

ReportWorX Training Manual

Version 9.20

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Introduction to ReportWorX

1

1.1 Overview of ReportWorX

ReportWorX is a powerful and comprehensive reporting tool that uses the latest Microsoft.NET technology to create, schedule, and redirect reports to be sent to redundant printers, fax machines, computer screens, PDF files, and local or remote disk drives. You can even publish reports to a Web server or send them to your entire organization via e-mail. Reports can be accessed over company intranets or over the Internet.

ReportWorX offers the most advanced reporting tool available today, taking maximum advantage of Microsoft's most powerful technologies. ReportWorX is designed from the ground up using Microsoft.NET and Microsoft Excel technologies. ReportWorX turns volumes of data into Manufacturing Intelligence. Transforming data from any data source into reports is fast, efficient, and easy to set up. ReportWorX uses Microsoft.NET technology to push data into your report worksheets and forms, and to control the execution of these Excel forms without the need for Excel to be visible or executing. ReportWorX performs complete workbook duplication, manipulation, chart and data updates, formula recalculation, automatic printout, and report scheduling.

ReportWorX includes the following basic components for creating, configuring, and executing reports:

- Configurator
- Excel Interface
- Unified Web Interface
- ReportWorX Service

1.2 ReportWorX Configurator

The ReportWorX Configurator, shown in Figure 1.1, is the primary interface that you use to configure how information and data will be displayed in your reports. The Configurator enables you to:

- Create and activate a configuration database.
- Create and configure reports.
- Edit report properties.
- Create report templates for defining how reports will look.
- Schedule triggered reports for execution.
- Specify redirector tasks such as e-mail, fax, PDF, file copy, printer, and Web publishing actions after a report executes
- Define user accounts and managed lists for report recipients.
- Set up report access permissions for registered Windows users and groups.
- Start the ReportWorX Service.
- Launch the Unified Web Interface.
- Publish reports to the Web server.
- Execute and view reports on demand.
- Archive reports.

For more information, please see the ReportWorX help documentation.

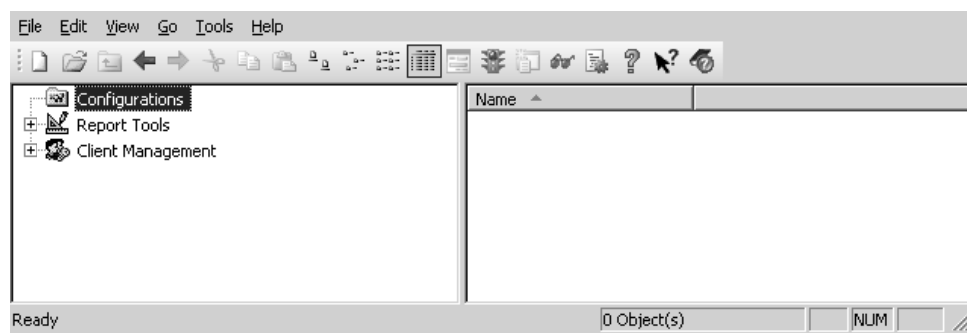


Figure 1.1 - ReportWorX Configurator Screen

1.3 ReportWorX Excel Interface

The ReportWorX Excel interface allows you to create and configure Microsoft Excel templates for your reports. The template design dictates how data displays in your report spreadsheets. The Excel interface also includes an embedded pop-up menu for connecting to data sources for your reports. You can access this

menu by right-clicking on one or more cells in the Microsoft Excel workbook. Highlight a cell, right-click on the cell, and then select **Connect to new Data Source** from the pop-up menu, as shown in Figure 1.2. From this pop-up menu, you can connect to:

- OPC Data Access (DA) and Historical Data Access (HDA) tags
- ICONICS TrendWorX32 historical tags, text aliases, and language aliases
- Open databases, including Microsoft Access, Microsoft Excel, Microsoft SQL Server, Oracle, SAP, ODBC, and OLEDB
- Preconfigured Alarm Analytic sources
- User-selectable parameters
- Hyperlinks to go to another Website
- Web services
- Custom Data Source

Reports are executed based on the data connections you specify in your Excel templates. The ReportWorX Configurator provides several example templates to help you get started. For more information, please see the ReportWorX help documentation.

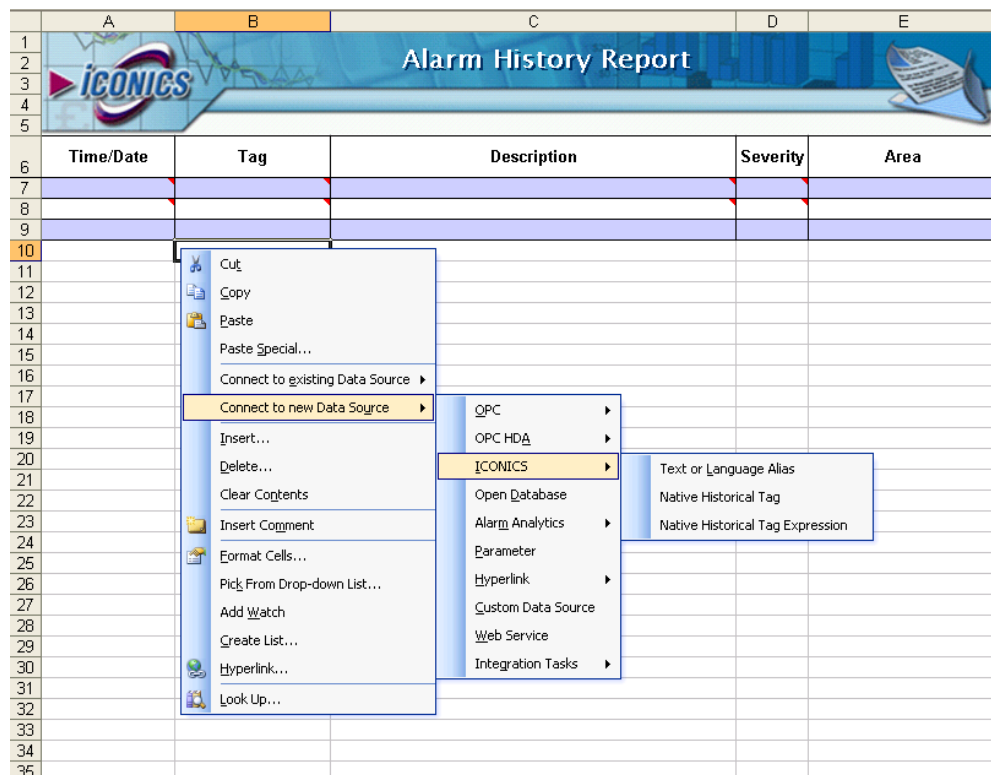


Figure 1.2 - Sample Report Template in Microsoft Excel

1.4 Unified Web Interface

The Unified Web Interface, shown in Figure 1.3, enables you to execute reports on demand and browse reports from any Microsoft® Internet Explorer client. Reports can be accessed over company intranets or over the Internet. The Unified Web Interface allows you to:

- Execute reports
- Visualize reports
- Manage reports

The Unified Web Interface displays configuration information from the active configuration database, as well as enabling you to modify the configuration information. Any configuration changes that you make in the Unified Web Interface are updated in the active report configuration database. Similarly, all changes that are made to the active configuration database using the ReportWorX Configurator are reflected in the Unified Web Interface.

Although the Unified Web Interface allows you to modify existing reports in the active configuration database from the client side, you cannot create new reports (or related items). Those can be created only through the ReportWorX Configurator on the server side.

The Unified Web Interface also features Windows NT® integrated security. Only registered users or groups with access rights may view, execute, and manage reports.

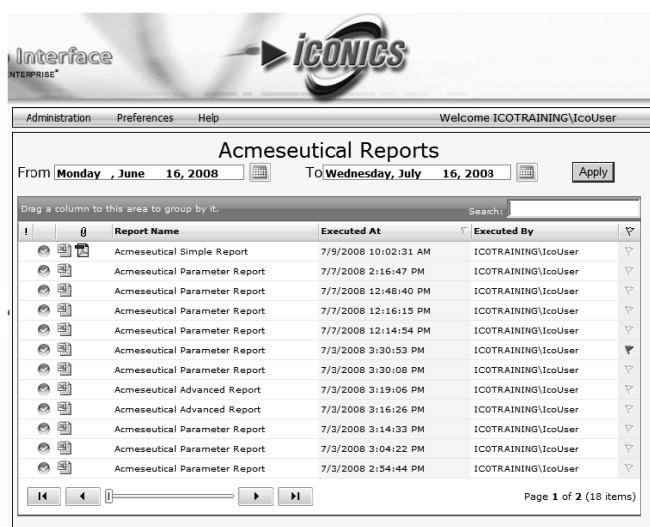


Figure 1.3 - Visualizing Reports in the Unified Web Interface

1.5 ReportWorX Service

The central module and runtime engine of ReportWorX is the ReportWorX Service, which links together the ReportWorX Configurator, Excel interface, and Unified Web Interface. The ReportWorX Service is responsible for managing:

- Report data source connectivity
- Report execution
- Report schedules
- Completed report redirection
- Performance monitoring
- NT Event reporting and integration
- Report administrative tasks
- Product license

For more information, please see the ReportWorX help documentation.

1.6 Using ReportWorX Configurator in ICONICS Workbench32 Tool

Workbench32 is ICONICS' Web-based centralized environment for system configuration and monitoring, greatly saving time and money and streamlining project development and deployment.

This topic covers how to add ICONICS ReportWorX Configurator Provider to the Workbench32 configuration/runtime tool. For additional information on how to add other Providers within Workbench32, consult the GENESIS32 V9.2/Workbench32 training or help documentation.

1. From the Project menu pulldown, select Add/Remove Providers.

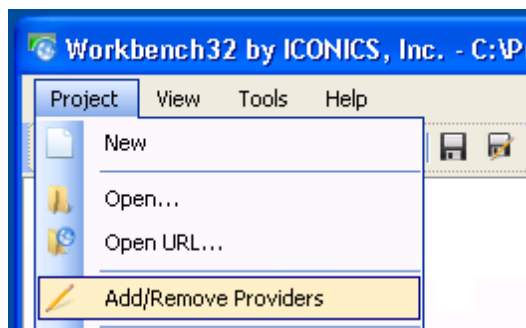


Figure 1.6-1 - Adding Providers in Workbench32

-OR-

Click on the Add/Remove Providers icon () in the toolbars at the top of Workbench32.

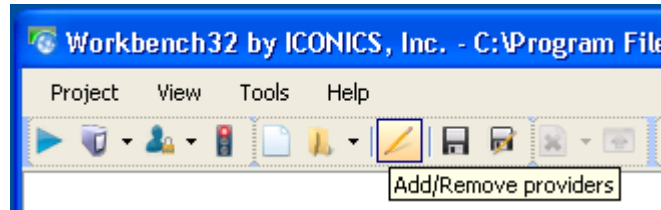


Figure 1.6-2 - Toolbar in Workbench32

This will bring up the "Select Applications in the Project" box, from where you can choose your required Workbench32-integrated applications. Click the checkbox next to "ReportWorX". You can also select the "ReportWorX Server" from beneath the Runtime Providers section at this time.

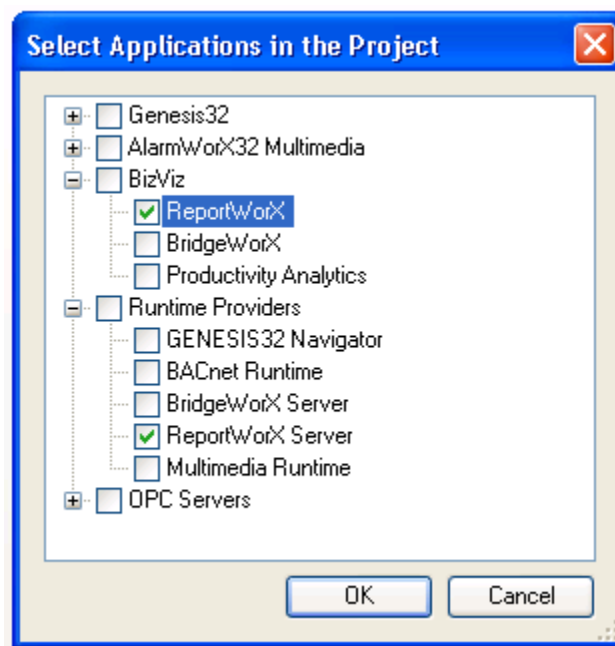


Figure 1.6-3 - Provider Selection in Workbench32

Once your selected Providers are successfully loaded into Workbench32, you will see their representative icons appear in the bottom left of the Tree Explorer.

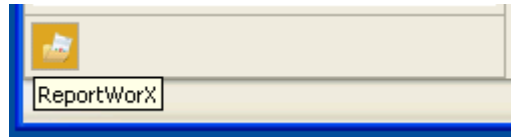


Figure 1.6-4 - ReportWorX Configurator Icon at Bottom of Tree Explorer in Workbench32

Should you not immediately see the Tree Explorer, you can make it appear by clicking View from the top menu, then ensuring the checkmark appears next to Tree Explorer.

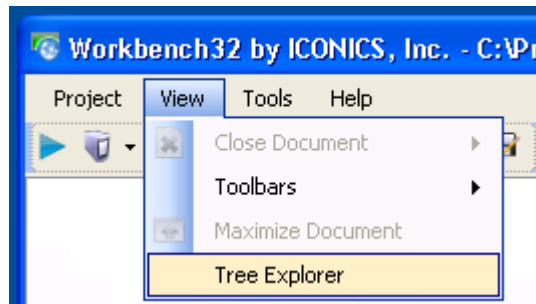


Figure 1.6-5 - Selecting the Tree Explorer from Workbench32's View Menu

ReportWorX is a database-driven application, which will utilize Microsoft SQL Server. You can use the ReportWorX Configurator provider in Workbench32 as the interface to configure how information and data will be displayed in your reports. Upon first use of the ReportWorX Configurator, before you can configure any report settings, you may need to use the standalone ReportWorX Configurator application to create a database in which your configuration can be stored:

1. To launch the ReportWorX Configurator from the Windows Start menu, select Programs > ICONICS BizViz > ReportWorX > ReportWorX Configurator.
2. The first time you open the Configurator, the ReportWorX Configuration Database Wizard helps you create a new configuration database, as shown in the following figure. Click the **Next** button to continue.



Figure 1.6-6 - Introduction to ReportWorX Configuration Database Wizard

3. Select whether to use the local computer or a remote computer for your SQL Server machine, as shown in the figure below. Click the **Next** button to continue.

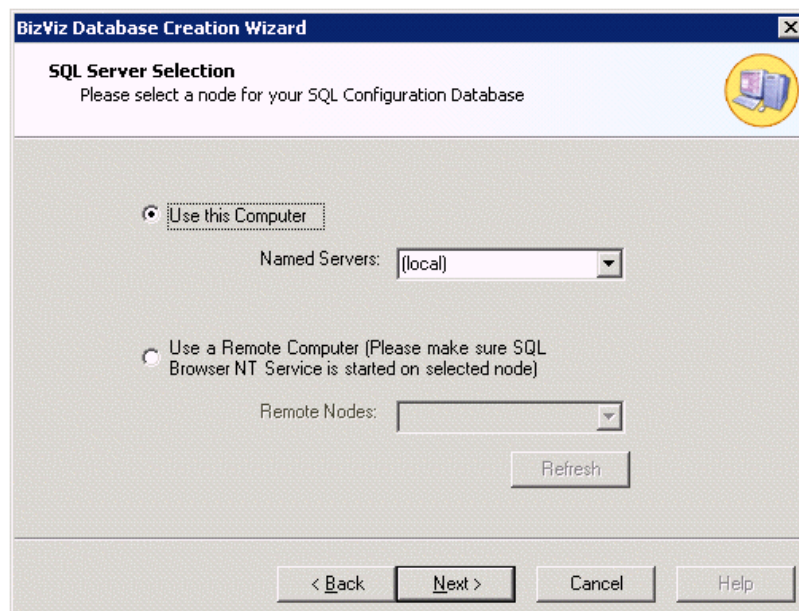


Figure 1.6-7 - Selecting Local or Remote SQL Server

4. Select the proper authentication mode to log into your SQL Server, as shown in the figure below. Click the **Next** button to continue.

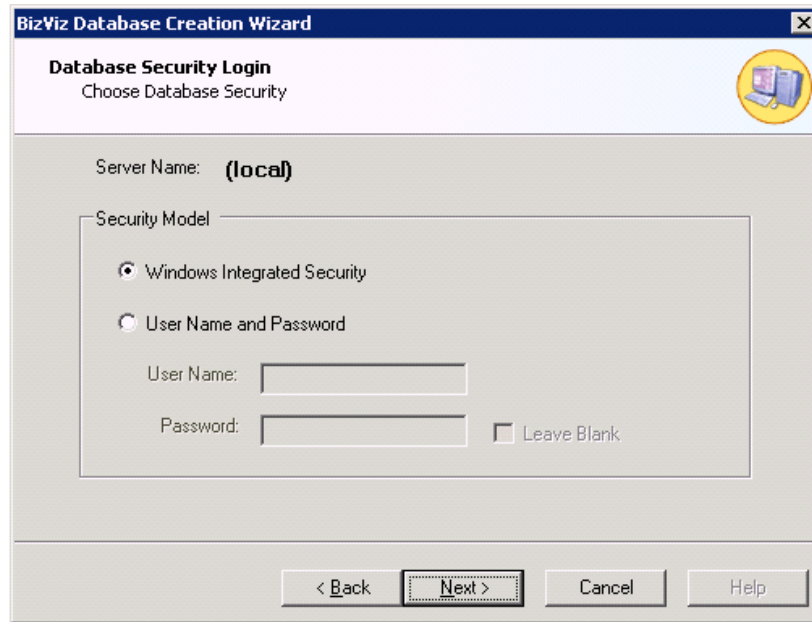


Figure 1.6-8 - Logging Into SQL Server

5. You have two options for creating your new database, as shown in following figure. You can either create a new Microsoft SQL Server database, or you can add the ReportWorX configuration database structure to an existing Microsoft SQL Server database. There is also an option to include or exclude the ReportWorX samples in the configuration database. Here we will assume that you will choose the first option (to create a new database). Select **I want to create a new Microsoft SQL Server database on local node**, and then click the **Next** button to continue.

Note: For information about how you can add the ReportWorX configuration database structure to an existing Microsoft SQL Server database, see **Adding the ReportWorX Configuration to an Existing Database**.

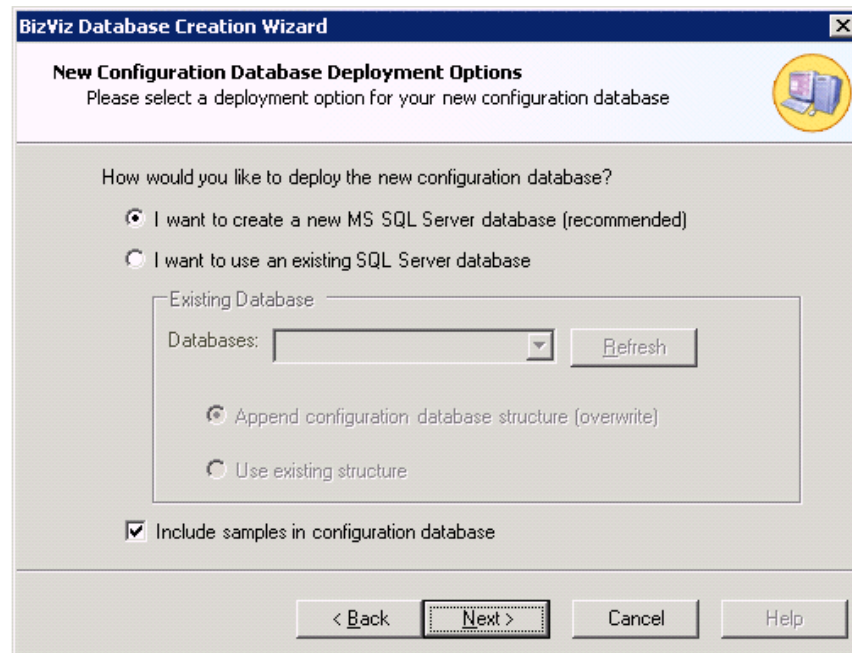


Figure 1.6-9 - Creating a New Microsoft SQL Server Database

6. Choose the settings for the SQL Server database parameters, as shown in the figure below. In the **SQL Server** field, select the SQL Server on which to create a new database. Type a name for the database in the **Database Name** field. In the **Database Path** field, choose a directory path for the new database. You can browse for a directory by clicking the ... button to the right of this field. Or you can use the default database file path and size.

Note: Usually you have only one instance of SQL Server running on the local node (in this case the SQL Server field has only one option: "(local)"). However, it is possible to run multiple SQL Server instances on the local node, in which case the **SQL Server** field lists all those SQL Server instances: "(local)" for the default instance and "node_name/instance_name" for all others. Again, all those are local SQL Servers.

Under the **Database File Properties** section, specify an initial size for the database, which should be as large as possible. You can also specify a **Database Growth** option (in megabytes) or as a percentage of the total size. MSDE servers are capable of increasing the database size on the fly to store more data. However, if this operation is performed frequently, the overall system performance may decrease. Choosing an initially large

database size and a corresponding database growth option can drastically improve system performance. To shrink the size of the new database, check the **Auto Shrink** check box.

Under the **Log File Properties** section, you can also modify the settings for the database transaction log file. Specify a **Log File Growth** option (in megabytes) or as a percentage of the total size. Again, a sufficient initial size setting can greatly improve performance. The default options should be adequate for most applications with a small to medium size load.

Click the **Next** button to create the new SQL Server database.

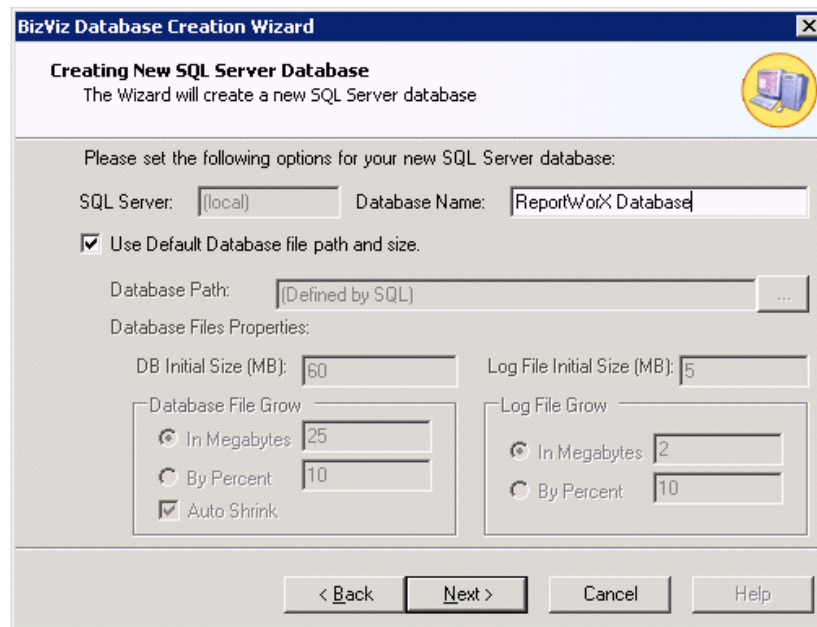


Figure 1.6-10 - Setting the Database Parameters

7. The Wizard creates the new SQL Server database, as shown in the following figure. When it is finished, it will tell you whether or not the operation has completed successfully. Click the **Next** button to continue.

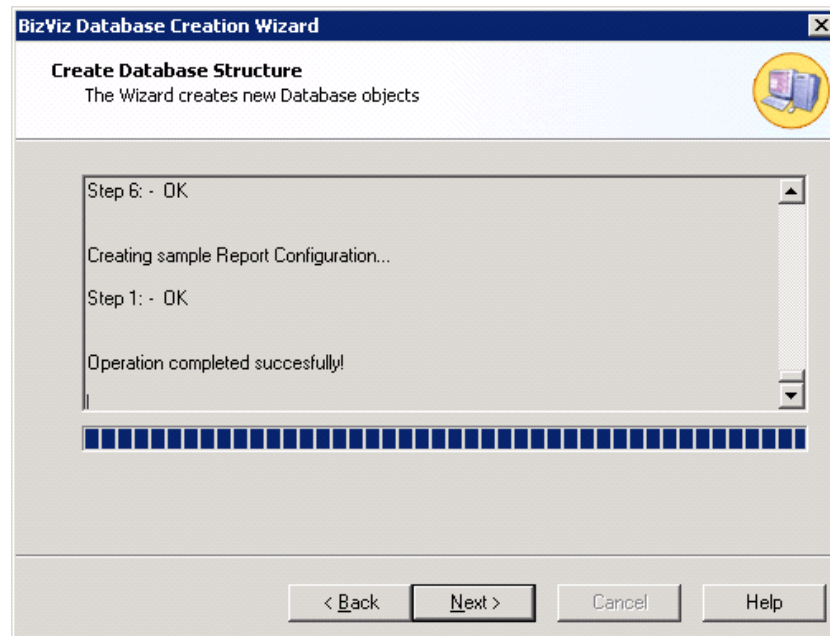


Figure 1.6-11 - Status of Database Creation

8. The ReportWorX Configurator uses Universal Data Link (.udl) files to connect to the Microsoft SQL Server database. These .udl files contain OLE database connection information that allows the Configurator to create and manage connections to OLE databases. Enter a name and directory path for the new .udl file in the **Data Link File Name** field, as shown in the figure below. You can browse for a directory by clicking the ... button to the right of this field. Click the Next button to continue. If you want this new database to be the active configuration database, check **Make Database Active**.

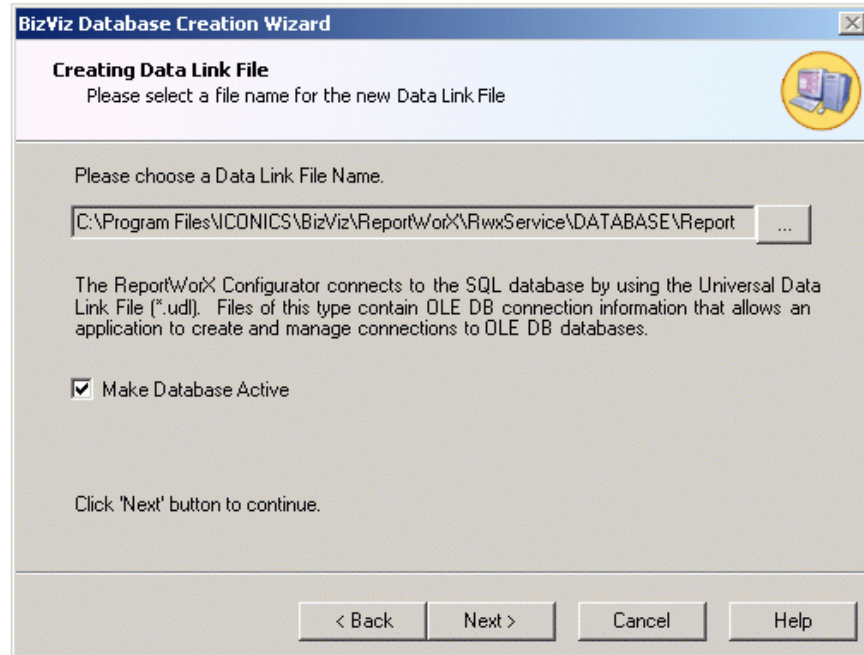


Figure 1.6-12 - Selecting a Directory and File Name for Universal Data Link (.udl) File

9. Once the Universal Data Link has been created, a summary appears, as shown in the figure below. Click the **Finish** button to complete the database creation.



Figure 1.6-13 - Completing the Database Creation

10. Once you have finished creating a new configuration database using the ReportWorX Configuration Database Wizard, the ReportWorX Configurator screen opens, as shown in the figure below. The screen consists of a split window with a tree control view in the left-hand pane and a configuration view in the right-hand pane. The name of the .udl file that you created appears in the title bar of the window. The Configurator provides a standard format for the configuration database, as well as a sample (default) ReportWorX configuration project. The Configurator also includes a toolbar and menus with many command functions.

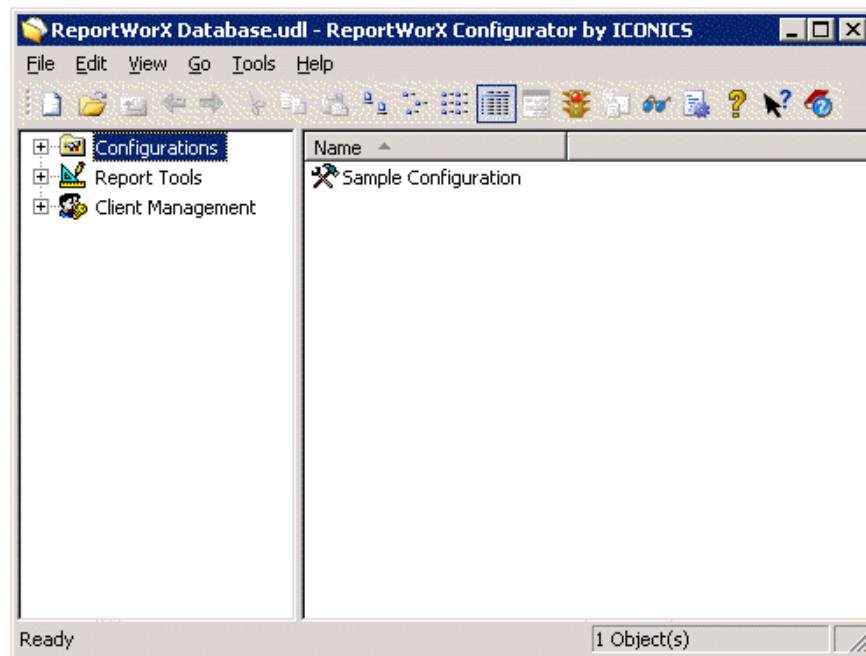


Figure 1.6-14 - ReportWorX Configurator Screen

11. Create a report template in Microsoft Excel to determine how your reports will look. The ReportWorX Configurator provides several example templates to help you get started.
12. Connect the report template to a data source.
13. Create a new report. In the folder in which the report is created, set up user access permissions for viewing, executing, and managing reports.

- 14.** Create a report redirector action (e-mail, fax, file copy, printer, or Web publishing) to define the method of report delivery to recipients.
- 15.** Create a redirector combined action group to determine the sequence of redirector actions.
- 16.** Assign a trigger (schedule) to define when a report will be executed, or specify that the report will be executed on demand.
- 17.** Activate the configuration database.
- 18.** Start the ReportWorX service.
- 19.** Execute any "on demand" reports by running them from the ReportWorX Configurator or ReportWorX Web Interface.

Note: If you would like to include Web publishing in any of your reports, you must first configure the Web Interface and Web publishing actions. Please see the ReportWorX Web Interface documentation for more information.

Lab: ReportWorX Examples Overview

1

1.1 Lab Overview

Throughout this manual, you will be asked to complete several exercises, or “labs”, in order to build your own ReportWorX reports. The labs will start very simple, but they will build upon each other such that in the end you will have an advanced set of reports. In this lab, you will see some examples of the reports you will eventually build.

1.1.1 Task Checklist

In this quick lab, you will complete the following task:

- Get an overview of the AcmeSeutical Project to be built in this class.

1.1.2 Support Files

You do not need any support file to complete this lab.

1.2 AcmeSeutical Overview



In this ReportWorX course, we will solve some reporting problems for the pharmaceutical company AcmeSeutical. This is a global manufacturer for Pain Medicine, which has production facilities all over the world as shown in Figure L1.1.

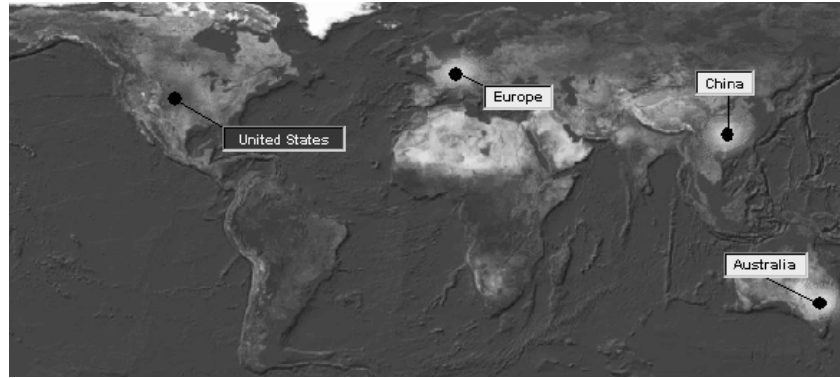


Figure L1.1 - AcmeSeutical Global Locations

The AcmeSeutical Headquarters is in Foxborough, Massachusetts in the United States. There are several AcmeSeutical factories located in the United States as shown in Figure L1.2.

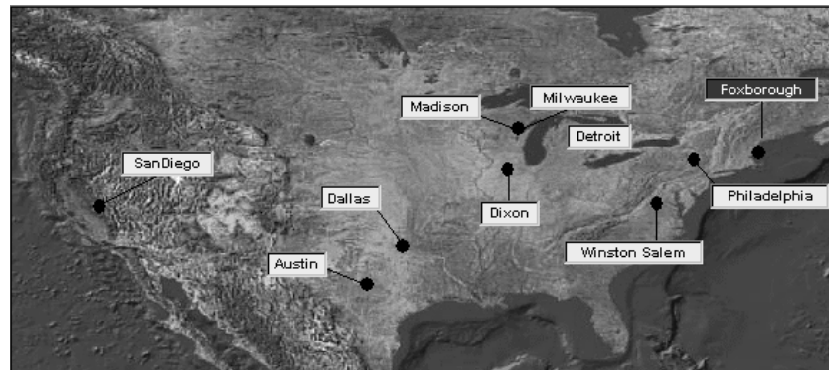


Figure L1.2 - AcmeSeutical Factories in the US

Other continents have their own regional headquarters. Europe has several factories as shown in Figure L1.3, while China and Australia have only one factory. These factories all report directly to the US headquarters.

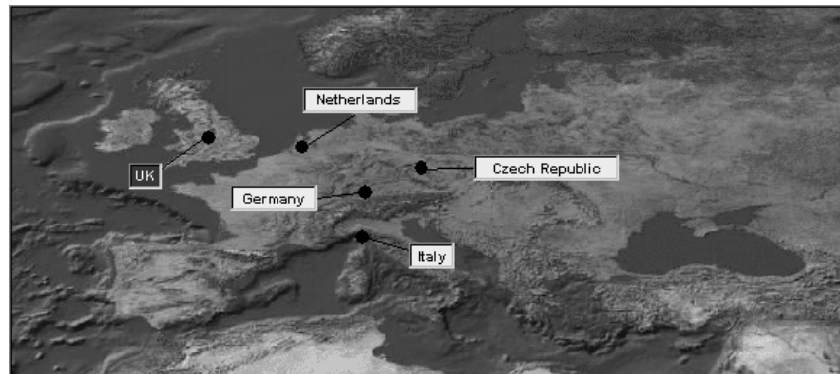


Figure L1.3 - AcmeSeutical Factories in Europe

The Acmeseutical factories have only one production line: creating pain relief pills. The recipes for these pills consist of four different chemicals. A visualization of this is shown in Figure L1.4.

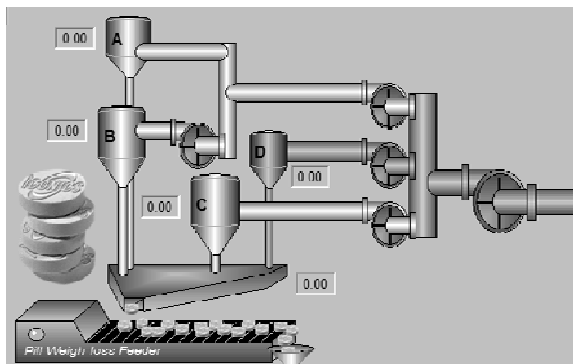


Figure L1.4 - Pill Production Visualization

The pill production line also has a bottling machine. This machine has certain settings that are specified in each pill recipe (i.e. belt speed, filling level, etc). Visualization of this process is shown in Figure L1.5.

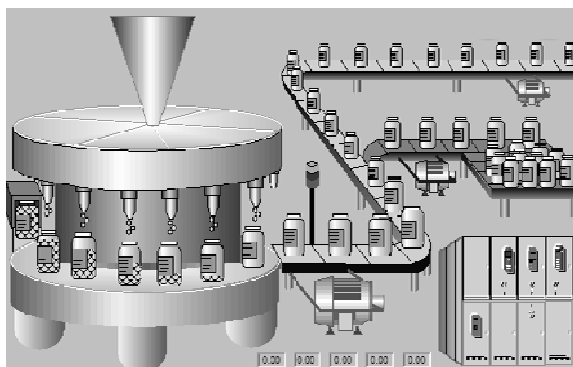


Figure L1.5 - Bottle Production Visualization

The recipes for all pill types are stored in the database of the manufacturing plant.

1.3 Project Guidelines

When finished with this project, you should have reports that look similar to those in Figure L1.6.

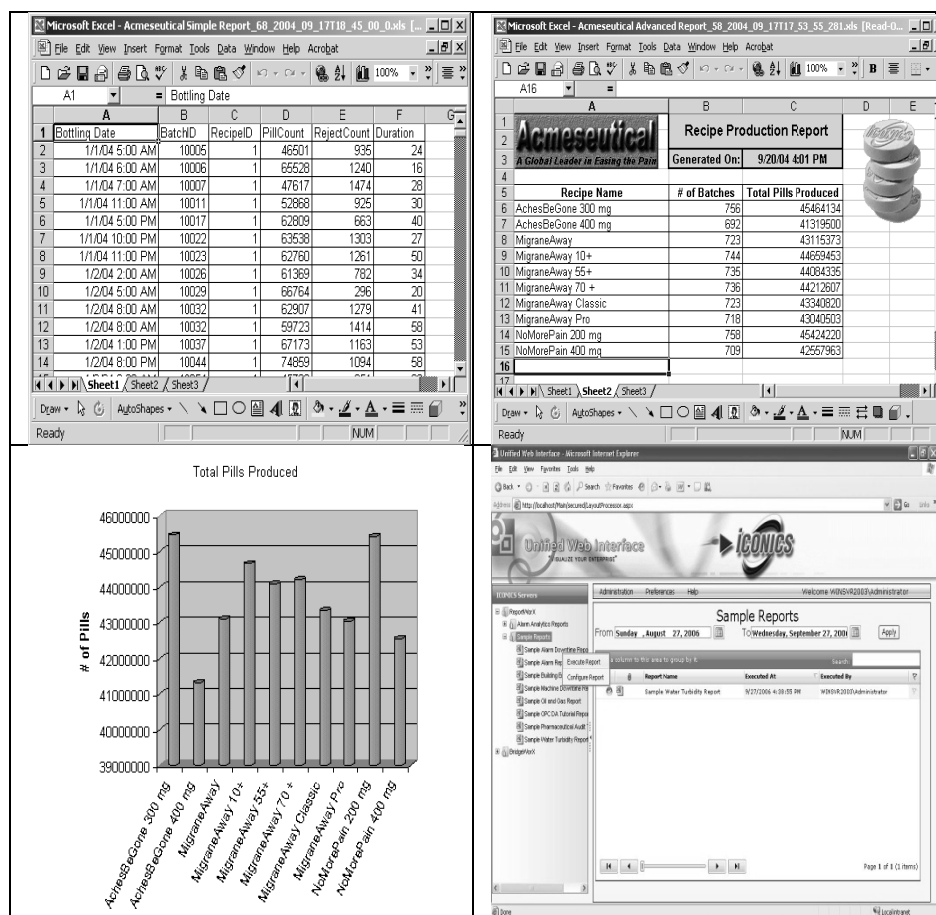


Figure L1.6 - Examples of Completed Acmeseutal Reports

Acmeseutal Headquarters has the following requests for this project:

- Pill Production reports should be generated every 20 seconds, showing current recipe and batch information with production and rejection totals.
- The Pill Production report should include detailed information, summarized information, and a bar chart showing the data.
- Bottling reports should also be generated on demand, showing the date the pills were bottled, along with recipe and batch information, and production and rejection totals.
- The Bottling reports should be copied to an external directory for browsing by the management.
- In a future phase, the reports will be e-mailed out to all of management, but Acmeseutal does not yet have the e-mail account set up for this. For now, they need an e-mail redirector action created, directed toward all of management, so they can apply it when ready.

Installing ReportWorX 2

2.1 Objectives

After completing this chapter, you should know how to:

- Set up your system for ReportWorX installation
- Install ReportWorX
- Create a ReportWorX configuration database during installation
- View licensing information using the ReportWorX License Monitor

2.2 System Requirements

This section describes the system requirements and steps for installing ReportWorX. Be sure to close all other applications before installing ReportWorX. To use this software, you must have the following *minimum* system requirements:

- **ReportWorX Lite:** 2.0 GHz processor with 1 GB RAM
- **ReportWorX Standard:** 2.5 GHz processor with 2 GB RAM
- **ReportWorX Enterprise:** 3.0 GHz processor with 4 GB RAM.

NOTE: It is recommended that your total system paging file size be set to at least four times the size of physical RAM. The above requirements assume that ONLY ReportWorX is running on the PC (with Microsoft SQL Server). If other applications will be running, then additional resources must be allocated.

- At least 100 MB of free hard disk space is required to install ReportWorX (does not include space required for prerequisite components or Microsoft .NET Framework).
- DVD Drive for installation
- Microsoft Windows XP Professional, Windows Server 2003, Windows Vista SP1, or Windows Server 2008 or Windows Server 2008 R2 with the latest service packs.

- Microsoft® Internet Information Services (IIS) 6.0 or later (requires approximately 20 MB disk space).

NOTE: If you install IIS after installing Microsoft .NET Framework, you must run the aspnet_regiis.exe file with the “-i” argument in the Microsoft.NET\Framework\v2.0.50727 directory in the Windows folder of your operating system.

- Microsoft .NET Framework Version 2.0 and 3.0 and 3.5

NOTE: If Microsoft .NET Framework is not detected on your machine during ReportWorX installation, it will be installed automatically.

- Microsoft® SQL Server® 2005 or SQL Server 2005 Express, SQL Server 2008 or SQL Server 2008 Express, SQL Server 2008 R2 or SQL Server 2008 R2 Express with latest service packs.

NOTE: If Microsoft SQL Server is not detected on your machine during ReportWorX installation, you have three options: you can cancel the installation at this point and install SQL Server locally yourself; you can allow SQL Server Express to be automatically installed from the BizViz DVD; or you can designate a remote instance of SQL Server, in which case you will not be forced to install SQL Server Express locally.

- Microsoft Excel 2003 or higher with the latest service packs.
- ICONICS ReportWorX license. For more information, see the **ReportWorX Licensing** section below. Without a valid ReportWorX license, your ReportWorX Service will only run in two-hour demo mode.

NOTE: In order to run ReportWorX, you need a ReportWorX license, which is based on the number of enabled reports and report templates. Please see the ICONICS Software Licensing documentation for information about how to authorize an ICONICS software license. You can also register for a license online at www.iconics.com/support/licenseproduct.asp.

2.3 Pre-Installation System Setup

Before installing ReportWorX, you must complete the following steps:

- Update your Windows operating system with the latest service packs.
- Update your Web browser application with the latest service packs.
- Update your Microsoft Office installation with the latest service packs.
- Update Microsoft SQL Server with the latest service packs.

2.4 ReportWorX Installation Procedure

To install ReportWorX, you should insert the product DVD and select the **ReportWorX** installation from the software selection menu. The **ReportWorX Setup** dialog box appears as shown in Figure 2.1, and you can click the **Next** button to continue.

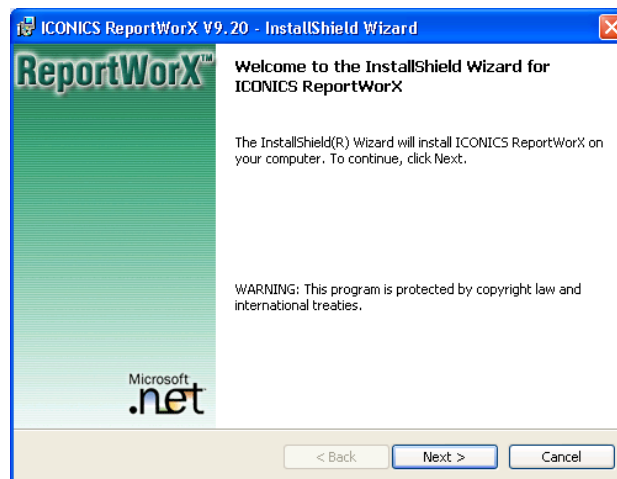


Figure 2.1 - ReportWorX Setup

NOTE: This setup procedure up will also install a PDF converter/printer driver behind the scenes.

The **License Agreement** dialog box appears, as shown in Figure 2.2. Carefully read the terms and conditions, select “I accept the terms in the license agreement,” and then click the **Next** button to continue.

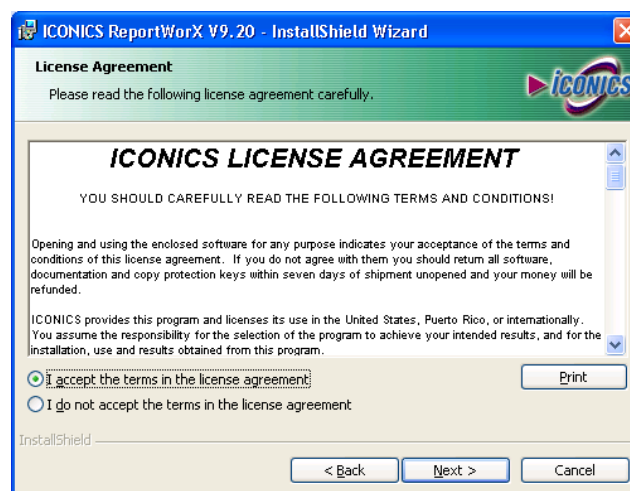


Figure 2.2 - Reviewing License Agreement

The **Customer Information** dialog box appears, as shown in Figure 2.3. Enter a **User Name** and **Organization**, and then click the **Next** button to continue.

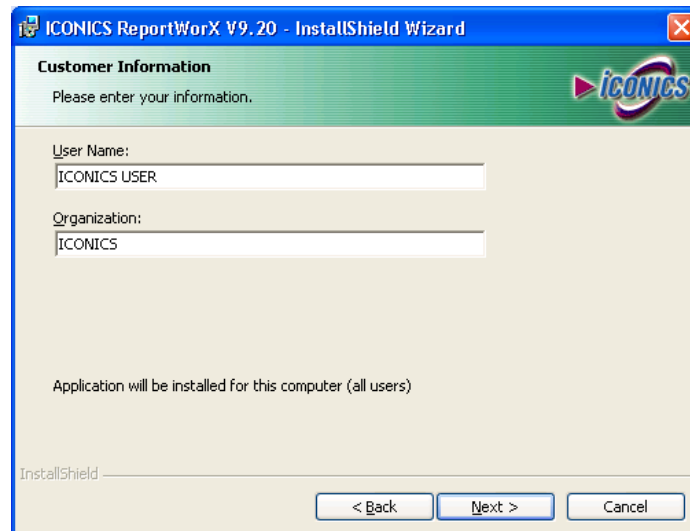


Figure 2.3 - Customer Information Dialog

The **Select Destination Folder** dialog box appears, as shown in Figure 2.4. By default, the directory for the ReportWorX installation is ".\Program Files\ICONICS\BizViz\ReportWorX." You can also click the **Browse** button to specify a different installation folder. Click the **Next** button to continue the installation.

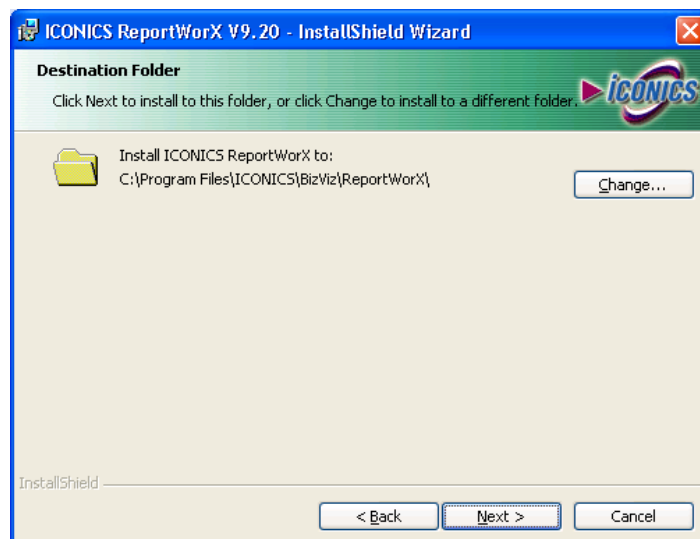


Figure 2.4 - Selecting Destination Folder

Click the **Install** button to proceed with installation, as shown in Figure 2.5.

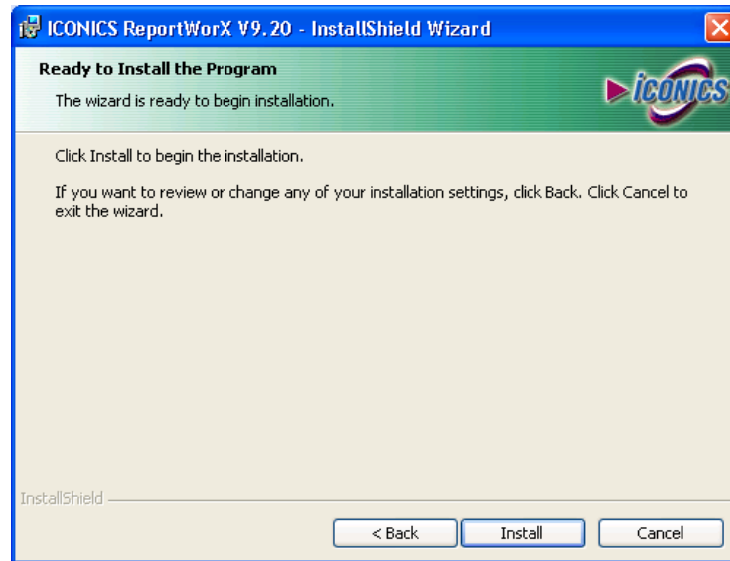


Figure 2.5 - Confirmation Installation Location

The ReportWorX Customization Wizard appears, as shown in Figure 2.6. Click the Next button to continue.



Figure 2.6 - ReportWorX Customization Wizard

The **ReportWorX User Configuration Wizard** dialog box appears, as shown in Figure 2.7. You should create a user account for managing the ReportWorX service. Ideally, this would be a local administrative account (one that's in the local **Administrators** group) on the PC where ReportWorX is running. An easier alternative is to run the ReportWorX service under the Administrator account. Enter the user name and password information for the user account. This completes the User Configuration Wizard. Click the **Next** button to continue.

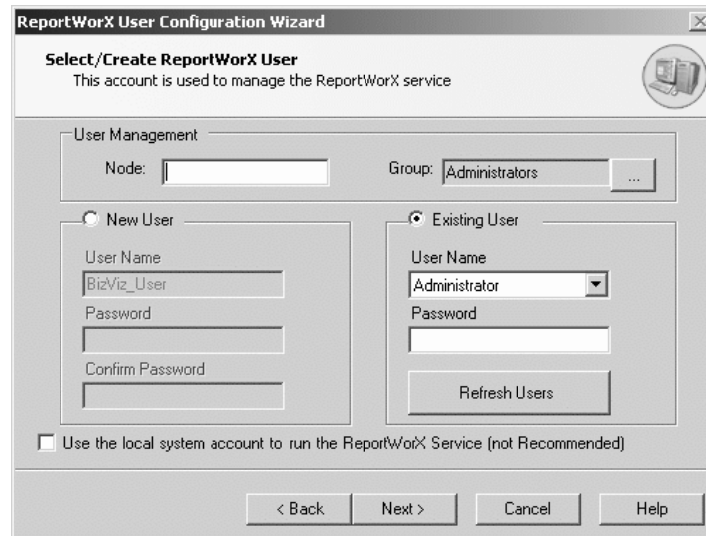


Figure 2.7 - ReportWorX User Configuration Wizard

The **Configuration Database Wizard** helps you create a new configuration database, as shown in Figure 2.8. Select whether to use the local computer or a remote computer for your SQL Server machine. Click the **Next** button to continue.

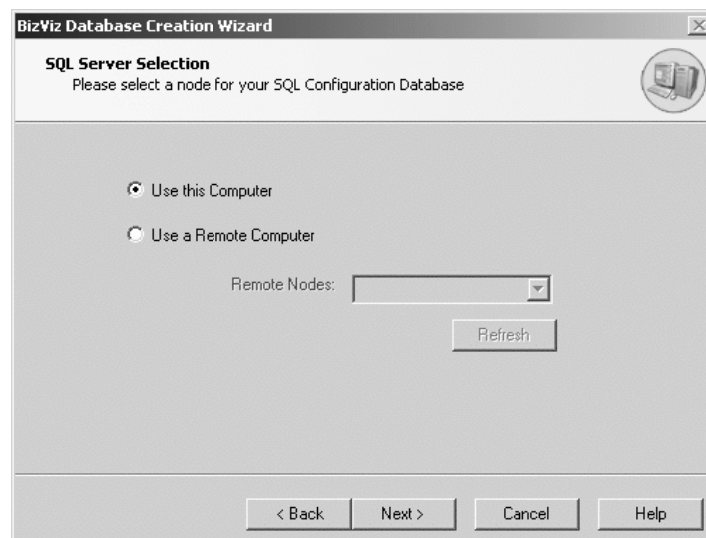


Figure 2.8 - Selecting a Database Server

Select the proper authentication mode to log into your SQL Server as shown in Figure 2.9. If you are connecting to a remote SQL Server, you should connect using a specific database username and password. Click the **Next** button to continue.

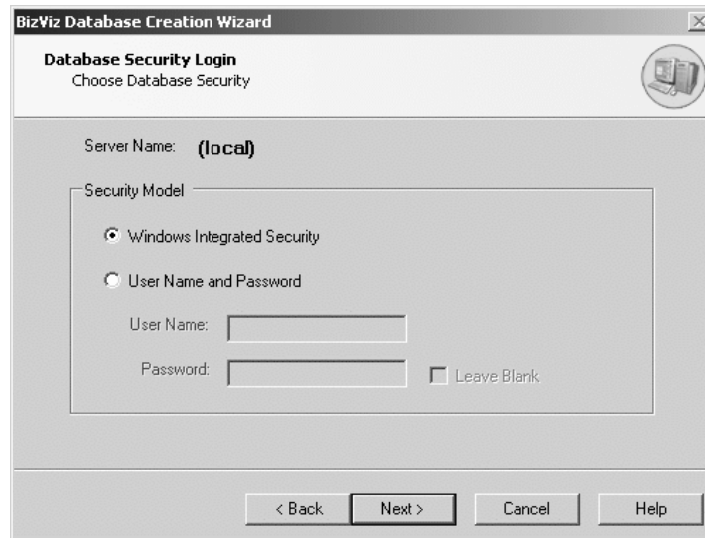


Figure 2.9 - Logging into SQL Server

You have two options for creating your new database, as shown in Figure 2.10. You can either create a new Microsoft SQL Server database, or you can add the ReportWorX configuration database structure to an existing Microsoft SQL Server database. There is also an option to include or exclude the ReportWorX samples in the configuration database. Here we will assume that you will choose the first option (to create a new database). Select **I want to create a new MS SQL Server database**, and then click the **Next** button to continue.

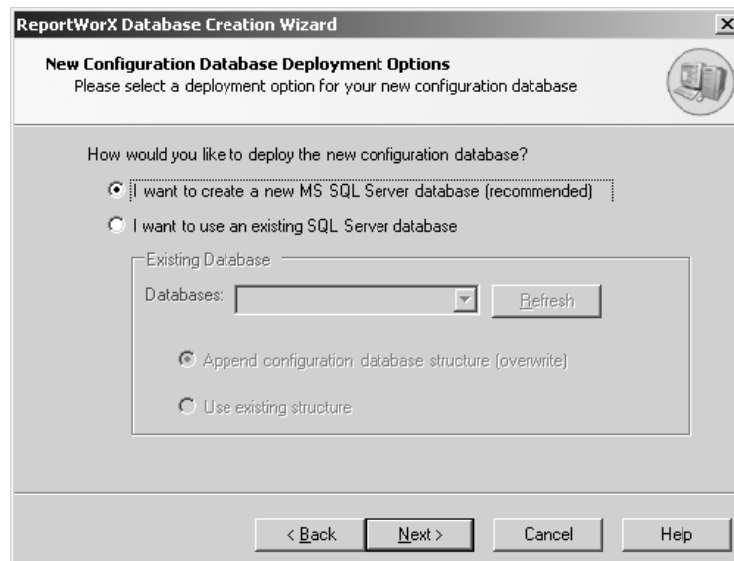


Figure 2.10 - Creating a New Microsoft SQL Server Database

Choose the settings for the SQL Server database parameters, as shown in Figure 2.11. The default options should be adequate for most applications with a small to medium size load. In the **SQL Server** field, select the SQL Server on which to

create a new database. Type a name for the database in the **Database Name** field. In the **Database Path** field, choose a directory path for the new database. You can browse for a directory by clicking the ... button to the right of this field. Or you can use the default database file path and size.

NOTE: Usually you have only one instance of SQL Server running on the local node. In this case, the **SQL Server** field has only one option: "(local)". However, it is possible to run multiple SQL Server instances on the local node, in which case, the **SQL Server** field lists all those SQL Server instances: "(local)" for the default instance and "node_name\instance_name" for all others. Again, all those are local SQL Servers.

Under the **Database File Properties** section, specify an initial size for the database, which should be as large as possible. You can also specify a **Database Growth** option: in megabytes or as a percentage of the total size. SQL Servers are capable of increasing the database size on the fly to store more data. However, if this operation occurs frequently, the overall system performance may decrease. Choosing an initially large database size and a corresponding database growth option can drastically improve system performance. To shrink the size of the new database, check the **Auto Shrink** check box. Under the **Log File Properties** section, you can also modify the settings for the database transaction log file. Specify a **Log File Growth** option in megabytes or as a percentage of the total size. Again, a sufficient initial size setting can greatly improve performance. Click the **Next** button to create the new SQL Server database.

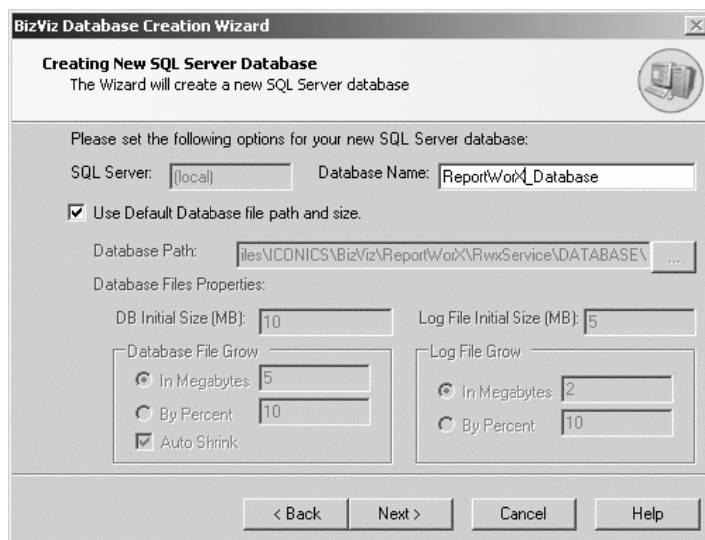


Figure 2.11 - Database Settings

The Wizard creates the new SQL Server database, as shown in Figure 2.12. When it is finished, it will tell you whether or not the operation has completed successfully. Click the **Next** button to continue.

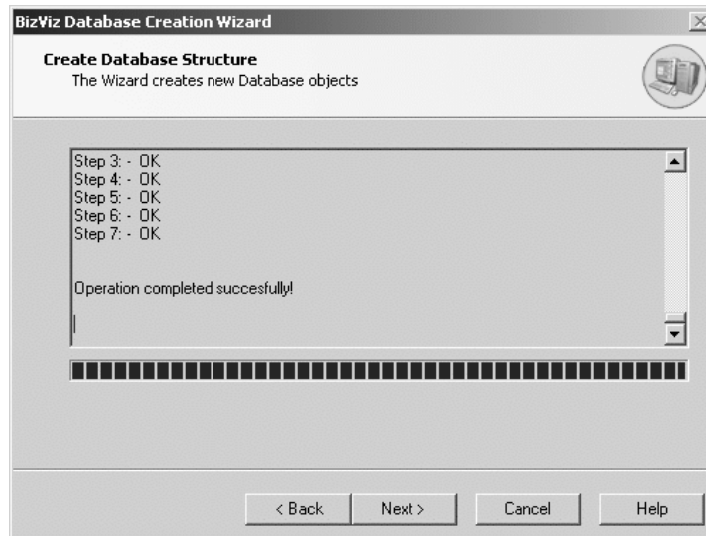


Figure 2.12 - Status of Database Creation

The ReportWorX Configurator uses Universal Data Link (.udl) files to connect to the Microsoft SQL Server database. These .udl files contain OLE database connection information that allows the Configurator to create and manage connections to OLE databases. Enter a name and directory path for the new .udl file in the **Data Link File Name** field, as shown in Figure 2.13. You can browse for a directory by clicking the ... button to the right of this field. Click the **Next** button to continue. If you want this new database to be the active configuration database, check **Make Database Active**.

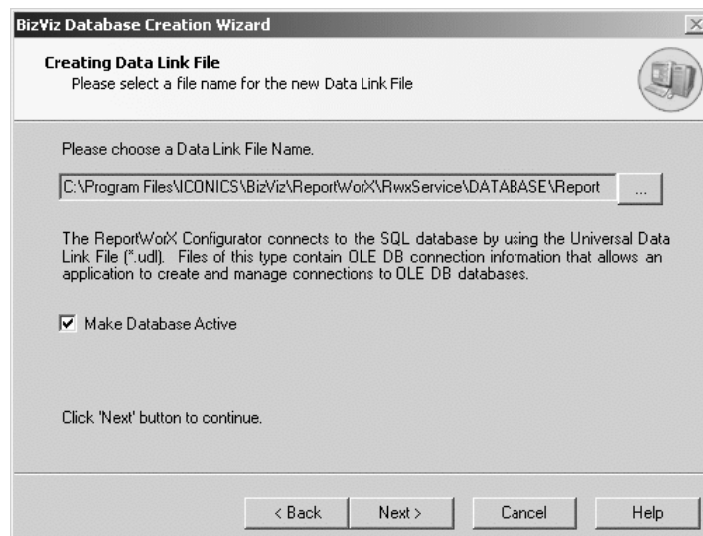


Figure 2.13 - Location for the UDL File

Once the Universal Data Link has been created, a summary appears, as shown in Figure 2.14. Click the **Finish** button to complete the database creation.



Figure 2.14 - Completing the Database Creation

When the installation has finished, click the **Close** button as shown in Figure 2.15. Then restart your computer.

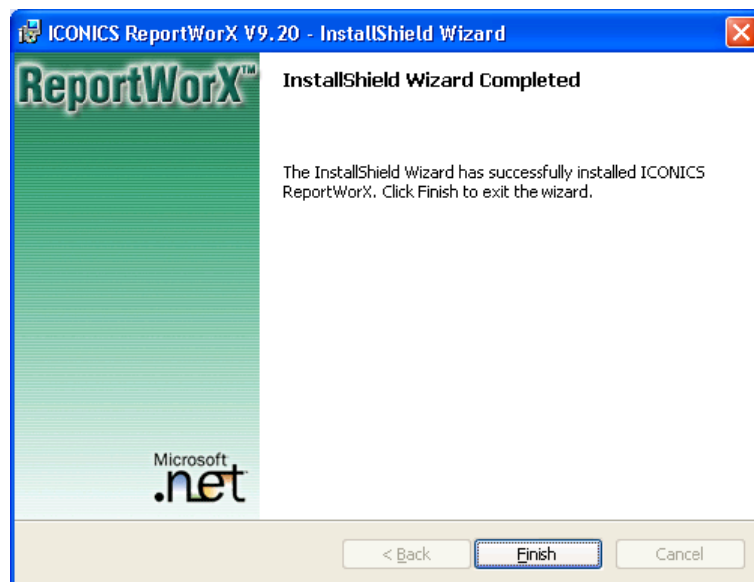


Figure 2.15 - ReportWorX Installation Completed

2.5 ReportWorX Licensing

In order to run ReportWorX, you need a valid ReportWorX license, which is based on the number of enabled reports and report templates.

ReportWorX is available in several different sizes to fit your needs, as shown in Table 2.1. You can also run ReportWorX in demo mode for up to two hours without an authorized license.

Table 2.1 - ReportWorX Licensing Schema

Version	Unified Web Interface	Number of Enabled Reports	Number of Templates
Enterprise	Yes	Unlimited	Unlimited
Standard	Yes	15	100
Lite	No	5	25
2hr Demo	Yes	5	25

Please see the ICONICS Software Licensing documentation for information about how to authorize an ICONICS software license. You can also register for a license online at www.iconics.com/support/licenseproduct.asp.

To view your ReportWorX license in the ReportWorX Configurator, you can select **Options** from the **Tools** menu in the ReportWorX configurator, as shown in Figure 2.16.

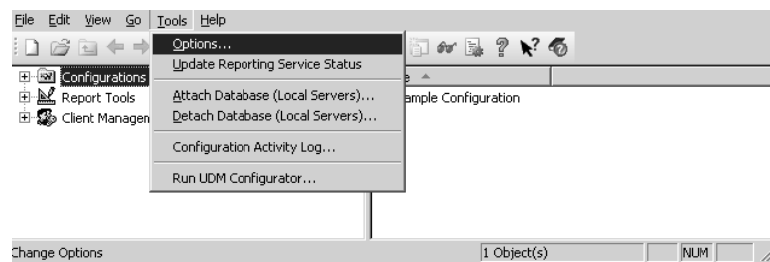


Figure 2.16 - ReportWorX License in the Report Configurator

The **License Monitor** tab of the **Options** dialog box, shown in Figure 2.17, displays the following information about your ReportWorX license:

- **Current License Mode:** Displays the license type (e.g. Demo, Lite, Standard, Enterprise, etc.).
- **Number of Enabled Reports:** Shows the number of enabled reports in the active report configuration that are currently being used, as well as the maximum number of active reports that your ReportWorX license allows.

Only one report configuration can be active, but there can be many enabled reports in the configuration.

- **Number of Templates:** Shows the number of report templates in the ReportWorX configuration database, as well as the maximum number of templates that your ReportWorX license allows.

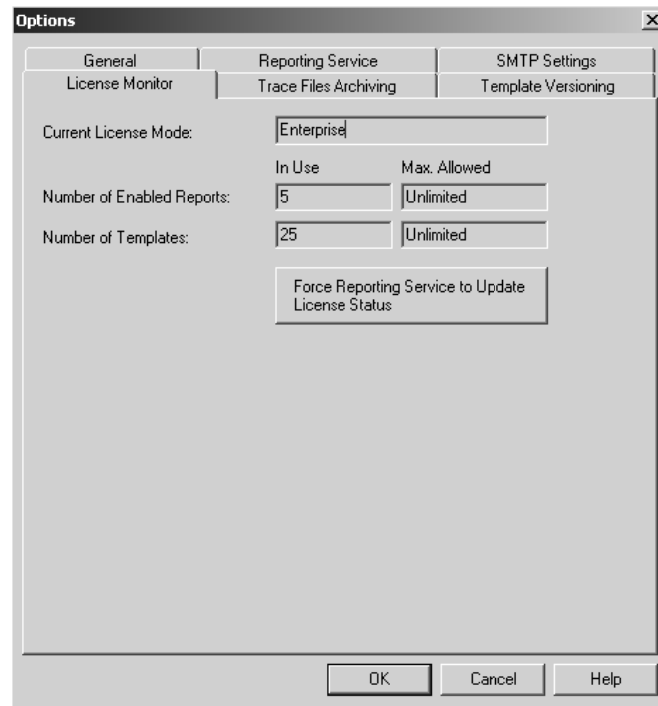


Figure 2.17 - Options Dialog: License Monitor Tab

Lab: Attaching the Database

2

2.1 Lab Overview

In this lab, we will begin building reports. Your reports will mine data from a sample SQL Server production database. The first step will be to attach this database to your local SQL Server.

2.1.1 Task Checklist

In this quick lab, you will complete the following task:

- Attach the sample database for the AcmeSeutical Project.

2.1.2 Support Files

To complete this quick lab, you will need the following support files:

- AcmeSeutical_Data.MDF
- AcmeSeutical_Log.LDF

2.2 Attaching the Database

This AcmeSeutical example already has a SQL Server database with production information in it. In order to use this existing database and make it available for reports, we must attach it to our local SQL Server. This will need to be done any time you move a database from one SQL Server to another. Your instructor will provide you with the database if it is not already installed on your machine.

If you have SQL Server 2005 installed on your system, you can use the SQL Server Management Studio to attach the database. If you have other versions of the SQL Server, you may use the appropriate management tool of your choosing.

SQL provides a free management tool called the SQL Server Management Studio Express. In this lab, we will assume that you have SQL Server 2005 installed and will be using the SQL Server Management Studio that comes with this server.

To attach an existing SQL Server database to your local SQL Server using the SQL Server Management Studio:

1. Open the SQL Server Management Studio from Start → Programs → Microsoft SQL Server 2005 → SQL Server Management Studio
2. In the Connect to Server dialog that comes up, fill in the appropriate server information and click on the Connect button. Your connection string may be similar to the one show in Figure L2.1.

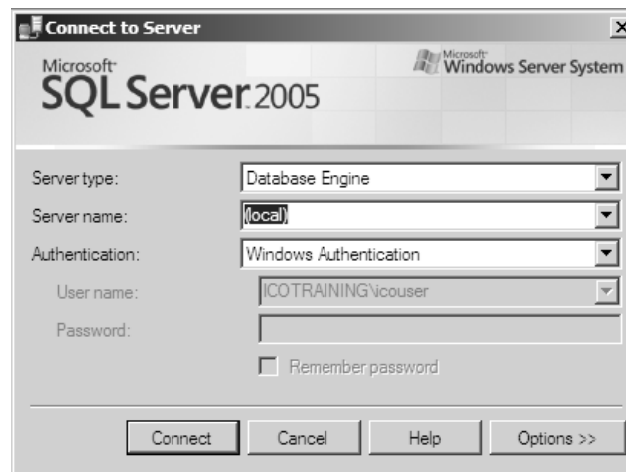


Figure L2.1 - SQL Server 2005 Connection Dialog

3. Once you have successfully connected to your database server, your management studio should look similar to Figure L2.2.

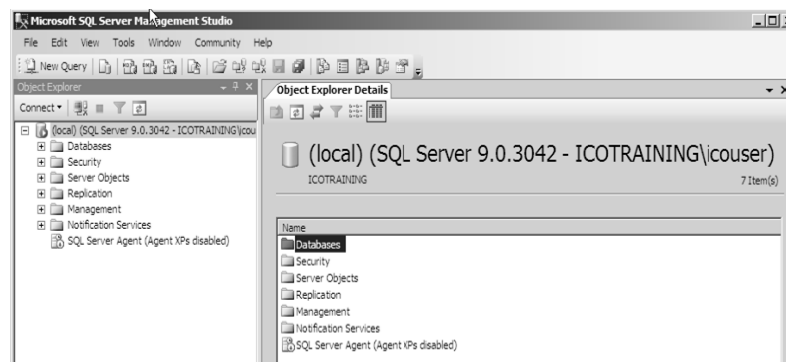


Figure L2.2 - Microsoft SQL Server Management Studio

4. In the tree-control on the left-hand side, right-click on Databases and select **Attach...** to add the AcmeSeutical database to the SQL Server as shown in Figure L2.3.

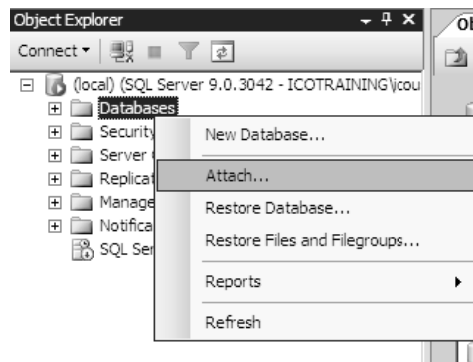


Figure L2.3 - Attaching the Database

5. The Attach Databases dialog will appear. Click on the Add button and browse to the path where the AcmeSeutical_Data.MDF is located (it's generally in \Program Files\ICONICS\GENESIS32\Examples\BizViz – Training\AcmeSeutical_Data).
6. Figure L2.4 shows the database details. You should see both the AcmeSeutical_Data.MDF and the AcmeSeutical_Log.LDF. Click on the OK button to finish the database attachment process.

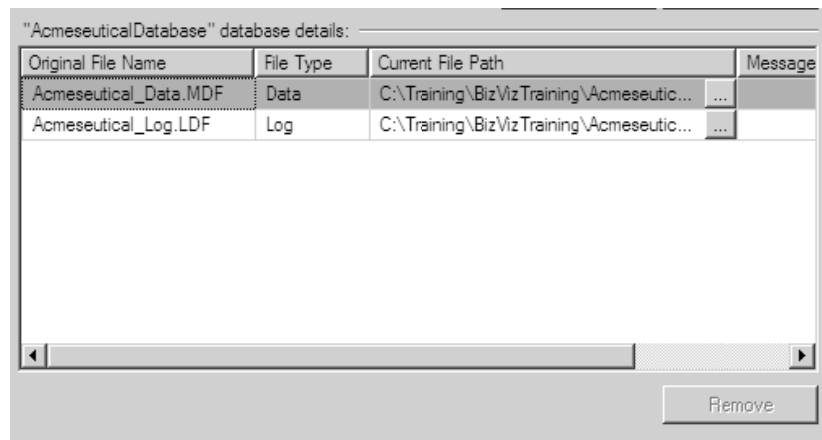


Figure L2.4 - Attaching the MDF File

7. When the dialog disappears, and you are back in the SQL Server Management Studio, expand Databases on the tree-control on the left-hand side, and you should now see AcmeSeuticalDatabase in the list as shown in Figure L2.5.

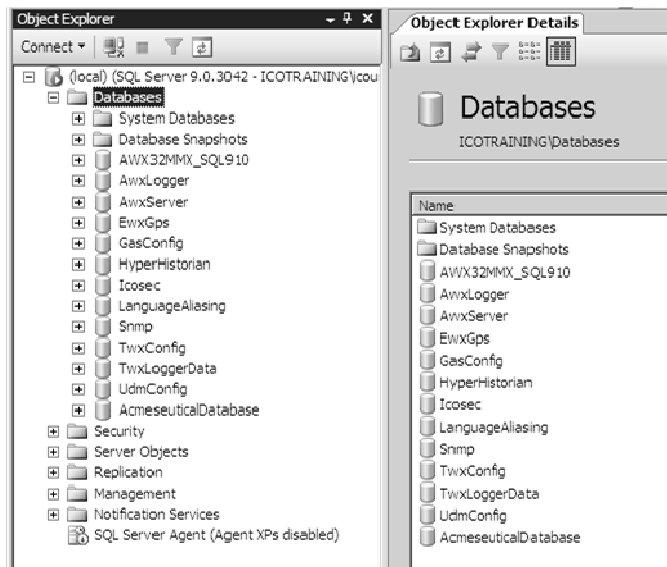


Figure L2.5 - AcmeSeuticalDatabase Successfully Attached

8. Now your database is ready to be data-mined using ReportWorX. If you would like to view the contents of your AcmeSeuticalDatabase, simply double-click on it. Then click on **Tables**, and you should see the tables contained in AcmeSeuticalDatabase, as shown in Figure L2.6.

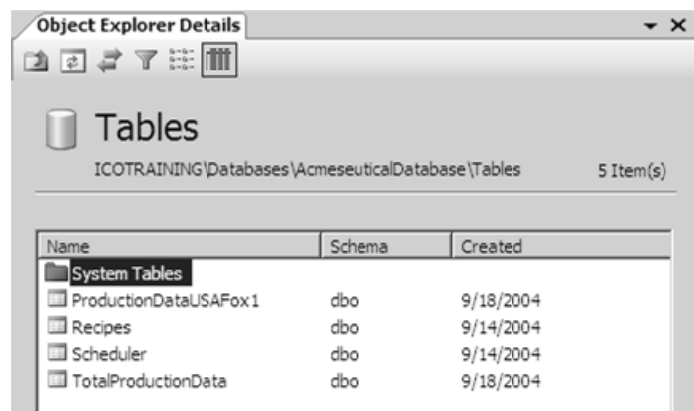


Figure L2.6 - AcmeSeuticalDatabase Tables

9. To view the data in a table, you can select the table and then right-click on it and select Open Table.

This completes Lab 2. You have attached the sample database for the AcmeSeutical project. The next chapter will introduce you to the report configuration

ReportWorX Configurator

3

3.1 Objectives

After completing this chapter, you should know how to:

- Start the ReportWorX Configurator
- Create a ReportWorX configuration database using the ReportWorX Configurator

3.2 Introduction to Report Configuration

The ReportWorX Configurator is the interface that allows you to configure how information and data are displayed in your reports. These settings are configured in the tree control of the Configurator, shown in Figure 3.1, which provides several different configuration tools that help you set the parameters for your reports. To help guide you through the creation of reports, the Configurator applies default settings and samples to each new database that you create.

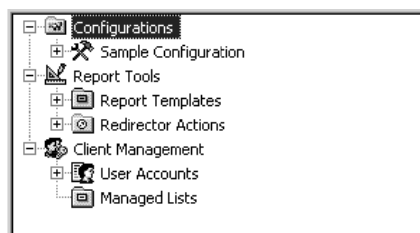


Figure 3.1 - Tree Control of the ReportWorX Configurator

The tree control (left-hand pane) of the Configurator organizes the database configuration into the following general items:

- **Report Configurations:** Sets the parameters for different types of reports.
- **Report Tools:** Configures report templates and redirector tasks (including e-mail, fax, PDF, printer, and Web publishing).
- **Client Management:** Registers user accounts and defines managed lists.

3.3 Creating a New Configuration Database

Similar to many ICONICS configurations, the ReportWorX configurator utilizes a database to store and retrieve information on the reports that you have configured. The installation automatically creates a default configuration database for you, but you can always create a new one specifically for a project.

NOTE: The lab following this chapter will outline the steps necessary to create a new Configuration Database for the ReportWorX Configurator. For more information on this topic refer to the ReportWorX Configurator help documentation.

Keeping consistency with all of the BizViz Suite applications, the configuration database must be of SQL Server type. It may be created and maintained with any of the compatible SQL installations as described in Chapter 2. The ReportWorX Configurator uses Universal Data Link (.udl) files to connect to the Microsoft SQL Server database. These .udl files contain OLE database connection information that allows the Configurator to create and manage connections to OLE databases.

3.4 Starting the ReportWorX Configurator

Once you have finished creating a new configuration database using the ReportWorX Configuration Database Wizard, the ReportWorX Configurator screen opens, as shown in Figure 3.2. The screen consists of a split window with a tree control view in the left-hand pane and a configuration view in the right-hand pane. The name of the .udl file that you created appears in the title bar of the window. The Configurator provides a standard format for the configuration database, as well as a sample (default) ReportWorX configuration project. The Configurator also includes a toolbar and menus with many command functions.

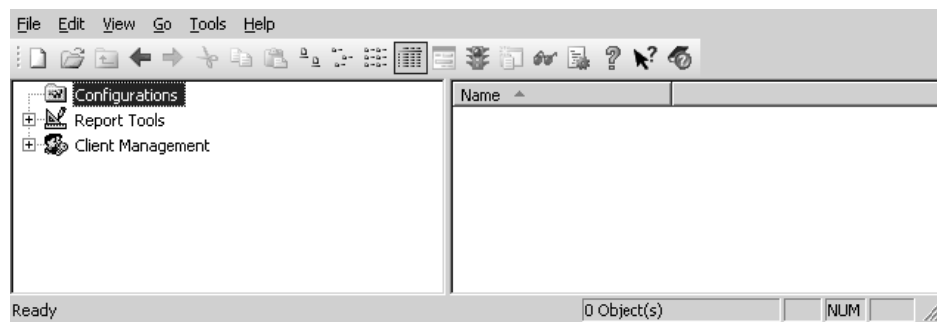


Figure 3.2 - ReportWorX Configurator Screen

Lab: Creating a New Report

3

3.1 Lab Overview

In this lab, you will create a ReportWorX configuration database to be used as a building block for all of the exercises that will follow. Although a configuration database is created during installation, we will create one specifically for this project.

3.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Open the ReportWorX Configurator
- Create a new configuration database

3.1.2 Support Files

You do not need any support file to complete this lab.

3.2 Creating the Training Configuration Database

1. Start the ReportWorX Configurator by clicking on **Start → Programs → ICONICS BizViz → ReportWorX → ReportWorX Configurator**.
2. Click on **File → New Configuration Database**.
3. The Configuration Database Wizard will appear, as shown in Figure L3.1.



Figure L3.1 - Configuration Database Wizard

4. Click **Next** to begin the wizard.
5. Leave **Use this Computer** selected to create the SQL Server Configuration Database locally as shown in Figure L3.2. Click **Next** to continue.

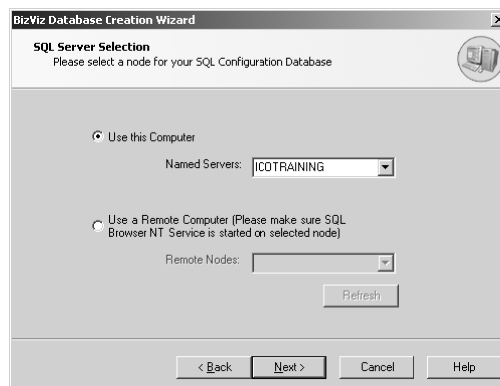


Figure L3.2 - SQL Server Selection

6. Since we are connecting to the local SQL Server, we can use **Windows Integrated Security** as shown in Figure L3.3. Click **Next** to continue.



Figure L3.3 - Database Security Login

7. Leave the settings in the next dialog as default, as shown in Figure L3.4, to create a new database in which to hold the configuration, rather than append the information to an existing database. We also want to include the samples in the configuration database. Click **Next** to continue.

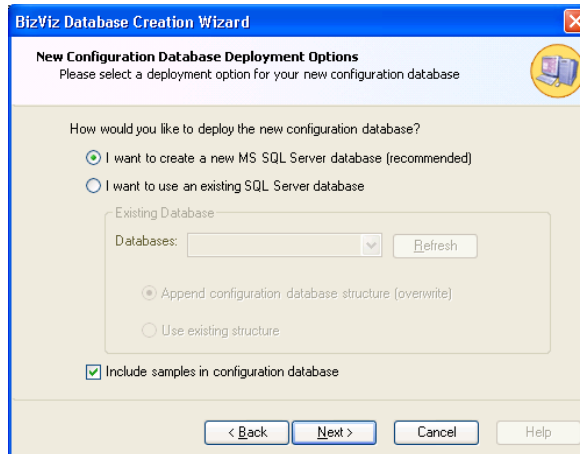


Figure L3.4 - Configuring Database Deployment Options

8. Name the database **ReportWorX_Training** and leave all other options default as shown in Figure L3.5, as they are the ideal settings for most configuration databases. Click **Next** to create the database.

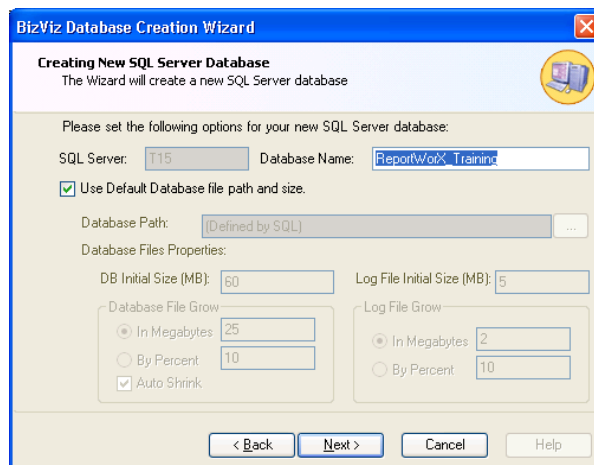


Figure L3.5 - New Database Settings

9. The next dialog as shown in Figure L3.6 will show the steps being executed while creating the new database, as all the predefined examples and structures are added to the new database. When the steps are finished, you should be informed that the operation was successful. Click **Next** to continue.

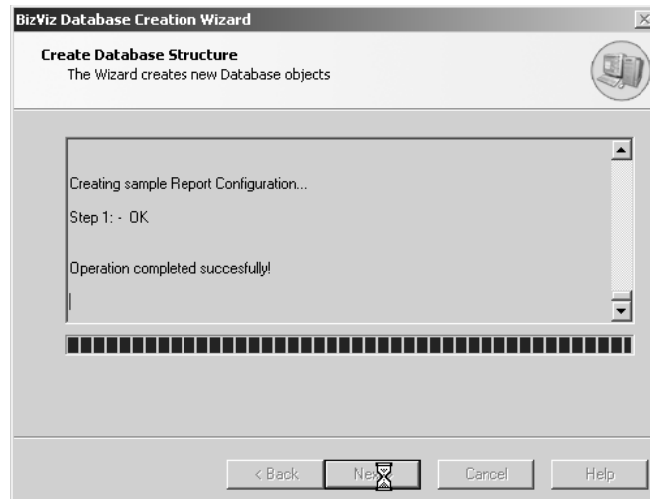


Figure L3.6 - Database Creation Status

10. Finally, accept the default name and location for the .udl file to be used, and make this the **Active** configuration database by checking the **Make Database Active** option as shown in Figure L3.7. Click **Next** to continue.

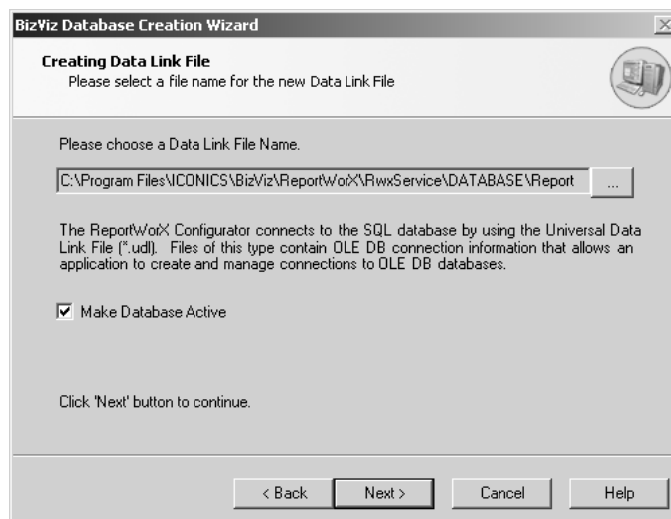


Figure L3.7 - Creating the .udl File

11. Click **Finish** to close the wizard after viewing the report.
12. Your ReportWorX Configurator should now look like Figure L3.8.

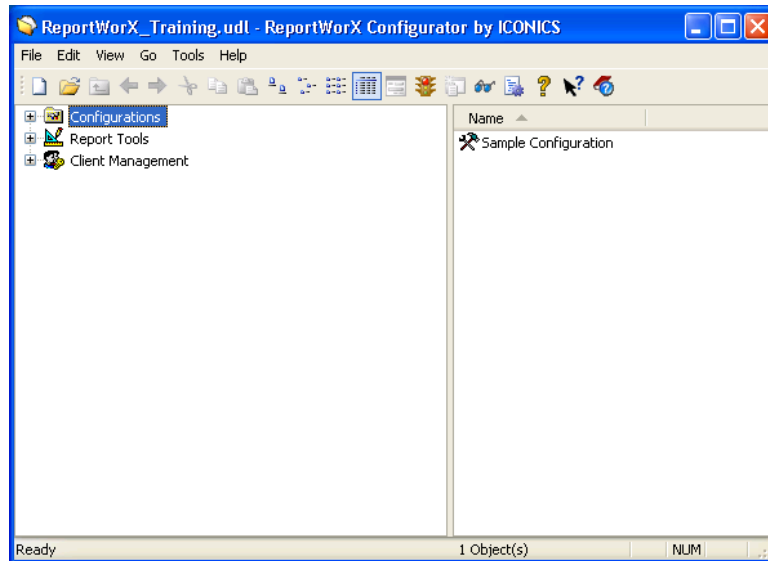


Figure L3.8 - The New ReportWorX Configuration

13. Now, create a new Report Configuration by right-clicking on “Configurations” in the left navigation tree pane and selecting New → Report Configuration. Name this new configuration as **AcmeSeutical Reports**, and then click **Set As Active Configuration**.
14. Next, right-click on the newly created AcmeSeutical Reports configuration listing in the navigation tree, and select New → Report Folder. Name the folder as **AcmeSeutical Folder**, and then click **APPLY**.
15. Right-click on the new AcmeSeutical Folder, and select New → Report. Name the report as **AcmeSeutical Report**.
16. Be sure to enable this report by checking the Enabled checkbox ☒ Enabled to the right of the Report Name field.
17. From the **Report Template** drop-down menu, be sure to select a template such as **Alarm Analytics.Alarm Distribution by Interval**. We will create an actual template in a later lab.
18. Finally, click on **APPLY** to save your new Report.

This completes Lab 3. We created a report configuration. The next chapter will introduce you to report triggers.

Report Scheduling and Triggers 4

4.1 Objectives

After completing this chapter, you should know how to:

- Distinguish between the different types of report triggers
- Create a report trigger using the Unified Data Manager

4.2 Creating a New Report Trigger

You can configure triggers to execute your report based on a time or event. Once you have triggers configured, you can associate them to your reports. This can be done from the Advanced Mode of the report properties. Once you are in advanced mode, you can add triggers by using the **Add** button found in the **Report Scheduling** tab as shown in Figure 4.1.

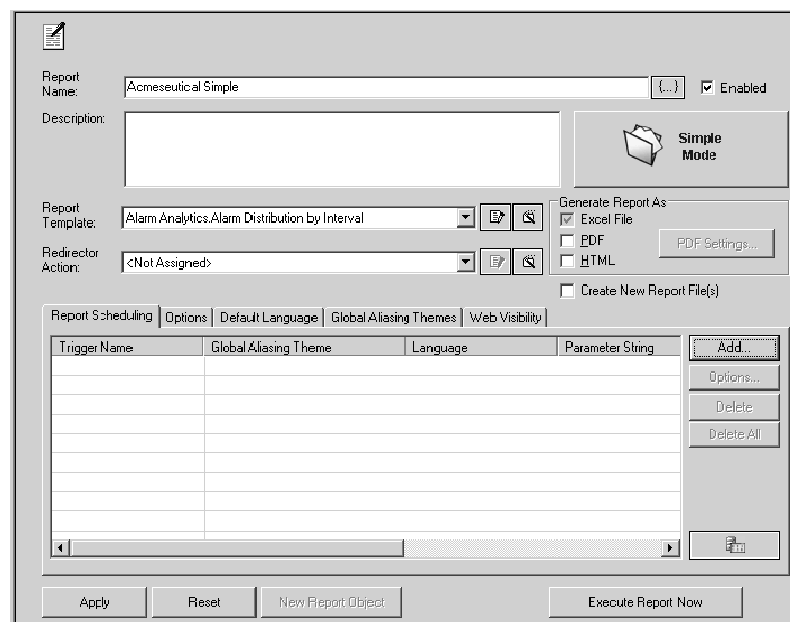


Figure 4.1 - Advanced Mode of the Report

The triggers that ReportWorX uses reside in a centralized location, namely, the Unified Data Manager (UDM). In this way, multiple ICONICS applications can use the same trigger. You can get to the UDM by click on the “Run UDM Configurator”  button located to the lower-right corner of the Report Scheduling tab.

4.2.1 Triggers in the Unified Data Manager

The **EventTriggers** tree control of the Unified Data Manager (UDM), shown in Figure 4.2, contains the triggers that ReportWorX can use. When you assign a trigger to a report, it will determine when (or on what condition) reports will be executed. Reports are executed based on one or more of the following types of triggers:

- Event Groups
- Event Switches
- Data/Time Triggers
- Data Triggers
- Alarm Triggers
- File Triggers
- NT Event Triggers
- Database Triggers

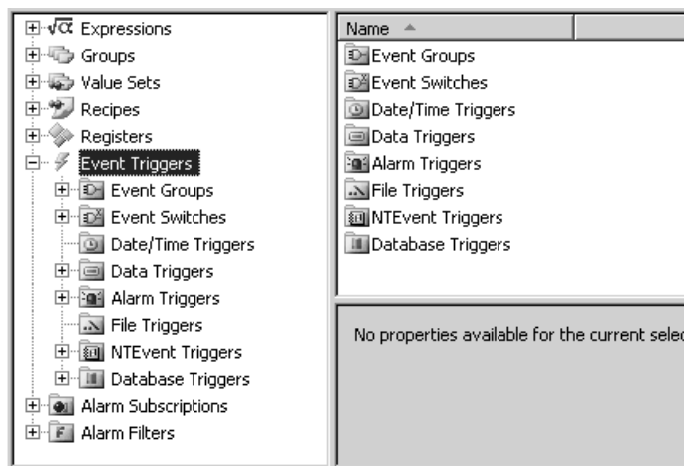


Figure 4.2 - Triggers in the Unified Data Manager

In the next few sections, we will describe some of the most often used triggers. For more information about triggers or the UDM, refer to the UDM help documentation or the UDM application notes.

4.2.1.1 Date/Time Triggers

A Date/Time trigger executes an event periodically according to a specified recurrence pattern (i.e. daily, weekly, monthly, or yearly). The settings for a time trigger are in the **Time Trigger Options** tab as shown in Figure 4.3.

The screenshot shows a dialog box titled 'Time Trigger Options' with a sub-tab 'Related Values'. The 'Name' field is 'NewTimeTrigger'. The 'Description' field is empty. The 'Recurrence Pattern' section has radio buttons for 'Daily', 'Weekly', 'Monthly', and 'Yearly'. The 'Daily' option is selected, and the 'Recur every' field is set to '1' with a unit of 'Days'. A note below states '(Start time will specify exact second/minute within minute/hour interval)'. The 'Recurrence Conditions' section has a checkbox 'Enable on Tag' which is unchecked. Below it is an 'Enable Tag' field with a dropdown arrow. The 'Start Date' is '6/30/2008' and the 'Start Time' is '12:00:00 AM'. At the bottom are 'Apply', 'Reset', and 'Add New' buttons.

Figure 4.3 - Day/Time Trigger Options

In the Time Trigger Options tab, you can configure the following settings:

- **Name:** Enter a name for the time trigger.
- **Description:** Enter a description for the time trigger (optional)
- **Start Date/Time:** Specifies a start date and a start time for trigger execution. Click the down arrow to select a date from the calendar.
- **Recurrence Pattern:** Specifies the frequency of the periodic event execution (daily, weekly, monthly, or yearly).
- **Enable on Tag:** Checking this box links the activation of the date/time trigger to a specific OPC tag. Enter the tag name in the **Enable Tag** field.
- **Enable Tag:** Specify a tag on which to enable the date/time trigger. Clicking the ... button allows you to select a tag from the Unified Data Browser. The trigger will be disabled if **Enable Tag** has a value of 0, FALSE, or Bad Quality.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.
- **Add New:** Creates a new date/time trigger item.

In the **Related Values** tab, as shown in Figure 4.4, you can associate different OPC tags to be read when the Date/Time Trigger executes.

- **Add Tag:** Add a new tag to the related values.
- **Add Value:** Add a new value to the related values.
- **Remove:** Remove a tag or Value from the related values.
- **Edit:** Change a selected tag or Value.

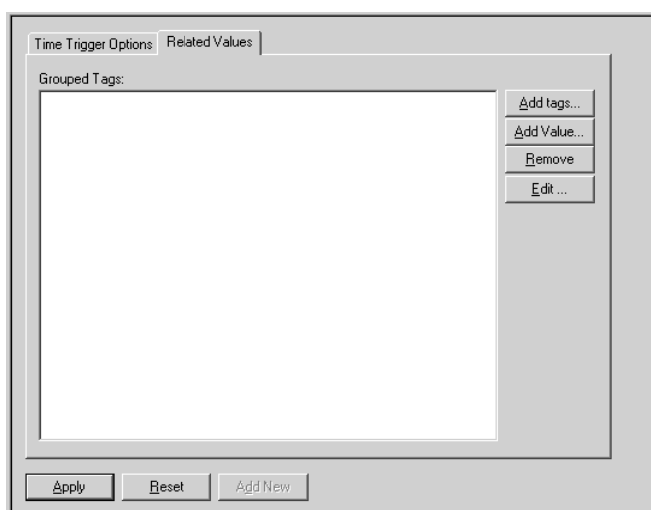


Figure 4.4 - Date/Time Trigger Related Values

4.2.1.2 Recurrence Patterns

As you can see from Figure 4.3, there are a few different recurrence patterns available for the date/time trigger. Depending on the recurrence pattern that you choose, you will have different options. We will describe each of the recurrence patterns here.

- **Daily Recurrence Pattern:** The daily recurrence pattern allows you to set up a time block for a daily recurring period for event execution. Specify a start date and start time for trigger execution, and then specify the frequency of daily execution every weekday or every x number of days.
- **Weekly Recurrence Pattern:** The weekly recurrence pattern allows you to set up a time block for a weekly recurring period for event execution. Specify a start date and start time for trigger execution, and then check the day on which you want to execute the event.
- **Monthly Recurrence Pattern:** The monthly recurrence pattern allows you to set up a time block for a monthly recurring period for event execution. Specify a start date and start time for trigger execution, and then specify the frequency of monthly execution (i.e. which day of each month).

- **Yearly Recurrence Pattern:** The yearly recurrence pattern allows you to set up a time block for a yearly recurring period for event execution. Specify a start date and start time for trigger execution, and then specify the frequency of the yearly execution (i.e. which day of a certain month to execute in the year).

4.2.1.3 Data Triggers

A **Data Trigger** executes an event when an OPC tag's value changes. Depending on the setup, you can fire the trigger on all data change, or only when the data changes to true or false. In the **Data Trigger Properties** tab, as shown in Figure 4.5, you can configure the following settings:

- **Name:** Enter a name for the time trigger.
- **Description:** Enter a description for the time trigger (optional)
- **Enable on Tag:** Checking this box links the activation of the data trigger to a specific OPC tag. Enter the tag name in the **Enable Tag** field.
- **Enable Tag:** Specify a tag on which to enable the data trigger. Clicking the ... button allows you to select a tag from the Unified Data Browser. The trigger will be disabled if **Enable Tag** has a value of 0, FALSE, or Bad Quality.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.
- **Add New:** Creates a new event switch item for you to configure.

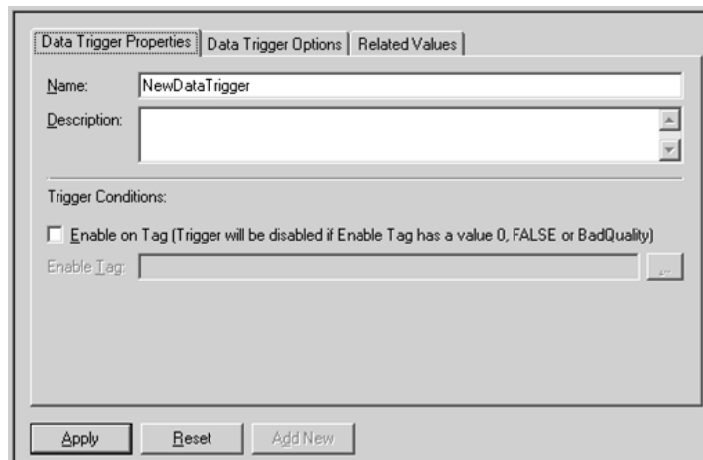


Figure 4.5 - Data Trigger Properties

In the Data Trigger Options tab, as shown in Figure 4.6, you can configure the condition to fire the data trigger and the data tag to monitor.

- **Execute Condition:** The trigger executes an event on any data tag change, or when the data tag changes to TRUE (1) or FALSE (0).

- **Data Tag:** You can either type a data tag directly into this field, or you can click the ... button to the right of this field to open the Unified Data Browser, where you can select a data tag.

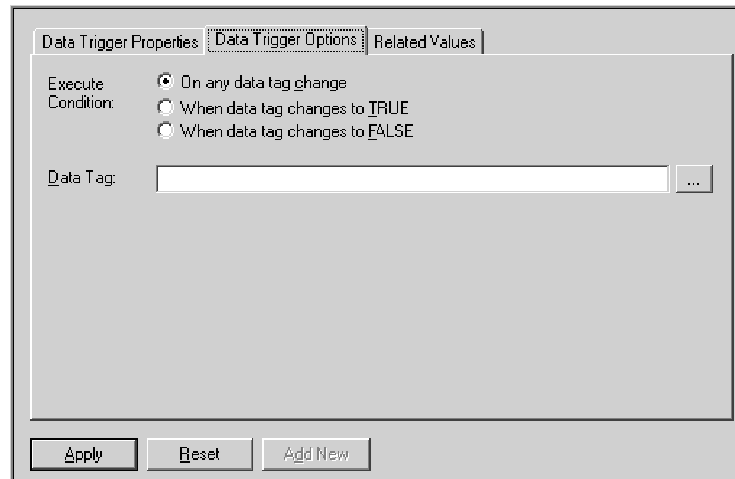


Figure 4.6 - Data Trigger Option

In the **Related Values** tab, you can associate tags to be read when the Data Trigger is executed.

- **Add Tag:** Add a new tag to the related values.
- **Add Value:** Add a new value to the related values.
- **Remove:** Remove a tag or Value from the related values.
- **Edit:** Change a selected tag or Value.

NOTE: For other triggers such as Alarm Triggers, File Triggers, NTEvent Triggers, etc, please refer to the help documentation in the Unified Data Manager.

Lab: Report Triggers 4

4.1 Lab Overview

This lab will explain how to create a date/time trigger and add the trigger to a report.

In the grand scheme of things, the trigger starts a report, and the report executes. If there are redirector actions associated with the report, it will then execute the redirector actions when the report finishes. Figure L4.1 shows the complete order of the process.

Triggers → Reports → Redirector Actions

Figure L4.1 - Process Overview

In this lab, we will focus on the first step of the process; the triggers. We will first configure a trigger in the Unified Data Manager (UDM) and then add it to a report in the ReportWorX Configurator.

4.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Add a trigger to the UDM
- Add a trigger to the configuration

4.1.2 Support Files

To complete this quick lab, you will not need any support files.

4.2 Creating a New Trigger

The first step is to add a new trigger to the UDM.

1. Launch the Unified Data Manager by selecting Start → Programs → ICONICS Tools → Unified Data Manager.
2. Open the **Event Triggers** folder in the tree control. You will see the different types of triggers that are available.
3. Right-click on Date/Time Triggers and select New → Time Trigger Item, as shown in Figure L4.2.

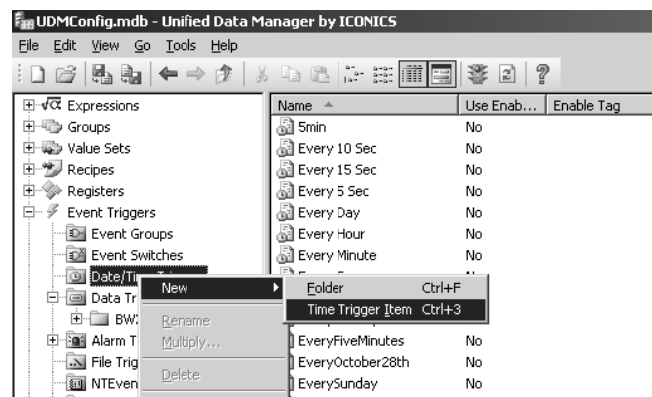


Figure L4.2 - Add Time Trigger Item

4. Name the trigger **Every 20 Seconds**, and set it to recur every 20 seconds with a **Daily Recurrence Pattern**. Click on **Apply** and the trigger is ready to be used. Your finished Trigger may look similar to Figure L4.3.

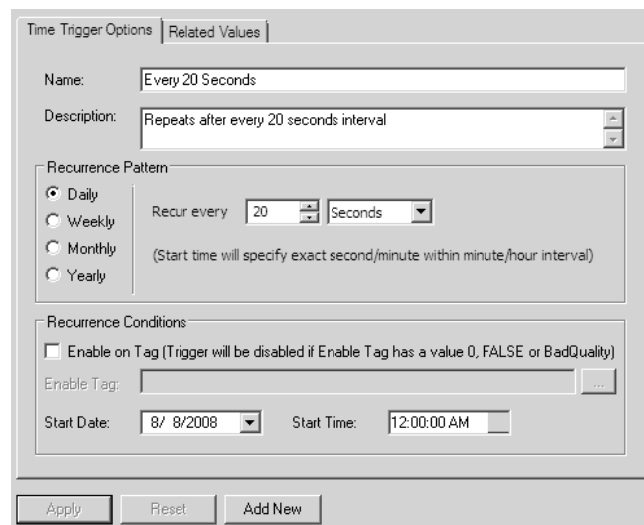


Figure L4.3 - 20 Second Time Trigger

5. Open the ReportWorX Configurator and go to the AcmeSeutical Reports configuration. Click on the **Advanced Mode** button.
6. New tabs will appear. In the **Report Scheduling** tab click on **Add**. The Unified Data Browser will open.
7. In the UDM Data tab, select the **Time Trigger** folder and double-click on the **Every 20 seconds** trigger as shown in Figure L4.4. Then click on **OK**.

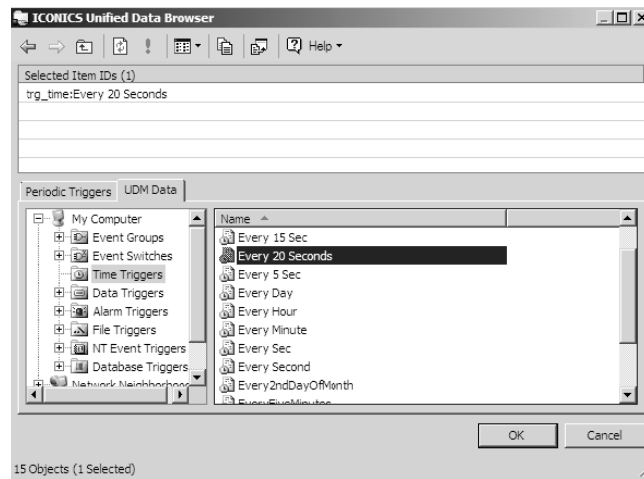


Figure L4.4 - Selecting the Time Trigger

8. You should now be in the ReportWorX Configurator and your Time trigger should be listed in the Report Scheduling tab as shown in Figure L4.5. Click on **Apply**, to save the changes. If your ReportWorX engine is running, you will get a warning asking if you want to notify the ReportWorX engine with the new triggers. Select “Yes, notify Report Engine Now”.

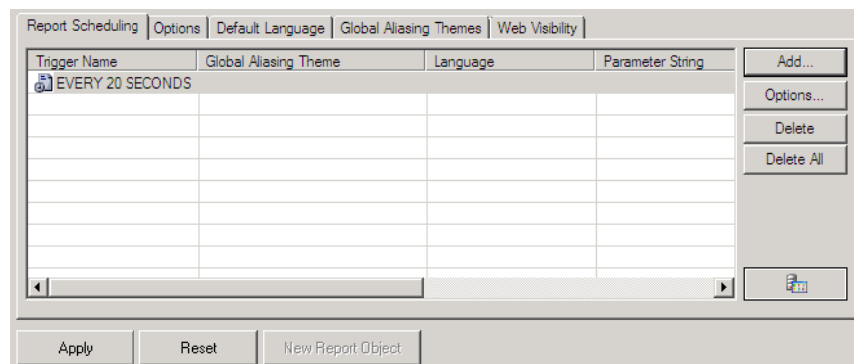


Figure L4.5 - Report Scheduling with Trigger

9. The ReportWorX engine will now execute the report every 20 seconds.

NOTE: You may want to manually execute the report to make sure it runs correctly first before giving it a periodic trigger.

This completes Lab 4. We created a trigger and associated it to a report. The next chapter will introduce you to Redirector Actions

Redirector Actions 5

5.1 Objectives

After completing this chapter, you should know how to:

- Distinguish between the different types of redirector actions
- Create a redirector action using the ReportWorX Configurator
- Create a combined action using the ReportWorX Configurator

5.2 Redirector Tasks and Actions Overview

The **Redirector Actions** tree control in the Configurator, shown in Figure 5.1, allows you to define a sequence of redirector actions for report delivery (i.e. e-mail, fax, file copy, printer, and Web publishing). A redirector task defines a new destination for the report once it completes.

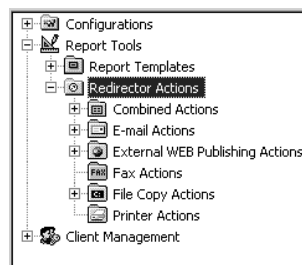


Figure 5.1 - Redirector Tasks Tree Control

You can configure Redirector Actions under the **Report Tools** tree control. ReportWorX uses the following methods for report execution and delivery:

- E-mail
- Fax
- File Copy
- Printing
- Web Publishing

5.3 Creating a New Redirector Action

Each type of redirector action has its own folder within the **Report Tools/Redirector Actions** branch of the tree control. Create redirector tasks by right-clicking on the folder of the type you want, and choosing **New → Redirector Action**, as shown in Figure 5.2.

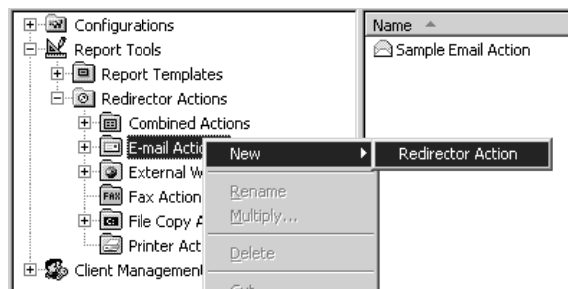


Figure 5.2 - Creating a New Redirector Action

The dialog for a new redirector action is shown in the right-hand pane of the Configurator. With the exception of a name and description, the redirector action properties will vary depending on the type of action.

5.4 E-Mail Actions

An **E-mail action** enables you to send out reports to one or more recipients via e-mail. Before you can send reports via e-mail you must specify your e-mail settings in the **SMTP Settings** tab of the **Options** dialog box (under the **Tools** menu), shown in Figure 5.3, which sets the secure connection access parameters for the Reporting Service.

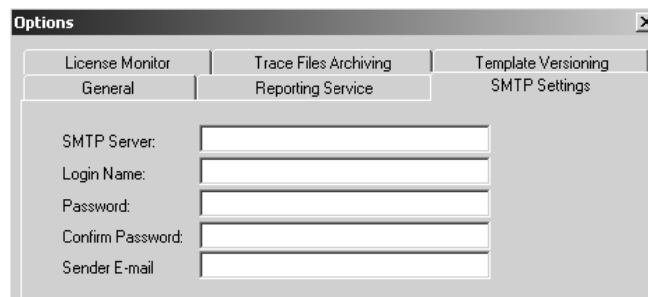


Figure 5.3 - Options Dialog: SMTP Settings Tab

- **SMTP Server:** Specifies the name of the e-mail server used to send the e-mail message. A server name must be entered in this field in order for e-

mail notification messages to be sent. It is recommended that you create an e-mail account to be used specifically for e-mailing reports.

- **Login Name and Password:** Enter a valid, alphanumeric user name and password (specified in the Security Server configuration settings).
- **Confirm Password:** Re-enter your password for confirmation.
- **Sender E-Mail:** Enter the e-mail address of the sender of the e-mail message. (The Reporting Service is the default.)

You can configure the following settings for an e-mail action, as shown in Figure 5.4:

- **Redirector Action Name:** Enter a name for the redirector action.
- **Action Type:** Displays the redirector action type (e.g. e-mail, fax, file copy, printer, or Web publishing).
- **Retry Number:** Sets the number of attempts to deliver the report to the specified recipient if the initial attempt fails.
- **Retry Delay:** Sets delay time (in seconds) between subsequent retry attempts. The minimum delay is 20 seconds.
- **Mail To:** Specifies the recipient(s) to whom you wish to send the e-mail message.
- **CC:** Sends a "carbon copy" of the e-mail to another recipient.
- **BCC:** Sends a "blind carbon copy" of the e-mail message to another recipient.

Redirector Action Name: Sample Email Action

Action Type: E-mail message

On Errors: Retry Number: 0 (0 = no retries) Retry Delay: 60 Sec.

Action Settings:

Mail To: MyBoss@MyCompany.com

CC: MyColleague@MyCompany.com

BCC:

Subject: Your report "%n" is completed

Body: Report name: %n
Executed on: %d at %t
(See attached report file)

Mail Report As: Excel File

Request Return Receipt ☐ ☐ Compress (Zip) Attachment

Use these shortcuts in the subject or body fields:
%n: Report Name
%t: Report Execution Time
%d: Report Execution Date

Apply Reset New Action Object

Figure 5.4 - E-Mail Action Properties

- **Recipient(s) Type:** For the **Mail To**, **CC**, and **BCC** fields, select one of the following recipient types from the drop-down list:
 - **Absolute Address:** Sends the message to an individual's e-mail address. When this option is selected, you can click the arrow buttons next to the **Mail To**, **CC**, and **BCC** fields to browse for an e-mail address using a MAPI-compliant e-mail client (e.g. Microsoft Outlook). Under **Profile Name**, select your e-mail server from the drop-down list, as shown in Figure 5.5.
 - **Registered User:** Sends the message to a single registered user (member of a group).
 - **Registered Group:** Sends the message to all registered users in a specified group.
 - **Mailing List:** Sends the message to all registered users and/or groups in a managed list.

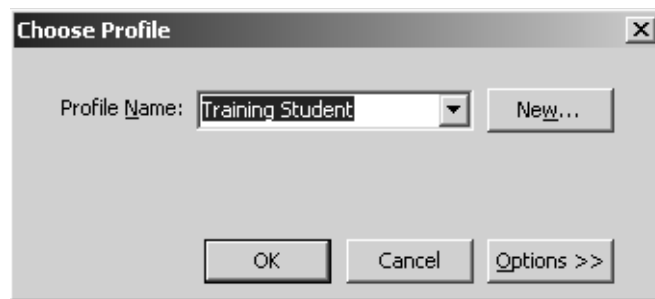


Figure 5.5 - Selecting an E-Mail Address From Your E-Mail Server

NOTE: Users, groups, and managed lists are configured in the **Client Management** tree control of the Configurator.

- **Subject:** Specifies the subject line of the e-mail message.
- **Body:** Type in the content of the e-mail message.

NOTE: In the subject and body text of an e-mail message, you can use the following shortcuts: %n for Report Name, %t for Report Execution Time, and %d for Report Execution Date.

- **Request Return Receipt:** When this check box is checked, the sender will be notified when the recipient of the e-mail message has read the message.
- **Compress (Zip) Attachment:** Zips up attached files before sending the e-mail. This reduces the size of the attachment, which may be important if your e-mail server imposes limits on attachment size.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.
- **New Action Object:** Creates a new e-mail action for you to configure.

5.5 Fax Actions

A **Fax action** enables you to send out reports to one or more recipients using a fax machine. In order to use the Fax Agent, you must have Microsoft Fax Services installed on your computer. The available settings for a fax action are shown in Figure 5.6 and described below:

NOTE: Going forward, we will not describe some of the common properties to the redirector task. These properties include Redirector Action Name, Action Type, and on Error Settings.

Redirector Action Name:

Action Type:

On Errors:
 Retry Number: (0 - no retries)
 Retry Delay: Sec.

Action Settings:

Fax Printer Name:

Fax Recipient Number:

Recipient Name:

Sender Name:

Subject:

Cover Page:
 ...

Use these shortcuts in the subject field:
 %n: Report Name
 %t: Report Execution Time
 %d: Report Execution Date

Apply Reset New Action Object

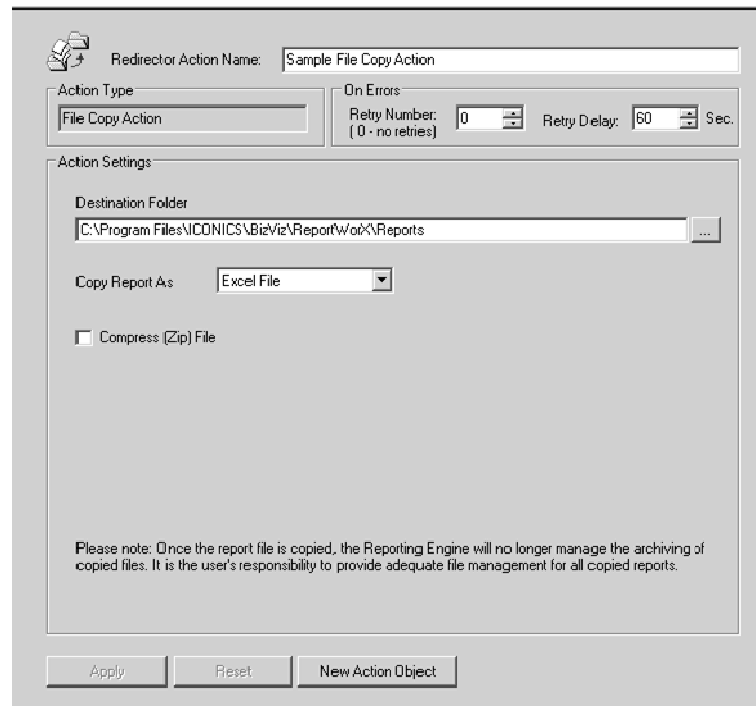
Figure 5.6 - Fax Action Properties

- **Fax Printer Name:** Specifies the name of the fax machine.
- **Fax Recipient Number:** Enter the fax number of the report recipient here.
- **Recipient Name:** Enter the name of the report recipient here.
- **Sender Name:** Enter the name of the report sender here.
- **Subject:** Specifies the subject line of the e-mail message.
- **Cover Page:** You have the option of including a separate cover page with the faxed report. To select a cover page to send, click the ... button to the right of this field and browse for a cover page (.cov) file.

NOTE: In the subject text of a fax, you can use the following shortcuts: **%n** for Report Name, **%t** for Report Execution Time, and **%d** for Report Execution Date.

5.6 File Copy Actions

A **file copy action** copies reports to a selected directory in Excel, PDF, or HTML formats. The available settings for a file copy action are shown in Figure 5.7 and described below.



The screenshot shows the 'File Copy Action Properties' dialog box. At the top, there is a 'Redirector Action Name' field with the text 'Sample File Copy Action'. Below this is the 'Action Type' section, which has a dropdown menu set to 'File Copy Action'. To the right of this is the 'On Errors' section, containing 'Retry Number' (set to 0) and 'Retry Delay' (set to 60 seconds). The main 'Action Settings' section contains a 'Destination Folder' field with the path 'C:\Program Files\ICONICS\BizViz\ReportWorX\Reports' and a browse button (...). Below this is a 'Copy Report As' dropdown menu set to 'Excel File'. There is also a checkbox for 'Compress (Zip) File' which is currently unchecked. At the bottom of the dialog are three buttons: 'Apply', 'Reset', and 'New Action Object'. A note at the bottom of the settings area states: 'Please note: Once the report file is copied, the Reporting Engine will no longer manage the archiving of copied files. It is the user's responsibility to provide adequate file management for all copied reports.'

Figure 5.7 - File Copy Action Properties

- **Destination Folder:** Click the ... button to browse for and select a file copy destination directory.
- **Copy Report As:** From the drop-down list, choose the format (Excel, PDF, or HTML) in which the report will be copied to the selected directory
- **Compress (Zip) File:** Zips up report files before copying them to the target directory. This reduces the size of the report files.

5.7 Printer Actions

A **printer action** enables you to print out completed reports. The available settings for a printer action are shown in Figure 5.8 and described below.

- **Action Settings:** Check all printers to which you want to send a completed report.
- **Number of copies:** Specifies how many copies of the report to print.

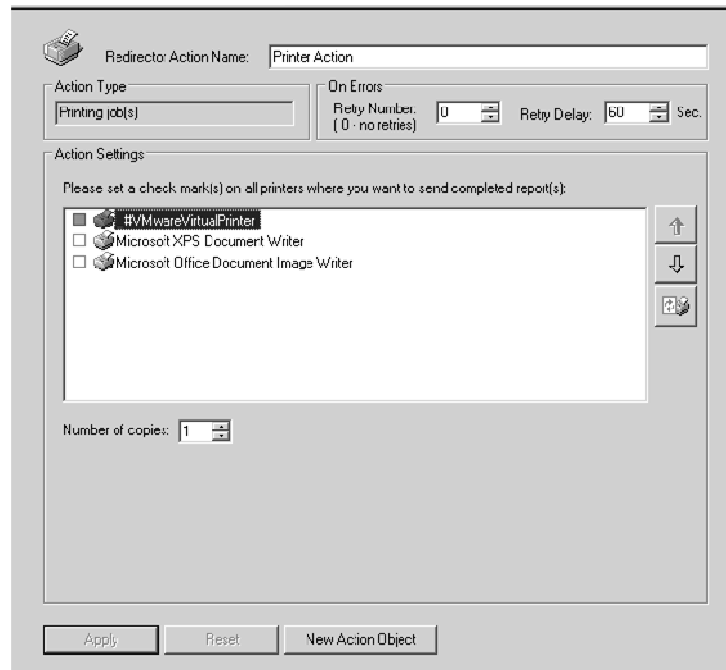


Figure 5.8 - Printer Action Properties

5.8 Web Publishing Actions

A **Web Publishing action** enables you to publish completed reports to a specified Web server so that recipients can simply download and view the report. The available settings for a Web Publishing action are shown in Figure 5.9 and described below.

NOTE: If you would like to include Web Publishing in any of your reports, you must first configure a web server where you can publish your files.

- **Publishing Type:** ReportWorX supports two types of Web Publishing: **FTP** (file transfer protocol) and **HTTP** (hypertext transfer protocol). On some OSes, you may not be able to use HTTP to publish because the OS blocked this method. In this case, you have to use FTP to publish. You must first setup your FTP server before you can use it.
- **Publish to URL:** In the **Publish to URL** field, use the default URL address for your local Web server: **http://localhost/Reports**. Make sure to replace the **localhost** with the name of your Web server computer, or the client computer will not be able to see the reports over the Internet/intranet.

- **Publish Report As:** From the drop-down list, choose the format (Excel, PDF, or HTML) format in which the report will be published to the entered destination.

Redirector Action Name: Sample External Web Publishing Action

Action Type
Publish to External Web Site

On Errors
Retry Number: 0 (0 - no retries) Retry Delay: 60 Sec.

Action Settings

Publishing Type: ☐ FTP ☒ HTTP

Publish To URL: http://MyExternalWebServer/Reports

Publish Report As: Excel File

Authentication

☐ Allow Anonymous Login

User Name: MyUserName

Password:

Domain: MyExternalWebServer

Please note: Once the report files are uploaded to the external Web site, the Reporting Engine will no longer manage the archiving of published files. It is the user's responsibility to provide adequate file management for published reports.

Apply Reset New Action Object

Figure 5.9 - Web Publishing Action Properties

- **Authentication:** You must specify a **User Name**, **Password**, and **Domain** (computer) name for Windows NT integrated security needed to gain access to the Web server. The user account should have write privileges to the target location (URL address specified in "Publish to URL") for the reports.
- **Allow Anonymous Login:** When this check box is checked, users will be able to log in to the specified Web server without user name or password authentication. This is available for HTTP only.
- **User Name:** Specifies an alphanumeric login name for access to the Web server.
- **Password:** Specifies an alphanumeric login password for access to the Web server.
- **Domain:** Specifies the NT domain (computer) name for Windows NT integrated security.

5.9 Combined Redirector Action Properties

Once you have configured at least one report redirector action, you can then create a combined redirector action as shown in Figure 5.10. This is a combination of several redirector actions, in any order.

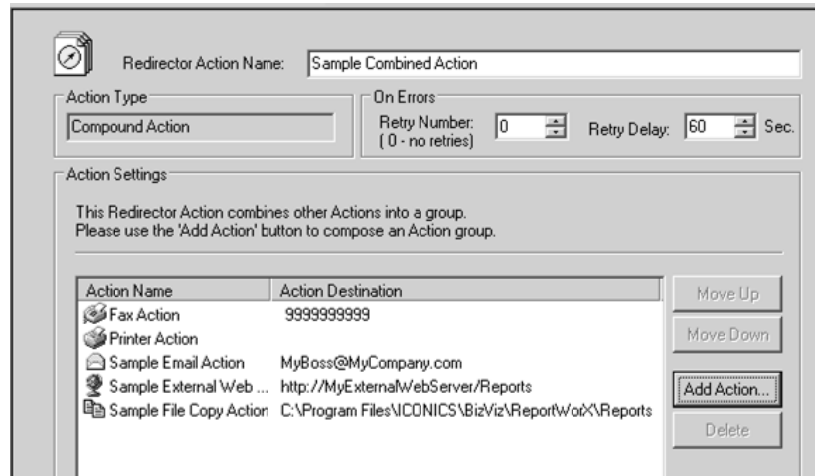


Figure 5.10 - Redirector Combined Action Properties

In the Action Settings, you can specify a group of redirector actions. To create an action group, click the **Add Action** button. This opens the Add Redirector Actions Group dialog box, as shown in Figure 5.11. This dialog lists all other redirector actions in the active configuration database. To add a redirector action to the group, select the action and then click on the **OK** button. The added actions are listed in the Action Settings, as shown in Figure 5.10. Click on the **Move Up** button or **Move Down** button to change the sequence of redirector actions in the group.

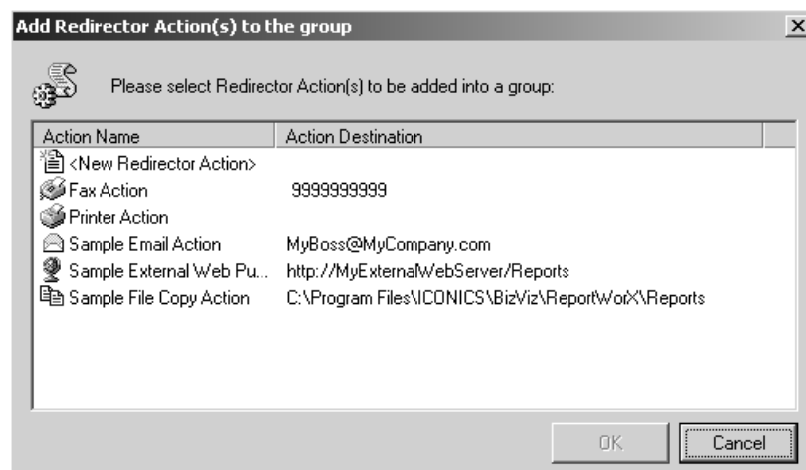


Figure 5.11 - Adding Redirector Action(s) to a Group

Lab: Creating Redirector Actions

5

5.1 Lab Overview

In this lab, we will create various redirector actions that we will later use in combination with our AcmeSeutical reports.

5.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Create an E-mail Redirector Action
- Create a File Copy Redirector Action
- Create a Combined Redirector Action

5.1.2 Support Files

You do not need any support file to complete this lab.

5.2 Creating Redirector Actions

1. Navigate to the **Redirector Actions** branch of your ReportWorX Configurator, under **Report Tools**.
2. First, we will create an E-mail Redirector Action. To do so, right-click on the **E-mail Actions** branch and select **New → Redirector Action**.

NOTE: This Redirector Action will only work if your training PC has a connection to the Internet, and your SMTP Settings (in the **ReportWorX Options** found in the **Tools** menu) are configured properly.

3. In the Redirector Action Name field, specify AcmeSeutical E-mail Action.
4. In the **Mail To**, **CC**, and **BCC** fields, specify any e-mail addresses that you would like, but for the **Subject** and **Body** fields, please note the additional

shortcuts that are available to you in the bottom right-hand corner of the dialog.

5. In the Subject field, type “E-mailing Report: %n”.
6. In the Body field, type:
Report name: %n
Execution date: %d
Execution time: %t
7. Your E-mail Redirector Action dialog should look like Figure L5.1. Click **Apply** to save the configuration. Please note that a warning message should appear in order to acknowledge this first configuration.

The screenshot shows the 'Redirector Action Name' dialog box for an 'E-mail message'. The 'Redirector Action Name' field is 'AcmeSeutical E-mail Action'. The 'Action Type' is 'E-mail message'. The 'On Errors' section shows 'Retry Number: 0' and 'Retry Delay: 60 Sec.'. The 'Action Settings' section includes fields for 'Mail To' (MyBoss@iconics.com), 'CC' (myColleague@iconics.com), and 'BCC' (myself@iconic.com). The 'Subject' field contains 'E-mailing Report %n' and the 'Body' field contains 'Report %n', 'Execution Date %d', and 'Execution Time %t'. The 'Mail Report As' dropdown is set to 'Excel File'. There are checkboxes for 'Request Return Receipt' and 'Compress (Zip) Attachment'. A legend at the bottom right explains the shortcuts: %n: Report Name, %t: Report Execution Time, %d: Report Execution Date. At the bottom are 'Apply', 'Reset', and 'New Action Object' buttons.

Figure L5.1 - AcmeSeutical E-Mail Action

8. Next, we will create a File Copy Redirector Action. To do so, right-click on **File Copy Actions** and select **New → Redirector Action**.
9. In the Redirector Action Name field, put **AcmeSeutical File Copy Action**.
10. Click on the “...” button to browse for a **Destination Folder**, and then navigate to your **C:\temp** directory. Click the **New Folder** button to create a new folder underneath this directory and call it **FileCopyDestination**. Then click the **OK** button to select that location. Refer to Figure L5.2 for clarification.

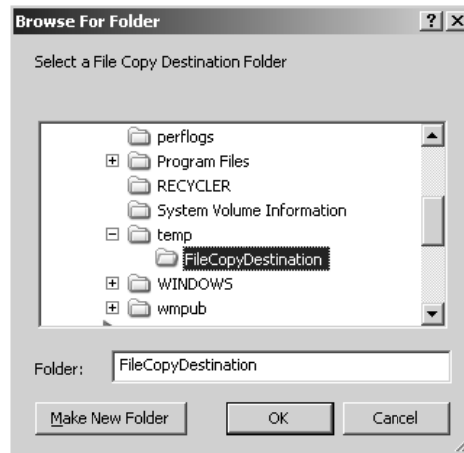


Figure L5.2 - File Copy Destination Folder

11. In the **Copy Report As** drop-down box, leave it as **Excel**, but let's also check the **Compress (Zip) File** check box to make the best use of our disk space.
12. Click **Apply** once you have made those changes, and your completed File Copy Action should resemble the one in Figure L5.3.

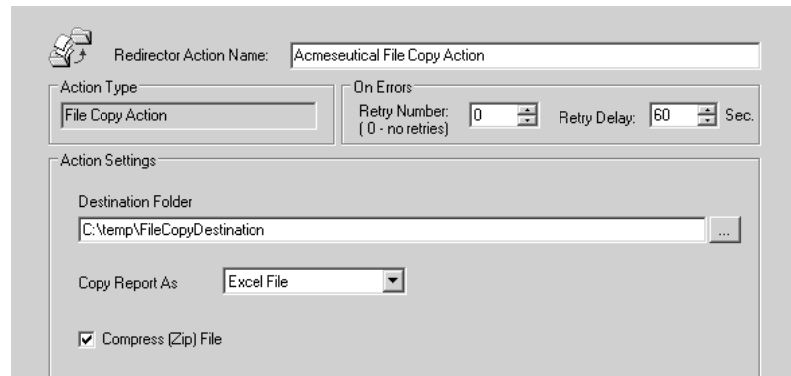


Figure L5.3 - Acmeseutical File Copy Action

13. Finally, we will create a Combined Action, which allows you to specify any number of Redirector Actions to execute as a “group,” in any order that you specify.
14. Right-click on Combined Actions and select New → Redirector Action.
15. In the name field, specify **Acmeseutical Combined Action**.
16. As you can see, you start with a blank slate. Click on the **Add Action** button to choose from a list of existing Redirector Actions, or you can even create a new action from here using the Redirector Action Wizard.

17. From the Add Redirector Action(s) dialog, use the <Ctrl> key to select both the **AcmeSeutical E-mail Action** and the **AcmeSeutical File Copy Action**, and then click OK.
18. Your completed AcmeSeutical Combined Action should look like Figure L5.4. Click **Apply** to save the configuration.

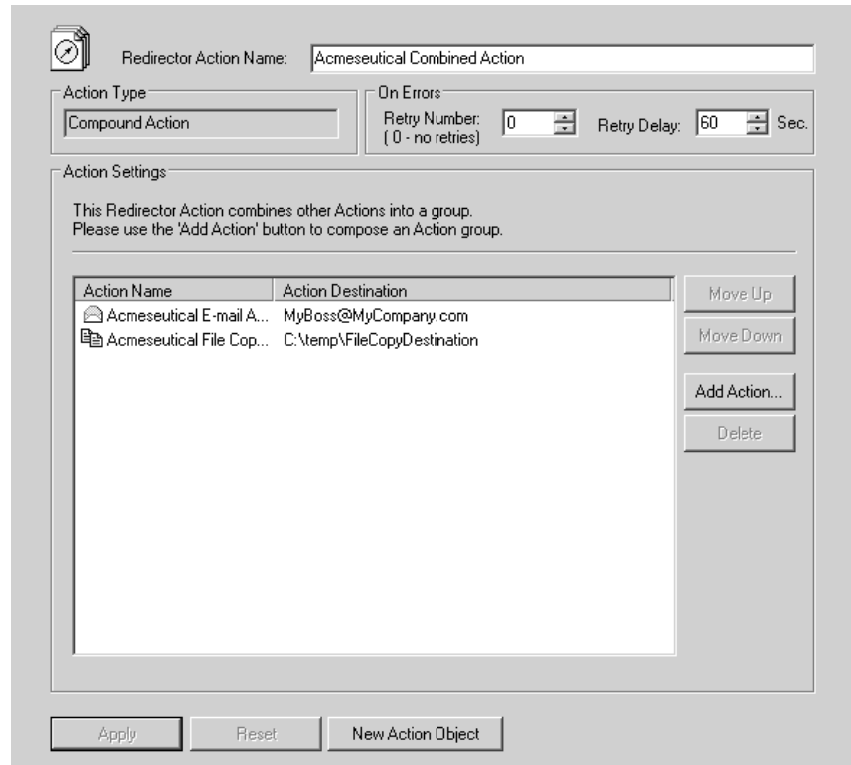


Figure L5.4 - AcmeSeutical Combined Action

This completes Lab 5. In the next lab you will learn how to configure report templates and begin configuring our existing templates with AcmeSeutical data.

Report Templates

6

6.1 Objectives

After completing this chapter, you should know how to:

- Create a template folder
- Create a report template using the ReportWorX Configurator

6.2 Designing Report Templates

The **Report Templates** tree control of the Configurator, shown in Figure 6.1, allows you to create and configure Microsoft Excel templates for your reports. The Excel spreadsheet template design dictates what kinds of data your reports will contain and how the data will be displayed in your reports. The ReportWorX Configurator provides several sample report templates. The report configuration tree-control also provides a Report Template Wizard to help you create your templates.

NOTE: You must have a report template in order to execute a report.

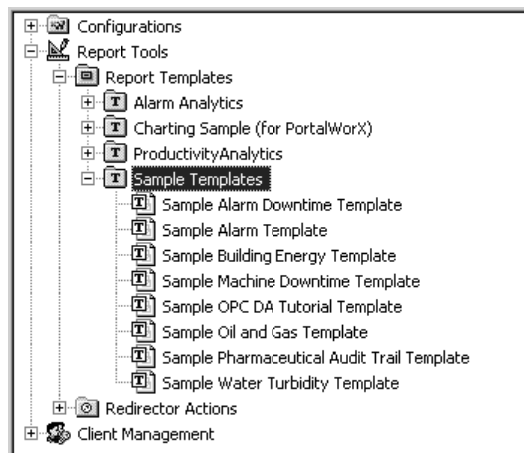


Figure 6.1 - Report Templates Tree Control

6.3 Creating Report Templates

Creating report templates involve the following main steps:

- Creating a report template folder
- Creating a new report template
- Setting report template properties
- Configuring a report template in Microsoft Excel

You can create new template folders and template objects in the ReportWorX Configurator by right-clicking on a parent folder and choosing the **New** command as shown in Figure 6.2.

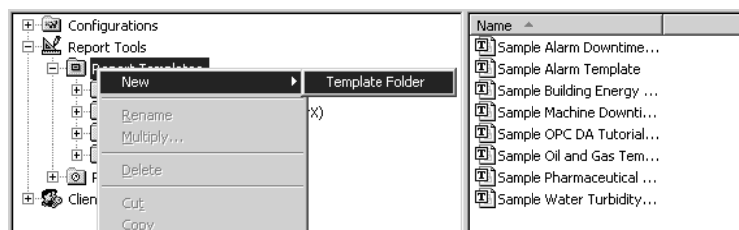


Figure 6.2 - Creating a New Template Folder

When you create a new report template item, you will have the following options, as shown in Figure 6.3-:

- **Create Blank Excel Workbook:** Creates a new, blank Microsoft Excel template workbook (e.g. without any formatting or data configuration).

NOTE: Users of ReportWorX Configurator V9.2 and Microsoft Office 2007 can take advantage of new functionality. When creating a new report template the configurator will automatically detect if you are running Microsoft Office 2007 and will provide the updated option of selecting between Office 2007 and Office 2003 formats for the creation of the new blank template workbook.

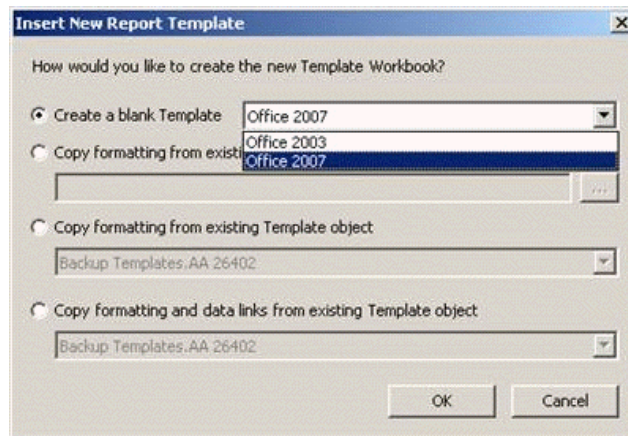


Figure 6.3-1 - Office 2007 or Office 2003 Option in New Report Template Creation in ReportWorX Configurator

In addition, following installation of the standalone version of the ReportWorX V9.2 application (or complete BizViz V9.2 suite installation), Microsoft Office 2007 will now display a native ReportWorX ribbon tab. This is an update from how previous versions of Office would provide access to ReportWorX functions (compatibility menus under the Add-Ins tab).

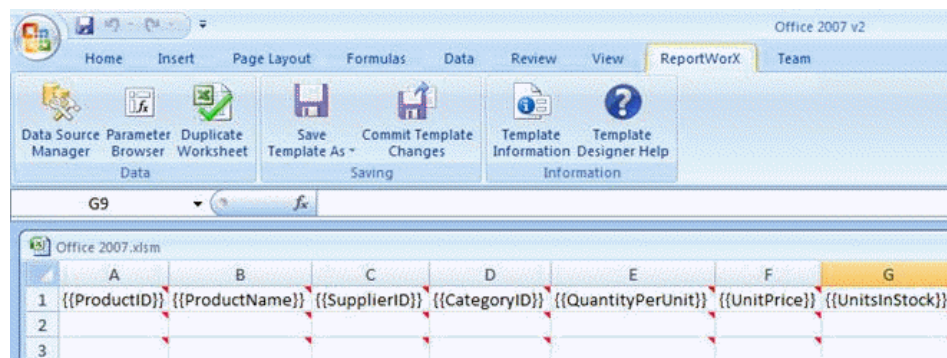


Figure 6.3-2 - New ReportWorX Tab in Office 2007 for Users Running ReportWorX V9.2

Also, when using the new ReportWorX ribbon tab in Office 2007, and having previously selected an Office 2007 (Excel 2007) report template, users will have the option to save the template back to Office 2003 (Excel 2003 Template) format.

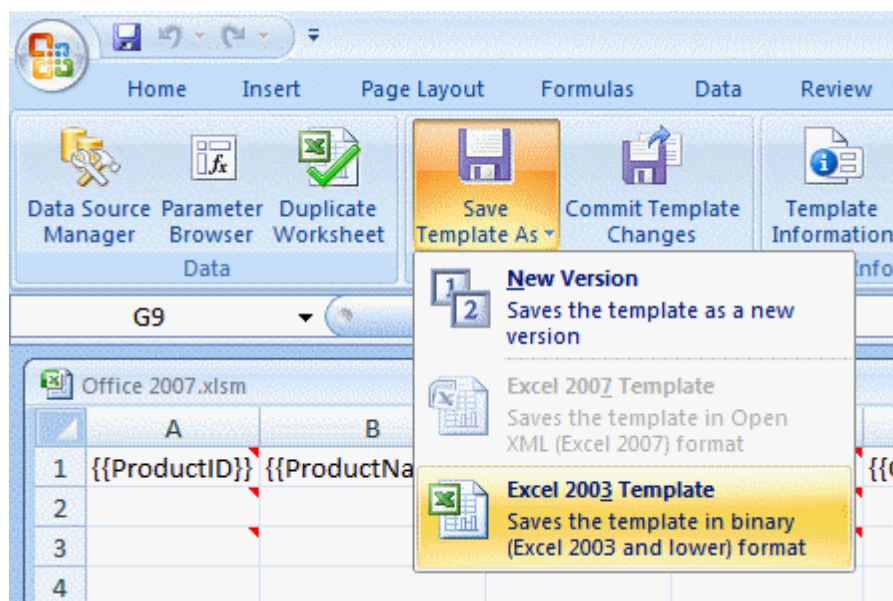


Figure 6.3-3 - Reverting an Existing Office 2007 (Excel 2007) Report Template

Should a user have initially selected to create a report template in Office 2003 format, the new ReportWorX ribbon tab options will allow the template to be "upgraded" to the newer Office 2007 (Excel 2007 Template) format.

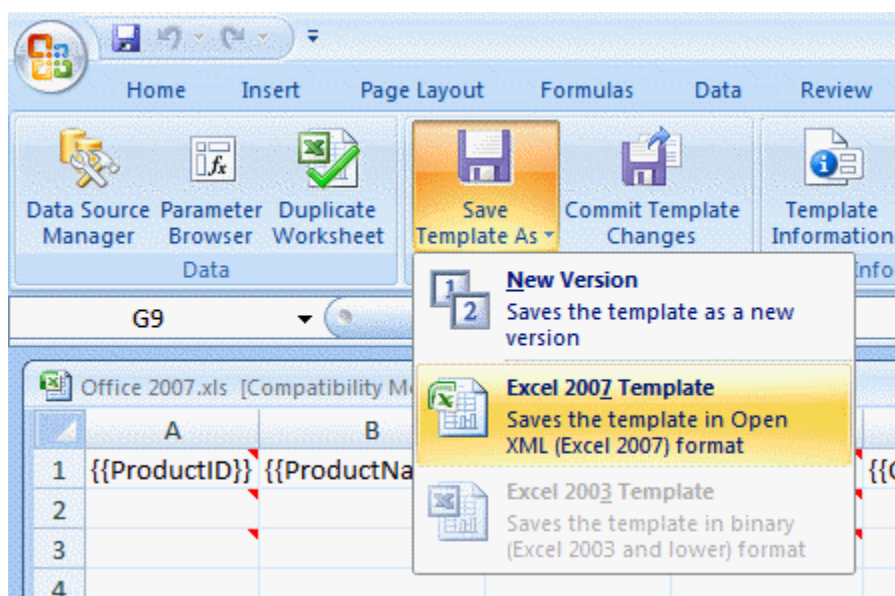


Figure 6.3-4 - Upgrading an Office 2003 (Excel 2003) Formatted Report Template to Office 2007 (Excel 2007) Format

- **Copy Formatting from Existing Workbook File:** Uses an existing Microsoft Excel workbook file as a basis for the design of your new template. Click the Ellipsis (...) button to browse for an existing Excel workbook.
- **Copy Formatting from Existing Template Object:** Uses an existing Microsoft Excel template from the configuration database as a basis for the formatting (i.e. style, design, fonts, etc.) of your new ReportWorX template. Select the existing template from the drop-down list, which lists all templates in the active configuration database.
- **Copy Formatting and Data Links from Existing Template Object:** It does the same thing as the Copying Formatting From Existing Template Object option. On top of that, it copies any data configurations (i.e. open database connections, OPC tags, etc.) contained in the existing template to the new template.

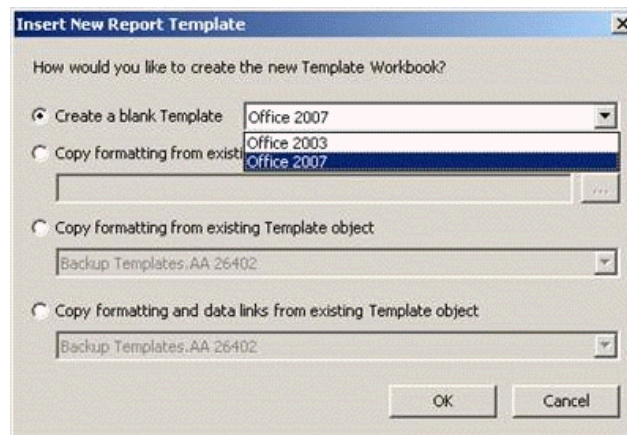


Figure 6.3-5 - Selecting a Template Type

6.3.1 Report Template Object Properties

You will notice, as shown in Figure 6., that once the template object is created, there are almost no properties to set on the configuration page. This is because the configurations are set by the template in Excel. The following options are found:

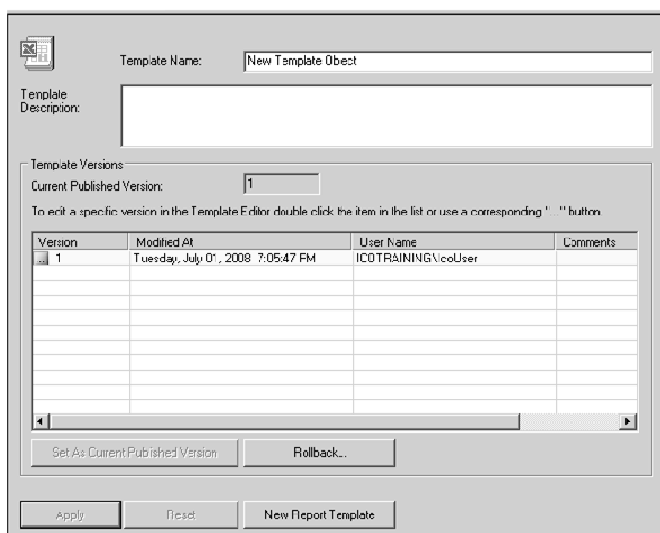


Figure 6.4 - Report Template Properties

- **Template Name:** Enter a name for the report template. When a template is created, the Excel file will be named after the template name. If you rename the template, the Excel file will also be renamed automatically.
- **Template Description:** Enter a description for the template (optional).
- **Current Published Version:** The version of template currently used.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.
- **New Report Template:** Creates a new report template to be configured.

You can modify a template by Click the Ellipsis  button. The message shown in Figure 6. appears, stating that while the template is being edited, all active reports that are based on the template will be temporarily disabled.

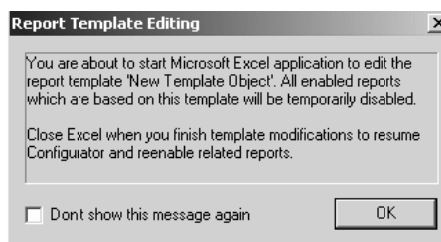


Figure 6.5 - Editing the Report Template

Once you acknowledge this message, the template opens in Microsoft Excel, and the ReportWorX Configurator temporarily closes while you are working inside the template. When you have finished editing the template, close Microsoft Excel and the Configurator will reopen to the template properties. All reports linked to the template will be re-enabled.

Lab: Configuring Templates

6

6.1 Lab Overview

In this lab we will configure our AcmeSeutical templates to mine data from the AcmeSeutical database.

6.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Create a new template folder
- Create a new template

6.1.2 Support Files

To complete the Chapter 6 quick labs, you will need the following support files:

- AcmeSeutical_Standard.xls

6.2 Creating Templates

1. If your ReportWorX Configurator is not already open, click **Start → Programs → ICONICS BizViz → ReportWorX → ReportWorX Configurator**.
2. Navigate to the **Report Templates** folder under **Report Tools**. You should see the **Sample Templates** folder already there, as shown in Figure L6.1. These are the templates that are included by default with a new ReportWorX configuration database.

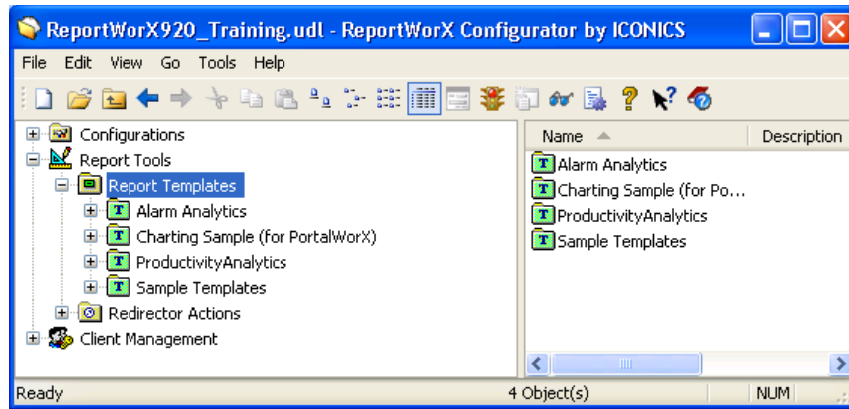


Figure L6.1 - Report Templates

3. Templates must be stored underneath a folder (they cannot be stored at the top level). Therefore, in this lab, we will create a new template folder called **AcmeSeutical Templates**.
4. Right-click on Report Templates and select New → Template Folder.
5. In the Template Folder Name field, enter **AcmeSeutical Templates**. Enter a description if you wish, and then click Apply, as shown in Figure L6.2.

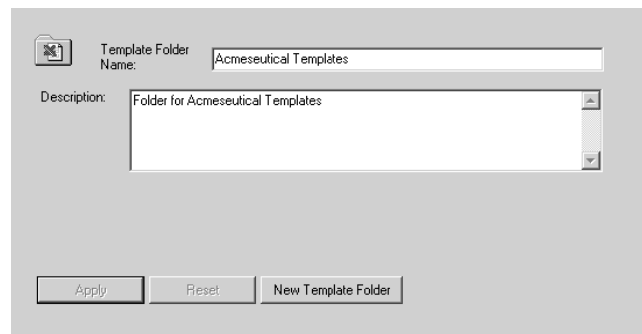


Figure L6.2 - AcmeSeutical Templates Folder

6. Next, we will create a new template underneath this folder using a predefined AcmeSeutical header from an external Excel file.
7. Right-click on your new **AcmeSeutical Templates** folder and select **New → Report Template**. The **Insert New Report Template** dialog will appear, with five different options for you to choose from, as shown in Figure L6.3.
8. Select the **Copy formatting from existing Excel workbook file** option, and click the “...” button to browse for an Excel workbook file.

NOTE: You can select **Create blank Excel workbook** if you wish to work with an empty Excel template.

9. Browse to your C:\Program Files\ICONICS\GENESIS32\Examples\Training - BizViz\ folder, and then select the Acmeseutical_Standard.xls file. The Insert New Report Template dialog should look like Figure L6.3.
10. Click **OK** to create a new template based on this Excel workbook. Let's name it **Acmeseutical Report Template**, and then click **Apply**.

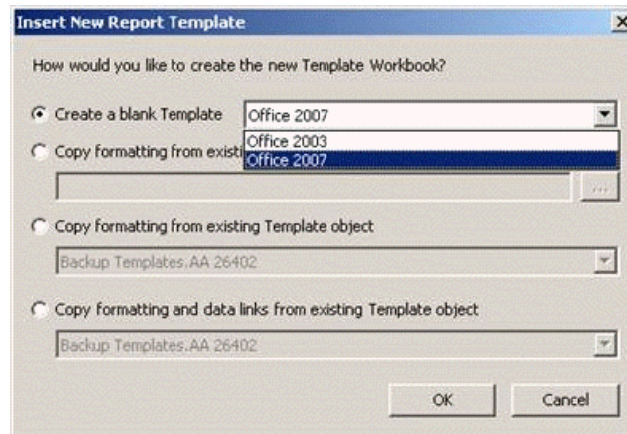


Figure L6.3 - Selecting the Acmeseutical_Standard.xls Template

11. Finally, to understand the effects of copying an existing Excel file when creating a new template object, click the  button in the Template Versions frame. This will allow you to view your newly created template within Excel, and you should see something similar to Figure L6.4.

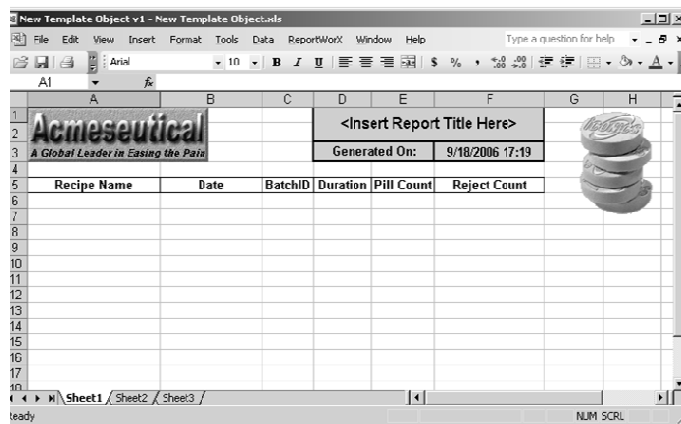


Figure L6.4 - Acmeseutical Formatted Template

12. Close Excel to return to the Configurator, and click **Commit Changes** to save the template. You will reopen this template to continue with the next two labs.

This completes Lab 6. We have created a new report template using the AcmeSeutical template. The next lab will walk you through configuring data sources.

Data Sources

7

7.1 Objectives

After completing this chapter, you should know how to:

- Connect to OPC tags using the ReportWorX Excel Interface
- Connecting to databases using the ReportWorX Excel Interface
- Create an advanced database query using the ReportWorX Excel Interface
- Add headers to report templates
- Duplicate and delete data configurations in the ReportWorX Excel Interface
- Distinguish between the different types of report parameters
- Use the Parameter Browser to browse for and select existing parameters
- Use the Parameter Wizard to create, edit, and delete report parameters

7.2 Configuring a Report Template

Report templates are configured in Microsoft Excel. In the report template properties of the Configurator, you can click the  button to launch the Microsoft Excel workbook corresponding to your template. The template opens inside Microsoft Excel, and the ReportWorX Configurator temporarily closes while you are working inside the template in Excel.

The ReportWorX template designer inserts a **ReportWorX** menu into the Microsoft Excel menu bar, as shown in Figure 7.1. This menu contains the following commands:

- **Data Source Manager:** Opens the Data Source manager.
- **Parameter Browser:** Opens the Parameter Browser.
- **Duplicate Worksheet:** Creates a duplicate of the selected worksheet.
- **Save As New Version:** Create a new version of the current template.
- **Commit Template Changes:** Edit comments about the current template.

- **Template Information:** Displays the history for the template.
- **Template Designer Help:** Launches the online Help documentation for the ReportWorX Excel Template Designer.

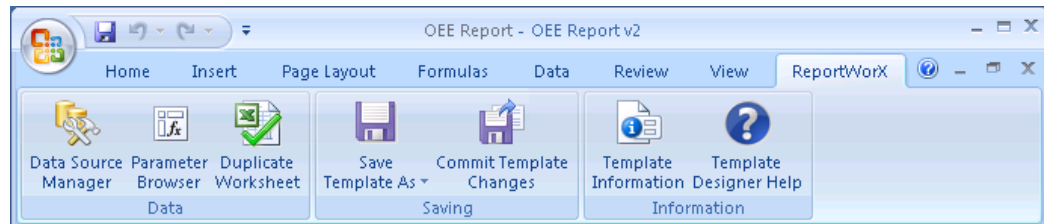


Figure 7.1 - ReportWorX Menu in Microsoft Excel

NOTE: If you are using Microsoft Office 2003, there will be a ReportWorX menu in the toolbar.

When you open Excel through ReportWorX, the following **File** menu commands in Microsoft Excel are not supported:

- **File - New:** All new ReportWorX templates must be created through the ReportWorX Configurator.
- **File - Open:** All new ReportWorX templates must be opened by clicking the **Edit This Template** button in the ReportWorX Configurator.
- **File - Save As:** When a template is created in the ReportWorX Configurator, the Excel file will be named after the template name. If you rename the template, the Excel file will also be renamed automatically.

For every report that you want to run, you must format the cells with supported data type in order to generate your reports correctly. The ReportWorX Excel interface includes an embedded pop-up menu that allows you to specify data sources for your reports, as mentioned earlier.

To format the data type, select the cell(s) you wish to format and then right-click on the selected (highlighted) cells in the Microsoft Excel workbook. In the pop-up menu options, choose Connect to new Data Source as shown in Figure 7.2.

From this pop-up menu, you can connect to:

- OPC Data Access (DA) and Historical Data Access (HDA) tags.
- ICONICS TrendWorX32 historical tags, text aliases, and language aliases.
- Databases, including Microsoft Access, Microsoft Excel, Microsoft SQL Server, etc.
- Alarm Analytics
- Parameter

- Hyperlinks
- Custom Data Sources
- Web services
- Integration Tasks

Reports are executed based on the data connections you specify in your Excel templates.

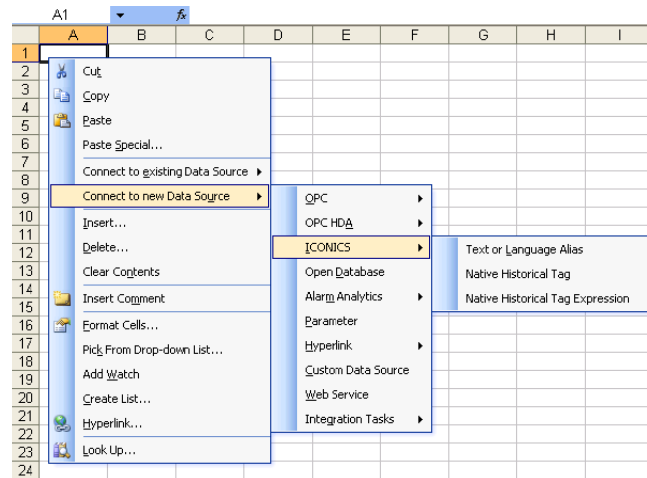


Figure 7.2 - Selecting a Data Type in Microsoft Excel

Once cells are configured with data connections, small red triangles appear in the top right corner of the cell, to show that it has its data connections configured. You can view comments about the data source for a particular cell by hovering the mouse pointer over the cell, as shown in Figure 7.3.

NOTE: You may find it necessary to update comments by selecting the **Refresh Comments** command from the **ReportWorX** menu in Excel.

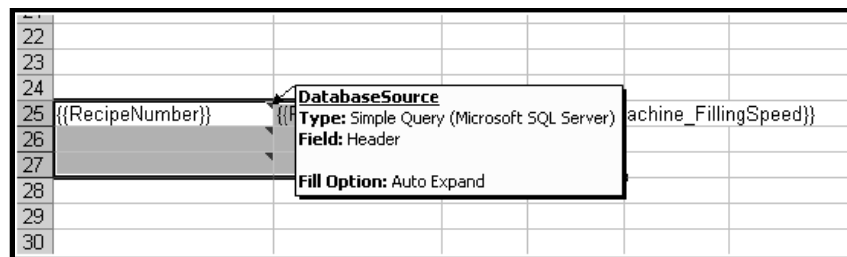


Figure 7.3 - Viewing Comments in Excel Spreadsheet

When you are finished configuring a template, save and close Excel as you normally would an Excel workbook.

The ReportWorX Configurator will reopen to the template properties, and all reports linked to the template will be re-enabled.

7.3 Connecting to OPC Tags

The ReportWorX Excel configuration interface enables you to link data cells in your spreadsheet template to real-time data sources. This way, you can generate reports using real-time data from OPC tags, expressions, and global aliases. You can connect to the following types of OPC tags:

- OPC Data Access (OPC DA) Tags
- OPC Historical Data Access (OPC HDA) Tags

7.3.1 OPC Data Access Tags

Right-clicking on a cell (or group), and then selecting **Connect to new Data Source → OPC → Data Access (DA) Tag** from the pop-up menu, to launch the OPC DA Connection Wizard as show in Figure 7.4.

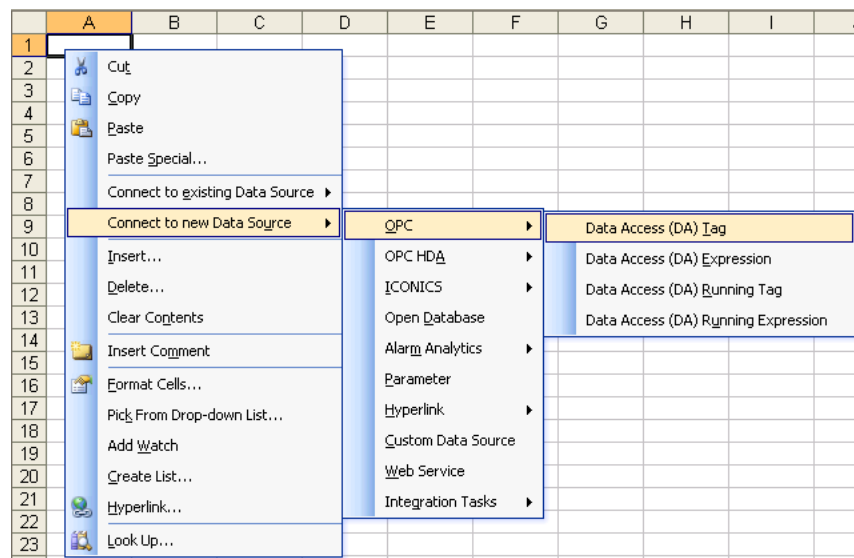


Figure 7.4 - Connecting to an OPC Data Access Tag

The **OPC DA Connection Wizard** dialog box, shown in Figure 7.5, helps you choose the tag connections.

To choose a DA tag with the OPC DA Connection Wizard, click on the ellipsis (...) button to open the **Unified Data Browser**. Once in the browser, select the tag, expression, or alias that you want to use.

NOTE: You can also select expressions or global aliases. Please refer to the ReportWorX Configurator help documentation for information about the Expression Editor and global aliasing.



Figure 7.5 - OPC DA Connection Wizard

The selected tag appears in the **Tag Name** field of the **OPC DA Connection Wizard** dialog box, as shown in Figure 7.6.

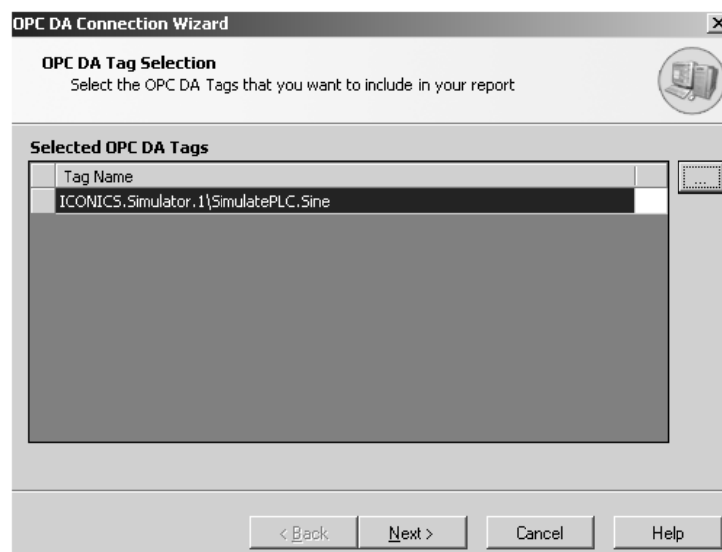


Figure 7.6 - OPC Data Tag Selected

Click on the **Next** button to display the Configure Engineering Units and Tag Descriptions check box as shown in Figure 7.7, and enable it to allow the user to view this information.

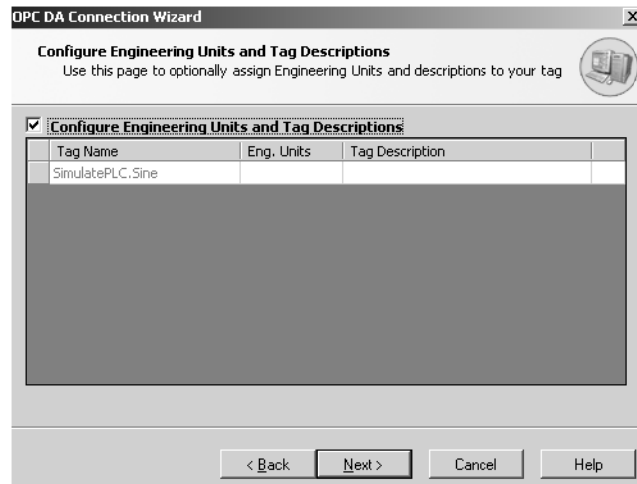


Figure 7.7 - Configuring Engineering Units and Tag Descriptions

Clicking the **Next** button and checking the Configure Data Sources Names check box, as shown in Figure 7.8; allows the user to specify names and descriptions for their data sources. Click on the Finish button to complete the wizard.

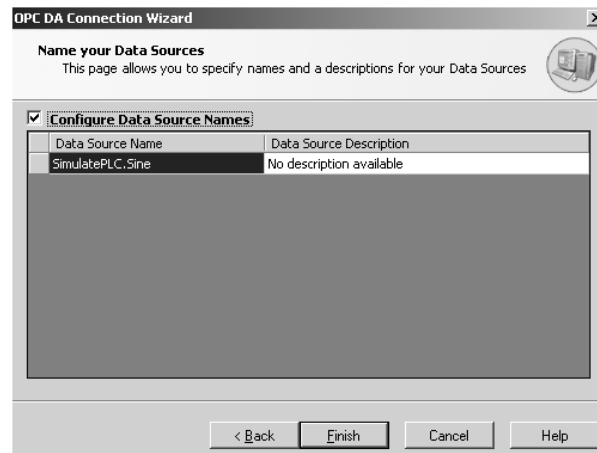


Figure 7.8 - Configure Data Source Name

When you return to the template after configuring the tag connections, the data tag will be linked to the selected cell(s) in the template, and a little red triangle indicates the data point. Recall that you can view comments about the data source by hovering the mouse pointer over the cell as shown in Figure 7.9.

NOTE: The **Layout Manager** will appear when finished, and will be discussed in a later chapter.

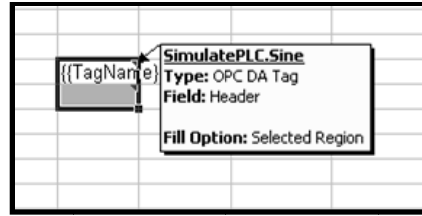


Figure 7.9 - OPC Data Access Tag in Template

7.3.2 OPC Historical Data Access Tags

Right-clicking on a cell (or group), and then selecting **Connect to new Data Source → OPC HDA → Historical Data Access (HDA) Tag** from the pop-up menu, as shown in Figure 7.10, will allow you to configure cells with OPC HDA data connections using the OPC HDA Connection Wizard as shown in Figure 7.11.

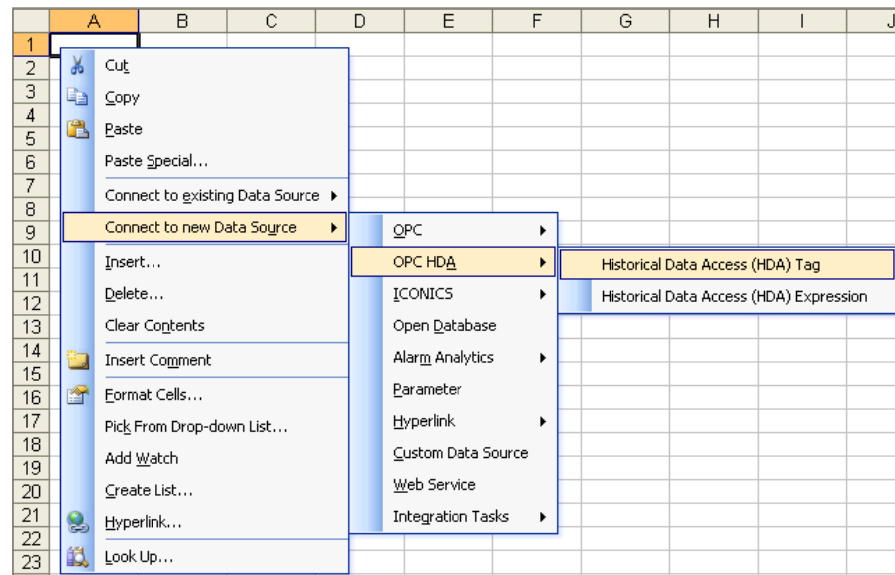


Figure 7.10 - Connecting to an OPC Historical Data Access

The **OPC HDA Connection Wizard** dialog box, shown in Figure 7.11, helps you choose the tag connections.

Click the ellipsis (...) button to browse for HDA tags using the **Unified Data Browser**. In the Unified Data Browser, select a tag, and the tag appears in the **Tag Name** field of the **OPC HDA Connection Wizard** dialog box, as shown in Figure 7.11.

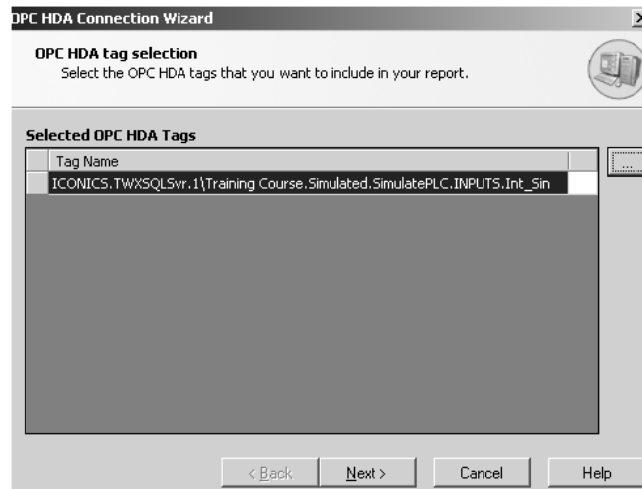


Figure 7.11 - OPC HDA Data Tag Selected

Click the **Next** button and check the Configure Engineering Units and Tag Descriptions check box, as shown in Figure 7.12.

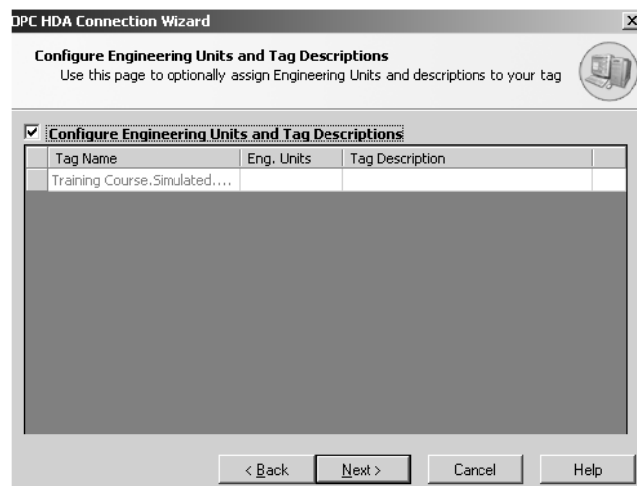


Figure 7.12 - Configuring Engineering Units and Tag Descriptions

Click the **Next** button and check the Configure Data Source Names check box, as shown in Figure 7.13. This allows the user to specify names and descriptions for their data sources.



Figure 7.13 - Configure Data Source Names

Click the **Next** button to display the **OPC HDA Tag group properties** page shown in Figure 7.14.

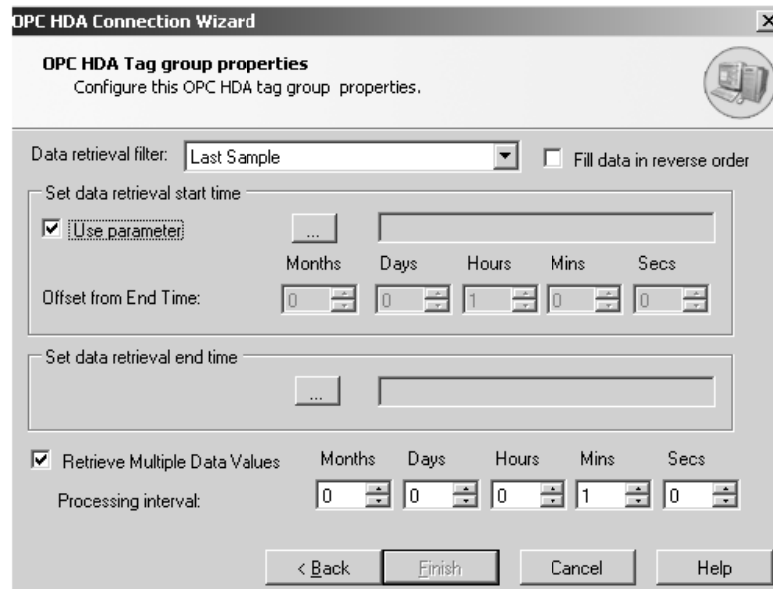


Figure 7.14 - OPC HDA Tag Group Properties

At the top of the **OPC HDA Tag group properties** dialog box, set the **Data retrieval filter** to Raw, Average, Minimum, Maximum, Standard Deviation, Minimum Actual Time, Maximum Actual time, or Last Sample. If desired, enable the **Fill data in reverse order** option.

If desired, set any one of the following options:

- The **Set data retrieval start time** section has the option to use a parameter. Check the **use parameter** checkbox and click the ... button to launch the **parameter browser**. User could choose to use the **Offset from End Time** setting as well.
- The **Set data retrieval end time** has a ... button to launch the **parameter browser**.
- The section on the bottom of the **OPC HDA Tag group properties** dialog box has the option to **Retrieve Multiple Data Values** by checking off the box next to it and setting the processing interval.

Select **Finish** to close the dialog box and return to Excel view.

NOTE: If the **Fill data in reverse order** check box is checked, cells in the report template will be filled with data from the bottom up. The oldest data will be in the bottom cell, and more recent data will be added to cells above the bottom cell.

7.4 Connecting to ICONICS Tags

The ReportWorX Excel configuration interface enables you to link data cells in your spreadsheet template to the following ICONICS data sources:

- Native Historical tag
- Text Aliases
- Language Aliases

7.4.1.1 Native Historical Tags

Right-clicking on a cell (or group), and then selecting **Connect to new Data Source → ICONICS → Native Historical Tag** from the pop-up menu, as shown in Figure 7.15, will allow you to configure cells with data connections to TrendWorX32 specific history tags using the Native Historical Tag Connection Wizard.

To configure native trend tags, you can select the **Connect to new Data Source → ICONICS Native Historical Tag → Native Trend Tag** from the context menu. In the **Native Historical Tag Connection Wizard** dialog box, click on the ellipsis (...) button to browse for tags via the **Unified Data Browser**.

NOTE: You can also select expressions or global aliases. Please refer to the ReportWorX Configurator help documentation for information about the Expression Editor and global aliasing.

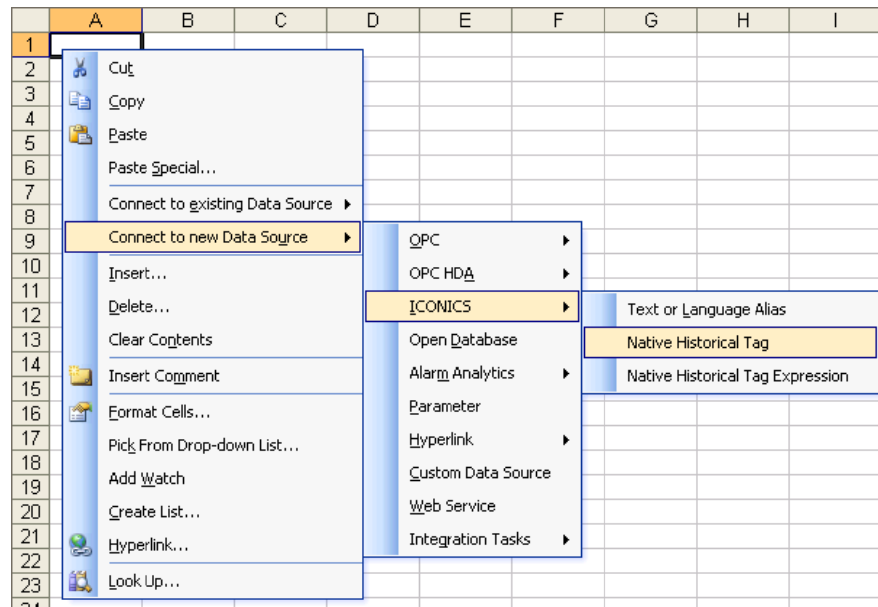


Figure 7.15 - Connecting to a Native Trend Tag

In the Unified Data Browser, you would need to create a TrendWorX32 historical database connection if you haven't done so. Right click on Historical Databases and select the corresponding database engine connection where your TrendWorX32 historical database resides in as shown in Figure 7.16. Follow the on-screen instructions to create your connection.

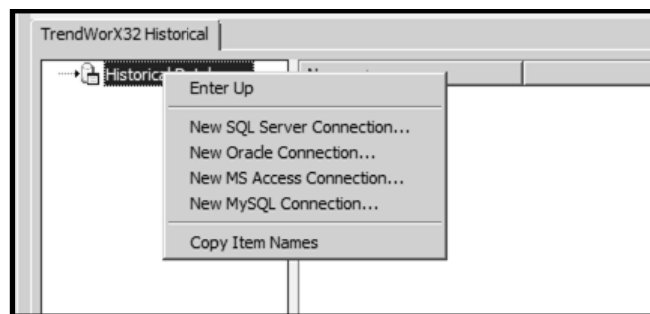


Figure 7.16 - New Historical Database Connections

Double click on the connection and select a tag. The selected tag appears in the **Tag Name** field of the **Native Tag Selection** dialog box, as shown in Figure 7.17.

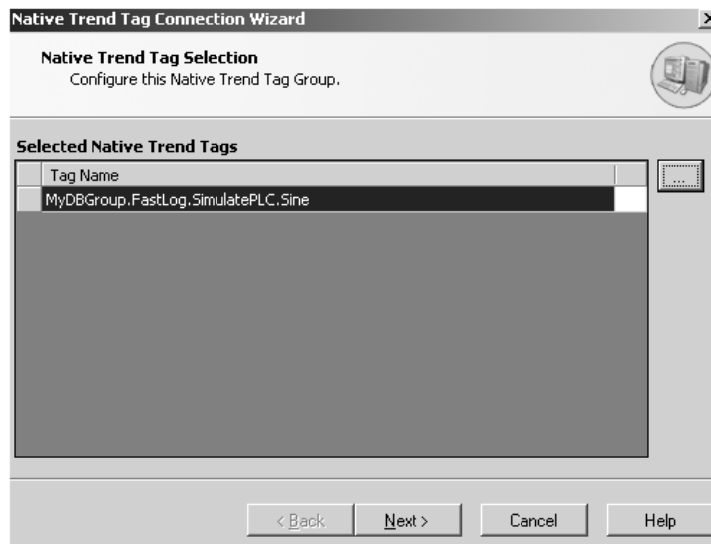


Figure 7.17 - Native Trend Tag Selected

Clicking the **Next** button will display a check box as shown in Figure 7.18, to allow the user to Configure Engineering Units and Tag Descriptions.

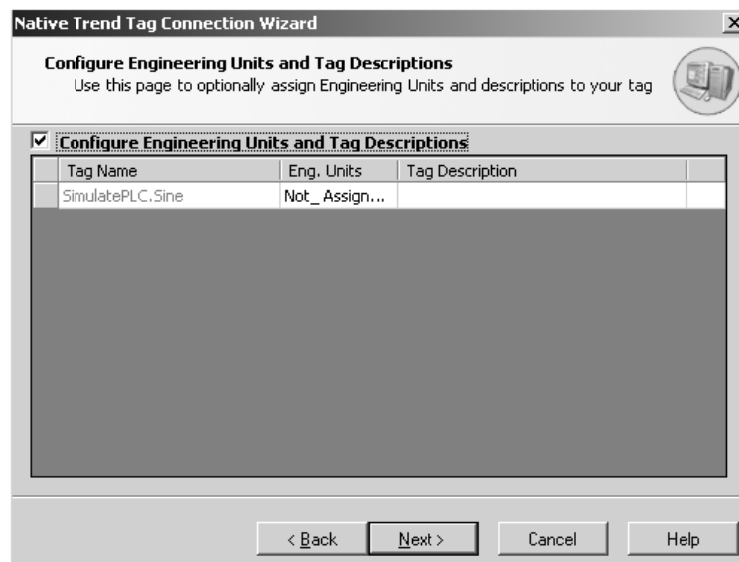


Figure 7.18 - Configure Engineering Units and Tag Descriptions

Click the **Next** button to display a check box, as shown in Figure 7.19, to allow the user to specify names and descriptions for their data sources.

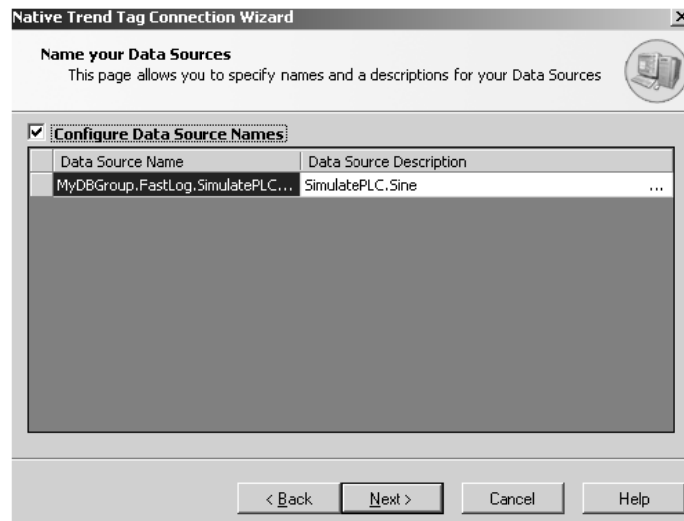


Figure 7.19 - Configure Data Source Names

Click the **Next** button to display the **Native Trend Tag group properties** as shown in Figure 7.20.

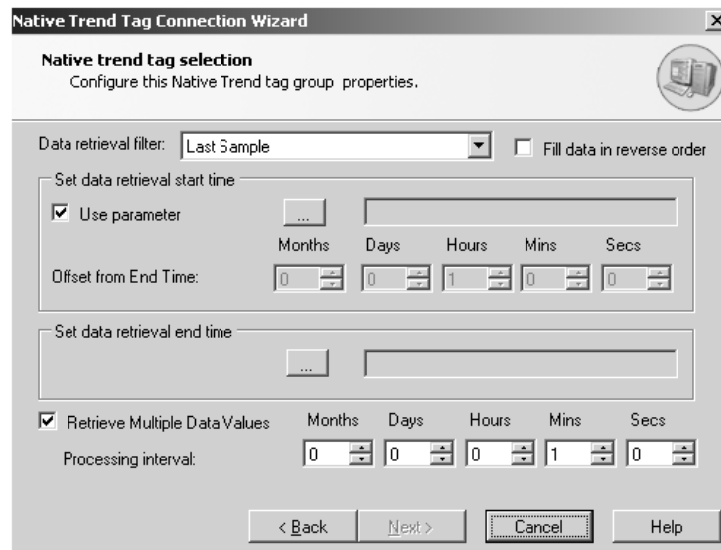


Figure 7.20 - Native Trend Tag Group Properties

In the **Native Trend Tag group properties** dialog box, set the **Data retrieval filter** to Raw, Average, Minimum, Maximum, Standard Deviation, Minimum Actual Time, Maximum Actual time, or Last Sample. You can also use the **Fill data in reverse order** option.

NOTE: If the **Fill data in reverse order** check box is checked, cells in the report template will be filled with data from the bottom up. The oldest data will be in the bottom cell, and more recent data will be added to cells above the bottom cell.

Set any of the additional options, as desired:

- The **Set data retrieval start time** section has the option to use parameters. Check the **use parameter** checkbox and click the ... button to launch the **parameter browser**. The user could choose to use the **Offset from End Time** setting as well.
- The **Set data retrieval end time** has a ... button to launch the **parameter browser**.
- The section on the bottom of the **Native Trend Tag group properties** dialog box has the option to **Retrieve Multiple Data Values** by checking off the box next to it and setting the processing interval.

Select **Finish** to close the dialog box and return to the Excel view.

7.4.1.2 Text Aliases

Text aliases include Global Aliases and Language Aliases. To add one, you can right-click on a cell (or group), and then select **Connect to new Data Source → ICONICS → Text or Language Alias** from the pop-up menu, as shown in Figure 7.21.

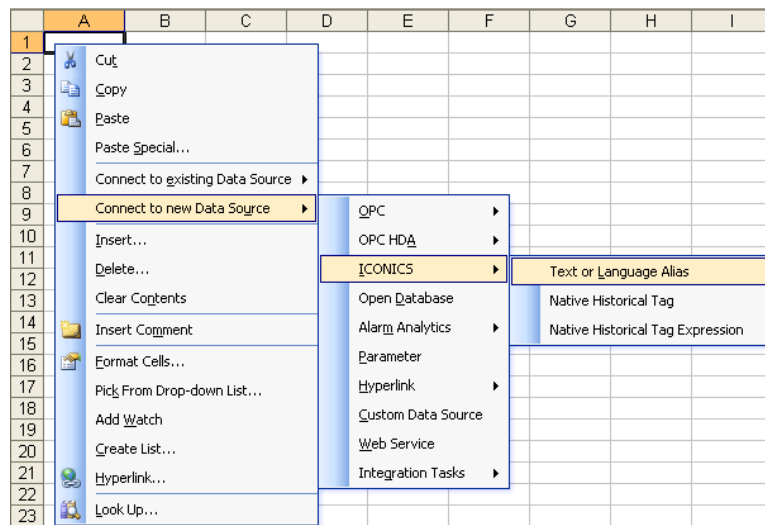


Figure 7.21 - Connecting to a Text Alias

The **Unified Data Browser** opens and you can select the desired text alias on the appropriate tab. To insert a Global Alias, browse for the one you need from the Global Aliases tab. If you need to use a Language Alias instead, select the Language Aliases tab, and browse for your language alias. Once you've selected your alias, return to the report template and the text alias is linked to the selected cell(s) in the template, and a little red triangle indicates the alias, as shown in Figure 7.22.

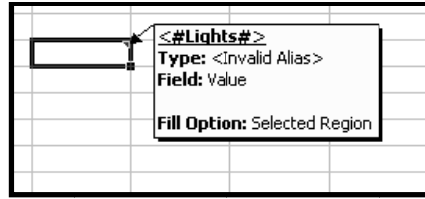


Figure 7.22 - Text Alias Added to Template

7.5 Connecting to Databases

The first step in defining a data source from which ReportWorX will access a database is establishing a connection to an OLE DB data provider. Once you have connected to a database, you need to specify which data will be retrieved from the database and displayed in the report template. The ReportWorX Excel configuration interface enables you to link data cells in your spreadsheet template to many types of databases, including the following:

- Microsoft SQL Server
- Microsoft Access
- Oracle
- ODBC
- Generic OLEDB
- Excel
- SAP

Although connecting to different types of databases have different connection and configuration properties, the three basic steps of configuring an **Open Database** data connection to a cell (or group of cells) are common to all types. They are:

- Database Connection
- Data Selection
- Data Mapping

NOTE: The basics of the first two steps will be explained in this chapter. For information on data mapping, refer to a later chapter.

7.5.1 Step One: Database Connection

You can create a database connection as the data source using the Database Connection Configuration Wizard.

To create a database connection, right click on a cell (or group), and select the **Connect to New Data Source → Open Database** from the context menu, as shown in Figure 7.23.

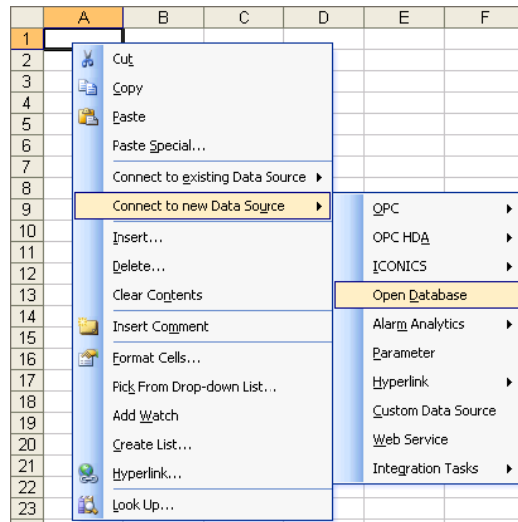


Figure 7.23 - Opening Database Connection Configuration Wizard

Click the Browse button in the Database Connection Configuration Wizard dialog box to open the Database Connections Browser, as shown in Figure 7.24.

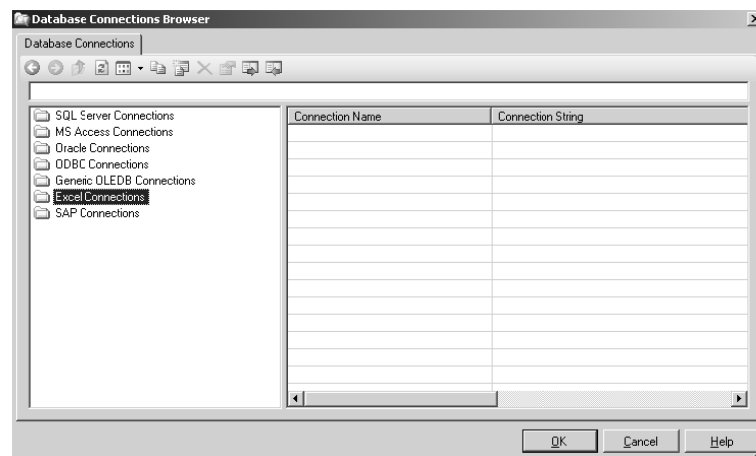


Figure 7.24 - Database Connection Browser

Right click on the desired database connection and select Insert New Connection. This will open a browser for you to select the database you want to use, which enables you to specify the database name and/or connection string in order to create a list of saved database connections. This list allows you to configure the connection information only once and be able to use it in other templates.

Click on **OK** to create the connection string. Select the connection and click OK. We will continue to use the **Database Connection Configuration Wizard** in the next sub-section. So leave it open for now.

7.5.2 Step Two: Data Selection

After selecting the newly created connection string, you need to select the data to display in the report. Continuing from the procedure above, you can click on the **Next** button to bring up the **Configure your data connection** dialog box as shown in Figure 7.25. Click the **Edit** button and set one of the following options for data retrieval:

- **Simple Query:** Simple Configuration Mode for Open Database Connections to query a single table
- **Advanced Query:** Helps you create advanced SQL queries to multiple tables.
- **Custom Query:** Provides an editor window for writing your own SQL language queries.
- **Stored Procedure Call:** Creates queries to execute stored procedures.

NOTE: Not all four options will always be available depending on the connection type, as certain types of queries are not supported by all types of databases.

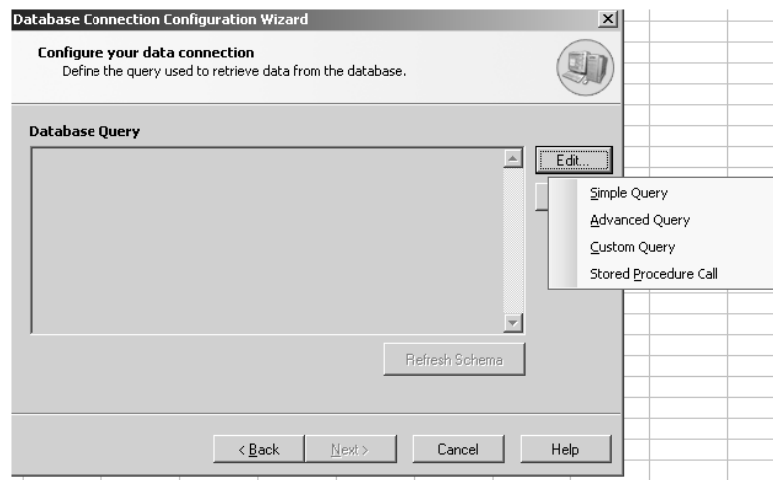


Figure 7.25 - Database Queries

7.5.2.1 Simple Query

The Simple Query allows for single table queries. To configure a query with the SQL Command Designer, you can click on the ellipsis (...) button to the right of the Table Name field and select a table from which to read data. Check the desired table columns from the **Column Name** list, as shown in Figure 7.26.

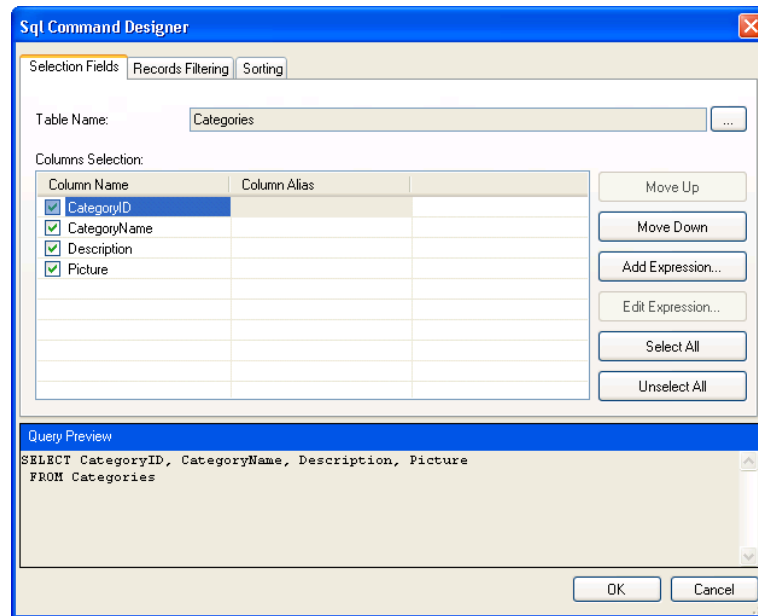


Figure 7.26 - Selecting Table Columns

Add and/or edit SQL column names/expressions to each column by clicking the **Add Expression** button.

In the **SQL Expression** dialog, edit the **SQL Expression Title** and **SQL Column Expression** fields, as shown in Figure 7.27.

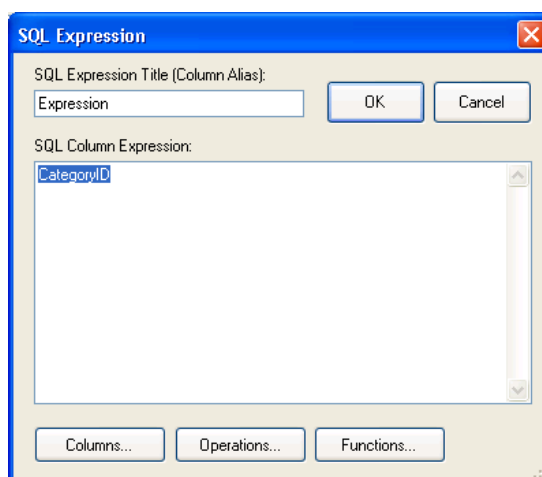


Figure 7.27 - Editing SQL Column Expression

7.5.2.2 Advanced Query

The Advanced Database Configuration provides an **Advanced SQL Query Wizard** to help you create complex SQL queries for your selected databases. The **Advanced SQL Query Generation** dialog box opens, as shown in Figure 7.28, allowing for multi-table queries and grouping.

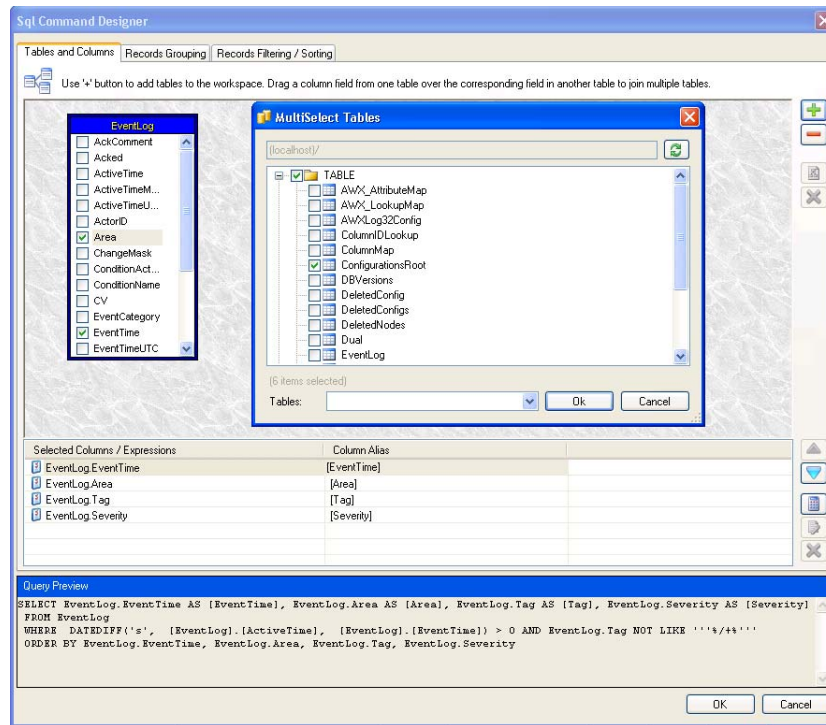


Figure 7.28 - Selecting Data Tables to Include in Database Query

To create a multi-table query, click on the [+] button to display a list of the tables in the database. In here, you can select from which tables to retrieve data from and display in the report template.

Select the data tables to include in the database query by clicking on the table and then click on the **Ok** button. Notice that the added table(s) show up in the bottom Tables section.

Once you click Ok to the Multiple Table Selection dialog, the wizard displays all columns from all the tables you have selected. For each table you chose, you can select which data columns to include in the database query by checking the box next to the name of each column, as shown in Figure 7.29.

If you select multiple tables, you can join the tables together by dragging a data column from one table to the corresponding field in another table.

A double-headed arrow that points to both connected tables will be drawn automatically, indicating that a joint between the two tables exists, as shown in Figure 7.29.

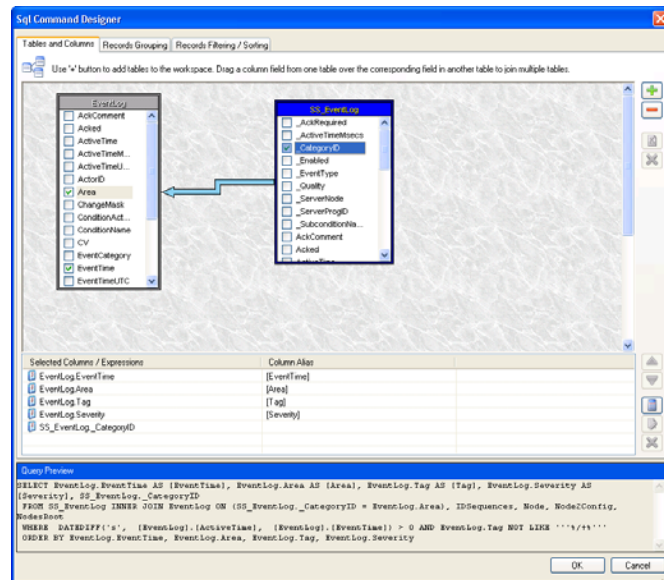


Figure 7.29 - Selecting Data Columns to Include in Query

To view the link details, double click the linking arrow to display the **Table Join Properties** dialog box, shown in Figure 7.30.

You see a list of the names of the tables and columns that are joined. You can use the expression options under **SQL Join Type** to define the relationship between the two columns (i.e. Equal, Greater than, Less than, etc.). You can also manually write a **Custom Join Condition** by clicking the **Edit** button.

NOTE: Please refer to the SQL language documentation for details about SQL joins.

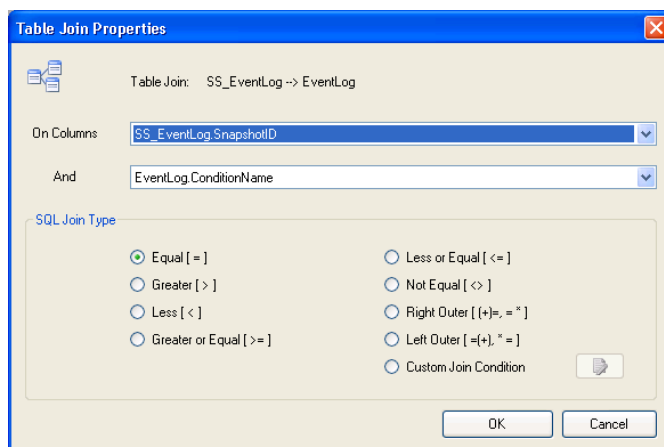


Figure 7.30 - Table Join Properties

Selected data columns are listed in the bottom pane of the window, as shown in Figure 7.29, determining which columns or expressions will be included in the SELECT statement as well as the column titles that will be displayed.

You can use the **Move Up/Move Down** buttons to change the order in which the columns will be displayed. To change an existing column/expression, click the **Edit Exp** button and make your addition or changes. To insert a column or to create a new expression, click the **Add Column Expression** button [] and specify the expression.

Clicking the **Records Grouping** tab as shown in Figure 7.31 offers additional options that are not available with the Simple SQL Query Wizard and lists the selected tables and columns.

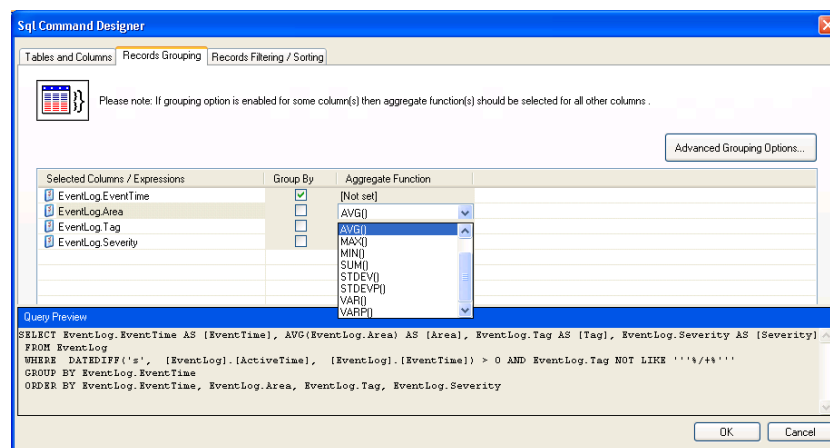


Figure 7.31 - Records Grouping and Aggregation

Grouping applies to records in a data column that have the same value. Click checkboxes to change the grouping options for the data tables (or leave them unchanged). Use the pulldown menus to assign an **Aggregate Function** (i.e. Count, Average, Maximum, Minimum, Sum, Standard Deviation, etc.) to each of the columns you did not include in the grouping list. The records of columns that are assigned the same aggregate function will be grouped together in the query result. You have two grouping options:

- **Grouping using the SQL 'GROUP BY' statement:** Grouping and aggregation are performed using standard SQL language grouping. Please refer to the SQL language documentation for details.

- **Running Periodic Summary:** Clicking the **Advanced Grouping Options...** button allows you to set **Periodic Summary Reports** preferences, which are especially useful if you want to compare several different sets of data over a specified time interval. For example, you could run a company report that lists the hire dates for all employees of the company that fall within the previous month.

You can specify both absolute and relative intervals for retrieving data from the database. An **absolute interval** is a fixed period of time (i.e. the month of June, or 1 week ago, or an 8-hour shift). A **relative interval** is a period of time relative to the report execution time. For example, if a one month relative interval is used, the periodic summary report will include data in several chunks, each of which covers an interval of one month calculated from the moment of the report execution time. You have to specify a number of intervals for the report.

7.5.2.3 Stored Procedure Call

The ReportWorX Excel Interface Advanced Database Configuration Mode allows you to create a SQL query to run a database stored procedure. Stored procedures are precompiled on the SQL server; and execute much faster than ordinary SQL queries.

The **Stored Procedures** dialog, shown in Figure 7.32, allows you to choose a stored procedure from the **Select Stored Procedure** dialog. This will tell ReportWorX the stored procedure in the database to execute and display the results in the report. Since some stored procedures require input values, you can select parameters as these input values in this dialog as well. You can add Parameters by clicking in the list, and then on the ellipsis (...) button to bring up the Parameter Browser.

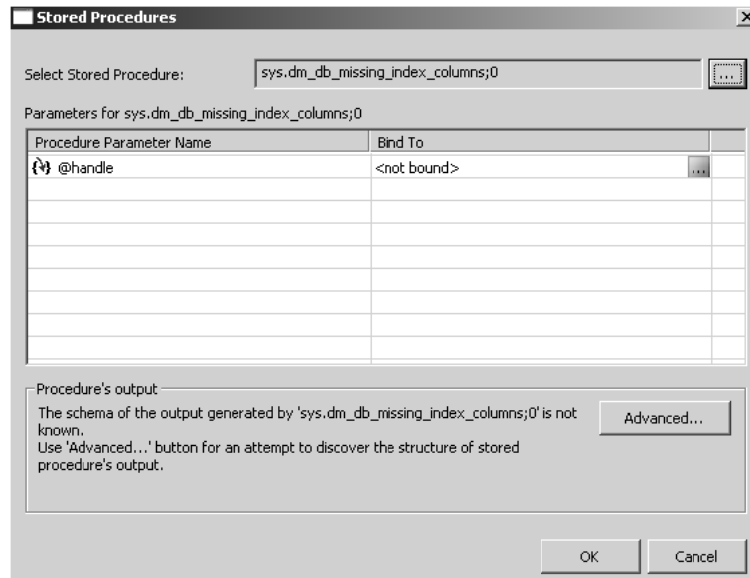


Figure 7.32 - Stored Procedures

The **Parameter Name** list displays all parameter objects you have created in this template. To modify a parameter's properties, double-click on the parameter name. This opens the **Parameter Browser**, as shown in Figure 7.33. Parameters will be discussed later in this chapter.

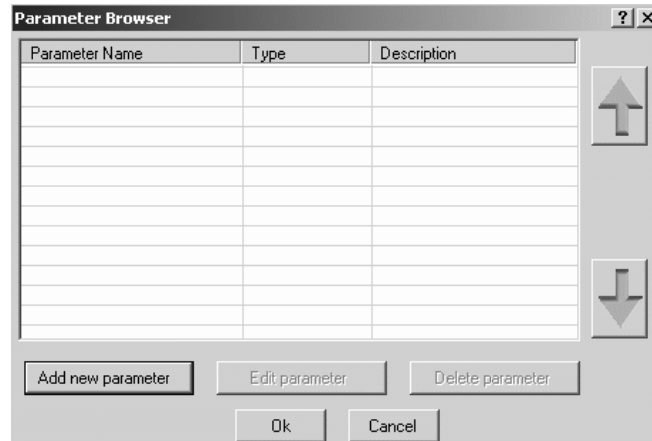


Figure 7.33 - Parameter Browser for Stored Procedure

7.5.2.4 Custom Query

The ReportWorX Excel Interface Advanced Database Configuration Mode also allows you to manually create and edit SQL data queries for your databases. This is done within an editor dialog box, where you can type in SQL commands, as shown in Figure 7.34.

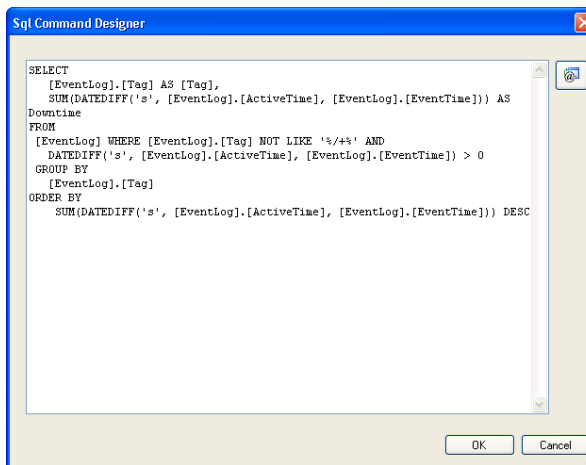


Figure 7.34 - SQL Command Designer

7.5.3 Filtering and Sorting Options

No matter the type of data connection you use, or the manner in which the data is selected, you always have filtering and sorting options. The filtering dialog shown in Figure 7.35 is an example of how filters are setup. Filters can be set in each of the query wizards.

To create a filter, click on the **Records Filtering** tab, and then on the [+] button.

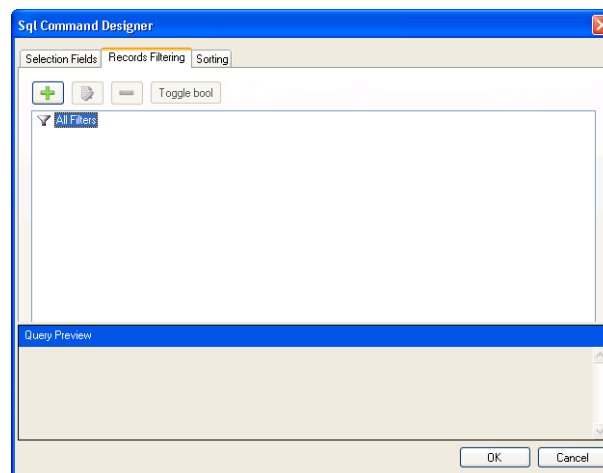


Figure 7.35 - Filtering Records

In the **Filtering Criteria** dialog box, shown in Figure 7.36, a SQL filtering expression will be created.

Select columns in the **Column name to filter on** drop-down list, and the appropriate relation from the **Relation Type** and **Relates To** list.

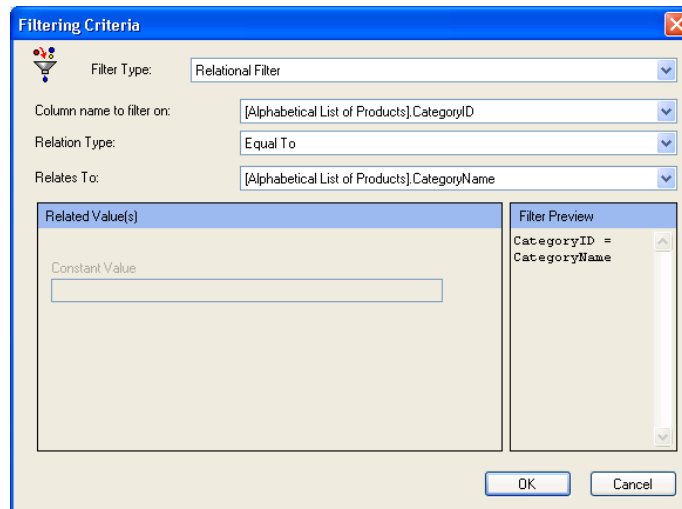


Figure 7.36 - Records Filtering Criteria

After filtering is configured (if desired), you can sort your records by clicking on **Sorting** tab.

In the Sort Records dialog, shown in Figure 7.37, specify the priority by which the columns and the records in each column are sorted. You can choose to sort on any of the selected columns, or leave them unsorted. To determine the order in which the data will be displayed within each column, select that column and choose one of the following sorting options:

- **Ascending:** Sorts the data in the column in ascending order (e.g. from least to greatest)
- **Descending:** Sorts the data in the column in descending order (e.g. from greatest to least)

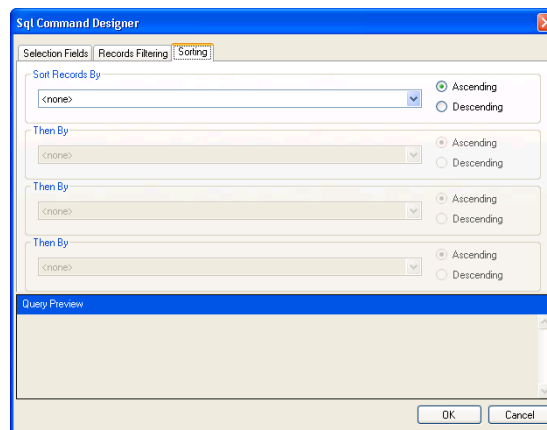


Figure 7.37 - SQL Records Sorting

7.6 Connecting to Web Services in Excel

The ReportWorX Excel interface enables you to get data from Web services and display the data in your reports.

To connect to a Web service in an Excel report template, you can right-clicking on the cell (or group), and then selecting **Connect to new Data Source → Web Service** from the pop-up menu, as shown in Figure 7.38.

The Web Services Connection Wizard appears in which you can configure cells with a Web Service data connection.

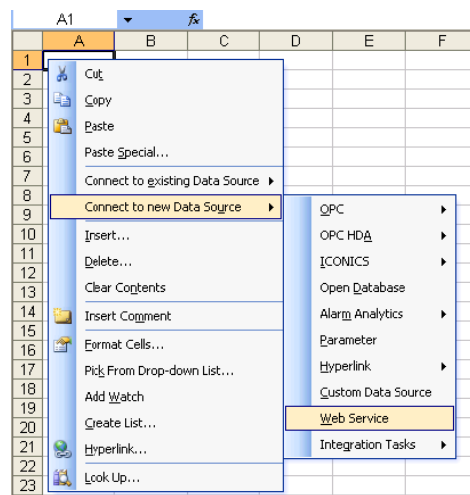


Figure 7.38 - Connecting to a Web Service

Complete the three pages of **Web Service Connection Wizard**, the first of which is shown in Figure 7.39. The three main steps of configuring a Web Service communication connection are: Web Service URL info, Select Web Service, and Select Web Service Method.

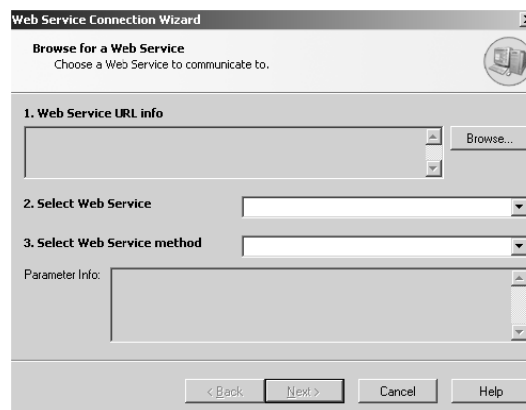


Figure 7.39 - Web Service Connection Wizard

7.6.1 Step One: Web Service URL info

You can set the Web Service URL information by clicking on the **Browse...** button in the **Web Service URL info** section to open the **Configure Web Service Connection** dialog box, as shown in Figure 7.40.

Type the URL address of the Web service under **Web Service URL** or select it from the drop down menu. Then, enter the **User Name**, **Password**, and **Domain** name if necessary to log in to the Web service. Finally, click on the **Connect** button to connect to the Web service. Once the service is connected, click the **Finish** button.

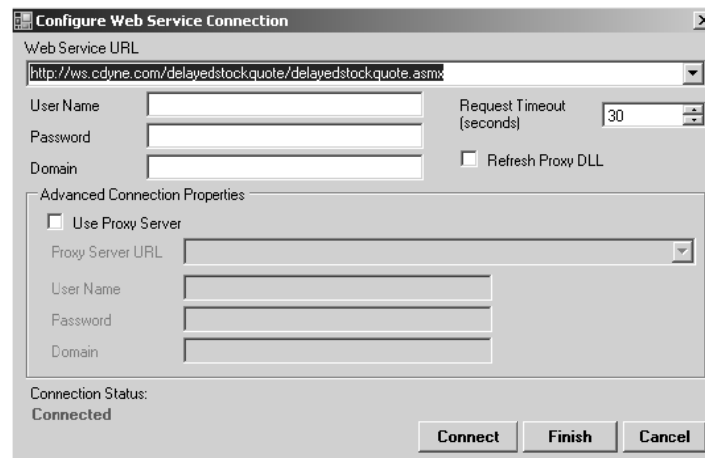


Figure 7.40 - Browse for Web Services

Other advanced parameters that may apply to selected Web services include:

- **Request Timeout:** Time (in seconds) that the ReportWorX Service will wait for a response from the Web service.
- **Refresh Proxy DLL:** When a connection to a Web service is made, a proxy .dll file is automatically created. If multiple report templates are connected to the same Web service, they will use the same proxy .dll file. Checking the **Refresh Proxy** check box will update the .dll, and all templates will use that proxy .dll file.
- **Use Proxy Server:** Check this box to use a proxy server. This will require you to also enter the **Proxy Server URL**, **User name**, **Password**, and **Domain** if necessary.

7.6.2 Step Two: Select Web Service

After connecting to the Web Service of choice, click on the drop down menu from the **Select Web Service** section, as shown in Figure 7.41, to complete step two.

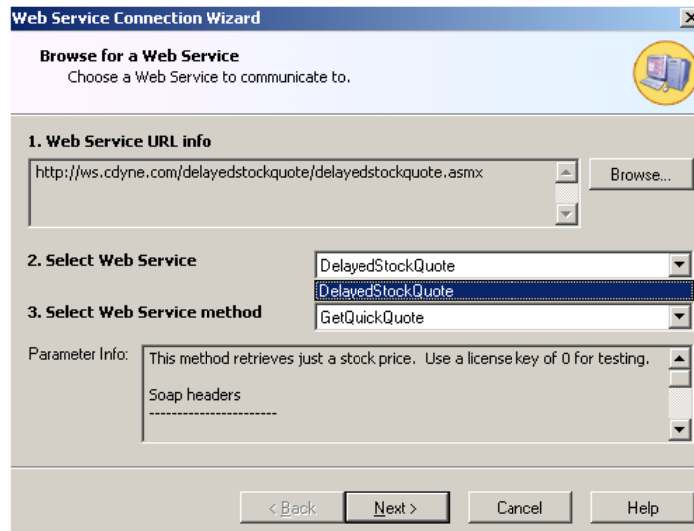


Figure 7.41 - Select Web Service

7.6.3 Step Three: Select Web Service method

After selecting the web service method, click on the **Next** button to open the **Configure Web Service parameters** dialog, as shown in Figure 7.42.

Create parameters to be assigned to each ID by clicking on ellipsis (...) button under the Parameter Binding section.

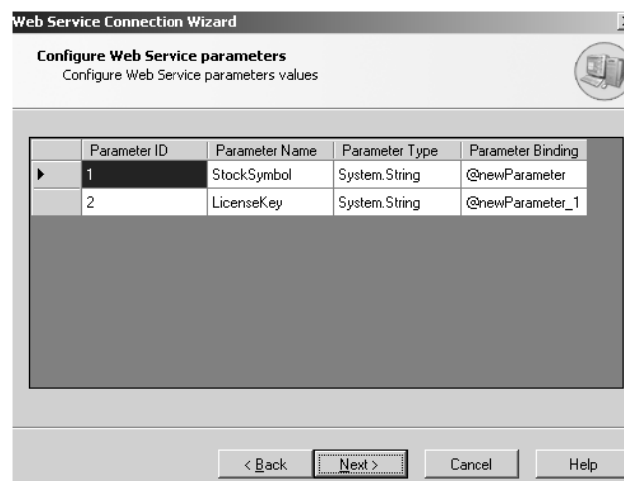


Figure 7.42 - Configure Web Service Parameters

Once the parameters are assigned, click on the **Next** button to show the **Configure Web Service data mapping** dialog box. You can choose to include the Return name value by checking the box under Include, as shown in Figure 7.43.

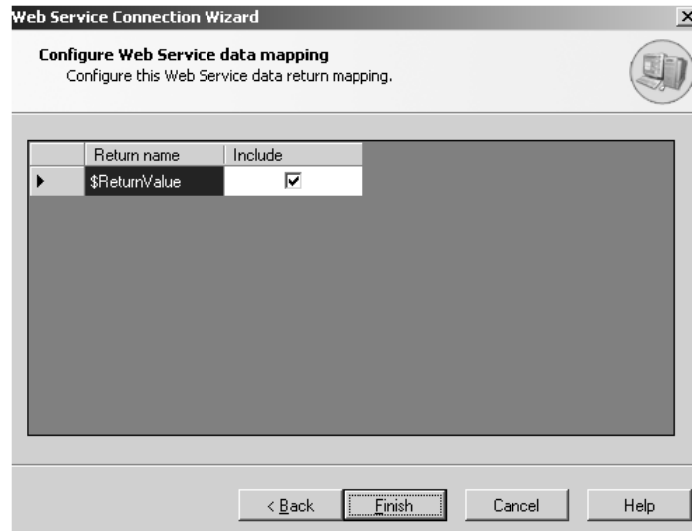


Figure 7.43 - Configure Service Data Mapping

Lastly, click the **Finish** button to return to the report template where you can see that a little red triangle appeared on the cell to indicate the data source is connected to the WebServiceDataSource as shown in Figure 7.44.

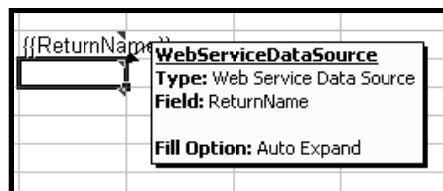


Figure 7.44 - Web Service Added to the Template

7.7 Parameters

Parameters can be used to make reports more flexible and interactive. There are several different types of parameters:

- **User selectable:** A **User Selectable Parameter** is a parameter type whose value is determined by the user that is requesting execution of the report through the Unified Web interface. This type of parameter is ideal for user-customizable reports.

- **Automatic:** An **Automatic Parameter** is a parameter type whose value is automatically determined by ReportWorX. No user interaction is required. This type of parameter is ideal for automatic reports.
- **Special Functions:** A **Special Function Parameter** is a parameter type used to provide special functions, such as reading user information from the Unified Web interface.

7.7.1 Parameter Browser

The **Parameter Browser** allows ReportWorX users to browse and select existing parameters, create, edit, and delete parameters. The parameter browser can be opened from many different locations, including cell configuration, filtering criteria, and web service configuration.

To start the Parameter Browser in the Microsoft Excel template designer, you can select **Parameter Browser** from the **ReportWorX** menu, as shown in Figure 7.45.

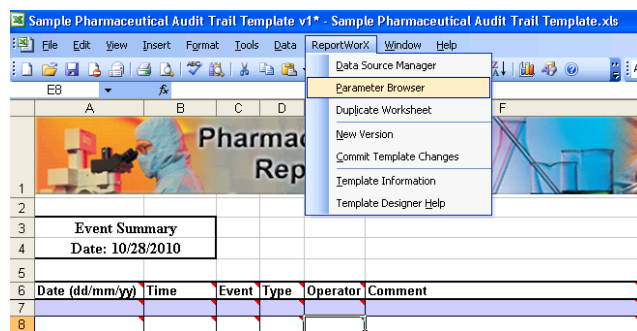


Figure 7.45 - Opening the Parameter Browser

The **Parameter Browser** lists the name, data type, parameter type, and if it's being used for each parameter. The up and down arrow buttons allow you to sort the list of parameters. The Parameter Browser also contains five buttons:

- **Validation Rules:** Click this button to open the Validation Rules dialog, which shows you any Rules and their validation Error Messages.
- **Add:** Click this button to launch the **Configure your parameter** dialog box, which helps you create and configure your parameters. Select the **Help me choose** button to launch the **Parameter Wizard**.
- **Edit:** Click this button to launch the **Configure your parameter** dialog box, which allows you to modify the selected parameter. Select the **Help me choose** button to launch the **Parameter Wizard**.
- **Duplicate:** Click this button to create a duplicate of the selected parameter

- **Delete:** Click this button to remove the currently selected parameter from the Parameter Browser.

7.7.2 Parameter Wizard

When adding a new parameter, click the **Add** button. The **Configure your parameter** dialog box appears with the following options:

- **Parameter Name:** Enter the parameter name.
- **Parameter type:** Can be selected from the drop down menu.
- **Help me choose:** Click this button to launch the **Parameter Wizard** to help choose your parameter type.
- **Data type:** Selects the data type for the parameter such as String, Integer, Float, or Date Time.
- **Configure Parameter Details:** Click this button to launch the **Configure the parameter properties** dialog box.
- **Web Prompt:** Enter the description to display in the Unified Web Interface.

The **Parameter Wizard** can help you decide on which Parameter type to use, as shown in Figure 7.46. The Parameter Wizard has three basic parameter types as described before. We will go into more details of each now.

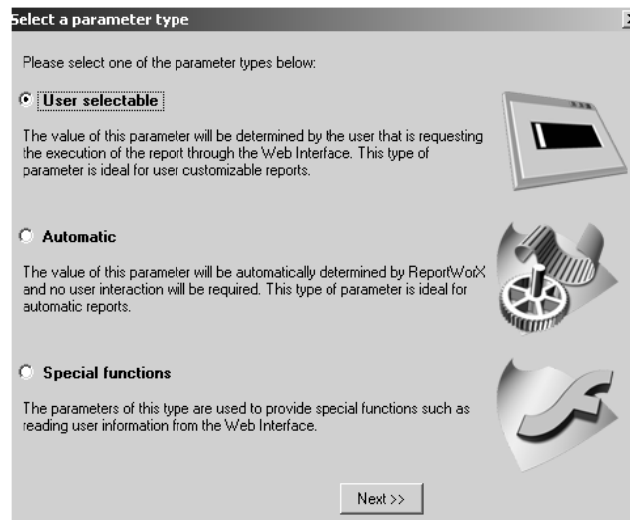


Figure 7.46 - Parameter Wizard

7.7.2.1 User selectable

Selecting **User selectable** and clicking the **Next** button brings you to the new dialog box shown in Figure 7.47. Here, you have the following options:

- **Manually enter the value:** For the user-selectable parameter type called **manually enter the value**, the user will be able to manually enter a value for the parameter. This parameter type is ideal when you want to leave maximum flexibility to the user. For example, you could have a parameter "day" that allows the user to choose a day and see all of the products sold that day.
- **Select from a fixed list of values:** For the user-selectable parameter type called **select from a fixed list of values**, the user will be able to choose a value from a list of pre-configured values. This parameter type is ideal when all the possible values for the parameter are well known. For example, you could have a parameter "gender" that can assume only the values "male" or "female."
- **Select from a dynamic list of values:** For the user-selectable parameter type called **select from a dynamic list of values**, the user will be able to choose from an up-to-date list of values coming from a database. This parameter type is ideal when the value of that parameter cannot be pre-determined, or may be constantly changing. For example, the user could select a name from the current list of customers in a database.

NOTE: The parameter name cannot contain any special characters or blank spaces. The parameter must begin with a letter.

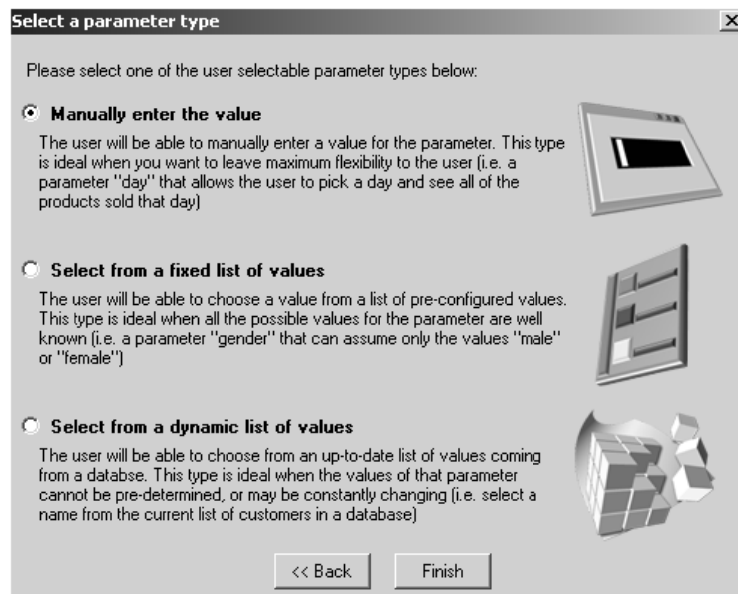


Figure 7.47 - User Selectable Parameter Choices

Selecting one of these three options and clicking the **Finish** button brings you back to the Configure your parameter dialog box with the newly selected type entered in the Parameter Type drop down menu.

7.7.2.2 Automatic

Selecting Automatic and clicking the **Next** button brings you to the new dialog box shown in Figure 7.48. Here you have the following options:

- **Read the values from a database:** For the automatic parameter type called **read the values from a database**, the value(s) will automatically be read from a database at the time of report execution.
- **Evaluate an expression:** For the automatic parameter type called **evaluate an expression**, the value will be one of the following: The result of an expression, the value of an OPC tag, the value of an alias, or a constant value.
- **Evaluate a date and time:** For the automatic parameter type called **evaluate a date and time**, the parameter will be a special date or time, or combination of both.

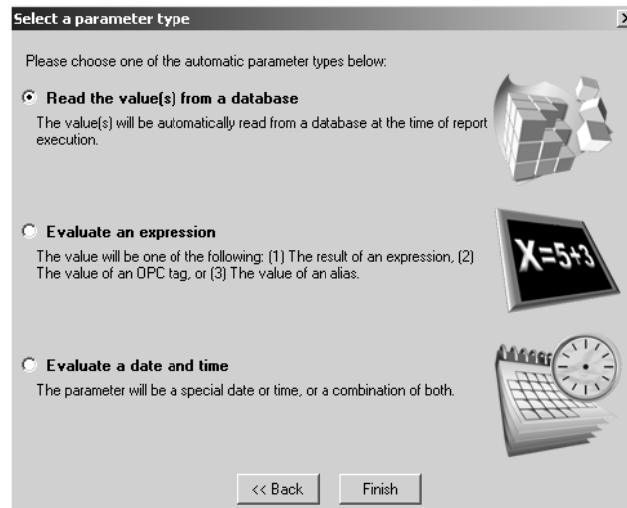


Figure 7.48 - Automatic Parameter Choices

Selecting one of these three options and clicking the **Finish** button brings you back to the Configure your parameter dialog box with the newly selected type entered in the Parameter Type drop down menu.

7.7.2.3 Special functions

Selecting Special functions and clicking the **Next** button brings you to the new dialog box shown in Figure 7.49. Here you can have the option to select:

- **Read web user identity** parameter type. This parameter value will correspond to the identity of the Web user that is requesting the report execution. This parameter can be used to filter information on a per-user basis.
- **Read report trigger information** parameter type. This parameter value will correspond to the information that triggered the report.

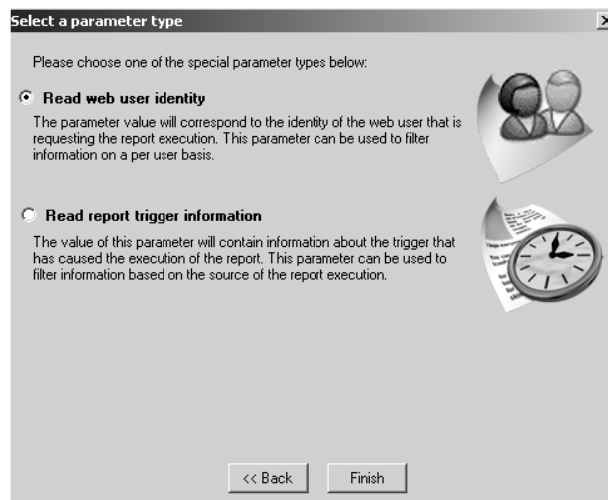


Figure 7.49 - Special Function Parameter Choices

Selecting one of these three options and clicking the **Finish** button brings you back to the Configure your parameter dialog box with the newly selected type entered in the Parameter Type drop down menu.

NOTE: For specific information on configuration steps for each type of parameter, see the ReportWorX Excel Interface help documentation.

Lab: Data Sources 7

7.1 Lab Overview

In this lab, you will use the Advanced SQL Query Wizard to create a database query.

7.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Create an advanced SQL query.

7.1.2 Support Files

To complete the Chapter 6 quick lab, you will need the following support file:

- Acmeseutical_Standard.xls

7.2 Advanced SQL Query Wizard Example

The ReportWorX Template Designer Advanced Database Configuration Mode provides an Advanced Query Wizard to help you create advanced queries for your selected databases. To run a query on an open database:

1. Open the **AcmeSeutical Report Template** for editing by clicking on the  button in the Template Versions frame.
2. Highlight a grid of cells in your **AcmeSeutical Report Template** from **A6** to **F7**.
3. Right-click on this group of cells and select **Connect to new Data Source** → **Open Database** from the pop-up menu, as shown in Figure L7. 1.

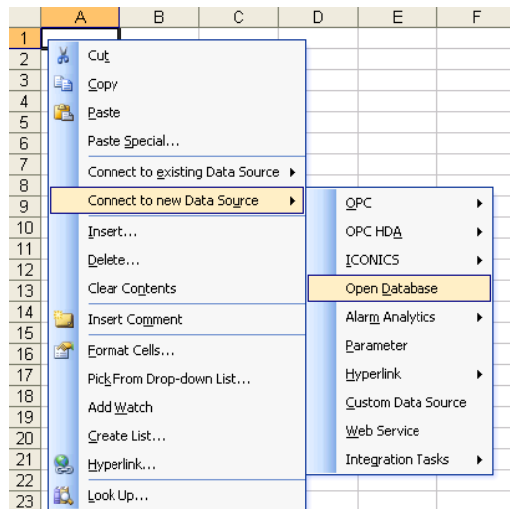


Figure L7. 1 - Open Database

4. In the Database Connection Configuration Wizard, click on the Browse button.
5. In the Database Connections Browser, right-click on **SQL Server Connections** and select **Insert New Connection**, as shown in Figure L7.2.

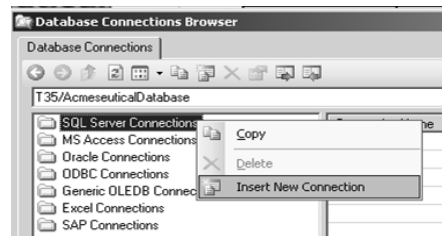


Figure L7.2 - Selecting a Database Server Type

6. In the **Data Link Properties** dialog, set the server name as "(local)" using the Windows NT Integrated Security, and select the **AcmeSeuticalDatabase** on your system, as shown in Figure L7. 3.

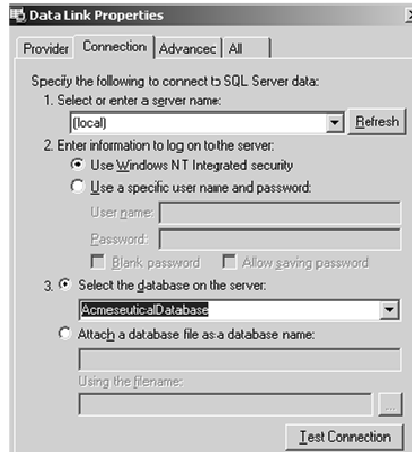


Figure L7.3 - Data Link Properties

7. Click the **Test Connection** button to ensure that a connection can be established to the database you have chosen. Click **OK** to confirm the test, and then click **OK** to accept the new settings.
8. Select the newly created database connection as shown in Figure L7.4 and click OK.

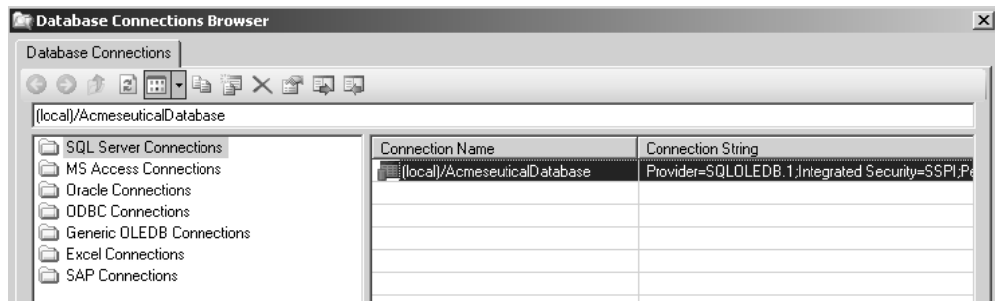


Figure L7.4 - Select Database Connection

9. Click **Next** to navigate to the next step. In the Database Connection Configuration Wizard, shown in Figure L7.5, click on the **Edit** button and choose **Advanced Query**.

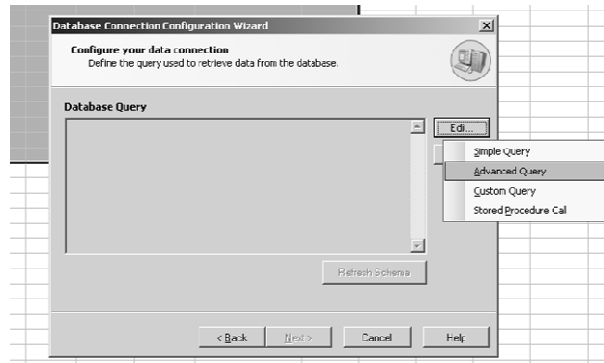


Figure L7.5 - Data Selection: Advanced Query

10. After the database schema loads (this may take several minutes depending on the size and location of the selected database), the Advanced SQL Query dialog box opens. The query wizard walks you through a series of dialogs to help you create your SQL query.
11. Click the [+] button to display a list of the tables in the database, as shown in Figure L7.6.

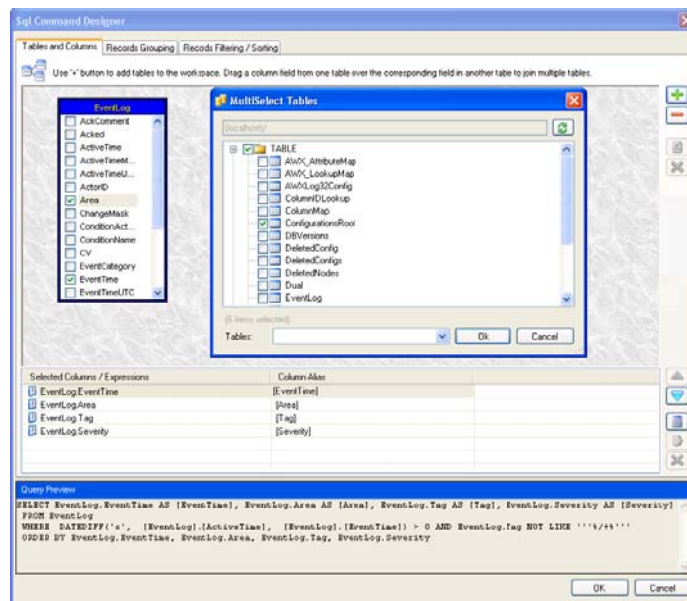


Figure L7.6 - Selecting Data Tables to Include in Database Query (Example Only)

12. Choose the '**TotalProductionData**' and '**Recipes**' tables by highlighting each one individually and clicking **Add**, as shown in Figure L7.6. Then click **OK**. This will include these tables in the database query.

13. In order to make a meaningful query using these two tables, we must specify the field that is common to the two tables and create a “join” between them. In our example, it is the **RecipeID** field from the **TotalProductionData** table and the **ID** field from the **Recipes** table.
 14. Click on the **RecipeID** field and drag it over to the **ID** field of the Recipes table. It is extremely important that you drag it exactly over the **ID** field, not just any field, and then release. This will create a join between the two tables.
 15. Now that we have established the link between these two tables, it is safe to select any of the fields from either table to be included in our report.
 16. From the **Recipes** table, select just the **RecipeName** field.
 17. From the **TotalProductionData** table, select the following fields in this order: **TheDate**, **BatchID**, **Duration**, **PillCount**, and **RejectCount**.
- NOTE:** The fields that you select in Advanced Mode will show up in the order in which you select them, so you can use this to your advantage when building reports. In **Simple Mode** you need to select the fields first and then adjust their order by clicking the **Move Up** and **Move Down** buttons.

18. Before clicking **Ok**, verify that your dialog looks similar to the example in Figure L7.7.

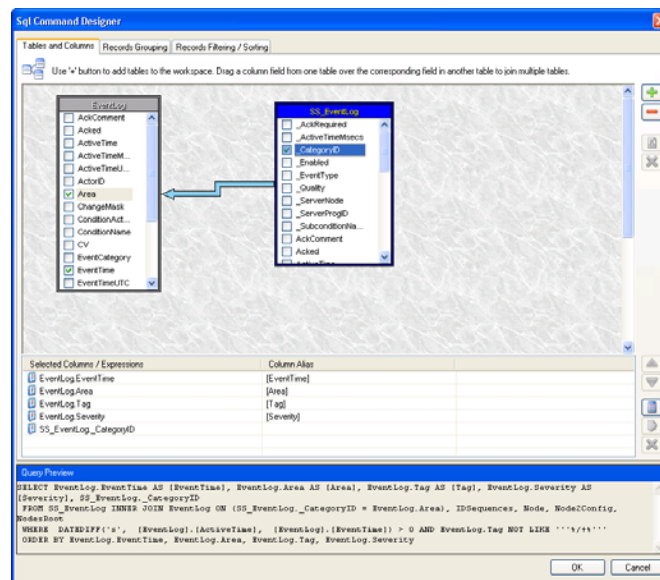


Figure L7.7 - Selecting Data Columns to Include in Query (Example Only)

19. We will not be using the **Records Grouping** tab in this exercise. We will not use this. Simply click on **Next** to continue.
20. Click on the **Records Filtering/Sorting** tab, as shown in Figure L7..1 and then the [+] button to open the **Filtering Criteria** dialog, as shown in L7.8.2.

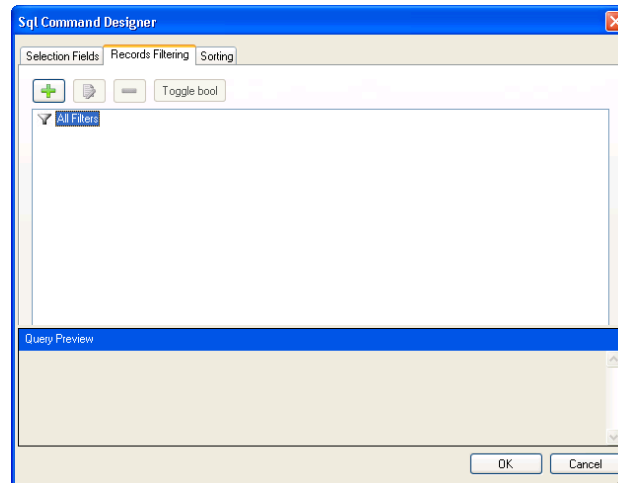


Figure L7.8.1 – Filtering Records

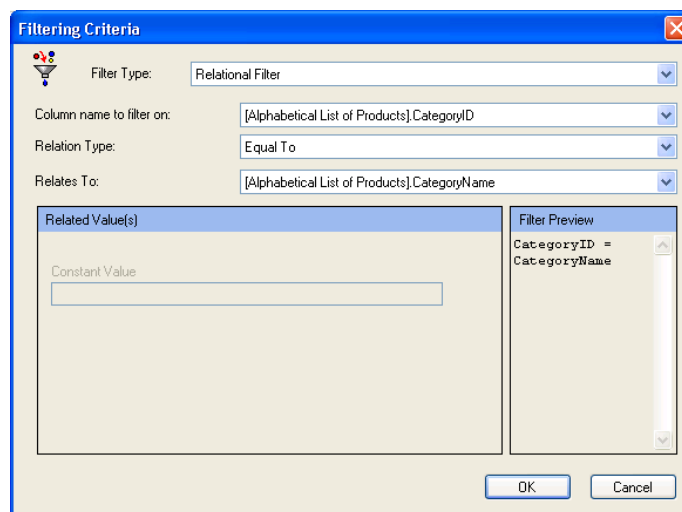


Figure L7.8.2 - Filtering Criteria (Example Only)

21. Under the **Filter Type**, select **Relational Filter**.
22. Under **Column Name to Filter On**, use **dbo.TotalProductionData.RecipeID**. Under **Relation Type**, you can select a relational filter expression (e.g. Equal To, Greater Than, Less Than, etc.) from the drop-down list to define the relationship between the values. In our case, we will use the '**Equal to**'.

23. For the **Relates To** field, select **Constant Value(s)** and our constant will be '1'. Click on **OK** when you are done.

NOTE: Please refer to SQL documentation for details about SQL expressions.

24. Click the **Finish** button to continue working through the **SQL Query Wizard**. You will see the following query summary window, shown in Figure L7.. Click **Next**.

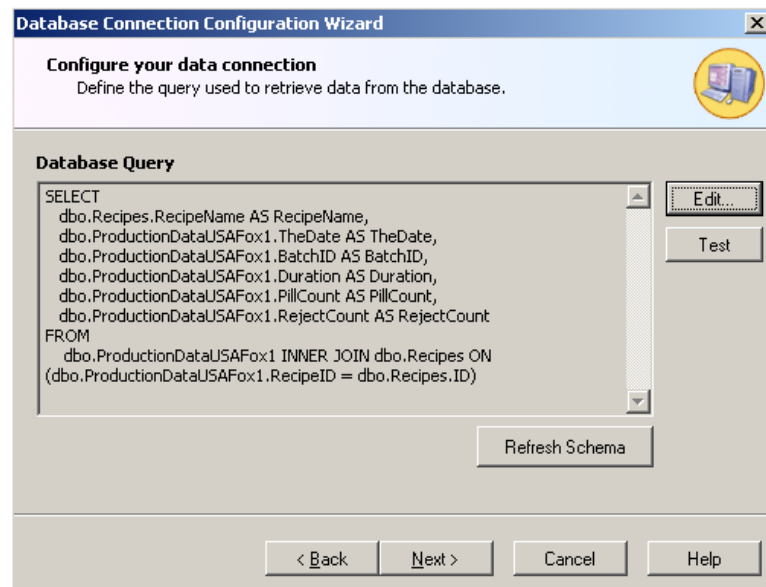


Figure L7.9 - Database Query Summary Window

25. Be sure to replace the title **DatabaseSource** with another name, such as **AcmeSeutical_Advanced_Query** and then click on the **Finish** button.
26. This will take you to the Layout Manager, which will be discussed in the next chapter. Just click **OK**.
27. You will return to the Excel template spreadsheet, which now contains data mapping cells, as shown in Figure L7.. Report templates are used by reports to visualize information from your data sources, such as statistics for employees or manufacturing productivity.

	A	B	C	D	E	F	G	H
1	 AcmeSeutical <i>A Global Leader in Easing the Pain</i>			Recipe Production report				
2				Generated On:		7/9/2008 9:05		
3								
4								
5	Recipe Name	Date	BatchID	Duration	Pill Count	Reject Count		
6								
7								
8								
9								
10								
11								

DatabaseSource
Type: Advanced Query (Microsoft SQL Server)
Field: Anchor Row
Fill Option: Auto Expand

Figure L7.10 - Excel Spreadsheet with Data Mapping

28. Finally, before we save our template, let's fill in the **<Insert Report Title Here>** field. Replace that text with **Recipe Production Report**.
29. You may close out of the ReportWorX Excel template. If prompted to **Commit Changes**, please do so in order to retain your customized template.

This completes Lab 7. You have just completed the creation of an Advanced Query with filtering within ReportWorX. The next chapter will introduce you to the Layout Manager.

Layout Manager

8

8.1 Objectives

After completing this chapter, you should know how to:

- Merge cells and map data sources to them
- Insert unmapped columns between mapped columns of data (for Excel formulas or calculations)
- Intelligently detect potential collisions in data-mapping layouts
- Span multiple rows with a single data source
- Auto-expand horizontally and vertically
- Quickly transpose configured cells from vertical alignment to horizontal alignment with one click
- Map data fields to new rows or columns

8.2 Layout Manager

The ReportWorX Layout Manager allows you to map data fields from data sources to cells in your report. To bring up the Layout Manager, right click a cell or group of cells that contain data and select **Edit Data Mapping**.

The Layout Manager can be divided into three sections, as illustrated by Figure 8.1:

- a dynamic toolbar for manipulating the data
- a tree control to select the available data column
- a work area that gives a data mapping preview modeled after the Excel spreadsheet

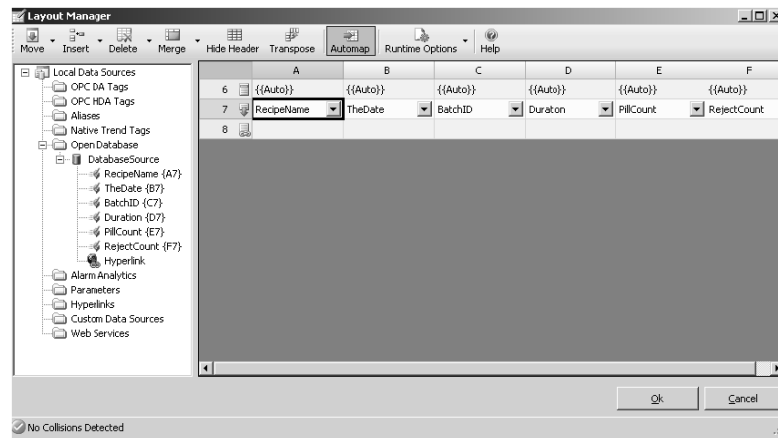


Figure 8.1 - Layout Manager

8.2.1 Toolbar

Along the top of the Layout Manager is a toolbar, which allows you to manipulate the data in the report and includes features such as moving, inserting, deleting, merging, transposing, etc. cells as shown in Figure 8.2.

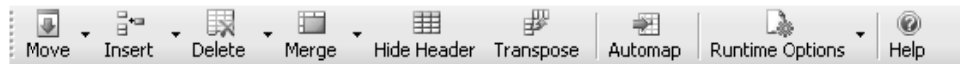


Figure 8.2 - Layout Manager Toolbar

8.2.2 Tree Control

The left hand side of the Layout Manager has a tree control, which lists all of the data sources currently connected to the report. They are organized by the type of the data source such as OPC DA Tags, Databases, Alarm Analytics, etc., as shown in Figure 8.3.

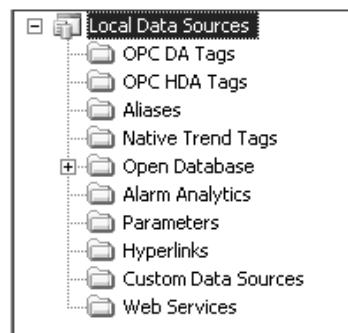


Figure 8.3 - Layout Manager Tree Control

8.2.3 Data Mapping Preview

In the main panel of the Layout Manager is the work area, shown in Figure 8.4, for you to sample the data mapping. Here the user can manipulate the layout of data and configure how the data will be displayed in the report. You can also give each column a manual title or use the auto detected column title.

	A	B	C	D	E	F
6	{{Auto}}	{{Auto}}	{{Auto}}	{{Auto}}	{{Auto}}	{{Auto}}
7	RecipeName	TheDate	BatchID	Duration	PillCount	RejectCount
8						

Figure 8.4 - Layout Manager Data Fields

8.3 Mapping Data Fields

To map data fields from the data source, drag it from the tree control on the left and drop it in a column of the work area on the right. You can also change any mapped data cell to any different data source by expanding the drop down list of a currently mapped cell as shown in Figure 8.5.

	A	B
6	TheDate	BatchID
7	<unmapped> TheDate BatchID PillCount RejectCount Duration RecipeName Hyperlink	

Figure 8.5 - Changing Data Mappings

The drop down contains all data fields from the configured data source as well as an extra “<unmapped>” field. Selecting this from the list would undo the data mapping of the cell.

8.3.1 Manipulating the Mapped Data

Once you have selected which data goes onto the excel spreadsheet and orders it in the different columns in the work area, your report is mostly ready for execution. However, there are some options in the toolbar that you may want to

set to further transform your data mapping. The toolbar of the Layout Manager offers the following options to manipulate the data mapping:

- **Move:** Move the current layout around the spreadsheet
- **Insert:** Append or insert rows/columns to the current layout
- **Delete:** Delete data mappings or the selected rows/columns from the current layout
- **Merge:** Merge/Unmerge selected cells
- **Show/Hide Header:** Toggles the header row which shows the field name
- **Transpose:** Transposes the current data mappings from column based to row based or vice versa
- **Automap:** Automatically map the fields from the data source to the current layout
- **Runtime Options:** Determines how ReportWorX fills in the data fields from the data source when executing the report

NOTE: For more information on these forms of data manipulation and others not included, please refer to the ReportWorX help documentation.

8.3.1.1 Move

Under the move button, you have the following options:

-  Move the current layout up by one row
-  Move the current layout right by one column
-  Move the current layout down by one row
-  Move the current layout left by one column

The moving of the data mapping is limited to the entire layout. For example, if the data mapping started at cell 1A, clicking on the down arrow, would move the entire mapping down one row, to start at cell 2A.

8.3.1.2 Insert

You get the following insert options by clicking on the triangle button next to the insert button:

-  Append a column at the end of the layout
-  Append a row at the end of the layout
-  Insert a column at the current selected column
-  Insert a row at the current selected row

For the insert options, you can either add a row or column at the end of the data mapping (append) or insert a row or column on top or in front of the selected row or column. Once you have performed an insert function, clicking on the insert button would perform the last insert operation.

8.3.1.3 Delete

The following delete options are available when clicking on the triangle button next to the delete button:

-  Delete the data mappings for the current selected cell(s)
-  Delete the current selected column
-  Delete the current selected row

You should note that you can delete any row or column using these buttons. However, you can only delete data mappings from cells where there are data using this button. If you select empty cells or cells with literal strings, the delete option will be grayed out. The delete button auto detects what is selected in the work area to perform the correct delete function.

8.3.1.4 Merge

Expand the merge menu with the triangle button next to the merge button and the following options become available:

-  Merge the current selected cells
-  Unmerge the selected merged cell

Be careful when you use the merge function. Similar to how excel performs a merge, the result of the function only keeps data in the first selected cell. For example, if you selected cell A1 and B1 for merging, and you have “John” in A1 and “Doe” in B1, the result of the merge would only leave “John” in the cell.

8.3.1.5 Show/Hide Header

Either the **Show Header** or the **Hide Header** button will be available depending if the header is already shown.

You can click on the Show Header  button to insert a header. The already mapped columns will automatically contain a column header as shown in Figure 8.6.

	Hide Header	Transpose	Automap	Runtime Options	Help
		A	B	C	
1		{{Auto}}	{{Auto}}	{{Auto}}	
2		RecipeNumber	RecipeName	NumberOfPills	
3					

Figure 8.6 – Automatic Headers

{{Auto}} in a header cell indicates that the cell uses Auto-text, which, when the report executes will be populated with the column names used in the SQL query of the data source.

Once you have added a header to your data mapping, the button in the toolbar changes to the Hide Header button. If you click on the button again, it will remove the header row for you as shown in Figure 8.7.

	Show Header	Transpose	Automap	Runtime Options	Help
		A	B	C	
1		RecipeNumber	RecipeName	NumberOfPills	
2					
3					

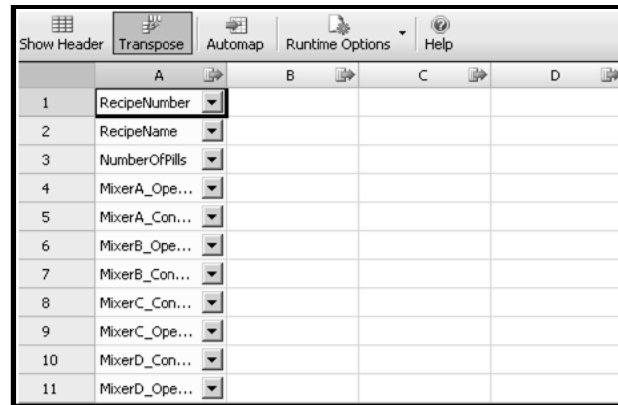
Figure 8.7 - Header Removed

8.3.1.6 Transpose

Transpose the current data mapping from expanding vertically (data fields are mapped to a column) as shown in Figure 8.8, to horizontal expansion (data fields are mapped to a row) as shown in Figure 8.9.

	Show Header	Transpose	Automap	Runtime Options	Help
		A	B	C	D
1		RecipeNumber	RecipeName	NumberOfPills	MixerA_Ope...
2					
3					
4					
5					
6					
7					
8					
9					

Figure 8.8 - Column based mapping



	A	B	C	D
1	RecipeNumber			
2	RecipeName			
3	NumberOfPills			
4	MixerA_Ope...			
5	MixerA_Con...			
6	MixerB_Ope...			
7	MixerB_Con...			
8	MixerC_Con...			
9	MixerC_Ope...			
10	MixerD_Con...			
11	MixerD_Ope...			

Figure 8.9 - Row based mapping

8.3.1.7 Automap

You can have ReportWorX automatically map the data fields from the data source to newly added rows or columns depending on the direction of how the data fills. Simply click on the Automap button, to enable or disable this function. When the button is highlighted, it is enabled. Note that in order to use this function, the first column or row must contained mapped data. The Automap function will use the next unmapped data field, skipping those that are already mapped.

8.3.1.8 Runtime Options

Click on **Runtime Options** to expand the menu as shown in Figure 8.10.

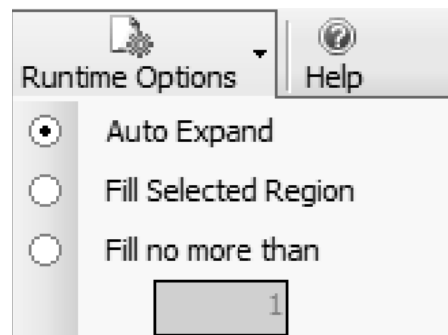


Figure 8.10 - Runtime Options

Select **Auto Expand** to have ReportWorX automatically expand the current data mapping based on the amount of data that is returned from the data source. If the data mapping is vertical (your headers goes across a row), the data mapping would expand down the rows. If the data mapping is horizontal (your headers goes down a column), the data mapping would expand across the columns.

Any configured data cells in the way of the auto expansion (such as the anchor row) will move down to accommodate for the expansion.

Auto Expand is the default runtime option. The symbol on the rows will change from just a rectangle (Auto Expand disabled) to a rectangle with a blue arrow pointing down (Auto Expand enabled), as shown in Figure 8.11.



Figure 8.11 - Auto Expand Icon (left); Static Icon (right)

Other options available under the **Runtime Options** drop down menu are:

- **Fill Selected Region:** Fill only the current data mapped layout with data.
- **Fill No More Than:** Fill the specified number of rows (if data expands vertically) or columns (if data expands horizontally) with data. If you select this option you must also specify the number in the field. The default is one. You can enter any positive integer equal to or greater than one.

NOTE: When the Auto Expand feature is used, headers and footers must be enabled.

Lab: Layout Manager 8

8.1 Lab Overview

In this lab we will use the Layout Manager to adjust our AcmeSeutical Advanced Template.

8.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Open the Layout Manager
- Move data mapping in the AcmeSeutical Report Template
- Show the headings in the AcmeSeutical Report Template

8.1.2 Support Files

You do not need any support file to complete this lab

8.2 Opening the Report Template

1. If your ReportWorX Configurator is not already open, click **Start → Programs → ICONICS BizViz → ReportWorX → ReportWorX Configurator**.
2. Navigate to the AcmeSeutical Report Template in the AcmeSeutical Templates folder
3. Open the **AcmeSeutical Report Template** by clicking on the  button in the Template Versions frame.
4. Right click on one of the data mapped cells, noted by a red triangle in the top right corner, and select Edit Data Mapping, as shown in Figure L8.1.

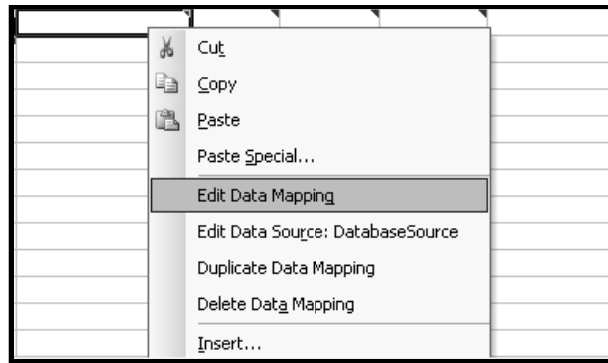


Figure L8.1 - Edit Data Mapping

5. This will launch the Layout Manager. From here, click on the **Show Header** button to show the header that is automatically filled in with the appropriate auto-text from the database.
6. Click on the **Move** button and choose **Move Up** to move the layout up by one row. This will replace the existing static header but retain its formatting.
7. Then click **OK**. You will notice that the header of each column is now filled in and displays the header name surrounded by two curly brackets. For example, {{RecipeName}}, as shown in Figure L8.2.

	A	B	C	D	E	F	G	H
1	 <i>A Global Leader in Easing the Pain</i>			Recipe Production Report				
2				Generated On:		8/10/2008 10:18		
3								
4								
5	{{RecipeName}}	{{TheDate}}	{BatchID}	{Duration}	{PillCount}	{{RejectCount}}		
6								
7								
8								

Figure L8.2 - Auto-text Headers in the Template

8. Click on the Runtime Options button, and make sure that Auto Expand is selected. If so, you can close the Layout Manager.
9. To complete this lab, you can save the template and then go back to the **ReportWorX Configurator**. Be sure to commit changes before closing the excel application.

This completes Lab 8. We used the Layout Manager to map the desired data from the database in the way we want on the spreadsheet. The next chapter will discuss creating and running reports in greater detail

Report Configuration 9

9.1 Objectives

After completing this chapter, you should know how to:

- Configure advanced settings for a report
- Associate a Report Template to a report
- Associate a redirector task to a report
- Generate reports in different file formats

9.2 Report Settings

Each report can be customized using various settings which affect how the report executes, the file format of the report, and where the report goes after execution. In previous chapters, we've discussed triggers, which dictate when the report runs. We have also discussed redirector actions, which will determine the destination of the report. In this chapter, we will discuss how to associate a report template to a report for execution, as well as how to associate your redirector actions.

9.2.1 General Report Settings

You can configure the following settings in the simple report mode:

- **Report Name:** Enter a name for the report.
- **Report Description:** Enter a description for the report (optional).
- **Enabled:** Before a report can be executed, you must activate it by checking the **Enabled** check box. Any report configuration can have many enabled reports.

NOTE: A report must have a report template assigned to it before the report can be enabled.

- **Report Template:** Select a report template from the drop-down list, which lists all templates under the **Report Tools** tree control. You can also click the buttons to the right of this field to either create a new template (see the "Report Template Wizard" section below) or edit an existing template.
- **Redirector Action:** Select a redirector task from the drop-down list, which lists all redirector tasks under the **Report Tools** tree control. You can also click the buttons to the right of this field to either create a new redirector task (see the "Creating a Redirector Action from a Report" section below) or edit an existing redirector task.
- **Generate Report As:** Select the file type(s) for your report file(s) (i.e. Excel file, PDF, and HTML). The default file type is an Excel report; note that you cannot uncheck this option. Clicking the **PDF Settings** button opens the **Advanced PDF Options** dialog, as shown in Figure 9.1. The options in this dialog are:
 - o **Protect PDF File:** Enables security protection for generated PDFs.
 - o **Linearize:** Optimizes PDFs for Web viewing.
 - o **Embed Fonts:** When this check box is checked, any text fonts contained in the report will be embedded in the resulting Adobe PDF file upon conversion to ensure that PDF readers will be able to view and print the report in its original font.

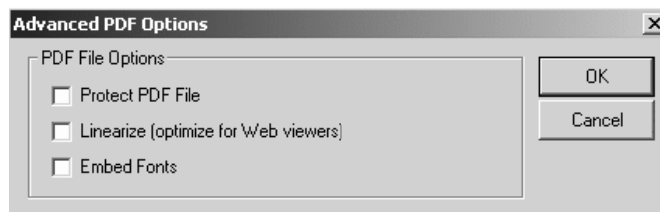


Figure 9.1 - Advanced PDF Options

- **Create New Report Files(s):** When this box is checked, a new report file is created each time the report executes by appending the execution time stamp to the file name.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.
- **New Report Object:** Creates a new report to be configured.

9.2.1.1 Report Template Wizard

The report properties dialog provides a **Report Template Wizard** to help you create new report templates in Microsoft Excel. To start the wizard, click the

Create New Template Object  button next to the **Report Template** field of the report properties, as shown in Figure 9.2.

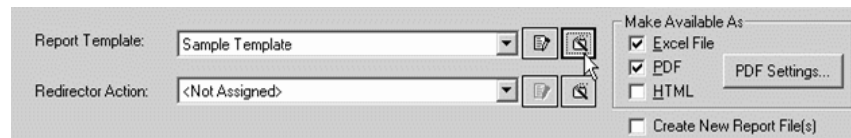


Figure 9.2 - Starting the Report Template Wizard

The Report Template Wizard, shown in Figure 9.3, allows you to create a full report template and apply it to the report, without needing to move to the report template section of the Configurator. The wizard will guide you through all necessary steps to create a working template.

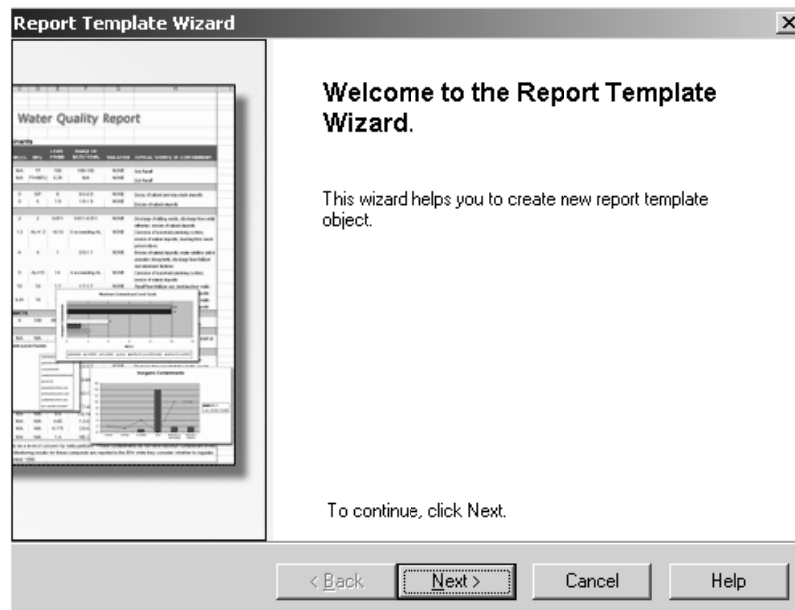


Figure 9.3 - Report Template Wizard: Welcome Screen

NOTE: For more information about report templates and how to configure them, see Chapter 6.

9.2.1.2 Creating a Redirector Action from a Report

Redirector actions specify the medium by which a report will be delivered to recipients (i.e. PDF publishing, Fax, Web publishing, E-mail, Printing, etc). As mentioned in a prior chapter, a **Redirector Action** defines how the resulting report will be processed once completed. To execute a redirector action when the report is completed, select a redirector action from the drop-down list, which lists all redirector actions configured under the **Redirector Tasks** tree control of the Configurator, as shown in Figure 9.4. You can also edit the selected redirector

action or create a new redirector action by clicking the buttons to the right of the drop-down list.

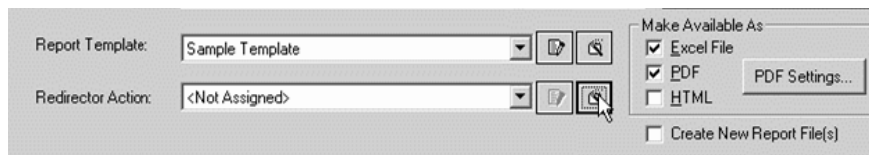


Figure 9.4 - Assigning a Redirector Action

To create a new redirector action from a report, click on the Create New Redirector Task  button. Give the new redirector action a name, as shown in Figure 9.5 and click on **OK**. If the **Navigate to Redirector Action Form** check box is checked, the proper redirector task configuration comes up once you click on OK. You can then edit the redirector action.

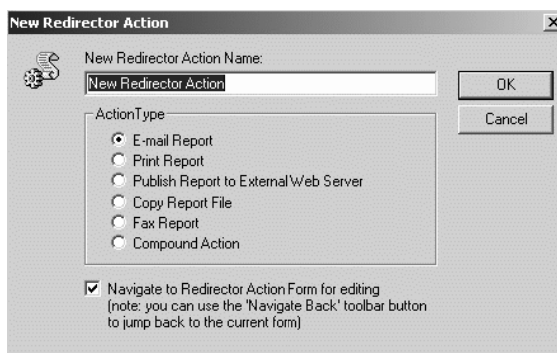


Figure 9.5 - Naming the New Redirector Task

9.2.2 Advanced Report Settings

You may remember that we had to go into the Advanced Mode of the report configuration to add a trigger. There are many more options under the Advanced Mode, including:

- Report Scheduling
- Options
- Default Language
- Global Aliasing Themes
- Web Visibility

9.2.2.1 Report Scheduling

The **Report Scheduling** tab of the advanced report settings defines when the report will be executed. Reports are executed based on triggers. To assign a

trigger to the report, click the **Add** button, which lists all triggers configured in the **Unified Data Manager**. You can edit the selected trigger or create a new trigger by clicking the Run UDM Configurator  button.

If you do not want to assign a trigger to the report, you alternatively can choose to execute it manually by clicking the **Execute Report Now** button.

If the ReportWorX service is in runtime mode, and a configuration change has occurred that modifies the scheduling of any report, the ReportWorX Configurator will display the following message as shown in Figure 9.6. If you select **Yes**, the changes will be transmitted immediately to the ReportWorX Service. If you select **No**, you must manually inform the ReportWorX service of the scheduling changes by clicking the **Reload Schedules** button on the Configurator toolbar.

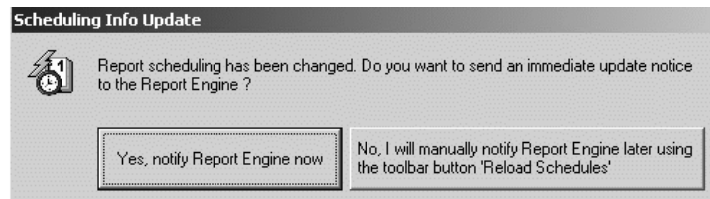


Figure 9.6 - Scheduling Updates

9.2.2.2 Options

In the **Options** tab of the advanced report settings, you can check one or more of the following check boxes:

- **Auto Fit Columns:** When **Auto Fit Columns** is checked, each column in the report's Microsoft Excel workbook/spreadsheet will be automatically expanded to fit all report data within a column.

NOTE: Enabling this option may alter or distort the appearance of any images that are embedded in columns within the Excel template. To avoid image distortion in your templates, while working in Excel right-click on the image and select **Format Picture** from the pop-up menu. Then click on the **Properties** tab. Select the **Don't move or size with cells** radio button, and then click **OK**. This setting prevents the image from stretching when the column in which the image is embedded gets expanded.

- **Protect Workbook:** When **Protect Workbook** is checked, the generated Microsoft Excel Report will be read-only (e.g. no one will be able to modify it).
- **Use Universal Coordinated Time (UTC):** When **Use UTC** is checked, all time stamps stored in the report will be stored as UTC time stamps.

This is to accommodate automatic daylight savings time switching in Windows when the report is executing.

- **Keep Workbook Comments:** When **Keep Workbook Comments** is checked, the generated Excel file will display comment tooltips for each data cell.
- **Compress Report File(s):** Minimizes the size of executed report files.
- **Cancel Report on server shutdown:** Cancels a report in progress when the server is shutdown.
- **OPC Read Timeout:** Specifies the amount of time (in milliseconds) that the Reporting Service will wait for OPC data when executing a report.
- **Database Command Timeout:** Specifies the amount of time (in seconds) that the Reporting Service will wait for database data when executing a report.

If user-selectable input parameters are used in a report, the following additional options (normally grayed out) become available in the **Options** tab, shown in Figure 9.7:

- **Merge Results in One Report:** Combines multiple values of input parameters into a single report.
- **Generate Multiple Reports:** Executes multiple reports for multiple values of input parameters.
- **Allow External Selection:** Enables selection of multiple values for input parameters through the ReportWorX Web Interface.

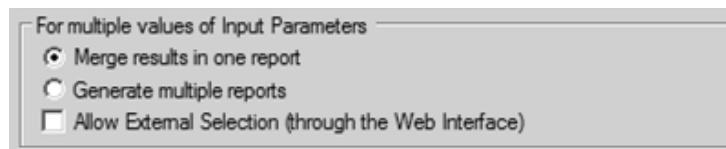


Figure 9.7 - Advanced Report Settings: Report Options

9.2.2.3 Default Language

The **Default Language** tab of the advanced report settings, shown in Figure 9.8, gives you the option to specify a language for the report that is different from the default language of the report configuration.

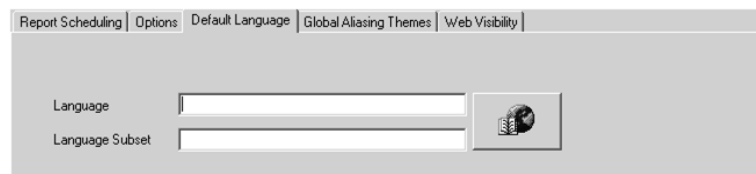


Figure 9.8 - Advanced Report Settings: Report Language

- **Language:** Click on the globe icon button to open the **Language Selector**, which allows you choose the report language. This is the language to be used in the reports. All language-aliased entries within the report template will be translated to the selected language, and OPC values will be scaled using the language configuration settings.
- **Language Subset:** The default language subset (chosen in the Language Selector) for the report is displayed in this field.

9.2.2.4 Global Aliasing Themes

The **Global Aliasing Themes** tab of the advanced report settings, shown in Figure 9.9, allows you to browse for global aliasing themes.

NOTE: For complete information about global aliasing, please see the GENESIS32 Global Aliasing Configurator help documentation.

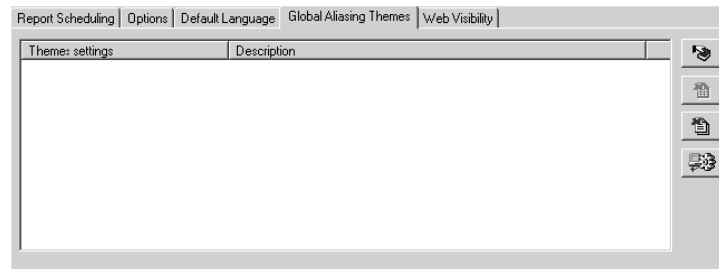


Figure 9.9 - Advanced Report Settings: Global Aliasing Themes

ReportWorX supports report-wide aliases, and it resolves the aliases for selected themes on a per-report basis. Global aliases are assigned to a certain group based on the following delimiters: <#...#>. For example, an aliased string for "Building" would appear as <#Building#>.

The resolution of global aliases is controlled by the **Theme**. You need to define themes on a per-report basis for all kinds of reports. Themes are defined in the global alias theme item browser, shown in Figure 9.10. For more information on selecting global alias themes, see the ReportWorX documentation.

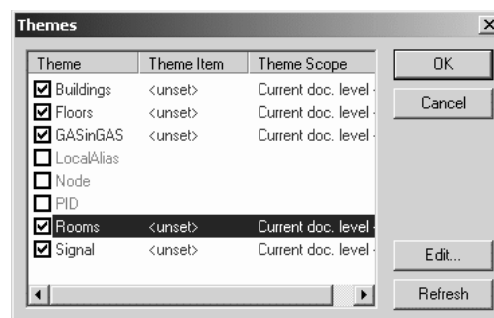


Figure 9.10 - Choosing Global Alias Start Theme

When a report associated with a global alias theme is executed, the ReportWorX Service will interface with the global aliasing engine (server) to resolve the global alias and theme.

NOTE: The global aliasing configuration within ReportWorX itself may change depending on the scheduling selected. For reports that are executed on demand, you will configure a selection of themes to be presented via the ReportWorX Web interface. For reports that are executed with a trigger on the server side, there is only one theme selection.

9.2.2.5 Web Visibility

You can decide which format of report (excel, pdf, html) to be viewable in the Unified Web Interface by selecting it in this tab as shown in Figure 9.11. Note that in order to view the reports in the selected format, you must check the option to generate the report in that format.

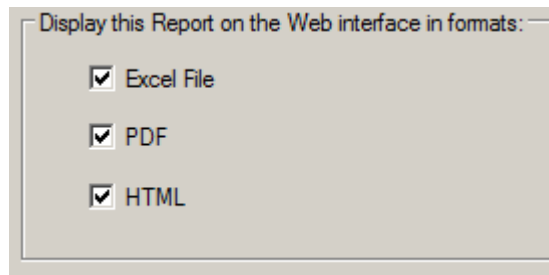


Figure 9.11 - Web Visibility

Lab: Running Reports 9

9.1 Lab Overview

In this lab we will edit the AcmeSeutical Report to use the template that we have configured to this point, and then we will execute the report.

9.1.1 Task Checklist

In this lab, you will complete the following tasks:

- Associate a report template to a report
- Associate redirector actions to a report
- Execute a report from the ReportWorX Configurator.
- Visualize the results using the Monitor View.

9.1.2 Support Files

To complete this quick lab, you will not need any support files.

9.2 Associating a Report Template to a Report

1. In the ReportWorX Configurator, select the **AcmeSeutical Report** from the **AcmeSeutical Reports** folder in the **AcmeSeutical Configuration**.
2. Click on the drop down list for the **Report Template** field
3. Select the AcmeSeutical Report Template, and click on Apply. Your report should look like Figure L9.1.

The screenshot shows the 'ReportWorX Configurator' window. The 'Report Name' field is set to 'AcmeSeutical Report' and the 'Enabled' checkbox is checked. The 'Description' field is empty. The 'Report Template' dropdown is set to 'AcmeSeutical Templates.AcmeSeutical Report Template'. The 'Redirector Action' dropdown is set to '<Not Assigned>'. The 'Generate Report As' section has 'Excel File' checked, and 'PDF' and 'HTML' are unchecked. The 'Create New Report File(s)' checkbox is unchecked. The 'Advanced Mode' button is visible. At the bottom, there are buttons for 'Apply', 'Reset', 'New Report Object', and 'Execute Report Now'.

Figure L9.1 - AcmeSeutical Report

4. You have now associated the AcmeSeutical Report Template to the AcmeSeutical Report using the Report Template field
5. Enable the report using the **Enabled** check box if it's not enabled.

9.3 Associate Redirector Actions to a Report

1. In the ReportWorX Configurator, select the **AcmeSeutical Report** from the **AcmeSeutical Reports** folder in the **AcmeSeutical Configuration**.
2. Click on the drop down list for the **Redirector Action** field and select the AcmeSeutical Combined Action. Your report should look like Figure L9.2.

The screenshot shows the 'ReportWorX Configurator' window. The 'Report Name' field is set to 'AcmeSeutical Report' and the 'Enabled' checkbox is checked. The 'Description' field is empty. The 'Report Template' dropdown is set to 'AcmeSeutical Templates.AcmeSeutical Report Template'. The 'Redirector Action' dropdown is now set to 'AcmeSeutical Combined Action'. The 'Generate Report As' section has 'Excel File' checked, and 'PDF' and 'HTML' are unchecked. The 'Create New Report File(s)' checkbox is unchecked. The 'Advanced Mode' button is visible. At the bottom, there are buttons for 'Apply', 'Reset', 'New Report Object', and 'Execute Report Now'.

Figure L9.2 - AcmeSeutical Report with Redirector Action

3. You have now associated the AcmeSeutical Combined Redirector Action to the AcmeSeutical Report using the Redirector Action field. Click on Apply to save the configuration.

9.4 Starting the ReportWorX service

1. Click on the traffic light in the toolbar of the ReportWorX Configurator to start the ReportWorX Service, as shown in Figure L9.3.

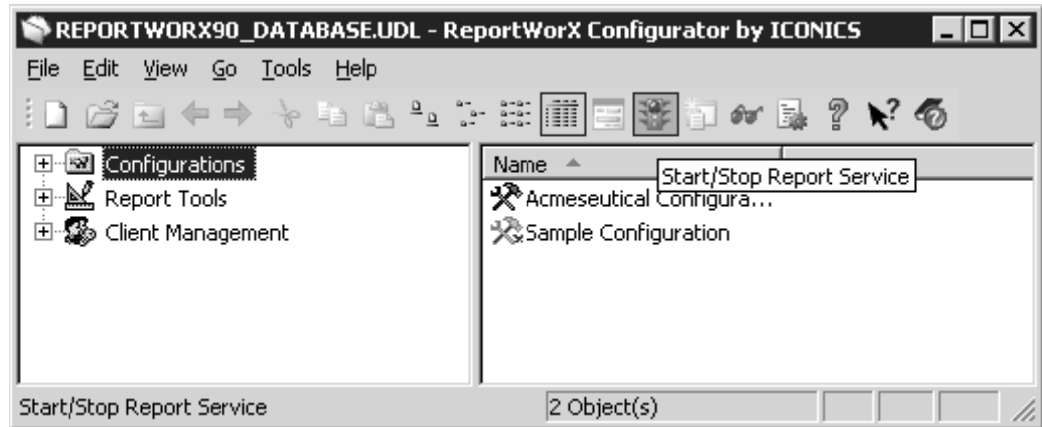


Figure L9.3 - Starting the ReportWorX Service

2. The traffic light should turn **green**  after about 15 to 20 seconds. If it turns yellow or gray instead of green, please let your instructor know, and he or she will help you troubleshoot the problem.
3. Navigate back to your **AcmeSeutical Report** and click the **Execute Report Now** button. You should receive a message telling you that the report has been successfully scheduled for execution, as shown in Figure L9.4. Click **OK** to acknowledge this message.

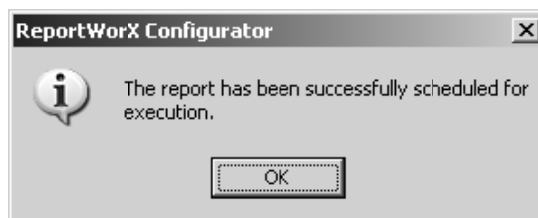


Figure L9.4 - Submitting the Report for Execution

9.5 Using Monitor View to view reports

1. To view the results of a report, we can use **Monitor View** from the ReportWorX Configurator. Click on the  icon to launch the Monitor View.

2. You should see something similar to Figure L9.5, showing you the execution time, user, file name, status, and any error information (if applicable). If your report status is still “Running,” use the refresh  button at the bottom to refresh the status until you see “Completed.”

Report Execution History - AcmeSeutical Configuration\AcmeSeutical Reports\AcmeSeutical Report				
				Last Update: 2:52:58 PM 8/10/2008
AcmeSeutical Report				
Execution Time	Report User	Report File	Report Status	Last Error
08/10/2008 02:52:55 PM	ICOTRAINING\icoUser	 AcmeSeutical Report	Completed	
Redirector Action	Action Start Time	Action Duration (sec)	Action Status	Last Error
AcmeSeutical Email Action	08/10/2008 02:52:56 PM	0.359	Success	
AcmeSeutical File Copy Action	08/10/2008 02:52:56 PM	0	Success	

Figure L9.5 - Report Execution Monitor View

3. To view the report, simply click on the Excel icon next to the report file name. This will open Excel and show you the completed report.

This completes Lab 9. We have associated a template and redirector actions to a report. We have also started the ReportWorX service, executed a report and viewed the report using Monitor View. In the next chapter you will learn about the Unified Web Interface.

Unified Web Interface 10

10.1 Objectives

After completing this chapter, you should know how to:

- Launch the Unified Web Interface from the ReportWorX Configurator.
- Execute reports from the Unified Web Interface.
- Visualize reports using the Unified Web Interface.
- Manage reports using the Unified Web Interface.
- Access the ReportWorX Web Service.

10.2 Introduction to the Unified Web Interface

The Unified Web Interface enables you to execute reports on demand and browse reports from any client computer with Internet Explorer 5.5 or above. Reports can be accessed over company intranets or over the Internet.

The Unified Web Interface allows you to:

- Execute reports
- Visualize reports
- Manage reports

The Unified Web Interface displays configuration information from the active configuration database, and it also enables you to modify configuration information. Any configuration change that you make in the Unified Web Interface is updated in the active report configuration database. Similarly, all changes that are made to the active configuration database using the ReportWorX Configurator are reflected in the Unified Web Interface.

The Unified Web Interface also feature Windows NT integrated security. Only registered users or groups with access rights may view, execute, and manage reports.

NOTE: The Unified Web Interface allows you to modify existing reports in the active configuration database from the client side. You can modify report configuration and report scheduling, but you cannot create new reports. Reports can only be created through the ReportWorX Configurator on the server side.

10.2.1 Launching the Unified Web Interface

You can launch the Unified Web Interface from the ReportWorX Configurator on the server by clicking on the **Visualize Reports** button on the Configurator toolbar, as shown in Figure 10.1.

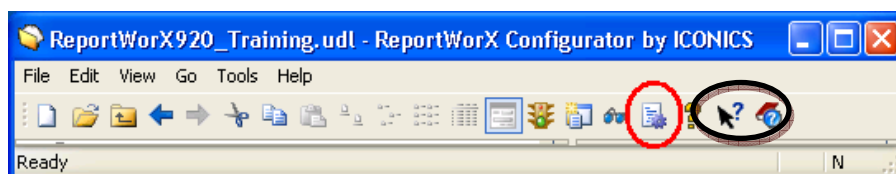


Figure 10.1 - Starting the Unified Web Interface

The Unified Web Interface opens in Internet Explorer. You can also launch the ReportWorX Unified Web Interface from a client machine on a company intranet or over the Internet. Open Internet Explorer and go to the following URL address:

<http://<mywebserver>/Main/Secured/LayoutProcessor.aspx>

where <mywebserver> should be the actual server's computer name or IP address. The Unified Web Interface opens in Internet Explorer. You can use the same URL to open the Unified Web Interface on the server machine.

10.2.2 The User Interface

Once the Unified Web Interface opens, you will notice that it is organized into three main sections:

- **Navigation Tree:** Contains providers, groups, and tabs.
- **Command Bar:** This menu bar in the header above the work area allows you to configure administration settings and user preferences.
- **Content Area:** Here, you can manage and visualize all aspects of the Unified Web Interface plug-ins.

10.2.2.1 Navigation Tree

The **Navigation Tree** contains the provider, groups, and tabs configured by the subscription. By default, if ReportWorX and BridgeWorX were installed before

your Unified Web Interface installation, both providers are in the navigation tree as shown in Figure 10.2.

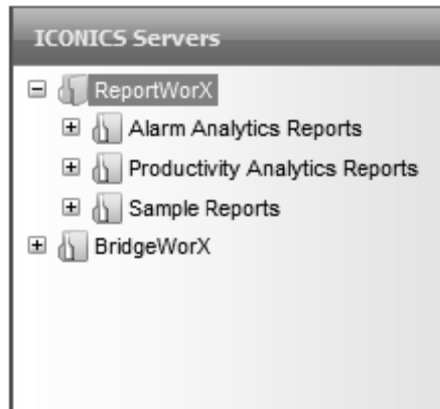


Figure 10.2 - Navigation Tree

Providers are available for ReportWorX, BridgeWorX, Productivity Analytics, and Custom XML. The **Custom XML Provider** can be used for adding additional content such as external links to the Navigation Tree.

10.2.2.2 Command Bar

The **Command Bar**, shown in Figure 10.3, is a menu bar that allows you to get to the Unified Web Interface's Administration and User Preferences page. There, you can change some settings for the Unified Web Interface. For more information on the options, please refer to the Unified Web Interface documentation.



Figure 10.3 - Command Bar

10.2.2.3 The Content Area

The Content Area, shown in the Figure 10.4, is the main work area for the Unified Web Interface. What you see in the Content Area varies according to which provider link item is selected in the Navigation Tree. Here you can manage and visualize all aspects of a report, including report configuration, execution, and management.

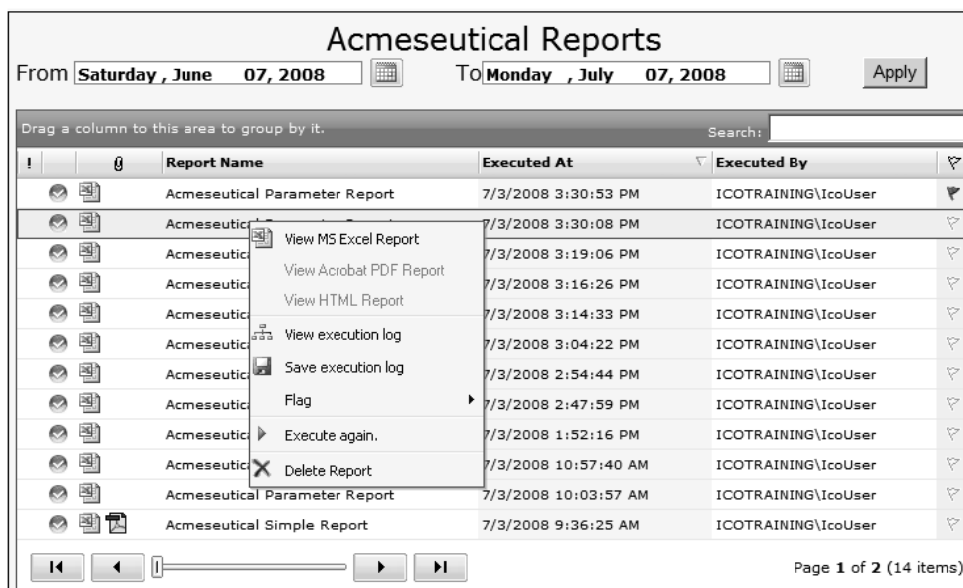


Figure 10.4 - The Content Area

Features of the Content Area include:

- Context-sensitive menus that provide shortcuts to the most common functionality for visualizing data
- Support for item sorting and grouping, enabling easier analysis and retrieval of data
- Filtering data by time range
- Paging slider bar for easy navigation between pages
- A search field that enables full-text search of all data items and columns

10.2.3 Interacting with Reports in the Unified Web Interface

The Unified Web Interface allows users with appropriate access right to view reports over the Internet and intranets. Windows integrated security is used to authenticate user identity. Once a user's identity is known, the ReportWorX security engine establishes which reports can be generated, viewed, or modified by the user. (See the ReportWorX Configurator documentation for details.)

In order to visualize reports using the Unified Web Interface, you must first create and configure your reports in the ReportWorX Configurator on the server side. Reports can be created only through the ReportWorX Configurator.

From the client side, the Unified Web Interface only allows you to modify existing reports in the active configuration database. By default, reports are made

available through the Unified Web Interface as Microsoft Excel files. You can optionally make reports available in Adobe PDF or HTML formats.

NOTE: In order to view and modify reports in Excel, the client machine needs the Microsoft Excel Viewer (available on the BizViz product CD or as a download from the ReportWorX Unified Web Interface). To view PDFs, you will need Adobe Acrobat Reader. The PDF and HTML formats are static, but Excel reports enable you to manipulate the data contained in the reports.

To view your reports through the Unified Web Interface, you will need to first start the ReportWorX Service on the server side. Once it's started, launch the Unified Web Interface from your web browser. Once you see the ReportWorX provider in the main page, you can navigate to the desired report for execution.

10.2.4 Executing Reports

In the **ReportWorX** folder on the Navigation Tree on the left hand side, you can expand the folder, and locate the report you want to execute, as shown in Figure 10.5.

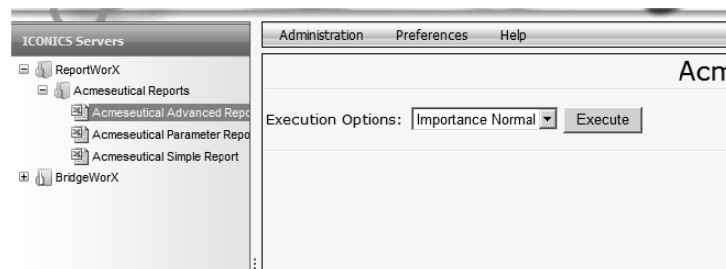


Figure 10.5 - Execute Report Page

10.2.4.1 Parameters and Execution Options

You can select a report to run from the appropriate Report Folder, which lists all enabled reports to which you have permissions in the active configuration database, as shown in Figure 10.6.

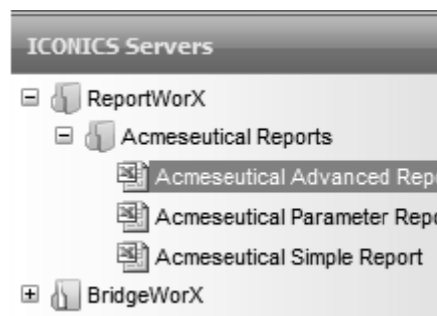


Figure 10.6 - Unified Web Interface: Report Folder

The Unified Web Interface will display all possible parameter selections necessary to run the report. Parameters are configured on the server side to allow you to refine the data in the report. For example, a pill inventory report could be filtered for a specific pill name, and allow you to customize which pill will be displayed in the report, as shown in Figure 10.7. It is possible to pass parameters to database queries as well as web service calls and global aliases. See the ReportWorX Excel configuration documentation for information about how to configure database parameters or web service parameters for reports.

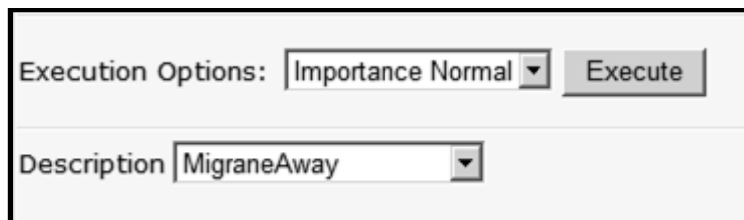


Figure 10.7 - Parameter Options for Report Execution

10.2.4.2 Report Execution Outcomes

If the report is successfully executed, then you will be notified, as shown in Figure 10.8.

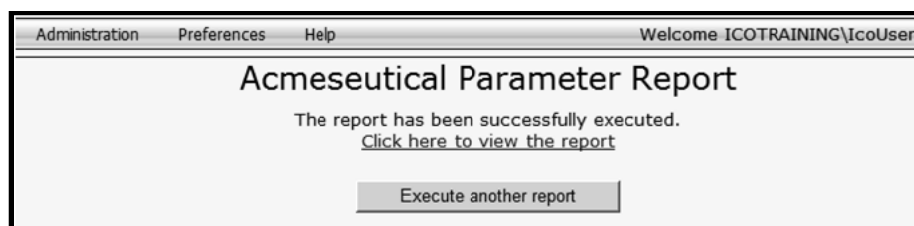


Figure 10.8 - Executing a Report

Some reports may take a long time to execute due to the amount of data in it or due to the time required to convert it into HTML. If the report takes a long time to execute, you will be notified with a message such as the one shown in Figure 10.9.

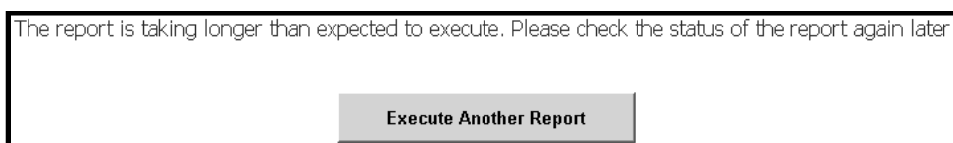


Figure 10.9 - Report Execution Message when It Takes a Long Time

The report will keep executing, but the Unified Web Interface will stop waiting for it. You can click the **Execute Another Report** button to go back to the report execution page, or you can use the toolbar to navigate to another page, such as the **Visualize Reports** page or the **Manage** page. The default timeout for the report

execution result is 60 seconds, which means that the Unified Web Interface will wait at most 60 seconds for a report to be executed. You can change this timeout by going to the **Preferences** page and setting a different value for it (see the “Preferences” section for details). You can also configure if you want to wait for the report execution result.

When reports are executed in the Unified Web Interface, an auto-generated URL address to the report file is made available at the resulting page. The URL address would all start with: `http://localhost/RwxWebService/tmp/<report_identifier>` where `<report_identifier>` is an auto-generated ID by ReportWorX for the particular report.

If the report is executed but no link is shown on the resulting web page, it may mean that the report did not execute successfully.

If the resulting page shows a link to a report but you cannot see the report by clicking on it, you may not have access rights to view the report.

If the report link contains **localhost** instead of the Web server name, it may be impossible for you to see the report because the ReportWorX provider address has not been properly configured. Ask your system administrator to change the ReportWorX provider address to match the server name.

10.2.5 Visualizing Reports

The **Content Area** page of the Unified Web Interface, shown in Figure 10.10, is the main page for viewing data for reports executed from the active report configuration. All executed reports can be viewed from this page. The page also shows the currently logged user account.

NOTE: Only registered users or groups with access rights may view reports. In order to view a report, you must have permission for report viewing for the folder in which the selected report is located. Please refer to the ReportWorX Configurator documentation for information about configuring report permissions.

AcmeSeutical Advanced Report		
From Tuesday, June 03, 2008 To Thursday, July 03, 2008 Apply		
Drag a column to this area to group by it: Search:		
	Report Name	Executed At
	AcmeSeutical Advanced Report	7/3/2008 3:19:06 PM
	AcmeSeutical Advanced Report	7/3/2008 3:16:26 PM
	AcmeSeutical Parameter Report	7/3/2008 3:14:33 PM
	AcmeSeutical Parameter Report	7/3/2008 3:04:22 PM
	AcmeSeutical Parameter Report	7/3/2008 2:54:44 PM
	AcmeSeutical Parameter Report	7/3/2008 2:47:59 PM
	AcmeSeutical Parameter Report	7/3/2008 1:52:16 PM
	AcmeSeutical Parameter Report	7/3/2008 10:57:40 AM
	AcmeSeutical Parameter Report	7/3/2008 10:03:57 AM
	AcmeSeutical Simple Report	7/3/2008 9:36:25 AM
	AcmeSeutical Advanced Report	7/2/2008 4:43:27 PM
	AcmeSeutical Advanced Report	7/2/2008 4:43:09 PM

Page 1 of 1 (12 items)

Figure 10.10 - Unified Web Interface: Visualizing Reports

The reports are organized according to the report folders in the active report configuration. Within each folder, you can sort the reports by each column in ascending or descending order by clicking on the column heading.

If the report is configured to be saved as the same file (i.e. the **Create new Files** check box in the report configuration properties is not checked), only the link to the last report execution will be displayed because the existing report files get overwritten. If you delete the report files from the web server, they will not be listed in the Unified Web Interface.

Each report folder lists the following data columns:

- **Report Name:** Displays the report names as shown in the configuration database. The **Report Name** column in the **Content Area** page of the Unified Web Interface lists both reports that were executed successfully as well as reports that failed to execute.
- **Executed At:** Lists the date and time each report was executed.
- **Executed By:** Lists the user and the domain they are from who executed the report.

10.2.5.1 Report Icons

In the column to the left of the **Report Name** column, there is a column with different icons next to each executed report that indicates the format in which the report was executed (i.e. HTML page, Adobe Acrobat PDF, or Excel spreadsheet). You can click on the icon to view the report. If you have multiple formats for the same report, the report will be executed in multiple formats, and you will see multiple icons, each representing a single format.

The icons have the following meanings:

- **No Icons:** When a report appears in the visualization page but there is no icon associated with the report, it means that the report did not execute successfully.
-  **PDF:** Report has been executed successfully in PDF format. Click on the icon to view the report.
-  **HTML:** Report has been executed successfully in HTML format. Click on the icon to view the report.
-  **Excel:** Report has been executed successfully in Excel format. Click on the icon to view the report.

10.2.5.2 Report Status Icons

In the column to the left of the Report Icons are icons indicating the status of this report execution. You can click on the icon to view report tracing information if the report failed to execute or if it executed with errors.

The icons have the following meanings:

-  **Successful:** Report completed successfully
-  **Error:** Report completed with errors
-  **Cancelled:** Report has been cancelled during execution
-  **Failed:** Report has failed to execute for some unknown reason

10.2.5.3 Viewing Excel Reports in the Unified Web Interface

Clicking on the Excel icon next to an executed report allows you to view the report in an Excel spreadsheet format, as shown in Figure 10.11. The report has all the Microsoft Excel functionality, so you can display data in charts, graphs, and other formats. You can also create new worksheets, charts, and perform other functions.

NOTE: Any modifications made to the Excel file on the client side will not be stored in the server side configuration database. To visualize native Excel report files, you will need to have Microsoft Excel installed on your computer. Alternatively you can install the Excel Viewer from the Unified Web Interface, or install the viewer from the BizViz product CD.

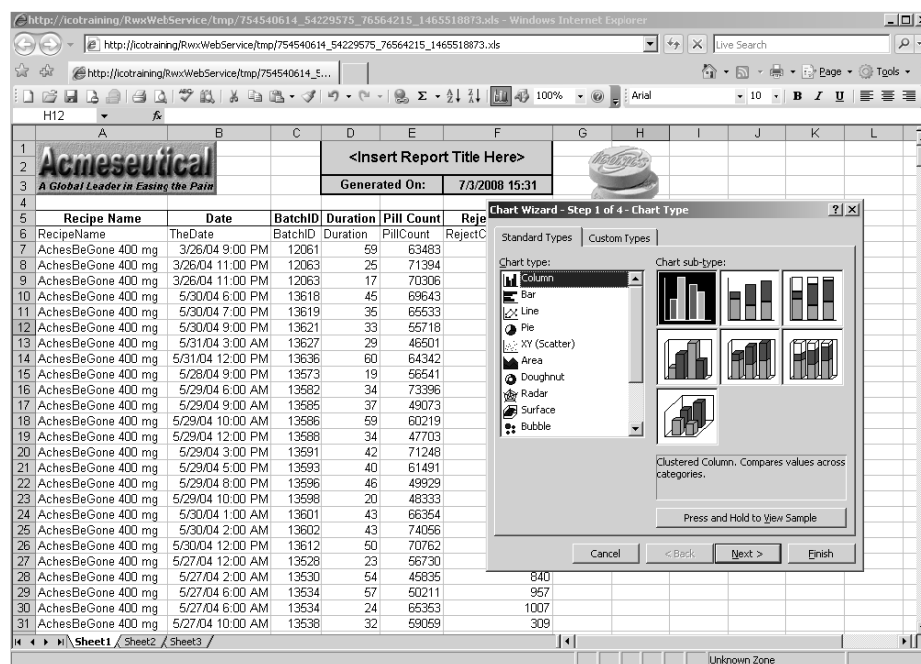


Figure 10.11 - Viewing Excel Reports in the Unified Web Interface

10.2.5.4 Filtering Report Data

The **Content Area** page of the Unified Web Interface allows you to filter reports by their date of execution as shown in Figure 10.12.

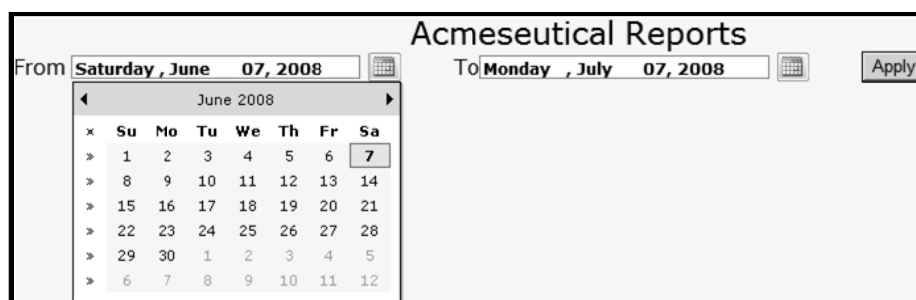


Figure 10.12 - Filtering Report Data

10.2.6 Managing Reports

By selecting a report from the Navigation Tree to the left of the Unified Web Interface, and right clicking it, you are able to select the **Configure Report** option as shown in Figure 10.13.

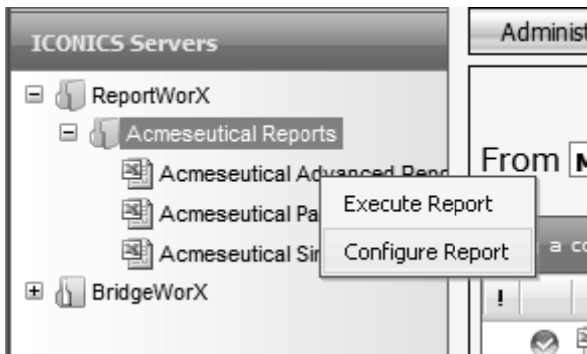


Figure 10.13 - Configuring a Report

This will display many configuration options in the Content Area to the right, similar to those in the ReportWorX Configurator, as shown in Figure 10.14.

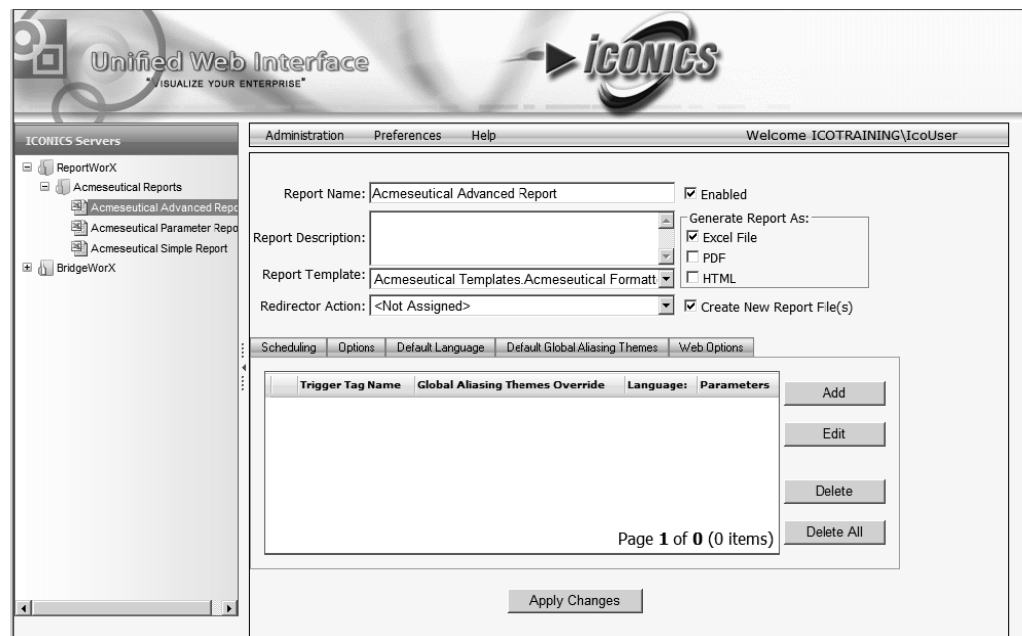


Figure 10.14 - Report Configuration Options in the Unified Web Interface

NOTE: For more information on the configuration options for each tab, please refer to the ReportWorX documentation.

Lab: Unified Web Interface

10

10.1 Lab Overview

The ReportWorX web part in the Unified Web Interface enables you to interact with ReportWorX from Internet Explorer. Reports can be accessed over company intranets or over the Internet. The Unified Web Interface allows you to:

- Execute reports
- Visualize reports
- Manage reports

10.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Configure report options in the Unified Web Interface
- Execute a report from the Unified Web Interface
- Visualize reports using the Unified Web Interface

10.1.2 Support Files

To complete this quick lab, you will not need any support files.

10.2 Launching the Unified Web Interface

To launch the Unified Web Interface from the ReportWorX Configurator on the server side:

1. Click the **Visualize Reports**  button on the configurator's toolbar, as shown in Figure L10.1.

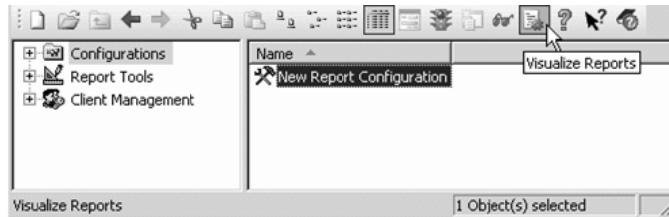


Figure L10.1 - Starting the Unified Web Interface

2. The Unified Web Interface opens in Internet Explorer to the following default URL address on the local machine:

<http://localhost/Main/secured/LayoutProcessor.aspx>

10.2.1 Executing Reports

To execute reports from a client machine using the Unified Web Interface:

1. Click on the plus sign to expand the **ReportWorX** folder in the Navigation Tree, and navigate to the folder that contains the report that you want to execute.
2. Right-click on the report that you want to execute and then select **Execute Report** from the pop-up menu, as shown in Figure L10.2.

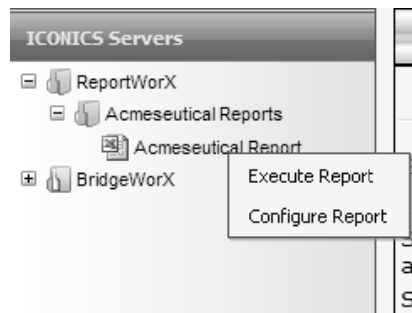


Figure L10.2 - Execute Report

NOTE: You must have access rights to execute reports. If you do not have access, the menu item will be grayed out. Please see the ReportWorX Configurator help documentation for more information about configuring report access privileges.

3. The main report execution page will appear on the screen in the content area, as shown in Figure L10.3.

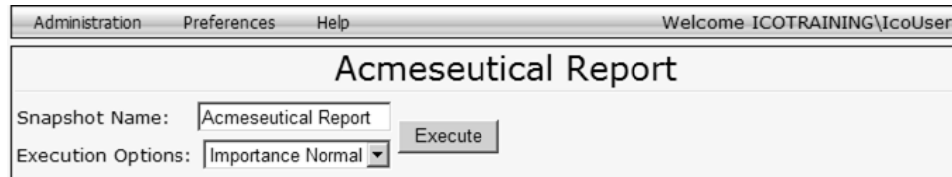


Figure L10.3 - Report Execution in Unified Web Interface

4. Fill in the user-selectable parameter values listed for the report (if any).
5. You can use the **Snapshot Name** field to give a friendly name to the report being executed, such as **AcmeSeutical Snapshot**. You can also specify the importance of the report execution.

NOTE: If you do not see the **Snapshot Name** field, enable it from **Preferences** → **General Settings** → **Execution**

6. When you are ready to run the report, click the **Execute** button to execute the report. When you execute a report, there may be a delay as the Unified Web Interface gets data from the active configuration database and the ReportWorX runtime engine as shown in Figure L10.4.

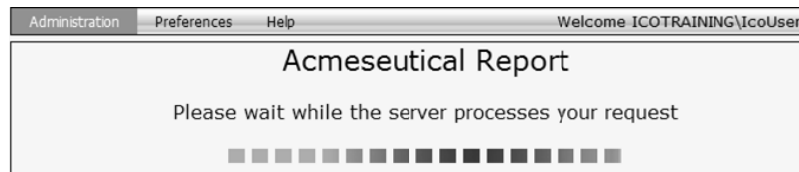


Figure L10.4 - Executing a Report

7. When the report finishes running, you should see a message similar to the one shown in Figure L10.5.



Figure L10.5 - Report Execution Completed Successfully

8. After the report has been executed, you can click on the hyperlink to view the report, or you can click on the **Execute another report** button to go back and execute another report.

NOTE: If the report is configured to be saved always on the same file (e.g. the Create new Files check box in the report configuration properties is not checked), each report execution will overwrite the previous one.

10.2.2 Visualizing Reports

The ReportWorX Viewer web part in the Unified Web Interface, shown in Figure L10.6, enables you to view all executed reports. To view a report:

1. Click on the **AcmeSeutical Reports** report folder to visualize all executed reports as shown in Figure L10.6.

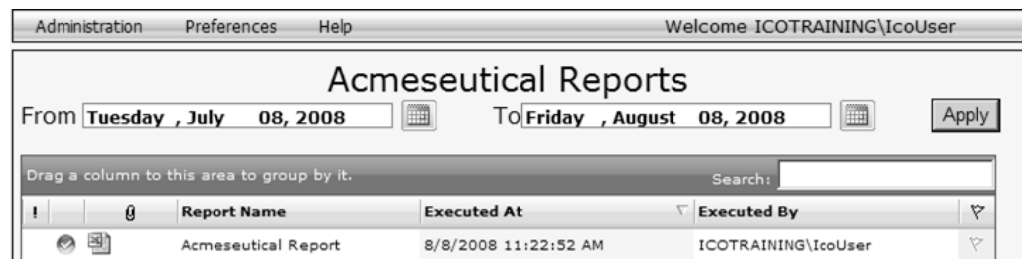


Figure L10.6 - Visualizing Reports

2. The content area displays a list of items, each one of them representing a single executed report. The items are displayed in an easy-to-access grid format with rows representing report executions and columns representing execution properties.
3. View reports by clicking on the Excel, PDF or HTML icon next to the executed report.

10.2.3 Managing Report Configuration

To manage reports from a client machine using the Unified Web Interface:

1. Click on the plus sign to expand the **ReportWorX** folder in the Navigation Tree and navigate to the folder that contains the report that you want to configure.
2. Right-click on the report that you want to configure and then select **Configure Report** from the pop-up menu, as shown in Figure L10.7.

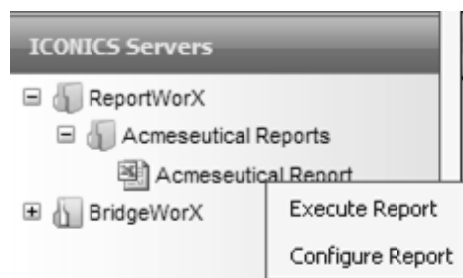


Figure L10.7 - Configuring Reports

NOTE: You must have access rights to configure reports. If you do not have access, the menu item will be grayed out. Please see the ReportWorX Configurator help documentation for more information about configuring report access privileges.

3. The main report configuration page will appear on the screen in the content area, as shown in Figure L10.8.

Administration Preferences Help Welcome ICOTRAINING\IcoUser

Report Name: ☒ Enabled

Report Description:

Report Template: ☒ Generate Report As:

Redirector Action: ☒ Excel File

☐ PDF

☐ HTML

☐ Create New Report File(s)

Scheduling Options Default Language Default Global Aliasing Themes Web Options

Trigger Tag Name	Global Aliasing Themes Override	Language	Parameters
------------------	---------------------------------	----------	------------

Page 1 of 0 (0 items)

Add Edit Delete Delete All

Apply Changes

Figure L10.8 - Report Configuration in the Unified Web Interface

4. You can check the options to generate reports in PDF and HTML, and then click on the Apply Changes button to save it.
5. If you check in the ReportWorX Configurator now, these options should be checked.

Client Management 11

11.1 Objectives

After completing this chapter, you should know how to:

- Register users and groups using the ReportWorX Configurator.
- Create a managed list using the ReportWorX Configurator.
- Add users and groups to a managed list.
- Associate managed lists with an e-mail action.
- Add users and set folder permissions

11.2 Introduction to Client Management

The ReportWorX Configurator allows you to set the report access permissions for Windows users and groups on the local computer or in a Windows NT domain over an intranet. The **Client Management** tree control of the Configurator, shown in Figure 11.1, manages the registration of user and group accounts for the ReportWorX Service. ReportWorX can automatically detect the users and groups that are configured in your Windows system/NT domain and add them under the **Client Management** tree control. You can also set up lists of users and groups for report delivery.

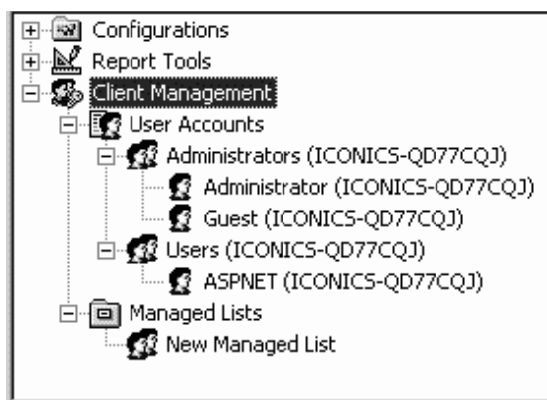


Figure 11.1 - Client Management Tree Control

11.2.1 User Accounts Registration

The **User Accounts** tree control of the Configurator, shown in Figure 11.2, lists a set of users already added to the ReportWorX configuration.



Figure 11.2 - User Accounts

To set up an account for report access, click the **User Accounts Registration** button on the right-hand pane. In the **Accounts Registration** dialog box, shown in Figure 11.3, all available users and groups for the local computer are listed in the upper pane of the Window. Simply click on the user or group and then click on the **Add to Selected Accounts list** button to add the user or group. Once you have all of the desired users, you can click OK to exit this dialog.

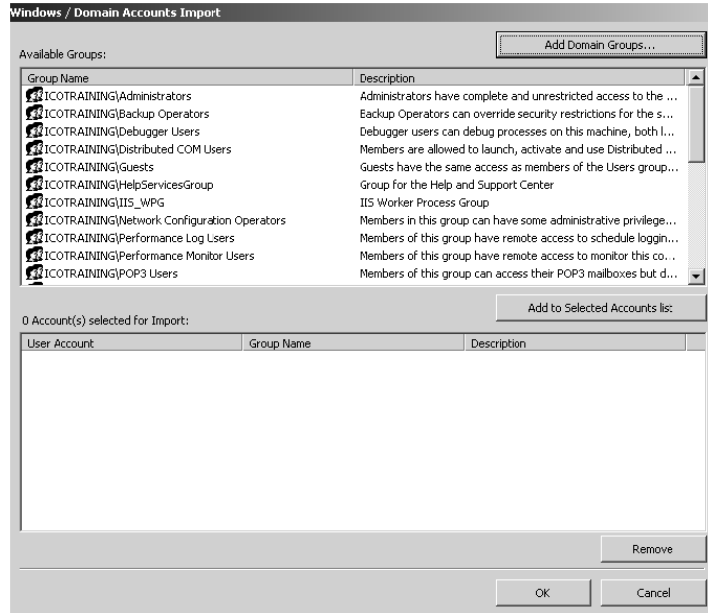


Figure 11.3 - Account Registration

NOTE: If you are on a domain, you can select domain users and groups by clicking the **Add Domain Groups...** button.

Registered users and groups will appear under the **User Accounts** tree control of the Configurator.

11.2.1.1 Group Properties

The group properties dialog, shown in Figure 11.4, displays some information about the group; however, you cannot edit these fields.

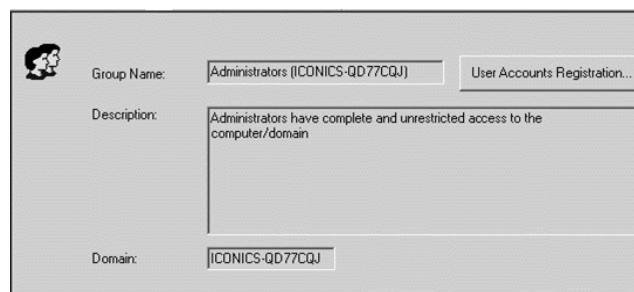


Figure 11.4 - Group Properties

- **Group Name:** Displays the name of the registered group.
- **Description:** A description for each group type is provided.
- **Domain:** Displays the name of the computer on which the group is registered.
- **User Accounts Registration:** Clicking this button opens the **Accounts Registration** dialog box, which allows you to register users and groups.

(Please see to the "User Accounts Registration" section above for more information.)

11.2.1.2 User Properties

Each user group may contain many users. The user properties are similar to the group properties, but you can also enter contact information for users as shown in Figure 11.5. The user properties are:

- **User Name:** Displays the name of the registered user.
- **Description:** A description for each user type is provided.
- **Domain:** Displays the domain the user belongs to, or if the user is local, it displays the name of the computer on which the user is registered
- **User Accounts Registration:** Clicking this button opens the **Accounts Registration** dialog box, which allows you to register users and groups.
- **E-mail Address:** Enter the user's e-mail address. An e-mail address must be specified if the user is to receive reports via e-mail.
- **Apply:** Saves all changes to the configuration database.
- **Reset:** Clears all recently added information.

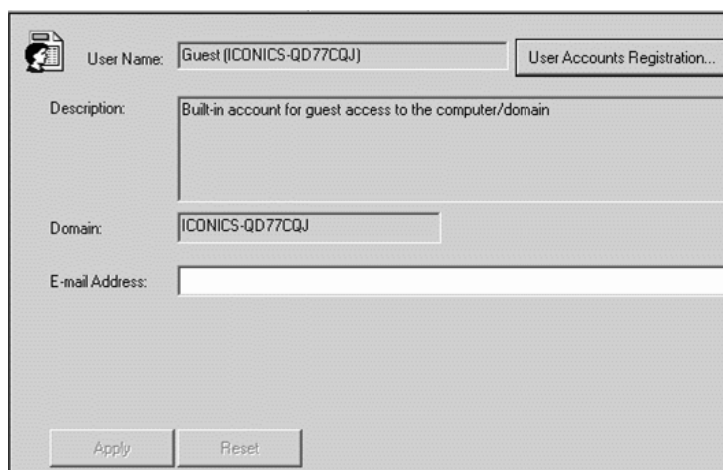


Figure 11.5 - User Properties

11.2.2 Folder Permissions

Once you have added users or groups, you may want to grant them permissions to view, execute, and manage reports. You can do this in the Report Folder. Click on the **Folder Permissions...** button, to launch the Report Permissions dialog, as shown in Figure 11.6. By default, two user groups will already have permissions: the local Administrators group and Users group.

The Administrators group will have full permissions, allowing them to view, execute, and manage reports. The Users group, on the other hand, will only have the view report permission.

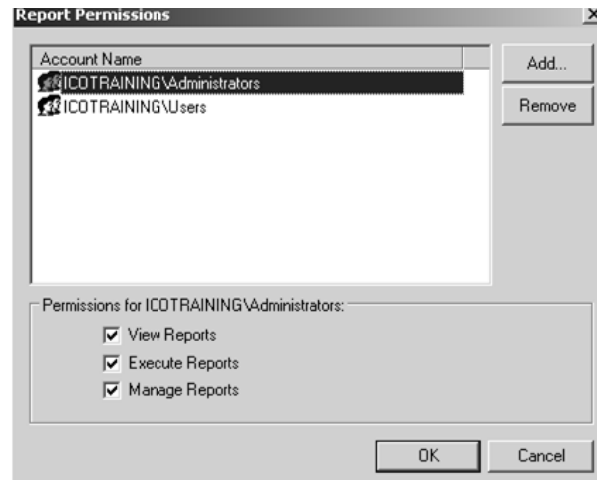


Figure 11.6 - Report Permissions Dialog

You can add more users and groups into the permissions window by clicking on the add or remove button. Clicking on the Add button brings up the Add Users and Groups dialog, as shown in Figure 11.7. The users and groups in the upper pane are those that you have added in your user management list. You can select any of the users or groups and click on the Add button to add it to the lower pane. Once you click OK in this dialog, the users will be added in the Folder Permissions. You can then select the user or group, check the permissions desired, and click OK to close the Report Permissions Dialog.

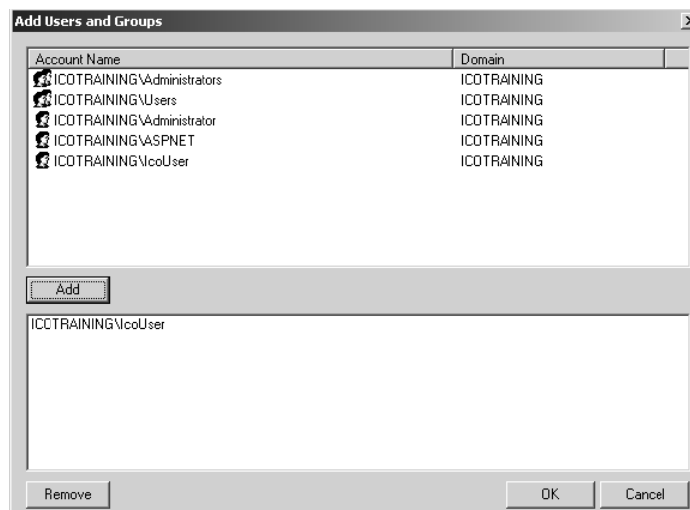


Figure 11.7 - Add Users and Groups Dialog

Clicking on Remove on either of the dialog removes the selected user.

11.2.3 Managed Lists

The **Managed Lists** tree control, shown in Figure 11.8, allows you to create lists of users and groups for report delivery. This is the equivalent of a common mailing list for email. These lists can be used with Email Redirector Actions.

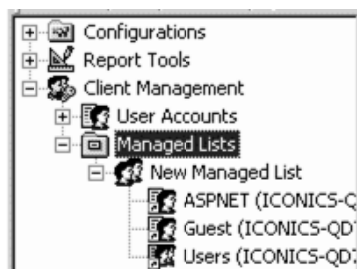


Figure 11.8 - Managed List Tree Control

11.2.3.1 Creating a New Managed List

To create a new managed list, right-click **Managed Lists** in the **Client Management** tree control and select **New → Managed List** from the pop-up menu, as shown in Figure 11.9.

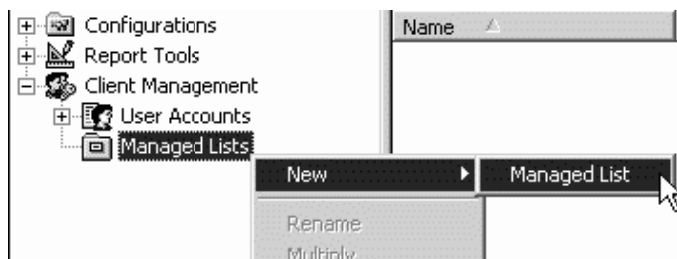


Figure 11.9 - Creating a New Managed List

The properties dialog for a new managed list shows up in the right-hand pane of the Configurator, as shown in Figure 11.10.

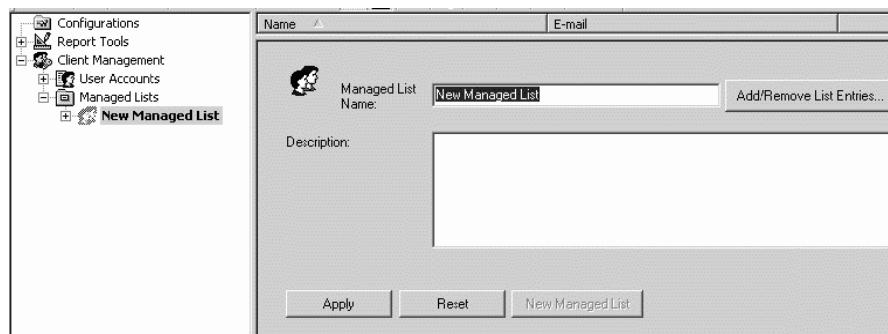


Figure 11.10 - Managed List

The **Add/Remove List Entries** button allows you to edit the list with the **Add/Remove Managed List Entries** dialog box, shown in Figure 11.11. The left-hand pane lists **Registered Users and Groups** on the local machine or domain. To add a registered user/group to the managed list, select the user/group name in the left-hand pane and then click the **Add** button. When the user/group is shown in the right hand pane under **Current Content of Managed List**, it will be added to the managed list. To remove a registered user/group from the managed list, select the user/group name in the right-hand pane and then click the **Delete** button.

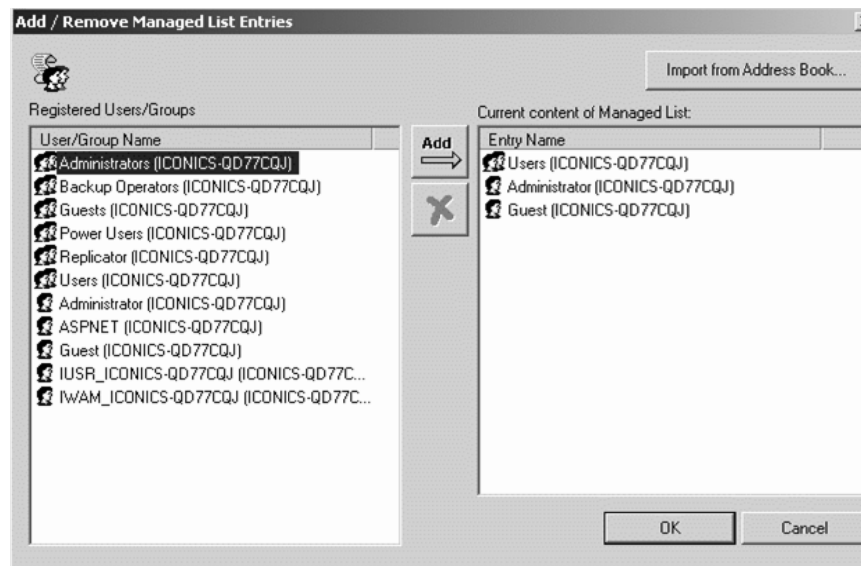


Figure 11.11 – Add or Remove Managed List Entries

NOTE: You can also import users/groups from an e-mail account address book into your managed lists. To do so, click the **Import from Address Book...** button and then select your e-mail server profile.

11.2.3.2 Managed List Items

Once you have added a user or group to a managed list, a new item is created for each user or group. For each group in the managed list, all users in the group are listed in the managed list properties dialog. Click the **Show Details** button to view the list of users in the group, as shown in Figure 11.12.

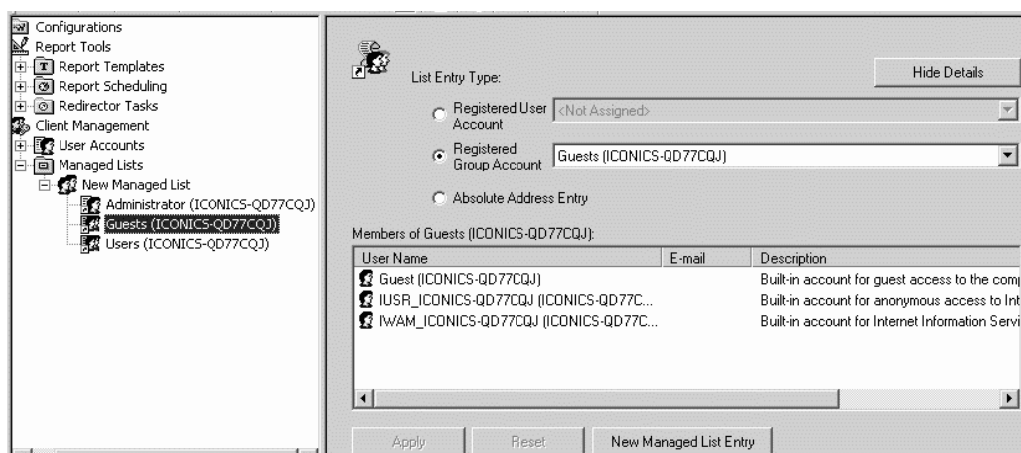


Figure 11.12 - Managed List: Group Properties

The same is true for all registered users added to the managed list: the user properties are listed in the managed list properties dialog. Click the **Show Details** button to view the user properties, as shown in Figure 11.13.

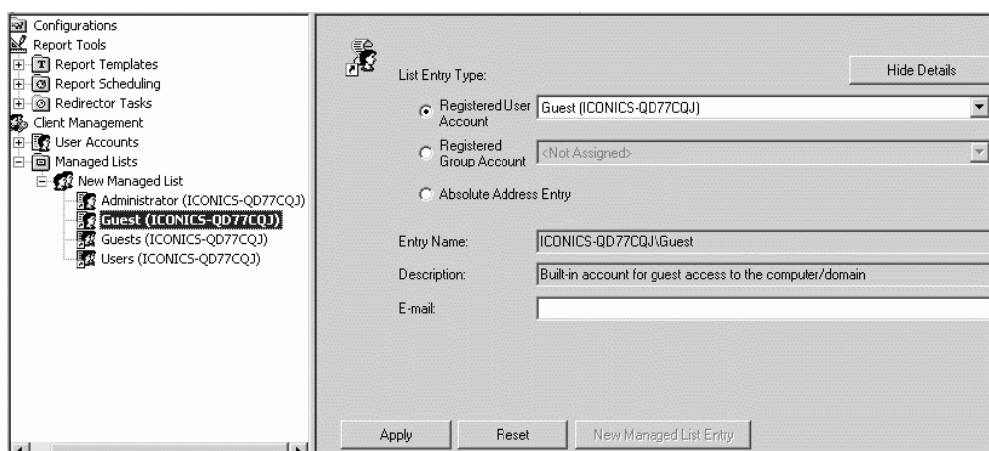


Figure 11.13 - Managed List: User Properties

NOTE: Make sure that an e-mail address is specified for each user in the user properties for the managed list. If a managed list is associated with an e-mail action, each user in the list must have a valid e-mail address in order to receive reports. This is one of the few user properties that is editable in the Client Management tool.

11.2.3.3 Associating Managed Lists with an E-mail Action

When e-mailing reports, you can send them to an entire list of groups and users. To do this you must specify a managed list in the e-mail action properties, by selecting **Mailing List** from the **Recipient(s) Type** drop-down list, as shown in Figure 11.14. You can also apply a managed list in the recipients listed in the **Mail To**, **Cc**, and **BCC** fields.

When a report is executed with the e-mail action, the report will be sent to every user in the mailing list.

Figure 11.14 - Associating Managed Lists with an E-mail Action

You can also edit the selected managed list or create a new managed list by clicking on the buttons to the right of the drop-down lists. Creating a new managed list from here will bring you back to the properties dialog for a New Managed List, shown in Figure 11.15.

Figure 11.15 - Naming the new Managed List

NOTE: Make sure that an e-mail address is specified for each user in the user properties for the managed list.

Lab: ReportWorX User Management

11

11.1 Lab Overview

In this lab we will learn about user management within the ReportWorX application. We will also explore managed lists and other user-related tasks.

11.1.1 Task Checklist

In this quick lab, you will complete the following tasks:

- Register a user in the User Accounts Registration
- Modify folder permissions
- Create a Managed List and use it in your E-mail Action

11.1.2 Support Files

To complete this quick lab, you will not need any support files.

11.2 Configuring User Accounts

Navigate to the **User Accounts** branch, under the **Client Management** tree.

You should see that underneath User Accounts, there are two groups listed: **Administrators** and **Users**, each prefixed with your PC's name as shown in Figure L11.1. This is because by default, ReportWorX imports the Administrators and Users groups from your Windows NT accounts.

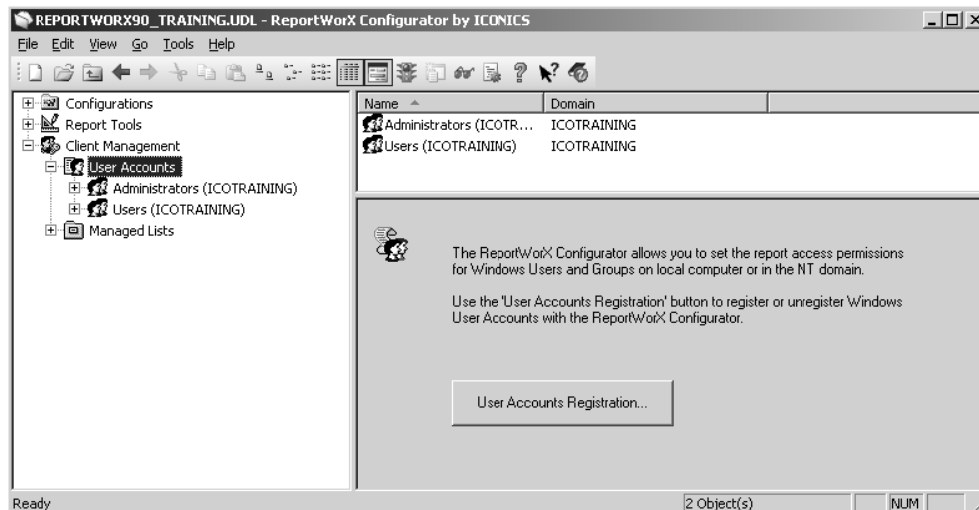


Figure L11.1 - Default User Accounts

To add or remove users or groups from this list, first click on the **User Accounts Registration** button. Then, if the users you want to remove are on your local machine, simply select the users from the Account(s) selected for Import box below as needed, then click **Remove** button to commit your changes. If you want to manage domain users, simply click the **Add Domain Groups** button on the top right and enter the Domain Name. Depending on the size of your domain, this operation may take a few minutes.

You can register all of the appropriate users and/or groups, but it is important to know the applications in which these accounts are used. As you learned earlier in this training class, ReportWorX security is folder-based, not report-based. Because of this, you must make modifications to the permission sets at the report folder level.

11.2.1 Report Folder Permissions

1. Navigate to your AcmeSeutical Reports folder under the AcmeSeutical Configuration tree and click on the Folder Permissions button to open the Report Permissions dialog.
2. Notice that the **Administrators** and **Users** groups are already present in your **Folder Permissions** dialog. The Administrators group has full permissions and the Users group only has View permissions.
3. For experimental purposes, let's uncheck the **Execute** check box for the **Administrators** group, so that it now looks like what you see in Figure L11.2.

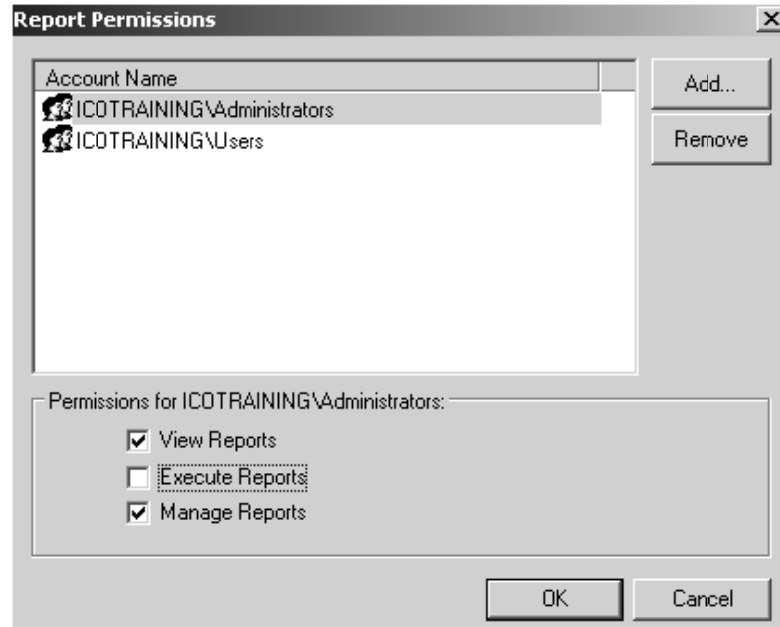


Figure L11.2 - Removing Execute Permission

4. Click **OK** to commit the changes.
5. To visualize the effect of this change, select the **AcmeSeutical Report** from the **AcmeSeutical Reports** folder, and then click the **Execute Report Now** button.
6. You should see that, although you previously had access to execute the **AcmeSeutical Report**, now, a popup dialog tells you that you do not have permissions to execute this report. This is because the execute reports permissions has been removed for your user.
7. Now, click ok on the popup dialog and re-open the **Folder Permissions** dialog under the **AcmeSeutical Reports** folder in order to restore your Execute permissions.

11.2.2 Managed Lists

1. Next, we will create a **Managed List** and see how it can be used in an E-mail Redirector Action.
2. Navigate to the **Managed Lists** branch under the **Client Management** folder, then right-click on **Managed Lists** and select **New → Managed List**.
3. In the Managed List Name field, put **AcmeSeutical Managers** and then click Apply.

4. Click on the **Add/Remove List Entries** button to build your managed list.
5. For this list, let's just add two users: **Administrator** and **BizViz_User** as shown in Figure L11.3. After you have added your desired users, click the **OK** button and the list will be updated.

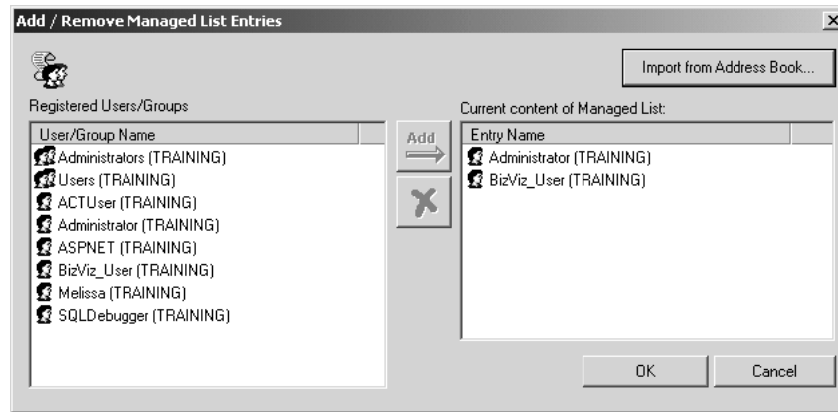


Figure L11.3 - Adding Users to the AcmeSeutical Managers List

6. You can expand your managed list to see each entry, and associated with each user will be an e-mail address. You can view this e-mail address by clicking on the **Show Details** button. E-mail addresses will be automatically imported if you use your Outlook address book to create the managed list. If not, you must manually enter e-mail addresses for each user.
7. For our managed list, we must enter an e-mail address for Administrator and BizViz_User. Let's make them **Administrator@acmeseutical.com**, as shown in Figure L11.4, and **BizViz_User@acmeseutical.com**.

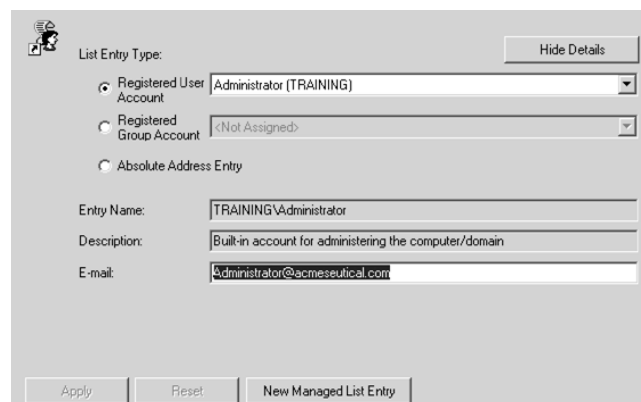


Figure L11.4 - Email Address for the Administrator Managed List User

8. Click on **Apply** to save your changes.

9. Now we can use this Managed List in our E-mail redirector action, so that instead of always having to type in strings of addresses, we can simply select our AcmeSeutical managed list and e-mail to a group of people at one time.
10. Navigate back to your **AcmeSeutical E-mail Action**. In the **Mail To** field, instead of using the Absolute Addresses, select **Mailing List** and then choose the **AcmeSeutical Managers** list from the drop-down menu, as shown in Figure L11.5.

Redirector Action Name: AcmeSeutical E-mail Action

Action Type: E-mail message

On Errors
Retry Number: 0 (0 - no retries) Retry Delay: 60 Sec.

Action Settings

Mail To: AcmeSeutical Managers Recipient(s) Type: Mailing List

CC: MyColleague@iconics.com CC. Recipient(s) Type: Absolute Address(es)

BCC: Myself@iconics.com BCC. Recipient(s) Type: Absolute Address(es)

Subject: E-mailing Report: %n

Body: Report name: %n
Execution date: %d
Execution time: %t

Mail Report As: Excel File

☐ Request Return Receipt Use these shortcuts in the subject or body fields:
☐ Compress (Zip) Attachment %n: Report Name
 %t: Report Execution Time
 %d: Report Execution Date

Apply Reset New Action Object

Figure L11.5 - Modifying E-Mail Action

11. Click **Apply** to save your changes.

Lab: Report with Parameters

A

A.1 Lab Overview

This chapter acts as an advanced lab, where you will configure some advanced reports for your AcmeSeutical application. This report will use various kinds of parameters for filtering data. After completing this chapter, you should know how to:

- Create a new template based on your existing AcmeSeutical Report Template
- Add a constant value parameter to your new template.
- Change your constant value parameter to a user-selectable parameter.
- Add another parameter to your template that depends on the value of the first parameter.
- Enable multi-selection for your user-selectable parameter.
- After each template modification, use the Unified Web Interface to execute a new copy of your report.

A.2 Creating a New Template

1. First, we will create a new template based on **AcmeSeutical Report Template**. To do so, navigate to your **AcmeSeutical Templates** folder, right-click and select **New → Report Template**.
2. Choose the fourth option, which is **Copy formatting and data links from existing template object**, and then select AcmeSeutical Report Template from the list, as shown in Figure A.1.
3. Click **OK** to create the template.
4. Name the template **AcmeSeutical Parameters**, and then click **Apply**.

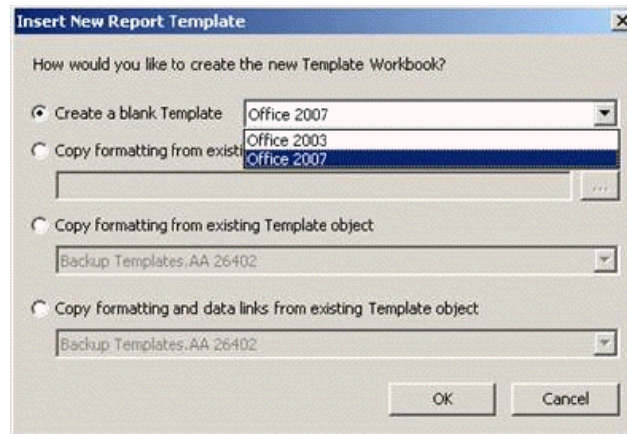


Figure A.1 – Insert New Report Template Dialog –
Choose the fourth option “Copy formatting and data links from existing Template object”

5. Click on the  button to open the template for editing. Notice that this template should look like a carbon copy of **Acmeseutical Report Template**. This prevents us from having to recreate the entire thing. Now we just have to modify some of the connections in order to show the advanced features of parameters.

A.2.1 Adding a Constant Value Parameter

1. From your new **Acmeseutical Parameters** template, right-click on the configuration in the first cell and select **Edit Data Source: DatabaseSource**.
2. Double click on the DatabaseSource name under the Open Database folder to open the **Database Connection Configuration Wizard**.
3. Click **Next** and then **Edit → Advanced Query**
4. Click on the **Records Filtering/Sorting** tab and then on the [+] button to open the **Filtering Criteria** dialog.
5. Complete the **Filter Type**, **Column name to filter on**, **Relation Type** and **Relates To** settings via the pulldown menus to edit the existing filter, then click **OK**.
6. Now suppose we only want to see data pertaining to a certain recipe. In this case we will filter on the **RecipeName** field.
7. Select **dbo.Recipes.RecipeName** from the **Column Name to Filter On** drop-down list, leave the Relation Type set to Equal To, and make sure the Relates To field is set to Constant Value(s).

8. Click the  icon to build a list of possible values directly from the database. You may receive a warning message telling you that building the list of database values may take a long time. Click on Yes to acknowledge this message, and if you wish, check the box that says “Don’t show me this message again.”
9. You will see a list of all of the different recipes that are currently in your database. Select the recipe called **NoMorePain 200 mg**, as shown in Figure A.2.

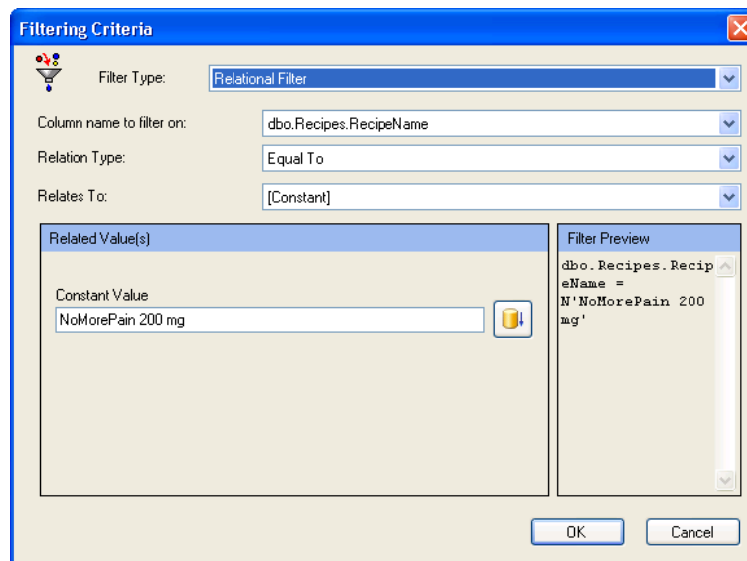


Figure A.2 - Creating a Constant Value Parameter

10. Click **OK** to add the filter, and then click **Next** through the rest of the **Data Selection** dialogs without changing anything.
11. Click **OK** to apply your configuration changes. Note that you don’t have to adjust the **Data Mapping** step at all.
12. Save your template and close Excel. Now, in order to test this new template, we must associate it to a report in our **AcmeSeutical Configuration**.
13. Navigate to your **AcmeSeutical Reports** folder and create a new report by right-clicking on the folder and selecting **New → Report**.
14. Name this report **AcmeSeutical Parameter Report**
15. From the **Report Template** drop-down list, select your **AcmeSeutical Parameter** template.
16. Make sure to check the box that says **Create New Report File(s)** as well.

17. Enable the report using the **Enabled** check box.
18. Finally, click **Apply** to complete the creation of your report. Because this report uses a constant value parameter, it does not require user interaction and can therefore be executed from the Configurator or from the Unified Web Interface with exactly the same results.
19. Click the **Execute Report Now** button to execute a copy of your new report.

NOTE: If your ReportWorX Service is not currently running, clicking on this button will automatically start the service.
20. Use **Monitor View** to visualize this report. It should resemble the report that you see in Figure A.3.
21. Note that the only records returned in the first worksheet are those with a Recipe Name of **NoMorePain 200 mg**.

Microsoft Excel - AcmeSaceutical Parameter Report_62_2008_07_03T14_03_57_0.xls [Read-Only]

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10 B I U

128

A		B	C	D	E	F	G	H
1			Recipe Production Report					
Generated On:			7/3/2008 10:08					
Recipe Name			Date	BatchID	Duration	Pill Count		
6	NoMorePain 200 mg		3/26/04 3:00 AM	12043	51	74172	332	
7	NoMorePain 200 mg		3/26/04 4:00 AM	12044	19	54745	1069	
8	NoMorePain 200 mg		3/26/04 9:00 AM	12049	23	72185	1406	
9	NoMorePain 200 mg		3/26/04 9:00 AM	12049	45	72951	1271	
10	NoMorePain 200 mg		3/26/04 11:00 AM	12051	19	52263	1000	
11	NoMorePain 200 mg		3/26/04 5:00 PM	12057	54	50404	554	
12	NoMorePain 200 mg		3/26/04 8:00 PM	12060	16	68130	1075	
13	NoMorePain 200 mg		5/30/04 10:00 PM	13622	46	60988	957	
14	NoMorePain 200 mg		5/31/04 1:00 AM	13625	31	46255	486	
15	NoMorePain 200 mg		5/31/04 4:00 AM	13628	30	72896	1339	
16	NoMorePain 200 mg		5/31/04 5:00 AM	13629	31	64229	1043	
17	NoMorePain 200 mg		5/31/04 9:00 AM	13633	37	67993	1188	
18	NoMorePain 200 mg		5/31/04 1:00 PM	13637	44	69194	1497	
19	NoMorePain 200 mg		5/31/04 2:00 PM	13638	48	60518	351	
20	NoMorePain 200 mg		5/31/04 8:00 PM	13644	53	61880	870	
21	NoMorePain 200 mg		5/31/04 11:00 PM	13647	37	59042	299	
22	NoMorePain 200 mg		5/28/04 7:00 PM	13571	20	68505	826	

Sheet1 Sheet2 Sheet3

Ready NUM

Figure A.3 - Completed AcmeSaceutical Parameter Report

A.2.2 Creating a User-Selectable Parameter

It is nice to have a report that filters out just the data that you want to see, but what if you want to see a different set of data each time? For example, what if you wanted to view information about a different recipe the next time you executed that report? This is a job for **User-Selectable Parameters**.

1. From your new **AcmeSeutical Parameters** template, right-click on the configuration in the first cell and select **Edit Data Source: DatabaseSource**.
2. Double click on the DatabaseSource name under the Open Database folder to open the **Database Connection Configuration Wizard**.
3. Click **Next** and then **Edit → Advanced Query**
4. Click on the **Records Filtering** tab and then the [+] to open the **Filtering Criteria** dialog.
5. Click on the existing constant value parameter filter and use the pulldown menus to set the column name, relation type and “relates to”.

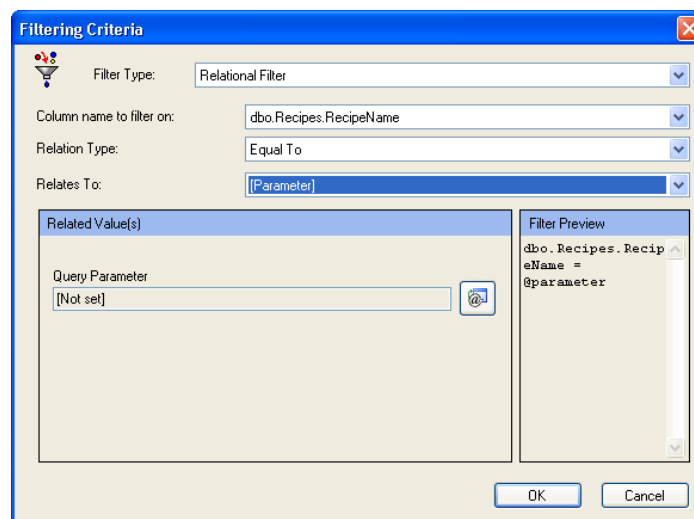


Figure A.4 - Editing Your Existing Constant Value Parameter (Example Only)

6. We will still filter on the RecipeName field, but this time, let's select a **RelatesTo** value of **Parameter** from the drop-down list.
7. Click on the  button to begin creating your parameter. This will launch the **Parameter Browser**.
8. Click the **Add** button to add a new parameter. This will open the **Configure your parameter** dialog box, which consists of inputs for creating a parameter.

9. Enter **RecipeName** for the **Parameter Name**.
10. Click the **Help me choose** button to launch the **Select a parameter** wizard.
11. Since we want to allow the user to choose a value for this parameter in the Unified Web Interface, we will make this parameter **user-selectable**.
12. Click **Next** and then select the third option: **Select from a dynamic list of values**, as shown in Figure A.5. Then click **Finish**.

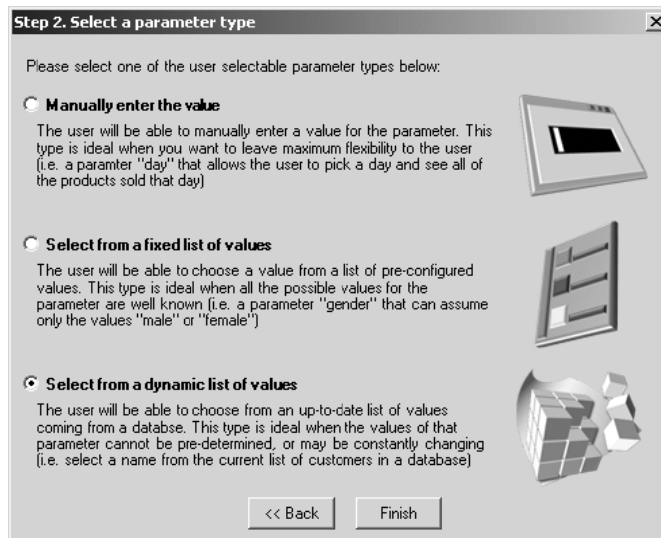


Figure A.5 - Selecting the Parameter Type

13. Click the **Configure Parameter Details** button to configure the parameter's properties.
14. The dialog that is launched here will be different for each type of parameter that you select from the **Select a parameter** wizard, but since the dynamic list of values is a very commonly used parameter type, it will be beneficial for you to learn now.
15. The first thing to configure is the **Database Connection**. Note that it is possible to extract a list of parameter values from a database that is different from the one you selected in your original query. But we will use the same database because that is what makes sense for the AcmeSeutical application.
16. Click the **Connect** button and select the **AcmeSeutical Database** from the list. Click **OK**, and then click the **Build Query...** button and select **Advanced Query** to generate your query.

You are also free to manually write SQL code instead of using the Query Wizard if you wish, but let's use the wizard for now.

17. Click the **Add Tables...** button to add the **Recipes** table and then click **OK**.
18. Check the checkbox for **RecipeName** and click **Next**
19. Click **Next** on the next dialog box to bring up the **Records Filtering And Sorting** dialog box.
20. We want to show all of the available **Recipe Names**, so there is no need to do any filtering now.
21. To make things easier for the user, let's sort the recipes alphabetically. Click the **Edit...** button on the bottom of the dialog box to open the **Sort Records** dialog box. Select **RecipeName** from the drop-down box and select **Ascending**, and then click **OK**.
22. Click **Finish**. The dialog should now look like Figure A.6.

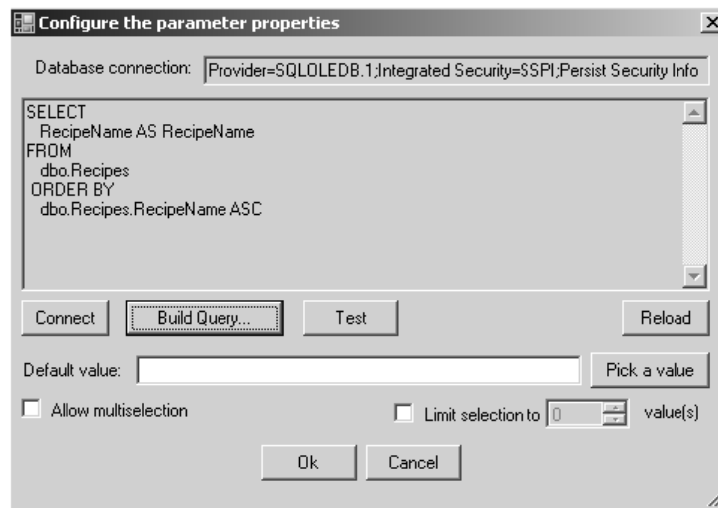


Figure A.6 - Completed SQL Query

23. Click the **Pick a value** button to select a default value for the parameter that will be used whenever a user cannot be present to select one manually. Note that this dialog can also be used as a test button to make sure that your query is correctly formed.
24. Select the **AchesBeGone 400 mg** entry from the list, as shown in Figure A.7, and then click **OK**.

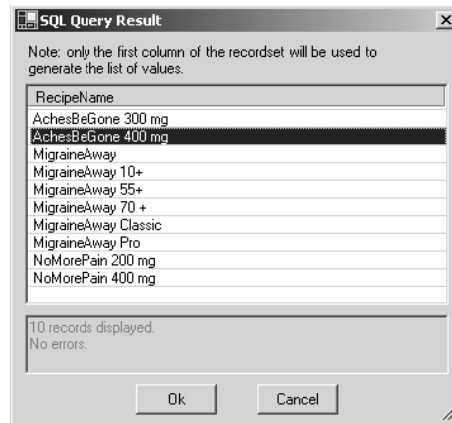


Figure A.7 - Selecting a Default Value

25. Click **OK** twice to get back to the **Configure your parameter** dialog.
26. Enter a description of what this parameter is in the **Web prompt** field. This will be displayed to the user in the Unified Web Interface.
27. Click **OK** twice to close the **Parameter Browser** and bring you back to the **Filtering Criteria** dialog, which should be similar Figure A.8.

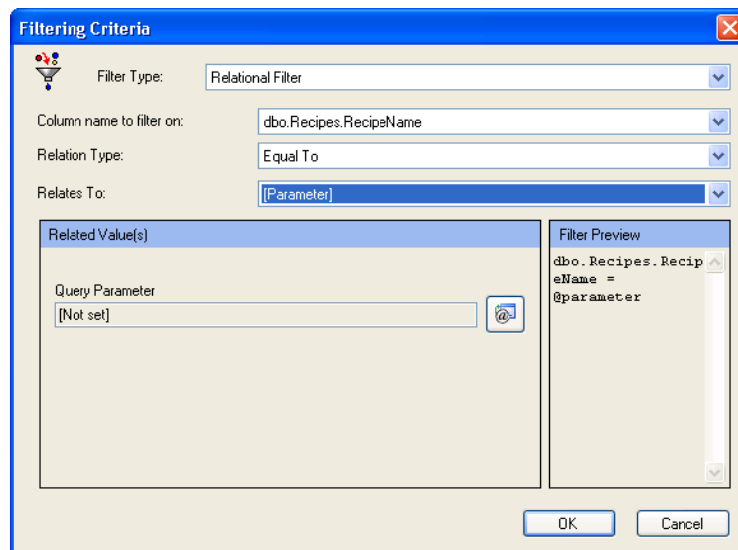


Figure A.8 - Filtering Criteria Dialog

28. Click **OK** to close your **SQL Command Designer** dialog and then click **Next** through the rest of the **Database Connection Configuration Wizard** dialogs to complete the change.
29. Click **OK** when you get back to your **Data Source Manager** dialog to apply the changes, and then **Save** and **Close** your template.

30. Now since this parameter requires user interaction, it is best to execute the report from the **Unified Web Interface**. Launch that now if it is not already open.
31. Select your **AcmeSeutical Parameter Report** from the **AcmeSeutical Reports** folder, right click the report and then click **Execute Report**.
32. You should see your **RecipeName** parameter complete with the default value of **AchesBeGone 400 mg** already selected in the drop-down list, as shown in Figure A.9.

AcmeSeutical Parameter Report

Snapshot Name:

Execution Options:

Language Options:

Select Recipe Name:

Figure A.9 - Executing the AcmeSeutical Parameter Report

33. Just to verify that the parameter is working properly, let's select a value from the list that is completely different from the two values that we have used before. Select **MigraineAway Classic** and then click **Execute**.
34. When the report has been executed you can view the report to see that it used the **MigraneAway Classic** recipe, as shown in Figure A.10.

	A	B	C	D	E	F	G	H
1				Recipe Production Report				
2				Generated On:				
3				9/20/2004 18:14				
4								
5	Recipe Name	Date	BatchID	Duration	Pill Count	Reject Count		
6	MigraineAway Classic	1/1/04 1:00 AM	10001	47	57302	766		
7	MigraineAway Classic	1/1/04 9:00 AM	10009	33	62240	324		
8	MigraineAway Classic	1/1/04 8:00 PM	10020	39	64080	1005		
9	MigraineAway Classic	1/2/04 12:00 AM	10024	37	64750	570		
10	MigraineAway Classic	1/2/04 9:00 AM	10033	60	61164	1104		
11	MigraineAway Classic	1/2/04 4:00 PM	10040	25	60790	1495		
12	MigraineAway Classic	1/3/04 8:00 AM	10056	28	51205	622		
13	MigraineAway Classic	1/3/04 12:00 PM	10060	53	71368	709		
14	MigraineAway Classic	1/3/04 4:00 PM	10064	57	66187	791		
15	MigraineAway Classic	1/3/04 5:00 PM	10065	35	60580	1450		
16	MigraineAway Classic	1/3/04 8:00 PM	10068	15	48763	1250		
17	MigraineAway Classic	1/4/04 5:00 AM	10077	42	45382	508		
18	MigraineAway Classic	1/4/04 9:00 AM	10081	39	73543	845		
19	MigraineAway Classic	1/4/04 5:00 PM	10089	15	51934	1262		
20	MigraineAway Classic	1/4/04 6:00 PM	10090	51	50115	783		
21	MigraineAway Classic	1/5/04 7:00 AM	10103	54	54094	742		
22	MigraineAway Classic	1/5/04 1:00 PM	10109	53	73323	374		
23	MigraineAway Classic	1/6/04 12:00 AM	10120	28	46847	884		
24	MigraineAway Classic	1/6/04 3:00 AM	10123	17	53392	1367		

Figure A.10 - Completed AcmeSeutical Parameter Report

A.2.3 Creating a Dependent User-Selectable Parameter

In this example, suppose that we want to not only narrow our record-set by the name of the recipe, but also by the particular Batch ID. We can add a parameter that will show only the BatchIDs that are related to the RecipeName chosen in the previous step. To do this, we must establish a dependency between the two parameters.

1. In your ReportWorX Configurator, navigate back to your **Acmeseutical Parameters** template and click the **Edit selected template object**  button.
2. Click the  button to edit the template in Excel.
3. Right click on a configured cell and select **Edit Data Source: DatabaseSource**
4. Then double click on the **DatabaseSource** from the Open Database folder, and click **Next**. Then select **Edit→Advanced Query**.
5. Click on the **Records Filtering/Sorting** tab.
6. Instead of editing our existing filter, we will add another filter to our query. Click on the [+] button to begin this process.
7. For the **Column Name to Filter On**, select **TotalProductionData.BatchID**.
8. For the **Relates To** field, select **Input Parameter**, and click the red arrow button to launch the **Parameter Browser** again.
9. Click **Add** to create another parameter.
10. Name the parameter **BatchID**
11. For the Parameter type drop down menu select **Select from a dynamic list of values**.
12. Click **Configure Parameter Details** to configure the database connection and query.
13. Click **Connect** and select **Acmeseutical Database** from the list, and then click the **Build Query... → Advanced Query** button to build your query.
14. If the **TotalProductionData** and **Recipe** tables are not on the canvas, add them using the [+] button, because we need to do a join that connects the two tables. Recreate the join between the **RecipeID** field in the **TotalProductionData** table and the **ID** field in the **Recipes** table.

15. Select the **BatchID** field from the **TotalProductionData** table. Verify that your dialog looks like Figure A.11, and then click on the **Records Filtering/Sorting** tab and then the **[+]** button to move on to the **Filtering Criteria** dialog.

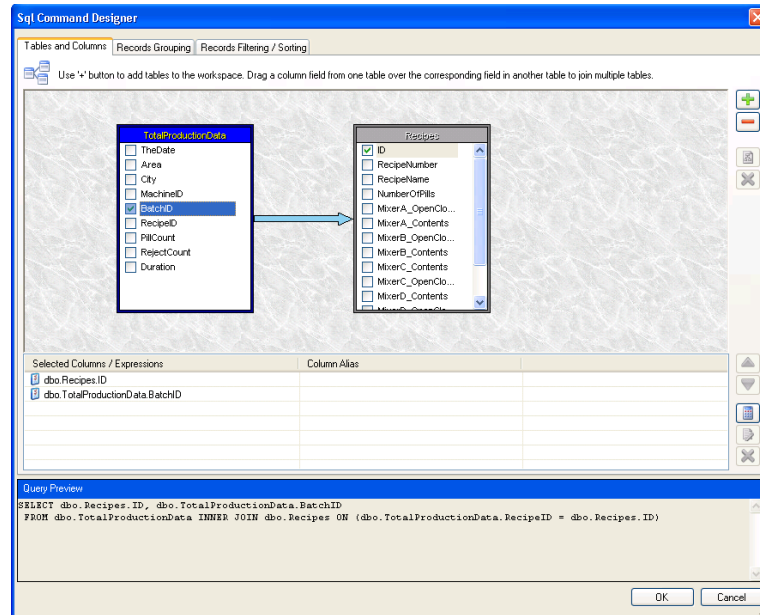


Figure A.11 - Configuring the BatchID Parameter

16. This time, we will add a filtering criterion to filter out only the BatchIDs that belong to the Recipe that we selected in the previous step. Click on the **[+]** to begin this process.
17. In the Column Name to Filter On, select **Recipes.RecipeName** and in the Relates To field, select **Input Parameter**.
18. Click the small red arrow button to launch the Parameter Browser again. Note that we have a Parameter Browser opened inside a Parameter Browser because we are now two levels deep in parameters.
19. There is no need to create another parameter this time though, since we want to associate our filtering criteria with the **RecipeName** parameter that we already created. Simply select that parameter from the list and click OK.
20. Click OK to close the **Filtering Criteria** dialog, and then click **Edit...** in the Records Sorting Order section. This opens the Sort Records dialog for the BatchID parameter.
21. To make it easier for the user, let's sort by **TotalProductionData.BatchID** in ascending order.

22. Click Finish to complete the Query Wizard.
23. Now click the **Pick a value** button to select a default value for our BatchID parameter.
24. Enter **AchesBeGone 400 mg** when prompted for a value for the **RecipeName** parameter. This is needed to complete the query request.
25. Select the first value in the list and click OK.
26. Your **Configure the parameter properties** dialog should now look like Figure A.12.

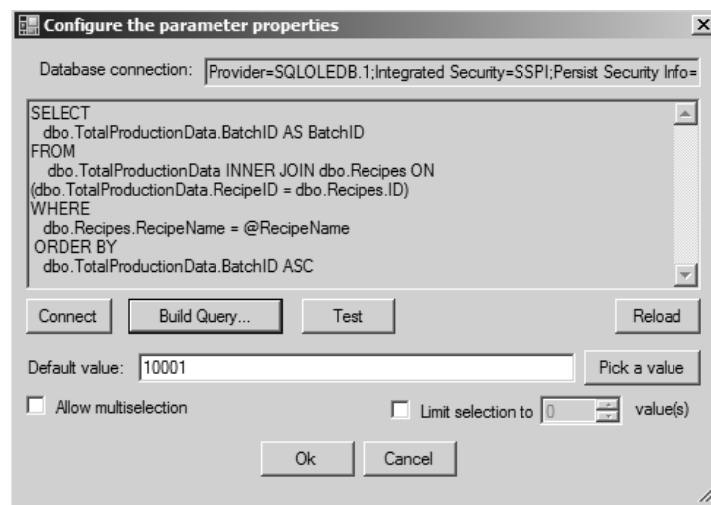


Figure A.12 - Configuring the BatchID Parameter

27. Click **OK** to close the Parameter properties dialog
28. Enter a description for this parameter in the **Web prompt** field to be displayed to the user in the Unified Web Interface.
29. Click **OK** three more times to complete the parameter creation process and to return to the **Records Filtering/Sorting** tab.
30. Click **OK** to close your **SQL Command Designer** dialog, and then click **Next** through the rest of the **Database Connection Configuration Wizard** dialogs to complete the change.
31. Save your template and then close Excel to return to the ReportWorX Configurator.
32. Let's use our **Unified Web Interface** again to execute a new copy of this report and see how the new dependent parameter affects it.

33. Navigate to the **AcmeSeutical Reports** page and select your **AcmeSeutical Parameter Report** from the list.
34. When you click **Execute Report**, you should see your two parameters appear on the screen. If you click on the drop down menu that has 10001 in it, as shown in Figure A.13, it will contain a list of values for the **BatchID** parameter.

AcmeSeutical Parameter Report

Snapshot Name:

Execution Options:

Language Options:

Select Recipe Name:

Select BatchID:

Figure A.13 - Executing the AcmeSeutical Parameter Report

35. Click **Execute** to execute the report.
36. After the report is completed, click on the hyperlink to view the completed report. It should contain only one row of data, as shown in Figure A.14, because we have only selected one **BatchID**. Wouldn't it be nice to be able to select multiple BatchIDs? In the next section you will learn how.

AcmeSeutical		Recipe Production Report			
A Global Leader in Easing the Pain		Generated On:		8/8/2008 16:20	
Recipe Name	Date	BatchID	Duration	Pill Count	Reject Count
AchesBeGone 400 mg	1/1/04 1:00 AM	10001	28	68557	724

Figure A.14 - Completed AcmeSeutical Parameter Report

A.2.4 Enabling Multi-selection for a User-Selectable Parameter

As we noticed in the last example, it would be nice if the user could select a few BatchIDs to include in his or her report instead of just one. This is possible through the **multiselection** check box in the **Parameter Configuration** dialog.

1. Navigate back to your **AcmeSeutical Parameters** template and click the **Edit this Template** button to launch Excel.
2. This time, since we only want to change one of the properties of an existing parameter, we can bypass the open database configuration dialogs and go straight to the **Parameter Browser**.

- To launch the Parameter Browser directly, click on the Parameter Browser icon within the ReportWorX ribbon in Excel 2007, as shown in Figure A.15. For Excel 2003 users, click on the ReportWorX menu item in the Excel menu toolbar and select Parameter Browser.

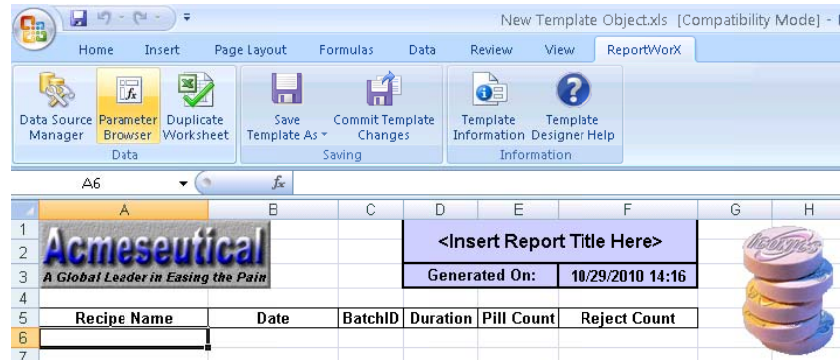


Figure A.15 - Launching the Parameter Browser Directly

- You should see your RecipeName and BatchID parameters listed. Click on the **BatchID** parameter, and then click the **Edit** button to open the **Configure your parameter** dialog box.
- In this way you can change many things about your parameters, including the type, database query, etc. Since we want to allow multiselection, we can click directly on **Configure Parameter Details** button.
- Check the check box that says **Allow multiselection**, as shown in Figure A.16, and then click **OK**.

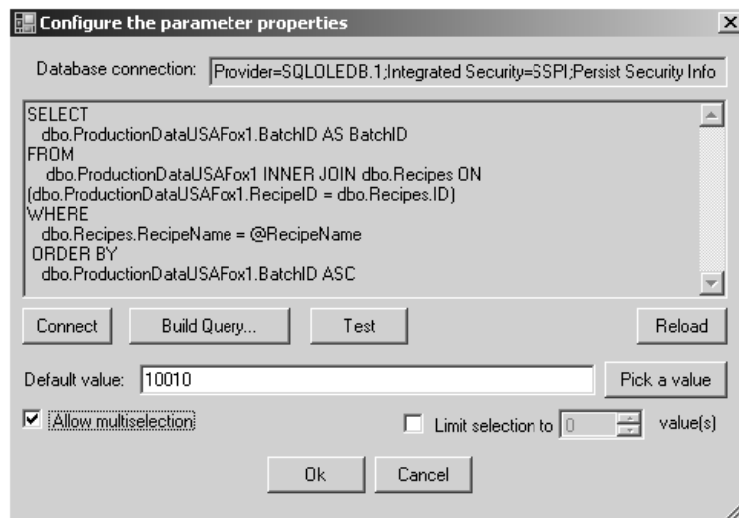


Figure A.16 - Enabling the Multi-selection Bit

- Click **OK** three times to close the Parameter Browser.

8. Finally, save your template and close Excel. You do not have to make any other modifications.
9. Let's go back to our **Unified Web Interface** to try out this new type of parameter.
10. Navigate to the **AcmeSeutical Reports** folder and select your **AcmeSeutical Parameter Report** from the list. Right click it and select **Execute Report**.
11. This time you should see a slightly different format(a **list box** instead of a drop-down box) for the **BatchID**, as shown in Figure A.17.

Figure A.17 - BatchID Parameter with Multi-selection Enabled

12. Using the **Ctrl** or **Shift** keys, you are now free to choose as many values as you want for the **BatchID** parameter. Select at least a few and then click **Execute** to run the report.
13. When the report is done executing, click on the hyperlink to visualize the results. You should see a record returned for each value of **BatchID** that you selected. See Figure A.18 for an example.

	A	B	C	D	E	F	G	H
1				Recipe Production Report				
2				Generated On:		8/11/2008 17:11		
3								
4								
5	Recipe Name	Date	BatchID	Duration	Pill Count	Reject Count		
6	AchesBeGone 400 mg	1/1/04 4:00 AM	10004	37	64292	1312		
7	AchesBeGone 400 mg	1/1/04 1:00 AM	10001	28	68557	724		
8	AchesBeGone 400 mg	1/1/04 3:00 AM	10003	21	54075	616		
9	AchesBeGone 400 mg	1/1/04 3:00 AM	10003	51	46975	326		
10	AchesBeGone 400 mg	1/1/04 3:00 AM	10003	17	48464	467		
11								

Figure A.18 - Completed AcmeSeutical Parameter Report

This completes Practice Lab A and the ReportWorX Training Manual. If you have any outstanding questions, feel free to discuss them with your instructor, use the ReportWorX Help files, or email support@iconics.com.

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