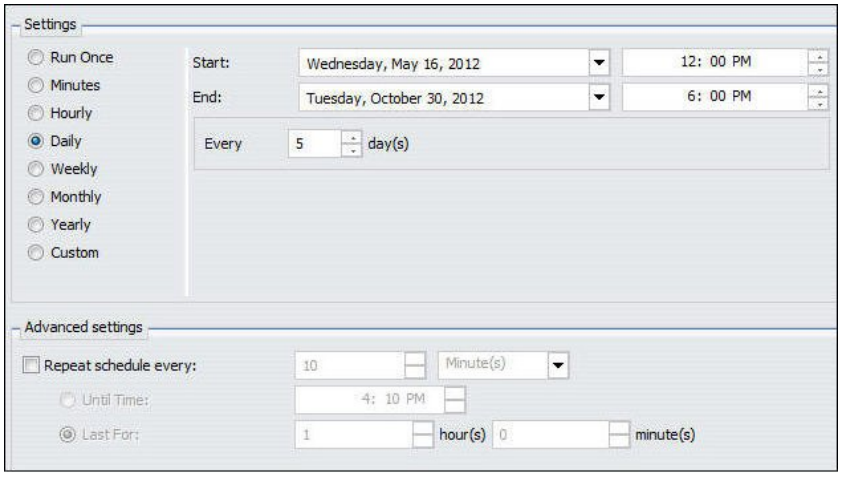
The *Hourly* option sets the schedule to run every *n* hours.

In the *Every hour(s)* field, type or select the hours interval (1 to 24), check the days of the week on which you want to run the schedule, and select the *Start* and *End* date and time to define the time period in which the schedule will run. For example, the schedule shown in the following image will run every three hours on Mondays and Fridays beginning at noon May 16, 2012 and ending 6:00 PM October 30, 2012.



The Daily Interval

The *Daily* option in the Run Interval drop-down list sets the schedule to run every *n* days. In the *Every day(s)* field, type or select the days interval to run the schedule and select *Start* and *End* date and time to define the period in which the schedule will run. For example, the schedule shown in the following image will run every five days beginning at noon May 16, 2012 and ending 6:00 PM October 30, 2012.

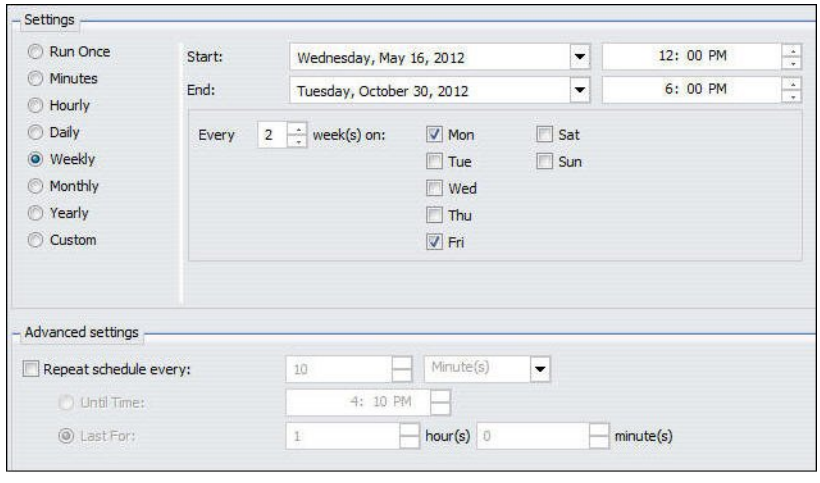


You can also set a secondary run interval. For information about this setting, see *Advanced Settings* on page 165.

The Weekly Interval

The *Weekly* option in the Run Interval drop-down list sets the schedule to run every *n* weeks.

In the *Every week(s)* field, type or select the weekly interval to run the schedule, check the days of the week on which you want to run the schedule, and select the *Start* and *End* date and time to define the time period in which the schedule will run. The following schedule will run every two weeks on both Monday and Friday beginning at noon May 16, 2012 and ending at 6:00pm on October 30, 2012.



Important: When selecting the *Week(s)* interval, set the *Start* to the date of the first day (current or future) of the week you want the schedule to run. If you select the current date, then you must make sure that the *Start* time is later than the current time when you save the schedule. If the *Start* time is less than or equal to the current time, the calculation for the next run time results in the schedule not running on the current date.

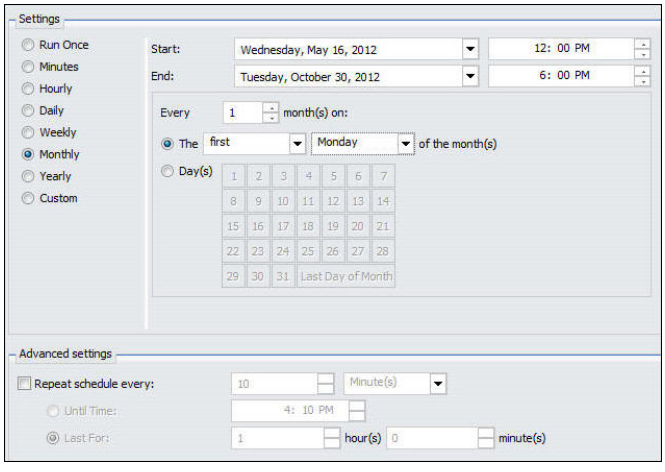
You can also set a secondary run interval. For more information about this settings, see *Advanced Settings* on page 165.

The Monthly Interval

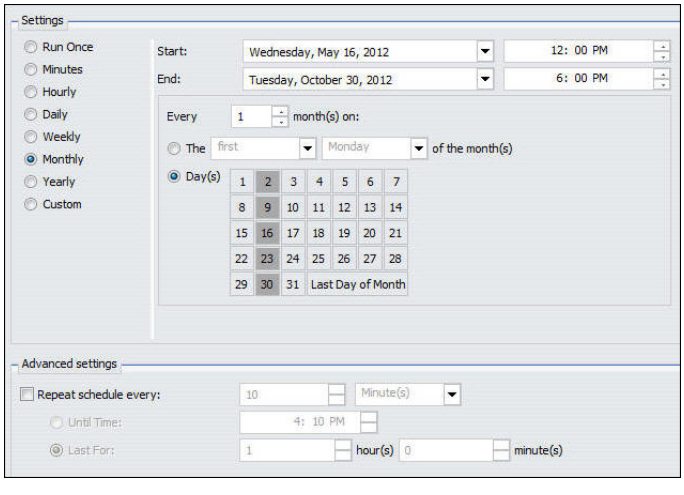
The *Monthly* option sets the schedule to run every *n* months. You can then refine the monthly interval with one of the following options. Note that these options are mutually exclusive.

- Every first, second, third, fourth, or last *n* day of the week (where n is Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or Sunday) every *n* months.
- Specific days every *n* months.

Also select the *Start* and *End* date and time to define the time period in which the schedule will run. The following image shows a schedule set to run on the first Monday of every month beginning at noon May 16, 2012 and ending 6:00 PM October 30, 2012.



The following image shows a schedule set to run on the 2nd, 9th, 16th, 23rd, and 30th of every month, regardless of the day of the week those dates fall on.



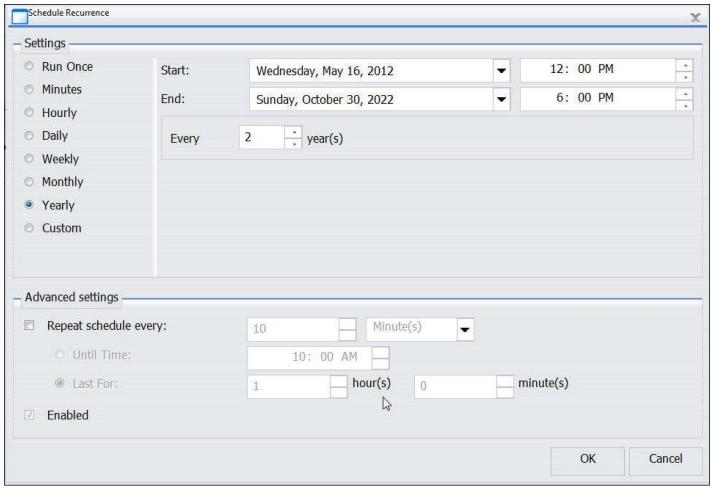
You can also select the *Last Day of the Month* option at the end of the calendar to run the schedule on the last day of the month.

Note: When selecting the *Month(s)* interval, set the *Start* date to the date of the first day (current or future) of the month you want the schedule to run. If you select the current date, then you must make sure that the *Start* time is later than the current time when you save the schedule. If the *Start* time is less than or equal to the current time, the calculation for the next run time results in the schedule not running on the current date.

You can also set a secondary run interval. For information about this setting, see *Advanced Settings* on page 165.

The Yearly Interval

The *Yearly* option sets the schedule to run every *n* years during a specific time period. The following image shows a schedule set to run every two years beginning at noon May 16, 2012 and ending 6:00 PM October 30, 2022.

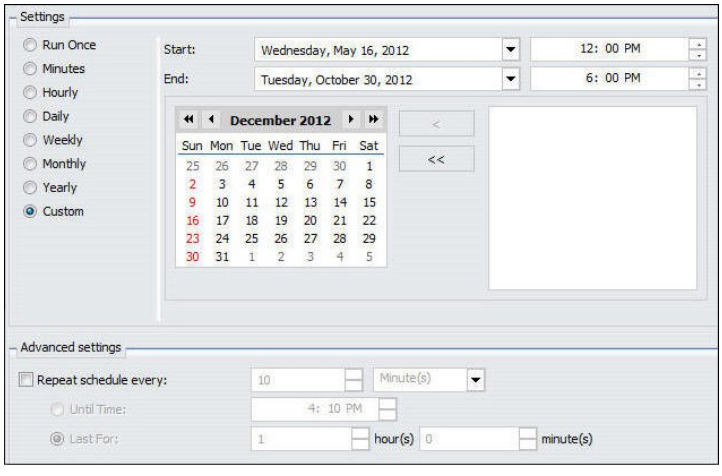


You can also set a secondary run interval. For information about this setting, see *Advanced Settings* on page 165.

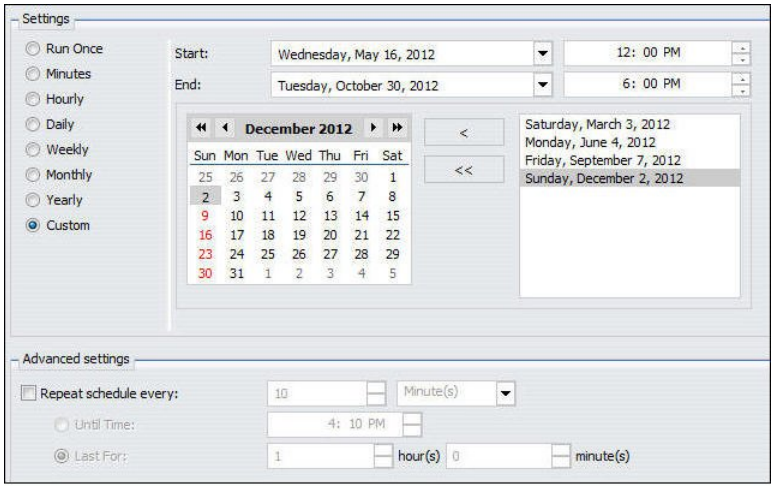
The Custom Interval

The *Custom* option allows you to select a set of dates that do not follow a specific pattern. For example, if you want to run a quarterly report on a different day of each quarter, then you can use the Custom run interval to set the schedule to run on dates such as March 3 (Saturday), June 4 (Monday), September 7 (Friday), and December 2 (Sunday).

The following image shows the Custom Run Interval options, which includes *Start* (initially set to the current date and time) and the *End* date and time options, the Custom calendar, and the Custom Date List node that appears in the right panel.



Define the time period in which the schedule will run by selecting the *Start* date and time and the *End* date and time. Select the specific days on which to run the schedule by clicking the day in the calendar. (Use the forward and back buttons at the top of the calendar to move through the months and years.) As you select a date, it appears in the Custom Date List. If it does not already exist, a folder for the year and month of the date you select is automatically created under the Custom Date List node. The following image shows an example of a selection of Custom dates in the calendar and the Custom Date List.



To remove a date from the list, click the date in the calendar. The date is no longer highlighted in the calendar and will not appear in the Custom Date List. You can optionally use the left single arrow to remove a date from the list. The double arrow button removes all defined lists.

You can also set secondary run interval. For information about this setting, see *Advanced Settings* on page 165.

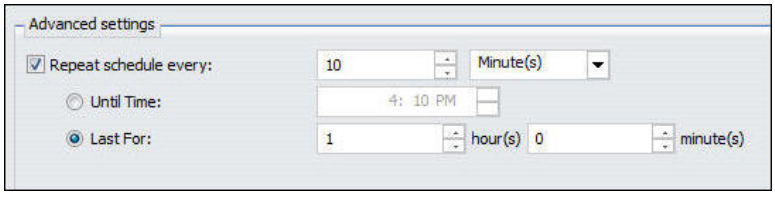
Advanced Settings

The Advanced settings option enables you to create a secondary run interval within the day the schedule runs. You can apply the secondary run interval every *n* minutes or hours for a specified number of hours and minutes or until a specified time. This option is available for schedules that run every day(s), week(s), month(s), or year(s).

Note: When a schedule is saved, the hours setting is converted to minutes. When a schedule is edited, this value appears as minutes.

The secondary run interval will not be validated when the schedule is created. Instead, validation is performed every time the next run time of the schedule is calculated when running within the secondary run interval. The secondary run interval cannot exceed the next run time for the primary run interval. For example, a daily schedule cannot have a secondary run interval greater than Every 1 day(s). If you schedule a secondary run interval to run after the next primary run interval of the schedule, the secondary run interval is stopped and an error message appears. This error message is also written to the log file.

The Advanced settings section allows you to specify repeat options, as well as time intervals. The following image shows an example of set secondary run interval options.



The Apply secondary run interval options are:

- **Repeat schedule every.** Applies the secondary run interval every *n* minutes or hours (in this example, every 10 minutes) within the day the schedule runs.
- **Until Time.** The time up until which the secondary run interval will be applied. In this example, the schedule will rerun every 10 minutes until 4:10 PM when the Until Time option is selected.
- **Last For.** The duration, specified in hours and minutes, during which the secondary run interval will be applied. This option and the Until Time option are mutually exclusive.

Note: When a schedule is updated, the next run time is recalculated based only on the primary run interval. This means that if a schedule that includes a secondary run interval is updated before the secondary schedule is able to run, then the secondary run interval is ignored and the NEXTRUNTIME is calculated based on the primary interval.

For example, a schedule exists that is set to run daily at 2:00 PM with a secondary run interval of every 10 minutes from 2:00 PM to 3:00 PM. When the schedule runs at 2:00 PM, the NEXTRUNTIME resets to run at 2:10, which honors the secondary run interval. If this schedule is updated at 2:03 PM, the NEXTRUNTIME is recalculated to be 2:00 PM the next day, rather than 2:10 PM on the current day.

Running a Schedule from Control Language (CL)

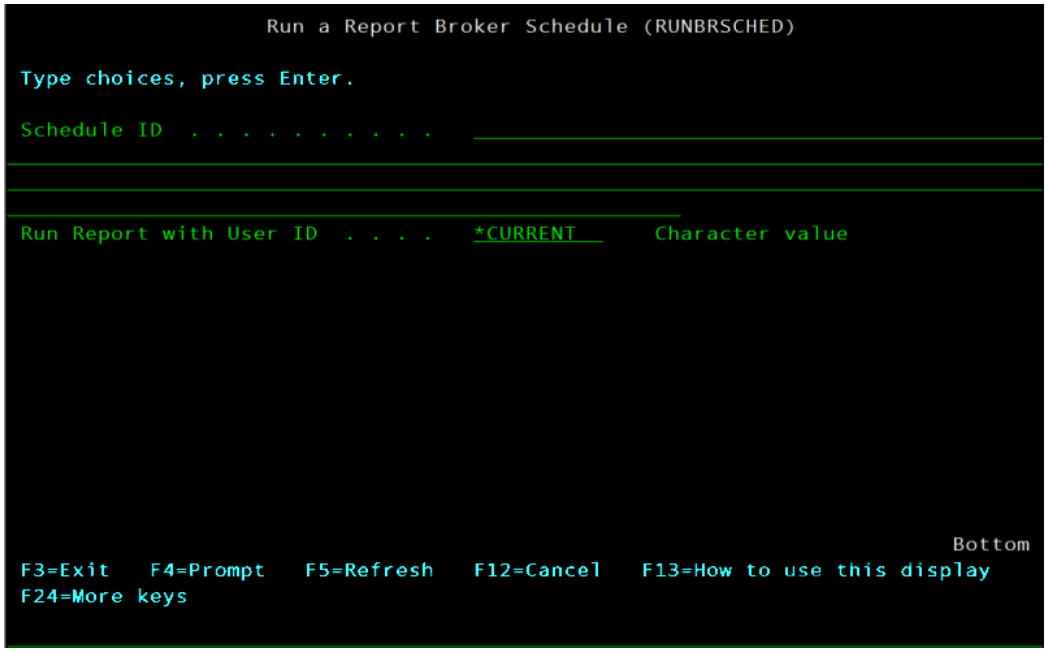
Describes how to use the RUNBRSCHED command.

Once you have created a schedule in Report Broker, you can run it at any time from the DB2 Web Query Report Broker application. There are times when a business user is not logged into DB2 Web Query, but may want to run a schedule as part of a business workflow process. The Report Broker CL program allows you to run schedules from outside of DB2 Web Query.

If you are a DB2 Web Query named licensed user or developer, you can run the schedules that you own. If you are a Report Broker Administrator, you can run any schedule.

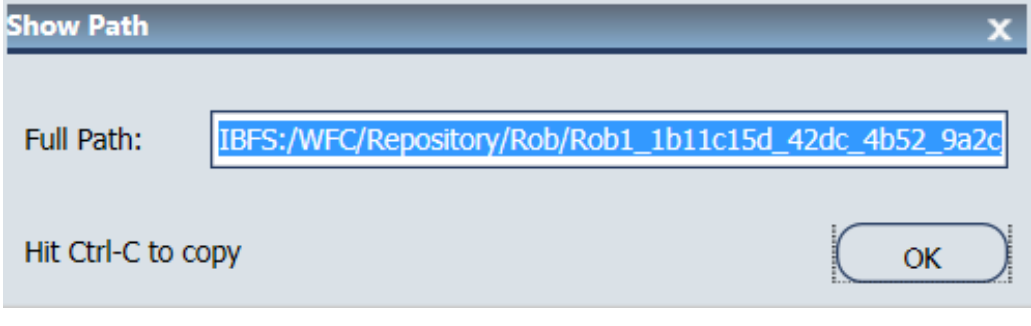
To run a Report Broker schedule outside of DB2 Web Query, type the following in a 5250 emulation session CL command line:

```
RUNBRSCHED
```



Schedule ID

Is a unique alphanumeric string assigned to a schedule when it is created. A Schedule created in Web Query 1.1.2 will have a 12-alphanumeric string while a Web Query 2.1.0 schedule will have a longer alphanumeric string. If you have a migrated schedule from a Web Query 1.1.2 installation, and want to run it in Web Query 2.1.0, then use the 12-alphanumeric string in this parameter. To run a schedule created in Web Query 2.1.0, use the schedule Full Path in this parameter. The full path can be copied from the Show Path option on the BI portal tree, as shown in the following image.



Run Report with User ID

Enables you to submit the job using another user ID. The default value is *CURRENT which means that the current user ID will be used to submit the job.

Maintaining Schedules

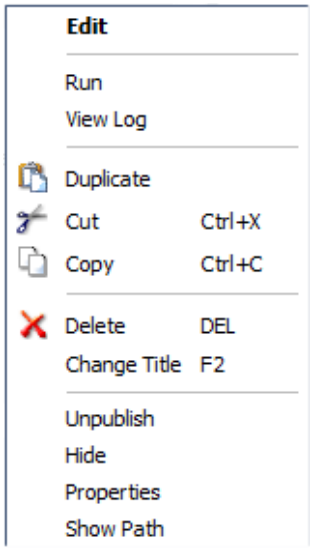
In this section:

Describes how to maintain, edit, copy, and delete a schedule.

Maintaining a schedule allows you to edit schedule properties or delete the schedule when it is no longer needed. If a schedule contains properties that you want to use in a new schedule, the duplicate or copy option creates a template with those properties for the new schedule. You can also check the status of a schedule and run a log report to obtain detailed information about the schedule.

About Maintaining a Schedule in the Basic Scheduling Tool

If you right-click a schedule in the tree, the options shown in the following image are available.



Edit

Allows you to open and edit an existing schedule.

Run

Runs the schedule.

View Log

Allows you to view a log report for one or more selected schedules.

Duplicate

Creates a new schedule with the same properties in the same folder. The new schedule is disabled automatically, because it is a duplicate of an existing schedule.

Cut

Allows you to move the schedule from the original folder to a target folder using the Paste operation.

Copy

Allows you to create a new schedule by copying an existing schedule.

Delete

Deletes the existing schedule.

Change Title

Allows you to rename the schedule.

Publish and Unpublish

An owner of a schedule can make a schedule available to other members of the top-level folder in which the schedule resides. The schedule owner remains the execution ID. The following table describes the right-click menu options permitted to the different groups associated with a top-level folder.

Top-Level Folder (TLF) Group Name	Right-click Option					
	Run	View Log	Edit	Publish / Unpublish	Security	Hide / Show
TLF-run	✓	×	×	×	×	×
TLF-analyst	✓	×	×	×	×	×
TLF-dev	✓	×	×	✓	✓	✓
TLF-dba	✓	×	×	×	×	×
TLF-sched	✓	✓	×	×	×	×
TLF-admin	×	×	×	×	×	×
WebQueryAdministrator	✓	✓	✓	✓	✓	✓

Note:

- In order for a user to Edit a published schedule, they must be a member of both the TLF-dev and TLF-sched groups.
- The default setting is Unpublish.

Hide and Show

Once an owner publishes a schedule, they can elect to Hide the schedule from all TLF-* groups, except the TLF-dev and WebQueryAdministrator groups. To hide or show a schedule, right-click on a schedule and select the *Hide* or *Show* option.

Note: The default setting is Show.

Security

Allows you to set the owner of a schedule.

Properties

This option is only available to Web Query Administrators to view schedule properties. A Web Query Administrator is any user belonging to the WebQueryAdministrator group.

Show Path

Displays the full path of the object within the Repository.

Editing a Schedule in the Basic Scheduling Tool

How to:

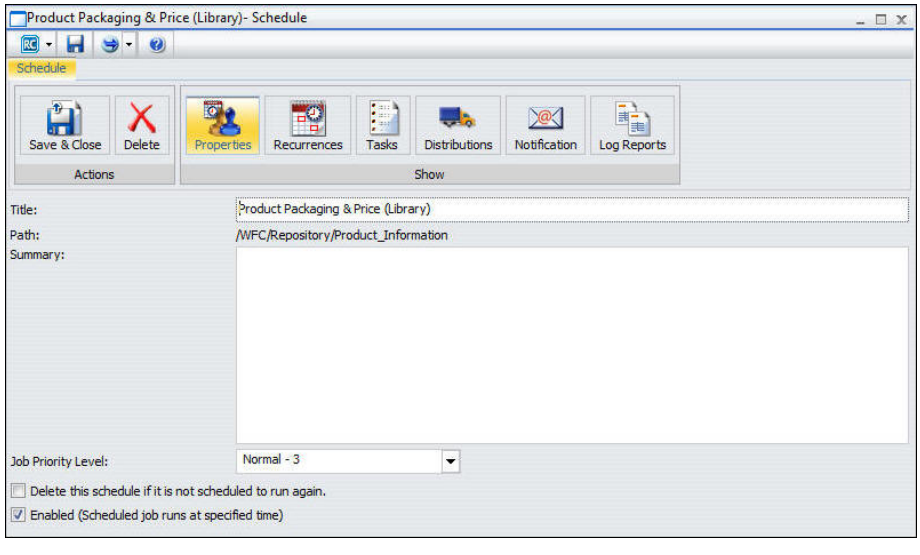
Edit a Schedule in the Basic Scheduling Tool

From the tree, you can edit the schedules you are authorized to access.

Procedure: How to Edit a Schedule in the Basic Scheduling Tool

1. Right-click the schedule you want to edit and select *Edit*.

   If the user is authorized to use the Advanced Scheduling tool, the Advanced Scheduling tool is used to edit schedules, as shown in the following image.



   Note: The Email and Print distribution methods support multiple tasks.

2. Make the required changes to the schedule. For details on the Basic Scheduling tool options, see *Creating a Schedule in the Basic Scheduling Tool* on page 116.

3. Click *Save & Close*.

Reference: Considerations When Editing a Schedule in the Basic Scheduling Tool

- If a schedule already exists, the existing schedule runs as previously defined, regardless of the changes. When you open a schedule that uses unavailable options, such as a distribution method, information is displayed that describes the change or changes that you must make for the schedule to use available options. Changes to the schedule cannot be saved until the schedule uses available options.
- If you selected *Run once* for the run interval, the schedule runs immediately unless you change the Start Time to a time later than the current time. All other run intervals run at the next primary run-time interval of the schedule.
- You must save your changes in order to be able to run from within the scheduling tool.
- If you want your selected schedule or schedules to run immediately, click *Run*.

Copying a Schedule in the Basic Scheduling Tool

How to:

Copy a Schedule in the Basic Scheduling Tool

For your convenience, you can copy an existing schedule for use as a template to create a new schedule. The copied schedule is created disabled because it is a duplicate schedule.

Procedure: How to Copy a Schedule in the Basic Scheduling Tool

Note: The cut, copy, and paste options display when you are authorized to use these options.

1. From the tree, right-click the schedule you want to copy and select *Copy*.
2. Right-click the folder you wish to copy the schedule into and select *Paste*.

Deleting a Schedule in the Basic Scheduling Tool

How to:

Delete a Schedule in the Basic Scheduling Tool

From the tree, you can delete schedules using the following procedure.

Procedure: How to Delete a Schedule in the Basic Scheduling Tool

Note that the Delete option displays when you are authorized to delete the selected schedule.

1. Right-click the schedule you want to delete and select *Delete*.

   Note: To select multiple schedules, use the Shift key and Control (Ctrl) key as in a standard Windows interface. A message appears asking to confirm if you want to delete the selected schedules.

2. Click *OK* to delete the schedule or schedules.

ReportBroker Explorer

In this section:

Describes how to obtain a list of Report Broker items, and how to filter schedules and Distribution Lists.

The Report Broker Explorer interface provides users with the ability to obtain a list of Report Broker items, by type, displayed with detail column information specific to the item type selected.

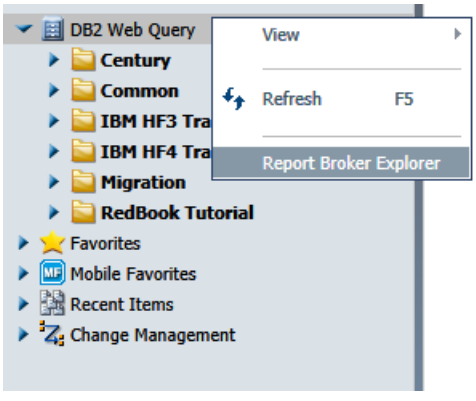
Note: Throughout this topic, the term Explorer refers to the Report Broker Explorer.

Using the Report Broker Explorer

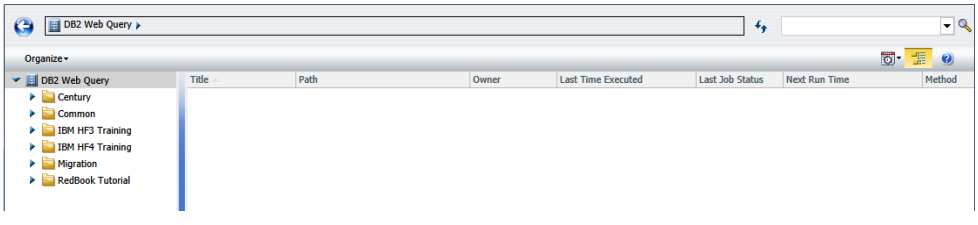
The Explorer interface provides users the ability to obtain a list of Report Broker items, by type, displayed with detail column information specific to the item type selected. The list can be filtered by Schedules and Distribution Lists in the selected folder. It can also include items in subfolders of the selected folder.

Access to the Explorer is controlled by the Client security authorization model. Users can be authorized to access the Explorer at the Repository folder or at specified lower-level folders.

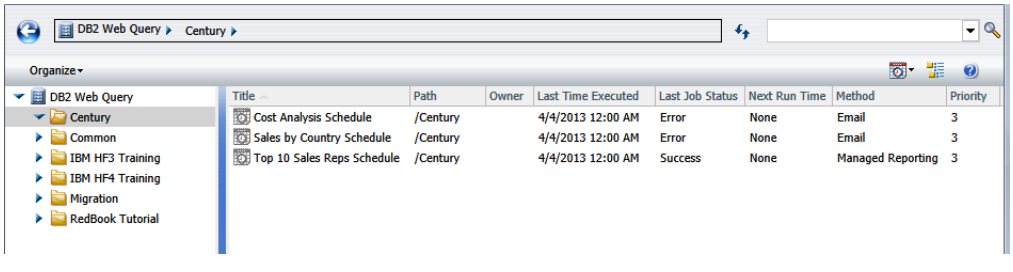
Authorized users can access the Explorer option from the context menu of a folder. The Explorer option is also available from the *Tools* menu, located on the BI Portal and Dashboard Menu Bar, provided that the user is authorized to access the Explorer from the *DB2 Web Query* folder.



When the Explorer interface is selected from the Tools menu, the *DB2 Web Query* folder is the default folder location and is expanded to list the folders that the user is authorized to access. The following image shows the Explorer with the *DB2 Web Query* folder as the selected folder location.



When the Explorer is selected from the context menu of a folder, the selected folder location is passed to Explorer so that the folder is the selected folder in the Explorer tree and schedules the user is permitted to access are listed in the right panel. The following image shows the Explorer invoked from the Century in which there are three schedules the user is authorized to access.



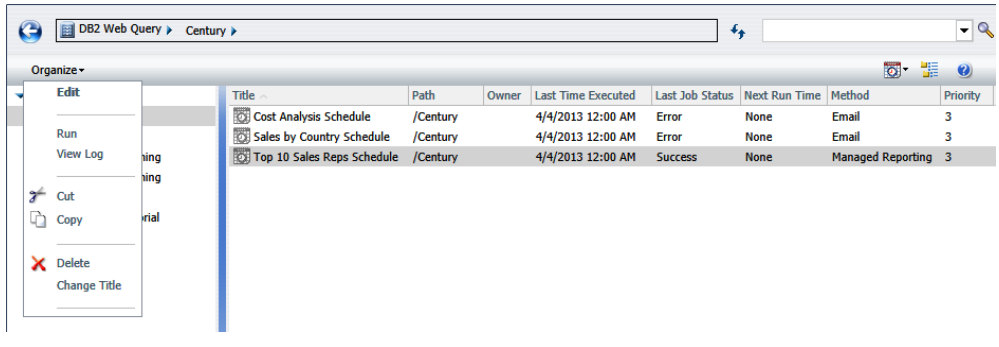
Note: Once the Report Broker Explorer is launched from the BI Portal, logging out of or closing the BI Portal does not close the Report Broker Explorer. You must manually close the Report Broker Explorer when you log out of or close the BI Portal. If you log back into the BI Portal with a different user name while the Report Broker Explorer is open from a previous session, the Report Broker content from the previous session will be visible and available in the Report Broker Explorer.

Explorer Schedule Toolbar

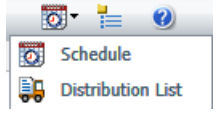
The following image shows the Explorer toolbar. This allows the user to quickly access the options available for a selected Report Broker item. You can specify what Report Broker item type to list and whether to list the items in the current folder or include subfolders. You can also access online help.

The Organize option displays the options the user is authorized to use for the Report Broker item selected in the right panel. The following image shows the Organize menu options for a schedule that has been selected in the right panel.

Note: The Organize menu is activated only when you have an item selected in the right panel.



The Change your filter option allows the user to specify whether to list Report Broker schedules or Distribution Lists. The default filter is Schedule. The following image shows the right side of the Explorer toolbar with the *Change your filter* option expanded.



The *List files in selected folder and subfolders* option allows the user to list the Report Broker items, based on the selected filter, in the current folder or in the current folder and its subfolders. The default is to list files in the current folder.

Note: The *List files in selected folder and subfolders* icon, which is displayed on the toolbar, is a toggle button to allow the user to change the depth of the folder search (that is, between the selected folder or the selected folder and its subfolders). It does not reflect the folder depth of the current list. Review the *Path* column in the right panel to confirm the folder location of the Report Broker items.

The following image shows the *List files in selected folder and subfolders* option that when selected, will list the Report Broker items for the selected Filter in the selected folder and its subfolders.

The following image shows the *List files in selected folder* option that when selected, will list the Report Broker items for the selected Filter in the selected folder.

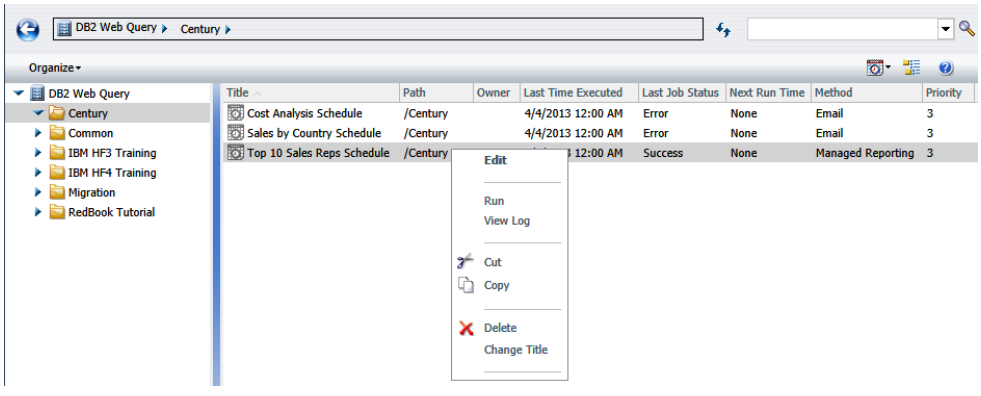
The following image shows the *Help* option and displays help information for the Report Broker Explorer interface.

Explorer Tree

The Explorer tree provides the same folder navigation as the tree that is accessible from the BI Portal, Dashboard, and Developer Workbench. Double-click a folder to expand or collapse a folder.

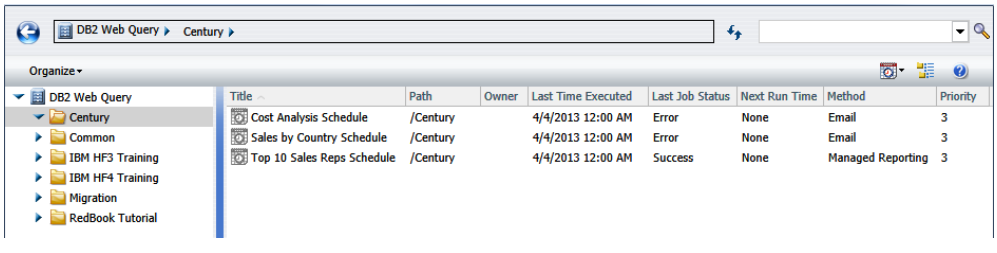
Explorer Item List Panel

The Explorer right panel displays the Report Broker items as specified by the Change your filter and List files in selected folder and subfolders toolbar options. The columns displayed are specific to each Report Broker Item type. The options available for a selected Report Broker item are accessible from the Organize toolbar option and the context menu of the item.



Explorer Schedule List Column Information

In the Explorer, right panel users can view the following information about schedules they are authorized to list.

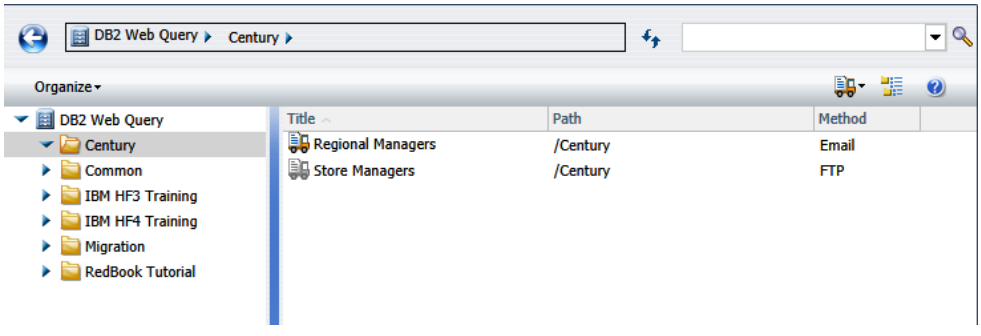


- **Title.** Displays the descriptive title of the schedule.
- **Path.** Displays the Repository path where the schedule is stored.
- **Owner.** Displays the user that owns the schedule.
- **Last Time Executed.** Displays the last day and time the schedule ran.
- **Last Job Status.** Displays whether the last schedule job ran with or without an error.
- **Next Run Time.** Displays the next day and time the schedule is set to run.
- **Method.** Displays the method the schedule will use to distribute the report output.

- **Priority.** Displays the level of priority the schedule will have when it is processed by the Distribution Server. Priority value 1 is the highest priority and 4 is the lowest priority.

Explorer Distribution List Column Information

In the Explorer, right panel users can view the following information about Distribution Lists they are authorized to list.



- **Title.** Displays the descriptive title of the Distribution List.
- **Path.** Displays the Repository path where the Distribution List is stored.
- **Method.** Displays the distribution method (Email, FTP, Print) for which the content within the Distribution List is specified.

Explorer Access List Column Information

In the Explorer, right panel users can view the following information about Access Lists they are authorized to list.

- **Title.** Displays the descriptive title of the Access List.
- **Path.** Displays the Repository path where the Access List is located.

Explorer Item Options

How to:

Open a Schedule

Run a Schedule

Delete a Schedule

Open a Distribution List

Delete a Distribution List

The options available from the Organize menu or the context menu for Report Broker items (Schedule and Distribution List) allow authorized users to select the following options.

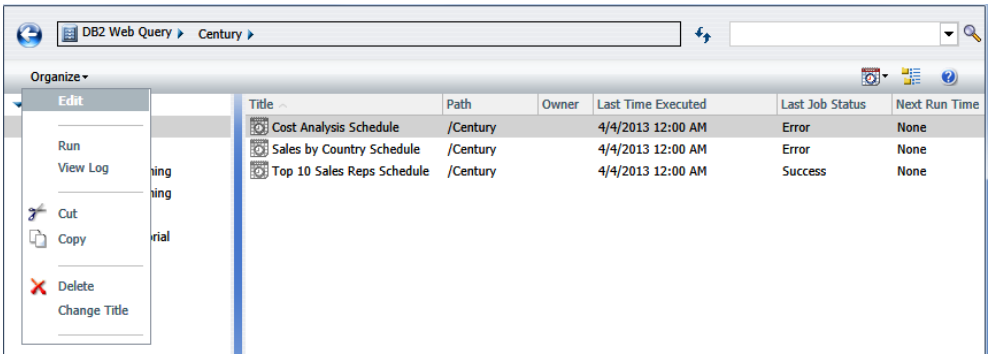
- Open a Schedule. For more information, see *How to Open a Schedule* on page 179.
- Run a Schedule. For more information, see *How to Run a Schedule* on page 180.
- Delete a Schedule. For more information, see *How to Delete a Schedule* on page 180.
- Open a Distribution List. For more information, see *How to Open a Distribution List* on page 181.
- Delete a Distribution List. For more information, see *How to Delete a Distribution List* on page 181.

Note: In Explorer, you can perform the following operations on multiple files simultaneously: Edit, Run, View Log, Cut, Copy, Delete, and Share.

Procedure: How to Open a Schedule

1. Select the folder where the items are that you want to access and select the *List files in selected folder* option on the toolbar.
2. In the Change your filter drop-down list, select *Schedule*. Schedule is the default filter option.
3. Select the Schedule displaying in the Explorer to open.

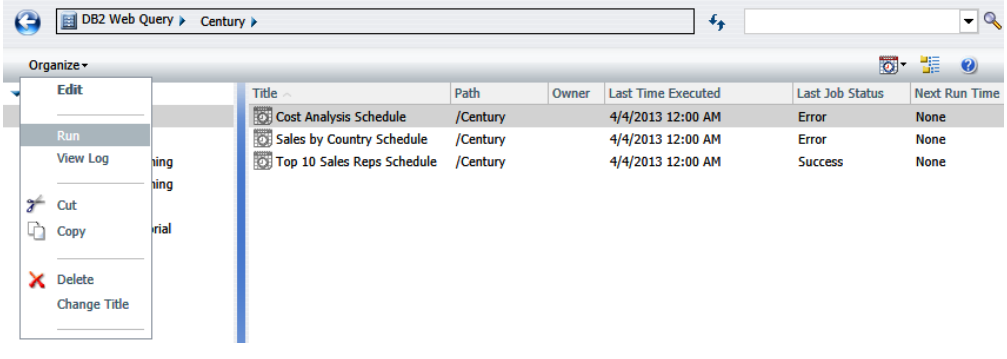
4. Right-click the selected schedule and click *Edit* on the drop-down list, as shown in the following image.



The Schedule appears.

Procedure: How to Run a Schedule

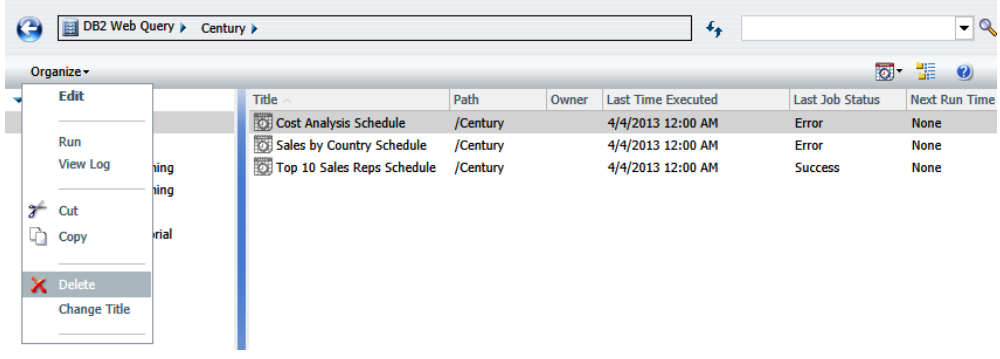
1. Select the folder where the items are that you want to access and select the *List files in selected folder* option on the toolbar.
2. In the Change your filter drop-down list, select *Schedule*. Schedule is the default filter option.
3. Select the Schedule displaying in the Explorer to run.
4. Right-click the schedule and select *Run*, as shown in the following image.



Procedure: How to Delete a Schedule

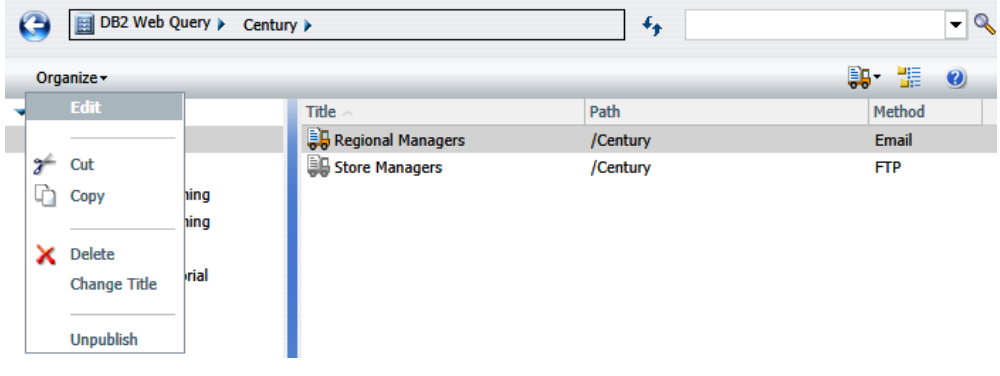
1. Select the folder where the items you want to access are located, and select the *List files in selected folder* option on the toolbar.

2. In the Change your filter drop-down list, select *Schedule*. Schedule is the default filter option.
3. Select the Schedule displaying in the Explorer to delete.
4. Right-click the schedule and select *Delete*, as shown in the following image.



Procedure: How to Open a Distribution List

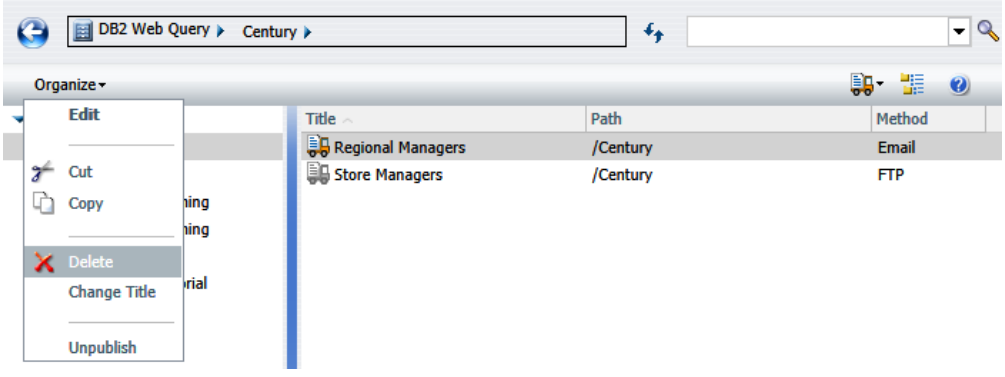
1. Select the folder where the items you want to access are located, and select the *List files in selected folder* option on the toolbar.
2. In the Change your filter drop-down list, select *Distribution List*.
3. Select the Distribution List displaying in the Explorer to open.
4. Right-click the Distribution List and select *Edit*, as shown in the following image.



Procedure: How to Delete a Distribution List

1. Select the folder where the items you want to access are located, and select the *List files in selected folder* option on the toolbar.

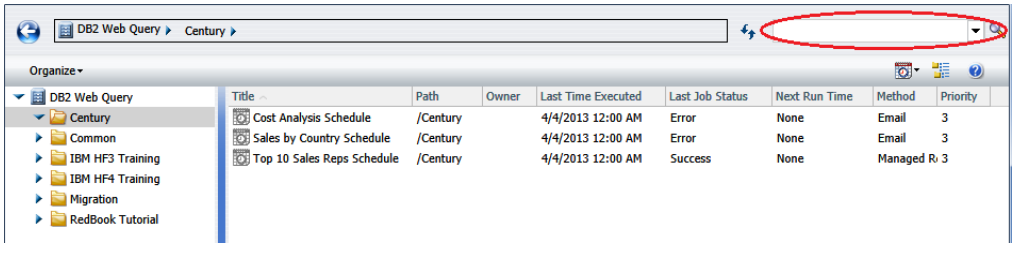
2. In the Change your filter drop-down list, select *Distribution List*.
3. Select the Distribution List displaying in the Explorer to delete.
4. Right-click the Distribution List and select *Delete*, as shown in the following image.



Searching Subfolders

Users authorized to access the Explorer can use the *Search* function in the right corner of the Explorer to locate folders andReport Broker items for the selected Report Broker item filter, as shown in the following image.

Note: When searching subfolders, any preset filters (for example, Schedules and Distribution Lists) will be respected unless you change them prior to running a search. For more information on the use of filters, see *Explorer Schedule Toolbar* on page 175.



Tracking Schedules

In this section:

Log Reports

Describes how to access log reports from the tree and Basic Scheduling tool.

Information about a schedule, such as date, time, execution status, and recipients of a distributed job, can be accessed by running a log report and checking the job status in the Report Broker Console Job Status tool.

Log Reports

In this section:

Tracking Schedules in the Console

Checking the Schedule Status

How to:

View a Log Report From the Tree

View a Log Report in the Scheduling Tool

Reference:

Considerations When Viewing a Log Report

Log reports are stylized HTML format and appear in a separate browser window. You can search, print, or save the log report. The log report displays information according to your specifications in a separate browser window. One log record is produced for each scheduled job run in the specified time frame.

Tracking Schedules in the Console

In this section:

Using Schedule Logs

Information about a schedule, such as date, time, execution status, and recipients of a distributed job, can be accessed by running a log report and checking the job status. For more information, see*ReportCaster Console*.

Using Schedule Logs

Log reports enable you to view information about a distributed job, such as whether or not the job executed successfully, when the scheduled output was distributed, in what format the distributed output was sent, and the method of distribution. Log reports are stylized HTML format and display in a separate browser window. You can search, print, or save the log report.

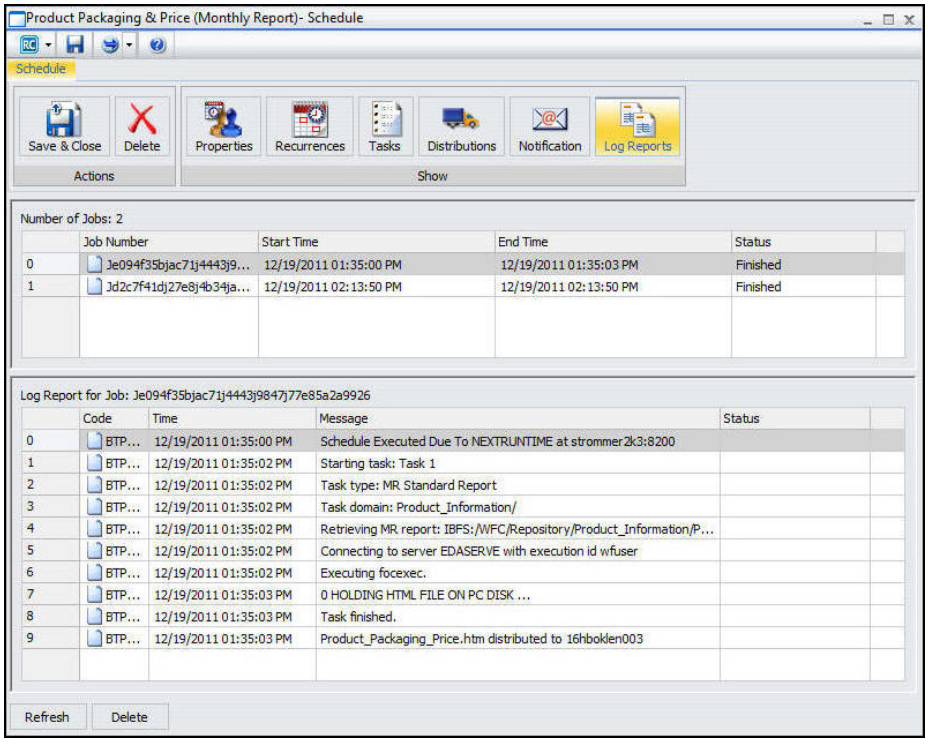
The log file accumulates information. You should periodically purge log records to manage the number of log reports stored in the Repository, as well as the performance of log report information that is displayed.

The list in the right panel provides basic information about the job execution, including the job ID, the time the job started running, the amount of time it took to complete the execution of the job, and the general status of the job. To view a full log report for a job, double-click the job in the job list.

Checking the Schedule Status

Another resource for tracking schedules is the schedule job status. The schedule status provides a list of scheduled jobs that are in the Distribution Server queue. Status information includes the schedule ID, the time it started running, and the status of the job.

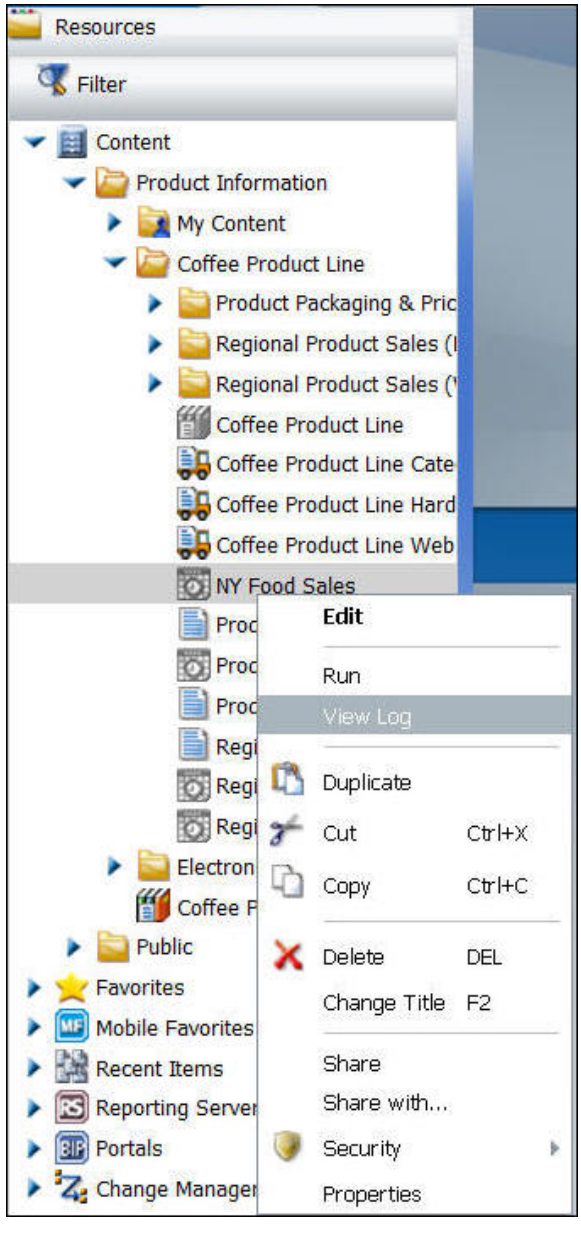
To access the schedule status information, click the *Log Reports* tab, as shown in the following image.



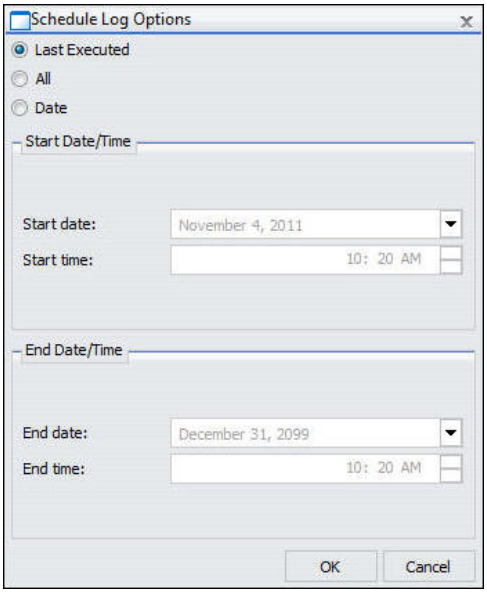
For more information about job status, see *Job Status* on page 90.

Procedure: How to View a Log Report From the Tree

1. Right-click the schedule from the tree and select *View Log*, as shown in the following image.



The Schedule Log Options dialog box appears, as shown in the following image.

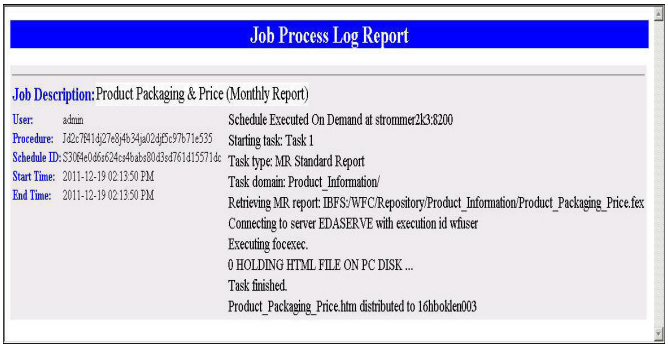


2. Specify which log report you would like to view by selecting *Last Executed*, *All*, or *Date*.

   If you select *Date*, you will have the option to specify your search using start date and time and end date and time parameters.

3. Click *OK*.

   The log reports that match your search criteria appear, as shown in the following image.



The log report first lists the job description for the record, which is the unique description identifier that you specified when you created the schedule. Underneath the Job Description, the left column of the log report includes the following information:

- **User.** Report Broker user ID, indicating the owner of the schedule.

- **Procedure.** Unique key generated by Report Broker that identifies a specific execution of a scheduled job.
- **Schedule ID.** Unique key generated by Report Broker that was assigned to the job when it was scheduled.
- **Start Time.** Date and time the job started running.
- **End Time.** Date and time the job finished running.

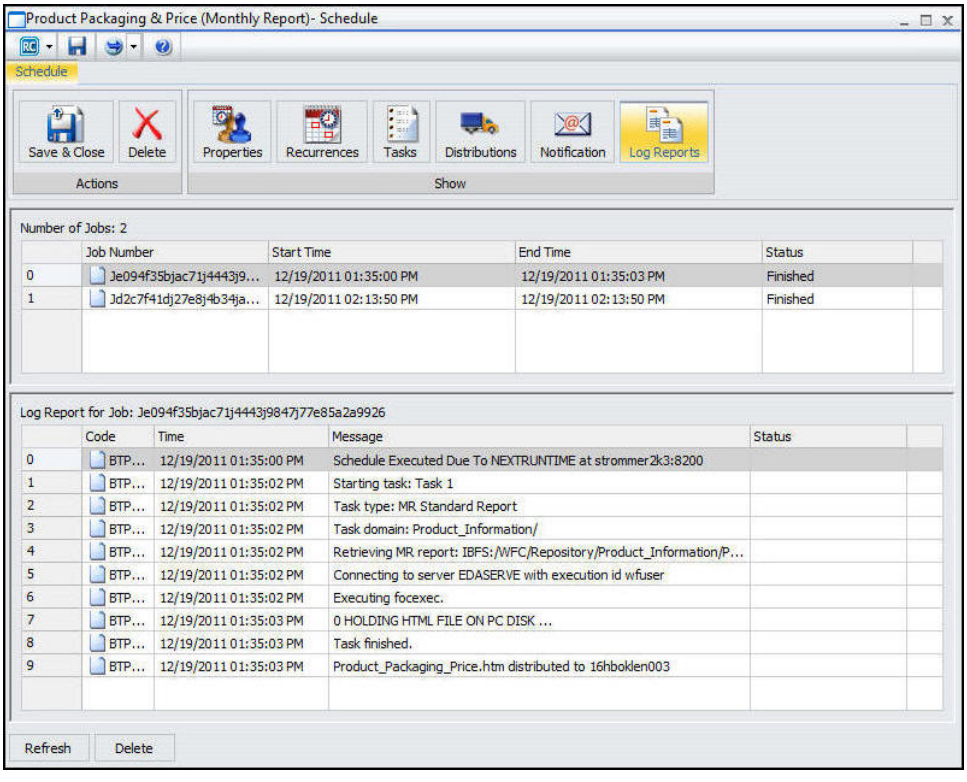
In the second column, the log report specifies messages consisting of the following:

- General information, such as the method of distribution for a particular job (for example, email distribution).
- Processing information, indicating that the request started, distribution was successful, and the request was completed. Processing information also includes reasons why a request failed, such as the unavailability of a data source.

Procedure: How to View a Log Report in the Scheduling Tool

1. From the Basic Scheduling tool, click the *Log Reports* tab.

The Log Reports panel appears, as shown in the following image.



2. Observe the Number of Jobs that have run.
3. Click the Job Number to view the log report information for that job in the panel below the job listing.

Reference: Considerations When Viewing a Log Report

When viewing a log report, be aware of the following considerations.

Task and Report Names

The Report Broker Log references DB2 Web Query folders and procedures (FEXs) by their path and file names and not their descriptions.

Email Addresses

Report Broker cannot validate email addresses since email validation is performed by the mail server. The log report will include any email addresses validated by the mail server and returned to Report Broker.

Burst Reports

- If a valid burst value is omitted in a Distribution List or Dynamic Distribution List, Report Broker treats the blank value as if it is a valid burst value and no entries indicating a blank burst value appear in the log file. This will significantly reduce the size of the log file, particularly when the database contains many values for the primary field and only a small subset of those values are burst.
- If a burst value is specified in a Distribution List or Dynamic Distribution List and it is not found in the database, the following message appears in the log file:

  `Burst Value: value is not in the database.`

- When a report procedure (FEX) is successfully burst, the log file will include the following message for each burst value:

  `FILE filename SUCCESSFULLY DISTRIBUTED TO destination FOR burst value.`

Unavailable Options

- When schedules with unavailable task types or distribution methods are not permitted to run, error notification is triggered. The log report, as well as the full and brief notifications, contains information on the unavailable options that the owner of the schedule must change.
- When schedules with unavailable task types or distribution methods are permitted to run, normal job execution occurs and a message appears in the log report indicating that existing schedules using the unavailable task types or distribution methods are able to run.

ReportBroker Tracing

In this section:

Describes Report Broker tracing, which enables administrators to obtain information about the internal operations of Report Broker components.

Tracing enables authorized users of Report Broker to obtain information about the internal operations of Report Broker components. Tracing a Report Broker request produces a detailed sequence of statements (stored in trace files) that describe the events as they are executed.

Enabling Tracing

You can enable and disable the Distribution Server Schedule trace by using the Report Broker Servlet Trace using the Administration Console.

Servlet Tracing

How to:

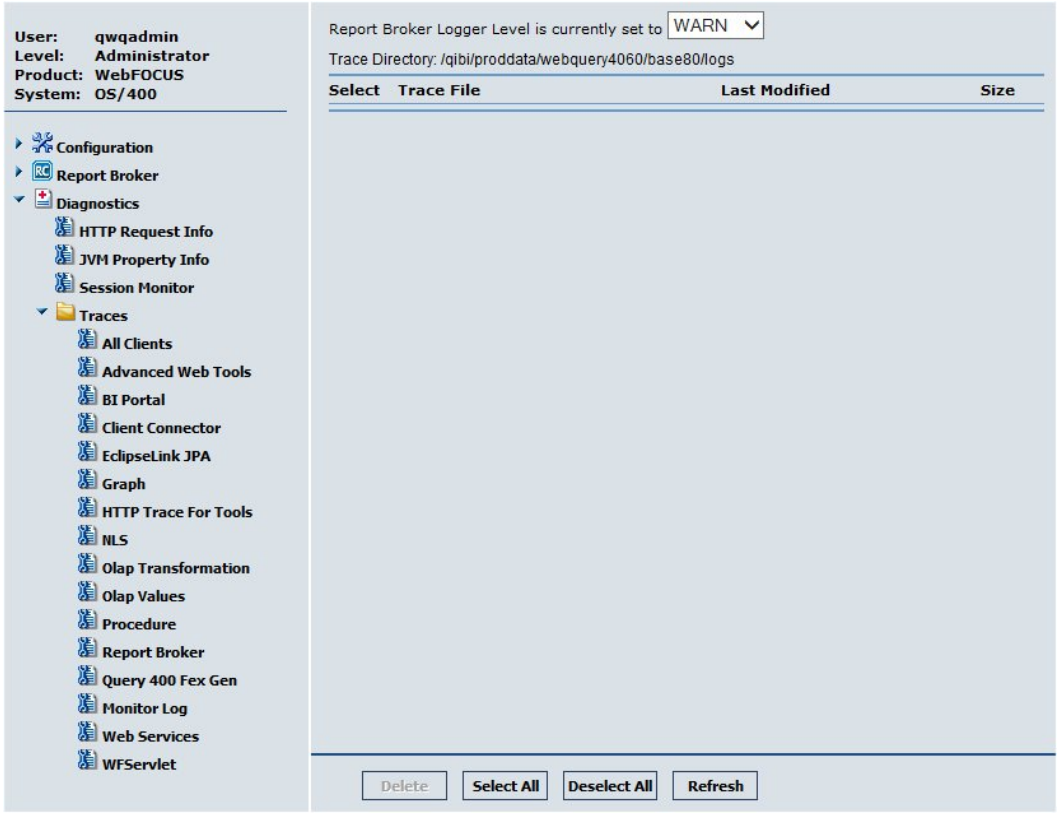
Access Servlet Tracing

Servlet tracing enables tracing for all Report Broker servlets deployed in the web application, including the Report Broker API. Servlet tracing provides information about queries to, and maintenance of, the Repository. This includes events that occur when a schedule is created.

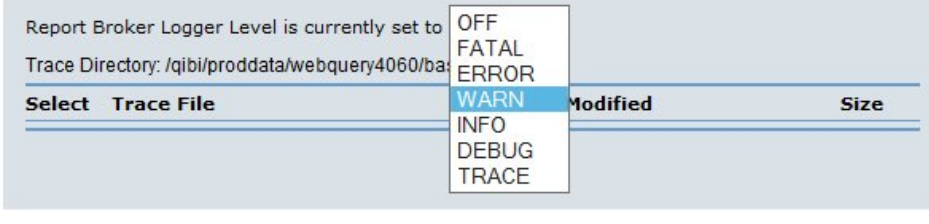
Procedure: How to Access Servlet Tracing

1. Navigate to the Administration Console.
2. Click the *Diagnostics* tab.
3. In the Traces group, select *Report Broker*.

The following image appears.



4. In the *Report Broker Logger Level is currently set to* drop-down list, select the type of information from the log file you would like to access, as shown in the following image.



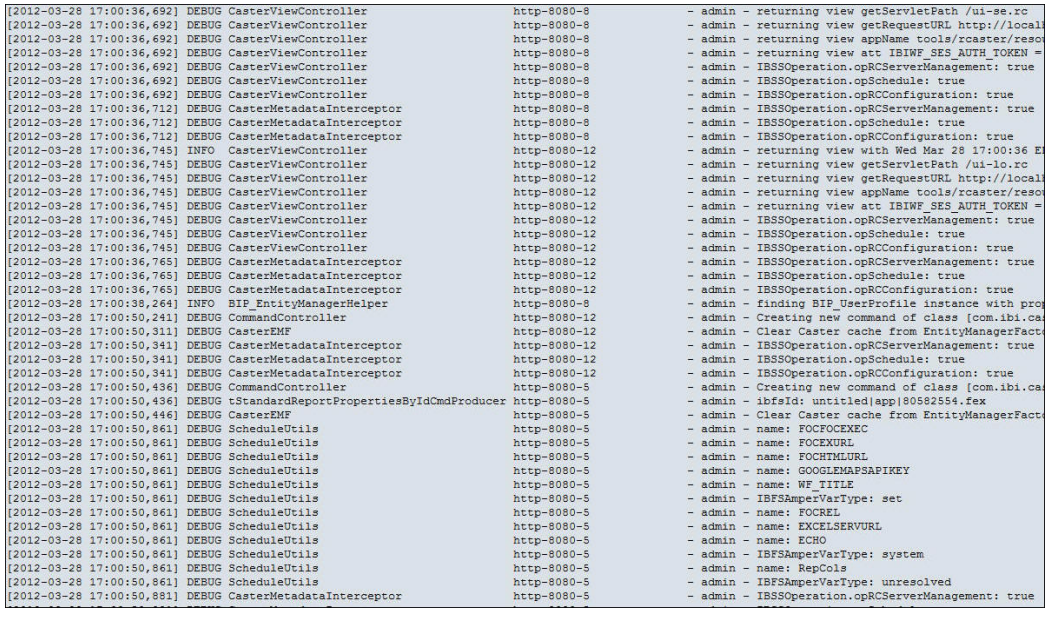
The Report Broker Logger Level option provides the following levels of diagnostics information:

- **OFF.** No information is written to the monitor.log file.
- **FATAL.** Produces minimum tracing.

- **ERROR.** Logs information only if an error occurs.
- **WARN.** Captures only informational messages.
- **INFO.** Captures only informational messages.
- **DEBUG.** Produces maximum tracing.
- **TRACE.** Designates more specific informational events than DEBUG.

5. Click the log file for which you would like to view traces.

In this example, we selected the event.log file.



```
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - returning view getServletPath /ui-se.rc
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - returning view getRequestURL http://locali
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - returning view appName tools/rcaster/reso
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - returning view att IBIWF_SES_AUTH_TOKEN =
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - IBSSOperation.opRCServerManagement: true
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - IBSSOperation.opSchedule: true
[2012-03-28 17:00:36,692] DEBUG CasterViewController                    http-8080-8             - admin - IBSSOperation.opRCConfiguration: true
[2012-03-28 17:00:36,712] DEBUG CasterMetadataInterceptor               http-8080-8             - admin - IBSSOperation.opRCServerManagement: true
[2012-03-28 17:00:36,712] DEBUG CasterMetadataInterceptor               http-8080-8             - admin - IBSSOperation.opSchedule: true
[2012-03-28 17:00:36,712] DEBUG CasterMetadataInterceptor               http-8080-8             - admin - IBSSOperation.opRCConfiguration: true
[2012-03-28 17:00:36,745] INFO  CasterViewController                    http-8080-12            - admin - returning view with Wed Mar 28 17:00:36 E
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - returning view getServletPath /ui-lo.rc
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - returning view getRequestURL http://locali
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - returning view appName tools/rcaster/reso
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - returning view att IBIWF_SES_AUTH_TOKEN =
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - IBSSOperation.opRCServerManagement: true
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - IBSSOperation.opSchedule: true
[2012-03-28 17:00:36,745] DEBUG CasterViewController                    http-8080-12            - admin - IBSSOperation.opRCConfiguration: true
[2012-03-28 17:00:36,765] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opRCServerManagement: true
[2012-03-28 17:00:36,765] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opSchedule: true
[2012-03-28 17:00:36,765] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opRCConfiguration: true
[2012-03-28 17:00:38,264] INFO  BIP_EntityManagerHelper                 http-8080-8             - admin - finding BIP_UserProfile instance with pro
[2012-03-28 17:00:50,241] DEBUG CommandController                       http-8080-12            - admin - Creating new command of class [com.ibi.ca
[2012-03-28 17:00:50,311] DEBUG CasterEMF                               http-8080-12            - admin - Clear Caster cache from EntityManagerFact
[2012-03-28 17:00:50,341] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opRCServerManagement: true
[2012-03-28 17:00:50,341] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opSchedule: true
[2012-03-28 17:00:50,341] DEBUG CasterMetadataInterceptor               http-8080-12            - admin - IBSSOperation.opRCConfiguration: true
[2012-03-28 17:00:50,436] DEBUG CommandController                       http-8080-5             - admin - Creating new command of class [com.ibi.ca
[2012-03-28 17:00:50,436] DEBUG tStandardReportPropertiesByIdCmdProducer http-8080-5             - admin - ibfsId: untitled|app|80582554.fex
[2012-03-28 17:00:50,446] DEBUG CasterEMF                               http-8080-5             - admin - Clear Caster cache from EntityManagerFact
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: FOCFOCEXEC
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: FOCEXURL
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: FOCHTMLURL
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: GOOGLEMAPSAPIKEY
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: WF_TITLE
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - IBFSAmperVarType: set
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: FOCREL
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: EXCELSERVURL
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: ECHO
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - IBFSAmperVarType: system
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - name: RepCols
[2012-03-28 17:00:50,861] DEBUG ScheduleUtils                           http-8080-5             - admin - IBFSAmperVarType: unresolved
[2012-03-28 17:00:50,881] DEBUG CasterMetadataInterceptor               http-8080-5             - admin - IBSSOperation.opRCServerManagement: true
```

Schedule and Report Tracing

In this section:

The Distribution Server schedule tracing is enabled by setting Schedule Trace to SCHEDULE (or to SCHEDULE & REPORT if you also want to enable report tracing) in the General tab of the Console Configuration tab.

Report Broker also provides the ability to enable SCHEDULE or SCHEDULE & REPORT tracing on a per schedule basis when dynamically running the schedule on demand. When you run a schedule, the Schedule Trace setting specified in the Report Broker Configuration tool appears along with options that enable you to change the setting for this particular schedule.

Trace Files Related to Specific Jobs

When the Schedule Trace parameter is set to SCHEDULE, Report Broker produces trace files containing Report Broker Distribution Server information related to the specific job or jobs being run. Each job creates the following trace files in the /qibm/userdata/qwebqry/base80/ReportCaster/trc directory, each with a unique Job Process ID (*Jobid*):

- **Jobid.trc** (for example, J0ud2a6kqk01.trc). Contains all information related to the execution of a job. This includes information about the scheduled procedure, distribution information, and the log creation and its contents.
- **Jobid.fex** (for example, J0ud2a6kqk01_0000.fex). Contains distribution information, report parameters (if any), pre-processing and post-processing steps (if any), procedure code (if DB2 Web Query), or a -INCLUDE FOCEXEC (if Server Procedure).
- **Jobid.err.** If there is a processing error, Report Broker generates a *jobid*.err file containing information about why the report was not distributed successfully.

Note: You can identify the Job Process ID of the target job by running a log report. For more information about log reports, see *Log Reports* or *Job Logs* on page 91. A Job Process ID begins with a J and is followed by a series of random digits and lowercase letters.

Distribution Server Startup Trace Files

Reference:

Job Procedure (FEX) File

When you enable schedule tracing, the following core Distribution Server trace files are created in the /qibm/userdata/qwebqry/base80/ReportCaster/trc directory. When a new instance of the Distribution Server starts, these trace files replace the previous trace files:

- **main.trc.** Traces the commands processed by the main Distribution Server thread. These commands include initialization, shutdown, and running a job immediately.
- **reader.trc.** Traces when the Distribution Server checks for schedules (the default polling interval is 1 minute).
- **disp.trc.** Traces the thread between the Distribution Server and the Reporting Server. The number of threads is defined by the Maximum Thread setting in the Report Broker Servlet Trace in the Administration Console. The default number of threads is 3.
- **console.trc.** Traces all communications between the Report Broker API and the Report Broker servlets to the Distribution Server.

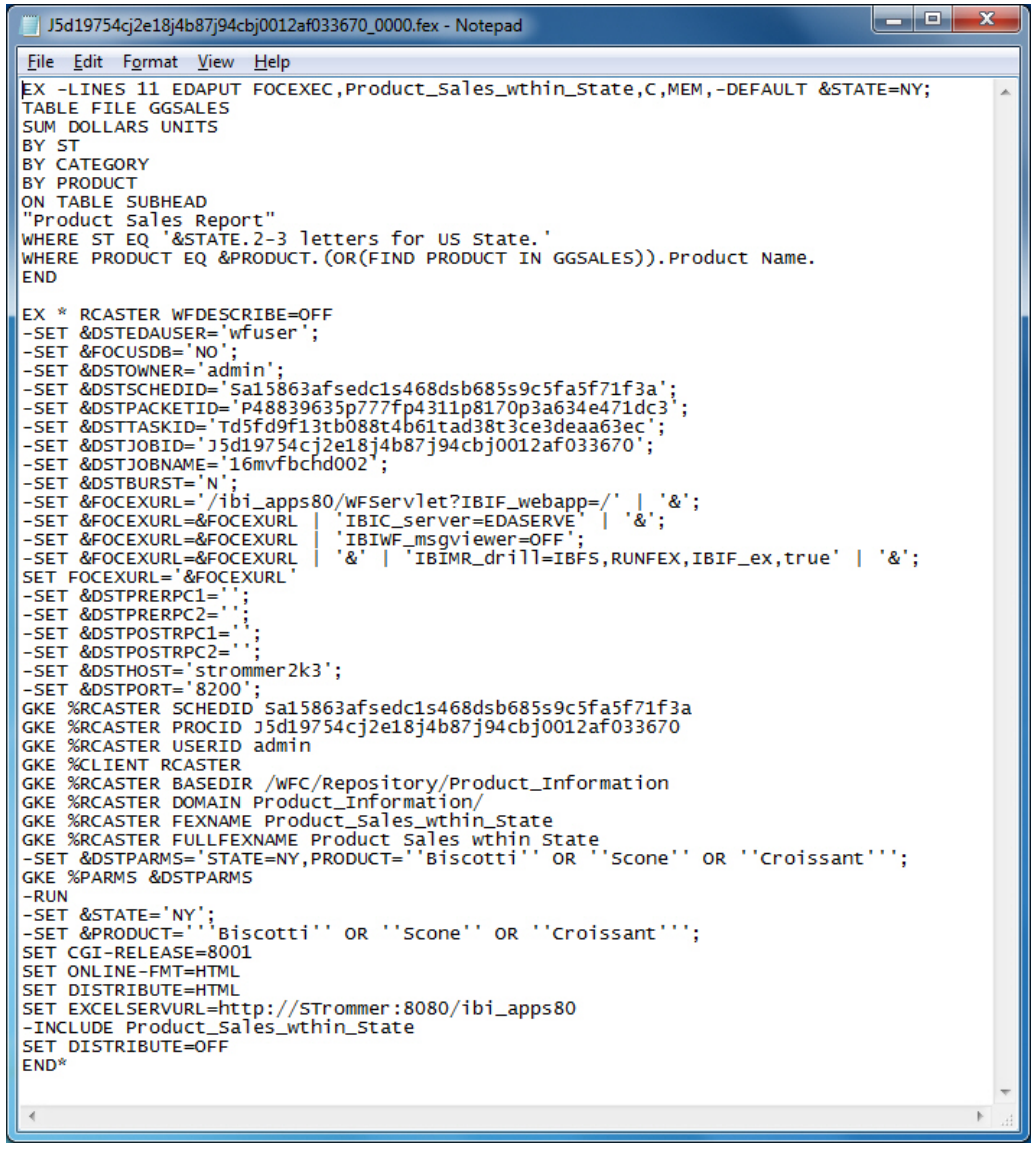
Note: If the Distribution Server is started as a service, a service.log file is created containing initialization information about the service.

Example: Using the Schedule Trace File

The following excerpt of a schedule trace file is for job ID reportcaster.log_2011-12-20.log. The reportcaster.log_2011-12-20.log file shows the date and time that the worker thread began, the parameters associated with the scheduled job, and the connection information for the Repository.

Reference: Job Procedure (FEX) File

The following Schedule trace file shows the procedure associated with the Job Procedure (FEX) file:



Trace Error Files

When Report Broker encounters an unexpected error or abend, the following trace error files are created:

- **console.err** when the console terminates.
- **disp.err** when the dispatcher terminates.
- **main.err** when the main thread terminates.
- **reader.err** when the reader terminates.
- **Jobid.err** when there is a job processing error.

Schedule Trace File Clean Up

When the Schedule Trace setting is turned OFF, the files and folders in the Distribution Server /temp directory, and the Schedule trace files J*.* in the /trc directory, are deleted when you start the Distribution Server. Therefore, if you want to keep any of these files you must either back them up or make sure that schedule tracing is enabled (meaning that Schedule Trace is set to either SCHEDULE or SCHEDULE & REPORT in the Report Broker Servlet Trace in the Administration Console).

Distribution Server Initialization Tracing

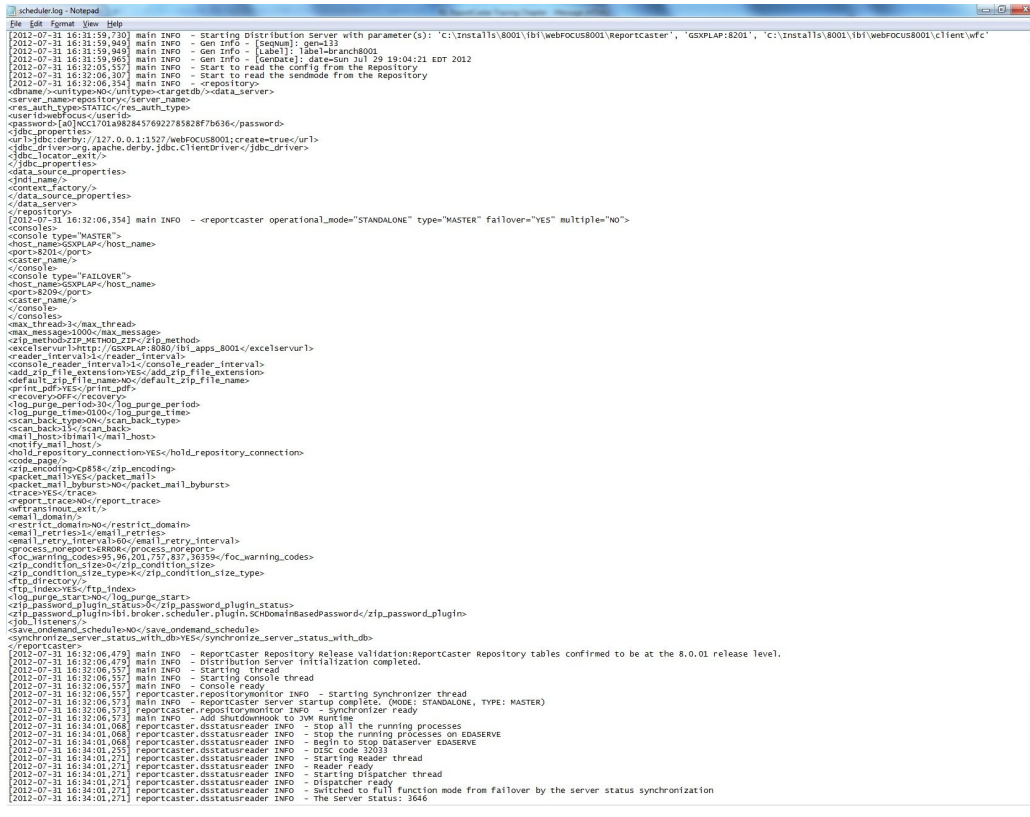
Reference:

Scheduler.log

The scheduler.log trace file is always created in the /qibm/userdata/qwebqry/base80/ReportCaster/log directory. This file traces Distribution Server initialization and indicates the options turned on in the Report Broker Servlet Trace in the Administration Console. It also shows information that is written to the log file.

Reference: Scheduler.log

The following is an excerpt from the Scheduler.log trace file.



```
scheduler.log - Notepad
File  Edit  Format  View  Help
[2012-07-31 16:31:59,730] main INFO  - Starting Distribution Server with parameter(s): 'C:\Installs\8001\ibi\webFOCUS8001\Reportcaster', 'GSXPLAP:8201', 'C:\Installs\8001\ibi\webFOCUS8001\client\wfc'
[2012-07-31 16:31:59,949] main INFO  - Gen Info - [SeqNum]: gen=133
[2012-07-31 16:31:59,949] main INFO  - Gen Info - [Label]: label=branch8001
[2012-07-31 16:31:59,965] main INFO  - Gen Info - [GenDate]: date=Sun Jul 29 19:04:21 EDT 2012
[2012-07-31 16:32:05,557] main INFO  - Start to read the config from the Repository
[2012-07-31 16:32:06,307] main INFO  - Start to read the sendmode from the Repository
[2012-07-31 16:32:06,354] main INFO  - <repository>
<dbname/><unitype>NO</unitype><targetdb/><data_server>
<server_name>repository</server_name>
<res_auth_type>STATIC</res_auth_type>
<userid>webfocus</userid>
<password>[a0]NCC1701A98284576922785828f7b636</password>
<jdbc_properties>
<url>jdbc:derby://127.0.0.1:1527/WebFOCUS8001;create=true</url>
<jdbc_driver>org.apache.derby.jdbc.ClientDriver</jdbc_driver>
<jdbc_locator_exit/>
</jdbc_properties>
<data_source_properties>
<jndi_name/>
<context_factory/>
</data_source_properties>
</data_server>
</repository>
[2012-07-31 16:32:06,354] main INFO  - <reportcaster operational_mode="STANDALONE" type="MASTER" failover="YES" multiple="NO">
<consoles>
<console type="MASTER">
<host_name>GSXPLAP</host_name>
<port>8201</port>
<caster_name/>
</console>
<console type="FAILOVER">
<host_name>GSXPLAP</host_name>
<port>8209</port>
<caster_name/>
</console>
</consoles>
<max_thread>3</max_thread>
<max_message>1000</max_message>
<zip_method>ZIP_METHOD_ZIP</zip_method>
<excelservurl>http://GSXPLAP:8080/ibi_apps_8001</excelservurl>
<reader_interval>1</reader_interval>
<console_reader_interval>1</console_reader_interval>
<add_zip_file_extension>YES</add_zip_file_extension>
<default_zip_file_name>NO</default_zip_file_name>
<print_pdf>YES</print_pdf>
<recovery>OFF</recovery>
<log_purge_period>30</log_purge_period>
<log_purge_time>0100</log_purge_time>
<scan_back_type>DN</scan_back_type>
<scan_back>15</scan_back>
<mail_host>ibimail</mail_host>
<notify_mail_host/>
<hold_repository_connection>YES</hold_repository_connection>
<code_page/>
<zip_encoding>Cp858</zip_encoding>
<packet_mail>YES</packet_mail>
<packet_mail_byburst>NO</packet_mail_byburst>
<trace>YES</trace>
<report_trace>NO</report_trace>
<wftransinout_exit/>
<email_domain/>
<restrict_domain>NO</restrict_domain>
<email_retries>1</email_retries>
<email_retry_interval>60</email_retry_interval>
<process_noreport>ERROR</process_noreport>
<foc_warning_codes>95,96,201,757,837,36359</foc_warning_codes>
<zip_condition_size>0</zip_condition_size>
<zip_condition_size_type>K</zip_condition_size_type>
<ftp_directory/>
<ftp_index>YES</ftp_index>
<log_purge_start>NO</log_purge_start>
<zip_password_plugin_status>0</zip_password_plugin_status>
<zip_password_plugin>ibi.broker.scheduler.plugin.SCHDomainBasedPassword</zip_password_plugin>
<job_listeners/>
<save_ondemand_schedule>NO</save_ondemand_schedule>
<synchronize_server_status_with_db>YES</synchronize_server_status_with_db>
</reportcaster>
[2012-07-31 16:32:06,479] main INFO  - ReportCaster Repository Release Validation:ReportCaster Repository tables confirmed to be at the 8.0.01 release level.
[2012-07-31 16:32:06,479] main INFO  - Distribution Server initialization completed.
[2012-07-31 16:32:06,557] main INFO  - Starting  thread
[2012-07-31 16:32:06,557] main INFO  - Starting Console thread
[2012-07-31 16:32:06,557] main INFO  - Console ready
[2012-07-31 16:32:06,557] reportcaster.repositorymonitor INFO  - Starting Synchronizer thread
[2012-07-31 16:32:06,573] main INFO  - Reportcaster Server startup complete. (MODE: STANDALONE, TYPE: MASTER)
[2012-07-31 16:32:06,573] reportcaster.repositorymonitor INFO  - Synchronizer ready
[2012-07-31 16:32:06,573] main INFO  - Add ShutDownHook to JVM Runtime
[2012-07-31 16:34:01,068] reportcaster.dsstatusreader INFO  - Stop all the running processes
[2012-07-31 16:34:01,068] reportcaster.dsstatusreader INFO  - Stop the running processes on EDASERVE
[2012-07-31 16:34:01,068] reportcaster.dsstatusreader INFO  - Begin to stop DataServer EDASERVE
[2012-07-31 16:34:01,255] reportcaster.dsstatusreader INFO  - DISC code 32033
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - Starting Reader thread
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - Reader ready
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - Starting Dispatcher thread
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - Dispatcher ready
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - Switched to full function mode from failover by the server status synchronization
[2012-07-31 16:34:01,271] reportcaster.dsstatusreader INFO  - The Server Status: 3646
```

Reporting Server Tracing

Reporting Server tracing provides information about job execution and distribution. To enable server tracing, perform the following steps:

1. Access the Reporting Server Console.
2. Select *Workspace* from the menu bar, then select *Diagnostics*, *Traces*.
3. Click *Enable Traces*.

Administering Report Broker

In this section:

Verifying the Report Broker Configuration Settings

Provides information to Report Broker administrators on how to configure for Report Broker access.

This is intended for Report Broker administrators. Before Report Broker can be used, the administrator must verify the Report Broker Configuration settings.

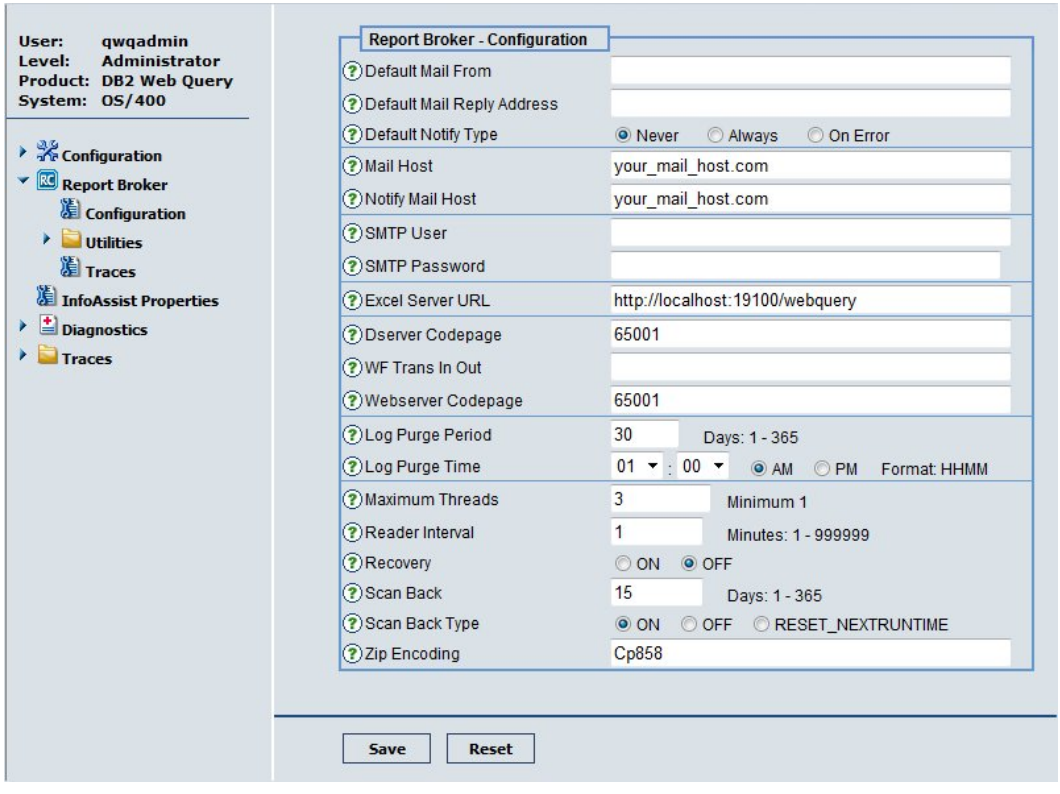
Verifying the Report Broker Configuration Settings

Reference:

Report Broker Configuration Settings

This section explains how to access and verify the configuration settings.

To access the configuration settings, from the DB2 Web Query Administration Console, click *Report Broker*, then *Configuration*. The right pane displays the configuration settings, as shown in the following image.



Change the Mail Host setting to your mail host server. Review the other settings and make any appropriate changes. When you have completed all changes, click *Save*.

The following message appears:

```
Report Broker Configuration changes have been saved.
Do you want to restart Report Broker?
```

Click *OK* to restart the Report Broker Distribution server. A message appears when the restart is complete. In the message window, click *OK*.

Reference: Report Broker Configuration Settings

The following settings are accessed by selecting *Configuration* in the Report Broker menu.

`Default Mail From`

The default value for the From field in a schedule using email distribution. This can be any value.

`Default Mail ReplyAddress`

The default value for the Reply Address field in a schedule using email distribution.

`Default Notify Type`

Specifies whether to send notification of the schedule status to a specified email address. Possible values are:

`Never`

Report Broker does not send notification of the schedule status under any circumstance. This is the default value.

`Always`

The specified user is always notified when the schedule runs.

`On Error`

The specified users are notified when errors are encountered while running the schedule. It is recommended using the On Error notification option.

`Mail Host`

The name of the default mail server used for a schedule using email distribution.

You can also specify a port for the Mail Host using *hostname*[:*port*]. If you do not specify a port or the port you specify is not present, the default port is used.

`Secure SSL connection`

Specifies whether the mail server requires a secure SSL connection.

You must add the necessary certificate to the Distribution Server Keystore, and update the Distribution Server classpath to include the Keystore.

`Secure TLS connection`

Specifies whether the mail server requires a secure TLS connection.

`Authentication`

Specifies whether the mail server requires a user ID and email address for authentication.

`SMTP User`

The user ID for Simple Mail Transfer Protocol (SMTP) authentication.

`SMTP Password`

The password associated with the SMTP user ID for SMTP authentication.

`Notify Mail Host`

The name of the mail server that handles notification email. If left blank, the mail server specified in the Mail Host setting is used as the notification mail server.

You can also specify a port for the Notify Mail Host using *hostname*[:*port*]. If you do not specify a port or the port you specify is not present, the default port is used.

Tip: It is recommended using different mail servers for notification and email distribution. If there is a problem with the default mail server, notification emails are still sent.

`Excel Server URL`

Specifies the application server and DB2 Web Query context root used to zip the file components that comprise an Excel 2007 file (.xlsx) file.

`Dserver Codepage`

The code page of the platform where the Distribution Server is running, which is then passed to the Reporting Server to enable its communication back to the Distribution Server. Used for National Language Support (NLS).

Note: For release V2.1.x, this is preset to 65001 (Unicode) and should not be changed.

`WF Trans In Out`

Configures the Servlet WFTRANSINOUT plug-in. This is a custom-written program that, when configured, is called by the Distribution Server as the last step prior to sending each request to the Reporting Server and again as the first step when receiving output from the Reporting Server.

In the WFTransInOut field, type the fully qualified name of the package and class that implements the WFTRANSINOUT plug-in.

To configure the exit jar file and classpath:

1. Copy the jar that contains the implementation of the WFTRANSINOUT plug-in to your /qibm/proddata/qwebqry/base80/ReportCaster/lib directory.
2. Edit the /qibm/proddata/qwebqry/base80/ReportCaster/bin/classpath file to add this jar file to the list of existing jar files.
3. Restart the Distribution Server.

`Webserver Codepage`

Code page of the platform where the web server is installed.

Note: For release V2.1.x, this is preset to 65001 (Unicode) and should not be changed.

`Log Purge Period`

Automatically purges individual log reports when they are older than a set number of days. The default value is 30 days. The maximum value is 365 days.

`Log Purge Time`

Time at which log purging occurs. The default value is 1:00 A.M.

`Maximum Threads`

Controls how many simultaneous connections (threads) the Distribution Server can utilize to process scheduled jobs. The default value is three threads.

`Reader Interval`

Polling interval, in minutes, for the Distribution Server to check for scheduled jobs. The default value is 1 minute.

`Recovery`

Recovers scheduled jobs. Possible values are:

`On`

During startup, the Distribution Server recovers scheduled jobs that were processed but not completed.

`Off`

During startup, the Distribution Server does not recover any scheduled jobs. This is the default value.

`Scan Back`

If the Distribution Server is unavailable for a period of time, any jobs scheduled during that period are not run. By default, when the Distribution Server is restarted, it searches for and runs all jobs with a next run time that is less than the current time, then resets the next run time according to the next scheduled run time of the job. The Scan Back value and Scan Back Type settings allow you to control the period of time the Distribution Server will look for jobs and whether or not it will run them.

The Scan Back value is an integer value that represents the number of 24 hour periods, beginning when the Distribution Server is restarted, that the Distribution Server scans back to look for, and run, jobs that have not yet run. The maximum integer value for Scan Back is 365. The default value is 15 days.

`Scan Back Type`

Possible Scan Back Type values are:

`On`

Turns on Scan Back functionality. The Distribution Server searches for all jobs with a next run time that is less than the current time, runs only those jobs found within the time period set in the Scan Back setting, and resets the next run time of all of the jobs initially found. This is the default value.

`Off`

Turns off Scan Back functionality, which results in the Distribution Server following its default behavior to locate, run, and reset all jobs with a next run time that is less than the current time.

`Reset Next Run Time`

Searches for all jobs with a next run time less than the current time and resets the next run time to the next scheduled run time of the job. A Scan Back value of zero defaults to this Scan Back Type.

`Zip Encoding`

Enables Report Broker administrators to specify an encoding other than the default encoding of the Distribution Server platform. It must match the encoding used by WinZip or any other Zip utility installed on the Distribution Server.

ReportBroker Formats for Scheduled Output

In this section:

Provides descriptions, suggested uses, and considerations about each Report Broker output format.

When you create a schedule, you specify the format for the scheduled output. This section describes each format available to Report Broker, and includes suggestions for using the format, as well as considerations that you should be aware of when distributing that format.

AHTML

Format: AHTML (.htm, .html)

Description: Provides customizable options for creating HTML formatted reports that enable users to experience features normally found in Excel workbooks.

Suggested Uses: Email for display in a web browser.

Considerations:

- Bursting is supported, except for compound reports.
- Can only be distributed as an email attachment. Inline email messages are not supported.

APDF

Format: APDF (.pdf)

Description: Also known as active report for PDF, it enables you to create and export PDF documents from Flex.

Suggested Uses: For the dynamic display of reports.

DHTML

Format: DHTML (.htm, .mht)

Description: Supports hyperlinks and other World Wide Web features. Retains StyleSheet formatting.

Along with the features of the HTML format, DHTML supports the web archive format (.mht). An .mht file can contain multiple reports and graphs and is utilized for Coordinated Compound Reports.

Suggested Uses: Email for display in a web browser.

Considerations:

- The default file type for the DHTML format is .mht. If the output returned from your procedure is HTML, you must manually change the file type to .htm in order for the output file to open correctly.
- Bursting is supported.
- DHTML can be distributed inline, provided the Reporting Server is not returning a web archive file (.mht). It cannot be used to distribute inline if the returned file is a web archive file.
- DHTML can be distributed as an email attachment and be sent as an inline email message when the output is .htm, but not when the output is .mht.
- DHTML will return two possible formats:

- The scheduled procedure (FOCEXEC) outputs an HTML file when the request does not contain the SET HTMLARCHIVE=ON command. When distributing by email or FTP, the file type should be .htm.
- The scheduled procedure (FOCEXEC) outputs a web archive file (.mht) when the SET HTMLARCHIVE=ON command is specified. When distributing by email or FTP, the file type should be .mht.

DOC

Format: DOC (.txt)

Description: Scheduled output opens as a plain-text word processing document. Text can be opened by any word processing application. Retains ASCII form feed characters to correctly display page output.

Suggested Uses: Word Processing applications, printing unformatted reports, email.

Considerations:

- Does not retain most formatting. Does not support hyperlinks or alerts.
- Can be distributed as an email attachment or as an inline email message.
- Bursting is supported.

EXL07

Format: EXL07 (.xlsx)

Description: Scheduled output opens within Excel 2007 or 2010.

Suggested Uses: Email.

Considerations:

- When scheduling a report to be distributed in this format, ensure that either the FEX or the ReportCaster configuration setting, *Excel server URL*, specifies the application server that will zip the Excel, PowerPoint 2007, or PowerPoint 2010 file components for distribution.

  Note: Specifying the Excel server URL (EXCELSERVURL) value in the procedure (.fex) that is scheduled will override the value specified in the ReportCaster Configuration.
- Bursting is supported, except compound reports.

EXL2K

Format: EXL2K (.xls)

Description: Scheduled output opens within Excel 2000 or higher.

Supports most StyleSheet attributes, allowing for full report formatting.

Suggested Uses: Email.

Considerations:

- Microsoft Excel 2000 or higher must be installed.
- The format is ASCII.
- All EXL2K output with an .xht extension is dynamically changed to .xls for email or FTP distribution. You must edit your web server MIME table so that the .xls extension is ASCII application data, instead of binary.
- Bursting is supported, except compound reports.

EXL2K FORMULA

Format: EXL2K FORMULA (.xls)

Description: Scheduled output opens within Excel 2000 or higher.

Contains Excel formulas that calculate and display the results of any type of summed information, such as column totals, row totals, and subtotals.

Suggested Uses: Email.

Considerations:

- Microsoft Excel 2000 or higher must be installed.
- The format is ASCII.
- All EXL2K output with an .xht extension is dynamically changed to .xls for email or FTP distribution. You must edit your web server MIME table so that the .xls extension is ASCII application data, instead of binary.
- Bursting is supported, except compound reports.

EXL97

Format: EXL97 (.xls)

Description: Scheduled output opens as an Excel97 spreadsheet file, an HTML-based display format that supports report formatting and drill downs.

Suggested Uses: Email.

Considerations:

- Microsoft Excel 97 or higher must be installed.
- Bursting is supported.

FLEX

Format: Flash

Description: This format provides portability and interactive enhancements to active reports.

Suggested Uses: Email for display in a web browser.

Considerations:

- Bursting is not supported.
- Most commonly used browsers recognize an active report in the Adobe® Flash® format as a Shockwave Flash Object.
- FUSION cannot be used with the AFLEX format, as images do not display.
- To enable Flash output, configure Java services on the Reporting Server with a Java Heap Size of 512 MB or higher.

HTML

Format: HTML (.htm, .html)

Description: Supports hyperlinks and other web-based features. Retains StyleSheet formatting.

Suggested Uses: Email for display in a web browser.

Considerations:

- The default file type for the HTML format is .htm. If the output returned from your procedure is an .mht file, you must manually change the file type to .mht, in order for the output file to open correctly.
- In order to output HTML pages with images, normally you would select DHTML as the format and the output is distributed with the extension .mht. You can select HTML as the distribution format. If you select HTML, Report Broker creates the output with the extension .htm by default.

  If the scheduled procedure contains the SET WEBARCHIVE = ON command, outputs pages with images, and you select HTML as the format, be sure to change the extension in the Save Report As field from .htm to .mht.

- When distributing HTML reports by email or FTP, the following types of reports are not supported:
  - Accordion reports
  - Table of Contents (TOC) reports
  - Peer Graphics/Data Visualization graphical reporting
  - Multi-drill reports
  - HFREEZE options
- Bursting is supported.
- Can be distributed as an email attachment or as an inline email message.
- Works with procedures that contain GRAPH FILE syntax. When used with GRAPH FILE, Report Broker automatically generates the graph on the reporting server (using JSCOM3) and embeds it into the HTML output using HTMLEMBEDIMG=ON. If the scheduled procedure specifies HTMLARCHIVE=ON, this will override HTMLEMBEDIMG=ON and generate output that can be displayed in older versions of Internet Explorer.

HTML5

Format: HTML5 (.htm)

Description: Scheduled output opens as a graph image. These graph images are bit-mapped and can support 16 million colors. In addition, HMTL5 graphics have lossless compression (data is decompressed 100% back to the original). Therefore, saving, altering, and resaving an HTML5 image does not degrade its overall quality.

Suggested Uses: Email and FTP.

Considerations:

- A report distributed in HTML5 may not open correctly in Internet Explorer 8. Internet Explorer 8 does not support HTML5 and will first attempt to render a chart distributed in HTML5 format (JSCHART) using the Adobe Flash Platform. If it is unable to render, the Microsoft VML standard will be used.
- Only works with procedures that contain GRAPH FILE syntax.
- Bursting is not supported.
- Drill downs are not supported, as this format creates a static image.
- A fully qualified FOCEXURL is required for email and FTP distribution.

JPEG

Format: JPEG (.jpg, .jpeg, .jpe, .jfif)

Description: Scheduled output opens as a graph image in JPEG format.

Suggested Uses: Email.

Considerations:

- Only works with procedures that contain GRAPH FILE syntax.
- Bursting is supported and is performed on the second BY field in the GRAPH FILE request.
- Drill downs are not supported since the JPEG format creates a static image.
- If the chart contains a header or footer and you want to distribute an image format (GIF, JPEG, PNG or SVG), then you must select the InfoAssist option to embed the header and footer in the image. If the embed option is not selected, then the header and footer are not included in the distributed JPEG file. In this case, you must use HTML, HTML5, or PDF to distribute a chart that contains a header or footer.

PDF

Format: PDF (.pdf)

Description: Appearance of the scheduled output is preserved in an electronic document when printed using Adobe Acrobat or distributed to a printer that has an appropriate driver. Retains all relevant StyleSheet formatting.

Suggested Uses: Email, printing.

Considerations:

- Does not support hyperlinks in email attachments. Recipient must have an Adobe Acrobat application to view.
- Printing is supported when Report Broker is configured for PDF printing and the printer has the appropriate driver.
- Bursting is supported.
- When Report Broker distributes PDF reports created with a TABLE request containing BY HIGHEST *primarysortfield* syntax, the report contains page breaks on each primary sort field value.
- The PDF Drill-Through feature is supported.

PNG

Format: PNG (.png)

Description: Scheduled output opens as a graph image. These graph images are bit-mapped and can support 16 million colors. In addition, PNG graphs have lossless compression (data is decompressed 100% back to the original). Therefore, saving, altering, and resaving a PNG does not degrade its overall quality. For these reasons, PNG graphs are superior to GIF graphs.

Suggested Uses: Email.

Considerations:

- Only works with procedures that contain GRAPH FILE syntax.
- Bursting is supported and is performed on the second BY field in the GRAPH FILE request.
- Drill downs are not supported, as this format creates a static image.
- If the chart contains a header or footer and you want to distribute an image format (GIF, JPEG, PNG or SVG), then you must select the InfoAssist option to embed the header and footer in the image. If the embed option is not selected, then the header and footer are not included in the distributed PNG file. In this case, you must use HTML, HTML5, or PDF to distribute a chart that contains a header or footer.

PPT

Format: PPT (.ppt)

Description: Generates a new PowerPoint file in the web archive format (.mht).

Suggested Uses: Email.

Considerations:

- Bursting is supported.
- PPT can output as a single report and can also include as many graphs as desired embedded in the StyleSheet of the report (TABLE).

PPTX

Format: PPTX (.pptx)

Description: Scheduled output opens within Excel 2007 or 2010.

Suggested Uses: Email.

Considerations:

- Bursting is not supported.

- When scheduling a report to be distributed in this format, ensure that either the FEX or the ReportCaster configuration setting, *Excel server URL*, specifies the application server that will zip the Excel, PowerPoint 2007, or PowerPoint 2010 file components for distribution.

  Note: Specifying the Excel server URL (EXCELSERVURL) value in the procedure (.fex) that is scheduled will override the value specified in the ReportCaster Configuration.

- PPTX can output as a single report and can also include as many graphs as desired embedded in the style sheet of the report (TABLE).

PS

Format: PS (.ps)

Description: Appearance of the scheduled output is preserved in an electronic document when printed using PostScript. Retains all relevant StyleSheet formatting.

Suggested Uses: Printing.

Considerations:

- Does not support hyperlinks.
- Printers must support PostScript. Recipient must have an application (for example, GhostView) that supports PostScript.
- Bursting is supported.

SVG

Format: SVG (.svg)

Description: Scheduled output opens as a graph image. This file format, based on Extensible Markup Language (XML), presents powerful, interactive images.

Suggested Uses: Email.

Considerations:

- Recipient must have a browser that supports viewing SVG graph images or an SVG viewer, such as Adobe SVG Viewer for Windows. To download Adobe SVG Viewer for Windows, go to *http://www.adobe.com*.
- Only works with procedures that contain GRAPH FILE syntax.
- Bursting is supported and is performed on the second BY field in the GRAPH FILE request.

- If the chart contains a header or footer and you want to distribute an image format (GIF, JPEG, PNG or SVG), then you must select the InfoAssist option to embed the header and footer in the image. If the embed option is not selected, then the header and footer are not included in the distributed SVG file. In this case, you must use HTML, HTML5, or PDF to distribute a chart that contains a header or footer.
- Drill downs are not supported, as this format creates a static image.

WP

Format: WP (.txt, .wp)

Description: Scheduled output opens as a plain-text word processing document in the web browser. Text can be opened by any word processing application.

Suggested Uses: Word processing applications, printing unformatted reports, email.

Considerations:

- Does not retain page breaks or most formatting.
- Does not support hyperlinks or alerts.
- Can be distributed as an email attachment or as an inline email message.
- Bursting is supported.

6 Using the DB2 Web Query Spreadsheet Client Add-in

The Spreadsheet Client is a Microsoft Office add-in that enables you to connect Excel directly to DB2 Web Query reporting tools where you can access and analyze data. Connecting Excel to the DB2 Web Query reporting engine allows Spreadsheet Client to leverage all the adapters available to DB2 Web Query.

You can install the Spreadsheet Client Add-in on your desktop where you can create and edit queries by accessing predefined data sources. Queries can be saved in an Excel document and refreshed at any time.

Because all DB2 Web Query report and connection information can be saved in an Excel workbook, users with the proper security and access rights can share spreadsheets throughout an organization. This functionality lets you spend less time recreating reports and more time analyzing information for effective decision-making. It also enhances Excel data-privacy features and better addresses compliance concerns. When reports are built directly within Excel, you can lock all or some of the cells and password protect the worksheet. Locking cells can be useful to protect data and queries when sharing workbooks, but in Excel, locked cells cannot be refreshed or edited.

Topics:

Spreadsheet Client Features

When using Spreadsheet Client from within the familiar Excel environment, you can utilize many powerful features including, but not limited to, the following:

- Build Excel applications with real-time information fed by Spreadsheet Client.
- Create dashboards and scorecards in Excel by combining multiple data sources in a single worksheet.
- Ensure data integrity in your spreadsheets by using named ranges and formulas that are automatically generated and updated with Spreadsheet Client.
- Create queries from scratch using the simple, yet powerful ad hoc reporting capabilities of DB2 Web Query.
- Use your own custom guided ad hoc forms to populate the workbook.
- Output computations and totals as native Excel formulas.
- Style output, add data filtering, and include drill-downs.
- Supports 64-bit version of Excel 2010 and 2013.
- Supports 32-bit version of Excel 2003, 2007, 2010, and 2013.

Note: A user connecting to DB2 Web Query using the Spreadsheet Client Add-in must connect to the same Hotfix version. For example, if your Add-in version is from DB2 Web Query v2.1 HF4, you must connect to a DB2 Web Query v2.1 HF4 environment. Connecting to a different version is not supported.

Configuring Spreadsheet Client

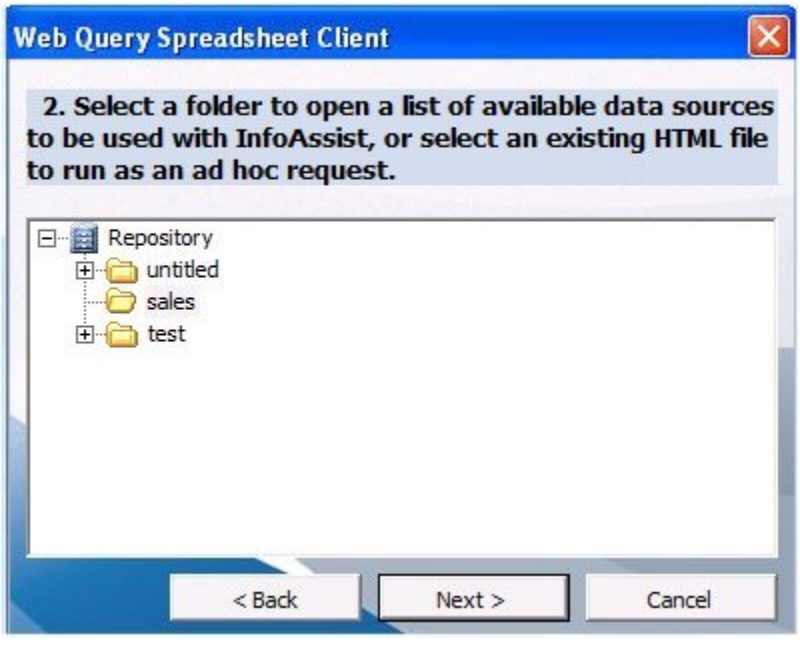
How to:

Configure Spreadsheet Client

The DB2 Web Query Administration Console is used to configure the Spreadsheet Client. By default, the Spreadsheet Client is configured to use DB2 Web Query MR Security. This leverages the security defined in DB2 Web Query and provides secure access to all data available through the DB2 Web Query environment. Additional optional settings in the console can be configured to provide you with the ability to create queries by accessing SAFs (Structured Ad hoc Forms) stored in the Managed Reporting repository. A SAF is an HTML form containing a report procedure that is already connected to a data source, which enables you to select from a series of parameters to build a data set for analysis in Excel.

Note: Run-time enablement users are not permitted to use the InfoAssist tool and must use SAFs.

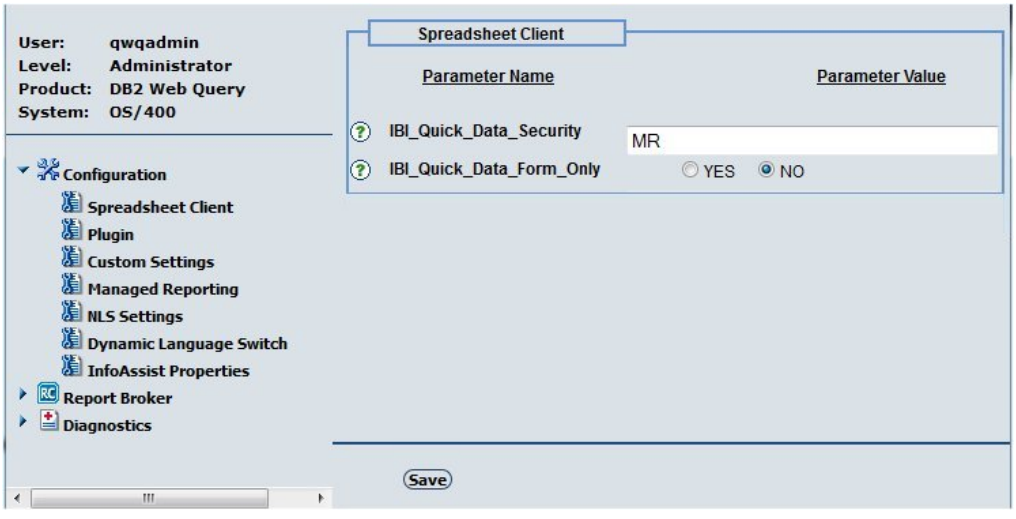
Spreadsheet Client has been enhanced when using Managed Reporting security to ensure that users are presented with a list of Master Files based on the application path set in the properties of a repository folder. This ensures that Managed Reporting Security is properly utilized and users only have access to metadata for which they are authorized.



Procedure: How to Configure Spreadsheet Client

1. Log on to DB2 Web Query using the QWQADMIN Administrator user ID, and launch the Administration Console. For more information, see *Administration Console* on page 34.
2. Click *Configuration* in the navigation pane, then click *Spreadsheet Client*.

The DB2 Web Query Spreadsheet Client panel appears with the *IBI_Quick_Data_Security* setting set to MR by default, as shown in the following image. Do not change this setting.



3. For the *IBI_Quick_Data_Form_Only* parameter, select *NO* (the default value) or *YES*. If you select *YES*, users can access only the available Structured Ad Hoc Forms (SAFs). Users will not be able to use InfoAssist to create a report.
4. The *IBI_Quick_Data_Form_Path* parameter is no longer used. SAFs may now reside in any folder that a user can access. For customers who have upgraded from a prior release, we recommend copying the SAFs to a folder owned by the respective users.
5. Click *Save* to save your configuration settings. Click *Clear Cache* on the main toolbar to clear the site collection cache for the web application.

Configuring a Default DB2 Web Query Environment

A configuration file is provided with the Spreadsheet Client Add-In as a template for the administrator to design a default DB2 Web Query environment. The configuration file defines such items as the DB2 Web Query Web server port number, alias, and client path. These items provide the user with a default DB2 Web Query environment allowing them to bypass the additional step of manually defining these parameters in order to use Spreadsheet Client.

The configuration file is named wqsclient.cfg and is located in

```
/QIBM/ProdData/QWEBQRY/base80/utilities/quickdata
```

The configuration file can contain multiple DB2 Web Query configurations. Keep in mind that if the configuration file contains more than one DB2 Web Query configuration, then the last one appearing in the file is the configuration that is used when opening Spreadsheet Client.

The configuration file provided as a template with Spreadsheet Client Add-in contains examples of configurations and instructions to help you create your own configuration. The following is an example of a DB2 Web Query configuration in the configuration file:

```
SERVER_START
      PROTOCOL="http"
      HOST="wq_hostname"
      PORT="12331"
      HTML_ALIAS="/webquery_html"
      CLIENT_PATH="/webquery/WFServlet"
SERVER_END
```

Use the following guidelines and rules to create the configuration file:

- The configuration file must have the same name as the Spreadsheet Add-In file and the extension, .cfg (for example, wqsclient.cfg).
- The configuration file must reside on the machine running the Spreadsheet Client in the same directory as the .xla file.
- Each DB2 Web Query configuration must be contained by the delimiters, SERVER_START and SERVER_END.
- Each configuration must contain the following parameters in order to connect to DB2 Web Query:
  - **PROTOCOL.** The protocol used in the environment running DB2 Web Query. If DB2 Web Query is running in an SSL environment, you must specify https as the protocol value. The default value is http.
  - **HOST.** The server name where the DB2 Web Query Web application is installed.
  - **PORT.** The port number of the application server where DB2 Web Query is installed. The default port is 12331. This should not be changed.
  - **HTML_ALIAS.** The Web server or application server alias where the DB2 Web Query static pages are located. The default value is /webquery_html and should not be changed. The leading slash is required.
  - **CLIENT_PATH.** The path to the DB2 Web Query Servlet, as defined in the DB2 Web Query Web application file, web.xml. This value is /webquery/WFServlet and should not be changed. The leading slash is required.
  - Using double quotation marks (" ") around parameter values, as shown in our example, is optional.
  - Begin a comment line in the file with a number sign (#).

Installing and Setting Up the Spreadsheet Client

How to:

Install and Set Up the DB2 Spreadsheet Client Excel Add-in for Excel 2003

Install and Set Up the DB2 Spreadsheet Client Excel Add-in for Excel 2007

The DB2 Web Query Spreadsheet Client requires:

- DB2 Web Query Version 2.1 or higher.
- Excel 2003 or higher.

Procedure: How to Install and Set Up the DB2 Spreadsheet Client Excel Add-in for Excel 2003

The Spreadsheet Client Add-in and configuration files are located in

`/QIBM/ProdData/QWEBQRY/base80/utilities/quickdata`

1. Copy the wqsclient.xla add-in and wqsclient.cfg file to the following directory on your hard drive:

   For Windows XP:

   `C:\Documents and Settings\`*`userid`*`\Application Data\Microsoft\AddIns\`

   For Windows 7:

   `C:\Users\`*`userid`*`\AppData\Roaming\Microsoft\AddIns\`

   where:

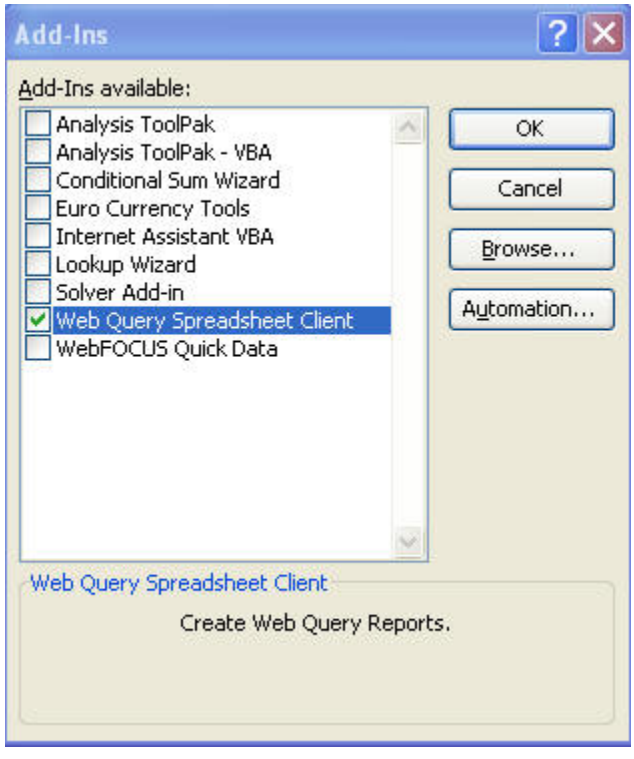
   `userid`

   Is the user name used to log on to the PC.

   After the Spreadsheet Client Add-in is in the proper directory location, you must open Excel and select the DB2 Web Query Spreadsheet Client option in the Add-Ins dialog box.

2. Launch Microsoft Excel.
3. Select *Tools*, then *Add-Ins*.

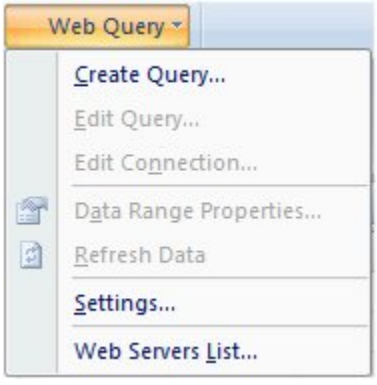
The Add-Ins dialog box appears with DB2 Web Query Spreadsheet Client listed as a selectable add-in option, as shown in the following image.



Note: If DB2 Web Query Spreadsheet Client is not listed in the Add-Ins dialog box, check that the add-in is in the correct directory.

4. Select *Web Query Spreadsheet Client* and click *OK*.
5. Close and open Microsoft Excel.

A new menu, labeled Web Query, is enabled in Excel, as shown in the following image.



Procedure: How to Install and Set Up the DB2 Spreadsheet Client Excel Add-in for Excel 2007

The Spreadsheet Client Add-in and configuration files are located in

`/QIBM/ProdData/QWEBQRY/base80/utilities/quickdata`

1. Copy the wqsclient.xla add-in and wqsclient.cfg file to the following directory on your hard drive:

   For Windows XP:

   `C:\Documents and Settings\`*`userid`*`\Application Data\Microsoft\AddIns\`

   For Windows 7:

   `C:\Users\`*`userid`*`\AppData\Roaming\Microsoft\AddIns\`

   where:

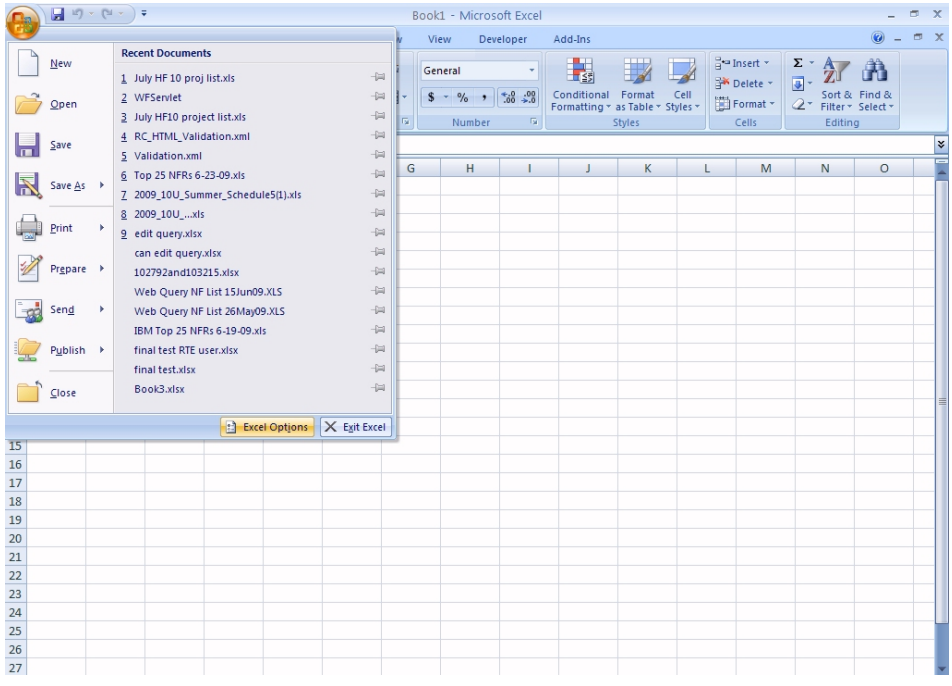
   `userid`

   Is the user name used to log on to the PC.

   After the Spreadsheet Client Add-in is in the proper directory location, you must open Excel and select the DB2 Web Query Spreadsheet Client option in the Add-Ins dialog box.

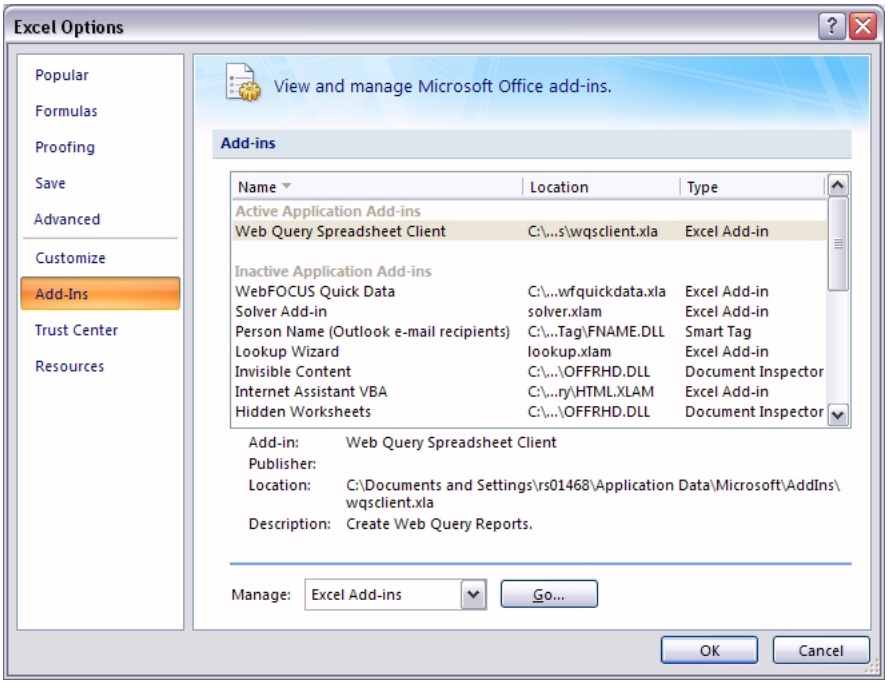
2. Launch Microsoft Excel.
3. Click the *Office* button.

4. Select *Excel Options*.



5. Click the *Add-Ins* option.

6. Click the *Go* button to the right of the Excel Add-in drop-down box.



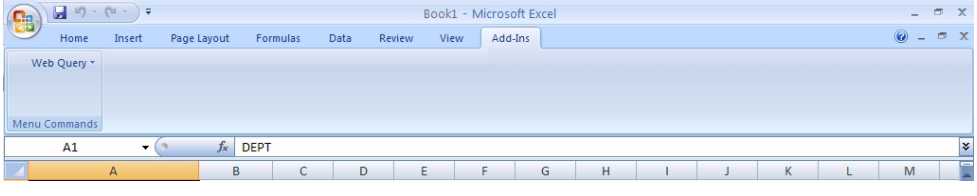
The Add-Ins dialog box appears.

7. Select *Web Query Spreadsheet Client* and click *OK*.

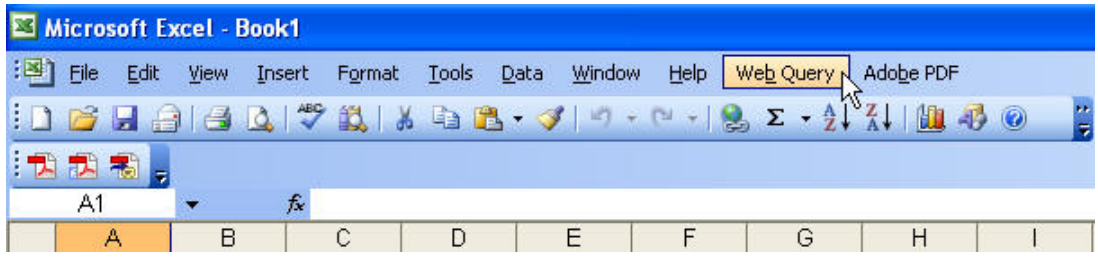
Accessing Spreadsheet Client

After installation, Spreadsheet Client is available in Excel from the main tool bar.

In Excel 2007, the Add-ins tab is displayed on the main tool bar and contains all add-in menu items, including the Web Query add-in, as shown in the following image.



In Excel 2003, the main tool bar contains the Web Query add-in as a new menu item, as shown in the following image.

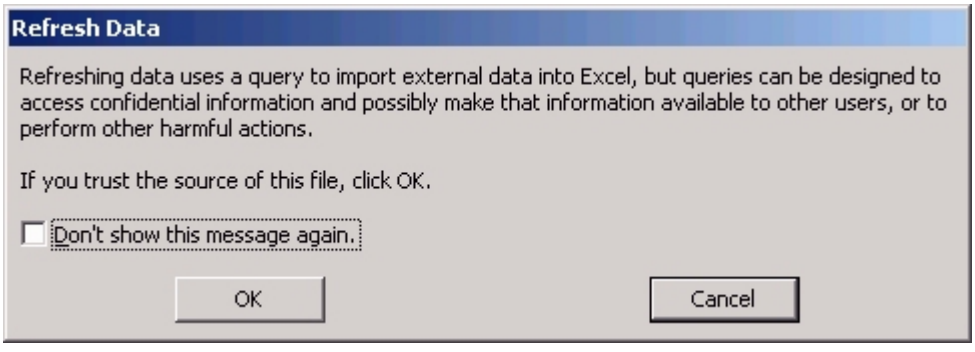


From Excel, click *Web Query* to view a drop-down menu with all of the necessary options for working with queries. The following options, except for Settings, are also available from Excel right-click context menus in cells containing any part of a query.

- **Create Query.** Available for new queries only, this option opens the Web Server Connection dialog box so you can connect to a Reporting Server. It continues by opening the Data Source Selection dialog box so you can select a Master File, and then opens the InfoAssist tool where you can create the query.
- **Edit Query.** Available for existing queries only, this option opens the InfoAssist tool where you can edit the query.

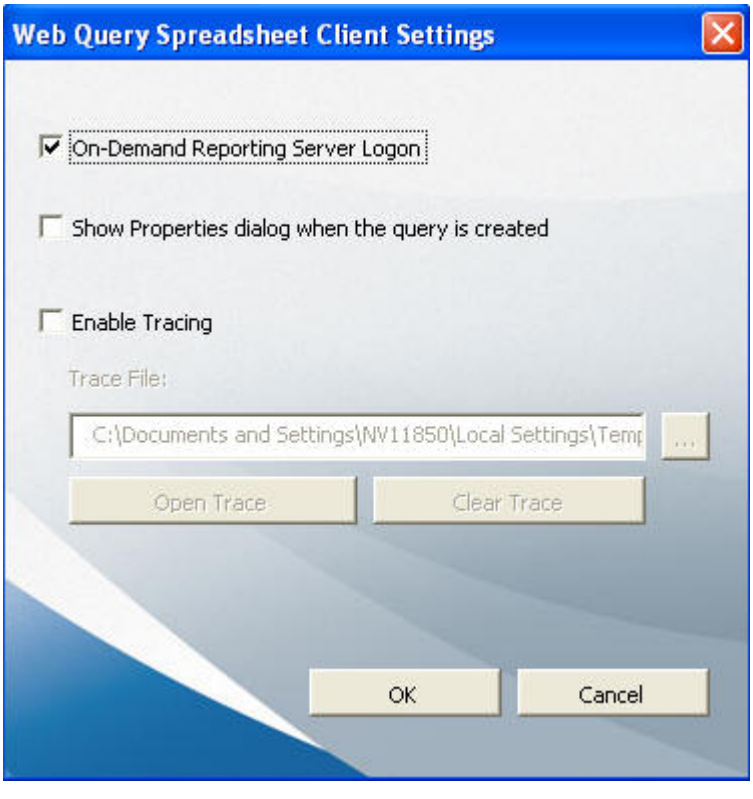
  Note: Edit Query is not enabled for password protected cells.
- **Edit Connection.** Available for existing queries only, this option opens the Web Server Connection dialog box, where you can edit the connection settings, including the Web Server URL, the HTML Alias, the Client Path, and the Reporting Server. The ability to edit connection information saves time when reusing reports and helps facilitate the sharing of workbooks across an organization.
- **Data Range Properties.** Available for existing queries only, this option opens the External Data Range Properties dialog box, where you can set Excel query properties. For more information, see *Setting Query Properties* on page 249.
- **Refresh Data.** Available for existing queries only, this option opens the Refresh Data dialog box where you can update the data in the report query.

The Refresh Data dialog box provides a security warning, as shown in the following image.



Note: Refresh is not enabled for password protected cells.

- **Settings.** This option opens the Web Query Spreadsheet Client Settings dialog box, as shown in the following image.



The Web Query Spreadsheet Client Settings window provides the following settings:

- **On-Demand Reporting Server Logon.** This setting determines if the user will be prompted to log on to DB2 Web Query the first time a connection to the server is made during an Excel session (check this setting), or each time a request is made to the DB2 Web Query during an Excel session (do not check this setting), for example, during a refresh or Edit Query operation.
- **Show Properties dialog when the query is created.** When this setting is selected, a dialog box with options on how to insert data into Excel opens each time a new query is executed. The following image shows this Properties dialog box.

The options to control how the results from the query will be inserted into the Excel worksheet are:

- **Insert cells for new data.** This option allows you to retain results from multiple queries in the same Excel worksheet. Depending on where new data will be inserted, data from an earlier request may shift.
- **Overwrite existing cells with new data.** This option will overwrite existing data to place results with those from the new request.

Once a query is generated, users can also control how data from new reports will be displayed in the Excel worksheet by right-clicking on a cell from an existing query and selecting *Data Range Properties*. For more information on this dialog box, see *Setting Query Properties* on page 249.

- **Enable Tracing.** This option allows you to capture DB2 Web Query Spreadsheet Client information in a trace file to troubleshoot communication problems and issues that occur when attempting to create and run report requests.

  The captured information includes tasks performed by the tool when it attempts to connect to the Web Server and Reporting Server, when requests are made for data, and when data is retrieved. The default name of the trace file is wqsclient.txt and it is created in the same directory as the DB2 Web Query Spreadsheet Client add-in file, for example:

  `C:\Users\`*`userid`*`\AppData\Roaming\Microsoft\Addins\`

  Note: Traces are captured for the duration of a single active Excel session. Tracing is automatically turned off when you close an Excel session. The trace file content is cumulative, adding trace information from each session where tracing is enabled.

  When you select Enable Trace, the Trace File field is automatically populated with the full path to the trace file. The path includes the trace file name. You can change the location and name of the trace file by either typing the changes in this field or by clicking the ellipsis and browsing to a new trace file location.

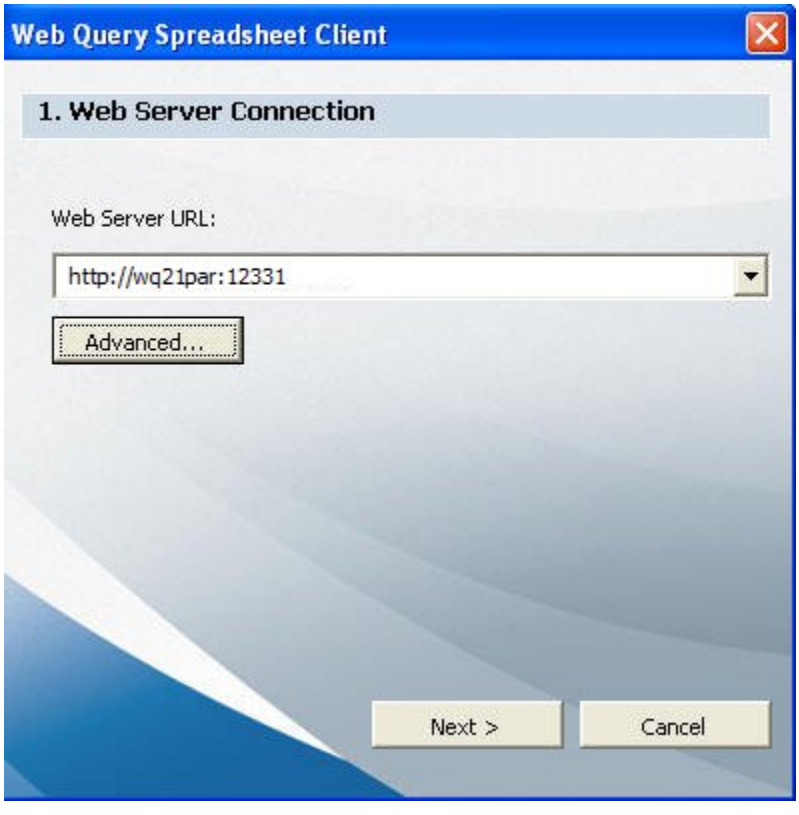
  To view the current trace file, click *Open Trace*.

  To delete the contents of the current trace file, click *Clear Trace*.

Defining Web Server Connection Settings

In this section:

Building, running, and accessing a query requires an HTTP connection to a DB2 Web Query reporting environment. The Web Server Connection dialog box opens when a new query is created, as shown in the following image.



The Spreadsheet Client configuration file, wqsclient.cfg, should have been updated by your administrator to include the correct Web Server URL for your environment. For more information, see *Configuring a Default DB2 Web Query Environment* on page 218. A newly created query will use this connection by default.

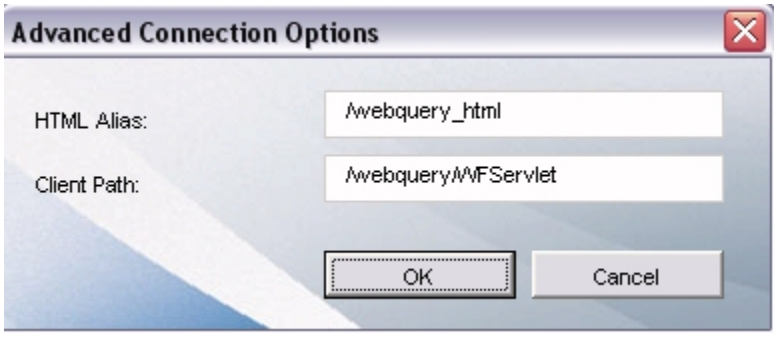
Reference: **Web Server Connection Usage Notes for Queries**

For query data connections, the following are supported:

- Anonymous Web servers.
- HTTP and HTTPS.

Advanced Connection Options Dialog

To access the Advanced Connection Options Dialog box, click the *Advanced* button in the Web Server Connection dialog box. The Spreadsheet Client configuration file contains the proper settings for your DB2 Web Query environment. Do not change these settings. The Advanced Connection Options dialog box is shown in the following image.



- **HTML Alias.** Defines the alias to the Web server where the webquery_html directory is located.
- **Client Path.** Specifies how calls are made to the Web server. Your DB2 Web Query environment uses the Web Query Servlet with the webquery context path, which results in the client path being set to /webquery/WFServlet by default.

Logging into DB2 Web Query

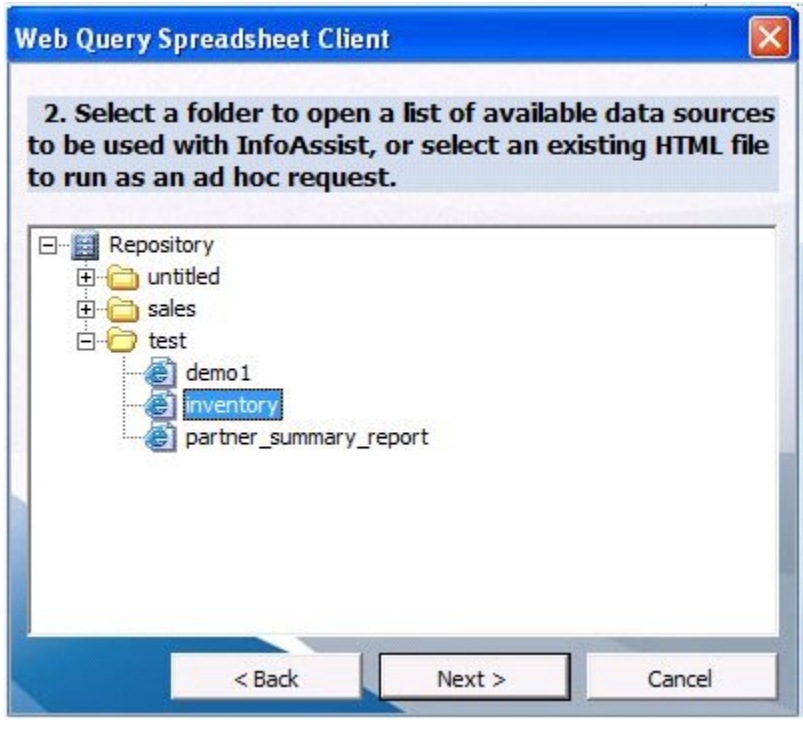
Spreadsheet Client is configured to use DB2 Web Query Authentication. You are prompted to log on with valid DB2 Web Query Managed Reporting credentials, as shown in the following image.

If your environment is not properly licensed, an error message appears.

After a successful login, you will be prompted to perform one of two options:

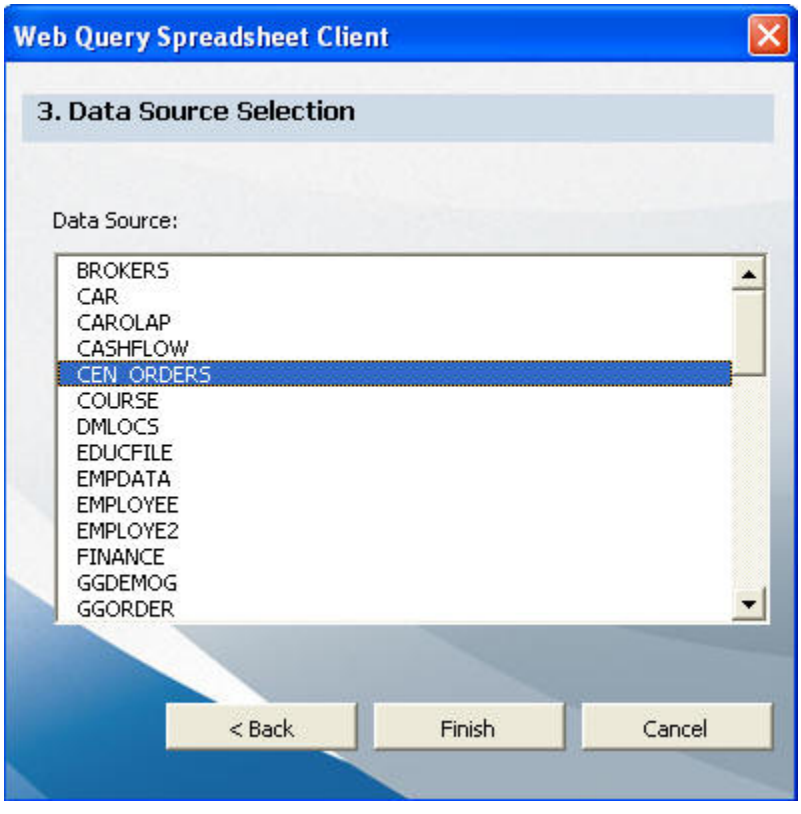
- Select a folder to determine which Master Files (synonyms) may be used to create a query with InfoAssist. The InfoAssist query will then be used to populate your Excel worksheet.
- Select an existing HTML file (SAF) that will be run to populate your Excel worksheet.

Folders and HTML files will be listed based on user privileges, as shown in the following image.



Selecting a Master File

After you select a folder from the Web Query repository, you are presented with a corresponding list of Master Files (synonyms), as shown in the following image.



Scroll through the Data Source list and select the desired Master File. When you click Finish, the associated data fields are loaded into the InfoAssist tool that opens.

Note: The only time you can select a Master File is when you are creating a new query. The Data Source Selection dialog box is not available for you to change Master Files when editing an existing query.

Creating Report Queries With the InfoAssist Tool

In this section:

Editing Report Queries in InfoAssist

How to:

Create a New Report Query in InfoAssist

You can create a new report query directly from Excel by accessing the Spreadsheet Client Add-in. Multiple queries can be placed within the same worksheet or spread out over multiple worksheets within a workbook.

Note that there are limitations with queries that overlap. However, there are data layout options available in the Query properties of Excel that can assist with overlapping queries. This behavior is governed by Excel, not Spreadsheet Client.

Procedure: How to Create a New Report Query in InfoAssist

1. Open an Excel file.
2. Select a cell in which to place the query.
3. Click the *Web Query* option in the Excel menu, then select *Create Query*.

   You can also right-click any cell and select *Create Web Query Report*.
4. Specify the desired Web Server URL when the Web Server Connection dialog box opens.

   When the desired connection settings have been specified, click *Next*.

   You are prompted to log on with valid DB2 Web Query credentials unless you are already logged on and have the on-demand Reporting Server Logon option checked under Web Query settings.
5. Select a folder to determine which Master Files (synonyms) may be used to create a query with InfoAssist.
6. In the Data Source Selection dialog box, select the desired Master File and click *Finish*. For more information, see *Selecting a Master File* on page 232.

   You are presented with the InfoAssist tool where you can build a query and run it to return the output data to Excel.

Example: Creating a New Report Query in InfoAssist

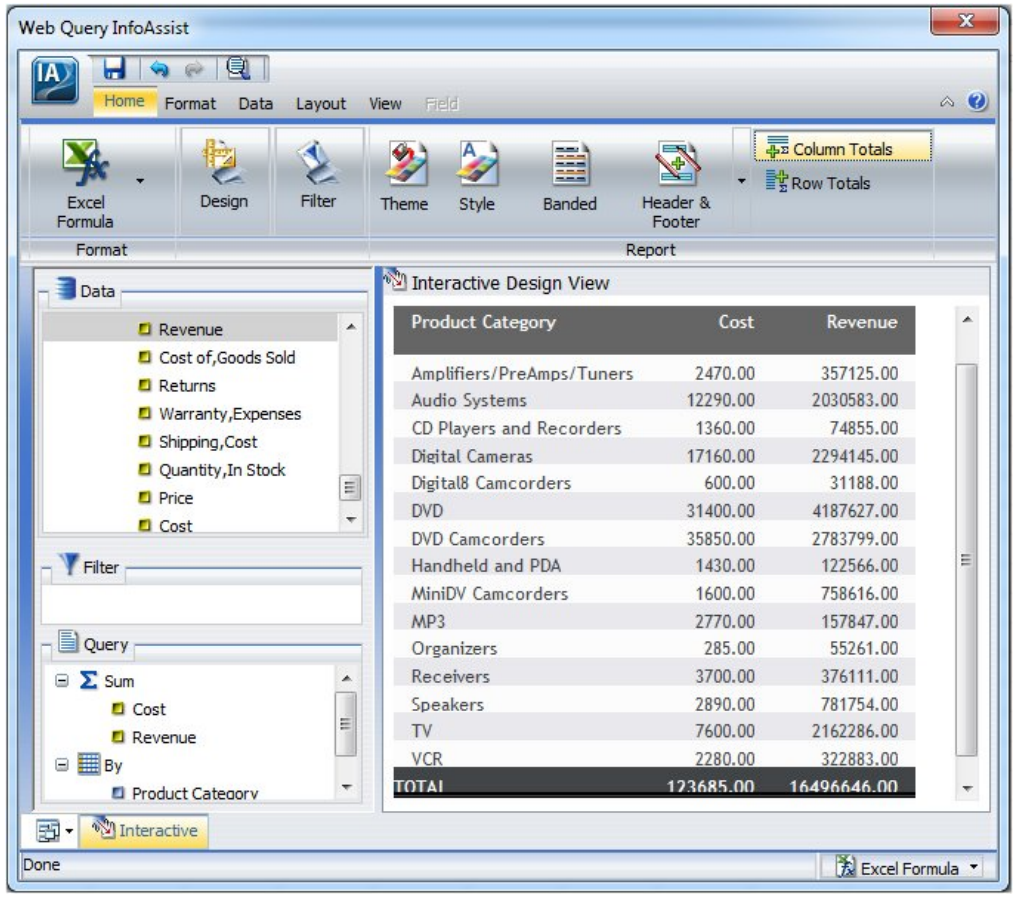
This example covers multiple aspects of creating a new report query using Spreadsheet Client from within an Excel file.

1. Open an Excel file, click the *Web Query* option in the Excel menu, then select *Create Query*.
2. Specify http://*hostname*:12331 in the Web Server URL field in the Web Server Connection dialog box that opens, then click *Next*.

   Note: Specify any Web Server URL that works in your reporting environment.
3. Select a folder to determine which Master Files (synonyms) may be used to create a query with InfoAssist.
4. In the Data Source Selection dialog box that opens, select *CEN_ORDERS* from the Data Source list, then click *Finish*.

   The InfoAssist tool opens.
5. In Interactive Design View, select *By* under Query on the left pane, and double-click *Product Category* from the Data list.
6. Select *Sum* under Query on the left pane, and double-click *Cost* and *Revenue* from the Data list.
7. On the Home tab, click the *Report* icon, and select *Column Totals*.

After you perform the steps up to this point, the InfoAssist window looks similar to the following.

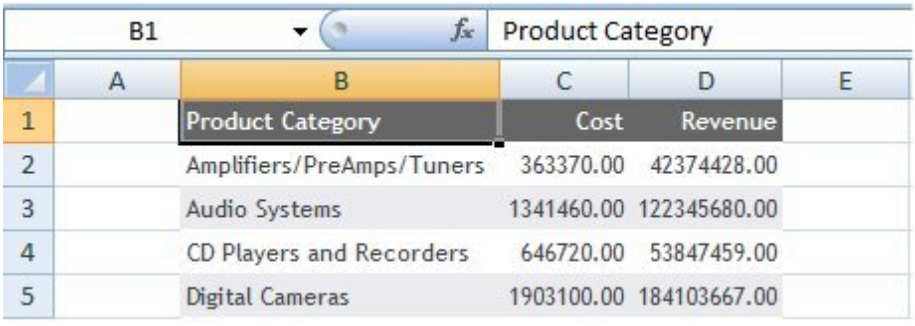


8. Click the *Save* button.

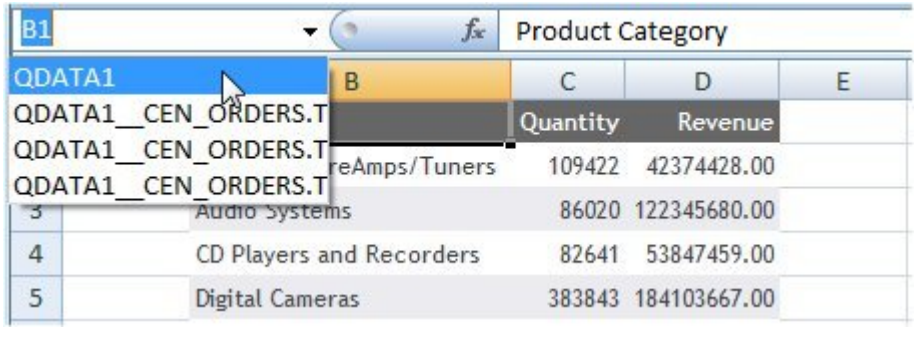
If you selected the *Show Properties dialog when the query is created* option in the DB2 Web Query Spreadsheet Client dialog box, the Properties dialog box opens. It allows you to choose to insert the new data into the Excel worksheet, or to replace the existing data with the new data. For details, see *Installing and Setting Up the Spreadsheet Client* on page 220.

9. If you see the Properties dialog box, select *Insert cells for new data*, and click *OK*.

The report query data is returned to the Excel file, as shown in the following image.



10. Click the drop-down arrow to the right of the Name Box. You will see named ranges that are automatically added to the query, as shown in the following image.



Named ranges are added to the entire data table. The named range for the entire data table is QDATA1.

11. Select *QDATA1* from the Name Box. The data in the table is automatically highlighted.

12. Save the Excel file so that it can be reused in the example on editing an existing report query.

Editing Report Queries in InfoAssist

How to:

Edit an Existing Report Query in InfoAssist

You can edit an existing query previously created with DB2 Web Query Spreadsheet Client in an Excel file. The Edit Query option automatically launches the InfoAssist tool using the same connection attributes and data source selected when the query was first created or last saved.

If you want to edit the connection attributes, prior to editing the query, right-click any cell in the existing query, and select *Edit Connection* to open the Web Server Connection dialog box.

Note:

- You cannot select a new Master File when editing an existing query.
- You cannot edit password-protected cells.

Procedure: How to Edit an Existing Report Query in InfoAssist

1. Open the desired Excel file that contains the existing query.
2. Move the cursor over any cell in the existing query data, and select the *Edit Query* option from the Excel right-click context menu.

   If there is only one query in the Excel file, you can also use the DB2 Web Query menu in the main toolbar to select the *Edit Query* option.

   Selecting Edit Query launches the InfoAssist tool, where you can edit the existing query.

Any cell that contains data from the query is a part of that query, so that you can click anywhere within that range of data to edit the query.

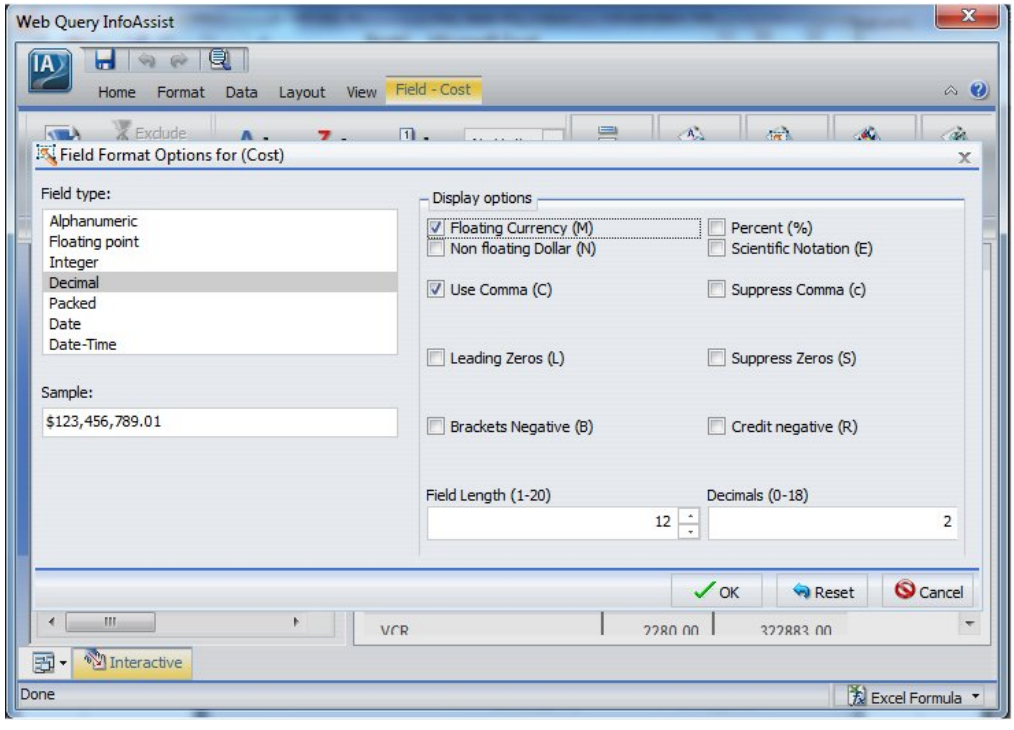
Example: Editing an Existing Report Query in InfoAssist

This example covers multiple aspects of editing an existing report query using the DB2 Web Query Spreadsheet Client tool from an Excel file.

1. Open the existing Excel file created in the previous example in *How to Create a New Report Query in InfoAssist* on page 233.
2. Right-click any cell in the data area of the existing report query, and select *Edit Query*.

   The InfoAssist tool opens, displaying the query.
3. To change the format of the Cost measure, right-click *Cost* under Sum in the Query list, and click *Edit Format* to open the Field Format Options dialog box.
4. Set the Field type to *Decimal*, leave the Field Length set to the default value of *12*, set the number of Decimals to *2*, and select *Floating Currency (M)* and *Use Comma (C)* from the Display options list.

The Field Format Options dialog box will look similar to the following.



5. Click *OK*.
6. Perform the same three previous steps to change the format of the Revenue measure to match the settings applied to the Revenue measure.
7. Right-click *Product Category* under By in the Query list, and click *Delete* to delete this field.
8. Double-click *Product Type* in the Data list, making it a By field to replace the Product Category field that you deleted in the previous step.
9. Click the *Save* button.

The report query data is returned to the Excel file, as shown in the following image.

Tip: You may need to widen the Cost and Revenue columns to correctly display the TOTAL value.

10. Since you can do formatting in DB2 Web Query and Excel, you need to make sure that the Excel formatting is preserved when you edit a query and return the data to Excel.

    To preserve any formatting applied in Excel, right-click any cell in the data area of the query, and select *Data Range Properties*.

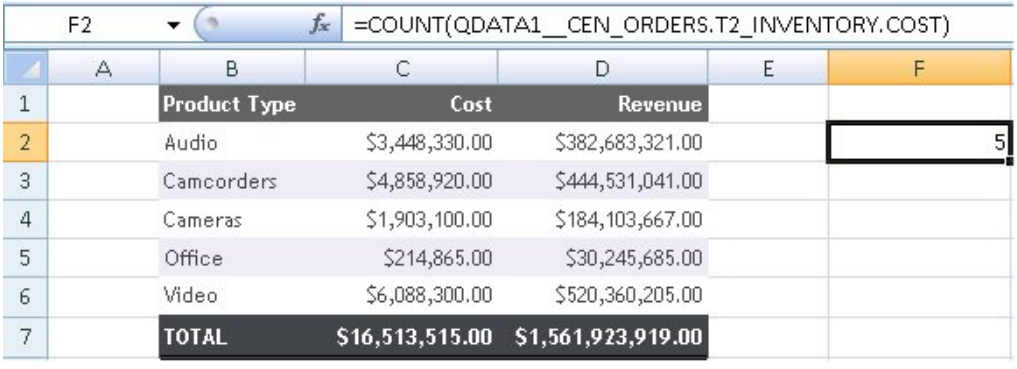
    The External Data Range Properties dialog box opens.

11. Select the *Preserve cell formatting* check box in the Data formatting and layout area of the dialog box, and click *OK*.

12. To demonstrate the value of having named ranges, add a formula that counts the number of values in a named range.

    Click any cell to the right of the existing query data, click the down arrow to the right of the AutoSum (formula) button on the Excel toolbar, select *Count Numbers*, and replace the range of cells in the function text box with the named range for the Cost column, which is QDATA1__CEN_ORDERS.T2_INVENTORY.COST. This cell now contains =COUNT(QDATA1__CEN_ORDERS.T2_INVENTORY.COST), and press the Enter key.

Because there are 5 values in the Cost column, the cell displays 5, as shown in the following image of the worksheet.



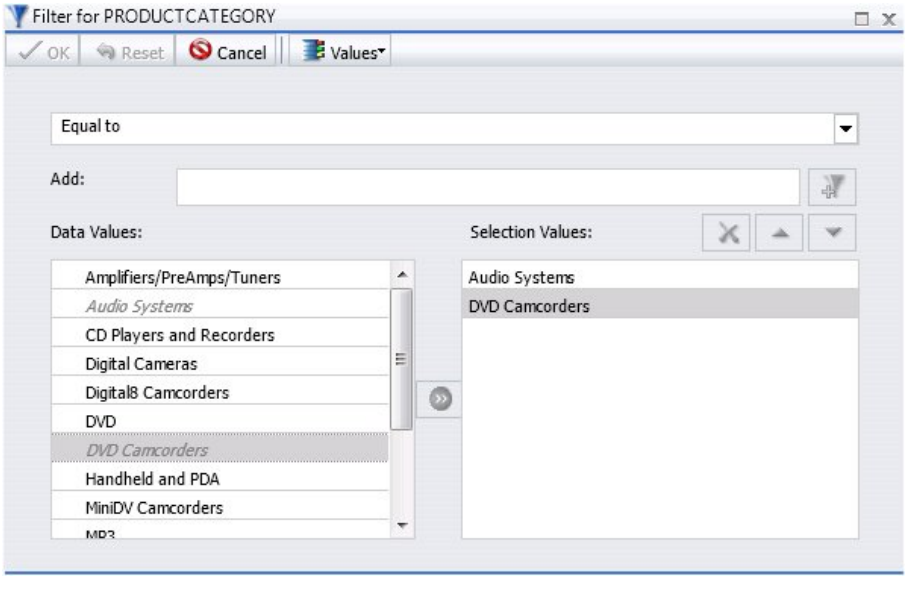
	A	B	C	D	E	F
1		Product Type	Cost	Revenue		
2		Audio	$3,448,330.00	$382,683,321.00		5
3		Camcorders	$4,858,920.00	$444,531,041.00		
4		Cameras	$1,903,100.00	$184,103,667.00		
5		Office	$214,865.00	$30,245,685.00		
6		Video	$6,088,300.00	$520,360,205.00		
7		TOTAL	$16,513,515.00	$1,561,923,919.00		

Notice the COUNT formula displayed in the function text box above the query data.

13. To edit the query again, right-click any cell in the query data, and select *Edit Query*. The InfoAssist tool opens, displaying the query.

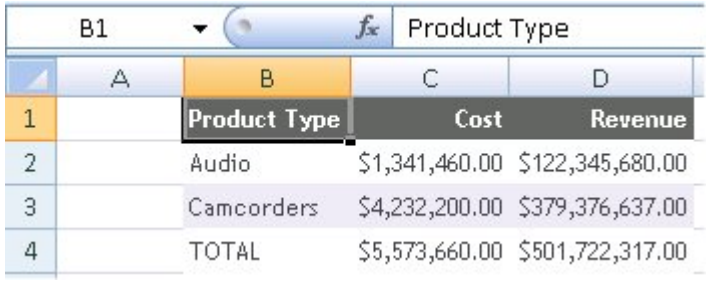
14. To add a filter, select *Product Category* from the Data list on the left pane, and click the *Filter* icon on the Home tab. In the Filter for PRODUCTCATEGORY dialog box, click the *Values* button, and select *Fetch All Values from Source*. Move *Audio Systems* and *DVD Camcorders* from the Data Values list to the Selection Values list, and click *OK*.

The filter is shown in the following image.



15. Click the *Save* button.

    The filtered data is returned to the Excel file, as shown in the following image.



16. Save the Excel file.

Creating Report Queries From Structured Ad hoc Forms

How to:

Create a Report Query From a Structured Ad hoc Form

You can create a new report query directly from Excel by accessing existing SAFs (Structured Ad hoc Forms). A SAF is an HTML form containing a report procedure that is already connected to a data source, which enables you to select from a series of parameters to create output that is added to the active worksheet in Excel. You can analyze the output data in Excel and rerun the query to refresh the data as needed.

Note: SAFs are created in the Developer Workbench HTML Composer, which references an existing parameterized report.

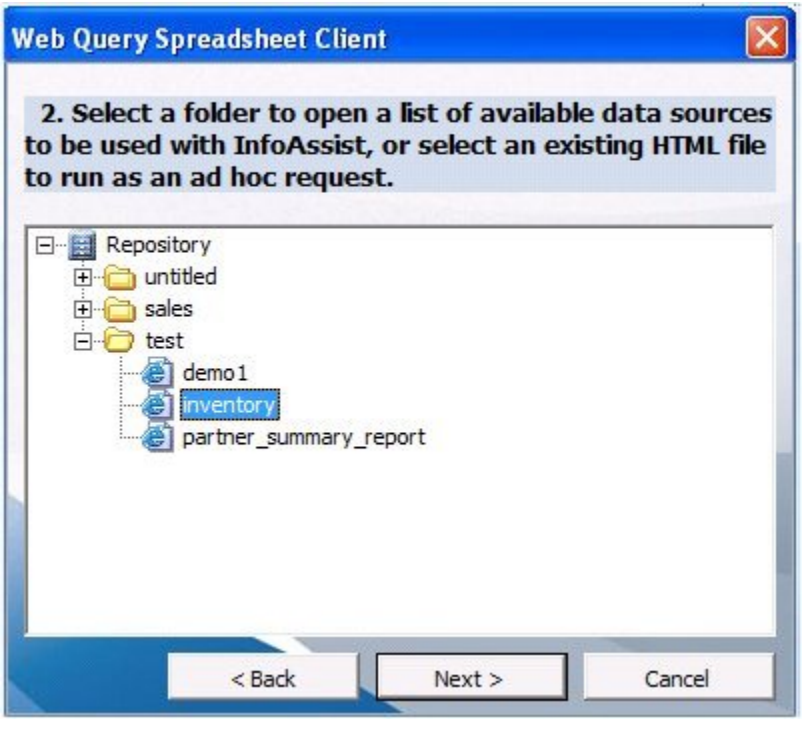
Procedure: How to Create a Report Query From a Structured Ad hoc Form

1. Open an Excel file.
2. Select a cell in which to place the query.
3. Click the *Web Query* option in the Excel menu, then select *Create Query*.

   You can also right-click any cell and select *Create Web Query Query*.
4. If connection information was not specified during the creation of a previous query, you must specify the desired Reporting Server URL when the Web Server Connection dialog box opens. When the desired connection settings have been specified, click *Next*. For more information, see *Defining Web Server Connection Settings* on page 229.

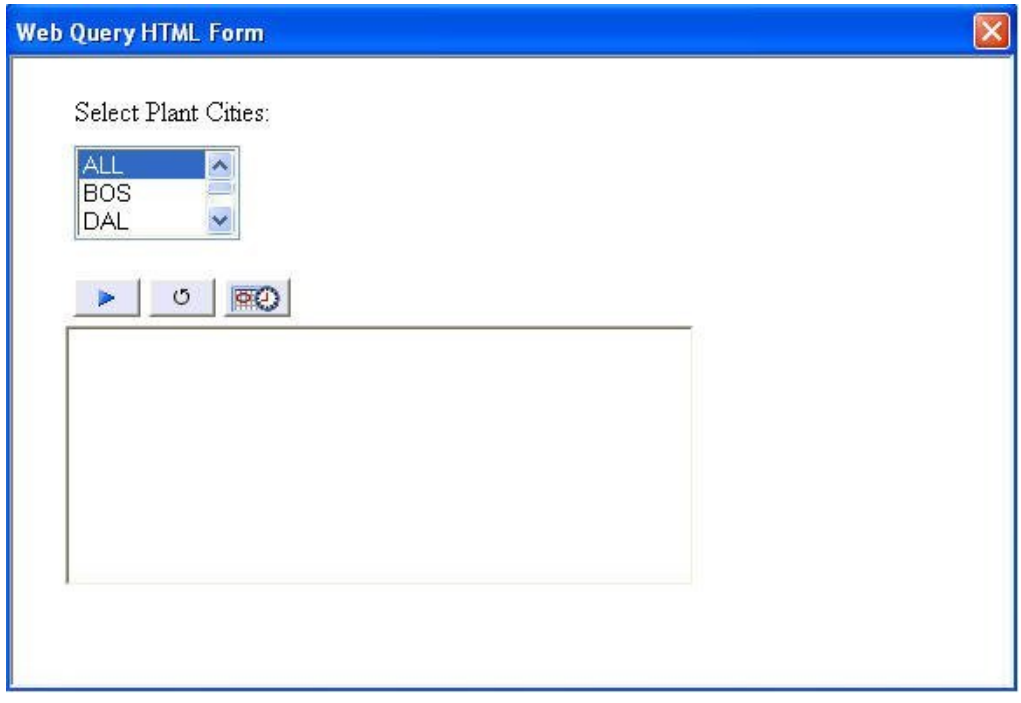
   Spreadsheet Client is configured to use MR Authentication, so you are prompted to log on with valid DB2 Web Query credentials (unless you are already logged on).

Structured Ad hoc forms can now reside in any folder. Folders and HTML files will be listed based on user privileges, as shown in the following image.



5. Navigate to the folder, select an HTML file (SAF), and click *Next*.

6. Select a parameter in the Web Query HTML Form dialog box that appears, as shown in the following image. Next, click the *Run* button to populate the Excel file with data from the report.



The output data is added to the Excel file, as shown in the following image.

	A	B	C	D
1				
2	**Sales Analysis**			
3			Units	
4	City	Units Sold	Returned	Revenue
5	BOS	1275843	123134	$881,737,037.00
6	DAL	201193	19383	$141,089,667.00
7	LA	165755	28521	$108,025,795.00
8	ORL	213405	20445	$136,998,975.00
9	SEA	97242	9390	$69,131,048.00
10	STL	333143	31765	$224,941,397.00
11				
12	**TOTAL**	**2286581**	**232638**	**$1,561,923,919.00**

You can edit the query to select different parameter values, or just rerun the same parameter values to refresh the data, by right-clicking any cell in the query and selecting *Edit Query*.

Creating Structured Ad hoc Forms in Developer Workbench

How to:

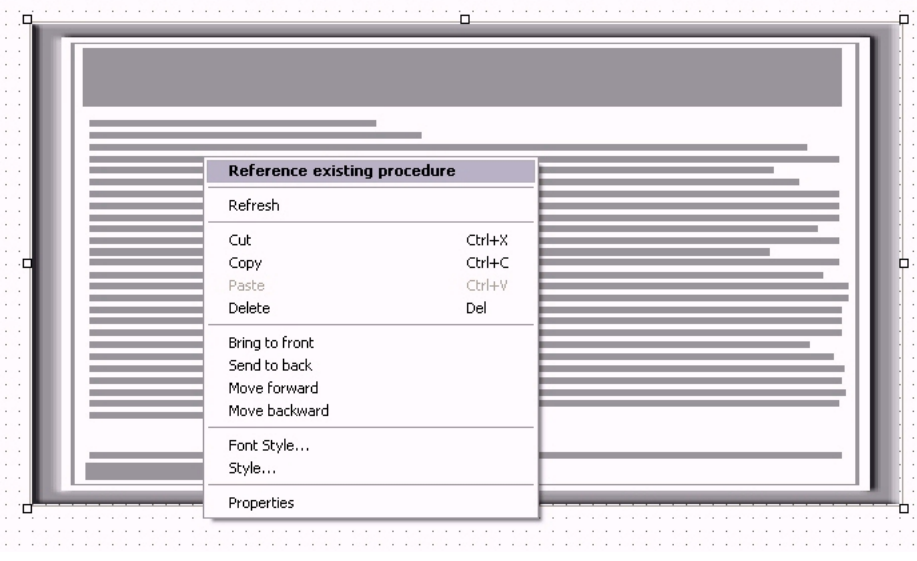
Create a Structured Ad hoc Form

Hide a Report Frame

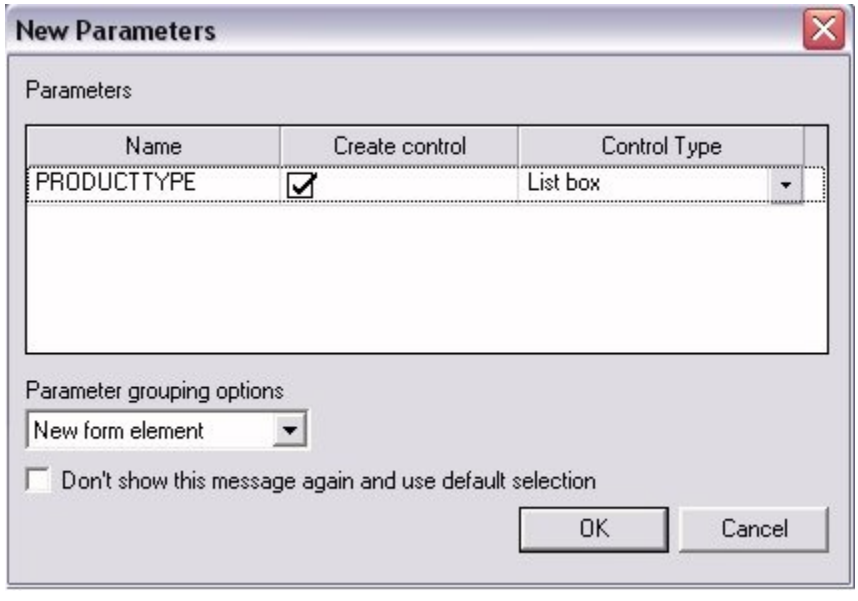
SAFs (Structured Ad hoc Forms) are created in the Developer Workbench Managed Reporting environment using the HTML Composer, by referencing an existing parameterized DB2 Web Query report. A parameter must be added to a report to make it a valid SAF.

Procedure: How to Create a Structured Ad hoc Form

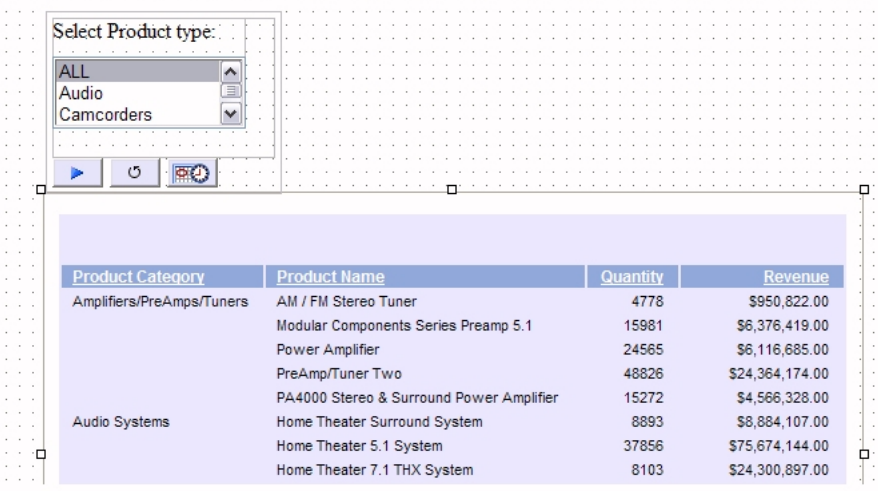
1. Insert a parameterized report into your HTML Layout by referencing an existing report, as shown in the following image.



2. Select the desired options in the New Parameters dialog box that appears.



The completed report that will be used as a SAF in Spreadsheet Client is shown in the following image.

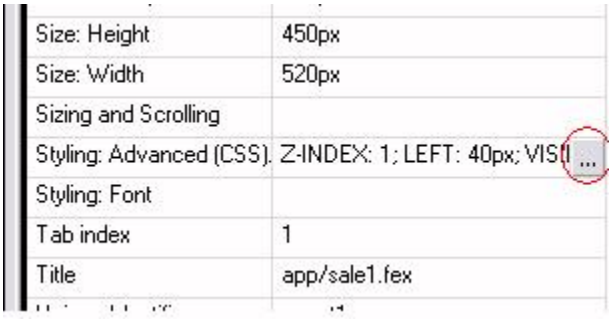


When a SAF is called from Excel, Spreadsheet Client automatically bypasses the report frame in the HTML page and returns the data to Excel. This allows forms to be used in the browser and in Excel.

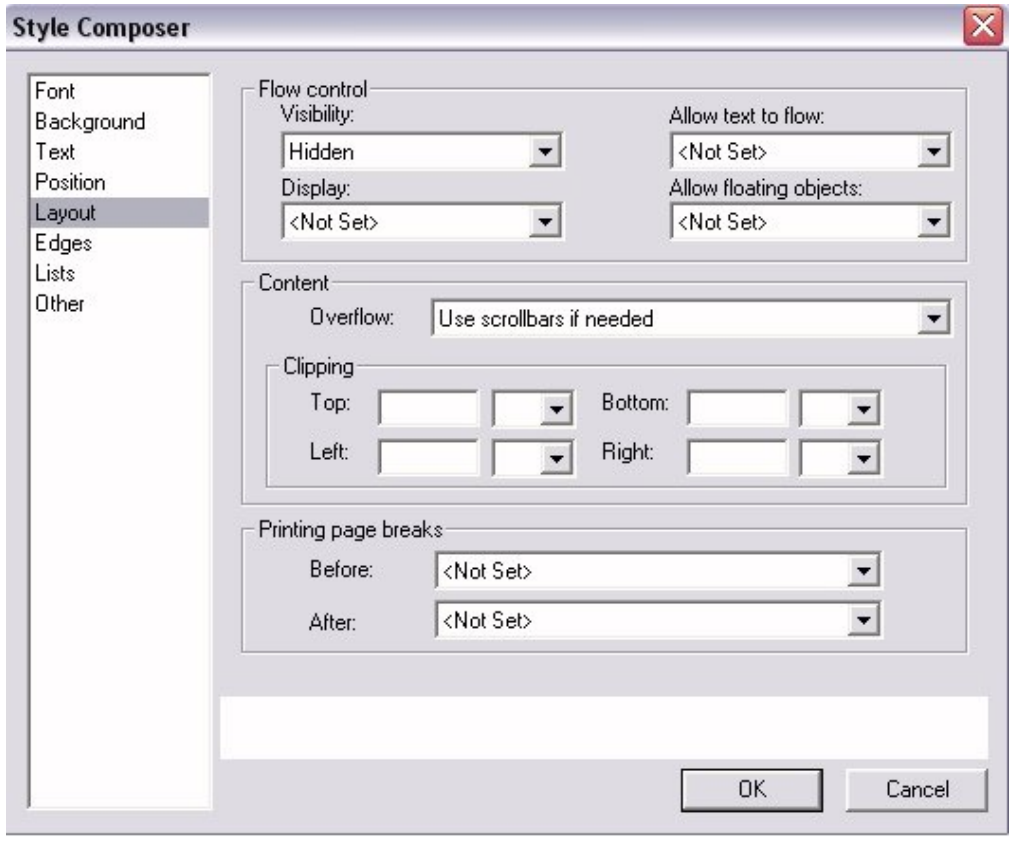
Procedure: How to Hide a Report Frame

If a form is to be used only in Excel, then you can hide the frame by changing the visibility property to hidden in the Layout window of the Style Composer in the HTML Composer.

1. Highlight the report frame.
2. In the Properties panel, select the Styling Advance ellipsis button.

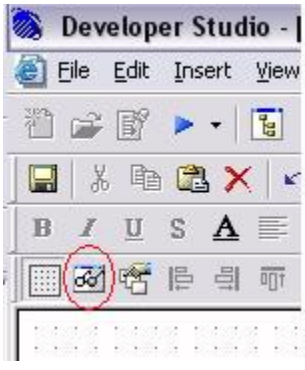


The Style Composer appears, as shown in the following image.



3. Select the *Layout* option.
4. Select *Hidden* in the Flow control Visibility drop-down list.
5. Click *OK*.

Once you hide a frame, you can make it visible in the HTML layout toolbar by clicking the Visibility Toggle button, as shown in the following image.

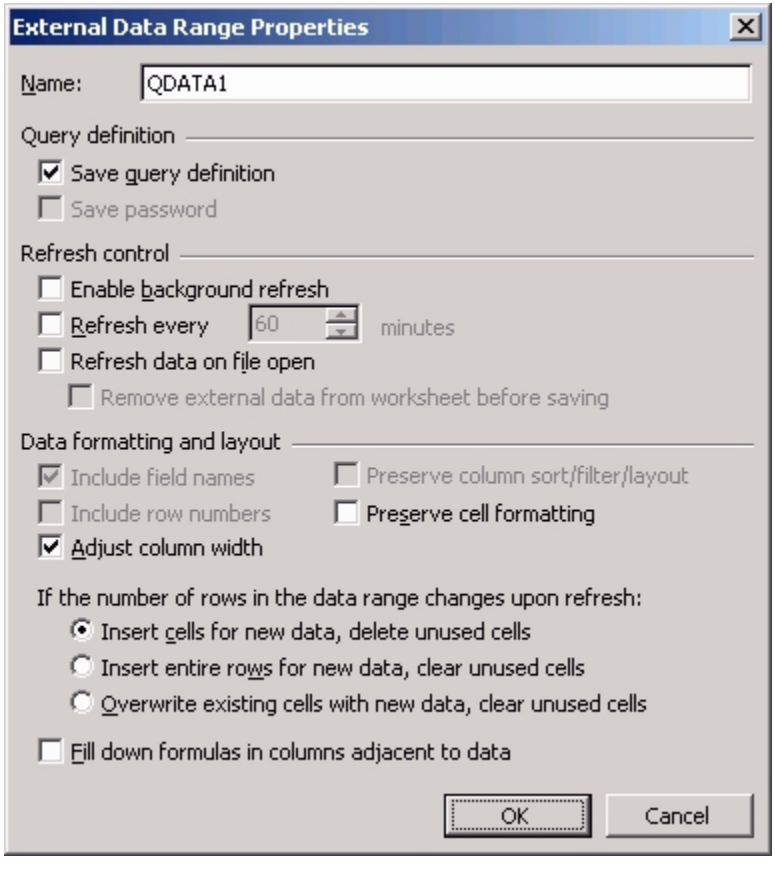


Setting Query Properties

In this section:

Defining Data Formatting and Layout

You can modify query properties in Excel by right-clicking any cell in an existing query and selecting *Data Range Properties*, which opens the External Data Range Properties dialog box, as shown in the following image.



Some of the External Data Range Properties options you can control include:

- **Name.** You can change the name that is automatically assigned to the named range.

  Spreadsheet Client automatically adds a named range to the entire data table and also to each individual column. Named ranges are useful when referencing data as a source for analysis or within an advanced Excel application.

- **Query definition.** Unchecking this option will remove the query from the worksheet. The data remains but is no longer tied to a Spreadsheet Client query.
- **Refresh control.** You can enable background refresh, set the refresh interval, and enable the file to refresh data when opened. If applicable, you can also remove external data from the worksheet before saving.

Defining Data Formatting and Layout

The report layout determines how the data returned from the server interacts with the existing worksheet and any existing content within the worksheet. The following are options you can select in the Data formatting and layout section of the External Data Range Properties dialog box.

- **Preserve cell formatting.** This option affects how data is returned to the worksheet when refreshed. If this option is checked, the existing formatting in the worksheet is preserved. If this option is unchecked, the existing formatting is removed when the query is refreshed.
- **Auto adjustment of existing data.** These options determine how existing data is handled when new data is returned from the query. In some instances, the number of rows returned from the query is more or less than the original data set, and the following options determine what happens when this occurs.
  - Insert cells for new data, delete unused cells.
  - Insert entire rows for new data, clear unused cells.
  - Overwrite existing cells with new data, clear unused cells.

For more information on specifying external data range properties for a query, see your Microsoft Excel documentation.

7 DB2 Web Query Change Management

Change management is the process of moving application components between DB2 Web Query environments of the same release level. Typically, this is done to ensure that applications have been fully tested, prior to deploying to a production environment.

There are features and methodologies within DB2 Web Query Version 2.1, which are used to facilitate these important tasks.

Topics:

- Understanding the Change Management Process
- Creating a Change Management Package

Understanding the Change Management Process

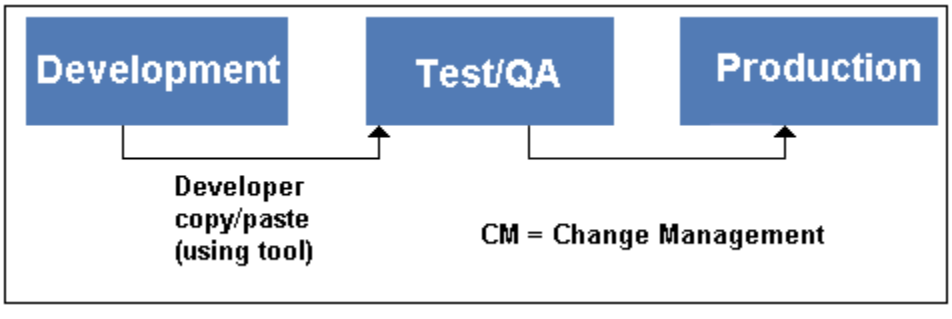
Developing an application is an iterative process. Developers revise application code and periodically move these components to the test environment for user feedback and acceptance. At some point within the application development lifecycle, when the application is stabilized, it is moved to production. After an application is released for general use, problems must be fixed, tested, and incorporated into the production environment. This is the essence of the change management process, which is also referred to as production control.

Organizations vary widely in how they approach change management. Some delegate much of the responsibility to developers, while others establish alternative processes to maintain a higher degree of control. Typically, developers utilize development tools to perform these duties, while change management professionals prefer batch-oriented methods to move application components between environments. Developers may be required to create a change management package in order to initiate changes after the application is moved to production. A combination of these approaches is often used in larger companies.

The examples that follow illustrate two different change management processes. These sections describe product features and methodologies that can be utilized by companies to meet their change management objectives with DB2 Web Query Version 2.1.

Example: Moving Application Files: A Simple Change Management Process

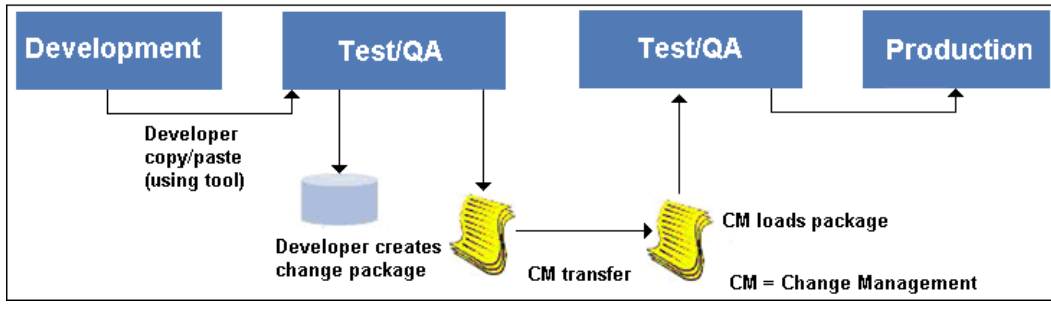
As shown in the following image, developers move application files between the development and test environments using their development tool. When the application is finished, a systems person copies the application from test to production using operating system utilities. There may only be a single test environment.



Example: **Moving Application Files: A Comprehensive Change Management Process**

In this example, four DB2 Web Query environments are established to increase the level of control of moving application code to production. Developers use the Business Intelligence Portal Resources tree or Developer Workbench to move application files from development to test. Developers then use the Change Management Export facility when they are ready to move their changes to the user acceptance test environment.

The Change Management Export facility allows the Developer to select the resources to be moved and creates a change management package. An administrator can subsequently move the change package into an acceptance test using the Change Management Import facility. Some organizations may choose to utilize an automated process to import the content, to achieve better integration with their business processes. As shown in the following image, when the application is deemed ready for release, the production control personnel initiates a file system copy of the application to the production environment. Users begin using the application and the change management process shifts into an application maintenance support role. From this point forward, incremental updates to production are facilitated by administrators using the Change Management Import facility.



Creating a Change Management Package

How to:

Create a Change Management Extract Package

Access the Change Management Export Facility to Create a Scenario

Import a Change Management Package

Many organizations do not grant developers write access to the user acceptance test and production environments. Access to these environments is strictly controlled and granted only to administrators, production control personnel, or automated change management processes.

Only developers know which changes are ready to be moved into test. The Change Management Export facility presents developers with a graphical view of the resources they manage and allows them to build a change management package. This package is then loaded into another environment by production control personnel or automated processes.

Procedure: How to Create a Change Management Extract Package

A user must be a Web Query developer or administrator to create a Change Management Export Package.

The steps required for creating a Change Management Package are:

1. **Creating a Scenario.** Utilizing the Change Management Export user interface, an authorized user will create a Scenario by selecting the resources to be exported. A Scenario is a description of all the resources that will be exported into a Change Management Export Package.
2. **Exporting a Scenario.** After a scenario is created, a user can export this scenario into a Change Management package. This Change Management Export Package is placed in the directory with the same name as the scenario:

   `/qibm/userdata/qwebqry/base80/cm/export`

   The exported folder is then copied to the target environment and placed in this directory:

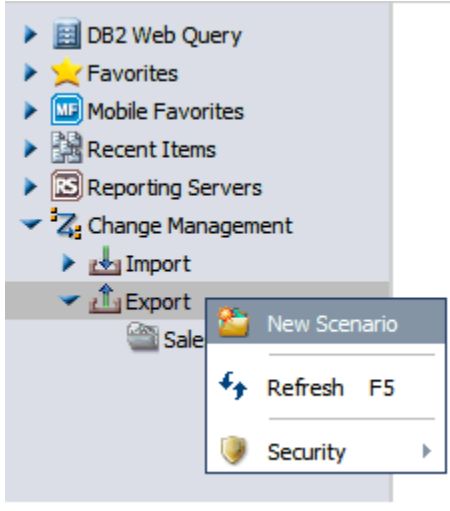
   `/qibm/userdata/qwebqry/base80/cm/import`

   Note: The Change Management Export and Import activity is written to the following log file:

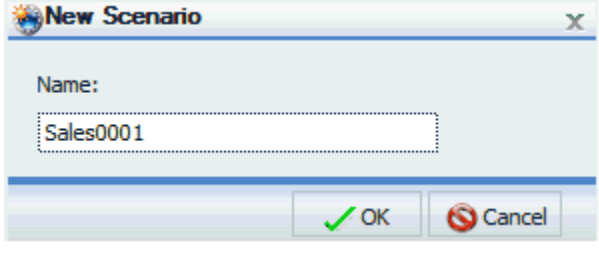
   `/qibm/userdata/qwebqry/base80/logs/impex.log`

Procedure: How to Access the Change Management Export Facility to Create a Scenario

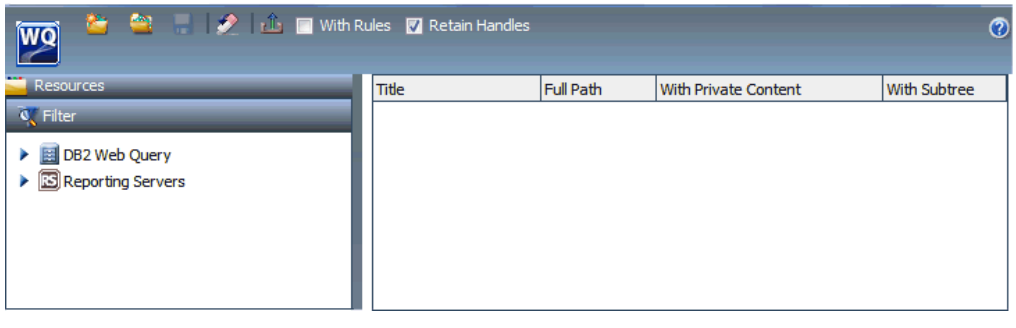
1. Right-click *Export* in the Change Management section, and select *New Scenario*, as shown in the following image.



2. You will then be prompted to enter the Scenario Name, as shown in the following image.



This will invoke the user interface to create the Scenario, which allows a user to select Resources that will be moved to the target system.



There are two major options listed on the top of the Change Management Export Interface.

With Rules. Unselected by default. This option should not be selected.

Retain Handles. This option is necessary when the Version 2.1.x source environment is migrated from a 1.1.x version of DB2 Web Query, and this content is used in a Change Management process. During migration from Version 1.1.x to Version 2.1.x, the 1.1.x version hrefs are used as the 2.1.x version handles to allow the earlier code for –INCLUDEs and drill downs to continue to work with the Version 1.1.x style syntax. Moving these handles to the target environment, will allow code that contained the earlier style –INCLUDE and drill down syntax to continue to work.

The following types of resources can be moved:

- Any folder or item from the /WFC/Repository or what is shown in the user interface as DB2 Web Query, including procedures (FOCEXECs), Stylesheets, Images, HTML files, Schedules, and Distribution Lists.
- Any application or specific files from the Reporting Server node on the tree.

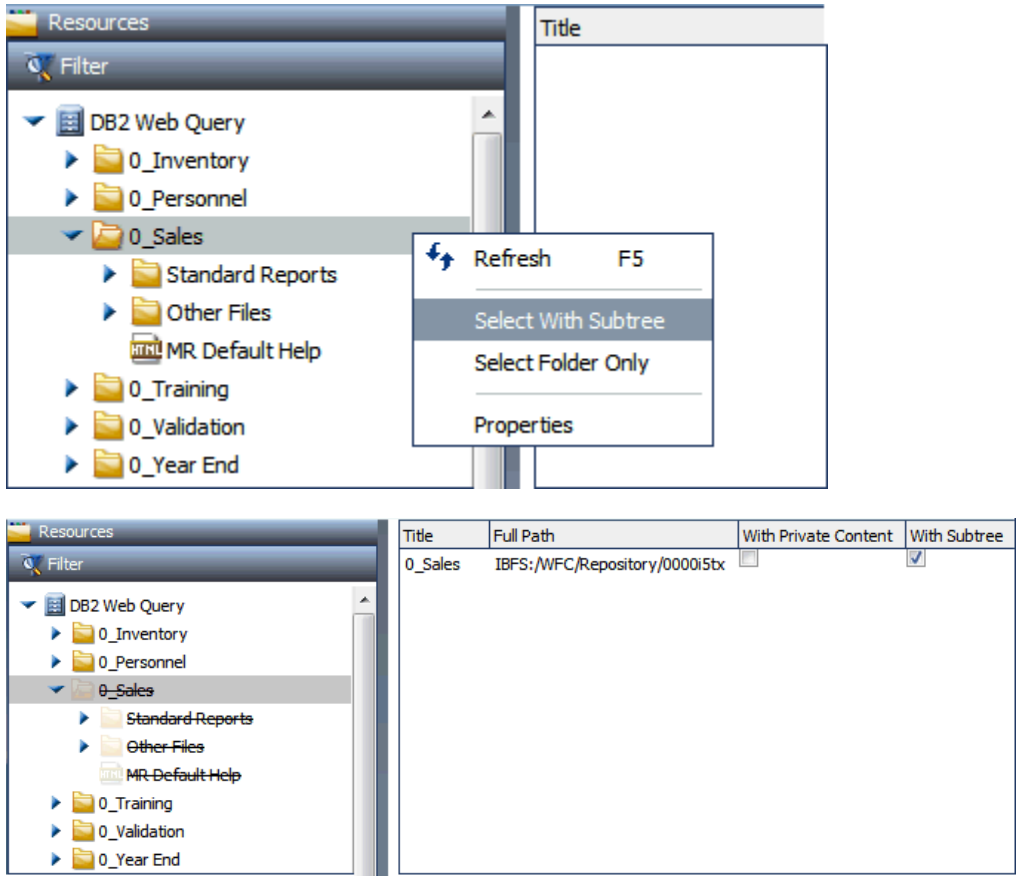
Selecting Resources

- Resources are selected by either dragging or dropping content from the Change Management tree on the left, to the right pane. Or, using the context menu and right-selecting the content you want to move, and choosing either *Select With Subtree* or *Select Folder Only*.
  - Select With Subtree selects that folder and all subfolders.
  - Select Folder Only selects the specific folder, with no content. Typically, that is done to move rules on the folder.
- If a Private resource is selected, the With Private Content check box is automatically selected and cannot be unselected.
- If a Published Folder is selected, you have the option of including Private Content within that folder, by selecting the With Private Content check box for that resource. This will export ALL of the private content in that folder and its subfolders.

Note:

- If Private Content is selected, it will ONLY be imported if the owner of that Private Content, already exists in the target environment.
- It is also possible to import Private Content to a target environment, and the users that should have access to it, do not have access to the Published Folder that contains those items. This can happen if the rules in that environment are different than the source environment.
- If a subfolder is selected, its parent folder must exist in the target system.

Selecting a folder



3. Now that resources are selected, the scenario should be saved.

   Once saved, the Scenario can be run through the Change Management Import interface.

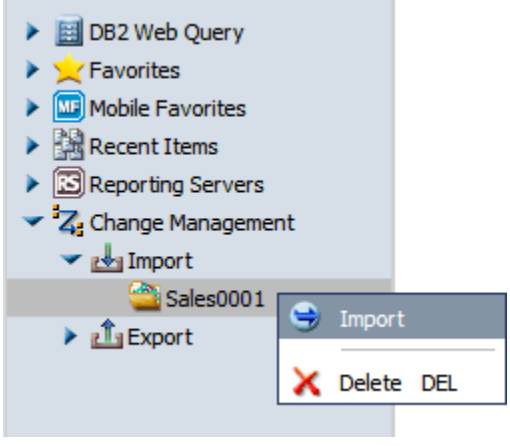
Procedure: How to Import a Change Management Package

A user must be a Web Query administrator to Import a Change Management Package.

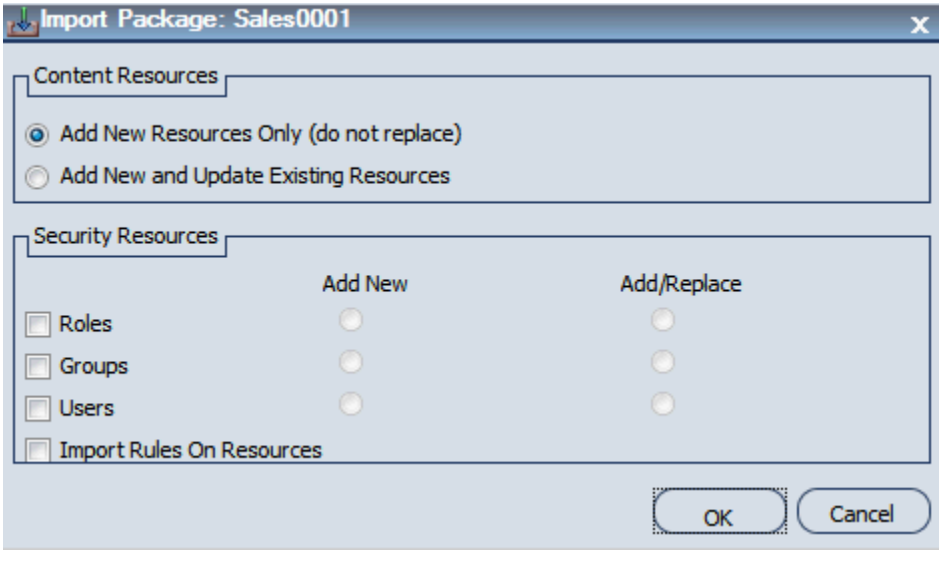
This step assumes that a Change Management Extract Package has been previously created and has been copied to the target environment in this directory:

`/qibm/userdata/qwebqry/base80/cm/import`

1. The Change Management Export Package is selected from the Change Management Import folder, and the option of Import is selected, as shown in the following image.



2. A number of options are presented to the user, as shown in the following image.



Add New Resource Only (do not replace). This option will only add new resources to the target environment. For newly created items, the Created On and Last Modified On fields will be updated with the time at which they were imported. The Created On and Last Modified On fields are accessible by right-clicking an item and selecting *Properties*.

If an item already exists in the target environment, but is also part of the Change Management Export Package, the target resource will be left alone and the Last Modified On field is not updated.

Add New and Update Existing Resources. This option will add new resources to the target environment if they do not exist, and update existing resources if they already exist. For newly created items, the Created On and Last Modified On fields will be updated with the time in which they were imported. For Updated items, the Created On value for the target will be retained, but the Last Modified On field will be updated with the time in which it was imported.

Security Resources: Roles, Groups, Users

Note: The Security Resources options should not be selected and are reserved for future use.

A Running DB2 Web Query Reports Using the Java Batch Run Utility

The Java Batch Run utility (RUNWEBQRY) enables you to run a DB2 Web Query report from the command line so that the request can be submitted to a batch queue, without having to physically log on to DB2 Web Query. The utility accepts a single report procedure (.fex) that is in DB2 Web Query and executes the .fex via a Java program.

Topics:

Java Batch Run Utility Prerequisites

How to:

Invoke the Java Batch Run

Reference:

Retrieving Input Parameters for the RUNWEBQRY Command

The following are prerequisites for running the utility:

- ❏ DB2 Web Query must be installed and running on the system where the reporting and application servers are running.
- ❏ FOCEXECs which exist in the DB2 Web Query environment.
- ❏ An available user ID that is licensed for DB2 Web Query.

Procedure: How to Invoke the Java Batch Run

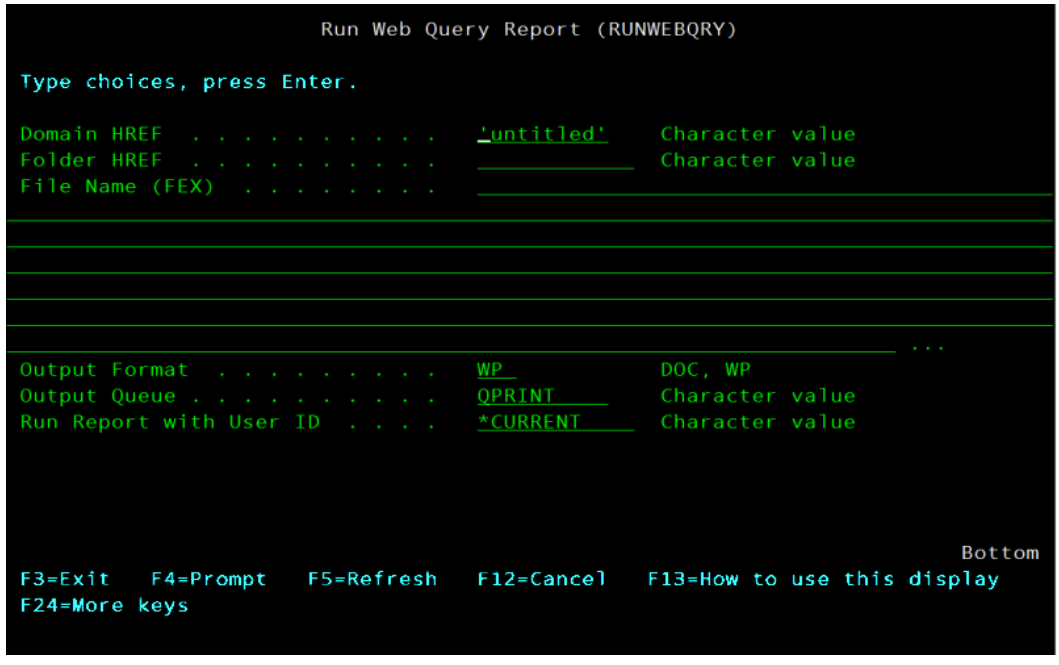
To invoke the utility from the command line:

1. Log in to the IBM i system via a 5250 terminal emulator.
2. At the command line, execute the following command:

   ```
   RUNWEBQRY
   ```

3. Press the *F4* key.

The Run Java batch in WebQuery (RUNWEBQRY) screen opens as shown in the following image.



4. On the screen, type values for the following input parameters:

Domain href

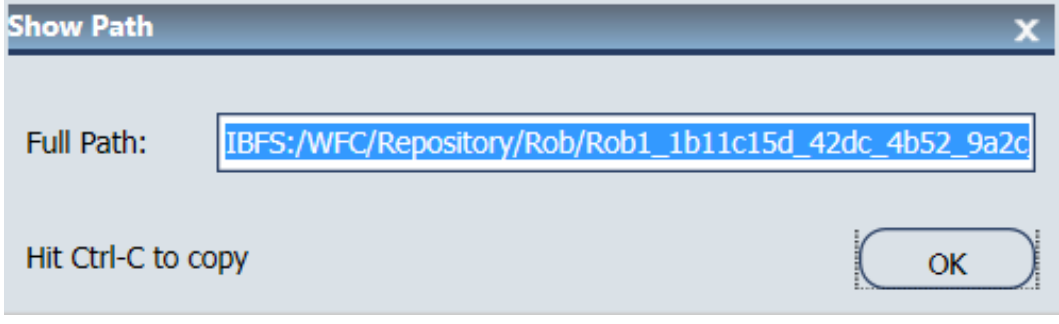
Is the domain name in Dashboard or an href. An href is an internal name given to an object. The href can be displayed via the Properties option in the Dashboard menu, which is available by right-clicking the mouse. You do not need to use the href if the name is exactly 8 characters. You need to use the href if the name is less than 8 characters or more than 8 characters. This input parameter can be retrieved from the Properties page by right-clicking the report name and choosing *Properties* from the drop-down menu.

Folder href

Is the folder name in Dashboard or an href. An href is an internal name given to an object. The href can be displayed via the Properties option in the Dashboard menu, which is available by right-clicking the mouse. You do not need to use the href if the name is exactly 12 characters. You need to use the href if the name is less than 12 characters or more than 12 characters. This input parameter can be retrieved from the Properties page by right-clicking the report name and choosing *Properties* from the drop-down menu.

File Name (fex)

Is the full path or name of the report FOCEXEC (fex) as displayed in the BI portal tree. This input parameter can be retrieved from the Show Path option by right-clicking the report name and choosing *Show Path* from the drop-down menu as shown in the following image. Press Ctrl+C to copy the fex's full path and report name.



Output Format

Is the report format. Possible values are DOC or WP. WP is the default value.

Output Queue

Is the name of the outq on the IBM i system where the report will be sent. QPRINT is the default value.

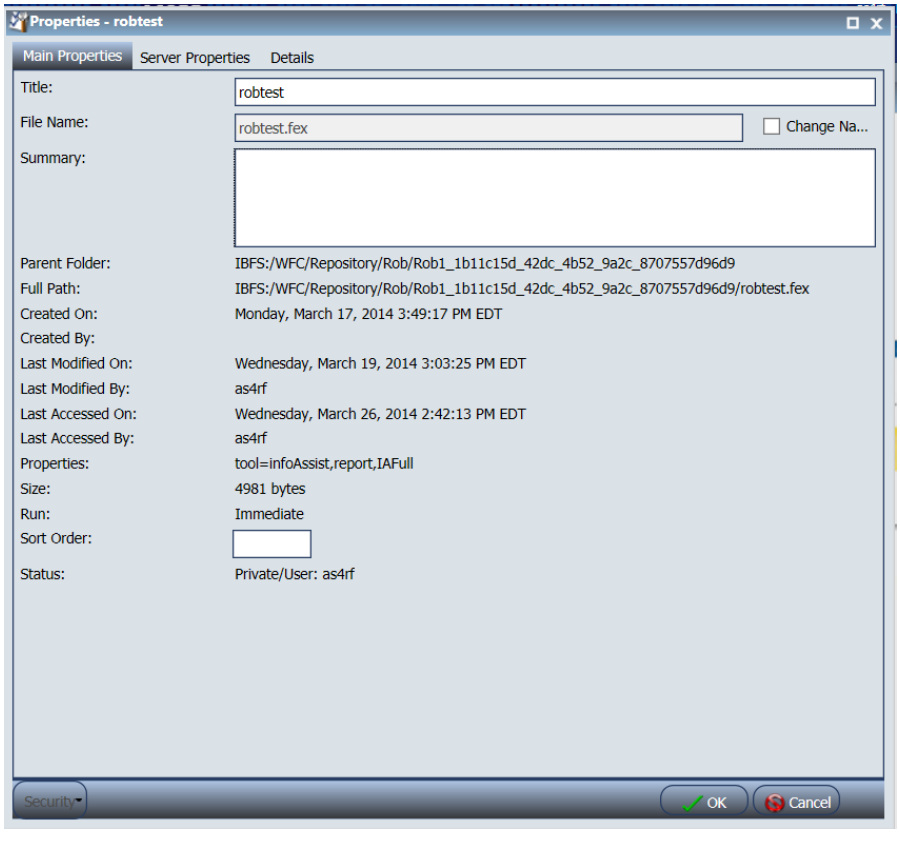
Run Report with User ID

Enables you to submit the job using another user ID. The default value is *CURRENT which means that the current user ID will be used to submit the job.

Note: The RUNWEBQRY command can be part of a job stream using SBMJOB to run multiple requests.

Reference: Retrieving Input Parameters for the RUNWEBQRY Command

The following is an example of a Properties page for retrieving parameter information. This page is accessed by right-clicking a report name in a report folder, and choosing *Properties* from the drop-down menu.



The following image shows the input parameters populated from the example properties page.